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

Radek Fučík[†], Pavel Eichler[†], Jakub Klinkovský[†], Robert Straka[‡,†], and Tomáš Oberhuber[†]

[†]Faculty of Nuclear Sciences and Physical Engineering, Czech Technical University in Prague, Trojanova 13, 120 00 Prague, Czech Republic
[‡]AGH University of Science and Technology, al. Mickiewicza 30, 30-059 Krakow, Poland

Contents

1 Global definitions

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

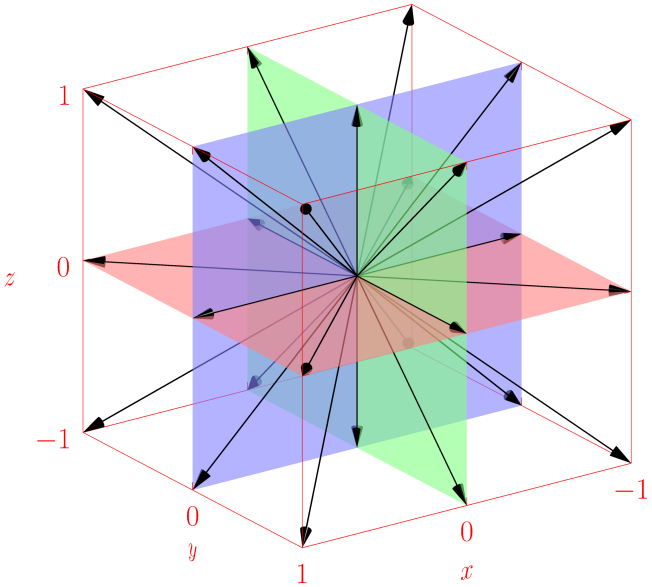
1.1 Discrete velocity vectors

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

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

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

respectively [1].



1.2 Raw and central moments

The raw and central moments are defined by

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

and

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

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

1.3 Transformation matrix M

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

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

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

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

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

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

1.4 Equilibrium

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

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

as

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

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

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

2 Spatial EPDEs

2.1 SRT

2.1.1 Definitions

Collision operator $\boldsymbol{C}$:

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

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

2.1.2 Conservation of mass: ρ

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

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

2.1.3 Conservation of momentum: ρv_1

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

$$+ \; C_{11}\frac{\rho\delta_l^4}{2\omega^3\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_2\partial x_3^2} + C_{12}\frac{\rho\delta_l^4}{12\omega^3\delta_t}\frac{\partial^4 v_2}{\partial x_1\partial x_2\partial x_3^2} + C_{13}\frac{\rho\delta_l^4 v_3}{\omega^3\delta_t}\frac{\partial^4 v_3}{\partial x_1\partial x_2\partial x_3^2} + C_{14}\frac{\delta_l^4}{12\omega^3\delta_t}\frac{\partial^4 \rho}{\partial x_2^2\partial x_3^2} + C_{15}\frac{\rho\delta_l^4}{4\omega^3\delta_t}\frac{\partial^4 v_1}{\partial x_2^2\partial x_3^2} +$$
$$C_{16}\frac{\rho v_2\delta_l^4}{2\omega^3\delta_t}\frac{\partial^4 v_2}{\partial x_2^2\partial x_3^2} + C_{17}\frac{\rho\delta_l^4}{4\omega^3\delta_t}\frac{\partial^4 v_3}{\partial x_2^2\partial x_3^2} + C_{18}\frac{\delta_l^4 v_3 c_s^2}{12\omega^3\delta_t}\frac{\partial^4 \rho}{\partial x_1\partial x_3^3} + (2-6c_s^2-\omega+\omega v_3^2-2v_3^2+3\omega c_s^2)\frac{\rho\delta_l^4 v_1 v_3}{12\omega\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_3^3} +$$
$$(-12+2\omega^2c_s^2+18\omega-\omega^3c_s^2-54\omega v_3^2-6\omega^2+18\omega^2v_3^2+36v_3^2)\frac{\rho\delta_l^4c_s^2}{12\omega^3\delta_t}\frac{\partial^4 v_3}{\partial x_1\partial x_3^3} +$$
$$(2-6c_s^2-\omega+\omega v_3^2-2v_3^2+3\omega c_s^2)\frac{\rho\delta_l^4 v_1 v_3}{12\omega\delta_t}\frac{\partial^4 v_2}{\partial x_2\partial x_3^3} +$$
$$(-12\omega v_3^2c_s^2-2c_s^2-\omega c_s^4+3\omega v_3^2+24v_3^2c_s^2+6v_3^4-3\omega v_3^4-6v_3^2+2c_s^4+\omega c_s^2)\frac{\delta_l^4 v_1}{24\omega\delta_t}\frac{\partial^4\rho}{\partial x_3^4} + C_{19}\frac{\rho\delta_l^4}{24\omega^3\delta_t}\frac{\partial^4 v_1}{\partial x_3^4} +$$
$$(-4+6c_s^2+2\omega-5\omega v_3^2+10v_3^2-3\omega c_s^2)\frac{\rho\delta_l^4 v_1 v_3}{12\omega\delta_t}\frac{\partial^4 v_3}{\partial x_3^4} = 0,$$

where:

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

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

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

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

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

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

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

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

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

$$C_{10} = 36\omega v_1v_3^2c_s^2+36\omega v_2^2v_1c_s^2+14\omega^2v_2v_1^2v_3^2-36\omega v_2v_1^2c_s^2-14\omega^2v_2^2v_1v_3^2+14\omega^2v_2v_3^2c_s^2+24v_2v_1^2v_3^2-\omega^3v_2v_3^2c_s^2+\omega^3v_2^2v_1v_3^2-\omega^3v_2v_1^2v_3^2+24v_2v_3^2c_s^2-24v_2^2v_1v_3^2-14\omega^2v_2^2v_1c_s^2-36\omega v_2v_1^2v_3^2-14\omega^2v_1v_3^2c_s^2-36\omega v_2v_3^2c_s^2+14\omega^2v_2v_1^2c_s^2+36\omega v_2^2v_1v_3^2-24v_1v_3^2c_s^2-\omega^3v_2v_1^2c_s^2-24v_2^2v_1c_s^2+\omega^3v_1v_3^2c_s^2+24v_2v_1^2c_s^2+\omega^3v_2^2v_1c_s^2$$

$$C_{11} = 36\omega v_3^2c_s^2-14\omega^2v_2^2c_s^2+\omega^3v_2^2v_3^2+48v_2v_1c_s^2-24v_2^2v_3^2-2\omega^3v_2v_1c_s^2+28\omega^2v_2v_1c_s^2-24v_3^2c_s^2-72\omega v_2v_1v_3^2+\omega^3v_3^2c_s^2+36\omega v_2^2v_3^2-2\omega^3v_2v_1v_3^2+48v_2v_1v_3^2-24v_2^2c_s^2-14\omega^2v_2^2v_3^2+\omega^3v_2^2c_s^2+36\omega v_2^2c_s^2-72\omega v_2v_1c_s^2-14\omega^2v_3^2c_s^2+28\omega^2v_2v_1v_3^2$$

$$C_{12} = -216\omega v_3^2c_s^2-288v_2v_1c_s^2+54\omega c_s^4-216\omega v_1^2v_3^2+12\omega^3v_2v_1c_s^2+144v_1^2v_3^2+84\omega^2v_1^2c_s^2-6\omega^3v_1^2v_3^2-168\omega^2v_2v_1c_s^2+144v_3^2c_s^2+432\omega v_2v_1v_3^2-6\omega^3v_3^2c_s^2+12\omega^3v_2v_1v_3^2-\omega^3c_s^4-216\omega v_1^2c_s^2-288v_2v_1v_3^2+432\omega v_2v_1c_s^2+84\omega^2v_3^2c_s^2-16\omega^2c_s^4-36c_s^4+84\omega^2v_1^2v_3^2-6\omega^3v_1^2c_s^2-168\omega^2v_2v_1v_3^2+144v_1^2c_s^2$$

$$C_{13} = \omega^3v_1c_s^2+14\omega^2v_2v_1^2-24v_1c_s^2-36\omega v_2c_s^2-24v_2^2v_1+\omega^3v_2^2v_1+36\omega v_2^2v_1+24v_2c_s^2-\omega^3v_2c_s^2+36\omega v_1c_s^2-14\omega^2v_2^2v_1-\omega^3v_2v_1^2-14\omega^2v_1c_s^2+24v_2v_1^2-36\omega v_2v_1^2+14\omega^2v_2c_s^2$$

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

$$C_{15} = -36\omega v_3^2c_s^2+14\omega^2v_2^2c_s^2-\omega^3v_2^2v_3^2+2\omega^3v_1v_3c_s^2-48v_2^2v_1v_3+24v_2^2v_3^2+12\omega c_s^4-48v_1v_3c_s^2+2\omega^3v_2^2v_1v_3-28\omega^2v_2^2v_1v_3+24v_3^2c_s^2-\omega^3v_3^2c_s^2-36\omega v_2^2v_3^2-28\omega^2v_1v_3c_s^2+24v_2^2c_s^2+14\omega^2v_2^2v_3^2-\omega^3v_2^2c_s^2-36\omega v_2^2c_s^2+14\omega^2v_3^2c_s^2-4\omega^2c_s^4+72\omega v_2^2v_1v_3-8c_s^4+72\omega v_1v_3c_s^2$$

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

$$C_{17} = -14\omega^2v_2^2c_s^2-2\omega^3v_1v_3c_s^2+48v_2^2v_1v_3+48v_1v_3c_s^2-2\omega^3v_2^2v_1v_3+36\omega v_2^2v_1^2+\omega^3v_2^2v_1^2+28\omega^2v_2^2v_1v_3-24v_2^2v_1^2-14\omega^2v_1^2c_s^2+28\omega^2v_1v_3c_s^2+36\omega v_1^2c_s^2-24v_2^2c_s^2+\omega^3v_2^2c_s^2+36\omega v_2^2c_s^2-72\omega v_2^2v_1v_3-72\omega v_1v_3c_s^2+\omega^3v_1^2c_s^2-24v_1^2c_s^2-14\omega^2v_2^2v_1^2$$

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

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

2.1.4 Conservation of momentum: ρv_2

attached text file: `output_d3q27_nse_srt_symbolic_pde_02.txt`

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

where:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

2.1.5 Conservation of momentum: ρv_3

attached text file: `output_d3q27_nse_srt_symbolic_pde_03.txt`

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

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

where:

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

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

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

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

$$C_5 = 36\omega v_1v_3^2c_s^2 + 36\omega v_2^2v_1c_s^2 + 14\omega^2v_2v_1^2v_3^2 - 36\omega v_2v_1^2c_s^2 - 14\omega^2v_2^2v_1v_3^2 + 14\omega^2v_2v_3^2c_s^2 + 24v_2v_1^2v_3^2 - \omega^3v_2v_3^2c_s^2 + \omega^3v_2^2v_1v_3^2 - \omega^3v_2v_1^2v_3^2 + 24v_2v_3^2c_s^2 - 24v_2^2v_1v_3^2 - 14\omega^2v_2^2v_1c_s^2 - 36\omega v_2v_1^2v_3^2 - 14\omega^2v_1v_3^2c_s^2 - 36\omega v_2v_3^2c_s^2 + 14\omega^2v_2v_1^2c_s^2 + 36\omega v_2^2v_1v_3^2 - 24v_1v_3^2c_s^2 - \omega^3v_2v_1^2c_s^2 - 24v_2^2v_1c_s^2 + \omega^3v_1v_3^2c_s^2 + 24v_2v_1^2c_s^2 + \omega^3v_2^2v_1c_s^2$$

$$C_6 = 36\omega v_3^2c_s^2 - 14\omega^2v_2^2c_s^2 + \omega^3v_2^2v_3^2 + 48v_2v_1c_s^2 - 24v_2^2v_3^2 - 2\omega^3v_2v_1c_s^2 + 28\omega^2v_2v_1c_s^2 - 24v_3^2c_s^2 - 72\omega v_2v_1v_3^2 + \omega^3v_3^2c_s^2 + 36\omega v_2^2v_3^2 - 2\omega^3v_2v_1v_3^2 + 48v_2v_1v_3^2 - 24v_2^2c_s^2 - 14\omega^2v_2^2v_3^2 + \omega^3v_2^2c_s^2 + 36\omega v_2^2c_s^2 - 72\omega v_2v_1c_s^2 - 14\omega^2v_3^2c_s^2 + 28\omega^2v_2v_1v_3^2$$

$$C_7 = -216\omega v_3^2c_s^2 - 288v_2v_1c_s^2 + 54\omega c_s^4 - 216\omega v_1^2v_3^2 + 12\omega^3v_2v_1c_s^2 + 144v_1^2v_3^2 + 84\omega^2v_1^2c_s^2 - 6\omega^3v_1^2v_3^2 - 168\omega^2v_2v_1c_s^2 + 144v_3^2c_s^2 + 432\omega v_2v_1v_3^2 - 6\omega^3v_3^2c_s^2 + 12\omega^3v_2v_1v_3^2 - \omega^3c_s^4 - 216\omega v_1^2c_s^2 - 288v_2v_1v_3^2 + 432\omega v_2v_1c_s^2 + 84\omega^2v_3^2c_s^2 - 16\omega^2c_s^4 - 36c_s^4 + 84\omega^2v_1^2v_3^2 - 6\omega^3v_1^2c_s^2 - 168\omega^2v_2v_1v_3^2 + 144v_1^2c_s^2$$

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

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

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

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

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

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

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

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

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

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

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

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

2.2 MRT

2.2.1 Definitions

Collision operator $\boldsymbol{C}$:

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

where

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

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

2.2.2 Conservation of mass: ρ

attached text file: `output_d3q27_nse_mrt1_symbolic_pde_00.txt`

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

$$3\omega_9\omega_{12}c_s^2\omega_5 - 6\omega_9\omega_{12}c_s^2 + \omega_9\omega_{12}v_1^2\omega_5 - 3\omega_9 v_1^2\omega_5 + 3\omega_{12}c_s^2\omega_5 - \omega_{12}\omega_5)\frac{\delta_l^4\rho v_1}{12\omega_9\omega_{12}\delta_t\omega_5}\frac{\partial^4 v_2}{\partial x_1^3\partial x_2} + (-2+\omega_5)\frac{\delta_l^4 c_s^4}{6\delta_t\omega_5}\frac{\partial^4\rho}{\partial x_1^2\partial x_2^2}$$
$$+ (-\omega_{12}+\omega_5)\frac{\delta_l^4 c_s^2\rho v_1}{2\omega_{12}\delta_t\omega_5}\frac{\partial^4 v_1}{\partial x_1^2\partial x_2^2} + (-\omega_{15}+\omega_5)\frac{\delta_l^4 c_s^2\rho v_2}{2\omega_{15}\delta_t\omega_5}\frac{\partial^4 v_2}{\partial x_1^2\partial x_2^2} +$$
$$(-\omega_{15} + 3\omega_{15}c_s^2 + \omega_{15}v_2^2 + \omega_{10} - 3c_s^2\omega_{10} - \omega_{10}v_2^2)\frac{\delta_l^4 v_1 v_2}{4\omega_{15}\delta_t\omega_{10}}\frac{\partial^4\rho}{\partial x_1\partial x_2^3} + (\omega_{15}v_2^2\omega_5 + 3\omega_{15}c_s^2\omega_{10}\omega_5 - 3\omega_{10}v_2^2\omega_5 -$$
$$\omega_{15}\omega_5 + \omega_{15}\omega_{10}v_2^2\omega_5 - \omega_{15}\omega_{10}\omega_5 + 3\omega_{15}c_s^2\omega_5 - 6\omega_{15}c_s^2\omega_{10} + 3\omega_{10}\omega_5 - 3c_s^2\omega_{10}\omega_5)\frac{\delta_l^4\rho v_2}{12\omega_{15}\delta_t\omega_{10}\omega_5}\frac{\partial^4 v_1}{\partial x_1\partial x_2^3} +$$
$$(-\omega_{15} + \omega_{15}c_s^2 + 3\omega_{15}v_2^2 + \omega_{10} - c_s^2\omega_{10} - 3\omega_{10}v_2^2)\frac{\delta_l^4\rho v_1}{4\omega_{15}\delta_t\omega_{10}}\frac{\partial^4 v_2}{\partial x_1\partial x_2^3} +$$
$$(-c_s^4\omega_{10} - 6v_2^2 - 3\omega_{10}v_2^4 - 2c_s^2 + 2c_s^4 + c_s^2\omega_{10} + 6v_2^4 + 3\omega_{10}v_2^2 - 12c_s^2\omega_{10}v_2^2 + 24c_s^2v_2^2)\frac{\delta_l^4}{24\delta_t\omega_{10}}\frac{\partial^4\rho}{\partial x_2^4} +$$
$$(-4 + 10v_2^2 + 6c_s^2 + 2\omega_{10} - 3c_s^2\omega_{10} - 5\omega_{10}v_2^2)\frac{\delta_l^4\rho v_2}{12\delta_t\omega_{10}}\frac{\partial^4 v_2}{\partial x_2^4} +$$
$$(\omega_9 - \omega_9 v_1^2 - 3\omega_9 c_s^2 + v_1^2\omega_{13} - \omega_{13} + 3c_s^2\omega_{13})\frac{\delta_l^4 v_1 v_3}{4\omega_9\delta_t\omega_{13}}\frac{\partial^4\rho}{\partial x_1^3\partial x_3} +$$
$$(\omega_9 - 3\omega_9 v_1^2 - \omega_9 c_s^2 + 3v_1^2\omega_{13} - \omega_{13} + c_s^2\omega_{13})\frac{\delta_l^4\rho v_3}{4\omega_9\delta_t\omega_{13}}\frac{\partial^4 v_1}{\partial x_1^3\partial x_3} + (\omega_6 v_1^2\omega_{13} - 3\omega_9\omega_6 v_1^2 - 6\omega_9 c_s^2\omega_{13} - 3\omega_9\omega_6 c_s^2 -$$
$$\omega_9\omega_6\omega_{13} + 3\omega_9\omega_6 c_s^2\omega_{13} - \omega_6\omega_{13} + \omega_9\omega_6 v_1^2\omega_{13} + 3\omega_6 c_s^2\omega_{13} + 3\omega_9\omega_6)\frac{\delta_l^4\rho v_1}{12\omega_9\omega_6\delta_t\omega_{13}}\frac{\partial^4 v_3}{\partial x_1^3\partial x_3} +$$
$$(-\omega_8+\omega_5)\frac{\delta_l^4 c_s^2\rho v_3}{2\delta_t\omega_8\omega_5}\frac{\partial^4 v_2}{\partial x_1^2\partial x_2\partial x_3} + (\omega_6-\omega_8)\frac{\delta_l^4 c_s^2\rho v_2}{2\omega_6\delta_t\omega_8}\frac{\partial^4 v_3}{\partial x_1^2\partial x_2\partial x_3} + (-\omega_8+\omega_5)\frac{\delta_l^4 c_s^2\rho v_3}{2\delta_t\omega_8\omega_5}\frac{\partial^4 v_1}{\partial x_1\partial x_2^2\partial x_3} +$$
$$(\omega_7-\omega_8)\frac{\delta_l^4 c_s^2\rho v_1}{2\delta_t\omega_7\omega_8}\frac{\partial^4 v_3}{\partial x_1\partial x_2^2\partial x_3} + (\omega_{16}v_2^2 - \omega_{16} + \omega_{10} - 3c_s^2\omega_{10} + 3c_s^2\omega_{16} - \omega_{10}v_2^2)\frac{\delta_l^4 v_2 v_3}{4\delta_t\omega_{16}\omega_{10}}\frac{\partial^4\rho}{\partial x_2^3\partial x_3} +$$
$$(3\omega_{16}v_2^2 - \omega_{16} + \omega_{10} - c_s^2\omega_{10} + c_s^2\omega_{16} - 3\omega_{10}v_2^2)\frac{\delta_l^4\rho v_3}{4\delta_t\omega_{16}\omega_{10}}\frac{\partial^4 v_2}{\partial x_2^3\partial x_3} + (-3\omega_{10}v_2^2\omega_7 - 6c_s^2\omega_{16}\omega_{10} + 3c_s^2\omega_{16}\omega_{10}\omega_7 -$$
$$\omega_{16}\omega_7 - \omega_{16}\omega_{10}\omega_7 + 3c_s^2\omega_{16}\omega_7 + 3\omega_{10}\omega_7 - 3c_s^2\omega_{10}\omega_7 + \omega_{16}\omega_{10}v_2^2\omega_7 + \omega_{16}v_2^2\omega_7)\frac{\delta_l^4\rho v_2}{12\delta_t\omega_{16}\omega_{10}\omega_7}\frac{\partial^4 v_3}{\partial x_2^3\partial x_3} +$$
$$(-2+\omega_6)\frac{\delta_l^4 c_s^4}{6\omega_6\delta_t}\frac{\partial^4\rho}{\partial x_1^2\partial x_3^2} + (\omega_6-\omega_{13})\frac{\delta_l^4 c_s^2\rho v_1}{2\omega_6\delta_t\omega_{13}}\frac{\partial^4 v_1}{\partial x_1^2\partial x_3^2} + (\omega_6-\omega_{18})\frac{\delta_l^4 c_s^2\rho v_3}{2\omega_6\delta_t\omega_{18}}\frac{\partial^4 v_3}{\partial x_1^2\partial x_3^2} + (\omega_6-\omega_8)\frac{\delta_l^4 c_s^2\rho v_2}{2\omega_6\delta_t\omega_8}\frac{\partial^4 v_1}{\partial x_1\partial x_2\partial x_3^2} +$$
$$(\omega_7-\omega_8)\frac{\delta_l^4 c_s^2\rho v_1}{2\delta_t\omega_7\omega_8}\frac{\partial^4 v_2}{\partial x_1\partial x_2^2\partial x_3^2} + (-2+\omega_7)\frac{\delta_l^4 c_s^4}{6\delta_t\omega_7}\frac{\partial^4\rho}{\partial x_2^2\partial x_3^2} + (-\omega_{16}+\omega_7)\frac{\delta_l^4 c_s^2\rho v_2}{2\delta_t\omega_{16}\omega_7}\frac{\partial^4 v_2}{\partial x_2^2\partial x_3^2} + (-\omega_{19}+\omega_7)\frac{\delta_l^4 c_s^2\rho v_3}{2\omega_{19}\delta_t\omega_7}\frac{\partial^4 v_3}{\partial x_2^2\partial x_3^2}$$
$$+ (-3c_s^2\omega_{11} - v_3^2\omega_{11} + 3c_s^2\omega_{18} + \omega_{11} - \omega_{18} + v_3^2\omega_{18})\frac{\delta_l^4 v_1 v_3}{4\delta_t\omega_{11}\omega_{18}}\frac{\partial^4\rho}{\partial x_1\partial x_3^3} + (-3\omega_6 v_3^2\omega_{11} + 3\omega_6\omega_{11} - 3\omega_6 c_s^2\omega_{11} +$$
$$3\omega_6 c_s^2\omega_{11}\omega_{18} + \omega_6 v_3^2\omega_{11}\omega_{18} - \omega_6\omega_{11}\omega_{18} - \omega_6\omega_{18} + \omega_6 v_3^2\omega_{18} + 3\omega_6 c_s^2\omega_{18} - 6c_s^2\omega_{11}\omega_{18})\frac{\delta_l^4\rho v_3}{12\omega_6\delta_t\omega_{11}\omega_{18}}\frac{\partial^4 v_1}{\partial x_1\partial x_3^3} +$$
$$(-c_s^2\omega_{11} - 3v_3^2\omega_{11} + c_s^2\omega_{18} + \omega_{11} - \omega_{18} + 3v_3^2\omega_{18})\frac{\delta_l^4\rho v_1}{4\delta_t\omega_{11}\omega_{18}}\frac{\partial^4 v_3}{\partial x_1\partial x_3^3} +$$
$$(-3c_s^2\omega_{11} + 3\omega_{19}c_s^2 - \omega_{19} - v_3^2\omega_{11} + \omega_{19}v_3^2 + \omega_{11})\frac{\delta_l^4 v_2 v_3}{4\omega_{19}\delta_t\omega_{11}}\frac{\partial^4\rho}{\partial x_2\partial x_3^3} + (\omega_{19}\omega_7 v_3^2 - \omega_{19}\omega_7\omega_{11} - \omega_{19}\omega_7 +$$
$$\omega_{19}\omega_7 v_3^2\omega_{11} + 3\omega_7\omega_{11} - 3c_s^2\omega_7\omega_{11} - 6\omega_{19}c_s^2\omega_{11} + 3\omega_{19}c_s^2\omega_7\omega_{11} - 3\omega_7 v_3^2\omega_{11} + 3\omega_{19}c_s^2\omega_7)\frac{\delta_l^4\rho v_3}{12\omega_{19}\delta_t\omega_7\omega_{11}}\frac{\partial^4 v_2}{\partial x_2\partial x_3^3} +$$
$$(-c_s^2\omega_{11} + \omega_{19}c_s^2 - \omega_{19} - 3v_3^2\omega_{11} + 3\omega_{19}v_3^2 + \omega_{11})\frac{\delta_l^4\rho v_2}{4\omega_{19}\delta_t\omega_{11}}\frac{\partial^4 v_3}{\partial x_2\partial x_3^3} +$$
$$(c_s^2\omega_{11} + 24c_s^2v_3^2 + 6v_3^4 - 2c_s^2 + 3v_3^2\omega_{11} - 12c_s^2v_3^2\omega_{11} + 2c_s^4 - c_s^4\omega_{11} - 3v_3^4\omega_{11} - 6v_3^2)\frac{\delta_l^4}{24\delta_t\omega_{11}}\frac{\partial^4\rho}{\partial x_3^4} +$$
$$(-4 - 3c_s^2\omega_{11} + 6c_s^2 - 5v_3^2\omega_{11} + 2\omega_{11} + 10v_3^2)\frac{\delta_l^4\rho v_3}{12\delta_t\omega_{11}}\frac{\partial^4 v_3}{\partial x_3^4} = 0.$$

2.2.3 Conservation of momentum: ρv_1

attached text file: `output_d3q27_nse_mrt1_symbolic_pde_01.txt`

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

$$
\begin{aligned}
&(-24+24\omega_9-60\omega_9 v_1^2+60v_1^2-36\omega_9 c_s^2+36c_s^2+5\omega_9^2c_s^2+11\omega_9^2v_1^2-4\omega_9^2)\frac{\delta_l^3\rho v_1}{6\omega_9^2\delta_t}\frac{\partial^3 v_1}{\partial x_1^3} + C_2\frac{\delta_l^3 v_1v_2}{\omega_9^2\omega_{12}\delta_t\omega_5}\frac{\partial^3\rho}{\partial x_1^2\partial x_2} + \\
&C_3\frac{\delta_l^3\rho v_2}{\omega_9^2\omega_{12}\delta_t\omega_5}\frac{\partial^3 v_1}{\partial x_1^2\partial x_2} + C_4\frac{\delta_l^3\rho v_1}{12\omega_9^2\omega_{12}\delta_t\omega_5^2}\frac{\partial^3 v_2}{\partial x_1^2\partial x_2} + (-12-\omega_5^2+12\omega_5)\frac{\delta_l^3c_s^4}{6\delta_t\omega_5^2}\frac{\partial^3\rho}{\partial x_1\partial x_2^2} + \\
&(12\omega_9\omega_{12}\omega_5+12\omega_9\omega_5-12\omega_9\omega_5^2+12\omega_5^2-\omega_9\omega_{12}\omega_5^2-12\omega_9\omega_{12}-12\omega_{12}\omega_5)\frac{\delta_l^3c_s^2\rho v_1}{6\omega_9\omega_{12}\delta_t\omega_5^2}\frac{\partial^3 v_1}{\partial x_1\partial x_2^2} + \\
&(-2\omega_{15}-\omega_5^2+\omega_{15}\omega_5+2\omega_5)\frac{\delta_l^3c_s^2\rho v_2}{\omega_{15}\delta_t\omega_5^2}\frac{\partial^3 v_2}{\partial x_1\partial x_2^2} + C_5\frac{\delta_l^3 v_1v_2}{12\omega_{15}\delta_t\omega_{10}\omega_5}\frac{\partial^3\rho}{\partial x_2^3} + C_6\frac{\delta_l^3\rho v_2}{6\omega_{15}\delta_t\omega_5^2}\frac{\partial^3 v_1}{\partial x_2^3} + C_7\frac{\delta_l^3\rho v_1}{12\omega_{15}\delta_t\omega_{10}\omega_5}\frac{\partial^3 v_2}{\partial x_2^3} + \\
&C_8\frac{\delta_l^3 v_1v_3}{\omega_9^2\omega_6\delta_t\omega_{13}}\frac{\partial^3\rho}{\partial x_1^2\partial x_3} + C_9\frac{\delta_l^3\rho v_3}{\omega_9^2\omega_6\delta_t\omega_{13}}\frac{\partial^3 v_1}{\partial x_1^2\partial x_3} + C_{10}\frac{\delta_l^3\rho v_1}{12\omega_9^2\omega_6^2\delta_t\omega_{13}}\frac{\partial^3 v_3}{\partial x_1^2\partial x_3} + \\
&(\omega_6\omega_8\omega_5+\omega_5^2-\omega_8\omega_5-\omega_6\omega_5^2-\omega_6\omega_8+\omega_6\omega_5)\frac{\delta_l^3c_s^2\rho v_3}{\omega_6\delta_t\omega_8\omega_5^2}\frac{\partial^3 v_2}{\partial x_1\partial x_2\partial x_3} + \\
&(-\omega_6^2\omega_5+\omega_6\omega_8\omega_5-\omega_8\omega_5+\omega_6^2-\omega_6\omega_8+\omega_6\omega_5)\frac{\delta_l^3c_s^2\rho v_2}{\omega_6^2\delta_t\omega_8\omega_5}\frac{\partial^3 v_3}{\partial x_1\partial x_2\partial x_3} + \\
&(\omega_6\omega_8\omega_5+\omega_5^2-\omega_8\omega_5-\omega_6\omega_5^2-\omega_6\omega_8+\omega_6\omega_5)\frac{\delta_l^3c_s^2\rho v_3}{\omega_6\delta_t\omega_8\omega_5^2}\frac{\partial^3 v_1}{\partial x_2^2\partial x_3} + \\
&(-\omega_6\omega_7\omega_8\omega_5+6\omega_6\omega_8\omega_5-6\omega_8\omega_5+6\omega_6\omega_7+6\omega_7\omega_5-6\omega_6\omega_8-6\omega_6\omega_7\omega_5)\frac{\delta_l^3c_s^2\rho v_1}{6\omega_6\delta_t\omega_7\omega_8\omega_5}\frac{\partial^3 v_3}{\partial x_2^2\partial x_3} + \\
&(-12+12\omega_6-\omega_6^2)\frac{\delta_l^3c_s^4}{6\omega_6^2\delta_t}\frac{\partial^3\rho}{\partial x_1\partial x_3^2} + \\
&(-12\omega_9\omega_{13}+12\omega_9\omega_6\omega_{13}-\omega_9\omega_6^2\omega_{13}-12\omega_6\omega_{13}-12\omega_9\omega_6^2+12\omega_6^2+12\omega_9\omega_6)\frac{\delta_l^3c_s^2\rho v_1}{6\omega_9\omega_6^2\delta_t\omega_{13}}\frac{\partial^3 v_1}{\partial x_1\partial x_3^2} + \\
&(2\omega_6-\omega_6^2+\omega_6\omega_{18}-2\omega_{18})\frac{\delta_l^3c_s^2\rho v_3}{\omega_6^2\delta_t\omega_{18}}\frac{\partial^3 v_3}{\partial x_1\partial x_3^2} + (-\omega_6^2\omega_5+\omega_6\omega_8\omega_5-\omega_8\omega_5+\omega_6^2-\omega_6\omega_8+\omega_6\omega_5)\frac{\delta_l^3c_s^2\rho v_2}{\omega_6^2\delta_t\omega_8\omega_5}\frac{\partial^3 v_1}{\partial x_2\partial x_3^2} + \\
&(-\omega_6\omega_7\omega_8\omega_5+6\omega_6\omega_8\omega_5-6\omega_8\omega_5+6\omega_6\omega_7+6\omega_7\omega_5-6\omega_6\omega_8-6\omega_6\omega_7\omega_5)\frac{\delta_l^3c_s^2\rho v_1}{6\omega_6\delta_t\omega_7\omega_8\omega_5}\frac{\partial^3 v_2}{\partial x_2\partial x_3^2} + \\
&C_{11}\frac{\delta_l^3 v_1v_3}{12\omega_6\delta_t\omega_{11}\omega_{18}}\frac{\partial^3\rho}{\partial x_3^3} + C_{12}\frac{\delta_l^3\rho v_3}{6\omega_6^2\delta_t\omega_{18}}\frac{\partial^3 v_1}{\partial x_3^3} + C_{13}\frac{\delta_l^3\rho v_1}{12\omega_6\delta_t\omega_{11}\omega_{18}}\frac{\partial^3 v_3}{\partial x_3^3} + C_{14}\frac{\delta_l^4 v_1}{12\omega_9^3\delta_t}\frac{\partial^4\rho}{\partial x_1^4} + C_{15}\frac{\delta_l^4\rho}{12\omega_9^3\delta_t}\frac{\partial^4 v_1}{\partial x_1^4} + \\
&C_{16}\frac{\delta_l^4 v_2}{4\omega_9^3\omega_{12}^2\delta_t\omega_5^2}\frac{\partial^4\rho}{\partial x_1^3\partial x_2} + C_{17}\frac{\delta_l^4\rho v_1v_2}{4\omega_9^3\omega_{12}^2\delta_t\omega_5^2}\frac{\partial^4 v_1}{\partial x_1^3\partial x_2} + C_{18}\frac{\delta_l^4\rho}{12\omega_9^3\omega_{12}^2\delta_t\omega_5^3}\frac{\partial^4 v_2}{\partial x_1^3\partial x_2} + C_{19}\frac{\delta_l^4 v_1}{12\omega_{15}\omega_9^3\omega_{12}^2\delta_t\omega_5^3\omega_{21}}\frac{\partial^4\rho}{\partial x_1^2\partial x_2^2} + \\
&C_{20}\frac{\delta_l^4\rho}{12\omega_{15}\omega_9^3\omega_{12}^2\delta_t\omega_5^3\omega_{21}}\frac{\partial^4 v_1}{\partial x_1^2\partial x_2^2} + C_{21}\frac{\delta_l^4\rho v_1v_2}{2\omega_{15}^2\omega_9^3\omega_{12}^2\delta_t\omega_{10}\omega_5^3\omega_{21}}\frac{\partial^4 v_2}{\partial x_1^2\partial x_2^2} + C_{22}\frac{\delta_l^4 v_2}{12\omega_{15}^2\omega_9\omega_{12}\delta_t\omega_{10}^2\omega_5^3\omega_{21}}\frac{\partial^4\rho}{\partial x_1\partial x_2^3} + \\
&C_{23}\frac{\delta_l^4\rho v_1v_2}{12\omega_{15}^2\omega_9^2\omega_{12}^2\delta_t\omega_{10}^2\omega_5^3\omega_{21}}\frac{\partial^4 v_1}{\partial x_1\partial x_2^3} + C_{24}\frac{\delta_l^4\rho}{12\omega_{15}^2\omega_9\omega_{12}\delta_t\omega_{10}^2\omega_5^3\omega_{21}}\frac{\partial^4 v_2}{\partial x_1\partial x_2^3} + C_{25}\frac{\delta_l^4 v_1}{24\omega_{15}^2\delta_t\omega_{10}^2\omega_5^2}\frac{\partial^4\rho}{\partial x_2^4} + C_{26}\frac{\delta_l^4\rho}{24\omega_{15}^2\delta_t\omega_5^3}\frac{\partial^4 v_1}{\partial x_2^4} + \\
&C_{27}\frac{\delta_l^4\rho v_1v_2}{12\omega_{15}^2\delta_t\omega_{10}^2\omega_5^2}\frac{\partial^4 v_2}{\partial x_2^4} + C_{28}\frac{\delta_l^4 v_3}{4\omega_9^3\omega_6^2\delta_t\omega_{13}^2}\frac{\partial^4\rho}{\partial x_1^3\partial x_3} + C_{29}\frac{\delta_l^4\rho v_1v_3}{4\omega_9^3\omega_6^2\delta_t\omega_{13}^2}\frac{\partial^4 v_1}{\partial x_1^3\partial x_3} + C_{30}\frac{\delta_l^4\rho}{12\omega_9^3\omega_6^3\delta_t\omega_{13}^2}\frac{\partial^4 v_3}{\partial x_1^3\partial x_3} + \\
&C_{31}\frac{\delta_l^4 v_1v_2v_3}{\omega_9^3\omega_{12}^2\omega_6^2\delta_t\omega_{13}^2\omega_{14}\omega_8\omega_5^2}\frac{\partial^4\rho}{\partial x_1^2\partial x_2\partial x_3} + C_{32}\frac{\delta_l^4\rho v_2v_3}{\omega_9^3\omega_{12}^2\omega_6^2\delta_t\omega_{13}^2\omega_{14}\omega_8\omega_5^2}\frac{\partial^4 v_1}{\partial x_1^2\partial x_2\partial x_3} + C_{33}\frac{\delta_l^4\rho v_1v_3}{2\omega_9^3\omega_{12}^2\omega_6^2\delta_t\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3}\frac{\partial^4 v_2}{\partial x_1^2\partial x_2\partial x_3} + \\
&C_{34}\frac{\delta_l^4\rho v_1v_2}{2\omega_9^3\omega_{12}^2\omega_6^3\delta_t\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2}\frac{\partial^4 v_3}{\partial x_1^2\partial x_2\partial x_3} + C_{35}\frac{2\delta_l^4c_s^4v_3}{\omega_6^2\delta_t\omega_8^2\omega_5^3}\frac{\partial^4\rho}{\partial x_1\partial x_2^2\partial x_3} + C_{36}\frac{\delta_l^4c_s^2\rho v_1v_3}{2\omega_9^2\omega_{12}^2\omega_6^2\delta_t\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3}\frac{\partial^4 v_1}{\partial x_1\partial x_2^2\partial x_3} + \\
&C_{37}\frac{\delta_l^4c_s^2\rho v_2v_3}{\omega_{15}^2\omega_6^2\delta_t\omega_{17}\omega_8^2\omega_5^3}\frac{\partial^4 v_2}{\partial x_1\partial x_2^2\partial x_3} + C_{38}\frac{\delta_l^4c_s^2\rho}{12\omega_{15}\omega_9\omega_{12}\omega_6^3\delta_t\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3}\frac{\partial^4 v_3}{\partial x_1\partial x_2^2\partial x_3} + C_{39}\frac{\delta_l^4 v_1v_2v_3}{4\omega_{15}^2\omega_6\delta_t\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2}\frac{\partial^4\rho}{\partial x_2^3\partial x_3} \\
&+ C_{40}\frac{\delta_l^4\rho v_2v_3}{2\omega_{15}^2\omega_6^2\delta_t\omega_{17}\omega_8^2\omega_5^3}\frac{\partial^4 v_1}{\partial x_2^3\partial x_3} + C_{41}\frac{\delta_l^4\rho v_1v_3}{4\omega_{15}^2\omega_6\delta_t\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2}\frac{\partial^4 v_2}{\partial x_2^3\partial x_3} + C_{42}\frac{\delta_l^4\rho v_1v_2}{12\omega_{15}^2\omega_6^2\delta_t\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2}\frac{\partial^4 v_3}{\partial x_2^3\partial x_3} + \\
&C_{43}\frac{\delta_l^4 v_1}{12\omega_9^3\omega_6^3\omega_{22}\delta_t\omega_{13}^2\omega_{18}}\frac{\partial^4\rho}{\partial x_1^2\partial x_3^2} + C_{44}\frac{\delta_l^4\rho}{12\omega_9^3\omega_6^3\omega_{22}\delta_t\omega_{13}^2\omega_{18}}\frac{\partial^4 v_1}{\partial x_1^2\partial x_3^2} + C_{45}\frac{\delta_l^4\rho v_1v_3}{2\omega_9^3\omega_6^3\omega_{22}\delta_t\omega_{13}^2\omega_{11}\omega_{18}^2}\frac{\partial^4 v_3}{\partial x_1^2\partial x_3^2} + \\
&C_{46}\frac{\delta_l^4}{2\omega_9\omega_{12}\omega_6^3\omega_{22}\delta_t\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}}\frac{\partial^4\rho}{\partial x_1\partial x_2\partial x_3^2} + C_{47}\frac{\delta_l^4\rho}{2\omega_9^2\omega_{12}\omega_6^3\omega_{22}\delta_t\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}}\frac{\partial^4 v_1}{\partial x_1\partial x_2\partial x_3^2} + \\
&C_{48}\frac{\delta_l^4\rho}{12\omega_9\omega_{12}\omega_6^3\omega_{22}\delta_t\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}}\frac{\partial^4 v_2}{\partial x_1\partial x_2\partial x_3^2} + C_{49}\frac{\delta_l^4\rho v_3}{\omega_9\omega_{12}\omega_6^3\omega_{22}\delta_t\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2}\frac{\partial^4 v_3}{\partial x_1\partial x_2\partial x_3^2} + \\
&C_{50}\frac{\delta_l^4}{12\omega_{15}\omega_6^2\delta_t\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}}\frac{\partial^4\rho}{\partial x_2^2\partial x_3^2} + C_{51}\frac{\delta_l^4\rho}{4\omega_{15}\omega_6^3\delta_t\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{18}}\frac{\partial^4 v_1}{\partial x_2^2\partial x_3^2} + \\
&C_{52}\frac{\delta_l^4\rho v_2}{2\omega_{15}\omega_6^2\delta_t\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}}\frac{\partial^4 v_2}{\partial x_2^2\partial x_3^2} + C_{53}\frac{\delta_l^4\rho}{4\omega_{15}\omega_6^2\omega_{19}\delta_t\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}}\frac{\partial^4 v_3}{\partial x_2^2\partial x_3^2} + \\
&C_{54}\frac{\delta_l^4 v_3}{12\omega_9\omega_6^3\omega_{22}\delta_t\omega_{13}\omega_{11}^2\omega_{18}^2}\frac{\partial^4\rho}{\partial x_1\partial x_3^3} + C_{55}\frac{\delta_l^4\rho v_1v_3}{12\omega_9^2\omega_6^3\omega_{22}\delta_t\omega_{13}^2\omega_{11}^2\omega_{18}^2}\frac{\partial^4 v_1}{\partial x_1\partial x_3^3} + C_{56}\frac{\delta_l^4\rho}{12\omega_9\omega_6^3\omega_{22}\delta_t\omega_{13}\omega_{11}^2\omega_{18}^2}\frac{\partial^4 v_3}{\partial x_1\partial x_3^3} + \\
&C_{57}\frac{\delta_l^4 v_1v_2v_3}{4\omega_6^2\omega_{19}\delta_t\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2}\frac{\partial^4\rho}{\partial x_2\partial x_3^3} + C_{58}\frac{\delta_l^4\rho v_2v_3}{2\omega_6^3\delta_t\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2}\frac{\partial^4 v_1}{\partial x_2\partial x_3^3} + C_{59}\frac{\delta_l^4\rho v_1v_3}{12\omega_6^2\omega_{19}\delta_t\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2}\frac{\partial^4 v_2}{\partial x_2\partial x_3^3} + \\
&C_{60}\frac{\delta_l^4\rho v_1v_2}{4\omega_6^2\omega_{19}\delta_t\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2}\frac{\partial^4 v_3}{\partial x_2\partial x_3^3} + C_{61}\frac{\delta_l^4 v_1}{24\omega_6^2\delta_t\omega_{11}^2\omega_{18}^2}\frac{\partial^4\rho}{\partial x_3^4} + C_{62}\frac{\delta_l^4\rho}{24\omega_6^3\delta_t\omega_{18}^2}\frac{\partial^4 v_1}{\partial x_3^4} + C_{63}\frac{\delta_l^4\rho v_1v_3}{12\omega_6^2\delta_t\omega_{11}^2\omega_{18}^2}\frac{\partial^4 v_3}{\partial x_3^4} = 0,
\end{aligned}
$$

where:

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

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

$C_3 = 3\omega_{12}v_1^2\omega_5 + \omega_9\omega_{12}\omega_5 - \omega_9c_s^2\omega_5 + 3\omega_9\omega_{12}v_1^2 + 3\omega_9^2v_1^2\omega_5 + \omega_9\omega_5 - \omega_9\omega_{12}c_s^2\omega_5 + \omega_9\omega_{12}c_s^2 - \omega_9^2c_s^2 - 3\omega_9\omega_{12}v_1^2\omega_5 + \omega_9^2c_s^2\omega_5 - 3\omega_9^2v_1^2 - \omega_9\omega_{12} + \omega_9^2 - \omega_9^2\omega_5 - 3\omega_9v_1^2\omega_5 + \omega_{12}c_s^2\omega_5 - \omega_{12}\omega_5$

$C_4 = -12\omega_9^2v_1^2\omega_5 - 18\omega_9\omega_{12}c_s^2\omega_5^2 + 6\omega_9^2\omega_{12}v_1^2\omega_5 + 12\omega_9\omega_5^2 - 3\omega_9^2\omega_{12}v_1^2\omega_5^2 + 12\omega_9^2v_1^2\omega_5^2 - 24\omega_9\omega_{12}c_s^2\omega_5 + 12\omega_{12}v_1^2\omega_5^2 + 6\omega_9\omega_{12}\omega_5^2 - 12\omega_9c_s^2\omega_5^2 - 11\omega_9^2\omega_{12}c_s^2\omega_5^2 - 12\omega_9^2\omega_5^2 - 12\omega_9v_1^2\omega_5^2 + 36\omega_{12}c_s^2\omega_5^2 - 12\omega_{12}\omega_5^2 - 24\omega_9^2\omega_{12}c_s^2 + 12\omega_9^2c_s^2\omega_5^2 + 3\omega_9^2\omega_{12}\omega_5^2 - 12\omega_9^2c_s^2\omega_5 - 6\omega_9\omega_{12}v_1^2\omega_5^2 - 6\omega_9^2\omega_{12}\omega_5 + 12\omega_9^2\omega_5 + 42\omega_9^2\omega_{12}c_s^2\omega_5$

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

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

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

$C_8 = \omega_6v_1^2\omega_{13} - \omega_9\omega_6v_1^2 - \omega_9^2\omega_6 + 3\omega_9c_s^2\omega_{13} - 3\omega_9\omega_6c_s^2 - \omega_9\omega_{13} + \omega_9\omega_6\omega_{13} - 3\omega_9\omega_6c_s^2\omega_{13} + \omega_9v_1^2\omega_{13} + 3\omega_9^2\omega_6c_s^2 - \omega_6\omega_{13} - \omega_9\omega_6v_1^2\omega_{13} - 3\omega_9^2c_s^2 - \omega_9^2v_1^2 + 3\omega_6c_s^2\omega_{13} + \omega_9^2 + \omega_9\omega_6 + \omega_9^2\omega_6v_1^2$

$C_9 = 3\omega_6v_1^2\omega_{13} - 3\omega_9\omega_6v_1^2 - \omega_9^2\omega_6 + \omega_9c_s^2\omega_{13} - \omega_9\omega_6c_s^2 - \omega_9\omega_{13} + \omega_9\omega_6\omega_{13} - \omega_9\omega_6c_s^2\omega_{13} + 3\omega_9v_1^2\omega_{13} + \omega_9^2\omega_6c_s^2 - \omega_6\omega_{13} - 3\omega_9\omega_6v_1^2\omega_{13} - \omega_9^2c_s^2 - 3\omega_9^2v_1^2 + \omega_6c_s^2\omega_{13} + \omega_9^2 + \omega_9\omega_6 + 3\omega_9^2\omega_6v_1^2$

$C_{10} = 36\omega_6^2c_s^2\omega_{13} + 12\omega_9^2\omega_6^2v_1^2 - 11\omega_9^2\omega_6^2c_s^2\omega_{13} + 12\omega_9^2\omega_6 + 6\omega_9^2\omega_6v_1^2\omega_{13} - 12\omega_6^2\omega_{13} - 12\omega_9^2\omega_6^2 + 3\omega_9^2\omega_6^2\omega_{13} - 6\omega_9\omega_6^2v_1^2\omega_{13} + 12\omega_9^2\omega_6^2c_s^2 - 24\omega_9\omega_6c_s^2\omega_{13} - 12\omega_9^2\omega_6c_s^2 - 24\omega_9^2c_s^2\omega_{13} + 6\omega_9\omega_6^2\omega_{13} + 12\omega_9\omega_6^2 - 18\omega_9\omega_6^2c_s^2\omega_{13} - 6\omega_9^2\omega_6\omega_{13} - 12\omega_9\omega_6^2c_s^2 - 12\omega_9\omega_6^2v_1^2 + 12\omega_6^2v_1^2\omega_{13} + 42\omega_9^2\omega_6c_s^2\omega_{13} - 3\omega_9^2\omega_6^2v_1^2\omega_{13} - 12\omega_9^2\omega_6v_1^2$

$C_{11} = -36c_s^2\omega_{11} + 6\omega_6v_3^2\omega_{11} - 6\omega_6\omega_{11} + 18\omega_6c_s^2\omega_{11} + 3\omega_6c_s^2\omega_{11}\omega_{18} - 12v_3^2\omega_{11} + \omega_6v_3^2\omega_{11}\omega_{18} - \omega_6\omega_{11}\omega_{18} + 36c_s^2\omega_{18} + 12\omega_{11} + 6\omega_6\omega_{18} - 6\omega_6v_3^2\omega_{18} - 18\omega_6c_s^2\omega_{18} - 12\omega_{18} + 12v_3^2\omega_{18}$

$C_{12} = -3\omega_6^2c_s^2\omega_{18} + 6\omega_6 - 6\omega_6v_3^2 + \omega_6^2\omega_{18} + 3\omega_6^2c_s^2 - \omega_6^2v_3^2\omega_{18} - 6\omega_6c_s^2 - 12c_s^2\omega_{18} - 3\omega_6^2 - 3\omega_6\omega_{18} + 3\omega_6v_3^2\omega_{18} + 15\omega_6c_s^2\omega_{18} + 3\omega_6^2v_3^2$

$C_{13} = -12c_s^2\omega_{11} + 18\omega_6v_3^2\omega_{11} - 6\omega_6\omega_{11} + 6\omega_6c_s^2\omega_{11} + \omega_6c_s^2\omega_{11}\omega_{18} - 36v_3^2\omega_{11} + 3\omega_6v_3^2\omega_{11}\omega_{18} - \omega_6\omega_{11}\omega_{18} + 12c_s^2\omega_{18} + 12\omega_{11} + 6\omega_6\omega_{18} - 18\omega_6v_3^2\omega_{18} - 6\omega_6c_s^2\omega_{18} - 12\omega_{18} + 36v_3^2\omega_{18}$

$C_{14} = 12 + 90\omega_9^2v_1^4 - 18\omega_9 - 1008\omega_9c_s^2v_1^2 + 234\omega_9v_1^2 - 5\omega_9^3c_s^4 - 156v_1^2 - 9\omega_9^3v_1^4 + 198\omega_9c_s^2 - 132c_s^2 - 34\omega_9^3c_s^2v_1^2 + 82\omega_9^2c_s^4 + 144c_s^4 - 216\omega_9c_s^4 + 10\omega_9^3v_1^2 - 78\omega_9^2c_s^2 + 672c_s^2v_1^2 - 98\omega_9^2v_1^2 + 8\omega_9^2 + 404\omega_9^2c_s^2v_1^2 + 144v_1^4 + 6\omega_9^3c_s^2 - 216\omega_9v_1^4 - \omega_9^3$

$C_{15} = 12 + 310\omega_9^2v_1^4 - 18\omega_9 - 648\omega_9c_s^2v_1^2 + 378\omega_9v_1^2 - \omega_9^3c_s^4 - 252v_1^2 - 29\omega_9^3v_1^4 + 54\omega_9c_s^2 - 36c_s^2 - 18\omega_9^3c_s^2v_1^2 + 14\omega_9^2c_s^4 + 24c_s^4 - 36\omega_9c_s^4 + 14\omega_9^3v_1^2 - 22\omega_9^2c_s^2 + 432c_s^2v_1^2 - 154\omega_9^2v_1^2 + 8\omega_9^2 + 252\omega_9^2c_s^2v_1^2 + 504v_1^4 + 2\omega_9^3c_s^2 - 756\omega_9v_1^4 - \omega_9^3$

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

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

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

$C_{19} = 36\omega_{15}\omega_9^3c_s^2v_2^2\omega_5^3\omega_{21} - 12\omega_{15}\omega_9\omega_{12}^2v_2^2\omega_5^2\omega_{21} - 12\omega_{15}\omega_9^3\omega_{12}v_1^2v_2^2\omega_5^3 - 36\omega_{15}\omega_9^3\omega_{12}^2c_s^2v_2^2\omega_5^2 - 48\omega_{15}\omega_9\omega_{12}^2c_s^4\omega_5^2\omega_{21} + 12\omega_{15}\omega_9^3\omega_{12}^2v_2^2\omega_5^2 +$
$12\omega_{15}\omega_9^2c_s^4\omega_5^3\omega_{21} - 12\omega_{15}\omega_9^3\omega_{12}^2c_s^2v_1^2\omega_5^2\omega_{21} - 36\omega_{15}\omega_9^3\omega_{12}^2c_s^4\omega_5^2 + 6\omega_9^3\omega_{12}^2c_s^2\omega_5^3 + 180\omega_{15}\omega_9^3\omega_{12}^2c_s^4\omega_5\omega_{21} + 12\omega_{15}\omega_9^2v_2^2\omega_5^3\omega_{21} -$
$12\omega_{15}\omega_9^2\omega_{12}v_1^2v_2^2\omega_5^2\omega_{21} + 18\omega_{15}\omega_9^2\omega_{12}^2c_s^2v_2^2\omega_5^3\omega_{21} - 96\omega_{15}\omega_9^3\omega_{12}^2c_s^4\omega_{21} + 12\omega_{15}\omega_9^2\omega_{12}c_s^2v_1^2\omega_5^3 - 12\omega_9^2\omega_{12}^2v_1^2v_2^2\omega_5^2\omega_{21} + 12\omega_{15}\omega_9\omega_{12}^2c_s^2\omega_5^3\omega_{21} -$
$18\omega_{15}\omega_9\omega_{12}^2v_1^2v_2^2\omega_5^3\omega_{21} + 36\omega_9^3\omega_{12}^2c_s^2v_2^2\omega_5^2 + 72\omega_{15}\omega_9^2\omega_{12}c_s^2v_2^2\omega_5^3\omega_{21} - 12\omega_{15}\omega_9^3c_s^2\omega_5^3\omega_{21} - 24\omega_{15}\omega_9^2\omega_{12}^2v_1^2v_2^2\omega_5^2\omega_{21} - 6\omega_{15}\omega_9^3\omega_{12}^2v_2^2\omega_5^3 -$
$12\omega_{15}\omega_9^2\omega_{12}c_s^2\omega_5^3 - 12\omega_9^3\omega_{12}^2c_s^2\omega_5^2 + 18\omega_{15}\omega_9^3\omega_{12}^2c_s^4\omega_5^3 + 2\omega_{15}\omega_9^2\omega_{12}^2c_s^2\omega_5^3\omega_{21} + 18\omega_9^2\omega_{12}^2c_s^2v_2^2\omega_5^3\omega_{21} + 12\omega_{15}\omega_9^3\omega_{12}v_2^2\omega_5^3\omega_{21} -$
$72\omega_{15}\omega_9^3\omega_{12}c_s^2v_2^2\omega_5\omega_{21} - 36\omega_9^2\omega_{12}^2c_s^4\omega_5^2\omega_{21} + 12\omega_9^2\omega_{12}^2v_2^2\omega_5^2\omega_{21} - 12\omega_{15}\omega_9^2c_s^2v_1^2\omega_5^3\omega_{21} + 36\omega_{15}\omega_9\omega_{12}^2c_s^2v_2^2\omega_5^2\omega_{21} + 18\omega_{15}\omega_9^3\omega_{12}^2c_s^2v_2^2\omega_5^3 +$
$12\omega_{15}\omega_9^3\omega_{12}v_1^2v_2^2\omega_5^2 + 30\omega_{15}\omega_9^3\omega_{12}c_s^4\omega_5^3\omega_{21} - 12\omega_{15}\omega_9\omega_{12}v_1^2v_2^2\omega_5^3\omega_{21} + 24\omega_{15}\omega_9^2\omega_{12}^2v_2^2\omega_5^2\omega_{21} - 12\omega_{15}\omega_9^3v_1^2v_2^2\omega_5^2\omega_{21} - 18\omega_{15}\omega_9^3\omega_{12}c_s^2\omega_5^2\omega_{21} -$
$18\omega_9^3\omega_{12}^2c_s^2v_2^2\omega_5^3 - 6\omega_9^2\omega_{12}^2c_s^2\omega_5^3\omega_{21} + 150\omega_{15}\omega_9^2\omega_{12}^2c_s^4\omega_5^2\omega_{21} + 12\omega_{15}\omega_9^3v_2^2\omega_5^2\omega_{21} + 18\omega_{15}\omega_9^3\omega_{12}c_s^2v_1^2\omega_5^2\omega_{21} + 12\omega_{15}\omega_9^3c_s^4\omega_5^2\omega_{21} -$
$6\omega_{15}\omega_9^2\omega_{12}^2v_1^2v_2^2\omega_5^3 - 24\omega_{15}\omega_9^3\omega_{12}v_1^2v_2^2\omega_5\omega_{21} + 6\omega_9^2\omega_{12}^2v_1^2v_2^2\omega_5^3\omega_{21} - 36\omega_{15}\omega_9\omega_{12}c_s^2v_2^2\omega_5^3\omega_{21} + 12\omega_{15}\omega_9\omega_{12}^2v_1^2v_2^2\omega_5^2\omega_{21} -$
$72\omega_{15}\omega_9^2\omega_{12}^2c_s^2v_2^2\omega_5^2\omega_{21} - 6\omega_9^3\omega_{12}^2c_s^2v_1^2\omega_5^3 + 12\omega_{15}\omega_9^3\omega_{12}c_s^2\omega_5^3 + 6\omega_{15}\omega_9^2\omega_{12}^2v_2^2\omega_5^3 + 24\omega_{15}\omega_9^2\omega_{12}v_1^2v_2^2\omega_5^3\omega_{21} - 18\omega_{15}\omega_9^2\omega_{12}^2c_s^4\omega_5^3 +$
$12\omega_{15}\omega_9^2c_s^2\omega_5^3\omega_{21} - 12\omega_{15}\omega_9^3\omega_{12}^2c_s^2\omega_5\omega_{21} + \omega_{15}\omega_9^3\omega_{12}^2c_s^2v_1^2\omega_5^3\omega_{21} + 6\omega_{15}\omega_9^3\omega_{12}^2c_s^2v_1^2\omega_5^3 - 12\omega_{15}\omega_9^2\omega_{12}^2c_s^2v_1^2\omega_5\omega_{21} + 18\omega_{15}\omega_9\omega_{12}^2v_2^2\omega_5^3\omega_{21} -$
$36\omega_{15}\omega_9^3c_s^2v_2^2\omega_5^2\omega_{21} - 36\omega_{15}\omega_9\omega_{12}^2c_s^4\omega_5^3\omega_{21} - 6\omega_{15}\omega_9^3\omega_{12}c_s^2v_1^2\omega_5^3\omega_{21} - 12\omega_{15}\omega_9^3v_2^2\omega_5^3\omega_{21} - 12\omega_{15}\omega_9^3c_s^4\omega_5^3\omega_{21} - 12\omega_{15}\omega_9^3\omega_{12}c_s^2\omega_5^2 +$
$12\omega_9^3\omega_{12}^2c_s^2v_1^2\omega_5^2 + 6\omega_{15}\omega_9^3\omega_{12}c_s^2\omega_5^3\omega_{21} - 6\omega_{15}\omega_9^2\omega_{12}^2v_2^2\omega_5^3\omega_{21} + 12\omega_{15}\omega_9^3v_1^2v_2^2\omega_5^3\omega_{21} + 36\omega_{15}\omega_9^2\omega_{12}c_s^2v_2^2\omega_5^3 - 6\omega_{15}\omega_9^2\omega_{12}^2c_s^4\omega_5^3\omega_{21} +$
$12\omega_9^2\omega_{12}^2c_s^2\omega_5^2\omega_{21} + 18\omega_9^2\omega_{12}^2c_s^4\omega_5^3\omega_{21} - 36\omega_9^2\omega_{12}^2c_s^2v_2^2\omega_5^2\omega_{21} - 36\omega_{15}\omega_9^3\omega_{12}v_2^2\omega_5^2\omega_{21} - 18\omega_{15}\omega_9^2\omega_{12}^2c_s^2\omega_5^2\omega_{21} - 42\omega_{15}\omega_9^3\omega_{12}c_s^4\omega_5^2\omega_{21} +$
$12\omega_{15}\omega_{12}^2c_s^2v_1^2\omega_5^3\omega_{21} - 6\omega_9^2\omega_{12}^2v_2^2\omega_5^3\omega_{21} - 54\omega_{15}\omega_9\omega_{12}^2c_s^2v_2^2\omega_5^3\omega_{21} - 12\omega_{15}\omega_9^3\omega_{12}^2c_s^2v_1^2\omega_5^2 + 6\omega_{15}\omega_9^2\omega_{12}^2v_1^2v_2^2\omega_5^3\omega_{21} + 12\omega_{15}\omega_9^3c_s^2\omega_5^2\omega_{21} -$
$36\omega_{15}\omega_9^2\omega_{12}c_s^2v_2^2\omega_5^2\omega_{21} - 12\omega_{15}\omega_9\omega_{12}^2c_s^2v_1^2\omega_5^3\omega_{21} + 36\omega_{15}\omega_{12}^2c_s^2v_2^2\omega_5^3\omega_{21} + 12\omega_{15}\omega_9\omega_{12}c_s^2\omega_5^3\omega_{21} + 36\omega_9^3\omega_{12}^2c_s^4\omega_5^2 - 12\omega_9^2\omega_{12}^2c_s^2v_1^2\omega_5^2\omega_{21} -$
$12\omega_{15}\omega_9^2\omega_{12}v_2^2\omega_5^3 - 6\omega_{15}\omega_9^3\omega_{12}^2c_s^2\omega_5^3 + 36\omega_{15}\omega_9^2\omega_{12}c_s^4\omega_5^3 - 6\omega_9^3\omega_{12}^2v_1^2v_2^2\omega_5^3 - 12\omega_9^3\omega_{12}^2v_2^2\omega_5^2 - 6\omega_{15}\omega_9^2\omega_{12}^2c_s^2v_1^2\omega_5^3 + 12\omega_{15}\omega_9^3\omega_{12}c_s^4\omega_5\omega_{21} +$
$24\omega_{15}\omega_9^3\omega_{12}v_2^2\omega_5\omega_{21} + 12\omega_{15}\omega_9^2\omega_{12}^2c_s^2\omega_5\omega_{21} - 36\omega_{15}\omega_9^3\omega_{12}c_s^2v_2^2\omega_5^3\omega_{21} + 36\omega_{15}\omega_9^3\omega_{12}c_s^2v_2^2\omega_5^2 + 6\omega_{15}\omega_9^3\omega_{12}^2v_1^2v_2^2\omega_5^3 - 12\omega_{15}\omega_{12}^2v_2^2\omega_5^3\omega_{21} +$
$36\omega_{15}\omega_{12}^2c_s^4\omega_5^3\omega_{21} + 36\omega_{15}\omega_9^3\omega_{12}v_1^2v_2^2\omega_5^2\omega_{21} + 12\omega_{15}\omega_9^3\omega_{12}^2c_s^2\omega_5^2 + 12\omega_{15}\omega_9^3\omega_{12}^2c_s^2\omega_5^2\omega_{21} + 12\omega_{15}\omega_9^2\omega_{12}v_2^2\omega_5^2\omega_{21} - 18\omega_9^3\omega_{12}^2c_s^4\omega_5^3 +$
$6\omega_9^3\omega_{12}^2v_2^2\omega_5^3 + 12\omega_9^3\omega_{12}^2v_1^2v_2^2\omega_5^2 - 12\omega_{15}\omega_9^3c_s^2v_1^2\omega_5^2\omega_{21} + 72\omega_{15}\omega_9^2\omega_{12}^2c_s^2v_2^2\omega_5\omega_{21} - 12\omega_{15}\omega_9^2v_1^2v_2^2\omega_5^3\omega_{21} - 18\omega_{15}\omega_9^2\omega_{12}c_s^2\omega_5^3\omega_{21} -$
$12\omega_{15}\omega_9\omega_{12}c_s^2v_1^2\omega_5^3\omega_{21} - 12\omega_{15}\omega_9^3\omega_{12}^2v_1^2v_2^2\omega_5^2 + 5\omega_{15}\omega_9^3\omega_{12}^2c_s^4\omega_5^3\omega_{21} - 36\omega_{15}\omega_9^3\omega_{12}c_s^2v_2^2\omega_5^3 + 18\omega_{15}\omega_9^2\omega_{12}^2c_s^2v_1^2\omega_5^2\omega_{21} + 12\omega_{15}\omega_9\omega_{12}v_2^2\omega_5^3\omega_{21} -$
$12\omega_{15}\omega_9^3\omega_{12}v_2^2\omega_5^2 + 24\omega_{15}\omega_9^2\omega_{12}^2v_1^2v_2^2\omega_5\omega_{21} + 12\omega_{15}\omega_9\omega_{12}c_s^4\omega_5^3\omega_{21} + 36\omega_{15}\omega_9^3\omega_{12}c_s^4\omega_5^2 - 12\omega_{15}\omega_9^3\omega_{12}c_s^2v_1^2\omega_5^3 + 108\omega_{15}\omega_9^3\omega_{12}c_s^2v_2^2\omega_5^2\omega_{21} -$
$84\omega_{15}\omega_9^2\omega_{12}^2c_s^4\omega_5\omega_{21} - 24\omega_{15}\omega_9^2\omega_{12}^2v_2^2\omega_5\omega_{21} + 18\omega_{15}\omega_9^2\omega_{12}c_s^2v_1^2\omega_5^3\omega_{21} + 12\omega_{15}\omega_9^3\omega_{12}c_s^2\omega_5\omega_{21} + 12\omega_{15}\omega_9^2\omega_{12}v_1^2v_2^2\omega_5^3 - 36\omega_{15}\omega_9^2c_s^2v_2^2\omega_5^3\omega_{21} -$
$12\omega_{15}\omega_9^3\omega_{12}c_s^2v_1^2\omega_5\omega_{21} + 6\omega_9^2\omega_{12}^2c_s^2v_1^2\omega_5^3\omega_{21} + 12\omega_{15}\omega_9^3\omega_{12}c_s^2v_1^2\omega_5^2 - 12\omega_{15}\omega_{12}^2c_s^2\omega_5^3\omega_{21} - 2\omega_{15}\omega_9^2\omega_{12}^2c_s^2v_1^2\omega_5^3\omega_{21} + 6\omega_{15}\omega_9^2\omega_{12}^2c_s^2\omega_5^3 +$
$12\omega_{15}\omega_9^3\omega_{12}v_2^2\omega_5^3 + 12\omega_{15}\omega_{12}^2v_1^2v_2^2\omega_5^3\omega_{21} - 36\omega_{15}\omega_9^3\omega_{12}c_s^4\omega_5^3 - 88\omega_{15}\omega_9^3\omega_{12}^2c_s^4\omega_5^2\omega_{21} + 12\omega_{15}\omega_9^3\omega_{12}^2c_s^2v_1^2\omega_5\omega_{21} - 24\omega_{15}\omega_9^2\omega_{12}v_2^2\omega_5^3\omega_{21} -$
$\omega_{15}\omega_9^3\omega_{12}^2c_s^2\omega_5^3\omega_{21} - 42\omega_{15}\omega_9^2\omega_{12}c_s^4\omega_5^3\omega_{21} - 18\omega_{15}\omega_9^2\omega_{12}^2c_s^2v_2^2\omega_5^3 + 12\omega_{15}\omega_9^3c_s^2v_1^2\omega_5^3\omega_{21} - 12\omega_{15}\omega_9^3\omega_{12}v_1^2v_2^2\omega_5^3\omega_{21}$

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

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

$$15\omega_{15}^2\omega_9\omega_{12}^2c_s^2\omega_{10}\omega_5^3\omega_{21} - 16\omega_{15}^2\omega_9^3\omega_{12}^2c_s^2\omega_{10}\omega_{21} - 8\omega_{15}^2\omega_9^2c_s^2\omega_{10}\omega_5^3\omega_{21} + 2\omega_{15}^2\omega_9^2\omega_{12}^2\omega_{10}\omega_5^3 + 2\omega_{15}^2\omega_9^2\omega_{12}c_s^2\omega_{10}\omega_5^2\omega_{21} - \omega_{15}\omega_9^3\omega_{12}^2\omega_{10}\omega_5^3\omega_{21} -$$
$$2\omega_{15}^2\omega_9^2\omega_{12}^2\omega_{10}\omega_5\omega_{21} + 2\omega_{15}^2\omega_9^3\omega_{12}^2c_s^2\omega_5^2\omega_{21} - 2\omega_{15}^2\omega_9^2\omega_{12}^2\omega_{10}v_1^2\omega_5^3 - 4\omega_{15}^2\omega_9^3\omega_{12}^2c_s^2\omega_{10}\omega_5^2 + 4\omega_{15}^2\omega_9\omega_{12}\omega_{10}\omega_5^3\omega_{21} + 8\omega_{15}\omega_9^3\omega_{12}^2c_s^2\omega_{10}\omega_5^3\omega_{21} -$$
$$3\omega_{15}^2\omega_9^3\omega_{12}\omega_{10}v_1^2\omega_5^3\omega_{21} + 2\omega_{15}^2\omega_9^2\omega_{12}^2\omega_{10}v_1^2\omega_5\omega_{21} + 4\omega_{15}^2\omega_9^3\omega_{10}v_1^2\omega_5^3\omega_{21} - 2\omega_9^3\omega_{12}^2c_s^2\omega_{10}\omega_5^3\omega_{21} - 4\omega_{15}^2\omega_{12}^2\omega_{10}\omega_5^3\omega_{21} - 7\omega_{15}^2\omega_9^2\omega_{12}\omega_{10}\omega_5^3\omega_{21} -$$
$$2\omega_{15}\omega_9^3\omega_{12}^2c_s^2\omega_5^3\omega_{21} - 8\omega_{15}^2\omega_9\omega_{12}c_s^2\omega_{10}\omega_5^3\omega_{21} + 2\omega_{15}^2\omega_9^3\omega_{12}^2c_s^2\omega_{10}\omega_5^3 + \omega_{15}^2\omega_9^3\omega_{12}^2\omega_{10}\omega_5^2\omega_{21} - \omega_{15}^2\omega_9^2\omega_{12}^2c_s^2\omega_{10}\omega_5^2\omega_{21}$$

$$C_{22} = 12\omega_{15}\omega_9\omega_{12}c_s^2\omega_{10}^2v_2^2\omega_5^2 - 36\omega_{15}^2\omega_9\omega_{12}\omega_{10}v_1^2v_2^2\omega_5^2\omega_{21} - 108\omega_{15}^2\omega_9\omega_{12}c_s^2\omega_{10}v_1^2\omega_5^2\omega_{21} - 12\omega_{15}^2\omega_{10}v_1^2v_2^2\omega_5^3\omega_{21} + 6\omega_{15}\omega_9\omega_{12}c_s^2\omega_{10}^2\omega_5^3 -$$
$$36\omega_{15}^2\omega_9c_s^2\omega_{10}v_1^2\omega_5^2\omega_{21} - 48\omega_{15}\omega_9\omega_{12}\omega_{10}^2v_1^2\omega_5^2\omega_{21} - 36\omega_{15}^2c_s^2\omega_{10}v_1^2\omega_5^3\omega_{21} - 12\omega_{15}^2\omega_9\omega_{10}v_1^2v_2^2\omega_5^2\omega_{21} - 12\omega_{15}^2\omega_9\omega_{12}v_1^2\omega_5^2\omega_{21} +$$
$$36\omega_{15}^2\omega_9c_s^4\omega_{10}^2\omega_5^2 - 36\omega_{15}^2\omega_9\omega_{12}c_s^4\omega_{10}^2\omega_5^2 + 156\omega_{15}^2\omega_9\omega_{12}c_s^4\omega_{10}^2\omega_5\omega_{21} + 144\omega_{15}\omega_9\omega_{12}c_s^2\omega_{10}^2v_1^2\omega_5^2\omega_{21} - 9\omega_{15}^2\omega_9\omega_{12}\omega_{10}v_1^2\omega_5^3\omega_{21} -$$
$$24\omega_{15}^2\omega_{12}\omega_{10}v_1^2\omega_5^2\omega_{21} - 12\omega_{15}^2\omega_9\omega_{10}v_1^2\omega_5^3\omega_{21} - 6\omega_{15}^2\omega_{12}\omega_{10}^2v_1^2v_2^2\omega_5^3 + 12\omega_{15}\omega_{12}\omega_{10}^2v_1^2v_2^2\omega_5^3\omega_{21} - 12\omega_{15}^2\omega_9\omega_{12}c_s^2\omega_{10}v_2^2\omega_5\omega_{21} -$$
$$96\omega_{15}^2\omega_9\omega_{12}c_s^4\omega_{10}^2\omega_{21} + 6\omega_{15}^2\omega_{12}\omega_{10}^2v_1^2\omega_5^3 + 12\omega_9\omega_{12}c_s^4\omega_{10}^2\omega_5^2\omega_{21} - 12\omega_{15}\omega_9\omega_{12}c_s^2\omega_{10}^2v_2^2\omega_5\omega_{21} + 6\omega_{15}^2\omega_{12}c_s^2\omega_{10}v_2^2\omega_5^3\omega_{21} -$$
$$42\omega_{15}\omega_9\omega_{12}c_s^4\omega_{10}^2\omega_5^2\omega_{21} + 36\omega_{15}^2\omega_9\omega_{12}c_s^2v_1^2\omega_5^2\omega_{21} + 18\omega_9\omega_{12}c_s^2\omega_{10}^2v_1^2\omega_5^3\omega_{21} + 18\omega_{15}^2\omega_9\omega_{12}c_s^4\omega_{10}^2\omega_5^3 + 18\omega_{15}^2\omega_{12}c_s^4\omega_{10}\omega_5^3\omega_{21} -$$
$$36\omega_{15}^2\omega_9c_s^4\omega_{10}^2\omega_5^3 - 36\omega_{15}^2\omega_9c_s^4\omega_{10}\omega_5^2\omega_{21} + 54\omega_{15}^2\omega_9\omega_{12}c_s^4\omega_{10}\omega_5^2\omega_{21} - 12\omega_{15}\omega_9\omega_{12}c_s^2\omega_{10}^2\omega_5^2 - 6\omega_{15}\omega_9\omega_{12}c_s^2\omega_{10}^2v_2^2\omega_5^3 + 36\omega_{15}^2c_s^2\omega_{10}^2v_1^2\omega_5^3 -$$
$$12\omega_{15}^2c_s^2\omega_{10}^2\omega_5^3 + \omega_{15}^2\omega_9\omega_{12}c_s^2\omega_{10}^2v_2^2\omega_5^3\omega_{21} - \omega_{15}^2\omega_9\omega_{12}c_s^2\omega_{10}^2\omega_5^3\omega_{21} + 12\omega_9\omega_{12}\omega_{10}^2v_1^2\omega_5^2\omega_{21} - 6\omega_9\omega_{12}c_s^4\omega_{10}^2\omega_5^3\omega_{21} - 18\omega_{15}\omega_9\omega_{12}c_s^4\omega_{10}^2\omega_5^3 -$$
$$24\omega_{15}\omega_9\omega_{12}\omega_{10}^2v_1^2v_2^2\omega_5\omega_{21} + 6\omega_{15}^2\omega_9\omega_{12}\omega_{10}^2v_1^2v_2^2\omega_5^3 + 12\omega_{15}^2c_s^2\omega_{10}^2v_2^2\omega_5^3 - 24\omega_{15}\omega_{12}\omega_{10}^2v_1^2v_2^2\omega_5^2\omega_{21} - 12\omega_{15}^2\omega_9\omega_{10}^2v_1^2v_2^2\omega_5^3 +$$
$$12\omega_{15}^2\omega_9\omega_{12}c_s^2\omega_{10}\omega_5\omega_{21} + 12\omega_{15}\omega_9\omega_{12}c_s^2\omega_{10}^2\omega_5\omega_{21} + 12\omega_{15}^2\omega_9\omega_{12}c_s^2\omega_{10}^2\omega_5^2 - 12\omega_{15}^2\omega_9c_s^2\omega_{10}^2\omega_5^2 + 6\omega_{15}^2\omega_9\omega_{12}v_1^2\omega_5^3\omega_{21} + 6\omega_{15}^2\omega_{12}\omega_{10}v_1^2\omega_5^3\omega_{21} +$$
$$12\omega_{15}^2\omega_9\omega_{10}v_1^2\omega_5^2\omega_{21} + 36\omega_{15}^2\omega_9\omega_{12}\omega_{10}v_1^2\omega_5^2\omega_{21} - 18\omega_{15}\omega_9\omega_{12}c_s^2\omega_{10}^2v_1^2\omega_5^3 - 45\omega_{15}\omega_9\omega_{12}c_s^2\omega_{10}^2v_1^2\omega_5^3\omega_{21} + 27\omega_{15}^2\omega_9\omega_{12}c_s^2\omega_{10}v_1^2\omega_5^3\omega_{21} +$$
$$12\omega_{15}^2c_s^2\omega_{10}\omega_5^3\omega_{21} + 9\omega_{15}^2\omega_9\omega_{12}\omega_{10}v_1^2v_2^2\omega_5^3\omega_{21} + 12\omega_{15}^2\omega_9\omega_{10}v_1^2v_2^2\omega_5^3\omega_{21} + 15\omega_{15}\omega_9\omega_{12}\omega_{10}^2v_1^2\omega_5^3\omega_{21} + 36\omega_{15}^2\omega_9c_s^2\omega_{10}v_1^2\omega_5^3\omega_{21} +$$
$$12\omega_{15}^2\omega_9c_s^2\omega_{10}^2\omega_5^3 - 6\omega_{15}^2\omega_9\omega_{12}c_s^2\omega_{10}^2\omega_5^3 + 12\omega_{15}^2\omega_9\omega_{12}c_s^2\omega_{10}^2\omega_5^2\omega_{21} - 6\omega_9\omega_{12}\omega_{10}^2v_1^2\omega_5^3\omega_{21} - 12\omega_{15}^2\omega_9\omega_{12}\omega_{10}^2v_1^2v_2^2\omega_5^2 + 12\omega_{15}^2\omega_9\omega_{10}^2v_1^2v_2^2\omega_5^2 -$$
$$12\omega_{15}^2\omega_9\omega_{12}c_s^2\omega_{10}^2v_2^2\omega_5^2\omega_{21} + 36\omega_{15}\omega_9\omega_{12}c_s^4\omega_{10}^2\omega_5^2 + 36\omega_{15}^2c_s^4\omega_{10}^2\omega_5^3 - 36\omega_9\omega_{12}c_s^2\omega_{10}^2v_1^2\omega_5^2\omega_{21} - 18\omega_{15}^2\omega_9\omega_{12}c_s^2v_1^2\omega_5^3\omega_{21} +$$
$$36\omega_{15}\omega_9\omega_{12}c_s^2\omega_{10}^2v_1^2\omega_5^2 + 15\omega_{15}\omega_9\omega_{12}c_s^4\omega_{10}^2\omega_5^3\omega_{21} - 15\omega_{15}^2\omega_9\omega_{12}c_s^4\omega_{10}\omega_5^3\omega_{21} + 36\omega_{15}^2\omega_9c_s^4\omega_{10}\omega_5^3\omega_{21} - 6\omega_{15}\omega_9\omega_{12}\omega_{10}^2v_1^2v_2^2\omega_5^3 -$$
$$12\omega_{15}^2\omega_9\omega_{12}c_s^2\omega_{10}^2\omega_5\omega_{21} - 18\omega_{15}^2\omega_{12}c_s^4\omega_{10}^2\omega_5^3 + 12\omega_{15}^2\omega_9\omega_{12}c_s^2\omega_{10}^2v_2^2\omega_5\omega_{21} + 6\omega_9\omega_{12}\omega_{10}^2v_1^2v_2^2\omega_5^3\omega_{21} - 12\omega_9\omega_{12}c_s^2\omega_{10}^2v_2^2\omega_5^2\omega_{21} +$$
$$12\omega_9\omega_{12}c_s^2\omega_{10}^2\omega_5^2\omega_{21} - 36\omega_{15}\omega_9\omega_{12}c_s^2\omega_{10}v_1^2\omega_5^2\omega_{21} - 12\omega_{15}\omega_9\omega_{12}\omega_{10}v_1^2v_2^2\omega_5^2\omega_{21} - 12\omega_{15}^2\omega_9\omega_{10}^2v_1^2\omega_5^2 + 12\omega_{15}^2\omega_9\omega_{12}\omega_{10}^2v_1^2\omega_5^2 +$$
$$12\omega_{15}\omega_9\omega_{12}\omega_{10}v_1^2\omega_5^2\omega_{21} + 18\omega_{15}^2\omega_9\omega_{12}c_s^2\omega_{10}^2v_1^2\omega_5^3 - 36\omega_{15}^2\omega_9c_s^2\omega_{10}^2v_1^2\omega_5^3 - 3\omega_{15}\omega_9\omega_{12}c_s^2\omega_{10}^2v_2^2\omega_5^3\omega_{21} + 12\omega_{15}^2\omega_{10}v_1^2\omega_5^3\omega_{21} +$$
$$48\omega_{15}\omega_9\omega_{12}\omega_{10}^2v_1^2v_2^2\omega_5^2\omega_{21} + 12\omega_{15}^2\omega_9c_s^2\omega_{10}v_2^2\omega_5^3\omega_{21} - 12\omega_{15}\omega_{12}\omega_{10}^2v_1^2\omega_5^3\omega_{21} - 18\omega_{15}\omega_9\omega_{12}c_s^2\omega_{10}^2\omega_5^2\omega_{21} - 18\omega_{15}^2\omega_9\omega_{12}c_s^2\omega_{10}\omega_5^2\omega_{21} -$$
$$6\omega_{15}^2\omega_{12}c_s^2\omega_{10}\omega_5^3\omega_{21} - 5\omega_{15}^2\omega_9\omega_{12}c_s^2\omega_{10}v_2^2\omega_5^3\omega_{21} + 12\omega_{15}^2\omega_9c_s^2\omega_{10}\omega_5^2\omega_{21} + 12\omega_{15}\omega_9\omega_{12}\omega_{10}^2v_1^2v_2^2\omega_5^2 + 24\omega_{15}^2\omega_{12}\omega_{10}v_1^2v_2^2\omega_5^2\omega_{21} -$$
$$36\omega_{15}^2\omega_9\omega_{12}c_s^2\omega_{10}^2v_1^2\omega_5^2 + 3\omega_{15}^2\omega_9\omega_{12}c_s^4\omega_{10}^2\omega_5^3\omega_{21} - 24\omega_{15}^2\omega_9\omega_{12}\omega_{10}v_1^2\omega_5\omega_{21} + 36\omega_{15}^2\omega_9c_s^2\omega_{10}^2v_1^2\omega_5^2 + 72\omega_{15}^2\omega_{12}c_s^2\omega_{10}v_1^2\omega_5^2\omega_{21} -$$
$$6\omega_{15}^2\omega_9\omega_{12}\omega_{10}^2v_1^2\omega_5^3 + 12\omega_{15}^2\omega_9\omega_{10}^2v_1^2\omega_5^3 + 36\omega_{15}\omega_{12}c_s^2\omega_{10}^2v_1^2\omega_5^3\omega_{21} - 6\omega_{15}^2\omega_{12}c_s^2\omega_{10}^2v_2^2\omega_5^3 + 12\omega_{15}^2\omega_9\omega_{12}v_1^2v_2^2\omega_5^2\omega_{21} - 36\omega_{15}^2\omega_9\omega_{12}c_s^4\omega_{10}\omega_5\omega_{21} -$$
$$18\omega_{15}^2\omega_{12}c_s^2\omega_{10}^2v_1^2\omega_5^3 + 12\omega_{15}\omega_9\omega_{12}c_s^4\omega_{10}^2\omega_5\omega_{21} - 6\omega_{15}\omega_9\omega_{12}\omega_{10}v_1^2\omega_5^3\omega_{21} + 12\omega_{15}^2\omega_9c_s^2\omega_{10}^2v_2^2\omega_5^2 - 12\omega_{15}^2\omega_9\omega_{12}c_s^2\omega_{10}^2v_2^2\omega_5^2 -$$
$$6\omega_9\omega_{12}c_s^2\omega_{10}^2\omega_5^3\omega_{21} + 6\omega_{15}\omega_9\omega_{12}\omega_{10}v_1^2v_2^2\omega_5^3\omega_{21} + 6\omega_{15}^2\omega_{12}c_s^2\omega_{10}^2\omega_5^3 + 18\omega_{15}\omega_9\omega_{12}c_s^2\omega_{10}v_1^2\omega_5^3\omega_{21} - 12\omega_9\omega_{12}\omega_{10}^2v_1^2v_2^2\omega_5^2\omega_{21} -$$
$$36\omega_{15}^2c_s^4\omega_{10}\omega_5^3\omega_{21} + 6\omega_{15}\omega_9\omega_{12}\omega_{10}^2v_1^2\omega_5^3 + 6\omega_9\omega_{12}c_s^2\omega_{10}^2v_2^2\omega_5^3\omega_{21} - 72\omega_{15}\omega_{12}c_s^2\omega_{10}^2v_1^2\omega_5^2\omega_{21} - 12\omega_{15}^2\omega_{10}^2v_1^2\omega_5^3 + 24\omega_{15}\omega_9\omega_{12}\omega_{10}^2v_1^2\omega_5\omega_{21} -$$
$$12\omega_{15}^2\omega_9c_s^2\omega_{10}^2v_2^2\omega_5^3 - 6\omega_{15}^2\omega_9\omega_{12}v_1^2v_2^2\omega_5^3\omega_{21} + 72\omega_{15}^2\omega_9\omega_{12}c_s^2\omega_{10}v_1^2\omega_5\omega_{21} + 12\omega_{15}^2\omega_{10}^2v_1^2v_2^2\omega_5^3 + 6\omega_{15}^2\omega_9\omega_{12}c_s^2\omega_{10}^2v_2^2\omega_5^3 +$$
$$24\omega_{15}^2\omega_9\omega_{12}\omega_{10}v_1^2v_2^2\omega_5\omega_{21} - 18\omega_{15}^2\omega_{12}c_s^2\omega_{10}v_1^2\omega_5^3\omega_{21} - 60\omega_{15}^2\omega_9\omega_{12}c_s^4\omega_{10}^2\omega_5^2\omega_{21} - 72\omega_{15}\omega_9\omega_{12}c_s^2\omega_{10}^2v_1^2\omega_5\omega_{21} - 6\omega_{15}^2\omega_{12}\omega_{10}v_1^2v_2^2\omega_5^3\omega_{21} -$$
$$12\omega_{15}^2c_s^2\omega_{10}v_2^2\omega_5^3\omega_{21} + 3\omega_{15}\omega_9\omega_{12}c_s^2\omega_{10}^2\omega_5^3\omega_{21} - 12\omega_{15}^2\omega_9c_s^2\omega_{10}v_2^2\omega_5^2\omega_{21} + 24\omega_{15}\omega_{12}\omega_{10}^2v_1^2\omega_5^2\omega_{21} + 18\omega_{15}^2\omega_9\omega_{12}c_s^2\omega_{10}v_2^2\omega_5^2\omega_{21} -$$
$$12\omega_{15}^2\omega_9c_s^2\omega_{10}\omega_5^3\omega_{21} + 5\omega_{15}^2\omega_9\omega_{12}c_s^2\omega_{10}\omega_5^3\omega_{21} + 18\omega_{15}\omega_9\omega_{12}c_s^2\omega_{10}^2v_2^2\omega_5^2\omega_{21} - 15\omega_{15}\omega_9\omega_{12}\omega_{10}^2v_1^2v_2^2\omega_5^3\omega_{21} - 12\omega_{15}\omega_9\omega_{12}\omega_{10}^2v_1^2\omega_5^2$$

$$C_{23} = -12\omega_{15}\omega_9^2\omega_{12}^2\omega_{10}^2v_2^2\omega_5^3 - 132\omega_{15}^2\omega_9^2\omega_{12}c_s^2\omega_{10}^2\omega_5^2\omega_{21} - 12\omega_{15}^2\omega_9^2\omega_{12}^2\omega_{10}^2\omega_5\omega_{21} + 12\omega_{15}^2\omega_9^2\omega_{12}\omega_{10}^2v_2^2\omega_5^3\omega_{21} + 12\omega_{15}^2\omega_9\omega_{12}^2\omega_{10}^2v_2^2\omega_5^2\omega_{21} -$$
$$24\omega_{15}^2\omega_{12}^2c_s^2\omega_{10}^2\omega_5^2\omega_{21} - 24\omega_{15}^2\omega_9^2c_s^2\omega_{10}^2\omega_5^3\omega_{21} + 24\omega_{15}^2\omega_9^2\omega_{12}^2\omega_{10}^2\omega_5^2 - 6\omega_{15}^2\omega_9^2\omega_{12}^2v_2^2\omega_5^3\omega_{21} + 12\omega_{15}^2\omega_9\omega_{12}\omega_{10}^2\omega_5^3\omega_{21} + 12\omega_{15}^2\omega_9^2\omega_{12}^2\omega_{10}v_2^2\omega_5\omega_{21} -$$
$$6\omega_{15}\omega_9^2\omega_{12}^2\omega_{10}\omega_5^3\omega_{21} + 12\omega_{15}\omega_9^2\omega_{12}^2\omega_{10}^2\omega_5^3 + 36\omega_{15}^2\omega_9^2\omega_{12}^2c_s^2\omega_5^2\omega_{21} - 36\omega_{15}\omega_9^2\omega_{12}^2c_s^2\omega_{10}^2\omega_5\omega_{21} + 12\omega_{15}^2\omega_9^2\omega_{12}^2c_s^2\omega_{10}\omega_5\omega_{21} - 12\omega_{15}^2\omega_9^2\omega_{12}^2\omega_{10}^2\omega_5^3 -$$
$$12\omega_{15}^2\omega_9^2\omega_{12}\omega_{10}^2\omega_5^3\omega_{21} + 18\omega_{15}^2\omega_9^2\omega_{12}\omega_{10}\omega_5^2\omega_{21} + 24\omega_{15}\omega_9^2\omega_{12}^2\omega_{10}^2v_2^2\omega_5^2 - 12\omega_{15}\omega_9^2\omega_{12}^2c_s^2\omega_{10}\omega_5^2\omega_{21} + \omega_{15}^2\omega_9^2\omega_{12}^2\omega_{10}^2v_2^2\omega_5^3\omega_{21} -$$
$$66\omega_{15}^2\omega_9^2\omega_{12}^2c_s^2\omega_{10}^2\omega_5^2\omega_{21} + 24\omega_{15}^2\omega_9c_s^2\omega_{10}^2\omega_5^3\omega_{21} - 84\omega_{15}^2\omega_9\omega_{12}c_s^2\omega_{10}^2\omega_5^3\omega_{21} - 12\omega_{15}\omega_9^2\omega_{12}\omega_{10}v_2^2\omega_5^2\omega_{21} - 24\omega_{15}\omega_9^2\omega_{12}^2\omega_{10}^2\omega_5^2 -$$
$$36\omega_{15}\omega_9^2\omega_{12}^2\omega_{10}^2v_2^2\omega_5\omega_{21} + 12\omega_{15}\omega_9^2\omega_{12}\omega_{10}\omega_5^2\omega_{21} - 24\omega_{15}^2\omega_9^2\omega_{12}^2\omega_{10}^2v_2^2\omega_5^2 - 18\omega_{15}^2\omega_9^2\omega_{12}^2c_s^2\omega_5^3\omega_{21} + 24\omega_{15}^2\omega_9^2c_s^2\omega_{10}^2\omega_5^2\omega_{21} -$$
$$24\omega_{15}^2\omega_9^2\omega_{12}^2c_s^2\omega_{10}^2\omega_5^3 + 84\omega_{15}^2\omega_9\omega_{12}^2c_s^2\omega_{10}^2\omega_5^2\omega_{21} - 12\omega_{15}^2\omega_9\omega_{12}^2\omega_{10}^2v_2^2\omega_5^3 + 12\omega_{15}^2\omega_9^2\omega_{12}^2v_2^2\omega_5^2\omega_{21} - 12\omega_{15}^2\omega_9^2\omega_{12}\omega_{10}^2v_2^2\omega_5^2\omega_{21} +$$
$$60\omega_{15}^2\omega_9^2\omega_{12}c_s^2\omega_{10}^2\omega_5^3\omega_{21} + 24\omega_{15}^2\omega_9\omega_{12}c_s^2\omega_{10}^2\omega_5^3 + 48\omega_{15}^2\omega_9\omega_{12}c_s^2\omega_{10}^2\omega_5^2\omega_{21} + 24\omega_{15}^2\omega_{12}c_s^2\omega_{10}^2\omega_5^3\omega_{21} + 36\omega_{15}\omega_9^2\omega_{12}^2\omega_{10}^2\omega_5\omega_{21} -$$
$$12\omega_{15}^2\omega_9\omega_{12}\omega_{10}^2v_2^2\omega_5^3\omega_{21} + 12\omega_{15}^2\omega_9^2\omega_{12}^2\omega_{10}^2v_2^2\omega_5^3 + 6\omega_{15}\omega_9^2\omega_{12}^2\omega_{10}v_2^2\omega_5^3\omega_{21} + 6\omega_{15}\omega_9^2\omega_{12}^2c_s^2\omega_{10}\omega_5^3\omega_{21} + 3\omega_{15}^2\omega_9^2\omega_{12}^2c_s^2\omega_{10}^2\omega_5^3\omega_{21} -$$
$$12\omega_{15}^2\omega_9^2\omega_{12}^2\omega_{10}^2v_2^2\omega_5^2\omega_{21} - 24\omega_{15}^2\omega_9\omega_{12}\omega_{10}^2\omega_5^3 - 4\omega_{15}^2\omega_9^2\omega_{12}^2\omega_{10}\omega_5^3\omega_{21} + 12\omega_{15}^2\omega_9^2\omega_{12}^2\omega_{10}^2\omega_5^2\omega_{21} + 24\omega_{15}^2\omega_9^2\omega_{12}c_s^2\omega_{10}^2\omega_5^2 + 24\omega_{15}\omega_9^2\omega_{12}^2c_s^2\omega_{10}^2\omega_5^2 -$$
$$66\omega_{15}\omega_9^2\omega_{12}^2\omega_{10}^2\omega_5^2\omega_{21} + 12\omega_{15}^2\omega_9^2\omega_{12}^2\omega_{10}^2v_2^2\omega_5\omega_{21} + 24\omega_9^2\omega_{12}^2\omega_{10}^2\omega_5^2\omega_{21} - 24\omega_{15}\omega_9\omega_{12}^2c_s^2\omega_{10}^2\omega_5^2\omega_{21} + 12\omega_{15}\omega_9\omega_{12}^2\omega_{10}^2v_2^2\omega_5^3\omega_{21} +$$
$$24\omega_9^2\omega_{12}^2c_s^2\omega_{10}^2\omega_5^3\omega_{21} - 24\omega_9^2\omega_{12}^2\omega_{10}^2v_2^2\omega_5^2\omega_{21} + 12\omega_{15}^2\omega_9^2\omega_{12}^2c_s^2\omega_{10}\omega_5^3\omega_{21} + 66\omega_{15}\omega_9^2\omega_{12}^2\omega_{10}^2v_2^2\omega_5^2\omega_{21} - 24\omega_{15}\omega_9^2\omega_{12}^2c_s^2\omega_{10}^2\omega_5^3\omega_{21} +$$
$$6\omega_{15}^2\omega_9^2\omega_{12}^2\omega_5^3\omega_{21} + 4\omega_{15}^2\omega_9^2\omega_{12}^2\omega_{10}v_2^2\omega_5^3\omega_{21} - 12\omega_{15}\omega_9^2\omega_{12}^2c_s^2\omega_{10}^2\omega_5^3 - 72\omega_{15}^2\omega_9\omega_{12}^2c_s^2\omega_{10}^2\omega_5\omega_{21} + 24\omega_{15}\omega_9\omega_{12}^2\omega_{10}^2\omega_5^2\omega_{21} + 12\omega_{15}^2\omega_9\omega_{12}^2\omega_{10}^2\omega_5^3 -$$
$$\omega_{15}^2\omega_9^2\omega_{12}^2\omega_{10}^2\omega_5^3\omega_{21} - 24\omega_{15}^2\omega_9^2\omega_{12}\omega_{10}^2\omega_5^2 - 24\omega_{15}\omega_9\omega_{12}^2\omega_{10}^2v_2^2\omega_5^2\omega_{21} - 12\omega_9^2\omega_{12}^2\omega_{10}^2\omega_5^3\omega_{21} + 12\omega_{15}\omega_9\omega_{12}^2c_s^2\omega_{10}^2\omega_5^3\omega_{21} + 12\omega_9^2\omega_{12}^2\omega_{10}^2v_2^2\omega_5^3\omega_{21} -$$
$$48\omega_9^2\omega_{12}^2c_s^2\omega_{10}^2\omega_5^2\omega_{21} - 12\omega_{15}^2\omega_9^2\omega_{12}\omega_{10}\omega_5^2\omega_{21} + 12\omega_{15}^2\omega_9^2\omega_{12}^2c_s^2\omega_{10}^2\omega_5^3 + 24\omega_{15}^2\omega_9\omega_{12}\omega_{10}^2v_2^2\omega_5^3 + 156\omega_{15}^2\omega_9^2\omega_{12}^2c_s^2\omega_{10}^2\omega_5\omega_{21} -$$
$$12\omega_{15}^2\omega_9\omega_{12}^2\omega_{10}^2\omega_5^2\omega_{21} + 24\omega_{15}^2\omega_9^2\omega_{12}\omega_{10}^2v_2^2\omega_5^2 + 18\omega_{15}\omega_9^2\omega_{12}^2\omega_{10}^2\omega_5^3\omega_{21} + 12\omega_{15}^2\omega_9^2\omega_{12}^2\omega_{10}^2\omega_5^2\omega_{21} + 72\omega_{15}^2\omega_9^2\omega_{12}c_s^2\omega_{10}^2\omega_5\omega_{21} -$$
$$24\omega_{15}^2\omega_9^2\omega_{12}^2c_s^2\omega_{10}^2\omega_5^2 - 12\omega_{15}\omega_9\omega_{12}^2\omega_{10}^2\omega_5^3 - 18\omega_{15}^2\omega_9^2\omega_{12}\omega_{10}v_2^2\omega_5^2\omega_{21} - 12\omega_{15}^2\omega_9\omega_{12}^2c_s^2\omega_{10}^2\omega_5^3 - 96\omega_{15}^2\omega_9^2\omega_{12}^2c_s^2\omega_{10}^2\omega_{21} -$$
$$42\omega_{15}^2\omega_9^2\omega_{12}^2c_s^2\omega_{10}\omega_5^2\omega_{21} + 90\omega_{15}\omega_9^2\omega_{12}^2c_s^2\omega_{10}^2\omega_5\omega_{21} - 12\omega_{15}^2\omega_9^2\omega_{12}^2\omega_5^2\omega_{21} - 24\omega_{15}^2\omega_9^2\omega_{12}\omega_{10}^2v_2^2\omega_5^3 - 18\omega_{15}\omega_9^2\omega_{12}^2\omega_{10}^2v_2^2\omega_5^3\omega_{21}$$

$$C_{24} = 36\omega_{15}\omega_9\omega_{12}c_s^2\omega_{10}^2v_2^2\omega_5^2 - 108\omega_{15}^2\omega_9\omega_{12}\omega_{10}v_1^2v_2^2\omega_5^2\omega_{21} - 36\omega_{15}^2\omega_9\omega_{12}c_s^2\omega_{10}v_1^2\omega_5^2\omega_{21} - 36\omega_{15}^2\omega_{10}v_1^2v_2^2\omega_5^3\omega_{21} + 6\omega_{15}\omega_9\omega_{12}c_s^2\omega_{10}^2\omega_5^3 -$$
$$12\omega_{15}^2\omega_9c_s^2\omega_{10}v_1^2\omega_5^2\omega_{21} - 48\omega_{15}\omega_9\omega_{12}\omega_{10}^2v_1^2\omega_5^2\omega_{21} - 12\omega_{15}^2c_s^2\omega_{10}v_1^2\omega_5^3\omega_{21} - 36\omega_{15}^2\omega_9\omega_{10}v_1^2v_2^2\omega_5^2\omega_{21} - 12\omega_{15}^2\omega_9\omega_{12}v_1^2\omega_5^2\omega_{21} +$$
$$12\omega_{15}^2\omega_9c_s^4\omega_{10}^2\omega_5^2 - 12\omega_{15}^2\omega_9\omega_{12}c_s^4\omega_{10}^2\omega_5^2 + 18\omega_{15}^2\omega_9\omega_{12}c_s^4\omega_{10}^2\omega_5\omega_{21} + 48\omega_{15}\omega_9\omega_{12}c_s^2\omega_{10}^2v_1^2\omega_5^2\omega_{21} - 9\omega_{15}^2\omega_9\omega_{12}\omega_{10}v_1^2\omega_5^3\omega_{21} -$$
$$24\omega_{15}^2\omega_{12}\omega_{10}v_1^2\omega_5^2\omega_{21} - 12\omega_{15}^2\omega_9\omega_{10}v_1^2\omega_5^3\omega_{21} - 18\omega_{15}^2\omega_{12}\omega_{10}^2v_1^2v_2^2\omega_5^3 + 36\omega_{15}\omega_{12}\omega_{10}^2v_1^2v_2^2\omega_5^3\omega_{21} - 36\omega_{15}^2\omega_9\omega_{12}c_s^2\omega_{10}v_2^2\omega_5\omega_{21} -$$
$$12\omega_{15}^2\omega_9\omega_{12}c_s^4\omega_{10}^2\omega_{21} + 6\omega_{15}^2\omega_{12}\omega_{10}^2v_1^2\omega_5^3 + 60\omega_{15}\omega_9\omega_{12}c_s^2\omega_{10}^2v_2^2\omega_5\omega_{21} + 18\omega_{15}^2\omega_{12}c_s^2\omega_{10}v_2^2\omega_5^3\omega_{21} - 18\omega_{15}\omega_9\omega_{12}c_s^4\omega_{10}^2\omega_5^2\omega_{21} +$$
$$12\omega_{15}^2\omega_9\omega_{12}c_s^2v_1^2\omega_5^2\omega_{21} + 6\omega_9\omega_{12}c_s^2\omega_{10}^2v_1^2\omega_5^3\omega_{21} + 6\omega_{15}^2\omega_9\omega_{12}c_s^4\omega_{10}^2\omega_5^3 + 6\omega_{15}^2\omega_{12}c_s^4\omega_{10}\omega_5^3\omega_{21} - 12\omega_{15}^2\omega_9c_s^4\omega_{10}^2\omega_5^3 - 12\omega_{15}^2\omega_9c_s^4\omega_{10}\omega_5^2\omega_{21} +$$
$$18\omega_{15}^2\omega_9\omega_{12}c_s^4\omega_{10}\omega_5^2\omega_{21} - 12\omega_{15}\omega_9\omega_{12}c_s^2\omega_{10}^2\omega_5^2 - 18\omega_{15}\omega_9\omega_{12}c_s^2\omega_{10}^2v_2^2\omega_5^3 + 12\omega_{15}^2c_s^2\omega_{10}^2v_1^2\omega_5^3 - 12\omega_{15}^2c_s^2\omega_{10}^2\omega_5^3 + 12\omega_9\omega_{12}\omega_{10}^2v_1^2\omega_5^2\omega_{21} -$$
$$6\omega_{15}\omega_9\omega_{12}c_s^4\omega_{10}^2\omega_5^3 - 72\omega_{15}\omega_9\omega_{12}\omega_{10}^2v_1^2v_2^2\omega_5\omega_{21} + 18\omega_{15}^2\omega_9\omega_{12}\omega_{10}^2v_1^2v_2^2\omega_5^3 + 36\omega_{15}^2c_s^2\omega_{10}^2v_2^2\omega_5^3 - 72\omega_{15}\omega_{12}\omega_{10}^2v_1^2v_2^2\omega_5^2\omega_{21} -$$
$$36\omega_{15}^2\omega_9\omega_{10}^2v_1^2v_2^2\omega_5^3 + 12\omega_{15}^2\omega_9\omega_{12}c_s^2\omega_{10}\omega_5\omega_{21} - 12\omega_{15}\omega_9\omega_{12}c_s^2\omega_{10}^2\omega_5\omega_{21} + 12\omega_{15}^2\omega_9\omega_{12}c_s^2\omega_{10}^2\omega_5^2 - 12\omega_{15}^2\omega_9c_s^2\omega_{10}^2\omega_5^2 + 6\omega_{15}^2\omega_9\omega_{12}v_1^2\omega_5^3\omega_{21} +$$
$$6\omega_{15}^2\omega_{12}\omega_{10}v_1^2\omega_5^3\omega_{21} + 12\omega_{15}^2\omega_9\omega_{10}v_1^2\omega_5^2\omega_{21} + 36\omega_{15}^2\omega_9\omega_{12}\omega_{10}v_1^2\omega_5^2\omega_{21} - 6\omega_{15}\omega_9\omega_{12}c_s^2\omega_{10}^2v_1^2\omega_5^3 - 15\omega_{15}\omega_9\omega_{12}c_s^2\omega_{10}^2v_1^2\omega_5^3\omega_{21} +$$

$9\omega_{15}^2\omega_9\omega_{12}c_s^2\omega_{10}v_1^2\omega_5^3\omega_{21} + 12\omega_{15}^2c_s^2\omega_{10}\omega_5^3\omega_{21} + 27\omega_{15}^2\omega_9\omega_{12}\omega_{10}v_1^2v_2^2\omega_5^3\omega_{21} + 36\omega_{15}^2\omega_9\omega_{10}v_1^2v_2^2\omega_5^3\omega_{21} + 15\omega_{15}\omega_9\omega_{12}\omega_{10}^2v_1^2\omega_5^3\omega_{21} +$
$12\omega_{15}^2\omega_9c_s^2\omega_{10}v_1^2\omega_5^3\omega_{21} + 12\omega_{15}^2\omega_9c_s^2\omega_{10}^2\omega_5^3 - 6\omega_{15}^2\omega_9\omega_{12}c_s^2\omega_{10}^3\omega_5^3 + \omega_{15}^2\omega_9\omega_{12}c_s^2\omega_{10}^2\omega_5^2\omega_{21} - 6\omega_9\omega_{12}\omega_{10}^2v_1^2\omega_5^3\omega_{21} - 36\omega_{15}^2\omega_9\omega_{12}\omega_{10}^2v_1^2v_2^2\omega_5^2 +$
$36\omega_{15}^2\omega_9\omega_{10}^2v_1^2v_2^2\omega_5^2 - 15\omega_{15}^2\omega_9\omega_{12}c_s^2\omega_{10}^2v_2^2\omega_5^2\omega_{21} + 12\omega_{15}\omega_9\omega_{12}c_s^4\omega_{10}^2\omega_5^2 + 12\omega_{15}^2c_s^4\omega_{10}^2\omega_5^3 - 12\omega_9\omega_{12}c_s^2\omega_{10}^2v_1^2\omega_5^2\omega_{21} - 6\omega_{15}^2\omega_9\omega_{12}c_s^2v_1^2\omega_5^3\omega_{21} +$
$12\omega_{15}\omega_9\omega_{12}c_s^2\omega_{10}^2v_1^2\omega_5^2 + 6\omega_{15}\omega_9\omega_{12}c_s^4\omega_{10}^2\omega_5^3\omega_{21} - 5\omega_{15}^2\omega_9\omega_{12}c_s^4\omega_{10}\omega_5^3\omega_{21} + 12\omega_{15}^2\omega_9c_s^4\omega_{10}\omega_5^3\omega_{21} - 18\omega_{15}\omega_9\omega_{12}\omega_{10}^2v_1^2v_2^2\omega_5^3 -$
$6\omega_{15}^2\omega_{12}c_s^4\omega_{10}^2\omega_5^3 + 60\omega_{15}^2\omega_9\omega_{12}c_s^2\omega_{10}^2v_2^2\omega_5\omega_{21} + 18\omega_9\omega_{12}\omega_{10}^2v_1^2v_2^2\omega_5^3\omega_{21} + 24\omega_9\omega_{12}c_s^2\omega_{10}^2v_2^2\omega_5^2\omega_{21} - 12\omega_{15}\omega_9\omega_{12}c_s^2\omega_{10}v_1^2\omega_5^2\omega_{21} -$
$36\omega_{15}\omega_9\omega_{12}\omega_{10}v_1^2v_2^2\omega_5^2\omega_{21} - 12\omega_{15}^2\omega_9\omega_{10}^2v_1^2\omega_5^2 + 12\omega_{15}^2\omega_9\omega_{12}\omega_{10}^2v_1^2\omega_5^2 + 12\omega_{15}\omega_9\omega_{12}\omega_{10}v_1^2\omega_5^2\omega_{21} + 6\omega_{15}^2\omega_9\omega_{12}c_s^2\omega_{10}^2v_1^2\omega_5^3 -$
$12\omega_{15}^2\omega_9c_s^2\omega_{10}^2v_1^2\omega_5^3 + 30\omega_{15}\omega_9\omega_{12}c_s^2\omega_{10}^2v_2^2\omega_5^3\omega_{21} + 12\omega_{15}^2\omega_{10}v_1^2\omega_5^3\omega_{21} + 144\omega_{15}\omega_9\omega_{12}\omega_{10}^2v_1^2v_2^2\omega_5^2\omega_{21} + 36\omega_{15}^2\omega_9c_s^2\omega_{10}v_2^2\omega_5^3\omega_{21} -$
$12\omega_{15}\omega_{12}\omega_{10}^2v_1^2\omega_5^3\omega_{21} + 18\omega_{15}\omega_9\omega_{12}c_s^2\omega_{10}^2\omega_5^2\omega_{21} - 18\omega_{15}^2\omega_9\omega_{12}c_s^2\omega_{10}\omega_5^2\omega_{21} - 6\omega_{15}^2\omega_{12}c_s^2\omega_{10}\omega_5^3\omega_{21} - 15\omega_{15}^2\omega_9\omega_{12}c_s^2\omega_{10}v_2^2\omega_5^3\omega_{21} +$
$12\omega_{15}^2\omega_9c_s^2\omega_{10}\omega_5^2\omega_{21} + 36\omega_{15}\omega_9\omega_{12}\omega_{10}^2v_1^2v_2^2\omega_5^2 + 72\omega_{15}^2\omega_{12}\omega_{10}v_1^2v_2^2\omega_5^2\omega_{21} - 12\omega_{15}^2\omega_9\omega_{12}c_s^2\omega_{10}^2v_1^2\omega_5^2 - \omega_{15}^2\omega_9\omega_{12}c_s^4\omega_{10}^2\omega_5^3\omega_{21} -$
$24\omega_{15}^2\omega_9\omega_{12}\omega_{10}v_1^2\omega_5\omega_{21} + 12\omega_{15}^2\omega_9c_s^2\omega_{10}^2v_1^2\omega_5^2 + 24\omega_{15}^2\omega_{12}c_s^2\omega_{10}v_1^2\omega_5^2\omega_{21} - 6\omega_{15}^2\omega_9\omega_{12}\omega_{10}^2v_1^2\omega_5^3 + 12\omega_{15}^2\omega_9\omega_{10}^2v_1^2\omega_5^3 +$
$12\omega_{15}\omega_{12}c_s^2\omega_{10}^2v_1^2\omega_5^3\omega_{21} - 18\omega_{15}^2\omega_{12}c_s^2\omega_{10}^2v_2^2\omega_5^3 + 36\omega_{15}^2\omega_9\omega_{12}v_1^2v_2^2\omega_5^2\omega_{21} - 12\omega_{15}^2\omega_9\omega_{12}c_s^4\omega_{10}\omega_5\omega_{21} - 6\omega_{15}^2\omega_{12}c_s^2\omega_{10}^2v_1^2\omega_5^3 +$
$12\omega_{15}\omega_9\omega_{12}c_s^4\omega_{10}^2\omega_5\omega_{21} - 6\omega_{15}\omega_9\omega_{12}\omega_{10}v_1^2\omega_5^3\omega_{21} + 36\omega_{15}^2\omega_9c_s^2\omega_{10}^2v_2^2\omega_5^2 - 36\omega_{15}^2\omega_9\omega_{12}c_s^2\omega_{10}^2v_2^2\omega_5^2 + 18\omega_{15}\omega_9\omega_{12}\omega_{10}v_1^2v_2^2\omega_5^3\omega_{21} +$
$6\omega_{15}^2\omega_{12}c_s^2\omega_{10}^2\omega_5^3 + 6\omega_{15}\omega_9\omega_{12}c_s^2\omega_{10}v_1^2\omega_5^3\omega_{21} - 36\omega_9\omega_{12}\omega_{10}^2v_1^2v_2^2\omega_5^2\omega_{21} - 12\omega_{15}^2c_s^4\omega_{10}\omega_5^3\omega_{21} + 6\omega_{15}\omega_9\omega_{12}\omega_{10}^2v_1^2\omega_5^3 -$
$48\omega_{15}^2\omega_9\omega_{12}c_s^2\omega_{10}^2v_2^2\omega_{21} - 12\omega_9\omega_{12}c_s^2\omega_{10}^2v_2^2\omega_5^3\omega_{21} - 24\omega_{15}\omega_{12}c_s^2\omega_{10}^2v_1^2\omega_5^2\omega_{21} - 12\omega_{15}^2\omega_{10}^2v_1^2\omega_5^3 + 24\omega_{15}\omega_9\omega_{12}\omega_{10}^2v_1^2\omega_5\omega_{21} -$
$36\omega_{15}^2\omega_9c_s^2\omega_{10}^2v_2^2\omega_5^3 - 18\omega_{15}^2\omega_9\omega_{12}v_1^2v_2^2\omega_5^3\omega_{21} + 24\omega_{15}^2\omega_9\omega_{12}c_s^2\omega_{10}v_1^2\omega_5\omega_{21} + 36\omega_{15}^2\omega_{10}^2v_1^2v_2^2\omega_5^3 + 18\omega_{15}^2\omega_9\omega_{12}c_s^2\omega_{10}^2v_2^2\omega_5^3 +$
$72\omega_{15}^2\omega_9\omega_{12}\omega_{10}v_1^2v_2^2\omega_5\omega_{21} - 6\omega_{15}^2\omega_{12}c_s^2\omega_{10}v_1^2\omega_5^3\omega_{21} - 5\omega_{15}^2\omega_9\omega_{12}c_s^4\omega_{10}^2\omega_5^2\omega_{21} - 24\omega_{15}\omega_9\omega_{12}c_s^2\omega_{10}^2v_1^2\omega_5\omega_{21} - 18\omega_{15}^2\omega_{12}\omega_{10}v_1^2v_2^2\omega_5^3\omega_{21} -$
$36\omega_{15}^2c_s^2\omega_{10}v_2^2\omega_5^3\omega_{21} - 6\omega_{15}\omega_9\omega_{12}c_s^2\omega_{10}^2\omega_5^3\omega_{21} - 36\omega_{15}^2\omega_9c_s^2\omega_{10}v_2^2\omega_5^2\omega_{21} + 24\omega_{15}\omega_{12}\omega_{10}^2v_1^2\omega_5^2\omega_{21} + 54\omega_{15}^2\omega_9\omega_{12}c_s^2\omega_{10}v_2^2\omega_5^2\omega_{21} -$
$12\omega_{15}^2\omega_9c_s^2\omega_{10}\omega_5^3\omega_{21} + 5\omega_{15}^2\omega_9\omega_{12}c_s^2\omega_{10}\omega_5^3\omega_{21} - 102\omega_{15}\omega_9\omega_{12}c_s^2\omega_{10}^2v_2^2\omega_5^2\omega_{21} - 45\omega_{15}\omega_9\omega_{12}\omega_{10}^2v_1^2v_2^2\omega_5^3\omega_{21} - 12\omega_{15}\omega_9\omega_{12}\omega_{10}^2v_1^2\omega_5^2$

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

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

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

$C_{28} = 120\omega_9^2\omega_6^2c_s^2v_1^2\omega_{13} + 24\omega_9^3\omega_6^2c_s^2v_1^2 - 36\omega_9^3c_s^2v_1^2\omega_{13} + 24\omega_6^2v_1^4\omega_{13}^2 - 4\omega_9\omega_6c_s^2\omega_{13}^2 - 4\omega_9\omega_6^2c_s^4\omega_{13} + 36\omega_9^2c_s^2v_1^2\omega_{13}^2 + 4\omega_9^3\omega_6^2c_s^4 + 36\omega_9\omega_6^2v_1^2\omega_{13}^2 +$
$4\omega_9^2\omega_6^2v_1^2 + 13\omega_9^2\omega_6^2v_1^4\omega_{13}^2 + 4\omega_9^3\omega_6c_s^2 - 8\omega_9^2\omega_6^2c_s^2\omega_{13} + 96\omega_6^2c_s^2v_1^2\omega_{13}^2 + 8\omega_9^3\omega_6c_s^4\omega_{13} + 4\omega_9^3c_s^2\omega_{13} - 8\omega_9^2v_1^2\omega_{13}^2 - 72\omega_9\omega_6^2c_s^2v_1^2\omega_{13} - 8\omega_9^2\omega_6c_s^4\omega_{13}^2 -$
$13\omega_9^3\omega_6^2v_1^4\omega_{13} + 16\omega_9^2\omega_6v_1^2\omega_{13} - 144\omega_9\omega_6^2c_s^2v_1^2\omega_{13}^2 + 84\omega_9^3\omega_6c_s^2v_1^2\omega_{13} + 4\omega_9^3\omega_6^2c_s^2\omega_{13} + 4\omega_9^2c_s^4\omega_{13}^2 + 20\omega_9^2\omega_6v_1^2\omega_{13}^2 + 4\omega_9^3\omega_6v_1^2 + 32\omega_9^2\omega_6^2v_1^4\omega_{13} -$
$20\omega_9^3\omega_6v_1^2\omega_{13} - 8\omega_9^3v_1^4\omega_{13} - 4\omega_9^2\omega_6^2c_s^2\omega_{13}^2 - 12\omega_9\omega_6^2c_s^4\omega_{13}^2 - 24\omega_9^2\omega_6^2c_s^2v_1^2 + 20\omega_9\omega_6^2v_1^2\omega_{13} + 4\omega_9^2\omega_6^2c_s^2 + 51\omega_9^2\omega_6^2c_s^2v_1^2\omega_{13}^2 - 8\omega_6^2c_s^2\omega_{13}^2 +$
$20\omega_9\omega_6v_1^4\omega_{13}^2 + 4\omega_9^3\omega_6^2v_1^4 - 13\omega_9^2\omega_6^2v_1^2\omega_{13}^2 - 8\omega_9^3\omega_6c_s^2\omega_{13} + 8\omega_9^2\omega_6^2c_s^4\omega_{13} - 4\omega_9^3c_s^4\omega_{13} + 8\omega_9^2v_1^4\omega_{13}^2 + 8\omega_9^2\omega_6c_s^2\omega_{13}^2 - 48\omega_9^2\omega_6c_s^2v_1^2\omega_{13} -$
$16\omega_9^2\omega_6v_1^4\omega_{13} + 13\omega_9^3\omega_6^2v_1^2\omega_{13} - 4\omega_9^3\omega_6v_1^4 - 4\omega_9^2\omega_6^2c_s^4 - 4\omega_9^3\omega_6^2v_1^2 + 4\omega_9\omega_6c_s^4\omega_{13}^2 - 24\omega_6^2v_1^2\omega_{13}^2 + 4\omega_9\omega_6^2c_s^2\omega_{13} - 36\omega_9\omega_6^2v_1^4\omega_{13}^2 +$
$12\omega_9\omega_6^2c_s^2\omega_{13}^2 - 4\omega_9^3\omega_6^2c_s^2 - 24\omega_9^3\omega_6c_s^2v_1^2 - 20\omega_9\omega_6^2v_1^4\omega_{13} - 4\omega_9^2\omega_6^2v_1^4 - 20\omega_9\omega_6v_1^2\omega_{13}^2 + 8\omega_6^2c_s^4\omega_{13}^2 + 72\omega_9\omega_6c_s^2v_1^2\omega_{13}^2 - 51\omega_9^3\omega_6^2c_s^2v_1^2\omega_{13} -$
$4\omega_9^3\omega_6^2c_s^4\omega_{13} - 4\omega_9^2c_s^2\omega_{13}^2 - 84\omega_9^2\omega_6c_s^2v_1^2\omega_{13}^2 - 20\omega_9^2\omega_6v_1^4\omega_{13}^2 + 20\omega_9^3\omega_6v_1^4\omega_{13} - 4\omega_9^3\omega_6c_s^4 - 32\omega_9^2\omega_6^2v_1^2\omega_{13} + 8\omega_9^3v_1^2\omega_{13} + 4\omega_9^2\omega_6^2c_s^4\omega_{13}^2$

$C_{29} = -28\omega_9^3\omega_6\omega_{13} - 24\omega_9\omega_6\omega_{13}^2 + 32\omega_9\omega_6c_s^2\omega_{13}^2 - 8\omega_9^3\omega_6^2 - 120\omega_9\omega_6^2v_1^2\omega_{13}^2 - 16\omega_9^2\omega_6^2v_1^2 - 16\omega_9^3\omega_6c_s^2 - 17\omega_9^2\omega_6^2\omega_{13}^2 + 56\omega_9^2\omega_6^2c_s^2\omega_{13} -$
$20\omega_9^3c_s^2\omega_{13} + 28\omega_9^2v_1^2\omega_{13}^2 - 32\omega_6^2\omega_{13}^2 - 48\omega_9^2\omega_6v_1^2\omega_{13} - 25\omega_9^3\omega_6^2c_s^2\omega_{13} - 68\omega_9^2\omega_6v_1^2\omega_{13}^2 - 16\omega_9^3\omega_6v_1^2 + 8\omega_9^2\omega_6^2 - 40\omega_9^2\omega_6^2\omega_{13} + 68\omega_9^3\omega_6v_1^2\omega_{13} +$
$25\omega_9^2\omega_6^2c_s^2\omega_{13}^2 + 8\omega_9^3\omega_6 - 64\omega_9\omega_6^2v_1^2\omega_{13} - 16\omega_9^2\omega_6^2c_s^2 + 48\omega_6^2c_s^2\omega_{13}^2 + 43\omega_9^2\omega_6^2v_1^2\omega_{13}^2 + 44\omega_9^3\omega_6c_s^2\omega_{13} - 44\omega_9^2\omega_6c_s^2\omega_{13}^2 + 24\omega_9\omega_6^2\omega_{13} -$
$43\omega_9^3\omega_6^2v_1^2\omega_{13} + 16\omega_9^3\omega_6^2v_1^2 + 80\omega_6^2v_1^2\omega_{13}^2 - 32\omega_9\omega_6^2c_s^2\omega_{13} + 16\omega_9^2\omega_6\omega_{13} - 72\omega_9\omega_6^2c_s^2\omega_{13}^2 + 16\omega_9^3\omega_6^2c_s^2 + 28\omega_9^2\omega_6\omega_{13}^2 + 12\omega_9^3\omega_{13} +$
$64\omega_9\omega_6v_1^2\omega_{13}^2 - 16\omega_9^2\omega_6c_s^2\omega_{13} + 17\omega_9^3\omega_6^2\omega_{13} + 20\omega_9^2c_s^2\omega_{13}^2 + 48\omega_9\omega_6^2\omega_{13}^2 + 104\omega_9^2\omega_6^2v_1^2\omega_{13} - 28\omega_9^3v_1^2\omega_{13} - 12\omega_9^2\omega_{13}^2$

$C_{30} = -12\omega_9^2\omega_6^2c_s^2v_1^2\omega_{13} - 12\omega_9^3\omega_6^2c_s^2v_1^2 - 90\omega_9\omega_6^3v_1^4\omega_{13}^2 - 72\omega_6^3v_1^2\omega_{13}^2 + 60\omega_9^2\omega_6^3c_s^2v_1^2\omega_{13}^2 - 12\omega_9^3\omega_6v_1^2\omega_{13}^2 + 12\omega_9^2\omega_6^2v_1^4\omega_{13}^2 + 12\omega_9^3\omega_6^3v_1^4 -$
$\omega_9^3\omega_6^3c_s^4\omega_{13}^2 + 27\omega_9^3\omega_6^3v_1^2\omega_{13} - 12\omega_9^2\omega_6^2c_s^2\omega_{13} + 12\omega_9^3\omega_6c_s^4\omega_{13} - 306\omega_9\omega_6^3c_s^2v_1^2\omega_{13}^2 + 102\omega_9^3\omega_6c_s^2v_1^2\omega_{13}^2 - 19\omega_9^2\omega_6^3v_1^2\omega_{13}^2 - 5\omega_9^3\omega_6^2c_s^2\omega_{13}^2 +$
$48\omega_9^3\omega_6^2v_1^4\omega_{13} - 6\omega_9^2\omega_6^3c_s^4\omega_{13} - 108\omega_9\omega_6^2c_s^2v_1^2\omega_{13}^2 - 12\omega_9^3\omega_6c_s^2v_1^2\omega_{13} + 252\omega_6^3c_s^2v_1^2\omega_{13}^2 + 18\omega_9^3\omega_6^2c_s^2\omega_{13} - 60\omega_9^2\omega_6^3v_1^2\omega_{13} + 12\omega_9^2\omega_6^3v_1^2 +$
$\omega_9^2\omega_6^3c_s^4\omega_{13}^2 - 18\omega_9^3\omega_6^2v_1^4\omega_{13}^2 + 6\omega_9^3\omega_6^3c_s^4\omega_{13} - 24\omega_9^2\omega_6^2v_1^4\omega_{13} + 24\omega_9^3\omega_6v_1^2\omega_{13} - 24\omega_9^3\omega_6c_s^4\omega_{13}^2 - 6\omega_9^2\omega_6^2c_s^2\omega_{13}^2 - 4\omega_9^3\omega_6^3v_1^2\omega_{13}^2 - 36\omega_9\omega_6^3c_s^2v_1^2\omega_{13} -$
$12\omega_9\omega_6^2c_s^4\omega_{13}^2 + 12\omega_6^3c_s^4\omega_{13}^2 + 54\omega_9^2\omega_6^3c_s^2v_1^2\omega_{13} + 162\omega_9^2\omega_6^2c_s^2v_1^2\omega_{13}^2 + 12\omega_9\omega_6^3c_s^2\omega_{13}^2 - 12\omega_9^3\omega_6^2v_1^4 - 48\omega_9^3c_s^2v_1^2\omega_{13}^2 - 36\omega_9\omega_6^3v_1^4\omega_{13} - 12\omega_9^2\omega_6^2v_1^2\omega_{13}^2 +$
$12\omega_9^3\omega_6v_1^4\omega_{13}^2 - 12\omega_9^3\omega_6c_s^2\omega_{13} - 27\omega_9^3\omega_6^3v_1^4\omega_{13} + 12\omega_9^2\omega_6^2c_s^4\omega_{13} - 12\omega_9^2\omega_6^3v_1^4 + 19\omega_9^2\omega_6^3v_1^4\omega_{13}^2 + 13\omega_9^3\omega_6^2c_s^4\omega_{13}^2 - 48\omega_9^3\omega_6^2v_1^2\omega_{13} + 6\omega_9^2\omega_6^3c_s^2\omega_{13} +$
$12\omega_9^3\omega_6^2v_1^2 - 81\omega_9^3\omega_6^2c_s^2v_1^2\omega_{13}^2 + 90\omega_9\omega_6^3v_1^2\omega_{13}^2 - 21\omega_9^3\omega_6^3c_s^2v_1^2\omega_{13} + 72\omega_6^3v_1^4\omega_{13}^2 + 12\omega_9^3\omega_6^3c_s^2v_1^2 - 12\omega_6^3c_s^2\omega_{13}^2 + 12\omega_9\omega_6^2c_s^2\omega_{13}^2 + 12\omega_9^3\omega_6^3c_s^2v_1^2\omega_{13}^2 -$
$12\omega_9^2\omega_6^3c_s^2v_1^2 - 12\omega_9\omega_6^3c_s^4\omega_{13}^2 + 30\omega_9^3\omega_6^2c_s^2v_1^2\omega_{13} + 36\omega_9\omega_6^3v_1^2\omega_{13} - 18\omega_9^3\omega_6^2c_s^4\omega_{13} + 60\omega_9^2\omega_6^3v_1^4\omega_{13} - 48\omega_9^2\omega_6c_s^2v_1^2\omega_{13}^2 - \omega_9^2\omega_6^3c_s^2\omega_{13}^2 +$
$18\omega_9^2\omega_6^2v_1^2\omega_{13}^2 - 24\omega_9^3\omega_6v_1^4\omega_{13} - 6\omega_9^3\omega_6^3c_s^2\omega_{13} - 12\omega_9^3\omega_6^3v_1^2 + 24\omega_9^2\omega_6^2v_1^2\omega_{13} + 6\omega_9^2\omega_6^2c_s^4\omega_{13}^2 + 4\omega_9^3\omega_6^3v_1^4\omega_{13}^2 + 6\omega_9^3\omega_6c_s^2\omega_{13}^2 + 12\omega_9^2c_s^4\omega_{13}^2$

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

$$3\omega_9^3\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_{14}\omega_8\omega_5^2 - 3\omega_9^3\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_5^2 + 3\omega_9^2\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_5^2 + 2\omega_9^2\omega_{12}^2\omega_6^2v_1^2\omega_{13}\omega_{14}\omega_8\omega_5^2 - \omega_9^3\omega_{12}\omega_6^2\omega_{13}^2\omega_8\omega_5 - \omega_9^3\omega_{12}^2\omega_6^2\omega_{14}\omega_8\omega_5^2 -$$
$$3\omega_9^3\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_{14}\omega_8\omega_5 - \omega_9^2\omega_{12}^2\omega_6^2v_1^2\omega_{13}^2\omega_{14}\omega_5 - \omega_9\omega_{12}^2\omega_6\omega_{13}^2\omega_{14}\omega_8\omega_5^2 - \omega_9^3\omega_{12}^2\omega_6\omega_{13}\omega_8\omega_5^2 + \omega_9^3\omega_{12}^2\omega_6^2\omega_{13}\omega_{14}\omega_8\omega_5^2 - \omega_9^3\omega_{12}^2\omega_6v_1^2\omega_{13}^2\omega_8\omega_5^2 -$$
$$\omega_9^2\omega_{12}^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2 - 3\omega_9\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2 + \omega_9^2\omega_{12}\omega_6^2v_1^2\omega_{13}^2\omega_8\omega_5^2 + 6\omega_9^3\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5 + 3\omega_9\omega_{12}^2\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2 -$$
$$3\omega_9^3\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_8\omega_5^2 - 6\omega_9^2\omega_{12}^2\omega_6c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2 + \omega_9^3\omega_{12}^2\omega_6v_1^2\omega_{13}^2\omega_5^2 - 2\omega_9^3\omega_{12}^2\omega_6\omega_{13}\omega_{14}\omega_8\omega_5^2 - \omega_9^2\omega_6^2v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2 + \omega_9^3\omega_{12}^2\omega_6^2v_1^2\omega_{13}^2\omega_8\omega_5^2 -$$
$$3\omega_9^2\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_8\omega_5^2 + 3\omega_9^3\omega_{12}\omega_6c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2 - 6\omega_9^2\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5 - 3\omega_9^3\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_8\omega_5 - \omega_9^3\omega_{12}\omega_6^2v_1^2\omega_{13}^2\omega_{14}\omega_8 -$$
$$3\omega_9^3\omega_{12}^2\omega_6c_s^2\omega_{14}\omega_8\omega_5^2 + \omega_9^3\omega_{12}^2\omega_{13}\omega_{14}\omega_8\omega_5^2 + \omega_9^2\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2 - \omega_9^3\omega_6^2v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_5 - \omega_9^2\omega_{12}^2\omega_6^2\omega_{13}\omega_8\omega_5^2 + \omega_9^2\omega_{12}^2\omega_6^2v_1^2\omega_{13}^2\omega_{14}\omega_8 -$$
$$3\omega_9^2\omega_{12}^2\omega_6c_s^2\omega_{13}^2\omega_{14}\omega_5^2 - \omega_9^2\omega_{12}\omega_6v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2 + \omega_9^3\omega_{12}^2\omega_6^2\omega_{13}^2\omega_8\omega_5 + \omega_9^3\omega_{12}\omega_6^2v_1^2\omega_{13}^2\omega_8\omega_5 - \omega_9^3\omega_{12}^2\omega_6\omega_{13}^2\omega_5^2 + 3\omega_9^2\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2 +$$
$$3\omega_9^3\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_8\omega_5^2 - 3\omega_9^3\omega_{12}\omega_6c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5 + \omega_9\omega_{12}\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2 + \omega_9^2\omega_{12}^2\omega_6\omega_{13}^2\omega_{14}\omega_5^2 + 2\omega_{12}^2\omega_6^2v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2 + \omega_9^3\omega_6^2v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2 -$$
$$\omega_9^2\omega_{12}^2\omega_6^2v_1^2\omega_{13}^2\omega_8\omega_5^2 + 3\omega_9^2\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_8\omega_5^2 - \omega_9^3\omega_{12}^2\omega_6^2\omega_{13}^2\omega_8\omega_5^2 - \omega_9^3\omega_{12}\omega_6^2v_1^2\omega_{13}^2\omega_8\omega_5^2 - 3\omega_9\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_{14}\omega_8\omega_5^2 - \omega_9^2\omega_{12}^2\omega_6v_1^2\omega_{13}^2\omega_{14}\omega_5^2 +$$
$$3\omega_9^2\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8 + 3\omega_9^3\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_8\omega_5 + 6\omega_9^2\omega_{12}^2\omega_6c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5 - 3\omega_9^3\omega_{12}^2c_s^2\omega_{13}\omega_{14}\omega_8\omega_5^2 - 3\omega_9^3\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2 -$$
$$\omega_9\omega_{12}^2\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5 - \omega_9^3\omega_{12}^2\omega_6v_1^2\omega_{14}\omega_8\omega_5^2 - 3\omega_9^3\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8 - \omega_9^3\omega_{12}^2\omega_6^2v_1^2\omega_{13}^2\omega_8\omega_5 + \omega_9^3\omega_{12}^2\omega_6\omega_{13}\omega_{14}\omega_8\omega_5 +$$
$$2\omega_9^2\omega_{12}\omega_6^2v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2 + \omega_9^2\omega_{12}^2\omega_6^2v_1^2\omega_{13}^2\omega_{14}\omega_5^2 + 6\omega_9^3\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_{14}\omega_8\omega_5^2 + \omega_9\omega_{12}^2\omega_6v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2 - \omega_9^3\omega_{12}^2\omega_6^2\omega_{13}\omega_{14}\omega_8\omega_5 +$$
$$\omega_9^3\omega_{12}^2\omega_6^2v_1^2\omega_{14}\omega_8\omega_5^2 - 3\omega_9^2\omega_{12}^2\omega_6^2c_s^2\omega_{14}\omega_8\omega_5^2 - 3\omega_9^3\omega_{12}^2\omega_6c_s^2\omega_{13}^2\omega_8\omega_5^2 + \omega_9\omega_{12}^2\omega_6^2v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_5 + \omega_9^2\omega_{12}^2v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2 -$$
$$2\omega_9^2\omega_{12}^2\omega_6^2\omega_{13}\omega_{14}\omega_8\omega_5^2 + 3\omega_9^3\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_{14}\omega_8\omega_5 + 3\omega_9^3\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_5 - 3\omega_9^2\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_5 + \omega_9^3\omega_{12}\omega_6^2\omega_{13}^2\omega_8\omega_5^2 - \omega_9^2\omega_{12}^2\omega_6^2v_1^2\omega_{13}\omega_{14}\omega_8\omega_5 +$$
$$\omega_9^3\omega_{12}^2\omega_6^2\omega_{13}\omega_8\omega_5^2 - \omega_9^3\omega_{12}\omega_6^2v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2 + 2\omega_9^2\omega_{12}^2\omega_6v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_5 - \omega_9^3\omega_{12}^2v_1^2\omega_{13}\omega_{14}\omega_8\omega_5^2 - 2\omega_{12}^2\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2 - \omega_9^3\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2 -$$
$$\omega_9^2\omega_{12}^2\omega_6^2\omega_{13}^2\omega_{14}\omega_8 - 2\omega_9^2\omega_{12}\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2 + 6\omega_9^2\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2 + \omega_9^2\omega_{12}^2\omega_6^2v_1^2\omega_{13}\omega_8\omega_5^2 + \omega_9^3\omega_{12}^2\omega_6^2\omega_{13}^2\omega_5^2 - 3\omega_9^3\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_8\omega_5^2 +$$
$$6\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2 + 3\omega_9^3\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2 + 3\omega_9^3\omega_{12}^2\omega_6c_s^2\omega_{13}^2\omega_5^2 - \omega_9^3\omega_{12}\omega_6v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_5 + \omega_9^2\omega_{12}^2\omega_6^2v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2 -$$
$$2\omega_9^3\omega_{12}\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5 + \omega_9^3\omega_{12}^2\omega_6\omega_{14}\omega_8\omega_5^2 - \omega_9\omega_{12}^2\omega_6^2v_1^2\omega_{13}\omega_{14}\omega_8\omega_5^2 + 2\omega_9^2\omega_{12}^2\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5 + 3\omega_9^2\omega_{12}^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2 +$$
$$\omega_9^3\omega_{12}^2\omega_6^2v_1^2\omega_{13}\omega_{14}\omega_8\omega_5 + 3\omega_9\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5 + \omega_9^3\omega_{12}\omega_6\omega_{13}^2\omega_{14}\omega_8\omega_5 - 3\omega_9^2\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_{14}\omega_8\omega_5 - 2\omega_9^2\omega_{12}^2\omega_6\omega_{13}^2\omega_{14}\omega_8\omega_5 +$$
$$\omega_9^2\omega_{12}^2\omega_6^2\omega_{13}^2\omega_{14}\omega_5 + 3\omega_9\omega_{12}^2\omega_6c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2 + 2\omega_9^3\omega_{12}^2\omega_6v_1^2\omega_{13}\omega_{14}\omega_8\omega_5^2 + \omega_9^2\omega_{12}^2\omega_6^2\omega_{14}\omega_8\omega_5^2 + \omega_9^2\omega_{12}\omega_6\omega_{13}^2\omega_{14}\omega_8\omega_5^2 +$$
$$3\omega_9^3\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_8\omega_5^2 - \omega_9^3\omega_{12}^2\omega_6^2v_1^2\omega_{13}^2\omega_5^2 + \omega_9\omega_{12}^2\omega_6^2\omega_{13}\omega_{14}\omega_8\omega_5^2 - \omega_9^3\omega_{12}^2\omega_6v_1^2\omega_{13}\omega_{14}\omega_8\omega_5 - \omega_9\omega_{12}\omega_6^2v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2 - \omega_9^2\omega_{12}\omega_6^2\omega_{13}^2\omega_8\omega_5^2 +$$
$$\omega_9^3\omega_{12}^2\omega_6^2v_1^2\omega_{13}^2\omega_5 - \omega_9^3\omega_{12}^2\omega_6^2v_1^2\omega_{13}\omega_{14}\omega_8\omega_5^2 - 9\omega_9\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2 - \omega_9^3\omega_{12}\omega_6\omega_{13}^2\omega_{14}\omega_8\omega_5^2 + \omega_9^3\omega_{12}^2\omega_6\omega_{13}^2\omega_8\omega_5^2 + \omega_9^3\omega_{12}^2\omega_6v_1^2\omega_{13}\omega_8\omega_5^2 +$$
$$6\omega_9^2\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_{14}\omega_8\omega_5^2 - \omega_9^2\omega_{12}^2\omega_6^2\omega_{13}^2\omega_{14}\omega_5^2 + 2\omega_9^2\omega_{12}^2\omega_6\omega_{13}^2\omega_{14}\omega_8\omega_5^2 + 3\omega_9^2\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_8\omega_5^2 - 3\omega_9^3\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5 - \omega_9^3\omega_{12}^2\omega_6^2v_1^2\omega_{13}\omega_8\omega_5^2 -$$
$$2\omega_9^2\omega_{12}^2\omega_6^2v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_5 + \omega_9^3\omega_{12}\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2 + \omega_9^3\omega_{12}\omega_6v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2 - 3\omega_9^2\omega_{12}\omega_6c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2 - \omega_9^2\omega_{12}^2\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2 -$$
$$2\omega_9^2\omega_{12}^2\omega_6v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2 + 2\omega_9^3\omega_{12}\omega_6^2v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_5 + \omega_9^3\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5 + \omega_9^2\omega_{12}^2\omega_6^2\omega_{13}^2\omega_8\omega_5^2 - 3\omega_9^2\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2 - \omega_9^3\omega_{12}^2\omega_6^2\omega_{13}^2\omega_5$$

$$C_{32} = \omega_9^3\omega_{12}\omega_6^2\omega_{13}^2\omega_{14}\omega_8 + \omega_9^3\omega_{12}^2\omega_6^2c_s^2\omega_{14}\omega_8\omega_5^2 - 9\omega_9\omega_{12}^2\omega_6^2v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2 - 3\omega_9^2\omega_{12}^2\omega_6^2v_1^2\omega_{14}\omega_8\omega_5^2 + \omega_9^2\omega_{12}^2\omega_6^2\omega_{13}\omega_{14}\omega_8\omega_5 -$$
$$\omega_9^3\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_{14}\omega_8\omega_5^2 - \omega_9^3\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_5^2 + \omega_9^2\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_5^2 + 6\omega_9^2\omega_{12}^2\omega_6^2v_1^2\omega_{13}\omega_{14}\omega_8\omega_5^2 - \omega_9^3\omega_{12}\omega_6^2\omega_{13}^2\omega_8\omega_5 - \omega_9^3\omega_{12}^2\omega_6^2\omega_{14}\omega_8\omega_5^2 -$$
$$\omega_9^3\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_{14}\omega_8\omega_5 - 3\omega_9^2\omega_{12}^2\omega_6^2v_1^2\omega_{13}^2\omega_{14}\omega_5 - \omega_9\omega_{12}^2\omega_6\omega_{13}^2\omega_{14}\omega_8\omega_5^2 - \omega_9^3\omega_{12}^2\omega_6\omega_{13}\omega_8\omega_5^2 + \omega_9^3\omega_{12}^2\omega_6^2\omega_{13}\omega_{14}\omega_8\omega_5^2 - 3\omega_9^3\omega_{12}^2\omega_6v_1^2\omega_{13}^2\omega_8\omega_5^2 -$$
$$\omega_9^2\omega_{12}^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2 - \omega_9\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2 + 3\omega_9^2\omega_{12}\omega_6^2v_1^2\omega_{13}^2\omega_8\omega_5^2 + 2\omega_9^3\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5 + 3\omega_9\omega_{12}^2\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2 -$$
$$\omega_9^3\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_8\omega_5^2 - 2\omega_9^2\omega_{12}^2\omega_6c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2 + 3\omega_9^3\omega_{12}^2\omega_6v_1^2\omega_{13}^2\omega_5^2 - 2\omega_9^3\omega_{12}^2\omega_6\omega_{13}\omega_{14}\omega_8\omega_5^2 - 3\omega_9^2\omega_6^2v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2 + 3\omega_9^3\omega_{12}^2\omega_6^2v_1^2\omega_{13}^2\omega_8\omega_5^2 -$$
$$\omega_9^2\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_8\omega_5^2 + \omega_9^3\omega_{12}\omega_6c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2 - 2\omega_9^2\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5 - \omega_9^3\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_8\omega_5 - 3\omega_9^3\omega_{12}\omega_6^2v_1^2\omega_{13}^2\omega_{14}\omega_8 -$$
$$\omega_9^3\omega_{12}^2\omega_6c_s^2\omega_{14}\omega_8\omega_5^2 + \omega_9^3\omega_{12}^2\omega_{13}\omega_{14}\omega_8\omega_5^2 + \omega_9^2\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2 - 3\omega_9^3\omega_6^2v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_5 - \omega_9^2\omega_{12}^2\omega_6^2\omega_{13}\omega_8\omega_5^2 + 3\omega_9^2\omega_{12}^2\omega_6^2v_1^2\omega_{13}^2\omega_{14}\omega_8 -$$
$$\omega_9^2\omega_{12}^2\omega_6c_s^2\omega_{13}^2\omega_{14}\omega_5^2 - 3\omega_9^2\omega_{12}\omega_6v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2 + \omega_9^3\omega_{12}^2\omega_6^2\omega_{13}^2\omega_8\omega_5 + 3\omega_9^3\omega_{12}\omega_6^2v_1^2\omega_{13}^2\omega_8\omega_5 - \omega_9^3\omega_{12}^2\omega_6\omega_{13}^2\omega_5^2 + \omega_9^2\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2 +$$
$$\omega_9^3\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_8\omega_5^2 - \omega_9^3\omega_{12}\omega_6c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5 + \omega_9\omega_{12}\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2 + \omega_9^2\omega_{12}^2\omega_6\omega_{13}^2\omega_{14}\omega_5^2 + 6\omega_{12}^2\omega_6^2v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2 + 3\omega_9^3\omega_6^2v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2 -$$
$$3\omega_9^2\omega_{12}^2\omega_6^2v_1^2\omega_{13}^2\omega_8\omega_5^2 + \omega_9^2\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_8\omega_5^2 - \omega_9^3\omega_{12}^2\omega_6^2\omega_{13}^2\omega_8\omega_5^2 - 3\omega_9^3\omega_{12}\omega_6^2v_1^2\omega_{13}^2\omega_8\omega_5^2 - \omega_9\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_{14}\omega_8\omega_5^2 - 3\omega_9^2\omega_{12}^2\omega_6v_1^2\omega_{13}^2\omega_{14}\omega_5^2 +$$
$$\omega_9^2\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8 + \omega_9^3\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_8\omega_5 + 2\omega_9^2\omega_{12}^2\omega_6c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5 - \omega_9^3\omega_{12}^2c_s^2\omega_{13}\omega_{14}\omega_8\omega_5^2 - \omega_9^3\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2 -$$
$$\omega_9\omega_{12}^2\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5 - 3\omega_9^3\omega_{12}^2\omega_6v_1^2\omega_{14}\omega_8\omega_5^2 - \omega_9^3\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8 - 3\omega_9^3\omega_{12}^2\omega_6^2v_1^2\omega_{13}^2\omega_8\omega_5 + \omega_9^3\omega_{12}^2\omega_6\omega_{13}\omega_{14}\omega_8\omega_5 +$$
$$6\omega_9^2\omega_{12}\omega_6^2v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2 + 3\omega_9^2\omega_{12}^2\omega_6^2v_1^2\omega_{13}^2\omega_{14}\omega_5^2 + 2\omega_9^3\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_{14}\omega_8\omega_5^2 + 3\omega_9\omega_{12}^2\omega_6v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2 - \omega_9^3\omega_{12}^2\omega_6^2\omega_{13}\omega_{14}\omega_8\omega_5 +$$
$$3\omega_9^3\omega_{12}^2\omega_6^2v_1^2\omega_{14}\omega_8\omega_5^2 - \omega_9^2\omega_{12}^2\omega_6^2c_s^2\omega_{14}\omega_8\omega_5^2 - \omega_9^3\omega_{12}^2\omega_6c_s^2\omega_{13}^2\omega_8\omega_5^2 + 3\omega_9\omega_{12}^2\omega_6^2v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_5 + 3\omega_9^2\omega_{12}^2v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2 -$$
$$2\omega_9^2\omega_{12}^2\omega_6^2\omega_{13}\omega_{14}\omega_8\omega_5^2 + \omega_9^3\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_{14}\omega_8\omega_5 + \omega_9^3\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_5 - \omega_9^2\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_5 + \omega_9^3\omega_{12}\omega_6^2\omega_{13}^2\omega_8\omega_5^2 - 3\omega_9^2\omega_{12}^2\omega_6^2v_1^2\omega_{13}\omega_{14}\omega_8\omega_5 +$$
$$\omega_9^3\omega_{12}^2\omega_6^2\omega_{13}\omega_8\omega_5^2 - 3\omega_9^3\omega_{12}\omega_6^2v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2 + 6\omega_9^2\omega_{12}^2\omega_6v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_5 - 3\omega_9^3\omega_{12}^2v_1^2\omega_{13}\omega_{14}\omega_8\omega_5^2 - 2\omega_{12}^2\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2 - \omega_9^3\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2 -$$
$$\omega_9^2\omega_{12}^2\omega_6^2\omega_{13}^2\omega_{14}\omega_8 - 2\omega_9^2\omega_{12}\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2 + 2\omega_9^2\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2 + 3\omega_9^2\omega_{12}^2\omega_6^2v_1^2\omega_{13}\omega_8\omega_5^2 + \omega_9^3\omega_{12}^2\omega_6^2\omega_{13}^2\omega_5^2 - \omega_9^3\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_8\omega_5^2 +$$
$$2\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2 + \omega_9^3\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2 + \omega_9^3\omega_{12}^2\omega_6c_s^2\omega_{13}^2\omega_5^2 - 3\omega_9^3\omega_{12}\omega_6v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_5 + 3\omega_9^2\omega_{12}^2\omega_6^2v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2 -$$
$$2\omega_9^3\omega_{12}\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5 + \omega_9^3\omega_{12}^2\omega_6\omega_{14}\omega_8\omega_5^2 - 3\omega_9\omega_{12}^2\omega_6^2v_1^2\omega_{13}\omega_{14}\omega_8\omega_5^2 + 2\omega_9^2\omega_{12}^2\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5 + \omega_9^2\omega_{12}^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2 +$$
$$3\omega_9^3\omega_{12}^2\omega_6^2v_1^2\omega_{13}\omega_{14}\omega_8\omega_5 + \omega_9\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5 + \omega_9^3\omega_{12}\omega_6\omega_{13}^2\omega_{14}\omega_8\omega_5 - \omega_9^2\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_{14}\omega_8\omega_5 - 2\omega_9^2\omega_{12}^2\omega_6\omega_{13}^2\omega_{14}\omega_8\omega_5 +$$
$$\omega_9^2\omega_{12}^2\omega_6^2\omega_{13}^2\omega_{14}\omega_5 + \omega_9\omega_{12}^2\omega_6c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2 + 6\omega_9^3\omega_{12}^2\omega_6v_1^2\omega_{13}\omega_{14}\omega_8\omega_5^2 + \omega_9^2\omega_{12}^2\omega_6^2\omega_{14}\omega_8\omega_5^2 + \omega_9^2\omega_{12}\omega_6\omega_{13}^2\omega_{14}\omega_8\omega_5^2 + \omega_9^3\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_8\omega_5^2 -$$
$$3\omega_9^3\omega_{12}^2\omega_6^2v_1^2\omega_{13}^2\omega_5^2 + \omega_9\omega_{12}^2\omega_6^2\omega_{13}\omega_{14}\omega_8\omega_5^2 - 3\omega_9^3\omega_{12}^2\omega_6v_1^2\omega_{13}\omega_{14}\omega_8\omega_5 - 3\omega_9\omega_{12}\omega_6^2v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2 - \omega_9^2\omega_{12}\omega_6^2\omega_{13}^2\omega_8\omega_5^2 + 3\omega_9^3\omega_{12}^2\omega_6^2v_1^2\omega_{13}^2\omega_5 -$$
$$3\omega_9^3\omega_{12}^2\omega_6^2v_1^2\omega_{13}\omega_{14}\omega_8\omega_5^2 - 3\omega_9\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2 - \omega_9^3\omega_{12}\omega_6\omega_{13}^2\omega_{14}\omega_8\omega_5^2 + \omega_9^3\omega_{12}^2\omega_6\omega_{13}^2\omega_8\omega_5^2 + 3\omega_9^3\omega_{12}^2\omega_6v_1^2\omega_{13}\omega_8\omega_5^2 +$$
$$2\omega_9^2\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_{14}\omega_8\omega_5^2 - \omega_9^2\omega_{12}^2\omega_6^2\omega_{13}^2\omega_{14}\omega_5^2 + 2\omega_9^2\omega_{12}^2\omega_6\omega_{13}^2\omega_{14}\omega_8\omega_5^2 + \omega_9^2\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_8\omega_5^2 - \omega_9^3\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5 - 3\omega_9^3\omega_{12}^2\omega_6^2v_1^2\omega_{13}\omega_8\omega_5^2 -$$
$$6\omega_9^2\omega_{12}^2\omega_6^2v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_5 + \omega_9^3\omega_{12}\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2 + 3\omega_9^3\omega_{12}\omega_6v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2 - \omega_9^2\omega_{12}\omega_6c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2 - \omega_9^2\omega_{12}^2\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2 -$$
$$6\omega_9^2\omega_{12}^2\omega_6v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2 + 6\omega_9^3\omega_{12}\omega_6^2v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_5 + \omega_9^3\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5 + \omega_9^2\omega_{12}^2\omega_6^2\omega_{13}^2\omega_8\omega_5^2 - \omega_9^2\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2 - \omega_9^3\omega_{12}^2\omega_6^2\omega_{13}^2\omega_5$$

$$C_{33} = 4\omega_9^3\omega_{12}^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^3 + 2\omega_9^3\omega_{12}^2\omega_6c_s^2\omega_{13}^2\omega_7\omega_8\omega_5^3 + 2\omega_9\omega_{12}^2\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3 + 2\omega_9^3\omega_{12}^2\omega_6^2\omega_{13}\omega_7\omega_8^2\omega_5^3 + \omega_9^3\omega_{12}^2\omega_6v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2 +$$
$$\omega_9^3\omega_{12}^2\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^3 + 2\omega_9^2\omega_{12}\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3 - 2\omega_9^3\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8^2\omega_5 - 2\omega_9^2\omega_{12}\omega_6v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3 + 2\omega_9^2\omega_{12}^2\omega_6^2\omega_7\omega_{14}\omega_8^2\omega_5^3 +$$
$$2\omega_9^2\omega_{12}^2\omega_6^2v_1^2\omega_{13}\omega_7\omega_8^2\omega_5^3 + 3\omega_9^3\omega_{12}^2\omega_6v_1^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3 - 2\omega_9^3\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_7\omega_8^2\omega_5^3 - 6\omega_9^3\omega_{12}^2\omega_6c_s^2\omega_7\omega_{14}\omega_8^2\omega_5^3 + 2\omega_9^3\omega_{12}^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3 +$$
$$2\omega_9^2\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3 + 2\omega_9^3\omega_{12}\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3 - 2\omega_9^3\omega_{12}^2\omega_6c_s^2\omega_{13}^2\omega_{14}\omega_8^2\omega_5^2 + 6\omega_9\omega_{12}^2\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3 - 4\omega_9^2\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^3 +$$
$$15\omega_9^3\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5 - 8\omega_9^2\omega_{12}^2\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2 - \omega_9^3\omega_{12}^2\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^2 - \omega_9^3\omega_{12}^2\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5 -$$
$$2\omega_9^3\omega_{12}\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5 + 2\omega_9^3\omega_{12}^2\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_5^3 - 3\omega_9^3\omega_{12}^2\omega_6\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3 - 2\omega_9^2\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3 - 2\omega_9^3\omega_{12}^2\omega_6v_1^2\omega_{13}^2\omega_7\omega_8^2\omega_5^3 -$$
$$2\omega_9^3\omega_{12}\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2 + 5\omega_9\omega_{12}^2\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3 - 9\omega_9^2\omega_{12}^2\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3 + 4\omega_9^2\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^2 -$$
$$\omega_9^3\omega_{12}^2\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2 - 2\omega_9^3\omega_{12}^2\omega_6\omega_{13}\omega_7\omega_8^2\omega_5^3 + 6\omega_9^2\omega_{12}^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3 + 2\omega_9^3\omega_{12}^2\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^2 - 2\omega_9^3\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_5^3 -$$
$$2\omega_9\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3 + 2\omega_9^2\omega_{12}\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_8^2\omega_5^3 - 8\omega_9^3\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2 - 2\omega_9^2\omega_{12}^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3 - 2\omega_9^3\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_8^2\omega_5^3 +$$
$$2\omega_9^3\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_8\omega_5^2 - 2\omega_9\omega_{12}^2\omega_6^2v_1^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3 + \omega_9^3\omega_{12}^2\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3 - 2\omega_9^3\omega_{12}^2\omega_6\omega_{13}^2\omega_7\omega_8\omega_5^3 + 2\omega_9^3\omega_{12}^2\omega_6\omega_7\omega_{14}\omega_8^2\omega_5^3 -$$
$$2\omega_9\omega_{12}^2\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3 + 2\omega_9^3\omega_{12}^2\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_8^2\omega_5^3 + 4\omega_9^3\omega_{12}\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2 - 2\omega_9^3\omega_{12}^2\omega_6^2\omega_{13}^2\omega_7\omega_8\omega_5^2 + \omega_9^2\omega_{12}^2\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3 +$$

$\omega_9^3\omega_{12}^2\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2 + 2\omega_9^3\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2 - 4\omega_9^3\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2 - 2\omega_9^2\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_8^2\omega_5^3 + 12\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3 +$
$2\omega_9^3\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3 - 2\omega_9^3\omega_{12}^2\omega_6^2\omega_7\omega_{14}\omega_8^2\omega_5^3 + 3\omega_9^2\omega_{12}^2\omega_6^2v_1^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3 - 2\omega_9^3\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_8\omega_5^3 + 2\omega_9^3\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_8^2\omega_5^2 -$
$2\omega_9^2\omega_{12}^2\omega_6^2\omega_{13}\omega_7\omega_8^2\omega_5^3 - 8\omega_9^3\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2 - 4\omega_9^2\omega_{12}\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3 - 11\omega_9^3\omega_{12}^2\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^3 + 4\omega_9^2\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3 +$
$2\omega_9^3\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_5^2 - 2\omega_9^3\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2 - 3\omega_9^3\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3 - 2\omega_9^2\omega_{12}^2\omega_6^2v_1^2\omega_7\omega_{14}\omega_8^2\omega_5^3 - 4\omega_{12}^2\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3 -$
$2\omega_9^3\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3 + 2\omega_9^3\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8^2\omega_5^2 + 2\omega_9^3\omega_{12}^2\omega_6^2\omega_{13}^2\omega_7\omega_8\omega_5^3 - 2\omega_9^3\omega_{12}\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3 - 2\omega_9^3\omega_{12}^2\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_8^2\omega_5^2 -$
$5\omega_9\omega_{12}^2\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3 - 2\omega_9^3\omega_{12}^2v_1^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3 + 2\omega_9^3\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_7\omega_8^2\omega_5^3 + 6\omega_9^3\omega_{12}^2\omega_6^2c_s^2\omega_7\omega_{14}\omega_8^2\omega_5^3 + 2\omega_9^3\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_8^2\omega_5^3 -$
$2\omega_9^2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3 - 2\omega_9^2\omega_{12}^2\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_8^2\omega_5^3 - 2\omega_9^3\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5 - 13\omega_9^3\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^2 + 2\omega_9^2\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_8^2\omega_5^3 +$
$2\omega_9^2\omega_{12}^2v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3 - 3\omega_9^2\omega_{12}^2\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3 + 4\omega_9^3\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2 - 2\omega_9^2\omega_{12}\omega_6^2\omega_{13}^2\omega_7\omega_8^2\omega_5^3 - 3\omega_9^2\omega_{12}^2\omega_6v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3 -$
$4\omega_9^3\omega_{12}\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2 - \omega_9^3\omega_{12}^2\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^3 - 2\omega_9^3\omega_{12}^2\omega_6^2\omega_{13}^2\omega_7\omega_8^2\omega_5^3 - 2\omega_9^3\omega_{12}\omega_6v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2 + 2\omega_9^3\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2 +$
$2\omega_9^3\omega_{12}^2\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_8\omega_5^2 - 2\omega_9^3\omega_{12}\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_8^2\omega_5^3 - 6\omega_9^2\omega_{12}^2\omega_6^2c_s^2\omega_7\omega_{14}\omega_8^2\omega_5^3 - 2\omega_9^2\omega_{12}\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3 + 11\omega_9^3\omega_{12}^2\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2 -$
$4\omega_9^2\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5 - \omega_9^2\omega_{12}^2\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3 + 8\omega_9^3\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^3 + 2\omega_9^3\omega_{12}^2\omega_6v_1^2\omega_{13}\omega_7\omega_8^2\omega_5^3 + 2\omega_9^3\omega_{12}^2\omega_6^2v_1^2\omega_7\omega_{14}\omega_8^2\omega_5^3 +$
$2\omega_9^3\omega_{12}^2\omega_6\omega_{13}^2\omega_7\omega_8^2\omega_5^3 - 2\omega_9^3\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_8^2\omega_5^2 + \omega_9^3\omega_{12}^2\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^2 + \omega_9^3\omega_{12}^2\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5 + 2\omega_9^3\omega_{12}\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3 +$
$2\omega_9\omega_{12}^2\omega_6v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3 + 2\omega_9^3\omega_{12}\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_8^2\omega_5^2 - 2\omega_9^3\omega_{12}^2\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_8\omega_5^3 + 2\omega_9^3\omega_{12}\omega_6v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3 - 2\omega_9^3\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^3 +$
$2\omega_9^3\omega_{12}^2\omega_6^2\omega_{13}^2\omega_7\omega_8^2\omega_5^2 + 9\omega_9^3\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3 + 4\omega_9^2\omega_{12}\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3 + 3\omega_9^2\omega_{12}^2\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3 - \omega_9^3\omega_{12}^2\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2 -$
$\omega_9^3\omega_{12}^2\omega_6v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^3 + 2\omega_9^2\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_7\omega_8^2\omega_5^3 - 4\omega_9^3\omega_{12}^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2 + 9\omega_9^2\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3 - 2\omega_9^3\omega_{12}^2\omega_6^2v_1^2\omega_{13}\omega_7\omega_8^2\omega_5^3 -$
$2\omega_9^3\omega_{12}^2\omega_6v_1^2\omega_7\omega_{14}\omega_8^2\omega_5^3 + 4\omega_9^2\omega_{12}^2\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^3 - 4\omega_9^3\omega_{12}^2\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5 + 8\omega_9^2\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2 -$
$6\omega_9^3\omega_{12}^2c_s^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3 - 15\omega_9\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3 - 2\omega_9^3\omega_{12}\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3 + 2\omega_9^3\omega_{12}^2\omega_6c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^3 - 2\omega_9^3\omega_{12}\omega_6^2\omega_{13}^2\omega_7\omega_8^2\omega_5^2 +$
$2\omega_9^3\omega_{12}^2\omega_6v_1^2\omega_{13}^2\omega_7\omega_8\omega_5^3 - 2\omega_9^3\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3 - \omega_9^3\omega_{12}^2\omega_6^2v_1^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3 - 2\omega_9^3\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2 + 4\omega_9^2\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2 -$
$2\omega_9^3\omega_{12}^2\omega_6c_s^2\omega_{13}^2\omega_7\omega_8^2\omega_5^3 - 6\omega_9\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3 - 2\omega_9\omega_{12}\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3 + 2\omega_9^3\omega_{12}\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5 + 2\omega_9^2\omega_{12}^2\omega_6^2\omega_{13}^2\omega_7\omega_8^2\omega_5^3 +$
$4\omega_{12}^2\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3 + 2\omega_9^3\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3 + \omega_9^3\omega_{12}^2\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^3 + 2\omega_9^3\omega_{12}\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2 - 4\omega_9\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2 +$
$3\omega_9^2\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3 + 6\omega_9^3\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5 + 4\omega_9^3\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2 + 2\omega_9\omega_{12}\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3 + 2\omega_9^3\omega_{12}\omega_6^2\omega_{13}^2\omega_7\omega_8^2\omega_5^3$

$C_{34} = -6\omega_9\omega_{12}\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2 + 2\omega_9^3\omega_{12}^2\omega_6\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2 - 2\omega_9^3\omega_{12}\omega_6^3v_1^2\omega_{13}^2\omega_7\omega_8^2\omega_5^2 + 2\omega_9^2\omega_{12}^2\omega_6^3\omega_{13}^2\omega_7\omega_8^2\omega_5^2 - \omega_9^3\omega_{12}^2\omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^2 +$
$\omega_9^3\omega_{12}^2\omega_6v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2 - 2\omega_9^3\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8^2\omega_5 - 2\omega_9\omega_{12}^2\omega_6^3v_1^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2 + 2\omega_9^3\omega_{12}\omega_6^3\omega_{13}^2\omega_7\omega_8^2\omega_5^2 + 2\omega_9^2\omega_{12}\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_8^2\omega_5^2 -$
$4\omega_9^2\omega_{12}^2\omega_6^3\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2 - 2\omega_9^2\omega_{12}^2\omega_6^3v_1^2\omega_{13}^2\omega_7\omega_8^2\omega_5^2 + \omega_9^2\omega_{12}^2\omega_6^3v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2 + 2\omega_9^3\omega_{12}^2\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5 + 2\omega_9^3\omega_{12}^2\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_8^2\omega_5^2 +$
$2\omega_9^3\omega_{12}^2\omega_6^3\omega_{13}^2\omega_7\omega_8^2\omega_5 + 6\omega_9^3\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2 + 12\omega_{12}^2\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2 - 2\omega_9^3\omega_{12}^2\omega_6c_s^2\omega_{13}^2\omega_{14}\omega_8^2\omega_5^2 + 11\omega_9^3\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5 -$
$4\omega_9^2\omega_{12}^2\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2 - \omega_9^3\omega_{12}^2\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^2 - \omega_9^3\omega_{12}^2\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5 + 4\omega_9^2\omega_{12}^2\omega_6^3v_1^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2 - 2\omega_9^3\omega_{12}^2\omega_6^3v_1^2\omega_{13}^2\omega_7\omega_8\omega_5^2 -$
$2\omega_9^3\omega_{12}^2\omega_6^3c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2 + \omega_9^3\omega_{12}\omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2 - 2\omega_9^3\omega_{12}^2\omega_6^2\omega_{13}\omega_7\omega_8^2\omega_5^2 + 9\omega_9^2\omega_{12}\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2 - 2\omega_9^3\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5 +$
$6\omega_9^2\omega_{12}^2\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2 + 4\omega_9^2\omega_{12}^2\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5 - 2\omega_9^3\omega_{12}^2\omega_6^3c_s^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2 + 4\omega_9^2\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^2 +$
$2\omega_9^3\omega_{12}^2\omega_6^3v_1^2\omega_7\omega_{14}\omega_8^2\omega_5^2 - \omega_9^3\omega_{12}^2\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2 + 2\omega_9^3\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_7\omega_8^2\omega_5^2 - \omega_9^3\omega_{12}^2\omega_6^3v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5 - 2\omega_9^2\omega_{12}^2\omega_6^3c_s^2\omega_7\omega_{14}\omega_8^2\omega_5^2 -$
$6\omega_9^3\omega_{12}\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2 - 5\omega_9\omega_{12}^2\omega_6^3v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2 - 2\omega_9^3\omega_{12}^2\omega_6v_1^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2 - \omega_9^3\omega_{12}\omega_6^3v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2 -$
$\omega_9^2\omega_{12}^2\omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2 + 6\omega_9^3\omega_{12}^2\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^2 + 4\omega_9^2\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2 + 2\omega_9^3\omega_{12}^2\omega_6^3c_s^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5 -$
$4\omega_9^3\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2 + 3\omega_9^3\omega_{12}\omega_6^3v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5 + 2\omega_9^3\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_8\omega_5^2 + 2\omega_9\omega_{12}^2\omega_6^3v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5 + \omega_9^3\omega_{12}^2\omega_6^3v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^2 +$
$3\omega_9^2\omega_{12}^2\omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5 + 2\omega_9^3\omega_{12}^2\omega_6^2\omega_7\omega_{14}\omega_8^2\omega_5^2 - 2\omega_9^3\omega_{12}^2\omega_6^2c_s^2\omega_7\omega_{14}\omega_8^2\omega_5^2 - 2\omega_9^2\omega_{12}^2\omega_6^3v_1^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5 - 2\omega_9^3\omega_{12}^2\omega_6^2\omega_{13}^2\omega_7\omega_8\omega_5^2 +$
$\omega_9^3\omega_{12}^2\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2 - 2\omega_9^3\omega_{12}^2\omega_6^3v_1^2\omega_{13}\omega_7\omega_8^2\omega_5^2 - 3\omega_9^3\omega_{12}\omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5 + 2\omega_9^3\omega_{12}^2\omega_6^3c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5 + 2\omega_9^3\omega_{12}^2\omega_6^3v_1^2\omega_{13}^2\omega_7\omega_8\omega_5 -$
$4\omega_9^2\omega_{12}^2\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^2 + 2\omega_9^2\omega_{12}^2\omega_6^3c_s^2\omega_{13}\omega_7\omega_8^2\omega_5^2 + 4\omega_9^3\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2 + 2\omega_9\omega_{12}\omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2 - 2\omega_9^2\omega_{12}\omega_6^3\omega_{13}^2\omega_7\omega_8^2\omega_5^2 -$
$4\omega_9^3\omega_{12}^2\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2 - 3\omega_9^2\omega_{12}^2\omega_6^3v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5 - 2\omega_9^3\omega_{12}^2\omega_6^3\omega_{13}^2\omega_7\omega_8^2\omega_5^2 - 2\omega_9^3\omega_{12}^2\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_8^2\omega_5 - 8\omega_9^3\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2 -$
$6\omega_9^3\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5 + 2\omega_9^3\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_5^2 - 2\omega_9^2\omega_6^3v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2 + \omega_9^3\omega_{12}^2\omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5 + 2\omega_9^3\omega_{12}\omega_6^3v_1^2\omega_{13}^2\omega_7\omega_8^2\omega_5 +$
$2\omega_9^3\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8^2\omega_5^2 - 2\omega_9^3\omega_{12}^2\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_8^2\omega_5^2 + 2\omega_9^2\omega_{12}^2\omega_6^3\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5 - 2\omega_9^3\omega_{12}\omega_6^3\omega_{13}^2\omega_7\omega_8^2\omega_5 + 2\omega_9^2\omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2 -$
$2\omega_9^3\omega_{12}^2\omega_6^3c_s^2\omega_{13}\omega_7\omega_8^2\omega_5^2 + 4\omega_9^3\omega_{12}^2\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8 - 2\omega_9^3\omega_{12}^2\omega_6^2v_1^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5 + 3\omega_9^2\omega_{12}\omega_6^3v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2 - 2\omega_9^3\omega_{12}^2\omega_6^2v_1^2\omega_7\omega_{14}\omega_8^2\omega_5^2 +$
$4\omega_9^2\omega_{12}^2\omega_6^3c_s^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2 + 4\omega_9^3\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5 - 13\omega_9^3\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^2 + 2\omega_9^2\omega_{12}^2\omega_6^3v_1^2\omega_{13}\omega_7\omega_8^2\omega_5^2 +$
$2\omega_9^3\omega_{12}^2\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_8\omega_5 + 2\omega_9^3\omega_{12}^2\omega_6^3\omega_{13}^2\omega_7\omega_8\omega_5^2 - 3\omega_9^3\omega_{12}\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2 - 2\omega_9^3\omega_{12}^2\omega_6^3\omega_7\omega_{14}\omega_8^2\omega_5^2 - 2\omega_9^3\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2 -$
$15\omega_9\omega_{12}^2\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2 - 11\omega_9^3\omega_{12}^2\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5 + 2\omega_9\omega_{12}^2\omega_6^3\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2 + 2\omega_9^3\omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5 +$
$2\omega_9^3\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2 + 2\omega_9^3\omega_{12}^2\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_8\omega_5^2 - 2\omega_9^2\omega_{12}^2\omega_6^3\omega_{13}\omega_7\omega_8^2\omega_5^2 - 2\omega_9^3\omega_{12}^2\omega_6^3v_1^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2 - 2\omega_9^3\omega_{12}^2\omega_6^3\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5 +$
$2\omega_9^3\omega_{12}\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_8^2\omega_5 - 2\omega_9\omega_{12}^2\omega_6^3c_s^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2 + 15\omega_9^3\omega_{12}^2\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2 - 8\omega_9^2\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5 +$
$5\omega_9\omega_{12}^2\omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2 + 2\omega_9^3\omega_{12}^2\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_5 - 2\omega_9^3\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_8^2\omega_5^2 - 2\omega_9\omega_{12}\omega_6^3v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2 + \omega_9^3\omega_{12}^2\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^2 +$
$\omega_9^3\omega_{12}^2\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5 + 2\omega_9^3\omega_6^3v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2 + 4\omega_{12}^2\omega_6^3v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2 + 2\omega_9^3\omega_{12}^2\omega_6^2\omega_{13}^2\omega_7\omega_8^2\omega_5^2 + 3\omega_9^2\omega_{12}^2\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2 -$
$2\omega_9^3\omega_{12}^2\omega_6^3v_1^2\omega_{13}^2\omega_7\omega_8^2\omega_5 - 2\omega_9^3\omega_6^3v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5 - 6\omega_9^2\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2 - \omega_9^3\omega_{12}^2\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2 - 2\omega_9^2\omega_{12}^2\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_8^2\omega_5^2 -$
$9\omega_9^2\omega_{12}^2\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5 - 8\omega_9^3\omega_{12}^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2 + 2\omega_9^3\omega_{12}^2\omega_6^3v_1^2\omega_{13}^2\omega_7\omega_8^2\omega_5^2 - 2\omega_9^3\omega_{12}\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_8^2\omega_5^2 + 2\omega_9^3\omega_{12}^2\omega_6^3\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2 -$
$4\omega_9^3\omega_{12}^2\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5 + 8\omega_9^2\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2 - 2\omega_9\omega_{12}^2\omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5 - 2\omega_9^3\omega_{12}^2\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_5^2 +$
$2\omega_9^2\omega_{12}\omega_6^3v_1^2\omega_{13}^2\omega_7\omega_8^2\omega_5^2 + 2\omega_9^3\omega_{12}^2\omega_6^2v_1^2\omega_{13}\omega_7\omega_8^2\omega_5^2 + 8\omega_9^3\omega_{12}^2\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^2 + 2\omega_9^3\omega_{12}^2\omega_6^3c_s^2\omega_7\omega_{14}\omega_8^2\omega_5^2 + 6\omega_9\omega_{12}^2\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5 +$
$2\omega_9^3\omega_{12}\omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8^2 + 9\omega_9^3\omega_{12}\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5 + 2\omega_9^3\omega_{12}^2\omega_6^3v_1^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5 - 2\omega_9^2\omega_{12}^2\omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8^2 - 4\omega_{12}^2\omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2 -$
$2\omega_9^3\omega_{12}\omega_6^3v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2 - 2\omega_9^3\omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2 - 2\omega_9^2\omega_{12}^2\omega_6^3v_1^2\omega_7\omega_{14}\omega_8^2\omega_5^2 + 2\omega_9^3\omega_{12}^2\omega_6^3\omega_{13}\omega_7\omega_8^2\omega_5^2 + 4\omega_9^3\omega_{12}^2\omega_6^2v_1^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2 -$
$3\omega_9^2\omega_{12}\omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2 - 4\omega_9\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2 + 2\omega_9^3\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5 + 2\omega_9^2\omega_{12}^2\omega_6^3v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2 -$
$4\omega_9^3\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2 + 2\omega_9^2\omega_{12}^2\omega_6^3\omega_7\omega_{14}\omega_8^2\omega_5^2 - 2\omega_9^2\omega_{12}^2\omega_6^3c_s^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5 - 2\omega_9^3\omega_{12}^2\omega_6^3\omega_{13}^2\omega_7\omega_8\omega_5 - 2\omega_9^3\omega_{12}^2\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_8\omega_5^2$

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

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

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

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

$C_{38} = 12\omega_{15}\omega_9\omega_{12}\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^3 - 24\omega_{15}\omega_9\omega_{12}\omega_6^3v_1^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5 + 10\omega_{15}\omega_9\omega_{12}\omega_6^3c_s^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5^3 +$
$12\omega_{15}\omega_9\omega_{12}\omega_6^2v_1^2\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5^3 + 12\omega_{15}\omega_9\omega_{12}\omega_6^3c_s^2\omega_{13}\omega_7^2\omega_{17}\omega_8^2\omega_5^2 - 2\omega_{15}\omega_9\omega_{12}\omega_6^3c_s^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2 +$
$12\omega_{15}\omega_9\omega_{12}\omega_6^3v_1^2\omega_{13}\omega_{17}\omega_{14}\omega_8^2\omega_5^3 - 12\omega_{15}\omega_9\omega_{12}\omega_6^2v_1^2\omega_{13}\omega_7^2\omega_{17}\omega_8\omega_5^3 - 24\omega_{15}\omega_{12}\omega_6^3v_1^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5^2 -$
$24\omega_{15}\omega_9\omega_{12}\omega_6v_1^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5^3 + 12\omega_{15}\omega_9\omega_{12}\omega_6^2v_2^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^2 + 12\omega_{15}\omega_{12}\omega_6^3v_1^2\omega_{13}\omega_7^2\omega_{17}\omega_8^2\omega_5^3 +$
$6\omega_{15}\omega_9\omega_{12}\omega_6^2v_2^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^3 - 12\omega_{15}\omega_6^3v_1^2\omega_{13}\omega_7^2\omega_{17}\omega_8^2\omega_5^3 - 18\omega_{15}\omega_9\omega_{12}\omega_6^3c_s^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5^2 - 24\omega_{15}\omega_9\omega_{12}\omega_6^2v_2^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^3 -$
$12\omega_{15}\omega_9\omega_{12}\omega_6^2v_1^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3 - 12\omega_{15}\omega_9\omega_{12}\omega_6^3v_1^2\omega_{13}\omega_{17}\omega_{14}\omega_8^2\omega_5^2 + 12\omega_{15}\omega_{12}\omega_6^3v_1^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5^3 - \omega_{15}\omega_9\omega_{12}\omega_6^3c_s^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3 +$
$6\omega_{15}\omega_9\omega_{12}\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^3 + 24\omega_{15}\omega_{12}\omega_6^2v_1^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^3 + 12\omega_{15}\omega_9\omega_{12}\omega_6^2v_1^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_5^3 - 12\omega_{15}\omega_9\omega_{12}\omega_6^3c_s^2\omega_{13}\omega_7^2\omega_{17}\omega_8^2\omega_5^3 +$
$12\omega_{15}\omega_6^3v_1^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5^3 + 18\omega_{15}\omega_9\omega_{12}\omega_6v_2^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3 - 6\omega_9\omega_{12}\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3 + 12\omega_{15}\omega_9\omega_{12}\omega_6c_s^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5^3 -$
$6\omega_{15}\omega_9\omega_{12}\omega_6^3v_2^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^3 - 12\omega_{15}\omega_9\omega_{12}\omega_6^3v_1^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_5^3 + 12\omega_{15}\omega_9\omega_{12}\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_{17}\omega_8^2\omega_5^3 + 12\omega_{15}\omega_9\omega_6^3c_s^2\omega_{13}\omega_7^2\omega_{17}\omega_8^2\omega_5^3 +$
$12\omega_{15}\omega_9\omega_{12}\omega_6^3c_s^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3 - 6\omega_{15}\omega_9\omega_{12}\omega_6^3c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^3 + 12\omega_{15}\omega_9\omega_{12}\omega_6^3c_s^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5 -$
$18\omega_{15}\omega_9\omega_{12}\omega_6^3v_1^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5^3 - 12\omega_{15}\omega_9\omega_{12}\omega_6^3v_1^2\omega_{13}\omega_7^2\omega_{17}\omega_8\omega_5^2 + 12\omega_9\omega_{12}\omega_6^2v_2^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2 - 12\omega_{15}\omega_{12}\omega_6^3v_1^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3 -$
$48\omega_{15}\omega_9\omega_{12}\omega_6^2v_1^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^3 + 12\omega_{15}\omega_9\omega_{12}\omega_6^3v_2^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2 + 12\omega_{15}\omega_{12}\omega_6^3c_s^2\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5^3 + 12\omega_{15}\omega_6^3c_s^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5^3 +$
$24\omega_{15}\omega_9\omega_{12}\omega_6^3c_s^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5 - 12\omega_{15}\omega_{12}\omega_6^3c_s^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5^3 + 12\omega_9\omega_{12}\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2 +$
$12\omega_{15}\omega_9\omega_{12}\omega_6^2v_1^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8\omega_5^3 - 12\omega_{15}\omega_9\omega_{12}\omega_6v_2^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2 - 6\omega_{15}\omega_9\omega_{12}\omega_6c_s^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3 -$
$6\omega_9\omega_{12}\omega_6^2v_2^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3 - 12\omega_{15}\omega_9\omega_{12}\omega_6^2v_1^2\omega_{13}\omega_{17}\omega_{14}\omega_8^2\omega_5^3 + 12\omega_{15}\omega_9\omega_{12}\omega_6^3v_1^2\omega_{13}\omega_7^2\omega_{17}\omega_8\omega_5^3 + 12\omega_{15}\omega_9\omega_{12}\omega_6^3c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2 +$
$36\omega_{15}\omega_9\omega_{12}\omega_6^3v_1^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5^2 + 12\omega_{15}\omega_9\omega_{12}\omega_6^3v_1^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_5^2 - 12\omega_{15}\omega_9\omega_6^3c_s^2\omega_{13}\omega_7^2\omega_{17}\omega_8^2\omega_5^2 - 12\omega_{15}\omega_9\omega_{12}\omega_6^3v_1^2\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5^3 +$
$30\omega_{15}\omega_9\omega_{12}\omega_6^3v_1^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^3 + 12\omega_{15}\omega_9\omega_{12}\omega_6^3v_1^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3 + 6\omega_9\omega_{12}\omega_6^3c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^3 - 12\omega_{15}\omega_9\omega_{12}\omega_6^3v_2^2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5^2 -$
$24\omega_{15}\omega_9\omega_{12}\omega_6^2v_2^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5 + 12\omega_{15}\omega_9\omega_{12}\omega_6^2v_2^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_5^3 - 12\omega_{15}\omega_6^3c_s^2\omega_{13}\omega_7^2\omega_{17}\omega_8^2\omega_5^3 - 12\omega_{15}\omega_{12}\omega_6^3c_s^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3 +$
$36\omega_{15}\omega_9\omega_{12}\omega_6^2v_1^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5^3 + 12\omega_{15}\omega_{12}\omega_6^3c_s^2\omega_{13}\omega_7^2\omega_{17}\omega_8^2\omega_5^3 - 12\omega_{15}\omega_9\omega_6^3v_1^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5^3 - 12\omega_{15}\omega_9\omega_{12}\omega_6^3v_1^2\omega_{13}\omega_7^2\omega_{17}\omega_8^2\omega_5^3 +$
$12\omega_{15}\omega_9\omega_{12}\omega_6^3v_1^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8\omega_5^2 + 6\omega_9\omega_{12}\omega_6^3v_2^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^3 - 12\omega_{15}\omega_9\omega_{12}\omega_6^3c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5^2 + 12\omega_{15}\omega_9\omega_6^3v_1^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5^2 +$
$12\omega_{15}\omega_9\omega_{12}\omega_6v_2^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^3 + 12\omega_{15}\omega_9\omega_{12}\omega_6^3v_2^2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5^3 - 12\omega_9\omega_{12}\omega_6^3c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2 - 48\omega_{15}\omega_9\omega_{12}\omega_6^3v_1^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^2 -$
$12\omega_{15}\omega_9\omega_{12}\omega_6^3v_1^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8\omega_5^3 + 24\omega_{15}\omega_9\omega_{12}\omega_6^3v_2^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5 + 12\omega_{15}\omega_9\omega_{12}\omega_6^3c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5^3 - 12\omega_9\omega_{12}\omega_6^3v_2^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2 -$
$12\omega_{15}\omega_9\omega_{12}\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_{17}\omega_8\omega_5^3 + 12\omega_{15}\omega_9\omega_{12}\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5 + 12\omega_{15}\omega_9\omega_{12}\omega_6^3v_1^2\omega_{13}\omega_7^2\omega_{17}\omega_8^2\omega_5^2 + 12\omega_{15}\omega_9\omega_{12}\omega_6^2c_s^2\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5^3 -$
$36\omega_{15}\omega_9\omega_{12}\omega_6^3v_2^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^2 - 12\omega_{15}\omega_9\omega_{12}\omega_6^2v_2^2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5^3 + 24\omega_{15}\omega_9\omega_{12}\omega_6v_1^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^3 +$
$12\omega_{15}\omega_9\omega_{12}\omega_6^3v_2^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_5^2 - 18\omega_{15}\omega_9\omega_{12}\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2 + 24\omega_{15}\omega_{12}\omega_6^3v_1^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^2 +$
$12\omega_{15}\omega_{12}\omega_6^3v_1^2\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5^3 - 12\omega_{15}\omega_9\omega_6^3v_1^2\omega_{13}\omega_7^2\omega_{17}\omega_8^2\omega_5^2 - 12\omega_{15}\omega_9\omega_{12}\omega_6^3c_s^2\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5^3 - 12\omega_{15}\omega_9\omega_6^3c_s^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5^3 -$
$18\omega_{15}\omega_9\omega_{12}\omega_6^2c_s^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5^3 - 6\omega_{15}\omega_9\omega_{12}\omega_6^2v_2^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3 + 12\omega_{15}\omega_9\omega_{12}\omega_6^3c_s^2\omega_{13}\omega_7^2\omega_{17}\omega_8\omega_5^3 -$
$12\omega_{15}\omega_9\omega_{12}\omega_6^3c_s^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^3 + 24\omega_{15}\omega_9\omega_{12}\omega_6^3v_1^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5 - 12\omega_{15}\omega_9\omega_{12}\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5^3 -$
$24\omega_{15}\omega_{12}\omega_6^3v_1^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^3 - 12\omega_{15}\omega_9\omega_{12}\omega_6^2c_s^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3 + 6\omega_{15}\omega_9\omega_{12}\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3 - 12\omega_{15}\omega_9\omega_{12}\omega_6^3v_2^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_5^3 -$
$12\omega_{15}\omega_9\omega_{12}v_2^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3 - 24\omega_{15}\omega_{12}\omega_6^2v_1^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5^3 + 12\omega_{15}\omega_9\omega_{12}\omega_6^3v_2^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^3 +$
$12\omega_{15}\omega_9\omega_{12}\omega_6^3c_s^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^2 - 12\omega_{15}\omega_9\omega_{12}\omega_6^3c_s^2\omega_{13}\omega_7^2\omega_{17}\omega_8\omega_5^2 - 24\omega_{15}\omega_9\omega_{12}\omega_6^3c_s^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2 +$
$24\omega_{15}\omega_9\omega_{12}\omega_6^2v_2^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2 + 12\omega_{15}\omega_9\omega_6^3c_s^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5^2 + 12\omega_{15}\omega_9\omega_6^3v_1^2\omega_{13}\omega_7^2\omega_{17}\omega_8^2\omega_5^3 + 12\omega_{15}\omega_9\omega_{12}\omega_6^2v_1^2\omega_{13}\omega_7^2\omega_{17}\omega_8^2\omega_5^3$

$C_{39} = 12\omega_{15}\omega_6c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5 + 4\omega_{15}^2\omega_6\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_5 + 8\omega_{15}\omega_6\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8\omega_5 + 2\omega_{15}^2\omega_6\omega_{10}v_2^2\omega_7\omega_{17}\omega_8\omega_5^2 -$
$9\omega_{15}^2\omega_6c_s^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2 - 4\omega_{15}^2\omega_{10}^2v_2^2\omega_{17}\omega_8\omega_5^2 + 2\omega_{15}^2\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8\omega_5^2 + 2\omega_{15}\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8\omega_5^2 + 12\omega_{15}^2\omega_6c_s^2\omega_{10}^2\omega_{17}\omega_8\omega_5^2 +$
$4\omega_{15}^2\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5 - 12\omega_6c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5 + 4\omega_{15}^2\omega_{10}^2\omega_{17}\omega_8\omega_5^2 + 2\omega_{15}\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2 + 4\omega_{15}^2\omega_6\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8\omega_5 +$
$4\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5 + 2\omega_{15}^2\omega_6\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_8\omega_5^2 - 6\omega_{15}^2\omega_6c_s^2\omega_{16}\omega_7\omega_{17}\omega_8\omega_5^2 - 4\omega_{15}^2\omega_6\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_5^2 + 4\omega_{15}^2\omega_6\omega_{16}v_2^2\omega_7\omega_{17}\omega_8\omega_5 -$
$2\omega_{15}^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2 - 4\omega_{15}^2\omega_6\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8 - 2\omega_{15}\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2 + 12\omega_{15}^2\omega_6c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_5 - 4\omega_{15}^2\omega_6\omega_{16}\omega_{10}\omega_{17}\omega_8\omega_5 +$
$12\omega_{15}^2c_s^2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5 + 6\omega_{15}^2\omega_6c_s^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2 + 3\omega_{15}^2\omega_6\omega_{16}\omega_{10}v_2^2\omega_7\omega_{17}\omega_8\omega_5^2 - 12\omega_{15}^2\omega_6c_s^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5 -$
$6\omega_{15}^2c_s^2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2 - 8\omega_{15}^2\omega_6\omega_{16}\omega_{10}v_2^2\omega_7\omega_{17}\omega_8\omega_5 - 4\omega_{15}\omega_6\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8 - 4\omega_{15}^2\omega_{16}\omega_{10}^2\omega_7\omega_5^2 - 2\omega_{15}^2\omega_6\omega_{16}v_2^2\omega_7\omega_{17}\omega_8\omega_5^2 +$
$4\omega_{15}^2\omega_6\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_5 - 12\omega_{15}^2\omega_6c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_5^2 + 4\omega_{15}\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5 + 4\omega_{15}^2\omega_6\omega_{16}\omega_{10}\omega_{17}\omega_8\omega_5^2 - 8\omega_{15}\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5 -$
$3\omega_{15}^2\omega_6\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8\omega_5^2 + 6\omega_{15}^2c_s^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2 - 4\omega_{15}^2\omega_6\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_8\omega_5 - 2\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2 + 12\omega_{15}^2\omega_6c_s^2\omega_{16}\omega_7\omega_{17}\omega_8\omega_5 -$
$2\omega_{15}\omega_6\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8\omega_5^2 - 2\omega_{15}^2\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_8\omega_5^2 - 4\omega_{15}^2\omega_6\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_5^2 - 6\omega_{15}\omega_6c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5^2 - 4\omega_{15}\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8\omega_5 -$
$12\omega_{15}^2\omega_6c_s^2\omega_{10}^2\omega_{17}\omega_8\omega_5 - 4\omega_{15}^2\omega_6\omega_{10}v_2^2\omega_7\omega_{17}\omega_8\omega_5 + 12\omega_{15}^2\omega_6c_s^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5 + 4\omega_{15}\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8 - 2\omega_{15}^2\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5^2 +$
$6\omega_6c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2 - 2\omega_{15}\omega_6\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_8\omega_5^2 - 6\omega_{15}^2c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5^2 + 2\omega_{15}^2\omega_6\omega_{16}\omega_7\omega_{17}\omega_8\omega_5^2 + 4\omega_{15}^2\omega_{16}\omega_{10}v_2^2\omega_7\omega_{17}\omega_8\omega_5 -$
$12\omega_{15}^2c_s^2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_5^2 + 9\omega_{15}^2\omega_6c_s^2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2 - 12\omega_{15}c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5 + 4\omega_{15}^2\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_5^2 - 6\omega_{15}\omega_6c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2 +$
$4\omega_{15}^2\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_5^2 - 12\omega_{15}^2\omega_6c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5 + 2\omega_6\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8\omega_5^2 - 4\omega_{15}^2\omega_6\omega_{16}\omega_{10}v_2^2\omega_{17}\omega_8\omega_5^2 + 3\omega_{15}^2\omega_6\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2 -$
$12\omega_{15}^2\omega_6c_s^2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_5 - 4\omega_{15}^2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5 + 12\omega_{15}^2c_s^2\omega_{16}\omega_{10}\omega_{17}\omega_8\omega_5^2 - 2\omega_{15}^2\omega_6\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2 + 2\omega_{15}\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5^2 +$
$12\omega_{15}^2\omega_6c_s^2\omega_{16}\omega_{10}\omega_{17}\omega_8\omega_5 - 12\omega_{15}^2c_s^2\omega_{10}^2\omega_{17}\omega_8\omega_5^2 + 4\omega_{15}^2\omega_6\omega_{10}^2v_2^2\omega_{17}\omega_8\omega_5^2 + 4\omega_{15}^2\omega_6\omega_{16}\omega_{10}v_2^2\omega_7\omega_{17}\omega_5^2 + 12\omega_{15}^2\omega_6c_s^2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8 -$
$3\omega_{15}^2\omega_6\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2 - 12\omega_{15}\omega_6c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8 + 4\omega_{15}^2\omega_6\omega_{10}^2\omega_{17}\omega_8\omega_5 - 12\omega_{15}^2\omega_6c_s^2\omega_{16}\omega_{10}\omega_{17}\omega_8\omega_5^2 + 4\omega_{15}^2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_5^2 -$
$4\omega_{15}\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5 + 8\omega_{15}^2\omega_6\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5 - 4\omega_{15}^2\omega_6\omega_{16}\omega_{10}v_2^2\omega_7\omega_{17}\omega_5 - 4\omega_{15}^2\omega_6\omega_{10}^2v_2^2\omega_{17}\omega_8\omega_5 - 4\omega_{15}^2\omega_6\omega_{10}^2\omega_{17}\omega_8\omega_5^2 +$
$2\omega_{15}^2\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5^2 - 4\omega_{15}^2\omega_{16}\omega_{10}v_2^2\omega_7\omega_{17}\omega_5^2 + 2\omega_{15}^2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2 + 4\omega_{15}^2\omega_6\omega_{10}\omega_7\omega_{17}\omega_8\omega_5 + 6\omega_{15}c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2 -$
$4\omega_{15}^2\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_5 + 6\omega_{15}^2\omega_6c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5^2 + 24\omega_{15}\omega_6c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5 - 4\omega_{15}^2\omega_6\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5 - 4\omega_6\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8\omega_5 +$

$$4\omega_{15}^2\omega_6\omega_{16}\omega_{10}v_2^2\omega_{17}\omega_8\omega_5 + 12\omega_{15}^2c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_5^2 - 4\omega_{15}^2\omega_{16}\omega_{10}\omega_{17}\omega_8\omega_5^2 + 4\omega_{15}^2\omega_6\omega_{16}\omega_{10}v_2^2\omega_7\omega_{17}\omega_8 + 12\omega_{15}^2\omega_6c_s^2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_5^2 -$$
$$4\omega_{15}^2\omega_6\omega_{16}\omega_7\omega_{17}\omega_8\omega_5 + 4\omega_{15}\omega_6\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_8\omega_5 - 2\omega_{15}^2\omega_{16}\omega_{10}v_2^2\omega_7\omega_{17}\omega_8\omega_5^2 - 24\omega_{15}^2\omega_6c_s^2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5 + 4\omega_{15}^2\omega_{16}\omega_{10}v_2^2\omega_{17}\omega_8\omega_5^2$$

$$C_{40} = \omega_{15}^2\omega_6^2v_2^2\omega_{17}\omega_8^2\omega_5 + 2\omega_{15}^2\omega_6c_s^2\omega_8\omega_5^3 - \omega_{15}\omega_6^2v_2^2\omega_8^2\omega_5^3 - 7\omega_{15}^2\omega_6c_s^2\omega_{17}\omega_8\omega_5^3 - 8\omega_{15}^2\omega_6^2c_s^2\omega_{17}\omega_8^2 + \omega_{15}\omega_6v_2^2\omega_{17}\omega_8^2\omega_5^3 - 2\omega_{15}^2\omega_6^2c_s^2\omega_{17}\omega_5^3 -$$
$$4\omega_{15}\omega_6^2\omega_{17}\omega_8^2\omega_5^2 - 2\omega_6^2v_2^2\omega_{17}\omega_8^2\omega_5^2 + 4\omega_{15}\omega_6^2v_2^2\omega_{17}\omega_8^2\omega_5^2 - 11\omega_{15}^2\omega_6^2c_s^2\omega_{17}\omega_8\omega_5^2 - 2\omega_{15}^2\omega_6^2v_2^2\omega_8^2\omega_5^2 - 2\omega_{15}^2c_s^2\omega_{17}\omega_8^2\omega_5^2 - \omega_{15}^2\omega_6^2\omega_8^2\omega_5^3 -$$
$$2\omega_{15}\omega_6v_2^2\omega_{17}\omega_8^2\omega_5^2 + 2\omega_{15}^2\omega_6^2c_s^2\omega_{17}\omega_5^2 + \omega_{15}\omega_6^2\omega_{17}\omega_8^2\omega_5^3 + \omega_6^2v_2^2\omega_{17}\omega_8^2\omega_5^3 + 4\omega_{15}^2\omega_6c_s^2\omega_{17}\omega_8\omega_5^2 + 2\omega_{15}\omega_6^2v_2^2\omega_8^2\omega_5^2 + 2\omega_{15}^2\omega_6^2\omega_8^2\omega_5^2 -$$
$$2\omega_{15}^2\omega_6\omega_8\omega_5^3 + \omega_{15}^2\omega_6^2v_2^2\omega_8^2\omega_5^3 + 5\omega_{15}^2\omega_6^2c_s^2\omega_{17}\omega_8\omega_5^3 + \omega_{15}^2\omega_6^2\omega_{17}\omega_8^2\omega_5^2 - \omega_{15}\omega_6^2v_2^2\omega_{17}\omega_8^2\omega_5^3 + \omega_{15}^2\omega_6v_2^2\omega_{17}\omega_8^2\omega_5^2 + 2\omega_{15}^2\omega_6v_2^2\omega_8\omega_5^3 -$$
$$\omega_{15}\omega_6^2c_s^2\omega_8^2\omega_5^3 - \omega_{15}^2\omega_6^2\omega_{17}\omega_8^2\omega_5 - 2\omega_{15}^2\omega_6^2c_s^2\omega_8^2\omega_5^2 - 2\omega_{15}\omega_6^2v_2^2\omega_{17}\omega_8^2\omega_5 + 6\omega_{15}^2\omega_6^2c_s^2\omega_{17}\omega_8\omega_5 + 2\omega_{15}\omega_6^2c_s^2\omega_8^2\omega_5^2 + \omega_{15}^2\omega_6\omega_{17}\omega_8\omega_5^3 -$$
$$\omega_{15}^2\omega_6^2v_2^2\omega_{17}\omega_8^2\omega_5^2 + \omega_{15}^2\omega_6^2c_s^2\omega_8^2\omega_5^3 + 2\omega_{15}\omega_6^2\omega_{17}\omega_8^2\omega_5 + 2\omega_6^2\omega_{17}\omega_8^2\omega_5^2 + 13\omega_{15}^2\omega_6^2c_s^2\omega_{17}\omega_8^2\omega_5 + \omega_{15}\omega_6^2\omega_8^2\omega_5^3 - 2\omega_6^2c_s^2\omega_{17}\omega_8^2\omega_5^2 +$$
$$\omega_{15}\omega_6c_s^2\omega_{17}\omega_8^2\omega_5^3 - \omega_{15}^2\omega_6v_2^2\omega_{17}\omega_8\omega_5^3 - \omega_{15}^2\omega_6^2v_2^2\omega_{17}\omega_8\omega_5^2 + 2\omega_{15}^2\omega_6c_s^2\omega_{17}\omega_5^3 + 4\omega_{15}\omega_6^2c_s^2\omega_{17}\omega_8^2\omega_5^2 + 2\omega_{15}\omega_6\omega_{17}\omega_8^2\omega_5^2 - 2\omega_{15}^2\omega_6^2c_s^2\omega_8\omega_5^3 -$$
$$\omega_{15}^2\omega_6v_2^2\omega_8^2\omega_5^3 - \omega_{15}^2\omega_6\omega_{17}\omega_8^2\omega_5^2 + \omega_6^2c_s^2\omega_{17}\omega_8^2\omega_5^3 - 2\omega_{15}\omega_6c_s^2\omega_{17}\omega_8^2\omega_5^2 - 2\omega_{15}\omega_6^2\omega_8^2\omega_5^2 - \omega_6^2\omega_{17}\omega_8^2\omega_5^3 - 6\omega_{15}^2\omega_6c_s^2\omega_{17}\omega_8^2\omega_5 + 2\omega_{15}^2\omega_6^2c_s^2\omega_8\omega_5^2 -$$
$$\omega_{15}\omega_6^2c_s^2\omega_{17}\omega_8^2\omega_5^3 - \omega_{15}\omega_6\omega_{17}\omega_8^2\omega_5^3 + \omega_{15}^2\omega_6^2v_2^2\omega_{17}\omega_8\omega_5^3 + 7\omega_{15}^2\omega_6c_s^2\omega_{17}\omega_8^2\omega_5^2 + 2\omega_{15}^2c_s^2\omega_{17}\omega_8\omega_5^3 + \omega_{15}^2\omega_6\omega_8^2\omega_5^3 - 2\omega_{15}^2\omega_6^2\omega_8\omega_5^2 +$$
$$\omega_{15}^2\omega_6^2\omega_{17}\omega_8\omega_5^2 - 2\omega_{15}^2\omega_6^2v_2^2\omega_8\omega_5^3 - \omega_{15}^2\omega_6c_s^2\omega_8^2\omega_5^3 - 2\omega_{15}\omega_6^2c_s^2\omega_{17}\omega_8^2\omega_5 + 2\omega_{15}^2\omega_6^2v_2^2\omega_8^2\omega_5^2 - 5\omega_{15}^2\omega_6^2c_s^2\omega_{17}\omega_8^2\omega_5^2 - \omega_{15}^2\omega_6^2\omega_{17}\omega_8\omega_5^3 + 2\omega_{15}^2\omega_6^2\omega_8\omega_5^3$$

$$C_{41} = 4\omega_{15}\omega_6c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5 + 4\omega_{15}^2\omega_6\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_5 + 24\omega_{15}\omega_6\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8\omega_5 + 6\omega_{15}^2\omega_6\omega_{10}v_2^2\omega_7\omega_{17}\omega_8\omega_5^2 -$$
$$3\omega_{15}^2\omega_6c_s^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2 - 12\omega_{15}^2\omega_{10}^2v_2^2\omega_{17}\omega_8\omega_5^2 + 6\omega_{15}^2\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8\omega_5^2 + 6\omega_{15}\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8\omega_5^2 + 4\omega_{15}^2\omega_6c_s^2\omega_{10}^2\omega_{17}\omega_8\omega_5^2 +$$
$$4\omega_{15}^2\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5 - 4\omega_6c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5 + 4\omega_{15}^2\omega_{10}^2\omega_{17}\omega_8\omega_5^2 + 2\omega_{15}\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2 + 12\omega_{15}^2\omega_6\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8\omega_5 +$$
$$4\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5 + 6\omega_{15}^2\omega_6\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_8\omega_5^2 - 2\omega_{15}^2\omega_6c_s^2\omega_{16}\omega_7\omega_{17}\omega_8\omega_5^2 - 12\omega_{15}^2\omega_6\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_5^2 + 12\omega_{15}^2\omega_6\omega_{16}v_2^2\omega_7\omega_{17}\omega_8\omega_5 -$$
$$2\omega_{15}^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2 - 4\omega_{15}^2\omega_6\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8 - 2\omega_{15}\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2 + 4\omega_{15}^2\omega_6c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_5 - 4\omega_{15}^2\omega_6\omega_{16}\omega_{10}\omega_{17}\omega_8\omega_5 +$$
$$4\omega_{15}^2c_s^2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5 + 2\omega_{15}^2\omega_6c_s^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2 + 9\omega_{15}^2\omega_6\omega_{16}\omega_{10}v_2^2\omega_7\omega_{17}\omega_8\omega_5^2 - 4\omega_{15}^2\omega_6c_s^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5 -$$
$$2\omega_{15}^2c_s^2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2 - 24\omega_{15}^2\omega_6\omega_{16}\omega_{10}v_2^2\omega_7\omega_{17}\omega_8\omega_5 - 12\omega_{15}\omega_6\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8 - 4\omega_{15}^2\omega_{16}\omega_{10}^2\omega_7\omega_5^2 - 6\omega_{15}^2\omega_6\omega_{16}v_2^2\omega_7\omega_{17}\omega_8\omega_5^2 +$$
$$12\omega_{15}^2\omega_6\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_5 - 4\omega_{15}^2\omega_6c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_5^2 + 4\omega_{15}\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5 + 4\omega_{15}^2\omega_6\omega_{16}\omega_{10}\omega_{17}\omega_8\omega_5^2 - 8\omega_{15}\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5 -$$
$$9\omega_{15}^2\omega_6\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8\omega_5^2 + 2\omega_{15}^2c_s^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2 - 12\omega_{15}^2\omega_6\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_8\omega_5 - 2\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2 + 4\omega_{15}^2\omega_6c_s^2\omega_{16}\omega_7\omega_{17}\omega_8\omega_5 -$$
$$6\omega_{15}\omega_6\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8\omega_5^2 - 6\omega_{15}^2\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_8\omega_5^2 - 4\omega_{15}^2\omega_6\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_5^2 - 2\omega_{15}\omega_6c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5^2 - 12\omega_{15}\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8\omega_5 -$$
$$4\omega_{15}^2\omega_6c_s^2\omega_{10}^2\omega_{17}\omega_8\omega_5 - 12\omega_{15}^2\omega_6\omega_{10}v_2^2\omega_7\omega_{17}\omega_8\omega_5 + 4\omega_{15}^2\omega_6c_s^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5 + 4\omega_{15}\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8 - 2\omega_{15}^2\omega_6c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2 +$$
$$2\omega_6c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2 - 6\omega_{15}\omega_6\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_8\omega_5^2 - 2\omega_{15}^2c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5^2 + 2\omega_{15}^2\omega_6\omega_{16}\omega_7\omega_{17}\omega_8\omega_5^2 + 12\omega_{15}^2\omega_{16}\omega_{10}v_2^2\omega_7\omega_{17}\omega_8\omega_5 -$$
$$4\omega_{15}^2c_s^2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_5^2 + 3\omega_{15}^2\omega_6c_s^2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2 - 4\omega_{15}c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5 + 12\omega_{15}^2\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_5^2 - 2\omega_{15}\omega_6c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2 +$$
$$4\omega_{15}^2\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_5^2 - 4\omega_{15}^2\omega_6c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5 + 6\omega_6\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8\omega_5^2 - 12\omega_{15}^2\omega_6\omega_{16}\omega_{10}v_2^2\omega_{17}\omega_8\omega_5^2 + 3\omega_{15}^2\omega_6\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2 -$$
$$4\omega_{15}^2\omega_6c_s^2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_5 - 4\omega_{15}^2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5 + 4\omega_{15}^2c_s^2\omega_{16}\omega_{10}\omega_{17}\omega_8\omega_5^2 - 2\omega_{15}^2\omega_6\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2 + 2\omega_{15}\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5^2 +$$
$$4\omega_{15}^2\omega_6c_s^2\omega_{16}\omega_{10}\omega_{17}\omega_8\omega_5 - 4\omega_{15}^2c_s^2\omega_{10}^2\omega_{17}\omega_8\omega_5^2 + 12\omega_{15}^2\omega_6\omega_{10}^2v_2^2\omega_{17}\omega_8\omega_5^2 + 12\omega_{15}^2\omega_6\omega_{16}\omega_{10}v_2^2\omega_7\omega_{17}\omega_5^2 + 4\omega_{15}^2\omega_6c_s^2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8 -$$
$$3\omega_{15}^2\omega_6\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2 - 4\omega_{15}\omega_6c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8 + 4\omega_{15}^2\omega_6\omega_{10}^2\omega_{17}\omega_8\omega_5 - 4\omega_{15}^2\omega_6c_s^2\omega_{16}\omega_{10}\omega_{17}\omega_8\omega_5^2 + 4\omega_{15}^2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_5^2 -$$
$$4\omega_{15}\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5 + 8\omega_{15}^2\omega_6\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5 - 12\omega_{15}^2\omega_6\omega_{16}\omega_{10}v_2^2\omega_7\omega_{17}\omega_5 - 12\omega_{15}^2\omega_6\omega_{10}^2v_2^2\omega_{17}\omega_8\omega_5 - 4\omega_{15}^2\omega_6\omega_{10}^2\omega_{17}\omega_8\omega_5^2 +$$
$$2\omega_{15}^2\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5^2 - 12\omega_{15}^2\omega_{16}\omega_{10}v_2^2\omega_7\omega_{17}\omega_5^2 + 2\omega_{15}^2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2 + 4\omega_{15}^2\omega_6\omega_{10}\omega_7\omega_{17}\omega_8\omega_5 + 2\omega_{15}c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2 -$$
$$4\omega_{15}^2\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_5 + 2\omega_{15}^2\omega_6c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5^2 + 8\omega_{15}\omega_6c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5 - 4\omega_{15}^2\omega_6\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5 - 12\omega_6\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8\omega_5 +$$
$$12\omega_{15}^2\omega_6\omega_{16}\omega_{10}v_2^2\omega_{17}\omega_8\omega_5 + 4\omega_{15}^2c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_5^2 - 4\omega_{15}^2\omega_{16}\omega_{10}\omega_{17}\omega_8\omega_5^2 + 12\omega_{15}^2\omega_6\omega_{16}\omega_{10}v_2^2\omega_7\omega_{17}\omega_8 + 4\omega_{15}^2\omega_6c_s^2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_5^2 -$$
$$4\omega_{15}^2\omega_6\omega_{16}\omega_7\omega_{17}\omega_8\omega_5 + 12\omega_{15}\omega_6\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_8\omega_5 - 6\omega_{15}^2\omega_{16}\omega_{10}v_2^2\omega_7\omega_{17}\omega_8\omega_5^2 - 8\omega_{15}^2\omega_6c_s^2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5 + 12\omega_{15}^2\omega_{16}\omega_{10}v_2^2\omega_{17}\omega_8\omega_5^2$$

$$C_{42} = 12\omega_{15}^2\omega_6^2c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_5 - 12\omega_6^2\omega_{16}\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5 - 4\omega_{15}^2\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2 + 6\omega_{15}^2\omega_6^2c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_8^2\omega_5^2 -$$
$$24\omega_{15}^2\omega_6^2c_s^2\omega_{16}\omega_{10}^2\omega_{17}\omega_8^2\omega_5 + 54\omega_{15}\omega_6^2c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5 - 54\omega_{15}^2\omega_6^2c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5 - 12\omega_{15}^2\omega_6^2\omega_{16}\omega_{10}^2v_2^2\omega_7^2\omega_8\omega_5^2 +$$
$$12\omega_{15}\omega_6^2\omega_{16}\omega_{10}^2v_2^2\omega_7^2\omega_8^2\omega_5 - 12\omega_{15}^2\omega_6^2\omega_{10}\omega_7\omega_{17}\omega_8^2\omega_5^2 + 6\omega_{15}^2\omega_6\omega_{16}\omega_{10}^2v_2^2\omega_7^2\omega_8\omega_5^2 + 6\omega_{15}^2\omega_6\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2 - 6\omega_{15}^2\omega_6^2\omega_{16}\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8\omega_5 -$$
$$42\omega_{15}^2\omega_6c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2 + 24\omega_{15}^2\omega_6^2c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8 + 12\omega_{15}^2\omega_6^2c_s^2\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2 + 12\omega_{15}^2\omega_6c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_8\omega_5^2 -$$
$$6\omega_{15}^2\omega_6^2c_s^2\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8^2\omega_5^2 - 12\omega_{15}^2\omega_6c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5 - 12\omega_{15}^2\omega_6^2c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2 - \omega_{15}^2\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2 -$$
$$6\omega_{15}^2\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2\omega_8^2\omega_5^2 - 6\omega_{15}^2\omega_6\omega_{16}\omega_{10}^2v_2^2\omega_7^2\omega_8^2\omega_5^2 - 12\omega_{15}^2\omega_6^2\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8^2\omega_5 - 12\omega_{15}\omega_6^2\omega_{16}\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8^2 + 12\omega_{15}^2\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2\omega_8^2\omega_5 +$$
$$12\omega_{15}^2\omega_6^2\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8^2\omega_5^2 + 6\omega_{15}^2\omega_6\omega_{16}\omega_{10}^2\omega_7^2\omega_8^2\omega_5^2 + 3\omega_{15}^2\omega_6^2c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2 + 12\omega_{15}^2\omega_6c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5 +$$
$$6\omega_{15}^2\omega_6^2c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2 - 12\omega_{15}^2\omega_6^2c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5 + 24\omega_{15}^2\omega_6^2c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2 + 18\omega_{15}^2\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5 -$$
$$12\omega_{15}^2\omega_6^2c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_5^2 + 24\omega_{15}^2\omega_6^2c_s^2\omega_{16}\omega_{10}^2\omega_{17}\omega_8^2\omega_5^2 - 12\omega_{15}^2\omega_6^2c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_8^2\omega_5 + 6\omega_{15}^2\omega_6c_s^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2 + 12\omega_{15}^2\omega_6\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2 -$$
$$9\omega_{15}\omega_6^2c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2 + 9\omega_{15}^2\omega_6^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2 + 6\omega_{15}^2\omega_6^2c_s^2\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2 - 12\omega_{15}^2\omega_6^2\omega_{16}\omega_{10}^2v_2^2\omega_7^2\omega_8^2\omega_5 - 12\omega_{15}^2\omega_6\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8^2\omega_5^2 -$$
$$24\omega_{15}^2\omega_6^2c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5 - 12\omega_{15}\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2\omega_8^2\omega_5 + 12\omega_{15}^2\omega_6^2c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_8\omega_5 - 6\omega_{15}\omega_6^2c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_8^2\omega_5^2 -$$
$$12\omega_{15}^2c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2 + 18\omega_6^2c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2 + 12\omega_{15}^2\omega_6^2\omega_{16}v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5 + 24\omega_{15}\omega_6^2c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5 -$$
$$24\omega_{15}^2\omega_6^2c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8^2 + 6\omega_{15}^2\omega_6^2\omega_{16}\omega_7^2\omega_{17}\omega_8^2\omega_5^2 - 3\omega_{15}\omega_6^2\omega_{16}\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2 + 12\omega_{15}^2\omega_6^2\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{17}\omega_8^2 +$$
$$12\omega_{15}\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2 + 12\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5 - 12\omega_{15}^2\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2\omega_8\omega_5 - 18\omega_{15}^2\omega_6^2\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5 + 6\omega_{15}^2\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5 +$$
$$3\omega_{15}\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2 + 12\omega_{15}^2\omega_6^2\omega_{10}v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5 + 6\omega_{15}^2\omega_6^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2 - 18\omega_{15}^2\omega_6^2c_s^2\omega_{16}\omega_7^2\omega_{17}\omega_8^2\omega_5^2 + 6\omega_{15}^2\omega_6^2\omega_{10}v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2 -$$
$$9\omega_{15}^2\omega_6^2c_s^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2 - 6\omega_{15}^2\omega_6^2\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2 + \omega_{15}^2\omega_6^2\omega_{16}\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2 - 12\omega_{15}^2\omega_6\omega_{16}\omega_{10}^2\omega_7^2\omega_8\omega_5^2 + 30\omega_{15}^2\omega_6^2c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2 +$$
$$12\omega_{15}^2\omega_6c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2 + 6\omega_{15}^2\omega_6\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8^2\omega_5^2 + 12\omega_{15}^2\omega_6c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_5^2 + 54\omega_{15}^2\omega_6^2c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5 -$$
$$24\omega_{15}^2\omega_6c_s^2\omega_{16}\omega_{10}^2\omega_{17}\omega_8^2\omega_5^2 + 12\omega_{15}^2\omega_6^2\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5 + 36\omega_{15}^2\omega_6^2c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2 - 12\omega_{15}^2\omega_6^2\omega_{10}v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5 +$$
$$12\omega_{15}^2\omega_6^2c_s^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5 - 54\omega_{15}^2\omega_6^2c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5 - 6\omega_{15}^2\omega_6\omega_{16}\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8\omega_5^2 - 36\omega_{15}^2\omega_6^2c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2 -$$
$$36\omega_{15}\omega_6^2c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2 - 6\omega_{15}^2\omega_6c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_8^2\omega_5^2 + 4\omega_{15}^2\omega_6^2\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2 - 6\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2 + 12\omega_{15}^2\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2\omega_8\omega_5^2 -$$
$$18\omega_{15}\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5 - 9\omega_{15}^2\omega_6^2\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2 - 6\omega_{15}^2\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2 + 36\omega_{15}^2\omega_6^2c_s^2\omega_{16}\omega_7^2\omega_{17}\omega_8^2\omega_5 +$$
$$12\omega_{15}^2\omega_6\omega_{16}\omega_{10}^2v_2^2\omega_7^2\omega_8\omega_5^2 - 6\omega_{15}^2\omega_6^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5 + 12\omega_{15}\omega_6^2c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_8^2\omega_5 - 12\omega_{15}^2\omega_6c_s^2\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2 -$$
$$12\omega_{15}^2\omega_6^2c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_8\omega_5^2 - 12\omega_{15}\omega_6^2c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2 - 6\omega_{15}^2\omega_6\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2 - 6\omega_{15}^2\omega_6^2\omega_{16}v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2 - 36\omega_6^2c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5 -$$
$$12\omega_{15}^2\omega_6^2\omega_{16}\omega_7^2\omega_{17}\omega_8^2\omega_5 + 18\omega_{15}\omega_6^2\omega_{16}\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5 + 12\omega_{15}^2c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2 - 12\omega_{15}^2\omega_6^2c_s^2\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5 -$$
$$12\omega_{15}^2\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2 - 12\omega_{15}^2\omega_6^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5 + 6\omega_{15}^2\omega_6^2\omega_{16}\omega_{10}^2v_2^2\omega_7^2\omega_8^2\omega_5^2 + 12\omega_{15}^2\omega_6^2c_s^2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8^2\omega_5^2 + 6\omega_{15}\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2\omega_8^2\omega_5^2$$

$$C_{43} = 12\omega_9\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_{18} + 12\omega_9^3\omega_6^3\omega_{22}c_s^2v_1^2\omega_{18} - 6\omega_9^2\omega_6^3\omega_{22}c_s^2\omega_{13}^2 + 6\omega_9^3\omega_6^3v_1^2\omega_{13}^2v_3^2\omega_{18} + 12\omega_9^2\omega_6^3\omega_{22}v_3^2\omega_{18} - 42\omega_9^3\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_{18} +$$
$$12\omega_9^2\omega_6^3c_s^2v_1^2\omega_{13}\omega_{18} - 36\omega_9^2\omega_6^3\omega_{22}c_s^2v_3^2\omega_{18} - 12\omega_9^2\omega_6^2\omega_{22}c_s^2v_1^2\omega_{13}^2 + 12\omega_9^3\omega_6^3\omega_{22}v_1^2v_3^2\omega_{18} + 6\omega_9^2\omega_6^3c_s^2\omega_{13}^2\omega_{18} + \omega_9^3\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}^2\omega_{18} +$$
$$12\omega_6^2\omega_{22}c_s^2v_1^2\omega_{13}^2\omega_{18} + 36\omega_9^3\omega_6^2c_s^4\omega_{13}\omega_{18} + 36\omega_9^2\omega_6^3c_s^2\omega_{13}v_3^2\omega_{18} - 12\omega_9^3\omega_6^3\omega_{22}c_s^4\omega_{18} + 12\omega_9^3\omega_6^2v_1^2\omega_{13}v_3^2\omega_{18} - 18\omega_9^2\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_{18} +$$
$$12\omega_9^2\omega_6^2\omega_{22}\omega_{13}^2v_3^2 - 18\omega_9^2\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_{18} - 18\omega_9^3\omega_6^3c_s^4\omega_{13}^2 - 12\omega_9^2\omega_6^2\omega_{22}v_1^2\omega_{13}^2v_3^2 - 12\omega_9^3\omega_6\omega_{22}c_s^2v_1^2\omega_{13}\omega_{18} + 36\omega_6^3\omega_{22}c_s^2\omega_{13}^2v_3^2\omega_{18} +$$
$$18\omega_9\omega_6^3\omega_{22}\omega_{13}^2v_3^2\omega_{18} + 6\omega_9^2\omega_6^3\omega_{22}v_1^2\omega_{13}^2v_3^2\omega_{18} + 12\omega_9^2\omega_6\omega_{22}c_s^2\omega_{13}^2\omega_{18} - 12\omega_9\omega_6^3\omega_{22}v_1^2\omega_{13}v_3^2\omega_{18} + 12\omega_9^3\omega_6^2\omega_{13}^2v_3^2\omega_{18} - 72\omega_9^3\omega_6\omega_{22}c_s^2\omega_{13}v_3^2\omega_{18} +$$
$$12\omega_9^3\omega_6^3c_s^2\omega_{13}\omega_{18} + 36\omega_6^3\omega_{22}c_s^4\omega_{13}^2\omega_{18} + 36\omega_9^3\omega_6^2c_s^2\omega_{13}^2v_3^2 + 5\omega_9^3\omega_6^3\omega_{22}c_s^4\omega_{13}^2\omega_{18} + 12\omega_9^3\omega_6^3\omega_{22}\omega_{13}v_3^2\omega_{18} - 12\omega_9^3\omega_6^2c_s^2\omega_{13}^2 + 12\omega_9^3\omega_6\omega_{22}c_s^4\omega_{13}\omega_{18} -$$
$$36\omega_9^2\omega_6^2\omega_{22}c_s^2\omega_{13}v_3^2\omega_{18} + 36\omega_9\omega_6^2\omega_{22}c_s^2\omega_{13}^2v_3^2\omega_{18} + 36\omega_9^3\omega_6^2\omega_{22}v_1^2\omega_{13}v_3^2\omega_{18} - 48\omega_9\omega_6^2\omega_{22}c_s^4\omega_{13}^2\omega_{18} - 96\omega_9^3\omega_{22}c_s^4\omega_{13}^2\omega_{18} +$$
$$18\omega_9^2\omega_6^3\omega_{22}c_s^2\omega_{13}^2v_3^2\omega_{18} + 18\omega_9^3\omega_6^2\omega_{22}c_s^2v_1^2\omega_{13}\omega_{18} + 12\omega_6^3\omega_{22}v_1^2\omega_{13}^2v_3^2\omega_{18} - 36\omega_9\omega_6^3\omega_{22}c_s^2\omega_{13}v_3^2\omega_{18} + 12\omega_9\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_{18} -$$
$$18\omega_9^2\omega_6^3c_s^4\omega_{13}^2\omega_{18} - 12\omega_9^2\omega_6^3\omega_{13}v_3^2\omega_{18} + 18\omega_9^2\omega_6^3\omega_{22}c_s^2\omega_{13}^2v_3^2 - 6\omega_9^2\omega_6^3\omega_{22}\omega_{13}^2v_3^2\omega_{18} - 6\omega_9^2\omega_6^3\omega_{22}\omega_{13}^2v_3^2 - 18\omega_9^3\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{18} -$$
$$12\omega_9\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_{18} - 12\omega_9^2\omega_6^2\omega_{22}v_1^2\omega_{13}v_3^2\omega_{18} + 108\omega_9^3\omega_6^2\omega_{22}c_s^2\omega_{13}v_3^2\omega_{18} + 12\omega_9\omega_6^2\omega_{22}v_1^2\omega_{13}^2v_3^2\omega_{18} + 150\omega_9^2\omega_6^2\omega_{22}c_s^4\omega_{13}^2\omega_{18} +$$
$$12\omega_9^2\omega_6^2\omega_{22}\omega_{13}v_3^2\omega_{18} - 24\omega_9^3\omega_6\omega_{22}v_1^2\omega_{13}v_3^2\omega_{18} - 18\omega_9^3\omega_6^3c_s^2\omega_{13}^2v_3^2 - 6\omega_9^3\omega_6^3\omega_{13}^2v_3^2\omega_{18} + 6\omega_9^3\omega_6^3c_s^2v_1^2\omega_{13}^2\omega_{18} - 12\omega_9^3\omega_6^2c_s^2\omega_{13}\omega_{18} +$$
$$12\omega_9^3\omega_6^2c_s^2v_1^2\omega_{13}\omega_{18} - 36\omega_9^3\omega_6^2\omega_{22}c_s^2v_3^2\omega_{18} + 18\omega_9^3\omega_6^3c_s^2\omega_{13}^2v_3^2\omega_{18} + 12\omega_9^2\omega_6^3\omega_{22}c_s^2\omega_{18} + 12\omega_9^2\omega_6^2\omega_{22}c_s^2\omega_{13}^2 - 42\omega_9^2\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_{18} -$$
$$84\omega_9^2\omega_6\omega_{22}c_s^4\omega_{13}^2\omega_{18} - 12\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_{18} + 12\omega_9^2\omega_6^3v_1^2\omega_{13}v_3^2\omega_{18} - \omega_9^3\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_{18} - 12\omega_9^3\omega_6^2\omega_{13}^2v_3^2 + 12\omega_9^3\omega_6^2\omega_{22}c_s^4\omega_{18} +$$
$$36\omega_9^3\omega_6^2c_s^2\omega_{13}v_3^2\omega_{18} - 36\omega_9^3\omega_6^3c_s^4\omega_{13}\omega_{18} + 12\omega_9^3\omega_6\omega_{22}c_s^2\omega_{13}\omega_{18} - 2\omega_9^2\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}^2\omega_{18} + 6\omega_9^3\omega_6^3c_s^2\omega_{13}^2 - 6\omega_9^2\omega_6^3\omega_{22}c_s^4\omega_{13}^2\omega_{18} -$$
$$24\omega_9^2\omega_6^2\omega_{22}\omega_{13}v_3^2\omega_{18} + 12\omega_9^3\omega_6^2v_1^2\omega_{13}^2v_3^2 + 6\omega_9^2\omega_6^3\omega_{13}^2v_3^2\omega_{18} - 12\omega_9^3\omega_6^2c_s^2v_1^2\omega_{13}^2\omega_{18} - 12\omega_9^3\omega_6^3\omega_{22}v_1^2\omega_{13}v_3^2\omega_{18} - 54\omega_9\omega_6^3\omega_{22}c_s^2\omega_{13}^2v_3^2\omega_{18} +$$
$$72\omega_9^2\omega_6^3\omega_{22}c_s^2\omega_{13}v_3^2\omega_{18} - 36\omega_9^2\omega_6^2\omega_{22}c_s^2\omega_{13}^2v_3^2 + 18\omega_9^3\omega_6^3c_s^4\omega_{13}^2\omega_{18} + 12\omega_9^3\omega_6^3\omega_{13}v_3^2\omega_{18} + 72\omega_9^2\omega_6\omega_{22}c_s^2\omega_{13}^2v_3^2\omega_{18} + 6\omega_9^3\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_{18} +$$
$$36\omega_9^3\omega_6^2c_s^4\omega_{13}^2 + 24\omega_9^2\omega_6^2\omega_{22}\omega_{13}^2v_3^2\omega_{18} - 12\omega_9^3\omega_6\omega_{22}c_s^2\omega_{13}^2\omega_{18} + 18\omega_9^2\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_{18} - 24\omega_9^2\omega_6^2\omega_{22}v_1^2\omega_{13}^2v_3^2\omega_{18} + 12\omega_9\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_{18} -$$
$$24\omega_9^2\omega_6\omega_{22}\omega_{13}^2v_3^2\omega_{18} - 12\omega_9^3\omega_6^2\omega_{22}c_s^2v_1^2\omega_{13}^2\omega_{18} + 12\omega_9^3\omega_6^2c_s^2v_1^2\omega_{13}^2 + 12\omega_9^3\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_{18} + 18\omega_9^2\omega_6^3\omega_{22}c_s^4\omega_{13}^2 + 36\omega_9^2\omega_6^3c_s^4\omega_{13}\omega_{18} -$$
$$36\omega_9^3\omega_6^3c_s^2\omega_{13}v_3^2\omega_{18} - 12\omega_9^2\omega_6\omega_{22}c_s^2v_1^2\omega_{13}^2\omega_{18} - 12\omega_9\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}^2\omega_{18} - 12\omega_9^3\omega_6^2\omega_{22}c_s^2\omega_{18} - 12\omega_9^2\omega_6^2\omega_{22}c_s^2v_1^2\omega_{18} + 12\omega_9^3\omega_6^2c_s^2\omega_{13}^2\omega_{18} +$$
$$36\omega_9^3\omega_6^2c_s^2v_1^2\omega_{13}^2v_3^2\omega_{18} + 12\omega_9^3\omega_6^3c_s^2v_1^2\omega_{13}\omega_{18} + 36\omega_9^3\omega_6^3\omega_{22}c_s^2v_3^2\omega_{18} + 12\omega_9^3\omega_6^2\omega_{22}v_3^2\omega_{18} - 6\omega_9^2\omega_6^3v_1^2\omega_{13}^2v_3^2\omega_{18} - 12\omega_9^2\omega_6^3\omega_{22}c_s^2v_1^2\omega_{18} +$$
$$12\omega_9^2\omega_6^3\omega_{22}c_s^4\omega_{18} + 12\omega_9^3\omega_6\omega_{22}c_s^2v_1^2\omega_{13}^2\omega_{18} + 2\omega_9^2\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_{18} + 6\omega_9^3\omega_6^3\omega_{13}^2v_3^2 - 6\omega_9^3\omega_6^3c_s^2v_1^2\omega_{13}^2 - 36\omega_9^2\omega_6^2\omega_{22}c_s^4\omega_{13}^2 - 12\omega_9^3\omega_6^3v_1^2\omega_{13}v_3^2\omega_{18} +$$
$$18\omega_9^2\omega_6^2\omega_{22}c_s^2v_1^2\omega_{13}^2\omega_{18} + 30\omega_9^3\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_{18} - 12\omega_9^3\omega_6^2v_1^2\omega_{13}^2v_3^2\omega_{18} - 12\omega_9^3\omega_6^3\omega_{22}v_3^2\omega_{18} - 12\omega_9^3\omega_6^2\omega_{22}c_s^2v_1^2\omega_{18} - 6\omega_9^3\omega_6^3c_s^2\omega_{13}^2\omega_{18} +$$
$$12\omega_9^2\omega_6^2\omega_{22}c_s^2\omega_{18} - 12\omega_9^3\omega_6^2\omega_{22}v_1^2v_3^2\omega_{18} + 6\omega_9^2\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}^2 - 18\omega_9^2\omega_6^3c_s^2\omega_{13}^2v_3^2\omega_{18} + 180\omega_9^3\omega_6\omega_{22}c_s^4\omega_{13}^2\omega_{18} + 24\omega_9^3\omega_6\omega_{22}\omega_{13}v_3^2\omega_{18} -$$
$$18\omega_9\omega_6^3\omega_{22}v_1^2\omega_{13}^2v_3^2\omega_{18} - 36\omega_9^3\omega_6^3\omega_{22}c_s^2\omega_{13}v_3^2\omega_{18} - 36\omega_9\omega_6^3\omega_{22}c_s^4\omega_{13}^2\omega_{18} + 12\omega_9\omega_6^3\omega_{22}\omega_{13}v_3^2\omega_{18} + 24\omega_9^2\omega_6^3\omega_{22}v_1^2\omega_{13}v_3^2\omega_{18} - 12\omega_9^2\omega_6^3c_s^2\omega_{13}\omega_{18} -$$
$$6\omega_9^2\omega_6^3c_s^2v_1^2\omega_{13}^2\omega_{18} - 88\omega_9^3\omega_6^2\omega_{22}c_s^4\omega_{13}^2\omega_{18} - 36\omega_9^3\omega_6^2\omega_{22}\omega_{13}v_3^2\omega_{18} - 6\omega_9^3\omega_6^3v_1^2\omega_{13}^2v_3^2 - 12\omega_9\omega_6^2\omega_{22}\omega_{13}^2v_3^2\omega_{18} - 6\omega_9^3\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_{18} -$$
$$72\omega_9^2\omega_6^2\omega_{22}c_s^2\omega_{13}^2v_3^2\omega_{18} + 24\omega_9^2\omega_6\omega_{22}v_1^2\omega_{13}^2v_3^2\omega_{18} - 12\omega_6^3\omega_{22}\omega_{13}^2v_3^2\omega_{18} - 36\omega_9^3\omega_6^2c_s^4\omega_{13}^2\omega_{18} - 12\omega_9^3\omega_6^2\omega_{13}v_3^2\omega_{18} + 6\omega_9^2\omega_6^3\omega_{22}v_1^2\omega_{13}^2v_3^2$$

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

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

$26\omega_9^3\omega_6\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_{18}^2 - 2\omega_9^3\omega_6^2\omega_{22}v_1^2\omega_{13}^2\omega_{11}\omega_{18} - 7\omega_9^2\omega_6^3\omega_{22}\omega_{13}\omega_{11}\omega_{18}^2 + 2\omega_9^2\omega_6^3\omega_{13}^2\omega_{11}\omega_{18}^2 + 8\omega_9^2\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_{18} -$
$15\omega_9\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_{18}^2 - 3\omega_9^3\omega_6^3\omega_{22}v_1^2\omega_{13}\omega_{11}\omega_{18}^2 - \omega_9^3\omega_6^3\omega_{22}\omega_{13}^2\omega_{11}\omega_{18} + 12\omega_9^3\omega_6\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_{18} + 13\omega_9^2\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18}^2 -$
$6\omega_9^2\omega_6\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_{18}^2 + 4\omega_9^3\omega_6^3\omega_{13}\omega_{11}\omega_{18}^2 + 2\omega_9^3\omega_6\omega_{22}v_1^2\omega_{13}^2\omega_{11}\omega_{18}^2 + 3\omega_9^2\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}\omega_{18}^2 - 8\omega_9^3\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_{18}^2 +$
$2\omega_9^3\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_{18}^2 - 3\omega_9^2\omega_6^2\omega_{22}v_1^2\omega_{13}^2\omega_{11}\omega_{18}^2 + 4\omega_9^3\omega_6^2v_1^2\omega_{13}^2\omega_{11}\omega_{18} - 2\omega_9^3\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_{11} - 2\omega_9^2\omega_6\omega_{22}\omega_{13}^2\omega_{11}\omega_{18}^2 - 4\omega_9^3\omega_6\omega_{22}c_s^2\omega_{13}^2\omega_{18} -$
$4\omega_9^3\omega_6^3c_s^2\omega_{13}\omega_{11}\omega_{18}^2 - 4\omega_9^3\omega_6^2c_s^2\omega_{13}^2\omega_{11}\omega_{18}^2 + 8\omega_9^3\omega_6^3\omega_{22}c_s^2\omega_{11}\omega_{18}^2 - 4\omega_9^2\omega_6^3\omega_{22}v_1^2\omega_{11}\omega_{18}^2 + 4\omega_9^3\omega_6^2\omega_{22}\omega_{11}\omega_{18}^2 - 2\omega_9^2\omega_6^3v_1^2\omega_{13}^2\omega_{11}\omega_{18}^2$

$C_{46} = -2\omega_9\omega_{12}\omega_6^3c_s^2v_2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 2\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1\omega_{13}v_3^2\omega_{14}\omega_8\omega_5^2\omega_{18} - 8\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^4v_2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18} +$
$2\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_1v_2^2\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18} - \omega_9\omega_{12}\omega_6^3c_s^2v_1v_2^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 2\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_2\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18} +$
$2\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_2\omega_{13}v_3^2\omega_{14}\omega_8^2\omega_5^2 + 12\omega_9\omega_{12}\omega_6\omega_{22}c_s^4v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 2\omega_9\omega_{12}\omega_6^2v_1^2v_2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$2\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1v_2^2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_{18} + 2\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_1\omega_{13}v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} - 2\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_2\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18} +$
$\omega_{12}\omega_6^3\omega_{22}c_s^2v_1^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 2\omega_9\omega_{12}\omega_6^2\omega_{22}v_1v_2^2\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - \omega_9\omega_{12}\omega_6^3\omega_{22}v_1v_2^2\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18} +$
$\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1\omega_{13}v_3^2\omega_{14}\omega_8^2\omega_5^2 - \omega_9\omega_{12}\omega_6^3c_s^2v_1\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 2\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$\omega_{12}\omega_6^3c_s^2v_1^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 2\omega_9\omega_6^3\omega_{22}v_1^2v_2\omega_{13}v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} - \omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18} -$
$\omega_6^3\omega_{22}c_s^2v_2\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 2\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 2\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1^2v_2\omega_{13}\omega_{20}\omega_8\omega_5^2\omega_{18} -$
$\omega_9\omega_{12}\omega_6^3v_1v_2^2\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 2\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_1^2v_2\omega_{13}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 2\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_1\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$2\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_1v_2^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 2\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_2\omega_{13}v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} + 2\omega_9\omega_{12}\omega_6^2\omega_{22}v_1^2v_2\omega_{13}v_3^2\omega_{20}\omega_8\omega_5^2\omega_{18} +$
$2\omega_{12}\omega_6^3\omega_{22}c_s^2v_2v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} - \omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1v_2^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18} + \omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2v_2\omega_{13}v_3^2\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$\omega_9\omega_{12}\omega_6^3\omega_{22}v_1v_2^2\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 2\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_2\omega_{13}v_3^2\omega_{14}\omega_8\omega_5^2\omega_{18} + 2\omega_9\omega_{12}\omega_6^3\omega_{22}v_1v_2^2\omega_{13}v_3^2\omega_{20}\omega_8^2\omega_5\omega_{18} +$
$2\omega_{12}\omega_6^3\omega_{22}c_s^2v_1v_2^2\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18} + 4\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^4v_2\omega_{13}\omega_{20}\omega_{14}\omega_5^2\omega_{18} - 2\omega_9\omega_6^3\omega_{22}c_s^2v_1v_2^2\omega_{13}\omega_{20}\omega_8^2\omega_5\omega_{18} +$
$2\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_1^2v_2\omega_{20}\omega_8^2\omega_5^2\omega_{18} - 2\omega_9\omega_6^3\omega_{22}c_s^2v_1\omega_{13}v_3^2\omega_{20}\omega_8^2\omega_5\omega_{18} + 2\omega_{12}\omega_6^3\omega_{22}c_s^2v_1\omega_{13}v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} -$
$2\omega_9\omega_{12}\omega_6^3\omega_{22}v_1v_2^2\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18} - \omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_2\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 2\omega_{12}\omega_6^3c_s^2v_2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$4\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^4v_2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_{18} + \omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1\omega_{13}v_3^2\omega_{14}\omega_8^2\omega_5\omega_{18} - \omega_9\omega_6^3\omega_{22}c_s^2v_1^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18} -$
$2\omega_{12}\omega_6^3\omega_{22}c_s^2v_2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 2\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + \omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1v_2^2\omega_{13}\omega_{14}\omega_8^2\omega_5\omega_{18} -$
$2\omega_9\omega_{12}\omega_6^2c_s^2v_1^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 2\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_2\omega_{13}v_3^2\omega_{20}\omega_8\omega_5\omega_{18} + 2\omega_9\omega_{12}\omega_6^2\omega_{22}v_1v_2^2\omega_{13}v_3^2\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$2\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_2v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} - 2\omega_9\omega_{12}\omega_6^2\omega_{22}v_1^2v_2\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 2\omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2v_2\omega_{13}v_3^2\omega_{14}\omega_8\omega_5\omega_{18} +$
$2\omega_6^3\omega_{22}v_1^2v_2\omega_{13}v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} + \omega_9\omega_6^3\omega_{22}v_1^2v_2\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 2\omega_9\omega_{12}\omega_6^2c_s^2v_2\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 - 2\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_1v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} -$
$\omega_9\omega_{12}\omega_6^3v_1^2v_2\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + \omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18} + 2\omega_{12}\omega_6^3\omega_{22}c_s^2v_1v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$\omega_9\omega_6^3\omega_{22}c_s^2v_2\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 2\omega_6^3\omega_{22}c_s^2v_1^2v_2\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18} - 2\omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2v_2\omega_{13}v_3^2\omega_{20}\omega_8^2\omega_5\omega_{18} +$
$\omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2v_2\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + \omega_{12}\omega_6^3v_1v_2^2\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - \omega_9\omega_{12}\omega_6^3\omega_{22}v_1v_2^2\omega_{13}v_3^2\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_2\omega_{13}v_3^2\omega_{14}\omega_8^2\omega_5\omega_{18} - \omega_9\omega_{12}\omega_6^3c_s^2v_1^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2 - 2\omega_9\omega_{12}\omega_6^2\omega_{22}v_1v_2^2\omega_{13}v_3^2\omega_{20}\omega_8\omega_5^2\omega_{18} +$
$2\omega_{12}\omega_6^3\omega_{22}v_1^2v_2^2v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} + 2\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_1^2v_2\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18} - 2\omega_{12}\omega_6^3c_s^2v_1v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$2\omega_9\omega_{12}\omega_6^2c_s^2v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 2\omega_{12}\omega_6^3\omega_{22}c_s^2v_2\omega_{13}v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} - 2\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_1^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2 +$
$\omega_9\omega_{12}\omega_6^3\omega_{22}v_1v_2^2\omega_{13}v_3^2\omega_{14}\omega_8^2\omega_5^2 - \omega_{12}\omega_6^3\omega_{22}v_1v_2^2\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 2\omega_9\omega_6^3\omega_{22}c_s^2v_2\omega_{13}v_3^2\omega_{20}\omega_8^2\omega_5\omega_{18} +$
$2\omega_9\omega_6^3\omega_{22}v_1v_2^2\omega_{13}v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} + 2\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1^2v_2\omega_{13}\omega_{14}\omega_8\omega_5\omega_{18} - \omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2v_2\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$2\omega_9\omega_{12}\omega_6^3c_s^2v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + \omega_{12}\omega_6^3c_s^2v_1v_2^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 2\omega_9\omega_{12}\omega_6^2c_s^2v_1v_2^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2 -$
$\omega_{12}\omega_6^3\omega_{22}c_s^2v_1\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 2\omega_9\omega_{12}\omega_6^2v_1v_2^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - \omega_{12}\omega_6^3\omega_{22}c_s^2v_1v_2^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$4\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^4v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 2\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1v_2^2\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18} - 2\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1\omega_{13}v_3^2\omega_{20}\omega_8\omega_5\omega_{18} -$
$2\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 2\omega_9\omega_{12}\omega_6^2\omega_{22}v_1^2v_2\omega_{13}v_3^2\omega_{14}\omega_8^2\omega_5^2 + \omega_{12}\omega_6^3c_s^2v_1\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$\omega_9\omega_{12}\omega_6^3c_s^2v_1^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 2\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_1^2v_2\omega_{13}\omega_{14}\omega_8^2\omega_5^2 + 2\omega_9\omega_{12}\omega_6^2v_1v_2^2\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$2\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_1^2v_2\omega_{13}\omega_{20}\omega_8\omega_5^2\omega_{18} + \omega_9\omega_{12}\omega_6^3v_1v_2^2\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 2\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_1v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$2\omega_6^3\omega_{22}v_1v_2^2\omega_{13}v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} + \omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1^2v_2\omega_{13}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + \omega_9\omega_6^3\omega_{22}v_1v_2^2\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18} -$
$2\omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2v_2\omega_{13}v_3^2\omega_{20}\omega_8\omega_5^2\omega_{18} - 2\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_2\omega_{13}v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} - 2\omega_9\omega_{12}\omega_6^3\omega_{22}v_1v_2^2\omega_{13}v_3^2\omega_{14}\omega_8\omega_5^2\omega_{18} -$
$\omega_6^3\omega_{22}v_1^2v_2\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 2\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18} - 2\omega_9\omega_6^3\omega_{22}c_s^2v_1^2v_2\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18} -$
$2\omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2v_2v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} + 2\omega_9\omega_{12}\omega_6^3c_s^2v_1v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 2\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_2\omega_{13}v_3^2\omega_{14}\omega_8\omega_5^2\omega_{18} +$
$2\omega_9\omega_{12}\omega_6^2\omega_{22}v_1v_2^2\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 - 2\omega_9\omega_{12}\omega_6^2\omega_{22}v_1^2v_2\omega_{13}v_3^2\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 2\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1v_2^2\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18} -$
$2\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_1\omega_{13}v_3^2\omega_{14}\omega_8\omega_5^2\omega_{18} + 2\omega_9\omega_{12}\omega_6^2c_s^2v_1v_2^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 2\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_1v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} -$
$2\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1\omega_{13}v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} - 2\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_1v_2^2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_{18} + \omega_9\omega_6^3\omega_{22}c_s^2v_1v_2^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18} -$
$4\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^4v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_{18} + \omega_9\omega_6^3\omega_{22}c_s^2v_1\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18} + 2\omega_{12}\omega_6^3c_s^2v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$2\omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2v_2\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18} - 2\omega_9\omega_{12}\omega_6^2\omega_{22}v_1v_2^2v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} - 8\omega_9\omega_{12}\omega_{22}c_s^4v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$4\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^4v_2\omega_{13}\omega_{20}\omega_{14}\omega_5\omega_{18} + 2\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 2\omega_9\omega_{12}\omega_6^2c_s^2v_1\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$2\omega_{12}\omega_6^3\omega_{22}c_s^2v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 2\omega_9\omega_{12}\omega_6^2\omega_{22}v_1^2v_2\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18} - \omega_9\omega_6^3\omega_{22}v_1v_2^2\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$\omega_{12}\omega_6^3c_s^2v_2\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - \omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1^2v_2\omega_{13}\omega_{14}\omega_8^2\omega_5\omega_{18} - \omega_9\omega_{12}\omega_6^3c_s^2v_2\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 -$
$2\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 2\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} + 2\omega_6^3\omega_{22}c_s^2v_2\omega_{13}v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} + 2\omega_9\omega_{12}\omega_6^2v_1^2v_2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 +$
$2\omega_9\omega_{12}\omega_6^2\omega_{22}v_1v_2^2\omega_{13}v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} + 2\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1\omega_{13}v_3^2\omega_{14}\omega_8\omega_5\omega_{18} - 2\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_1^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18} +$
$\omega_{12}\omega_6^3\omega_{22}c_s^2v_2\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 2\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_2v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} - 2\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18} +$
$2\omega_9\omega_6^3\omega_{22}c_s^2v_1^2v_2\omega_{13}\omega_{20}\omega_8^2\omega_5\omega_{18} + 2\omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2v_2\omega_{13}v_3^2\omega_{20}\omega_8\omega_5\omega_{18} + \omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1v_2^2\omega_{13}\omega_{14}\omega_8^2\omega_5^2 -$
$2\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_2\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 2\omega_{12}\omega_6^3\omega_{22}c_s^2v_1v_2^2\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18} + 2\omega_9\omega_{12}\omega_6^3\omega_{22}v_1v_2^2\omega_{13}v_3^2\omega_{14}\omega_8\omega_5^2\omega_{18} -$
$2\omega_{12}\omega_6^3\omega_{22}v_1^2v_2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 2\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1\omega_{13}v_3^2\omega_{20}\omega_8\omega_5\omega_{18} - \omega_9\omega_6^3\omega_{22}c_s^2v_1v_2^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18} -$
$\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 2\omega_{12}\omega_6^3v_1^2v_2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - \omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1v_2^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2 +$
$2\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1\omega_{13}v_3^2\omega_{20}\omega_8^2\omega_5\omega_{18} - 8\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^4v_2\omega_{13}\omega_{20}\omega_{14}\omega_5^2\omega_{18} - 2\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1v_2^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$\omega_6^3\omega_{22}c_s^2v_1v_2^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 2\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18} - 2\omega_9\omega_6^3\omega_{22}c_s^2v_1^2v_2\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18} -$
$2\omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2v_2v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} + 2\omega_9\omega_{12}\omega_6^3c_s^2v_1v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 2\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_1v_2^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$2\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_1v_2^2\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18} + 2\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1\omega_{13}v_3^2\omega_{20}\omega_8\omega_5\omega_{18} - \omega_9\omega_6^3\omega_{22}c_s^2v_1v_2^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18} -$
$\omega_{12}\omega_6^3\omega_{22}c_s^2v_1\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 2\omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2v_2\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 - 2\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1v_2^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$4\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^4v_2\omega_{13}\omega_{20}\omega_{14}\omega_5^2\omega_{18} + 2\omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2v_2\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18} - \omega_6^3\omega_{22}c_s^2v_1^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$2\omega_9\omega_{12}\omega_6^3\omega_{22}v_1v_2^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - \omega_9\omega_6^3\omega_{22}c_s^2v_1\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 2\omega_9\omega_{12}\omega_6^2c_s^2v_2\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$

$\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_2\omega_{13}v_3^2\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 2\omega_9\omega_{12}\omega_6^2\omega_{22}v_1^2v_2\omega_{13}v_3^2\omega_{14}\omega_8\omega_5^2\omega_{18} - \omega_9\omega_6^3\omega_{22}c_s^2v_2\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18} +$
$2\omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2v_2\omega_{13}v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} + \omega_9\omega_{12}\omega_6^3\omega_{22}v_1v_2^2\omega_{13}v_3^2\omega_{14}\omega_8^2\omega_5\omega_{18} + 2\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_2\omega_{13}v_3^2\omega_{20}\omega_8\omega_5^2\omega_{18} -$
$\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 2\omega_{12}\omega_6^3\omega_{22}v_1v_2^2\omega_{13}v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} - 2\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1^2v_2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_{18} +$
$\omega_9\omega_{12}\omega_6^3v_1^2v_2\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 2\omega_9\omega_6^3\omega_{22}v_1v_2^2\omega_{13}v_3^2\omega_{20}\omega_8^2\omega_5\omega_{18} - 2\omega_9\omega_6^3\omega_{22}c_s^2v_2\omega_{13}v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} - 2\omega_{12}\omega_6^3\omega_{22}c_s^2v_1v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} -$
$2\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_1^2v_2\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18} - 2\omega_9\omega_{12}\omega_6^2\omega_{22}v_1^2v_2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 2\omega_{12}\omega_6^3\omega_{22}c_s^2v_1^2v_2\omega_{20}\omega_8^2\omega_5^2\omega_{18} +$
$2\omega_9\omega_{12}\omega_6^2\omega_{22}v_1^2v_2\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 2\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_1\omega_{13}v_3^2\omega_{14}\omega_8^2\omega_5^2 + \omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2v_2\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18} +$
$2\omega_9\omega_{12}\omega_6^2c_s^2v_2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - \omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_2\omega_{13}v_3^2\omega_{14}\omega_8^2\omega_5^2 + 2\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_1v_2^2\omega_{13}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$2\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1\omega_{13}v_3^2\omega_{20}\omega_8\omega_5^2\omega_{18} - 2\omega_9\omega_{12}\omega_6^3v_1^2v_2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 2\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_1\omega_{13}v_3^2\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$8\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^4v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18} + 2\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1v_2^2\omega_{13}\omega_{20}\omega_8\omega_5^2\omega_{18} + 2\omega_9\omega_{12}\omega_6^3\omega_{22}v_1v_2^2\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18} +$
$2\omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2v_2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + \omega_6^3\omega_{22}c_s^2v_1v_2^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 2\omega_9\omega_{12}\omega_6^2\omega_{22}v_1v_2^2\omega_{13}v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} +$
$2\omega_9\omega_6^3\omega_{22}c_s^2v_1\omega_{13}v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} + 2\omega_9\omega_6^3\omega_{22}c_s^2v_1v_2^2\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18} + 2\omega_9\omega_{12}\omega_6^2\omega_{22}v_1v_2^2\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18} -$
$2\omega_{12}\omega_6^3v_1v_2^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 2\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_1\omega_{13}v_3^2\omega_{20}\omega_8\omega_5^2\omega_{18} - \omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1v_2^2\omega_{13}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$2\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_2\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 2\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_1v_2^2\omega_{13}\omega_{20}\omega_8\omega_5^2\omega_{18} + \omega_9\omega_6^3\omega_{22}c_s^2v_1^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1\omega_{13}v_3^2\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 2\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} + 2\omega_{12}\omega_6^3\omega_{22}v_1v_2^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_2\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18} + \omega_6^3\omega_{22}c_s^2v_1\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 4\omega_9\omega_{12}\omega_6\omega_{22}c_s^4v_2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18} +$
$\omega_6^3\omega_{22}v_1v_2^2\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + \omega_9\omega_{12}\omega_6^3c_s^2v_2\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 2\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1v_2^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18} -$
$2\omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2v_2\omega_{13}v_3^2\omega_{14}\omega_8\omega_5^2\omega_{18} + 2\omega_{12}\omega_6^3\omega_{22}c_s^2v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 2\omega_9\omega_{12}\omega_6^3\omega_{22}v_1v_2^2\omega_{13}v_3^2\omega_{20}\omega_8\omega_5\omega_{18} -$
$2\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_2\omega_{13}v_3^2\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 2\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_1v_2^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18} + 2\omega_9\omega_{12}\omega_6^2\omega_{22}v_1^2v_2v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} -$
$2\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_2\omega_{13}v_3^2\omega_{20}\omega_8\omega_5^2\omega_{18} - 2\omega_9\omega_{12}\omega_6^2\omega_{22}v_1^2v_2\omega_{13}v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} - 2\omega_9\omega_{12}\omega_6^2c_s^2v_1v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$2\omega_{12}\omega_6^3c_s^2v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 2\omega_9\omega_{12}\omega_6^2v_1^2v_2\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 2\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_1^2v_2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_{18} +$
$\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1^2v_2\omega_{13}\omega_{14}\omega_8^2\omega_5^2 - 2\omega_9\omega_{12}\omega_6^2v_1v_2^2\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 2\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_1\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18} -$
$\omega_9\omega_6^3\omega_{22}v_1^2v_2\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18} + 2\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18} + 2\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1^2v_2\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18} +$
$2\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_1\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 2\omega_9\omega_{12}\omega_6^3v_1v_2^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 2\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1v_2^2\omega_{13}\omega_{14}\omega_8\omega_5\omega_{18} -$
$\omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2v_2\omega_{13}v_3^2\omega_{14}\omega_8^2\omega_5^2 + 2\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_2\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 - 4\omega_9\omega_{12}\omega_6\omega_{22}c_s^4v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18} -$
$2\omega_{12}\omega_6^3\omega_{22}c_s^2v_1v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} - 2\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1\omega_{13}v_3^2\omega_{14}\omega_8\omega_5\omega_{18} + 4\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^4v_2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18} +$
$2\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_1v_2^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 2\omega_9\omega_{12}\omega_6^2c_s^2v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + \omega_9\omega_{12}\omega_6^3c_s^2v_1v_2^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2 -$
$2\omega_{12}\omega_6^3\omega_{22}v_1v_2^2v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} + \omega_9\omega_{12}\omega_6^3\omega_{22}v_1v_2^2\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 2\omega_6^3\omega_{22}c_s^2v_1\omega_{13}v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} - 2\omega_6^3\omega_{22}c_s^2v_1v_2^2\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18} +$
$2\omega_9\omega_{12}\omega_6^2\omega_{22}v_1v_2^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + \omega_9\omega_{12}\omega_6^3c_s^2v_1\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + \omega_{12}\omega_6^3\omega_{22}v_1^2v_2\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$2\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 2\omega_9\omega_{12}\omega_6^2\omega_{22}v_1v_2^2\omega_{13}v_3^2\omega_{14}\omega_8^2\omega_5^2 + \omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$2\omega_{12}\omega_6^3\omega_{22}v_1^2v_2\omega_{13}v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} + 2\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1^2v_2\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18} + 2\omega_9\omega_6^3\omega_{22}v_1^2v_2\omega_{13}v_3^2\omega_{20}\omega_8^2\omega_5\omega_{18} -$
$\omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2v_2\omega_{13}v_3^2\omega_{14}\omega_8^2\omega_5\omega_{18} - \omega_{12}\omega_6^3v_1^2v_2\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 2\omega_9\omega_{12}\omega_6^3\omega_{22}v_1v_2^2\omega_{13}v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} +$
$\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1v_2^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 2\omega_9\omega_{12}\omega_6^2c_s^2v_1^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2 - 2\omega_9\omega_{12}\omega_6^2\omega_{22}v_1v_2^2\omega_{13}v_3^2\omega_{14}\omega_8\omega_5^2\omega_{18} -$
$2\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_2\omega_{13}v_3^2\omega_{20}\omega_8^2\omega_5\omega_{18} + \omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_2\omega_{13}v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 2\omega_9\omega_{12}\omega_6^3c_s^2v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}$

$C_{47} = \omega_9^2\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_7v_3^2\omega_{14}\omega_8^2\omega_5\omega_{18} - 4\omega_9^2\omega_{12}\omega_6^2\omega_{22}c_s^2v_1v_2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2 - 2\omega_9\omega_{12}\omega_6^3c_s^2\omega_{13}\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$2\omega_9^2\omega_{12}\omega_6^2\omega_{22}c_s^2v_2^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_{18} + \omega_9\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 2\omega_9^2\omega_{12}\omega_6^3\omega_{22}c_s^2v_2^2\omega_{13}^2\omega_7\omega_{20}\omega_8\omega_5^2\omega_{18} +$
$2\omega_9^2\omega_{12}\omega_6^3c_s^2v_2^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 4\omega_9^2\omega_{12}\omega_6^3\omega_{22}v_1v_2\omega_{13}\omega_7v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} + 2\omega_9^2\omega_{12}\omega_6^3v_1v_2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$4\omega_9^2\omega_{12}\omega_6^2v_1v_2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 4\omega_{12}\omega_6^3\omega_{22}c_s^2v_1v_2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 2\omega_9^2\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$\omega_9^2\omega_{12}\omega_6^3c_s^2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 - 4\omega_9^2\omega_6^3\omega_{22}v_1v_2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} + 2\omega_9^2\omega_{12}\omega_6^2\omega_{22}v_2^2\omega_{13}\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$2\omega_9\omega_6^3\omega_{22}c_s^2v_2^2\omega_{13}^2\omega_7\omega_{20}\omega_8^2\omega_5^2\omega_{18} - 2\omega_9^2\omega_{12}\omega_6^3\omega_{22}v_2^2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_8\omega_5\omega_{18} - 4\omega_9^2\omega_{12}\omega_6^3\omega_{22}v_1v_2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_8\omega_5^2\omega_{18} -$
$14\omega_9^2\omega_{12}\omega_6^2\omega_{22}c_s^2v_1v_2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18} + \omega_9^2\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_7v_3^2\omega_{14}\omega_8^2\omega_5^2 - 8\omega_9^2\omega_{12}\omega_{22}c_s^2v_1v_2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$2\omega_9^2\omega_{12}\omega_6^2c_s^2\omega_{13}\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 4\omega_9\omega_{12}\omega_6^3\omega_{22}v_1v_2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} - 12\omega_9^2\omega_{12}\omega_6^2\omega_{22}c_s^2v_1v_2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$4\omega_{12}\omega_6^2\omega_{22}c_s^2v_1v_2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 2\omega_9^2\omega_{12}\omega_6^3\omega_{22}c_s^2v_2^2\omega_{13}^2\omega_7\omega_{20}\omega_8^2\omega_5\omega_{18} + 2\omega_9\omega_{12}\omega_6^3\omega_{22}v_1v_2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$\omega_9^2\omega_{12}\omega_6^3\omega_{22}c_s^2v_2^2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + \omega_9^2\omega_{12}\omega_6^3\omega_{22}v_2^2\omega_{13}^2\omega_7v_3^2\omega_{14}\omega_8^2\omega_5^2 + 2\omega_9^2\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_7v_3^2\omega_{14}\omega_8\omega_5^2\omega_{18} +$
$2\omega_9^2\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} - 4\omega_9^2\omega_{12}\omega_6^2\omega_{22}c_s^2v_1v_2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 2\omega_9\omega_{12}\omega_6^3\omega_{22}v_2^2\omega_{13}\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$2\omega_9^2\omega_{12}\omega_6^2c_s^2v_2^2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 8\omega_9^2\omega_{12}\omega_6^2\omega_{22}c_s^2v_1v_2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18} - 2\omega_9^2\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$4\omega_9^2\omega_{12}\omega_6^3\omega_{22}c_s^2v_1v_2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8\omega_{18} + \omega_9\omega_6^3\omega_{22}c_s^2v_2^2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 2\omega_9^2\omega_6^3\omega_{22}v_1v_2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$4\omega_9^2\omega_{12}\omega_6^3\omega_{22}c_s^2v_1v_2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 4\omega_9^2\omega_{12}\omega_6^2\omega_{22}v_1v_2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} + 4\omega_9^2\omega_{12}\omega_6^3\omega_{22}v_1v_2\omega_{13}\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$12\omega_9^2\omega_{12}\omega_6^3\omega_{22}c_s^2v_1v_2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18} - 2\omega_9^2\omega_{12}\omega_6^2\omega_{22}v_2^2\omega_{13}^2\omega_7v_3^2\omega_{14}\omega_8\omega_5^2\omega_{18} + 2\omega_9^2\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} +$
$2\omega_9^2\omega_{12}\omega_6^3\omega_{22}v_1v_2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 - 4\omega_9^2\omega_{12}\omega_6^3\omega_{22}v_1v_2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_8^2\omega_5\omega_{18} - 2\omega_9^2\omega_{12}\omega_6^3\omega_{22}c_s^2v_1v_2\omega_{13}\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$\omega_9^2\omega_{12}\omega_6^3v_2^2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} - 2\omega_9^2\omega_6^3\omega_{22}c_s^2v_2^2\omega_{13}^2\omega_7\omega_{20}\omega_8^2\omega_5\omega_{18} - 2\omega_9^2\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$4\omega_9\omega_{12}\omega_6^3v_1v_2\omega_{13}\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - \omega_9^2\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18} + 2\omega_9^2\omega_{12}\omega_6^3\omega_{22}v_2^2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18} +$
$\omega_9^2\omega_6^3\omega_{22}v_2^2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18} + 2\omega_9^2\omega_{12}\omega_6^3\omega_{22}v_1v_2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18} + 4\omega_9^2\omega_{12}\omega_6^3\omega_{22}v_1v_2\omega_{13}^2\omega_7v_3^2\omega_{14}\omega_8\omega_5\omega_{18} +$
$2\omega_9^2\omega_{12}\omega_6^3\omega_{22}v_2^2\omega_{13}^2\omega_7v_3^2\omega_{14}\omega_8\omega_5^2\omega_{18} + 2\omega_9^2\omega_{12}\omega_6^2v_2^2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 2\omega_9^2\omega_{12}\omega_6^2\omega_{22}v_2^2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} -$
$4\omega_9^2\omega_{12}\omega_6^2\omega_{22}c_s^2v_1v_2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 2\omega_9^2\omega_{12}\omega_6^2\omega_{22}v_2^2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 4\omega_9^2\omega_{12}\omega_6^2c_s^2v_1v_2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$4\omega_9^2\omega_{12}\omega_6^2\omega_{22}v_1v_2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 2\omega_9^2\omega_{12}\omega_6^3\omega_{22}c_s^2v_1v_2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 2\omega_9^2\omega_{12}\omega_6^3\omega_{22}c_s^2v_2^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_{18} -$
$4\omega_9^2\omega_{12}\omega_6\omega_{22}c_s^2v_1v_2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18} - 12\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1v_2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 2\omega_9^2\omega_{12}\omega_6^3\omega_{22}c_s^2v_2^2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$\omega_9^2\omega_6^3\omega_{22}c_s^2v_2^2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 2\omega_9^2\omega_{12}\omega_6^3\omega_{22}c_s^2v_2^2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18} + \omega_9^2\omega_{12}\omega_6^3\omega_{22}c_s^2v_2^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2 +$
$2\omega_9^2\omega_{12}\omega_6^2\omega_{22}c_s^2v_2^2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 4\omega_9^2\omega_{12}\omega_6^3\omega_{22}c_s^2v_1v_2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18} - 2\omega_9^2\omega_{12}\omega_6^3\omega_{22}c_s^2v_1v_2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_{18} -$
$2\omega_9^2\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_7v_3^2\omega_{14}\omega_8\omega_5^2\omega_{18} + 2\omega_9^2\omega_6^3\omega_{22}v_2^2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} + 8\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_1v_2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$4\omega_9^2\omega_{12}\omega_6^2\omega_{22}c_s^2v_1v_2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 2\omega_9^2\omega_{12}\omega_6^3\omega_{22}c_s^2v_1v_2\omega_{13}^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18} - \omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_2^2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$2\omega_9^2\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} + 2\omega_9\omega_{12}\omega_6^3\omega_{22}v_2^2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} + \omega_9\omega_{12}\omega_6^3v_2^2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$2\omega_9^2\omega_{12}\omega_6^3\omega_{22}c_s^2v_1v_2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_5\omega_{18} + \omega_9^2\omega_{12}\omega_6^3\omega_{22}v_2^2\omega_{13}^2\omega_7v_3^2\omega_{14}\omega_8^2\omega_5\omega_{18} + 2\omega_9^2\omega_{12}\omega_6^3\omega_{22}v_1v_2\omega_{13}^2\omega_7v_3^2\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$

$\omega_9^2\omega_{12}\omega_6^3\omega_{22}v_2^2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 4\omega_9^2\omega_{12}\omega_6^3\omega_{22}v_1v_2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18} - 2\omega_9^2\omega_{12}\omega_6^3v_1v_2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 +$
$4\omega_9^2\omega_{12}\omega_6^2v_1v_2\omega_{13}\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 2\omega_9^2\omega_{12}\omega_6^2\omega_{22}c_s^2v_1v_2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_5^2\omega_{18} - 4\omega_9^2\omega_{12}\omega_6^3c_s^2v_1v_2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 4\omega_9^2\omega_{12}\omega_6^2\omega_{22}v_1v_2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 2\omega_9\omega_{12}\omega_6^3c_s^2v_1v_2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$2\omega_9^2\omega_{12}\omega_6^3c_s^2\omega_{13}\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 2\omega_9^2\omega_6^3\omega_{22}c_s^2v_1v_2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18} - 2\omega_9^2\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18} -$
$\omega_9^2\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 2\omega_9\omega_{12}\omega_6^3c_s^2v_2^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 2\omega_9^2\omega_{12}\omega_6^2\omega_{22}c_s^2v_1v_2\omega_{13}^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$4\omega_9^2\omega_{12}\omega_6^2\omega_{22}c_s^2v_1v_2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_{18} + 4\omega_9\omega_6^3\omega_{22}v_1v_2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} + \omega_9^2\omega_{12}\omega_6^3v_2^2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 -$
$2\omega_9^2\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_8\omega_5\omega_{18} + 6\omega_9^2\omega_{12}\omega_6\omega_{22}c_s^2v_1v_2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18} - \omega_9^2\omega_{12}\omega_6^3\omega_{22}c_s^2v_2^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$2\omega_9^2\omega_{12}\omega_6^2\omega_{22}c_s^2v_2^2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 2\omega_9^2\omega_{12}\omega_6^2c_s^2v_2^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 2\omega_9^2\omega_{12}\omega_6^2\omega_{22}c_s^2v_2^2\omega_{13}^2\omega_7\omega_{20}\omega_8\omega_5^2\omega_{18} +$
$4\omega_9^2\omega_{12}\omega_6\omega_{22}c_s^2v_1v_2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - \omega_9^2\omega_{12}\omega_6^3\omega_{22}c_s^2v_2^2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18} - 2\omega_9^2\omega_{12}\omega_6^2\omega_{22}v_2^2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_8\omega_5^2\omega_{18} -$
$2\omega_9^2\omega_{12}\omega_6^2\omega_{22}v_2^2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 4\omega_9^2\omega_{12}\omega_6^2\omega_{22}v_1v_2\omega_{13}^2\omega_7v_3^2\omega_{14}\omega_8^2\omega_5^2\omega_{18} - \omega_9^2\omega_{12}\omega_6^3\omega_{22}v_2^2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18} -$
$4\omega_9^2\omega_{12}\omega_6^3\omega_{22}v_1v_2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18} + 4\omega_9^2\omega_{12}\omega_6^2c_s^2v_1v_2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 2\omega_9^2\omega_{12}\omega_6^3\omega_{22}c_s^2v_1v_2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_5^2\omega_{18} -$
$\omega_9^2\omega_{12}\omega_6^3\omega_{22}v_2^2\omega_{13}^2\omega_7v_3^2\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 2\omega_9^2\omega_{12}\omega_6^2\omega_{22}v_2^2\omega_{13}\omega_7v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} - 2\omega_9^2\omega_{12}\omega_6^3\omega_{22}v_1v_2\omega_{13}^2\omega_7v_3^2\omega_{14}\omega_8^2\omega_5\omega_{18} -$
$4\omega_9^2\omega_{12}\omega_6^3v_1v_2\omega_{13}\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 2\omega_9^2\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7v_3^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18} + \omega_9^2\omega_{12}\omega_6^3c_s^2v_2^2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2 +$
$4\omega_9\omega_6^2\omega_{22}c_s^2v_1v_2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + \omega_9^2\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18} - 2\omega_9\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} +$
$2\omega_9^2\omega_6^2\omega_{22}c_s^2v_1v_2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 2\omega_9^2\omega_{12}\omega_6^2c_s^2\omega_{13}\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 2\omega_9^2\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18} -$
$2\omega_9^2\omega_{12}\omega_6^2\omega_{22}v_2^2\omega_{13}^2\omega_7v_3^2\omega_{14}\omega_8^2\omega_5^2 + 4\omega_9^2\omega_{12}\omega_6^2\omega_{22}c_s^2v_1v_2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_{18} + 4\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_1v_2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18} +$
$2\omega_9^2\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_8\omega_5^2\omega_{18} - 2\omega_9^2\omega_{12}\omega_6^2\omega_{22}c_s^2v_1v_2\omega_{13}^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18} - 2\omega_9\omega_{12}\omega_6^3\omega_{22}v_2^2\omega_{13}\omega_7v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} +$
$4\omega_9^2\omega_{12}\omega_6^3\omega_{22}c_s^2v_1v_2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_{18} + 2\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_2^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 2\omega_9^2\omega_{12}\omega_6^3\omega_{22}c_s^2v_1v_2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$2\omega_9^2\omega_{12}\omega_6^2\omega_{22}c_s^2v_2^2\omega_{13}^2\omega_7v_3^2\omega_{14}\omega_8^2\omega_5^2\omega_{18} + \omega_9^2\omega_{12}\omega_6^3c_s^2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 2\omega_9^2\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_7v_3^2\omega_{14}\omega_8^2\omega_5^2 +$
$4\omega_9\omega_{12}\omega_6^3c_s^2v_1v_2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 2\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_2^2\omega_{13}^2\omega_7\omega_{20}\omega_8^2\omega_5^2\omega_{18} + \omega_9^2\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$\omega_9\omega_{12}\omega_6^3c_s^2v_2^2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 4\omega_9^2\omega_{12}\omega_6^2\omega_{22}v_1v_2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18} + 2\omega_9^2\omega_{12}\omega_6^2\omega_{22}c_s^2v_1v_2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 +$
$2\omega_9^2\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 - 4\omega_9^2\omega_{12}\omega_6^3\omega_{22}v_1v_2\omega_{13}^2\omega_7v_3^2\omega_{14}\omega_8\omega_5^2\omega_{18} + 2\omega_9^2\omega_{12}\omega_6^3\omega_{22}c_s^2v_1v_2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$2\omega_9^2\omega_{12}\omega_6^3\omega_{22}c_s^2v_2^2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_8\omega_5\omega_{18} - 2\omega_9^2\omega_{12}\omega_6^3\omega_{22}c_s^2v_1v_2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2 + 2\omega_9^2\omega_{12}\omega_6^3\omega_{22}c_s^2v_2^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_{18} +$
$2\omega_9^2\omega_{12}\omega_6^2\omega_{22}c_s^2v_2^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 4\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1v_2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18} + 12\omega_9^2\omega_{12}\omega_6\omega_{22}c_s^2v_1v_2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$2\omega_9^2\omega_{12}\omega_6^2c_s^2v_2^2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 8\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_1v_2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18} - \omega_9^2\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 +$
$2\omega_9^2\omega_{12}\omega_6^3\omega_{22}c_s^2v_1v_2\omega_{13}^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18} + 2\omega_9^2\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_8^2\omega_5\omega_{18} - 2\omega_9^2\omega_{12}\omega_6^3c_s^2v_1v_2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2 -$
$2\omega_9^2\omega_6^3\omega_{22}v_2^2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_8^2\omega_5\omega_{18} + 2\omega_9^2\omega_{12}\omega_6^2\omega_{22}c_s^2v_1v_2\omega_{13}^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 2\omega_9^2\omega_{12}\omega_6^3\omega_{22}c_s^2v_1v_2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$2\omega_9^2\omega_{12}\omega_6^3\omega_{22}c_s^2v_2^2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} - 2\omega_9^2\omega_{12}\omega_6\omega_{22}c_s^2v_1v_2\omega_{13}^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 4\omega_9^2\omega_{12}\omega_6^2\omega_{22}c_s^2v_1v_2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2 -$
$\omega_9^2\omega_{12}\omega_6^2c_s^2v_2^2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 2\omega_9^2\omega_{12}\omega_6^2\omega_{22}c_s^2v_2^2\omega_{13}\omega_7\omega_{20}\omega_8^2\omega_5^2\omega_{18} - 2\omega_9^2\omega_{12}\omega_6^2\omega_{22}c_s^2v_2^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_{18} -$
$2\omega_9\omega_{12}\omega_6^3v_2^2\omega_{13}\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 2\omega_9^2\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 4\omega_9^2\omega_{12}\omega_6^2c_s^2v_1v_2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_5^2 +$
$\omega_9\omega_6^3\omega_{22}v_2^2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 2\omega_9^2\omega_{12}\omega_6^2v_2^2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 - 2\omega_9^2\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_7v_3^2\omega_{14}\omega_8\omega_5\omega_{18} -$
$2\omega_9^2\omega_6^3\omega_{22}v_1v_2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18} - 2\omega_9^2\omega_{12}\omega_6^2\omega_{22}c_s^2v_2^2\omega_{13}\omega_7\omega_{20}\omega_8^2\omega_5^2\omega_{18} + 4\omega_9^2\omega_{12}\omega_6^3\omega_{22}v_1v_2\omega_{13}\omega_7v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} +$
$\omega_9^2\omega_{12}\omega_6^2\omega_{22}c_s^2v_1v_2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 2\omega_9\omega_{12}\omega_6^3v_1v_2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 2\omega_9^2\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$8\omega_9^2\omega_{12}\omega_6^3\omega_{22}c_s^2v_1v_2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 2\omega_9^2\omega_{12}\omega_6^2v_2^2\omega_{13}\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - \omega_9^2\omega_{12}\omega_6^3\omega_{22}v_2^2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 +$
$4\omega_9^2\omega_{12}\omega_6^3\omega_{22}v_1v_2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} + 4\omega_9^2\omega_{12}\omega_6^2\omega_{22}c_s^2v_1v_2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 2\omega_9^2\omega_{12}\omega_6^3\omega_{22}v_2^2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_8^2\omega_5\omega_{18} -$
$2\omega_9^2\omega_{12}\omega_6^3\omega_{22}v_1v_2\omega_{13}^2\omega_7v_3^2\omega_{14}\omega_8^2\omega_5^2 - 2\omega_9^2\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_8^2\omega_5\omega_{18} - 4\omega_9^2\omega_{12}\omega_6^2\omega_{22}v_1v_2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 +$
$9\omega_9^2\omega_{12}\omega_6^3\omega_{22}c_s^2v_1v_2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18} - 2\omega_9^2\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_8\omega_5^2\omega_{18} + 2\omega_9^2\omega_{12}\omega_6^3\omega_{22}c_s^2v_1v_2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2 -$
$\omega_9^2\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_7v_3^2\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 2\omega_9^2\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_7v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} - 2\omega_9\omega_6^3\omega_{22}v_2^2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} -$
$2\omega_9^2\omega_{12}\omega_6^3\omega_{22}c_s^2v_2^2\omega_{13}^2\omega_7\omega_{20}\omega_8\omega_5\omega_{18} - 2\omega_9^2\omega_{12}\omega_6^2\omega_{22}c_s^2v_2^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2 + 2\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$2\omega_9^2\omega_{12}\omega_6^3\omega_{22}v_2^2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_8\omega_5^2\omega_{18} + 4\omega_9^2\omega_6^3\omega_{22}v_1v_2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_8^2\omega_5\omega_{18} + 4\omega_9^2\omega_{12}\omega_6^3\omega_{22}v_1v_2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_8\omega_5\omega_{18} -$
$4\omega_9^2\omega_{12}\omega_6^2v_1v_2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 4\omega_9^2\omega_{12}\omega_6^2\omega_{22}v_1v_2\omega_{13}\omega_7v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} - 2\omega_9\omega_6^3\omega_{22}v_1v_2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$4\omega_9^2\omega_{12}\omega_6^2\omega_{22}v_1v_2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_8\omega_5^2\omega_{18} - 2\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} - 2\omega_9^2\omega_{12}\omega_6^3\omega_{22}v_2^2\omega_{13}\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$2\omega_9^2\omega_{12}\omega_6^3\omega_{22}c_s^2v_1v_2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18} + 2\omega_9^2\omega_{12}\omega_6^3\omega_{22}v_2^2\omega_{13}\omega_7v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} + 2\omega_9^2\omega_{12}\omega_6^2\omega_{22}v_2^2\omega_{13}^2\omega_7v_3^2\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$4\omega_9^2\omega_{12}\omega_6^2\omega_{22}c_s^2v_1v_2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18} + 4\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1v_2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - \omega_9^2\omega_{12}\omega_6^3c_s^2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$2\omega_9^2\omega_{12}\omega_6^2\omega_{22}c_s^2v_1v_2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18} - 4\omega_9^2\omega_{12}\omega_6^2\omega_{22}v_1v_2\omega_{13}\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}$

$C_{48} = 12\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} - 12\omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2\omega_{13}\omega_7^2v_3^2\omega_{14}\omega_8\omega_5^3\omega_{18} + 24\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1v_2\omega_{13}\omega_7^2\omega_{20}\omega_8\omega_5^3\omega_{18} +$
$12\omega_{12}\omega_6^3c_s^2\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} + 12\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 12\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^3\omega_{18} +$
$24\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18} - 12\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} - 12\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5^3\omega_{18} -$
$12\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_8\omega_5^3\omega_{18} + 12\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 - 12\omega_9\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} -$
$12\omega_9\omega_{12}\omega_6^2\omega_{22}v_1^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5^3\omega_{18} + 24\omega_9\omega_{12}\omega_6^2\omega_{22}v_1v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5^3\omega_{18} + 6\omega_9\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} +$
$12\omega_9\omega_{12}\omega_6^3\omega_{22}v_1v_2\omega_{13}\omega_7^2v_3^2\omega_{14}\omega_8^2\omega_5^3\omega_{18} + 12\omega_9\omega_{12}\omega_6^2c_s^2v_1^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} - 12\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_1^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^3\omega_{18} -$
$18\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} + 12\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18} + 12\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_5^2\omega_{18} +$
$12\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18} - 12\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} + 12\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_5^2\omega_{18} -$
$6\omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} - 24\omega_{12}\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{18} + 24\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1v_2\omega_7^2\omega_{20}\omega_8^2\omega_5^3\omega_{18} +$
$12\omega_6^3\omega_{22}c_s^2v_1v_2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} + 6\omega_9\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} + 12\omega_9\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18} - 12\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3 - 24\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_1v_2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^3 +$
$12\omega_9\omega_{12}\omega_6^3\omega_{22}v_1v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} + 24\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_1v_2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} - 6\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$

$6\omega_6^3\omega_{22}v_1^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} - 12\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^4\omega_7^2\omega_{20}\omega_8^2\omega_5^3\omega_{18} + 12\omega_9\omega_{12}\omega_6^2v_1^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3 +$
$12\omega_9\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} - 12\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} + 24\omega_9\omega_{12}\omega_6^3\omega_{22}v_1v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_8\omega_5^3\omega_{18} -$
$12\omega_{12}\omega_6^3\omega_{22}v_1^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5^3\omega_{18} - 6\omega_9\omega_{12}\omega_6^3c_s^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3 - 12\omega_9\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} -$
$6\omega_9\omega_6^3\omega_{22}v_1^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 12\omega_9\omega_{12}\omega_6^3c_s^2\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} + 24\omega_9\omega_{12}\omega_6^2\omega_{22}v_1v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{18} -$
$12\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3 - 12\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_{18} + 12\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} +$
$12\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1v_2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 12\omega_9\omega_{12}\omega_6^2v_1^2\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} - 12\omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} -$
$6\omega_9\omega_{12}\omega_6^3c_s^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3 - 12\omega_{12}\omega_6^3\omega_{22}c_s^2v_1v_2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} + 12\omega_{12}\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5^3\omega_{18} +$
$24\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_1v_2\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5^3\omega_{18} + 6\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 24\omega_9\omega_{12}\omega_6^2v_1v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} +$
$12\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} - 12\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{18} - 12\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1v_2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_9\omega_{12}\omega_6^2\omega_{22}v_1^2\omega_{13}\omega_7^2v_3^2\omega_{14}\omega_8^2\omega_5^3 + 12\omega_9\omega_{12}\omega_6^2\omega_{22}v_1^2\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5^3\omega_{18} - 12\omega_9\omega_{12}\omega_6^2\omega_{22}v_1^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{18} +$
$12\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_5^3\omega_{18} + 24\omega_9\omega_{12}\omega_6^3c_s^2v_1v_2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} + 12\omega_{12}\omega_6^3c_s^2v_1v_2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} -$
$12\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 12\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{18} - 12\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18} +$
$24\omega_{12}\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18} + 6\omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 12\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} -$
$24\omega_9\omega_{12}\omega_6\omega_{22}c_s^2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} + 12\omega_{12}\omega_6^3\omega_{22}c_s^4\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} + 12\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{18} -$
$6\omega_9\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 6\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18} - 12\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_{18} -$
$12\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5^3\omega_{18} - 12\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_5^3\omega_{18} + 36\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$24\omega_9\omega_{12}\omega_6^2c_s^2v_1v_2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} + 24\omega_{12}\omega_6^3\omega_{22}v_1v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5^3\omega_{18} - 24\omega_{12}\omega_6^3\omega_{22}c_s^2v_1v_2\omega_7^2\omega_{20}\omega_8^2\omega_5^3\omega_{18} -$
$6\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} - 48\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{18} - 12\omega_9\omega_{12}\omega_6^3\omega_{22}v_1v_2\omega_{13}\omega_7^2v_3^2\omega_{14}\omega_8^2\omega_5^3\omega_{18} +$
$12\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1v_2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^3 + 6\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3 - 6\omega_9\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$24\omega_{12}\omega_6^2\omega_{22}c_s^2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} + 12\omega_6^3\omega_{22}v_1v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} + 12\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} +$
$12\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5^3\omega_{18} - 24\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_1v_2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5^3\omega_{18} - 6\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} -$
$24\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1v_2\omega_{13}\omega_7^2\omega_{20}\omega_8\omega_5^2\omega_{18} + 12\omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2\omega_{13}\omega_7^2v_3^2\omega_{14}\omega_8\omega_5^2\omega_{18} + 6\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3 -$
$60\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{18} - 12\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1v_2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3 + 12\omega_9\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5^3\omega_{18} +$
$12\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} + 12\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_8\omega_5^2\omega_{18} - 6\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} -$
$12\omega_{12}\omega_6^3\omega_{22}v_1v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} + 24\omega_{12}\omega_6^3\omega_{22}c_s^2v_1v_2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} + 24\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_1v_2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{18} +$
$12\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} + 12\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} - 12\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^3 -$
$24\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 24\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_1v_2\omega_7^2\omega_{20}\omega_8^2\omega_5^3\omega_{18} - 24\omega_{12}\omega_6^3c_s^2v_1v_2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} +$
$24\omega_{12}\omega_6^3\omega_{22}c_s^2v_1v_2\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5^3\omega_{18} - 12\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^4\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} + 12\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1v_2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} +$
$12\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_1^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^3 + 12\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18} + 12\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5^3\omega_{18} +$
$12\omega_9\omega_{12}\omega_6^2\omega_{22}v_1^2\omega_{13}\omega_7^2v_3^2\omega_{14}\omega_8\omega_5^3\omega_{18} + 12\omega_{12}\omega_6^3v_1v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} - 12\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_8\omega_5^3\omega_{18} +$
$6\omega_9\omega_6^3\omega_{22}v_1^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} + 12\omega_9\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 6\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} -$
$24\omega_9\omega_{12}\omega_6^3\omega_{22}v_1v_2\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} + 12\omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5^3\omega_{18} - 6\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 +$
$12\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_8\omega_5^3\omega_{18} - 12\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1v_2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^3\omega_{18} - 12\omega_9\omega_{12}\omega_6^3\omega_{22}v_1v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$6\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^3\omega_{18} - 12\omega_9\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^3 - 12\omega_9\omega_{12}\omega_6^3\omega_{22}v_1v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3 -$
$24\omega_9\omega_{12}\omega_6^3\omega_{22}v_1v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_8\omega_5^2\omega_{18} + 24\omega_9\omega_{12}\omega_6^2c_s^2v_1v_2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} - 24\omega_9\omega_{12}\omega_6^2\omega_{22}v_1v_2\omega_{13}\omega_7^2v_3^2\omega_{14}\omega_8\omega_5^3\omega_{18} -$
$12\omega_9\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5^3\omega_{18} + 24\omega_9\omega_6^3\omega_{22}v_1v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5^3\omega_{18} + 12\omega_9\omega_{12}\omega_6^3v_1v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3 +$
$12\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} + 12\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18} - 2\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} +$
$12\omega_9\omega_{12}\omega_6\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 24\omega_9\omega_{12}\omega_6^3v_1v_2\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} - 6\omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2\omega_{13}\omega_7^2v_3^2\omega_{14}\omega_8^2\omega_5^3 +$
$6\omega_9\omega_{12}\omega_6^3c_s^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} - 12\omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5^3\omega_{18} - 12\omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18} -$
$24\omega_{12}\omega_6^3\omega_{22}v_1v_2\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5^3\omega_{18} - 12\omega_9\omega_{12}\omega_6^2v_1^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} - 12\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_9\omega_{12}\omega_6^2c_s^2\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} - 12\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_8\omega_5^2\omega_{18} + 24\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_1v_2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^3\omega_{18} +$
$12\omega_9\omega_{12}\omega_6^2c_s^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3 - 12\omega_9\omega_{12}\omega_6^3v_1^2\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} + 24\omega_9\omega_{12}\omega_6^2\omega_{22}v_1v_2\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} +$
$24\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1v_2\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} - 12\omega_9\omega_{12}\omega_6^2\omega_{22}v_1^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3 + 12\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} -$
$6\omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2\omega_{13}\omega_7^2v_3^2\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 24\omega_9\omega_{12}\omega_6^2\omega_{22}v_1v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5^3\omega_{18} - 6\omega_{12}\omega_6^3v_1^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} +$
$24\omega_9\omega_{12}\omega_6^3\omega_{22}v_1v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} - 24\omega_9\omega_{12}\omega_6^2\omega_{22}v_1v_2\omega_{13}\omega_7^2v_3^2\omega_{14}\omega_8^2\omega_5^3 + 24\omega_9\omega_{12}\omega_6^2\omega_{22}v_1v_2\omega_{13}\omega_7^2v_3^2\omega_{14}\omega_8^2\omega_5^3\omega_{18} -$
$12\omega_9\omega_{12}\omega_6^3c_s^2v_1^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} + 12\omega_9\omega_{12}\omega_6\omega_{22}c_s^4\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} + 6\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^3 -$
$12\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5^3\omega_{18} + 24\omega_9\omega_{12}\omega_6^3\omega_{22}v_1v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 42\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{18} +$
$6\omega_{12}\omega_6^3\omega_{22}v_1^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} - 12\omega_{12}\omega_6^3\omega_{22}v_1^2\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} - 12\omega_9\omega_6^3\omega_{22}c_s^2v_1v_2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} -$
$12\omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_8\omega_5^3\omega_{18} - 6\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 24\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1v_2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5^3\omega_{18} -$
$12\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5^3\omega_{18} - 6\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^3\omega_{18} - 12\omega_9\omega_{12}\omega_6^2\omega_{22}v_1^2\omega_{13}\omega_7^2v_3^2\omega_{14}\omega_8^2\omega_5^3\omega_{18} +$
$12\omega_{12}\omega_6^3v_1^2\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} - 12\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_1v_2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} + 12\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5^3\omega_{18} +$
$24\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_1v_2\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} + 24\omega_9\omega_{12}\omega_6^3\omega_{22}v_1v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5^3\omega_{18} - 6\omega_{12}\omega_6^3c_s^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} +$

$12\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5^3\omega_{18} + 12\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_8\omega_5^3\omega_{18} + 12\omega_9\omega_{12}\omega_6^2\omega_{22}v_1^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_8\omega_5^3\omega_{18} +$
$6\omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2\omega_{13}\omega_7^2v_3^2\omega_{14}\omega_8^2\omega_5^3\omega_{18} - 24\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1v_2\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5^3\omega_{18} - 12\omega_{12}\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} +$
$12\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} - 24\omega_6^3\omega_{22}v_1v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5^3\omega_{18} - 12\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5^3\omega_{18} +$
$24\omega_9\omega_{12}\omega_6\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} - 18\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 12\omega_9\omega_{12}\omega_6^3v_1v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} +$
$12\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^4\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} + 24\omega_{12}\omega_6^3\omega_{22}v_1v_2\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} - 24\omega_9\omega_{12}\omega_6^2c_s^2v_1v_2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3 +$
$12\omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{18} + 6\omega_{12}\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} - 6\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^3 +$
$24\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 12\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_1^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} - 24\omega_9\omega_6^3\omega_{22}v_1v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} -$
$24\omega_{12}\omega_6^3v_1v_2\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} - 6\omega_{12}\omega_6^3c_s^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} - 12\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{18} +$
$18\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18} - 24\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1v_2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_{18} + 6\omega_9\omega_{12}\omega_6^3v_1^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} +$
$12\omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_8\omega_5^2\omega_{18} + 12\omega_9\omega_6^3\omega_{22}c_s^2v_1v_2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 24\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_1v_2\omega_{13}\omega_7^2\omega_{20}\omega_8\omega_5^3\omega_{18} -$
$60\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18} - 24\omega_9\omega_{12}\omega_6^2\omega_{22}v_1v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} + 6\omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3 +$
$6\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 12\omega_9\omega_{12}\omega_6^2c_s^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} + 12\omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} -$
$24\omega_9\omega_{12}\omega_6^3\omega_{22}v_1v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5^3\omega_{18} - 12\omega_{12}\omega_6^3\omega_{22}c_s^4\omega_7^2\omega_{20}\omega_8^2\omega_5^3\omega_{18} + 24\omega_9\omega_{12}\omega_6\omega_{22}c_s^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{18} +$
$12\omega_6^3\omega_{22}v_1^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5^3\omega_{18} - 24\omega_{12}\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 18\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} +$
$12\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_{18} - 24\omega_9\omega_{12}\omega_6^3\omega_{22}v_1v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} + 36\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} -$
$24\omega_9\omega_{12}\omega_6^2v_1v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3 - 12\omega_9\omega_6^3\omega_{22}v_1v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} - 36\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18} -$
$24\omega_6^3\omega_{22}c_s^2v_1v_2\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5^3\omega_{18} + 12\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5^3\omega_{18} - \omega_9\omega_{12}\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} +$
$24\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1v_2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18} + 12\omega_{12}\omega_6^3\omega_{22}c_s^2v_1^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} + 24\omega_{12}\omega_6^2\omega_{22}c_s^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{18} +$
$12\omega_9\omega_{12}\omega_6^2\omega_{22}v_1^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} - 24\omega_9\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} - 12\omega_9\omega_{12}\omega_6^2c_s^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$24\omega_9\omega_{12}\omega_6^2\omega_{22}v_1^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 12\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_1^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} + 24\omega_{12}\omega_6^2\omega_{22}c_s^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{18} +$
$12\omega_9\omega_{12}\omega_6^2\omega_{22}v_1^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} - 24\omega_9\omega_6^3\omega_{22}c_s^2v_1v_2\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} - 12\omega_9\omega_{12}\omega_6^2c_s^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$24\omega_9\omega_{12}\omega_6^2v_1v_2\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} + 12\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^4\omega_7^2\omega_{20}\omega_8^2\omega_5^3\omega_{18} + 24\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{18}$

$C_{49} = \omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_{18}^2 - \omega_{12}\omega_6^3v_1^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 - \omega_9\omega_6^3\omega_{22}v_1^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}^2 +$
$\omega_9\omega_{12}\omega_6^3v_1v_2^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + \omega_{12}\omega_6^3\omega_{22}v_1^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 + \omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_5^2\omega_{18}^2 +$
$2\omega_9\omega_{12}\omega_6^2\omega_{22}v_1v_2^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 2\omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2v_2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2 + \omega_9\omega_{12}\omega_6^3\omega_{22}v_1v_2^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 +$
$\omega_9\omega_{12}\omega_6^3\omega_{22}v_1v_2^2\omega_{13}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + \omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 2\omega_9\omega_{12}\omega_6^2\omega_{22}v_1v_2^2\omega_{13}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 +$
$3\omega_9\omega_{12}\omega_6\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}^2 + 2\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_1v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18} + 2\omega_9\omega_{12}\omega_6^3v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 +$
$2\omega_9\omega_{12}\omega_6^3\omega_{22}v_1v_2^2\omega_{13}\omega_{20}\omega_8\omega_5^2\omega_{18}^2 - 2\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1\omega_{13}\omega_{14}\omega_8\omega_5\omega_{18}^2 + \omega_6^3\omega_{22}c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 +$
$2\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18}^2 + 2\omega_{12}\omega_6^3\omega_{22}v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 + 2\omega_9\omega_{12}\omega_6^2\omega_{22}v_1^2v_2\omega_{13}\omega_{20}\omega_8\omega_5^2\omega_{18}^2 - 2\omega_{12}\omega_6^3v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 -$
$2\omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2v_2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_{18}^2 - 2\omega_{12}\omega_6^3\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2 + 2\omega_9\omega_{12}\omega_6^2\omega_{22}v_1^2v_2\omega_{13}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 2\omega_{12}\omega_6^3\omega_{22}v_1^2v_2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2 +$
$2\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 2\omega_9\omega_{12}\omega_6^3\omega_{22}v_1v_2^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{22}v_1^2v_2\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2 + 2\omega_9\omega_{12}\omega_6^2c_s^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 -$
$3\omega_9\omega_{12}\omega_6\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + \omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 2\omega_9\omega_{12}\omega_6^3\omega_{22}v_1v_2^2\omega_{13}\omega_{20}\omega_8^2\omega_5\omega_{18}^2 +$
$2\omega_9\omega_{12}\omega_6^2\omega_{22}v_1^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 + 3\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}^2 - 2\omega_9\omega_{12}\omega_6^2\omega_{22}v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 +$
$\omega_9\omega_{12}\omega_6^3v_1^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 - 2\omega_9\omega_{12}\omega_6^2c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 - \omega_9\omega_6^3\omega_{22}c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 -$
$\omega_9\omega_{12}\omega_6^2\omega_{22}v_1^2v_2\omega_{13}\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 2\omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 - 2\omega_9\omega_{12}\omega_6^2c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$2\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2 - 2\omega_9\omega_6^3\omega_{22}v_1^2v_2\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2 - 2\omega_9\omega_6^3\omega_{22}c_s^2v_1\omega_{13}\omega_{20}\omega_8^2\omega_5\omega_{18}^2 + 2\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}^2 +$
$2\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_1\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2 - \omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1\omega_{13}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 + 2\omega_9\omega_{12}\omega_6^2c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 -$
$2\omega_{12}\omega_6^3\omega_{22}v_1^2v_2\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2 + 2\omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2v_2\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18}^2 + 2\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_8\omega_5^2\omega_{18}^2 +$
$2\omega_9\omega_{12}\omega_6^3c_s^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 + 2\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1\omega_{13}\omega_{20}\omega_8\omega_5^2\omega_{18}^2 - 2\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}^2 -$
$2\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_1\omega_{13}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 - 2\omega_{12}\omega_6^3\omega_{22}c_s^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 + 2\omega_9\omega_{12}\omega_6^2c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 + \omega_{12}\omega_6^3v_1v_2^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 + 2\omega_9\omega_{12}\omega_6^3\omega_{22}v_1v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2 +$
$\omega_9\omega_6^3\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 + 2\omega_{12}\omega_6^3\omega_{22}c_s^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 + \omega_{12}\omega_6^3v_1v_2^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 + 2\omega_9\omega_{12}\omega_6^3\omega_{22}v_1v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2 +$
$2\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1\omega_{13}\omega_{20}\omega_8^2\omega_5\omega_{18}^2 - \omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 2\omega_{12}\omega_6^3\omega_{22}c_s^2v_1\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2 - 2\omega_9\omega_6^3\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2 +$
$2\omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2v_2\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2 - 2\omega_9\omega_{12}\omega_6^2\omega_{22}v_1^2v_2\omega_{13}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 - 2\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 -$
$\omega_6^3\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 - \omega_9\omega_{12}\omega_6^3v_1v_2^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 - \omega_9\omega_{12}\omega_6^3\omega_{22}v_1v_2^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$\omega_9\omega_{12}\omega_6^3\omega_{22}v_1v_2^2\omega_{13}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 - 2\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 - 2\omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 + \omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 +$
$2\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_1\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2 - 2\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1\omega_{13}\omega_{20}\omega_8\omega_5^2\omega_{18}^2 + 2\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}^2 +$
$\omega_9\omega_{12}\omega_6^3c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 + 2\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18} + 2\omega_9\omega_6^3\omega_{22}v_1v_2^2\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2 +$
$\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 + 2\omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}^2 + 2\omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 +$
$\omega_9\omega_{12}\omega_6^3\omega_{22}v_1v_2^2\omega_{13}\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 2\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_1\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2 - 2\omega_9\omega_{12}\omega_6^3v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 - 2\omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2v_2\omega_{13}\omega_{20}\omega_8\omega_5^2\omega_{18}^2 +$
$2\omega_9\omega_{12}\omega_6^2\omega_{22}v_1^2v_2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_{18}^2 - \omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2v_2\omega_{13}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 2\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2 - \omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2 +$
$2\omega_{12}\omega_6^3\omega_{22}c_s^2v_1\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2 - 2\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18}^2 + 2\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}^2 +$
$2\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}^2 - \omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 + \omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 +$
$2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 + 2\omega_9\omega_{12}\omega_6^2\omega_{22}v_1v_2^2\omega_{13}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 + 2\omega_{12}\omega_6^3\omega_{22}c_s^2v_2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2 + 2\omega_{12}\omega_6^3v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 +$
$2\omega_9\omega_{12}\omega_6^3\omega_{22}v_1v_2^2\omega_{13}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 + 2\omega_9\omega_{12}\omega_6^2\omega_{22}v_1v_2^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}^2 - 2\omega_{12}\omega_6^3\omega_{22}v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 -$
$2\omega_9\omega_{12}\omega_6^2\omega_{22}v_1^2v_2\omega_{13}\omega_{20}\omega_8\omega_5^2\omega_{18}^2 - \omega_9\omega_6^3\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 4\omega_9\omega_{12}\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 +$
$\omega_{12}\omega_6^3\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 - 2\omega_9\omega_{12}\omega_6^2v_1v_2^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - \omega_9\omega_6^3\omega_{22}v_1v_2^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 - \omega_{12}\omega_6^3c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 +$
$2\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 + 2\omega_9\omega_{12}\omega_6^2\omega_{22}v_1v_2^2\omega_{13}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 - 4\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}^2 +$

$5\omega_9\omega_{12}\omega_6\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 - 2\omega_9\omega_{12}\omega_6^3\omega_{22}v_1v_2^2\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2 - 2\omega_9\omega_{12}\omega_6^3\omega_{22}v_1v_2^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}^2 -$
$\omega_6^3\omega_{22}v_1^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 - 2\omega_6^3\omega_{22}c_s^2v_1\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2 + 2\omega_9\omega_{12}\omega_6^2v_1v_2^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 + 2\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 +$
$2\omega_9\omega_6^3\omega_{22}v_1^2v_2\omega_{13}\omega_{20}\omega_8^2\omega_5\omega_{18}^2 + \omega_{12}\omega_6^3c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 - 2\omega_9\omega_{12}\omega_6^2v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 - 2\omega_9\omega_{12}\omega_6^2\omega_{22}v_1^2v_2\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2 -$
$2\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_8^2\omega_5\omega_{18}^2 + 2\omega_9\omega_{12}\omega_6^2\omega_{22}v_1^2v_2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2 - \omega_{12}\omega_6^3\omega_{22}c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 + \omega_9\omega_6^3\omega_{22}c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}^2 +$
$\omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2v_2\omega_{13}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 + \omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1\omega_{13}\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 2\omega_9\omega_6^3\omega_{22}c_s^2v_1\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2 + 2\omega_9\omega_{12}\omega_6^2v_1^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$\omega_9\omega_6^3\omega_{22}v_1^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 - \omega_9\omega_{12}\omega_6^3c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 2\omega_{12}\omega_6^3\omega_{22}c_s^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 -$
$2\omega_9\omega_{12}\omega_6^3\omega_{22}v_1v_2^2\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18}^2 - 6\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 2\omega_9\omega_{12}\omega_6^2\omega_{22}v_1^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}^2 +$
$2\omega_{12}\omega_6^3\omega_{22}v_1v_2^2\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2 + 2\omega_{12}\omega_6^3c_s^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 - \omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 -$
$\omega_9\omega_{12}\omega_6^3\omega_{22}v_1v_2^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 2\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_1\omega_{13}\omega_{20}\omega_8\omega_5^2\omega_{18}^2 + 2\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_{18}^2 -$
$2\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 - 2\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_1\omega_{13}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - \omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$\omega_9\omega_{12}\omega_6^3c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 + 2\omega_9\omega_{12}\omega_6^3\omega_{22}v_1^2v_2\omega_{13}\omega_{14}\omega_8\omega_5\omega_{18}^2 - 2\omega_9\omega_{12}\omega_6^3c_s^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 - 2\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_8\omega_5^2\omega_{18}^2$

$C_{50} = 12\omega_{15}\omega_6v_1^2v_2^2\omega_7^2v_3\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18} - 28\omega_{15}\omega_6^2c_s^4v_1\omega_7\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} + 6\omega_{15}\omega_6^2v_1v_2^2\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} +$
$3\omega_{15}\omega_6^2c_s^2v_1\omega_7^2v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 6\omega_{15}\omega_6^2c_s^2v_2^2\omega_7^2v_3\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18} + 6\omega_{15}\omega_6^2v_1^2v_2^2\omega_7^2v_3\omega_{17}\omega_8^2\omega_5^2 + 12\omega_{15}\omega_6c_s^2v_1\omega_7^2v_3^2\omega_{17}\omega_8\omega_5^2\omega_{18} +$
$12\omega_{15}\omega_6^2v_1^2v_2^2\omega_7^2v_3\omega_{17}\omega_8\omega_5^2\omega_{18} - 6\omega_{15}\omega_6^2c_s^2v_1\omega_7^2v_3^2\omega_{17}\omega_8^2\omega_5\omega_{18} + 6\omega_{15}\omega_6v_1^2v_2^2\omega_7^2v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 12\omega_{15}\omega_6^2c_s^2v_1\omega_7^2v_3^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18} +$
$6\omega_{15}\omega_6^2c_s^2v_1v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{18} - 6\omega_{15}\omega_6^2c_s^2v_2^2\omega_7^2v_3\omega_{20}\omega_8^2\omega_5^2\omega_{18} + 12\omega_{15}\omega_6^2v_1v_2^2\omega_7^2v_3^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18} - 6\omega_{15}\omega_6^2c_s^2v_1^2\omega_7^2v_3\omega_{17}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_{15}\omega_6^2c_s^2v_1^2\omega_7^2v_3\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18} - 12\omega_{15}\omega_6^2c_s^2v_1v_2^2\omega_7^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18} - 6\omega_{15}\omega_6^2c_s^2v_1\omega_7^2v_3^2\omega_{17}\omega_8^2\omega_5^2 - 12\omega_{15}\omega_6^2c_s^2v_2^2\omega_7^2v_3\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18} -$
$12\omega_{15}\omega_6v_1^2v_2^2\omega_7^2v_3\omega_{17}\omega_8\omega_5^2\omega_{18} - 3\omega_{15}\omega_6^2v_1^2v_2^2\omega_7^2v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 12\omega_{15}\omega_6^2v_1v_2^2\omega_7^2v_3^2\omega_{20}\omega_8\omega_5\omega_{18} - 12\omega_6^2c_s^2v_2^2\omega_7^2v_3\omega_{20}\omega_8^2\omega_5\omega_{18} +$
$6\omega_{15}\omega_6^2c_s^2v_1\omega_7^2v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18} - 6\omega_{15}\omega_6v_1v_2^2\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} - 6\omega_{15}\omega_6c_s^2v_1\omega_7^2v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 6\omega_{15}\omega_6^2v_1^2v_2^2\omega_7^2v_3\omega_{20}\omega_8^2\omega_5\omega_{18} +$
$12\omega_{15}\omega_6^2c_s^2v_1\omega_7^2v_3^2\omega_{17}\omega_8\omega_5^2\omega_{18} + 48\omega_{15}\omega_6c_s^4v_1\omega_7\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} + 3\omega_{15}\omega_6^2c_s^2v_1^2\omega_7^2v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} - 24\omega_{15}\omega_6c_s^4v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} -$
$3\omega_6^2v_1^2v_2^2\omega_7^2v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} - 3\omega_{15}\omega_6^2c_s^2v_1v_2^2\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} - 12\omega_{15}\omega_6^2c_s^2v_1^2\omega_7^2v_3\omega_{17}\omega_8\omega_5\omega_{18} + 6\omega_{15}\omega_6^2v_1v_2^2\omega_7^2v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18} -$
$12\omega_{15}\omega_6^2c_s^2v_2^2\omega_7^2v_3\omega_{20}\omega_8\omega_5\omega_{18} + 12\omega_{15}\omega_6^2c_s^2v_1v_2^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{18} + 12\omega_6^2v_1v_2^2\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5\omega_{18} - 12\omega_{15}\omega_6c_s^2v_1v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{18} +$
$6\omega_{15}\omega_6c_s^2v_2^2\omega_7^2v_3\omega_{20}\omega_8^2\omega_5^2\omega_{18} - 24\omega_{15}\omega_6^2c_s^4v_1\omega_7^2\omega_{20}\omega_{17}\omega_5^2\omega_{18} + 12\omega_{15}\omega_6c_s^2v_1^2\omega_7^2v_3\omega_{17}\omega_8^2\omega_5^2\omega_{18} - 24\omega_{15}\omega_6^2c_s^4v_1\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18} -$
$12\omega_{15}\omega_6v_1v_2^2\omega_7^2v_3^2\omega_{17}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2c_s^2v_1v_2^2\omega_7^2\omega_{20}\omega_8^2\omega_5\omega_{18} - 48\omega_{15}\omega_6^2c_s^4v_1\omega_7^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18} - 12\omega_{15}\omega_6v_1v_2^2\omega_7^2v_3^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18} -$
$12\omega_{15}\omega_6^2c_s^2v_1\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^2c_s^2v_1^2\omega_7^2v_3\omega_{20}\omega_8^2\omega_5\omega_{18} - 3\omega_6^2c_s^2v_2^2\omega_7^2v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} + 12\omega_{15}\omega_6^2v_1^2v_2^2\omega_7^2v_3\omega_{20}\omega_8^2\omega_5^2\omega_{18} -$
$12\omega_{15}\omega_6v_1^2v_2^2\omega_7^2v_3\omega_{20}\omega_8^2\omega_5^2\omega_{18} + 12\omega_{15}\omega_6^2v_1v_2^2\omega_7^2v_3^2\omega_{17}\omega_8\omega_5\omega_{18} + 12\omega_{15}\omega_6c_s^2v_1v_2^2\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} + 12\omega_{15}\omega_6c_s^2v_1v_2^2\omega_7^2v_3\omega_{17}\omega_8^2\omega_5^2\omega_{18} -$
$6\omega_{15}\omega_6c_s^2v_1^2\omega_7^2v_3\omega_{20}\omega_8^2\omega_5^2\omega_{18} + 12\omega_{15}\omega_6^2c_s^2v_1v_2^2\omega_7^2v_3^2\omega_{17}\omega_8\omega_5\omega_{18} + 6\omega_6^2c_s^2v_1\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5\omega_{18} - 48\omega_{15}\omega_6^2c_s^4v_1\omega_7^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18} - 12\omega_{15}\omega_6v_1v_2^2\omega_7^2v_3^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18} -$
$6\omega_6^2c_s^2v_1\omega_7^2v_3^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18} - 48\omega_{15}\omega_6c_s^4v_1\omega_7^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18} + 12\omega_{15}\omega_6v_1v_2^2\omega_7^2v_3^2\omega_{17}\omega_8\omega_5^2\omega_{18} + 6\omega_{15}\omega_6v_1^2v_2^2\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} +$
$3\omega_{15}\omega_6^2v_1v_2^2\omega_7^2v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 6\omega_{15}\omega_6^2c_s^2v_1\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} - 12\omega_{15}\omega_6^2v_1^2v_2^2\omega_7^2v_3\omega_{20}\omega_8\omega_5\omega_{18} + 12\omega_{15}\omega_6c_s^2v_1\omega_7^2v_3^2\omega_{17}\omega_8^2\omega_5^2 +$
$24\omega_{15}\omega_6^2c_s^4v_1\omega_7^2\omega_{20}\omega_{17}\omega_8\omega_{18} + 3\omega_6^2c_s^2v_1v_2^2\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} + 3\omega_{15}\omega_6^2v_1^2v_2^2\omega_7^2v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} - 3\omega_6^2c_s^2v_1^2\omega_7^2v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} -$
$12\omega_6^2v_1^2v_2^2\omega_7^2v_3\omega_{20}\omega_8^2\omega_5\omega_{18} + 12\omega_{15}\omega_6^2c_s^2v_1^2\omega_7^2v_3\omega_{20}\omega_8^2\omega_5\omega_{18} - 12\omega_{15}\omega_6^2c_s^2v_1v_2^2\omega_7^2\omega_{20}\omega_8^2\omega_5\omega_{18} + 6\omega_{15}\omega_6^2c_s^2v_2^2\omega_7^2v_3\omega_{17}\omega_8^2\omega_5\omega_{18} +$
$6\omega_{15}\omega_6c_s^2v_1\omega_7^2v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} - 12\omega_{15}\omega_6^2c_s^2v_2^2\omega_7^2v_3\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18} + 6\omega_{15}\omega_6^2c_s^2v_1v_2^2\omega_7^2v_3\omega_{17}\omega_8^2\omega_5^2 + 6\omega_6^2v_1v_2^2\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5\omega_{18} +$
$6\omega_{15}\omega_6^2c_s^2v_1^2\omega_7^2v_3\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18} + 24\omega_{15}\omega_6^2c_s^4v_1\omega_7^2\omega_{20}\omega_{17}\omega_5\omega_{18} - 6\omega_6^2v_1v_2^2\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} - 6\omega_{15}\omega_6c_s^2v_1v_2^2\omega_7^2v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2 -$
$3\omega_{15}\omega_6^2v_1v_2^2\omega_7^2v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} - 12\omega_{15}\omega_6^2c_s^2v_1v_2^2\omega_7^2v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} + 12\omega_{15}\omega_6^2c_s^2v_2^2\omega_7^2v_3\omega_{20}\omega_8\omega_5^2\omega_{18} + 12\omega_{15}\omega_6^2c_s^2v_1^2\omega_7^2v_3\omega_{17}\omega_8\omega_5^2\omega_{18} +$
$6\omega_{15}\omega_6c_s^2v_1^2\omega_7^2v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 48\omega_{15}\omega_6^2c_s^4v_1\omega_7\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18} + 6\omega_{15}\omega_6^2c_s^2v_1^2\omega_7^2v_3\omega_{17}\omega_8^2\omega_5^2 - 6\omega_{15}\omega_6^2c_s^2v_1v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2 +$
$12\omega_{15}\omega_6v_1v_2^2\omega_7^2v_3^2\omega_{20}\omega_8\omega_5^2\omega_{18} - 12\omega_{15}\omega_6^2c_s^2v_1\omega_7^2v_3^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18} - 12\omega_{15}\omega_6^2v_1^2v_2^2\omega_7^2v_3\omega_{17}\omega_8\omega_5\omega_{18} + 6\omega_{15}\omega_6^2c_s^2v_1\omega_7^2v_3^2\omega_{17}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_{15}\omega_6v_1^2v_2^2\omega_7^2v_3\omega_{17}\omega_8^2\omega_5^2\omega_{18} + 3\omega_{15}\omega_6^2c_s^2v_2^2\omega_7^2v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} - 12\omega_{15}\omega_6^2c_s^2v_1v_2^2\omega_7^2v_3^2\omega_{20}\omega_8\omega_5\omega_{18} + 3\omega_{15}\omega_6^2c_s^2v_1v_2^2\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2 +$
$12\omega_{15}\omega_6c_s^2v_1v_2^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{18} - 12\omega_{15}\omega_6c_s^2v_2^2\omega_7^2v_3\omega_{20}\omega_8\omega_5^2\omega_{18} - 12\omega_{15}\omega_6c_s^2v_1^2\omega_7^2v_3\omega_{17}\omega_8\omega_5^2\omega_{18} - 3\omega_{15}\omega_6^2c_s^2v_1^2\omega_7^2v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2 +$
$6\omega_{15}\omega_6^2c_s^2v_1^2\omega_7^2v_3\omega_{17}\omega_8^2\omega_5\omega_{18} + 12\omega_{15}\omega_6^2c_s^2v_2^2\omega_7^2v_3\omega_{20}\omega_8\omega_5\omega_{18} - 12\omega_{15}\omega_6^2c_s^2v_1\omega_7^2v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} - 12\omega_{15}\omega_6^2v_1v_2^2\omega_7^2v_3^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18} +$
$12\omega_{15}\omega_6^2c_s^2v_1v_2^2\omega_7^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18} - 12\omega_{15}\omega_6^2c_s^2v_1^2\omega_7^2v_3\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}$

$C_{51} = -2\omega_{15}\omega_6^2v_2^2v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3 + 8\omega_{15}\omega_6^3v_1v_2^2v_3\omega_{20}\omega_8^2\omega_5^2\omega_{18} + 8\omega_{15}\omega_6^3v_1v_2^2v_3\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18} + 4\omega_{15}\omega_6^3v_2^2v_3^2\omega_{20}\omega_8\omega_5^2\omega_{18} -$
$2\omega_{15}\omega_6^3c_s^4\omega_{17}\omega_8^2\omega_5^3\omega_{18} + 4\omega_{15}\omega_6^2c_s^2v_2^2\omega_{17}\omega_8^2\omega_5^3 + 4\omega_{15}\omega_6c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} + 4\omega_{15}\omega_6^2c_s^2v_3^2\omega_{20}\omega_{17}\omega_5^3\omega_{18} + 4\omega_{15}\omega_6^2c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^2 -$
$\omega_{15}\omega_6^3v_2^2v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{18} - 4\omega_6^3c_s^4\omega_{20}\omega_8^2\omega_5^2\omega_{18} + 4\omega_{15}\omega_6^2c_s^2v_2^2\omega_{17}\omega_8\omega_5^3\omega_{18} - 8\omega_{15}\omega_6^2c_s^2v_1v_3\omega_{20}\omega_8\omega_5^3\omega_{18} - 4\omega_{15}\omega_6^2c_s^4\omega_{20}\omega_8\omega_5^3\omega_{18} -$
$2\omega_{15}\omega_6^2c_s^2v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3 - 2\omega_6^3c_s^2v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} - 4\omega_{15}\omega_6^2v_2^2v_3^2\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{18} + 2\omega_{15}\omega_6^3c_s^2v_1v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{18} +$
$4\omega_{15}\omega_6^3c_s^2v_3^2\omega_{20}\omega_8\omega_5^2\omega_{18} - 4\omega_{15}\omega_6^2c_s^2v_1v_3\omega_{20}\omega_8^2\omega_5^3\omega_{18} + 4\omega_6^3v_1v_2^2v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} - 8\omega_{15}\omega_6^2v_1v_2^2v_3\omega_{17}\omega_8^2\omega_5^3 + 4\omega_{15}\omega_6^2v_2^2v_3^2\omega_{17}\omega_8^2\omega_5^3 +$
$4\omega_{15}\omega_6^2c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18} - 8\omega_{15}\omega_6^2v_1v_2^2v_3\omega_{17}\omega_8\omega_5^3\omega_{18} + 4\omega_{15}\omega_6^3c_s^2v_1v_3\omega_{17}\omega_8^2\omega_5^2\omega_{18} - 16\omega_{15}\omega_6^2c_s^2v_3^2\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{18} -$
$8\omega_{15}\omega_6c_s^2v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} + 8\omega_{15}\omega_6^2c_s^2v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} - 4\omega_{15}\omega_6^3c_s^2v_2^2\omega_{20}\omega_{17}\omega_5^3\omega_{18} - 4\omega_{15}\omega_6^2v_1v_2^2v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{18} +$

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

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

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

$C_{53} = \omega_{15}\omega_6^2\omega_{19}c_s^2 v_2^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 2\omega_{15}\omega_6^2\omega_{19}c_s^2 v_2^2\omega_7^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2 - 4\omega_{15}\omega_6\omega_{19}c_s^2 v_1\omega_7 v_3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} +$
$4\omega_{15}\omega_6\omega_{19}v_1^2 v_2^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} - 8\omega_{15}\omega_6^2\omega_{19}v_1 v_2^2\omega_7^2 v_3\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} - 4\omega_{15}\omega_6^2\omega_{19}c_s^2 v_1\omega_7^2 v_3\omega_{20}\omega_{17}\omega_{11}\omega_5^2\omega_{18} -$
$2\omega_{15}\omega_6^2\omega_{19}c_s^2 v_2^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 2\omega_{15}\omega_6\omega_{19}v_1^2 v_2^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2 - 4\omega_{15}\omega_6^2\omega_{19}c_s^2 v_1^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} +$
$8\omega_{15}\omega_6 c_s^2 v_1\omega_7 v_3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 2\omega_{15}\omega_6^2\omega_{19}c_s^2 v_1\omega_7^2 v_3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 2\omega_6^2\omega_{19}v_1^2 v_2^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$8\omega_{15}\omega_6\omega_{19}c_s^2 v_1\omega_7 v_3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2 + 8\omega_{15}\omega_6^2\omega_{19}c_s^2 v_1 v_3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 4\omega_{15}\omega_6^2\omega_{19}c_s^2 v_2^2\omega_7^2\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} -$
$4\omega_{15}\omega_6\omega_{19}v_1^2 v_2^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} - 4\omega_{15}\omega_6^2\omega_{19}c_s^2 v_2^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} - 4\omega_6^2\omega_{19}c_s^2 v_1^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18} +$
$8\omega_6^2\omega_{19}c_s^2 v_1\omega_7^2 v_3\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18} + 4\omega_{15}\omega_6\omega_{19}c_s^2 v_1\omega_7 v_3\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} - 4\omega_{15}\omega_6\omega_{19}c_s^2 v_1^2\omega_7^2\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} +$
$4\omega_{15}\omega_6^2\omega_{19}c_s^2 v_2^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} - 2\omega_{15}\omega_6^2\omega_{19}v_1 v_2^2\omega_7^2 v_3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 4\omega_{15}\omega_6\omega_{19}c_s^2 v_2^2\omega_7^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2 -$
$4\omega_{15}\omega_6\omega_{19}v_1 v_2^2\omega_7^2 v_3\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 4\omega_{15}\omega_6\omega_{19}c_s^2 v_1\omega_7^2 v_3\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 2\omega_{15}\omega_6^2\omega_{19}c_s^2 v_2^2\omega_7^2\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} +$
$6\omega_{15}\omega_6^2 c_s^2 v_1\omega_7^2 v_3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 4\omega_{15}\omega_6\omega_{19}v_1^2 v_2^2\omega_7^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - \omega_6^2\omega_{19}v_1^2 v_2^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$8\omega_6^2\omega_{19}v_1 v_2^2\omega_7^2 v_3\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18} + 8\omega_{15}\omega_6\omega_{19}v_1 v_2^2\omega_7^2 v_3\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} - 2\omega_{15}\omega_6^2\omega_{19}c_s^2 v_1^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} -$
$16\omega_{15}\omega_6^2\omega_{19}c_s^2 v_1\omega_7^2 v_3\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} + 2\omega_{15}\omega_6\omega_{19}c_s^2 v_1^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 4\omega_{15}\omega_6^2\omega_{19}v_1^2 v_2^2\omega_7^2\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} +$
$4\omega_{15}\omega_6^2\omega_{19}v_1 v_2^2\omega_7^2 v_3\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 8\omega_{15}\omega_6^2 c_s^2 v_1\omega_7 v_3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} - 4\omega_{15}\omega_6\omega_{19}c_s^2 v_2^2\omega_7^2\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} -$
$4\omega_6^2\omega_{19}c_s^2 v_2^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18} - 4\omega_{15}\omega_6^2\omega_{19}c_s^2 v_1\omega_7 v_3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 8\omega_{15}\omega_6^2\omega_{19}c_s^2 v_1\omega_7^2 v_3\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} -$
$4\omega_{15}\omega_6^2\omega_{19}c_s^2 v_1^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} + 4\omega_{15}\omega_6\omega_{19}v_1 v_2^2\omega_7^2 v_3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 8\omega_{15}\omega_6\omega_{19}c_s^2 v_1\omega_7 v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} -$
$\omega_6^2\omega_{19}c_s^2 v_2^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 2\omega_{15}\omega_6\omega_{19}c_s^2 v_2^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 4\omega_{15}\omega_6^2\omega_{19}v_1^2 v_2^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18} -$
$8\omega_{15}\omega_6^2\omega_{19}v_1 v_2^2\omega_7^2 v_3\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} + 4\omega_{15}\omega_6^2\omega_{19}v_1^2 v_2^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} - 4\omega_6^2\omega_{19}v_1 v_2^2\omega_7^2 v_3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} -$
$\omega_{15}\omega_6^2\omega_{19}v_1^2 v_2^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2 + 4\omega_{15}\omega_6\omega_{19}c_s^2 v_1\omega_7 v_3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 2\omega_{15}\omega_6^2\omega_{19}c_s^2 v_1^2\omega_7^2\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} +$
$2\omega_{15}\omega_6^2\omega_{19}v_1^2 v_2^2\omega_7^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2 + 8\omega_{15}\omega_6^2\omega_{19}c_s^2 v_1\omega_7 v_3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 2\omega_{15}\omega_6^2\omega_{19}c_s^2 v_1\omega_7^2 v_3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2 -$
$2\omega_{15}\omega_6^2\omega_{19}c_s^2 v_1^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 8\omega_{15}\omega_6^2\omega_{19}c_s^2 v_1\omega_7^2 v_3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 4\omega_6^2\omega_{19}c_s^2 v_1\omega_7^2 v_3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} -$
$2\omega_{15}\omega_6\omega_{19}c_s^2 v_1^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2 + 4\omega_{15}\omega_6^2\omega_{19}c_s^2 v_1^2\omega_7^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2 - 4\omega_{15}\omega_6 c_s^2 v_1\omega_7^2 v_3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$2\omega_{15}\omega_6^2\omega_{19}c_s^2 v_1^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 4\omega_{15}\omega_6^2\omega_{19}c_s^2 v_1^2\omega_7^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 8\omega_{15}\omega_6 c_s^2 v_1\omega_7^2 v_3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} -$
$\omega_{15}\omega_6^2\omega_{19}c_s^2 v_1^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2 - 6\omega_{15}\omega_6^2\omega_{19}c_s^2 v_1\omega_7 v_3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 8\omega_{15}\omega_6 c_s^2 v_1\omega_7^2 v_3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} -$
$8\omega_{15}\omega_6^2\omega_{19}v_1 v_2^2\omega_7^2 v_3\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} + 2\omega_{15}\omega_6^2\omega_{19}v_1^2 v_2^2\omega_7^2\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} + 4\omega_{15}\omega_6\omega_{19}c_s^2 v_2^2\omega_7^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$2\omega_6^2\omega_{19}c_s^2 v_1\omega_7^2 v_3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 8\omega_{15}\omega_6\omega_{19}v_1 v_2^2\omega_7^2 v_3\omega_{17}\omega_{11}\omega_8^2\omega_5^2 - \omega_6^2\omega_{19}c_s^2 v_1^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} -$
$4\omega_{15}\omega_6^2\omega_{19}c_s^2 v_1^2\omega_7^2\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} - 8\omega_{15}\omega_{19}c_s^2 v_1\omega_7 v_3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 4\omega_{15}\omega_6^2\omega_{19}c_s^2 v_1\omega_7 v_3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} -$
$4\omega_{15}\omega_6\omega_{19}c_s^2 v_1^2\omega_7^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2 - 4\omega_{15}\omega_6\omega_{19}c_s^2 v_2^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} - 2\omega_{15}\omega_6^2\omega_{19}c_s^2 v_2^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} +$
$4\omega_{15}\omega_6^2\omega_{19}v_1 v_2^2\omega_7^2 v_3\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 4\omega_{15}\omega_6^2 c_s^2 v_1\omega_7^2 v_3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} + 2\omega_6^2\omega_{19}v_1^2 v_2^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} -$
$4\omega_6^2\omega_{19}v_1 v_2^2\omega_7^2 v_3\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 4\omega_{15}\omega_6\omega_{19}c_s^2 v_1\omega_7^2 v_3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2 - 2\omega_{15}\omega_6^2\omega_{19}c_s^2 v_2^2\omega_7^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$\omega_{15}\omega_6^2\omega_{19}c_s^2 v_1^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_{15}\omega_6^2\omega_{19}c_s^2 v_1\omega_7^2 v_3\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} + 2\omega_{15}\omega_6\omega_{19}c_s^2 v_1^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2 +$
$8\omega_{15}\omega_6^2\omega_{19}v_1 v_2^2\omega_7^2 v_3\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} + 4\omega_{15}\omega_6^2\omega_{19}c_s^2 v_1\omega_7^2 v_3\omega_{20}\omega_{17}\omega_{11}\omega_5\omega_{18} + 8\omega_{15}\omega_6\omega_{19}v_1 v_2^2\omega_7^2 v_3\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} +$
$4\omega_{15}\omega_6\omega_{19}c_s^2 v_1^2\omega_7^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_{15}\omega_6^2\omega_{19}c_s^2 v_1\omega_7^2 v_3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 2\omega_{15}\omega_6^2\omega_{19}c_s^2 v_2^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} -$
$\omega_{15}\omega_6^2\omega_{19}c_s^2 v_2^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2 + 2\omega_{15}\omega_6\omega_{19}v_1^2 v_2^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 4\omega_{15}\omega_6^2\omega_{19}c_s^2 v_2^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} -$
$4\omega_{15}\omega_6\omega_{19}c_s^2 v_1^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} - 8\omega_{15}\omega_6\omega_{19}v_1 v_2^2\omega_7^2 v_3\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 4\omega_6^2\omega_{19}v_1^2 v_2^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18} +$
$4\omega_{15}\omega_6^2\omega_{19}c_s^2 v_1^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} + 4\omega_{15}\omega_6^2\omega_{19}c_s^2 v_1\omega_7^2 v_3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} - 4\omega_{15}\omega_6^2\omega_{19}c_s^2 v_2^2\omega_7^2\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} -$
$4\omega_{15}\omega_6\omega_{19}v_1^2 v_2^2\omega_7^2\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} - 8\omega_{15}\omega_6^2\omega_{19}c_s^2 v_1\omega_7 v_3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} + 8\omega_{15}\omega_6^2\omega_{19}c_s^2 v_1\omega_7^2 v_3\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} +$
$4\omega_{15}\omega_6^2\omega_{19}c_s^2 v_1\omega_7 v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} + 8\omega_{15}\omega_6 c_s^2 v_1\omega_7^2 v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}$

$C_{54} = 12\omega_9\omega_6^2 c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2 + 12\omega_6^3\omega_{22}v_1^2\omega_{13}v_3^2\omega_{11}^2\omega_{18} + 72\omega_6^2\omega_{22}c_s^2 v_1^2\omega_{13}\omega_{11}\omega_{18}^2 - 36\omega_9\omega_6^2\omega_{22}c_s^2 v_1^2\omega_{13}\omega_{11}^2 + 5\omega_9\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18}^2 -$
$5\omega_9\omega_6^3\omega_{22}c_s^2\omega_{13}v_3^2\omega_{11}\omega_{18}^2 - 36\omega_9\omega_6^2 c_s^2 v_1^2\omega_{13}\omega_{11}^2\omega_{18}^2 + 6\omega_6^3 c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2 - 36\omega_9\omega_6^3 c_s^4\omega_{11}^2\omega_{18}^2 - 12\omega_9\omega_6^2\omega_{22}c_s^2\omega_{13}v_3^2\omega_{11}^2 - 6\omega_9\omega_6^3\omega_{22}v_1^2\omega_{13}\omega_{11}^2 -$
$12\omega_9\omega_6^2 v_1^2\omega_{13}\omega_{11}^2\omega_{18} - 72\omega_9\omega_6\omega_{22}c_s^2 v_1^2\omega_{13}\omega_{11}^2\omega_{18} + 15\omega_9\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_{11}^2\omega_{18} - 6\omega_9\omega_6^3\omega_{22}v_1^2\omega_{13}\omega_{11}\omega_{18} - 18\omega_6^3 c_s^2 v_1^2\omega_{13}\omega_{11}^2\omega_{18}^2 -$
$18\omega_9\omega_6^3 c_s^4\omega_{13}\omega_{11}^2\omega_{18} - 18\omega_9\omega_6^3\omega_{22}c_s^2 v_1^2\omega_{13}\omega_{18}^2 - 12\omega_9\omega_6^2 c_s^2\omega_{13}v_3^2\omega_{11}^2\omega_{18}^2 - 18\omega_9\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{11}^2\omega_{18} + 24\omega_9\omega_6\omega_{22}v_1^2\omega_{13}\omega_{11}^2\omega_{18} +$

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

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

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

$$12\omega_9\omega_6^2\omega_{22}v_1^2\omega_{13}\omega_{11}\omega_{18} - 18\omega_9\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_{11}^2\omega_{18} - 6\omega_9\omega_6^3v_1^2\omega_{13}\omega_{11}^2\omega_{18}^2 - 18\omega_9\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18}^2 + 6\omega_9\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_{11}^2 -$$
$$12\omega_9\omega_6^2\omega_{22}c_s^4\omega_{11}\omega_{18}^2 + 18\omega_9\omega_6\omega_{22}c_s^4\omega_{13}\omega_{11}^2\omega_{18}^2 - 24\omega_9\omega_6\omega_{22}v_1^2\omega_{13}\omega_{11}\omega_{18}^2 + 6\omega_9\omega_6^3c_s^2v_1^2\omega_{13}\omega_{11}^2\omega_{18}^2 - 12\omega_6^3\omega_{22}c_s^4\omega_{11}\omega_{18}^2 -$$
$$108\omega_9\omega_6^2\omega_{22}v_1^2\omega_{13}v_3^2\omega_{11}\omega_{18}^2 - 15\omega_9\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_{11}^2\omega_{18} + 6\omega_9\omega_6^3v_1^2\omega_{13}\omega_{11}^2\omega_{18} + 12\omega_9\omega_6\omega_{22}c_s^4\omega_{13}\omega_{11}^2\omega_{18} + 18\omega_9\omega_6^3\omega_{22}v_1^2\omega_{13}v_3^2\omega_{11}^2 -$$
$$36\omega_9\omega_6^2\omega_{22}v_1^2\omega_{13}v_3^2\omega_{11}\omega_{18} + 6\omega_6^3\omega_{22}v_1^2\omega_{13}\omega_{11}\omega_{18}^2 + 12\omega_9\omega_6^2\omega_{22}v_1^2\omega_{13}\omega_{11}^2 - 6\omega_9\omega_6^3c_s^2v_1^2\omega_{13}\omega_{11}^2\omega_{18} + 27\omega_9\omega_6^3\omega_{22}v_1^2\omega_{13}v_3^2\omega_{11}\omega_{18}^2 +$$
$$48\omega_9\omega_6^2\omega_{22}c_s^2v_1^2\omega_{13}\omega_{11}^2\omega_{18} + 12\omega_9\omega_6\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18}^2 - 48\omega_9\omega_{22}c_s^2\omega_{13}v_3^2\omega_{11}^2\omega_{18}^2 + 36\omega_9\omega_6^2\omega_{22}v_1^2\omega_{13}\omega_{11}\omega_{18}^2 - 6\omega_9\omega_6^3c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2 -$$
$$5\omega_9\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_{11}^2\omega_{18}^2 - 72\omega_9\omega_6\omega_{22}v_1^2\omega_{13}v_3^2\omega_{11}^2\omega_{18} - 18\omega_9\omega_6^3c_s^2\omega_{13}v_3^2\omega_{11}^2\omega_{18} - 12\omega_9\omega_6^3c_s^2v_1^2\omega_{11}^2\omega_{18}^2 + 12\omega_9\omega_6^3v_1^2\omega_{11}^2\omega_{18}^2 -$$
$$18\omega_6^3v_1^2\omega_{13}v_3^2\omega_{11}^2\omega_{18}^2 + 36\omega_9\omega_6^2\omega_{22}v_1^2\omega_{13}v_3^2\omega_{18}^2 - 36\omega_9\omega_6^3v_1^2v_3^2\omega_{11}^2\omega_{18}^2 - 36\omega_9\omega_6^2\omega_{22}c_s^2v_3^2\omega_{11}\omega_{18}^2 + 24\omega_6^2\omega_{22}v_1^2\omega_{13}\omega_{11}^2\omega_{18} +$$
$$12\omega_9\omega_6^2\omega_{22}c_s^2\omega_{11}\omega_{18}^2 - 36\omega_9\omega_6^2v_1^2\omega_{13}v_3^2\omega_{11}^2\omega_{18}^2 - 12\omega_9\omega_{22}c_s^4\omega_{13}\omega_{11}^2\omega_{18}^2 + 12\omega_9\omega_6^2c_s^4\omega_{13}\omega_{11}^2\omega_{18} + 15\omega_9\omega_6^3\omega_{22}v_1^2\omega_{13}\omega_{11}^2\omega_{18} +$$
$$72\omega_6^2\omega_{22}v_1^2\omega_{13}v_3^2\omega_{11}\omega_{18}^2 + 12\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_{11}^2\omega_{18} + 12\omega_6^3\omega_{22}c_s^2\omega_{11}\omega_{18}^2 - 36\omega_6^3\omega_{22}c_s^2v_3^2\omega_{11}\omega_{18}^2 - 102\omega_9\omega_6^2\omega_{22}c_s^2\omega_{13}v_3^2\omega_{11}^2\omega_{18}$$

$$C_{57} = 12\omega_6^2\omega_{19}c_s^2\omega_7\omega_{11}^2\omega_{18}^2 - 6\omega_6^2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18}^2 - 12\omega_6c_s^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 + 24\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} -$$
$$9\omega_6^2c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 + 12\omega_6\omega_{19}c_s^2\omega_7\omega_{11}^2\omega_5\omega_{18}^2 + 4\omega_6^2\omega_{19}v_3^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2 + 12\omega_6\omega_{19}c_s^2\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18} + 2\omega_6^2\omega_{19}\omega_7v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_{18} +$$
$$2\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 2\omega_6^2\omega_{19}\omega_7\omega_{11}^2\omega_8\omega_{18}^2 - 2\omega_6^2\omega_{19}\omega_7v_3^2\omega_{20}\omega_8\omega_5\omega_{18}^2 + 4\omega_6\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 + 2\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18}^2 -$$
$$6\omega_6^2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} - 12\omega_6c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 + 4\omega_6\omega_{19}\omega_7v_3^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2 - 2\omega_6^2\omega_{19}\omega_7v_3^2\omega_{11}^2\omega_8\omega_5\omega_{18} - 4\omega_6\omega_{19}\omega_7\omega_{11}^2\omega_5\omega_{18}^2 +$$
$$4\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5 - 12\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18} + 12\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 + 12\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_8\omega_5\omega_{18}^2 + 4\omega_6\omega_{19}\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18}^2 +$$
$$4\omega_6^2\omega_{19}\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 - 4\omega_6^2\omega_{19}\omega_7\omega_{11}^2\omega_{18}^2 + 4\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_{18}^2 + 4\omega_6\omega_{19}v_3^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 - 4\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_5\omega_{18}^2 +$$
$$2\omega_6^2\omega_{19}\omega_7v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5 + 4\omega_6^2\omega_{19}\omega_7\omega_{11}^2\omega_5\omega_{18}^2 - 4\omega_6\omega_{19}\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18} - 2\omega_6^2\omega_{19}\omega_7v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 3\omega_6^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 +$$
$$12\omega_6^2\omega_{19}c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2 + 4\omega_6\omega_{19}\omega_7v_3^2\omega_{11}^2\omega_5\omega_{18}^2 + 12\omega_6^2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}\omega_5\omega_{18}^2 + 2\omega_6^2\omega_7v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - 12\omega_6^2\omega_{19}c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 +$$
$$2\omega_6^2\omega_{19}\omega_7v_3^2\omega_{11}^2\omega_8\omega_5\omega_{18}^2 + 4\omega_{19}\omega_7v_3^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 + 8\omega_6\omega_{19}\omega_7v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} - 3\omega_6^2\omega_7v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 + 4\omega_6^2v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 +$$
$$4\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18} - 4\omega_6\omega_7v_3^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 + 4\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 8\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 - 12\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5 -$$
$$4\omega_6\omega_{19}\omega_7v_3^2\omega_{20}\omega_{11}\omega_5\omega_{18}^2 - 12\omega_6\omega_{19}c_s^2\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18}^2 - 4\omega_6\omega_{19}\omega_7\omega_{20}\omega_8\omega_5\omega_{18}^2 + 4\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_5\omega_{18}^2 - 4\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 -$$
$$8\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 4\omega_6^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - 4\omega_6\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 + 2\omega_6^2\omega_{19}\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18} - 8\omega_6\omega_{19}\omega_7v_3^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 -$$
$$4\omega_6\omega_{19}\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 + 4\omega_6\omega_{19}\omega_7v_3^2\omega_{20}\omega_8\omega_5\omega_{18}^2 + 6\omega_6^2c_s^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 - 4\omega_6^2\omega_{19}\omega_7v_3^2\omega_{20}\omega_{11}\omega_{18}^2 + 12\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18}^2 -$$
$$12\omega_6^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - 6\omega_6^2\omega_{19}c_s^2\omega_7\omega_{11}^2\omega_8\omega_{18}^2 - 4\omega_6\omega_{19}\omega_7v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_{18} - 4\omega_6^2\omega_{19}\omega_7v_3^2\omega_{11}^2\omega_5\omega_{18}^2 - 6\omega_6^2\omega_{19}c_s^2\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18} +$$
$$12\omega_6c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 - 2\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18} + 3\omega_6^2\omega_{19}\omega_7v_3^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 + 4\omega_6\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 - 4\omega_6v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 +$$
$$4\omega_6^2\omega_{19}\omega_7v_3^2\omega_{11}^2\omega_{18}^2 - 6\omega_6^2\omega_{19}c_s^2\omega_7\omega_{20}\omega_8\omega_5\omega_{18}^2 - 2\omega_6^2\omega_{19}\omega_7v_3^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2 + 2\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_8\omega_5\omega_{18}^2 - 4\omega_{19}\omega_7v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} +$$
$$6\omega_6^2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18} + 4\omega_6\omega_{19}\omega_7v_3^2\omega_{11}^2\omega_8\omega_5\omega_{18} - 12\omega_6^2\omega_{19}c_s^2\omega_7\omega_{11}^2\omega_5\omega_{18}^2 - 4\omega_6^2\omega_{19}\omega_{20}\omega_{11}\omega_8\omega_{18}^2 - 2\omega_6^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 -$$
$$12\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}\omega_5\omega_{18}^2 - 12\omega_6^2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}\omega_{18}^2 - 4\omega_6^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 - 4\omega_6\omega_{19}\omega_7v_3^2\omega_{11}^2\omega_8\omega_5\omega_{18}^2 + 9\omega_6^2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 -$$
$$2\omega_6^2\omega_{19}\omega_7v_3^2\omega_{11}^2\omega_8\omega_{18}^2 + 12\omega_6\omega_{19}c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 - 4\omega_6^2\omega_{19}v_3^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 - 4\omega_6^2v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - 4\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18}^2 -$$
$$2\omega_6^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 - 4\omega_6\omega_{19}\omega_7v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5 - 12\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} - 2\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5 - 24\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 +$$
$$4\omega_6^2\omega_{19}\omega_7v_3^2\omega_{20}\omega_{11}\omega_5\omega_{18}^2 + 6\omega_6^2c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 + 6\omega_6^2\omega_{19}c_s^2\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18}^2 + 12\omega_6^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 + 4\omega_6\omega_7v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 -$$
$$2\omega_6^2\omega_{19}\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18}^2 - 3\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 + 6\omega_6^2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5 + 2\omega_6^2\omega_7v_3^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2$$

$$C_{58} = -\omega_6^3v_3^2\omega_{20}\omega_8\omega_5\omega_{18}^2 + \omega_6^2\omega_{20}\omega_8\omega_5^2\omega_{18}^2 + 2\omega_6^2c_s^2\omega_8^2\omega_5^2\omega_{18} - 2\omega_6^2v_3^2\omega_{20}\omega_8^2\omega_5\omega_{18} - 2\omega_6^2\omega_8^2\omega_5^2\omega_{18} + \omega_6^3v_3^2\omega_8^2\omega_5^2\omega_{18}^2 - \omega_6^3\omega_8^2\omega_5^2\omega_{18}^2 +$$
$$2\omega_6^3c_s^2\omega_{20}\omega_5\omega_{18}^2 - 11\omega_6^2c_s^2\omega_{20}\omega_8\omega_5^2\omega_{18}^2 + 2\omega_6^2v_3^2\omega_8\omega_5^2\omega_{18}^2 - \omega_6^3c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} + 2\omega_6^3v_3^2\omega_8\omega_5\omega_{18}^2 + 2\omega_6^2c_s^2\omega_{20}\omega_5^2\omega_{18}^2 - \omega_6^2\omega_{20}\omega_8^2\omega_5\omega_{18}^2 +$$
$$2\omega_6^2\omega_{20}\omega_8^2\omega_5^2 - 2\omega_6^3\omega_8\omega_5\omega_{18}^2 + \omega_6^3\omega_{20}\omega_8\omega_5\omega_{18}^2 - 2\omega_6^2c_s^2\omega_{20}\omega_8^2\omega_5^2 + 7\omega_6^2c_s^2\omega_{20}\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^3c_s^2\omega_{20}\omega_8\omega_{18}^2 - 7\omega_6^3c_s^2\omega_{20}\omega_8\omega_5\omega_{18}^2 + \omega_6^3v_3^2\omega_{20}\omega_8^2\omega_5^2 -$$
$$\omega_6^3c_s^2\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^2c_s^2\omega_{20}\omega_8^2\omega_5\omega_{18} - \omega_6^2v_3^2\omega_{20}\omega_8\omega_5^2\omega_{18}^2 - \omega_6^3v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} - 6\omega_6c_s^2\omega_{20}\omega_8^2\omega_5\omega_{18}^2 - \omega_6^3\omega_{20}\omega_8^2\omega_5^2 + 2\omega_6^2\omega_{20}\omega_8^2\omega_5\omega_{18} +$$
$$\omega_6^3\omega_{20}\omega_8^2\omega_5^2\omega_{18} - 2\omega_6^3c_s^2\omega_8\omega_5^2\omega_{18}^2 + \omega_6^3\omega_8^2\omega_5^2\omega_{18} + 6\omega_6c_s^2\omega_{20}\omega_8\omega_5^2\omega_{18}^2 - 2\omega_6^2c_s^2\omega_8^2\omega_5^2\omega_{18}^2 + \omega_6^2v_3^2\omega_{20}\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^2c_s^2\omega_{20}\omega_8^2\omega_{18}^2 -$$
$$\omega_6^3v_3^2\omega_8^2\omega_5^2\omega_{18} + 2\omega_6^2\omega_8^2\omega_5^2\omega_{18}^2 - \omega_6^3\omega_{20}\omega_8^2\omega_5\omega_{18} - 8c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2 + 2\omega_6^3c_s^2\omega_8\omega_5\omega_{18}^2 + 2\omega_6\omega_{20}\omega_8^2\omega_5^2\omega_{18} - 2\omega_6v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} -$$
$$2\omega_6^2v_3^2\omega_{20}\omega_8^2\omega_5^2 - \omega_6^2v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2 + 5\omega_6^3c_s^2\omega_{20}\omega_8\omega_5^2\omega_{18}^2 + 2\omega_6^2v_3^2\omega_8^2\omega_5^2\omega_{18} + 4\omega_6^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} + \omega_6^3c_s^2\omega_8^2\omega_5^2\omega_{18}^2 - 2\omega_6^2\omega_8\omega_5^2\omega_{18}^2 +$$
$$2\omega_6^2c_s^2\omega_8\omega_5^2\omega_{18}^2 - 4\omega_6^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} + 13\omega_6c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2 + \omega_6^3v_3^2\omega_{20}\omega_8^2\omega_5\omega_{18} - 2\omega_6^3v_3^2\omega_8\omega_5^2\omega_{18}^2 + \omega_6^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2 - 2\omega_6c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} -$$
$$2\omega_6^2v_3^2\omega_8^2\omega_5^2\omega_{18}^2 - 5\omega_6^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2 + 2\omega_6^3\omega_8\omega_5^2\omega_{18}^2 - \omega_6^3c_s^2\omega_8^2\omega_5^2\omega_{18} - \omega_6^3\omega_{20}\omega_8\omega_5^2\omega_{18}^2 + \omega_6^3c_s^2\omega_{20}\omega_8^2\omega_5^2 + \omega_6^3v_3^2\omega_{20}\omega_8\omega_5^2\omega_{18}^2 - \omega_6^3v_3^2\omega_8^2\omega_5\omega_{18}^2 +$$
$$4\omega_6^2v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} - 2\omega_6^3c_s^2\omega_{20}\omega_5^2\omega_{18}^2 + 4\omega_6^2c_s^2\omega_{20}\omega_8\omega_5\omega_{18}^2 + \omega_6^3\omega_8^2\omega_5\omega_{18}^2 + \omega_6v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2 - \omega_6\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2 + \omega_6^3c_s^2\omega_{20}\omega_8^2\omega_5\omega_{18}$$

$$C_{59} =$$
$$9\omega_6^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2 + 6\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 + 6\omega_6^2\omega_{19}\omega_7^2\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 24\omega_6^2\omega_{19}c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 12\omega_6^2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} -$$
$$6\omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 + 6\omega_6^2\omega_{19}\omega_7^2v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2 + 12\omega_6\omega_{19}c_s^2\omega_7^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} + 12\omega_6\omega_7^2v_3^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2 + 6\omega_6^2\omega_{19}\omega_7^2v_3^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2 -$$
$$6\omega_6^2\omega_{19}\omega_7v_3^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2 + 3\omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2 + 6\omega_6^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2 + 12\omega_6\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 +$$
$$12\omega_6^2\omega_{19}\omega_7^2\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2 + 12\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} + 36\omega_6\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2 + 18\omega_6\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2 + 24\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} +$$
$$12\omega_6^2c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2 + 12\omega_6\omega_{19}\omega_7^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2 - 12\omega_6\omega_{19}\omega_7^2v_3^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2 + 24\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2 - 12\omega_6^2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_{18}^2 -$$
$$\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2 - 42\omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 - 12\omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2 + 6\omega_6\omega_{19}\omega_7v_3^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2 -$$
$$6\omega_6\omega_{19}\omega_7^2v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2 + 12\omega_6^2\omega_{19}\omega_7^2v_3^2\omega_{11}^2\omega_8\omega_5\omega_{18}^2 + 4\omega_6^2\omega_{19}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2 - 6\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2 - 9\omega_6^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2 +$$
$$54\omega_6\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_5^2\omega_{18}^2 - 12\omega_6c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2 + 12\omega_6^2\omega_7v_3^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2 +$$
$$6\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2 + 12\omega_6\omega_{19}\omega_7^2v_3^2\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2 + 54\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2 + 12\omega_6\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2 - 12\omega_6\omega_{19}\omega_7^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} -$$
$$6\omega_6^2\omega_{19}\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2 - 12\omega_{19}\omega_7^2v_3^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 + 3\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} +$$
$$18\omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2 - 12\omega_6\omega_{19}c_s^2\omega_7^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2 - 12\omega_6^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2 + 6\omega_6^2\omega_7^2v_3^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 6\omega_6^2\omega_{19}\omega_7^2v_3^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} -$$
$$12\omega_6\omega_{19}\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2 - 18\omega_6\omega_{19}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2 - 9\omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} + 6\omega_6\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2 +$$
$$36\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2 - 24\omega_6\omega_{19}c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2 - 36\omega_6^2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2 + 12\omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2 +$$
$$12\omega_6^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 9\omega_6^2\omega_7^2v_3^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2 - 12\omega_6\omega_{19}\omega_7^2v_3^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2 + 18\omega_6\omega_{19}\omega_7^2v_3^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} -$$
$$24\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2 - 6\omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} - 12\omega_6\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2 + 12\omega_6\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2 - 36\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} -$$
$$6\omega_6^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2 + 42\omega_6^2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 + 12\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2 + 6\omega_6^2\omega_{19}\omega_7^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} + 6\omega_6^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 +$$
$$12\omega_6\omega_{19}c_s^2\omega_7^2\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2 + 6\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2 - 54\omega_6\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2 - 6\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 + 12\omega_6\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2 +$$
$$12\omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_5\omega_{18}^2 - 3\omega_6^2\omega_{19}\omega_7^2v_3^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^2\omega_7v_3^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 12\omega_6^2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2 -$$
$$12\omega_6c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2 - 18\omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2 - 4\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2 - 12\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 +$$

$6\omega_6^2\omega_{19}\omega_7^2v_3^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2 + 12\omega_{19}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2 + 12\omega_6\omega_{19}\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2 - 12\omega_6^2c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 12\omega_6^2\omega_{19}\omega_7^2\omega_{11}^2\omega_8\omega_5\omega_{18}^2 -$
$24\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2 - 36\omega_6\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2 - 12\omega_6\omega_6^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2 - 12\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2 - 18\omega_6\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2 + 30\omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2 - 12\omega_6^2\omega_{19}\omega_7^2v_3^2\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2 + 12\omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{11}^2\omega_8\omega_5\omega_{18}^2 +$
$\omega_6^2\omega_{19}\omega_7^2v_3^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2 - 6\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2 + 12\omega_6\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_5^2\omega_{18}^2 - 12\omega_6\omega_7v_3^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2 +$
$6\omega_6^2c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2 - 6\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2 + 12\omega_6^2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2 - 6\omega_6^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 12\omega_6\omega_{19}\omega_7^2\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2 +$
$24\omega_6^2\omega_{19}c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2 - 6\omega_6^2\omega_{19}\omega_7^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2 + 6\omega_6^2\omega_{19}\omega_7v_3^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 + 12\omega_6\omega_{19}\omega_7^2v_3^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} - 6\omega_6^2\omega_{19}\omega_7^2v_3^2\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 -$
$6\omega_6^2\omega_{19}\omega_7^2v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 + 6\omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2 - 54\omega_6\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2 + 12\omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2$

$C_{60} = 4\omega_6^2\omega_{19}c_s^2\omega_7\omega_{11}^2\omega_{18}^2 - 2\omega_6^2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18}^2 - 4\omega_6c_s^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 + 8\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} -$
$3\omega_6^2c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 + 4\omega_6\omega_{19}c_s^2\omega_7\omega_{11}^2\omega_5\omega_{18}^2 + 12\omega_6^2\omega_{19}v_3^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2 + 4\omega_6\omega_{19}c_s^2\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18} + 6\omega_6^2\omega_{19}\omega_7v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_{18} +$
$2\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 2\omega_6^2\omega_{19}\omega_7\omega_{11}^2\omega_8\omega_{18}^2 - 6\omega_6^2\omega_{19}\omega_7v_3^2\omega_{20}\omega_8\omega_5\omega_{18}^2 + 4\omega_6\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 + 2\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18}^2 -$
$2\omega_6^2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} - 4\omega_6c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 + 12\omega_6\omega_{19}\omega_7v_3^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2 - 6\omega_6^2\omega_{19}\omega_7v_3^2\omega_{11}^2\omega_8\omega_5\omega_{18} - 4\omega_6\omega_{19}\omega_7\omega_{11}^2\omega_5\omega_{18}^2 +$
$4\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5 - 4\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18} + 4\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 + 4\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_8\omega_5\omega_{18}^2 + 4\omega_6\omega_{19}\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18}^2 +$
$4\omega_6^2\omega_{19}\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 - 4\omega_6^2\omega_{19}\omega_7\omega_{11}^2\omega_{18}^2 + 4\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_{18}^2 + 12\omega_6\omega_{19}v_3^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 - 4\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_5\omega_{18}^2 +$
$6\omega_6^2\omega_{19}\omega_7v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5 + 4\omega_6^2\omega_{19}\omega_7\omega_{11}^2\omega_5\omega_{18}^2 - 4\omega_6\omega_{19}\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18} - 6\omega_6^2\omega_{19}\omega_7v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 3\omega_6^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 +$
$4\omega_6^2\omega_{19}c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2 + 12\omega_6\omega_{19}\omega_7v_3^2\omega_{11}^2\omega_5\omega_{18}^2 + 4\omega_6^2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}\omega_5\omega_{18}^2 + 6\omega_6^2\omega_7v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - 4\omega_6^2\omega_{19}c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 +$
$6\omega_6^2\omega_{19}\omega_7v_3^2\omega_{11}^2\omega_8\omega_5\omega_{18}^2 + 12\omega_{19}\omega_7v_3^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 + 24\omega_6\omega_{19}\omega_7v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} - 9\omega_6^2\omega_7v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 +$
$12\omega_6^2v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 + 4\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18} - 12\omega_6\omega_7v_3^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 + 4\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 8\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 -$
$4\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5 - 12\omega_6\omega_{19}\omega_7v_3^2\omega_{20}\omega_{11}\omega_5\omega_{18}^2 - 4\omega_6\omega_{19}c_s^2\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18}^2 - 4\omega_6\omega_{19}\omega_7\omega_{20}\omega_8\omega_5\omega_{18}^2 + 4\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_5\omega_{18}^2 -$
$4\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 - 8\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 4\omega_6^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - 4\omega_6\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 + 2\omega_6^2\omega_{19}\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18} -$
$24\omega_6\omega_{19}\omega_7v_3^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 - 4\omega_6\omega_{19}\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 + 12\omega_6\omega_{19}\omega_7v_3^2\omega_{20}\omega_8\omega_5\omega_{18}^2 + 2\omega_6^2c_s^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 - 12\omega_6^2\omega_{19}\omega_7v_3^2\omega_{20}\omega_{11}\omega_{18}^2 +$
$4\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18}^2 - 4\omega_6^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - 2\omega_6^2\omega_{19}c_s^2\omega_7\omega_{11}^2\omega_8\omega_{18}^2 - 12\omega_6\omega_{19}\omega_7v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_{18} - 12\omega_6^2\omega_{19}\omega_7v_3^2\omega_{11}^2\omega_5\omega_{18}^2 -$
$2\omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{11}^2\omega_8\omega_5\omega_{18} + 4\omega_6c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 - 2\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18} + 9\omega_6^2\omega_{19}\omega_7v_3^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 + 4\omega_6\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 -$
$12\omega_6v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 + 12\omega_6^2\omega_{19}\omega_7v_3^2\omega_{11}^2\omega_{18}^2 - 2\omega_6^2\omega_{19}c_s^2\omega_7\omega_{20}\omega_8\omega_5\omega_{18}^2 - 6\omega_6^2\omega_{19}\omega_7v_3^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2 + 2\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_8\omega_5\omega_{18}^2 -$
$12\omega_{19}\omega_7v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 2\omega_6^2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18} + 12\omega_6\omega_{19}\omega_7v_3^2\omega_{11}^2\omega_8\omega_5\omega_{18} - 4\omega_6^2\omega_{19}c_s^2\omega_7\omega_{11}^2\omega_5\omega_{18}^2 - 4\omega_6^2\omega_{19}\omega_{20}\omega_{11}\omega_8\omega_{18}^2 -$
$2\omega_6^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - 4\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}\omega_5\omega_{18}^2 - 4\omega_6^2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}\omega_{18}^2 - 4\omega_6^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 - 12\omega_6\omega_{19}\omega_7v_3^2\omega_{11}^2\omega_8\omega_5\omega_{18}^2 +$
$3\omega_6^2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 - 6\omega_6^2\omega_{19}\omega_7v_3^2\omega_{11}^2\omega_8\omega_{18}^2 + 4\omega_6\omega_{19}c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 - 12\omega_6^2\omega_{19}v_3^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 - 12\omega_6^2v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 -$
$4\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18}^2 - 2\omega_6^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 - 12\omega_6\omega_{19}\omega_7v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5 - 4\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} - 2\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5 -$
$8\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 + 12\omega_6^2\omega_{19}\omega_7v_3^2\omega_{20}\omega_{11}\omega_5\omega_{18}^2 + 2\omega_6^2c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 + 2\omega_6^2\omega_{19}c_s^2\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18}^2 + 4\omega_6^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 +$
$12\omega_6\omega_7v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 - 2\omega_6^2\omega_{19}\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18}^2 - 3\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 + 2\omega_6^2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5 + 6\omega_6^2\omega_7v_3^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2$

$C_{61} = 24\omega_6c_s^4\omega_{18}^2 + 36\omega_6^2v_3^2\omega_{18}^2 - 24\omega_6^2v_3^2\omega_{11}\omega_{18} - \omega_6^2c_s^4\omega_{11}^2\omega_{18}^2 + 72\omega_6^2c_s^2v_3^2\omega_{11}^2 + 72\omega_6^2c_s^2v_3^2\omega_{11}\omega_{18} + 288\omega_6c_s^2v_3^2\omega_{18}^2 + 36\omega_6^2v_3^4\omega_{11}\omega_{18}^2 +$
$12\omega_6^2c_s^2\omega_{11}^2\omega_{18} - 144\omega_6c_s^2v_3^2\omega_{11}\omega_{18} + 96\omega_6v_3^4\omega_{11}^2\omega_{18} + 48\omega_6c_s^2\omega_{11}\omega_{18}^2 + 24c_s^2\omega_{11}^2\omega_{18} + 48v_3^4\omega_{11}\omega_{18}^2 + 12\omega_6^2v_3^4\omega_{11}^2 + 24\omega_6c_s^2\omega_{11}^2 + 216c_s^2v_3^2\omega_{11}\omega_{18}^2 +$
$\omega_6^2c_s^2\omega_{11}^2\omega_{18}^2 + 24\omega_6^2v_3^4\omega_{11}\omega_{18} - 432\omega_6c_s^2v_3^2\omega_{11}\omega_{18}^2 + 12\omega_6^2c_s^4\omega_{11}^2 + 24\omega_6v_3^2\omega_{11}^2 - 12\omega_6^2c_s^4\omega_{11}^2\omega_{18} - 36\omega_6^2v_3^2\omega_{11}\omega_{18}^2 + 72\omega_6v_3^4\omega_{18}^2 + 150\omega_6^2c_s^2v_3^2\omega_{11}\omega_{18}^2 -$
$48\omega_6c_s^4\omega_{11}\omega_{18}^2 - 96\omega_6v_3^2\omega_{11}^2\omega_{18} + 12\omega_6^2c_s^2\omega_{18}^2 - 48v_3^2\omega_{11}\omega_{18}^2 - 24c_s^4\omega_{11}^2\omega_{18} - 144\omega_6^2c_s^2v_3^2\omega_{18}^2 + 3\omega_6^2v_3^2\omega_{11}^2\omega_{18}^2 + 48\omega_6v_3^2\omega_{11}\omega_{18} - 144\omega_6c_s^2v_3^2\omega_{11}^2 -$
$12\omega_6^2c_s^2v_3^2\omega_{11}^2\omega_{18}^2 - 12\omega_6^2v_3^2\omega_{11}^2 - 24\omega_6c_s^4\omega_{11}^2 - 24\omega_6c_s^2\omega_{18}^2 - 48v_3^4\omega_{11}^2\omega_{18} - 24c_s^2\omega_{11}\omega_{18}^2 - 36\omega_6^2v_3^4\omega_{18}^2 - 14\omega_6^2c_s^2\omega_{11}\omega_{18}^2 - 30\omega_6^2v_3^4\omega_{11}^2\omega_{18} -$
$48\omega_6c_s^2\omega_{11}^2\omega_{18} - 96\omega_6v_3^4\omega_{11}\omega_{18}^2 - 3\omega_6^2v_3^4\omega_{11}^2\omega_{18}^2 - 72\omega_6v_3^2\omega_{18}^2 + 432\omega_6c_s^2v_3^2\omega_{11}^2\omega_{18} - 48\omega_6v_3^4\omega_{11}\omega_{18} - 12\omega_6^2c_s^4\omega_{18}^2 - 216c_s^2v_3^2\omega_{11}^2\omega_{18} +$
$24c_s^4\omega_{11}\omega_{18}^2 + 48v_3^2\omega_{11}^2\omega_{18} + 30\omega_6^2v_3^2\omega_{11}^2\omega_{18} + 14\omega_6^2c_s^4\omega_{11}\omega_{18}^2 - 12\omega_6^2c_s^2\omega_{11}^2 + 96\omega_6v_3^2\omega_{11}\omega_{18}^2 + 48\omega_6c_s^4\omega_{11}^2\omega_{18} - 24\omega_6v_3^4\omega_{11}^2 - 126\omega_6^2c_s^2v_3^2\omega_{11}^2\omega_{18}$

$C_{62} = -24\omega_6^2v_3^4 - 48\omega_6c_s^4\omega_{18}^2 + 24\omega_6^2v_3^2\omega_{18}^2 + 6\omega_6^3c_s^4\omega_{18} + 3\omega_6^3v_3^4\omega_{18}^2 - 48\omega_6v_3^4\omega_{18} + 156\omega_6c_s^2v_3^2\omega_{18}^2 + 24\omega_6^2c_s^2\omega_{18} + 12\omega_6^3c_s^2v_3^2 + 24c_s^4\omega_{18}^2 +$
$12\omega_6^3v_3^4 - 18\omega_6^3v_3^4\omega_{18} + 24\omega_6v_3^4\omega_{18}^2 - 24\omega_6c_s^2v_3^2\omega_{18} - 8\omega_6^2c_s^2\omega_{18}^2 + 24\omega_6c_s^4\omega_{18} - 72\omega_6^2v_3^2\omega_{18} - 3\omega_6^3c_s^4\omega_{18}^2 - 72\omega_6^2c_s^2v_3^2\omega_{18}^2 - 12\omega_6^3v_3^2 -$
$24\omega_6^2c_s^2v_3^2 - 96c_s^2v_3^2\omega_{18}^2 - 12\omega_6^3c_s^2v_3^2\omega_{18} + 12\omega_6c_s^2\omega_{18}^2 - 24\omega_6^2v_3^4\omega_{18}^2 - 6\omega_6^3c_s^2\omega_{18} - 3\omega_6^3v_3^2\omega_{18}^2 + 48\omega_6v_3^2\omega_{18} - 24\omega_6^2c_s^4\omega_{18} + 18\omega_6^3v_3^2\omega_{18} -$
$24\omega_6v_3^2\omega_{18}^2 + 24\omega_6^2c_s^4\omega_{18}^2 - 24\omega_6c_s^2\omega_{18} + 24\omega_6^2v_3^2 + 72\omega_6^2v_3^4\omega_{18} + \omega_6^3c_s^2\omega_{18}^2 + 6\omega_6^3c_s^2v_3^2\omega_{18}^2 + 48\omega_6^2c_s^2v_3^2\omega_{18}$

$C_{63} = -60\omega_6^2v_3^2\omega_{18}^2 + 36\omega_6^2v_3^2\omega_{11}\omega_{18} - 33\omega_6^2c_s^2\omega_{11}^2\omega_{18} + 36\omega_{11}^2\omega_{18} - 120\omega_6c_s^2\omega_{11}\omega_{18}^2 + 24\omega_6^2\omega_{18}^2 - 60c_s^2\omega_{11}^2\omega_{18} - 48\omega_6c_s^2\omega_{11}^2 - 25\omega_6^2\omega_{11}\omega_{18}^2 -$
$12\omega_6^2\omega_{11}\omega_{18} - 3\omega_6^2c_s^2\omega_{11}^2\omega_{18}^2 - 24\omega_6c_s^2\omega_{11}\omega_{18} - 48\omega_6v_3^2\omega_{11}^2 + 24\omega_6\omega_{11}^2 + 61\omega_6^2v_3^2\omega_{11}\omega_{18}^2 + 168\omega_6v_3^2\omega_{11}^2\omega_{18} - 36\omega_6^2c_s^2\omega_{18}^2 - 72\omega_6\omega_{11}^2\omega_{18} +$
$84v_3^2\omega_{11}\omega_{18}^2 - 5\omega_6^2v_3^2\omega_{11}^2\omega_{18}^2 - 72\omega_6v_3^2\omega_{11}\omega_{18} + 24\omega_6\omega_{11}\omega_{18} + 24\omega_6^2v_3^2\omega_{11}^2 + 21\omega_6^2\omega_{11}^2\omega_{18} + 72\omega_6c_s^2\omega_{18}^2 + 60c_s^2\omega_{11}\omega_{18}^2 + 39\omega_6^2c_s^2\omega_{11}\omega_{18}^2 -$
$12\omega_6^2\omega_{11}^2 - 36\omega_{11}\omega_{18}^2 + 120\omega_6c_s^2\omega_{11}^2\omega_{18} + 12\omega_6^2c_s^2\omega_{11}\omega_{18} - 48\omega_6\omega_{18}^2 + 120\omega_6v_3^2\omega_{18}^2 + 2\omega_6^2\omega_{11}^2\omega_{18}^2 - 84v_3^2\omega_{11}^2\omega_{18} - 51\omega_6^2v_3^2\omega_{11}^2\omega_{18} +$
$24\omega_6^2c_s^2\omega_{11}^2 - 168\omega_6v_3^2\omega_{11}\omega_{18}^2 + 72\omega_6\omega_{11}\omega_{18}^2$

2.2.4 Conservation of momentum: ρv_2

attached text file: `output_d3q27_nse_mrt1_symbolic_pde_02.txt`

$$v_2\frac{\partial\rho}{\partial t} + \rho\frac{\partial v_2}{\partial t} + \frac{\delta_l v_1 v_2}{\delta_t}\frac{\partial\rho}{\partial x_1} + \frac{\delta_l\rho v_2}{\delta_t}\frac{\partial v_1}{\partial x_1} + \frac{\delta_l\rho v_1}{\delta_t}\frac{\partial v_2}{\partial x_1} + (v_2^2+c_s^2)\frac{\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_2} + \frac{2\delta_l\rho v_2}{\delta_t}\frac{\partial v_2}{\partial x_2} + \frac{\delta_l v_2 v_3}{\delta_t}\frac{\partial\rho}{\partial x_3} + \frac{\delta_l\rho v_3}{\delta_t}\frac{\partial v_2}{\partial x_3} +$$
$$\frac{\delta_l\rho v_2}{\delta_t}\frac{\partial v_3}{\partial x_3} + (-2+\omega_5)\frac{\delta_l^2c_s^2}{2\delta_t\omega_5}\frac{\partial\rho}{\partial x_1}\frac{\partial v_2}{\partial x_1} + (-2+\omega_5)\frac{\delta_l^2c_s^2}{2\delta_t\omega_5}\frac{\partial\rho}{\partial x_1}\frac{\partial v_1}{\partial x_2} +$$
$$(-2+6v_2^2+4c_s^2+\omega_{10}-2c_s^2\omega_{10}-3\omega_{10}v_2^2)\frac{\delta_l^2}{\delta_t\omega_{10}}\frac{\partial\rho}{\partial x_2}\frac{\partial v_2}{\partial x_2} + (2-\omega_{10})\frac{3\delta_l^2\rho v_2}{\delta_t\omega_{10}}\left(\frac{\partial v_2}{\partial x_2}\right)^2 + (-2+\omega_7)\frac{\delta_l^2c_s^2}{2\delta_t\omega_7}\frac{\partial\rho}{\partial x_3}\frac{\partial v_3}{\partial x_2} +$$
$$(-2+\omega_7)\frac{\delta_l^2c_s^2}{2\delta_t\omega_7}\frac{\partial\rho}{\partial x_3}\frac{\partial v_2}{\partial x_3} + (-2+\omega_5)\frac{\delta_l^2c_s^2\rho}{2\delta_t\omega_5}\frac{\partial^2v_2}{\partial x_1^2} + (-2+\omega_5)\frac{\delta_l^2c_s^2\rho}{2\delta_t\omega_5}\frac{\partial^2v_1}{\partial x_1\partial x_2} +$$

$$
\begin{aligned}
&(-2+2v_2^2+6c_s^2+\omega_{10}-3c_s^2\omega_{10}-\omega_{10}v_2^2)\frac{\delta_l^2 v_2}{2\delta_t\omega_{10}}\frac{\partial^2\rho}{\partial x_2^2}+(-2+6v_2^2+2c_s^2+\omega_{10}-c_s^2\omega_{10}-3\omega_{10}v_2^2)\frac{\delta_l^2\rho}{2\delta_t\omega_{10}}\frac{\partial^2 v_2}{\partial x_2^2}+\\
&(-2+\omega_7)\frac{\delta_l^2 c_s^2\rho}{2\delta_t\omega_7}\frac{\partial^2 v_3}{\partial x_2\partial x_3}+(-2+\omega_7)\frac{\delta_l^2 c_s^2\rho}{2\delta_t\omega_7}\frac{\partial^2 v_2}{\partial x_3^2}+C_1\frac{\delta_l^3 v_1 v_2}{12\omega_9\omega_{12}\delta_t\omega_5}\frac{\partial^3\rho}{\partial x_1^3}+C_2\frac{\delta_l^3\rho v_2}{12\omega_9\omega_{12}\delta_t\omega_5}\frac{\partial^3 v_1}{\partial x_1^3}+C_3\frac{\delta_l^3\rho v_1}{6\omega_{12}\delta_t\omega_5^2}\frac{\partial^3 v_2}{\partial x_1^3}+\\
&(-12-\omega_5^2+12\omega_5)\frac{\delta_l^3 c_s^4}{6\delta_t\omega_5^2}\frac{\partial^3\rho}{\partial x_1^2\partial x_2}+(-2\omega_{12}-\omega_5^2+2\omega_5+\omega_{12}\omega_5)\frac{\delta_l^3 c_s^2\rho v_1}{\omega_{12}\delta_t\omega_5^2}\frac{\partial^3 v_1}{\partial x_1^2\partial x_2}+\\
&(-12\omega_{15}\omega_{10}+12\omega_5^2-12\omega_{15}\omega_5+12\omega_{15}\omega_{10}\omega_5-12\omega_{10}\omega_5^2+12\omega_{10}\omega_5-\omega_{15}\omega_{10}\omega_5^2)\frac{\delta_l^3 c_s^2\rho v_2}{6\omega_{15}\delta_t\omega_{10}\omega_5^2}\frac{\partial^3 v_2}{\partial x_1^2\partial x_2}+\\
&C_4\frac{\delta_l^3 v_1 v_2}{\omega_{15}\delta_t\omega_{10}^2\omega_5}\frac{\partial^3\rho}{\partial x_1\partial x_2^2}+C_5\frac{\delta_l^3\rho v_2}{12\omega_{15}\delta_t\omega_{10}^2\omega_5^2}\frac{\partial^3 v_1}{\partial x_1\partial x_2^2}+C_6\frac{\delta_l^3\rho v_1}{\omega_{15}\delta_t\omega_{10}^2\omega_5}\frac{\partial^3 v_2}{\partial x_1\partial x_2^2}+C_7\frac{\delta_l^3}{12\delta_t\omega_{10}^2}\frac{\partial^3\rho}{\partial x_2^3}+\\
&(-24+60v_2^2+11\omega_{10}^2v_2^2-4\omega_{10}^2+36c_s^2+24\omega_{10}-36c_s^2\omega_{10}+5c_s^2\omega_{10}^2-60\omega_{10}v_2^2)\frac{\delta_l^3\rho v_2}{6\delta_t\omega_{10}^2}\frac{\partial^3 v_2}{\partial x_2^3}+\\
&(\omega_5^2-\omega_8\omega_5-\omega_7\omega_8+\omega_7\omega_5+\omega_7\omega_8\omega_5-\omega_7\omega_5^2)\frac{\delta_l^3 c_s^2\rho v_3}{\delta_t\omega_7\omega_8\omega_5^2}\frac{\partial^3 v_2}{\partial x_1^2\partial x_3}+\\
&(-\omega_6\omega_7\omega_8\omega_5-6\omega_8\omega_5-6\omega_7\omega_8+6\omega_6\omega_7+6\omega_7\omega_8\omega_5-6\omega_6\omega_7\omega_5+6\omega_6\omega_5)\frac{\delta_l^3 c_s^2\rho v_2}{6\omega_6\delta_t\omega_7\omega_8\omega_5}\frac{\partial^3 v_3}{\partial x_1^2\partial x_3}+\\
&(\omega_5^2-\omega_8\omega_5-\omega_7\omega_8+\omega_7\omega_5+\omega_7\omega_8\omega_5-\omega_7\omega_5^2)\frac{\delta_l^3 c_s^2\rho v_3}{\delta_t\omega_7\omega_8\omega_5^2}\frac{\partial^3 v_1}{\partial x_1\partial x_2\partial x_3}+\\
&(\omega_7^2-\omega_7^2\omega_5-\omega_8\omega_5-\omega_7\omega_8+\omega_7\omega_5+\omega_7\omega_8\omega_5)\frac{\delta_l^3 c_s^2\rho v_1}{\delta_t\omega_7^2\omega_8\omega_5}\frac{\partial^3 v_3}{\partial x_1\partial x_2\partial x_3}+C_8\frac{\delta_l^3 v_2 v_3}{\delta_t\omega_{16}\omega_{10}^2\omega_7}\frac{\partial^3\rho}{\partial x_2^2\partial x_3}+C_9\frac{\delta_l^3\rho v_3}{\delta_t\omega_{16}\omega_{10}^2\omega_7}\frac{\partial^3 v_2}{\partial x_2^2\partial x_3}\\
&+C_{10}\frac{\delta_l^3\rho v_2}{12\delta_t\omega_{16}\omega_{10}^2\omega_7^2}\frac{\partial^3 v_3}{\partial x_2^2\partial x_3}+\\
&(-\omega_6\omega_7\omega_8\omega_5-6\omega_8\omega_5-6\omega_7\omega_8+6\omega_6\omega_7+6\omega_7\omega_8\omega_5-6\omega_6\omega_7\omega_5+6\omega_6\omega_5)\frac{\delta_l^3 c_s^2\rho v_2}{6\omega_6\delta_t\omega_7\omega_8\omega_5}\frac{\partial^3 v_1}{\partial x_1\partial x_3^2}+\\
&(\omega_7^2-\omega_7^2\omega_5-\omega_8\omega_5-\omega_7\omega_8+\omega_7\omega_5+\omega_7\omega_8\omega_5)\frac{\delta_l^3 c_s^2\rho v_1}{\delta_t\omega_7^2\omega_8\omega_5}\frac{\partial^3 v_2}{\partial x_1\partial x_3^2}+(-12-\omega_7^2+12\omega_7)\frac{\delta_l^3 c_s^4}{6\delta_t\omega_7^2}\frac{\partial^3\rho}{\partial x_2\partial x_3^2}+\\
&(12\omega_7^2-\omega_{16}\omega_{10}\omega_7^2-12\omega_{16}\omega_{10}-12\omega_{16}\omega_7+12\omega_{16}\omega_{10}\omega_7+12\omega_{10}\omega_7-12\omega_{10}\omega_7^2)\frac{\delta_l^3 c_s^2\rho v_2}{6\delta_t\omega_{16}\omega_{10}\omega_7^2}\frac{\partial^3 v_2}{\partial x_2\partial x_3^2}+\\
&(-\omega_7^2+\omega_{19}\omega_7-2\omega_{19}+2\omega_7)\frac{\delta_l^3 c_s^2\rho v_3}{\omega_{19}\delta_t\omega_7^2}\frac{\partial^3 v_3}{\partial x_2\partial x_3^2}+C_{11}\frac{\delta_l^3 v_2 v_3}{12\omega_{19}\delta_t\omega_7\omega_{11}}\frac{\partial^3\rho}{\partial x_3^3}+C_{12}\frac{\delta_l^3\rho v_3}{6\omega_{19}\delta_t\omega_7^2}\frac{\partial^3 v_2}{\partial x_3^3}+C_{13}\frac{\delta_l^3\rho v_2}{12\omega_{19}\delta_t\omega_7\omega_{11}}\frac{\partial^3 v_3}{\partial x_3^3}+\\
&C_{14}\frac{\delta_l^4 v_2}{24\omega_9^2\omega_{12}^2\delta_t\omega_5^2}\frac{\partial^4\rho}{\partial x_1^4}+C_{15}\frac{\delta_l^4\rho v_1 v_2}{12\omega_9^2\omega_{12}^2\delta_t\omega_5^2}\frac{\partial^4 v_1}{\partial x_1^4}+C_{16}\frac{\delta_l^4\rho}{24\omega_{12}^2\delta_t\omega_5^3}\frac{\partial^4 v_2}{\partial x_1^4}+C_{17}\frac{\delta_l^4 v_1}{12\omega_{15}\omega_9^2\omega_{12}^2\delta_t\omega_{10}\omega_5^3\omega_{21}}\frac{\partial^4\rho}{\partial x_1^3\partial x_2}+\\
&C_{18}\frac{\delta_l^4\rho}{12\omega_{15}\omega_9^2\omega_{12}^2\delta_t\omega_{10}\omega_5^3\omega_{21}}\frac{\partial^4 v_1}{\partial x_1^3\partial x_2}+C_{19}\frac{\delta_l^4\rho v_1 v_2}{12\omega_{15}^2\omega_9^2\omega_{12}^2\delta_t\omega_{10}^2\omega_5^3\omega_{21}}\frac{\partial^4 v_2}{\partial x_1^3\partial x_2}+C_{20}\frac{\delta_l^4 v_2}{12\omega_{15}^2\omega_{12}\delta_t\omega_{10}^3\omega_5^3\omega_{21}}\frac{\partial^4\rho}{\partial x_1^2\partial x_2^2}+\\
&C_{21}\frac{\delta_l^4\rho v_1 v_2}{2\omega_{15}^2\omega_9\omega_{12}^2\delta_t\omega_{10}^3\omega_5^3\omega_{21}}\frac{\partial^4 v_1}{\partial x_1^2\partial x_2^2}+C_{22}\frac{\delta_l^4\rho}{12\omega_{15}^2\omega_{12}\delta_t\omega_{10}^3\omega_5^3\omega_{21}}\frac{\partial^4 v_2}{\partial x_1^2\partial x_2^2}+C_{23}\frac{\delta_l^4 v_1}{4\omega_{15}^2\delta_t\omega_{10}^3\omega_5^2}\frac{\partial^4\rho}{\partial x_1\partial x_2^3}+\\
&C_{24}\frac{\delta_l^4\rho}{12\omega_{15}^2\delta_t\omega_{10}^3\omega_5^3}\frac{\partial^4 v_1}{\partial x_1\partial x_2^3}+C_{25}\frac{\delta_l^4\rho v_1 v_2}{4\omega_{15}^2\delta_t\omega_{10}^3\omega_5^2}\frac{\partial^4 v_2}{\partial x_1\partial x_2^3}+C_{26}\frac{\delta_l^4 v_2}{12\delta_t\omega_{10}^3}\frac{\partial^4\rho}{\partial x_2^4}+C_{27}\frac{\delta_l^4\rho}{12\delta_t\omega_{10}^3}\frac{\partial^4 v_2}{\partial x_2^4}+\\
&C_{28}\frac{\delta_l^4 v_1 v_2 v_3}{4\omega_9^2\omega_{12}^2\omega_6\delta_t\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2}\frac{\partial^4\rho}{\partial x_1^3\partial x_3}+C_{29}\frac{\delta_l^4\rho v_2 v_3}{4\omega_9^2\omega_{12}^2\omega_6\delta_t\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2}\frac{\partial^4 v_1}{\partial x_1^3\partial x_3}+C_{30}\frac{\delta_l^4\rho v_1 v_3}{2\omega_{12}^2\delta_t\omega_7^2\omega_{14}\omega_8^2\omega_5^3}\frac{\partial^4 v_2}{\partial x_1^3\partial x_3}+\\
&C_{31}\frac{\delta_l^4\rho v_1 v_2}{12\omega_9^2\omega_{12}^2\omega_6^2\delta_t\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2}\frac{\partial^4 v_3}{\partial x_1^3\partial x_3}+C_{32}\frac{2\delta_l^4 c_s^4 v_3}{\delta_t\omega_7^2\omega_8^2\omega_5^3}\frac{\partial^4\rho}{\partial x_1^2\partial x_2\partial x_3}+C_{33}\frac{\delta_l^4 c_s^2\rho v_1 v_3}{\omega_{12}^2\delta_t\omega_7^2\omega_{14}\omega_8^2\omega_5^3}\frac{\partial^4 v_1}{\partial x_1^2\partial x_2\partial x_3}+\\
&C_{34}\frac{\delta_l^4 c_s^2\rho v_2 v_3}{2\omega_{15}^2\omega_6\delta_t\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3}\frac{\partial^4 v_2}{\partial x_1^2\partial x_2\partial x_3}+C_{35}\frac{\delta_l^4 c_s^2\rho}{12\omega_{15}\omega_{12}\omega_6^2\delta_t\omega_{16}\omega_{10}\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_5^3}\frac{\partial^4 v_3}{\partial x_1^2\partial x_2\partial x_3}+\\
&C_{36}\frac{\delta_l^4 v_1 v_2 v_3}{\omega_{15}^2\delta_t\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2}\frac{\partial^4\rho}{\partial x_1\partial x_2^2\partial x_3}+C_{37}\frac{\delta_l^4\rho v_2 v_3}{2\omega_{15}^2\omega_6\delta_t\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^3}\frac{\partial^4 v_1}{\partial x_1\partial x_2^2\partial x_3}+C_{38}\frac{\delta_l^4\rho v_1 v_3}{\omega_{15}^2\delta_t\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2}\frac{\partial^4 v_2}{\partial x_1\partial x_2^2\partial x_3}\\
&+C_{39}\frac{\delta_l^4\rho v_1 v_2}{2\omega_{15}^2\omega_6\delta_t\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5^2}\frac{\partial^4 v_3}{\partial x_1\partial x_2^2\partial x_3}+C_{40}\frac{\delta_l^4 v_3}{4\delta_t\omega_{16}^2\omega_{10}^3\omega_7^2}\frac{\partial^4\rho}{\partial x_2^3\partial x_3}+C_{41}\frac{\delta_l^4\rho v_2 v_3}{4\delta_t\omega_{16}^2\omega_{10}^3\omega_7^2}\frac{\partial^4 v_2}{\partial x_2^3\partial x_3}+\\
&C_{42}\frac{\delta_l^4\rho}{12\delta_t\omega_{16}^2\omega_{10}^3\omega_7^3}\frac{\partial^4 v_3}{\partial x_2^3\partial x_3}+C_{43}\frac{\delta_l^4}{12\omega_{12}\omega_6^2\omega_{19}\delta_t\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2}\frac{\partial^4\rho}{\partial x_1^2\partial x_3^2}+C_{44}\frac{\delta_l^4\rho}{4\omega_9\omega_{12}\omega_6^2\omega_{19}\delta_t\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2}\frac{\partial^4 v_1}{\partial x_1^2\partial x_3^2}+\\
&C_{45}\frac{\delta_l^4\rho}{4\omega_{12}\omega_{19}\delta_t\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^3}\frac{\partial^4 v_2}{\partial x_1^2\partial x_3^2}+C_{46}\frac{\delta_l^4\rho v_3}{2\omega_{12}\omega_6^2\omega_{19}\delta_t\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}}\frac{\partial^4 v_3}{\partial x_1^2\partial x_3^2}+\\
&C_{47}\frac{\delta_l^4}{2\omega_{15}\omega_{19}\delta_t\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2}\frac{\partial^4\rho}{\partial x_1\partial x_2\partial x_3^2}+C_{48}\frac{\delta_l^4\rho}{12\omega_{15}\omega_6^2\omega_{19}\delta_t\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3}\frac{\partial^4 v_1}{\partial x_1\partial x_2\partial x_3^2}+\\
&C_{49}\frac{\delta_l^4\rho v_2}{2\omega_{15}\omega_6\omega_{19}\delta_t\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2}\frac{\partial^4 v_2}{\partial x_1\partial x_2\partial x_3^2}+C_{50}\frac{\delta_l^4\rho}{2\omega_{15}\omega_{19}^2\delta_t\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2}\frac{\partial^4 v_3}{\partial x_1\partial x_2\partial x_3^2}+\\
&C_{51}\frac{\delta_l^4 v_2}{12\omega_{19}\delta_t\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{23}}\frac{\partial^4\rho}{\partial x_2^2\partial x_3^2}+C_{52}\frac{\delta_l^4\rho}{12\omega_{19}\delta_t\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{23}}\frac{\partial^4 v_2}{\partial x_2^2\partial x_3^2}+C_{53}\frac{\delta_l^4\rho v_2 v_3}{2\omega_{19}^2\delta_t\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{23}\omega_{11}}\frac{\partial^4 v_3}{\partial x_2^2\partial x_3^2}+\\
&C_{54}\frac{\delta_l^4 v_1 v_2 v_3}{4\omega_6\omega_{19}^2\delta_t\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}}\frac{\partial^4\rho}{\partial x_1\partial x_3^3}+C_{55}\frac{\delta_l^4\rho v_2 v_3}{12\omega_6^2\omega_{19}^2\delta_t\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}}\frac{\partial^4 v_1}{\partial x_1\partial x_3^3}+C_{56}\frac{\delta_l^4\rho v_1 v_3}{2\omega_{19}^2\delta_t\omega_7^3\omega_{20}\omega_8^2\omega_5^2}\frac{\partial^4 v_2}{\partial x_1\partial x_3^3}+\\
&C_{57}\frac{\delta_l^4\rho v_1 v_2}{4\omega_6\omega_{19}^2\delta_t\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}}\frac{\partial^4 v_3}{\partial x_1\partial x_3^3}+C_{58}\frac{\delta_l^4 v_3}{12\omega_{19}^2\delta_t\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2}\frac{\partial^4\rho}{\partial x_2\partial x_3^3}+C_{59}\frac{\delta_l^4\rho v_2 v_3}{12\omega_{19}^2\delta_t\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}^2}\frac{\partial^4 v_2}{\partial x_2\partial x_3^3}+\\
&C_{60}\frac{\delta_l^4\rho}{12\omega_{19}^2\delta_t\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2}\frac{\partial^4 v_3}{\partial x_2\partial x_3^3}+C_{61}\frac{\delta_l^4 v_2}{24\omega_{19}^2\delta_t\omega_7^2\omega_{11}^2}\frac{\partial^4\rho}{\partial x_3^4}+C_{62}\frac{\delta_l^4\rho}{24\omega_{19}^2\delta_t\omega_7^3}\frac{\partial^4 v_2}{\partial x_3^4}+C_{63}\frac{\delta_l^4\rho v_2 v_3}{12\omega_{19}^2\delta_t\omega_7^2\omega_{11}^2}\frac{\partial^4 v_3}{\partial x_3^4}=0,
\end{aligned}
$$

where:

$C_1 = -6\omega_{12}v_1^2\omega_5 - \omega_9\omega_{12}\omega_5 + 18\omega_9c_s^2\omega_5 + 12\omega_9 - 12\omega_9v_1^2 - 12\omega_{12} - 6\omega_9\omega_5 - 36\omega_9c_s^2 + 3\omega_9\omega_{12}c_s^2\omega_5 + 36\omega_{12}c_s^2 + \omega_9\omega_{12}v_1^2\omega_5 + 12\omega_{12}v_1^2 + 6\omega_9v_1^2\omega_5 - 18\omega_{12}c_s^2\omega_5 + 6\omega_{12}\omega_5$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$12\omega_{15}^2\omega_9^2\omega_{12}^2\omega_{10}\omega_5^3 - 24\omega_{15}^2\omega_9^2\omega_{12}c_s^2\omega_{10}\omega_5^2\omega_{21} + 12\omega_{15}^2\omega_9^2\omega_{12}^2c_s^2\omega_{10}^2\omega_5^3 - 12\omega_{15}^2\omega_9\omega_{12}\omega_{10}^2v_1^2\omega_5^2\omega_{21} + 156\omega_{15}^2\omega_9^2\omega_{12}^2c_s^2\omega_{10}^2\omega_5\omega_{21} -$
$12\omega_{15}^2\omega_9^2\omega_{12}^2\omega_{10}v_1^2\omega_5^3 + 18\omega_{15}^2\omega_9\omega_{12}^2\omega_{10}^2\omega_5^2\omega_{21} + 24\omega_{15}^2\omega_9^2\omega_{10}^2\omega_5^2\omega_{21} - 12\omega_{15}\omega_9^2\omega_{12}^2\omega_{10}^2\omega_5^3\omega_{21} + 12\omega_{15}^2\omega_9^2\omega_{12}^2\omega_{10}^2\omega_5^2\omega_{21} - 36\omega_{15}^2\omega_9^2\omega_{12}c_s^2\omega_{10}^2\omega_5\omega_{21} -$
$24\omega_{15}^2\omega_9^2\omega_{12}^2c_s^2\omega_{10}^2\omega_5^2 + 12\omega_{15}^2\omega_9^2\omega_{12}\omega_{10}^2\omega_5^3 - 12\omega_{15}^2\omega_9^2\omega_{12}\omega_{10}\omega_5^3\omega_{21} - 18\omega_{15}^2\omega_9^2\omega_{12}\omega_{10}^2v_1^2\omega_5^3\omega_{21} - 24\omega_{15}\omega_9^2\omega_{12}^2\omega_{10}\omega_5^3 - 96\omega_{15}^2\omega_9^2\omega_{12}^2c_s^2\omega_{10}^2\omega_{21} +$
$84\omega_{15}^2\omega_9^2\omega_{12}^2c_s^2\omega_{10}\omega_5^2\omega_{21} - 18\omega_{15}^2\omega_9\omega_{12}^2\omega_{10}^2v_1^2\omega_5^2\omega_{21} - 132\omega_{15}\omega_9^2\omega_{12}^2c_s^2\omega_{10}^2\omega_5^2\omega_{21} - 24\omega_{15}^2\omega_9^2\omega_{10}^2v_1^2\omega_5^2\omega_{21} - 6\omega_{15}^2\omega_{12}^2\omega_{10}^2v_1^2\omega_5^3\omega_{21}$

$C_{20} = -88\omega_{15}^2\omega_{12}c_s^4\omega_{10}^3\omega_5^2\omega_{21} + 36\omega_{15}^2c_s^4\omega_{10}^3\omega_5^2 - 18\omega_{15}\omega_{12}c_s^2\omega_{10}^2\omega_5^3\omega_{21} + 6\omega_{15}^2\omega_{12}c_s^2\omega_{10}^3v_2^2\omega_5^3 + 12\omega_{15}\omega_{12}c_s^2\omega_{10}^3\omega_5\omega_{21} - 12\omega_{15}^2\omega_{12}\omega_{10}v_1^2\omega_5^2\omega_{21} +$
$36\omega_{15}^2\omega_{12}c_s^4\omega_5^3\omega_{21} - 6\omega_{15}^2\omega_{12}\omega_{10}^2v_1^2v_2^2\omega_5^3 + 24\omega_{15}\omega_{12}\omega_{10}^2v_1^2v_2^2\omega_5^3\omega_{21} - 36\omega_{15}\omega_{12}c_s^2\omega_{10}^3v_1^2\omega_5^3 - 12\omega_{15}\omega_{12}\omega_{10}^3v_1^2v_2^2\omega_5^3 + 12\omega_{12}c_s^2\omega_{10}^2\omega_5^3\omega_{21} +$
$12\omega_{12}c_s^2\omega_{10}^3v_2^2\omega_5^3\omega_{21} + 6\omega_{15}^2\omega_{12}\omega_{10}^2v_1^2\omega_5^3 + 18\omega_{15}^2c_s^4\omega_{10}^2\omega_5^3\omega_{21} - 12\omega_{15}^2\omega_{12}c_s^2\omega_{10}v_2^2\omega_5^3\omega_{21} - 12\omega_{15}\omega_{12}\omega_{10}v_1^2v_2^2\omega_5^3\omega_{21} - 6\omega_{15}\omega_{12}c_s^2\omega_{10}^3v_2^2\omega_5^3\omega_{21} +$
$36\omega_{15}^2\omega_{12}c_s^2v_1^2\omega_5^3\omega_{21} - 36\omega_{15}\omega_{12}c_s^2\omega_{10}v_1^2\omega_5^3\omega_{21} - 12\omega_{15}^2\omega_{12}c_s^2\omega_{10}^3v_2^2\omega_5^2 - 36\omega_{15}^2\omega_{12}c_s^4\omega_{10}\omega_5^3\omega_{21} - 12\omega_{12}c_s^4\omega_{10}^3\omega_5^3\omega_{21} - 12\omega_{15}\omega_{12}\omega_{10}^2v_1^2\omega_5^3 -$
$18\omega_{15}^2c_s^4\omega_{10}^3\omega_5^3 - 12\omega_{12}\omega_{10}^2v_1^2v_2^2\omega_5^3\omega_{21} - 72\omega_{15}^2\omega_{12}c_s^2\omega_{10}^2v_1^2\omega_5^2\omega_{21} + 12\omega_{15}\omega_{12}\omega_{10}v_1^2\omega_5^3\omega_{21} - 12\omega_{15}^2c_s^2\omega_{10}^2v_2^2\omega_5^2\omega_{21} + 12\omega_{15}\omega_{12}\omega_{10}^3v_1^2v_2^2\omega_5^2 +$
$6\omega_{15}^2\omega_{10}^2v_1^2v_2^2\omega_5^3\omega_{21} - 18\omega_{15}^2\omega_{12}c_s^2\omega_{10}^2\omega_5^2\omega_{21} - 6\omega_{15}^2\omega_{10}^2v_1^2\omega_5^3\omega_{21} + 30\omega_{15}\omega_{12}c_s^4\omega_{10}^3\omega_5^3\omega_{21} + 36\omega_{15}\omega_{12}c_s^2\omega_{10}^3v_1^2\omega_5^2 - 12\omega_{15}^2\omega_{12}c_s^2\omega_{10}^2v_2^2\omega_5\omega_{21} -$
$12\omega_{15}^2c_s^2\omega_{10}^3\omega_5^2 + 12\omega_{15}\omega_{12}c_s^4\omega_{10}\omega_5^3\omega_{21} + 12\omega_{15}\omega_{12}c_s^2\omega_{10}^3v_2^2\omega_5^2 - 12\omega_{12}c_s^2\omega_{10}^3v_2^2\omega_5^2\omega_{21} - 36\omega_{15}^2c_s^4\omega_{10}^2\omega_5^2\omega_{21} - 12\omega_{15}\omega_{12}\omega_{10}^2v_1^2v_2^2\omega_5^2\omega_{21} -$
$12\omega_{15}^2\omega_{12}c_s^2\omega_5^3\omega_{21} + 18\omega_{15}\omega_{12}c_s^2\omega_{10}^2v_2^2\omega_5^3\omega_{21} - 12\omega_{15}^2\omega_{12}\omega_{10}^3v_1^2v_2^2\omega_5^2 + 18\omega_{15}^2\omega_{12}\omega_{10}v_1^2\omega_5^3\omega_{21} - 84\omega_{15}^2\omega_{12}c_s^4\omega_{10}^2\omega_5\omega_{21} +$
$12\omega_{15}^2\omega_{12}c_s^2\omega_{10}^3v_2^2\omega_5\omega_{21} + 6\omega_{15}^2\omega_{10}^3v_1^2\omega_5^3 + 5\omega_{15}^2\omega_{12}c_s^4\omega_{10}^3\omega_5^3\omega_{21} - 36\omega_{15}^2\omega_{12}c_s^2\omega_{10}^3v_1^2\omega_5^2 - 42\omega_{15}\omega_{12}c_s^4\omega_{10}^3\omega_5^2\omega_{21} + 12\omega_{15}^2\omega_{10}^2v_1^2\omega_5^2\omega_{21} +$
$2\omega_{15}^2\omega_{12}c_s^2\omega_{10}^2\omega_5^3\omega_{21} + 24\omega_{15}^2\omega_{12}\omega_{10}^2v_1^2v_2^2\omega_5\omega_{21} - 12\omega_{15}^2\omega_{12}c_s^2\omega_{10}^3\omega_5\omega_{21} + 6\omega_{15}^2c_s^2\omega_{10}^2v_2^2\omega_5^3\omega_{21} - 72\omega_{15}\omega_{12}c_s^2\omega_{10}^3v_1^2\omega_5\omega_{21} - 12\omega_{15}\omega_{12}c_s^2\omega_{10}^3v_2^2\omega_5^3 +$
$6\omega_{15}^2c_s^2\omega_{10}^3\omega_5^3 - 12\omega_{15}^2\omega_{10}^2v_1^2v_2^2\omega_5^2\omega_{21} - 24\omega_{15}^2\omega_{12}\omega_{10}^2v_1^2\omega_5\omega_{21} + 18\omega_{15}^2\omega_{12}c_s^2\omega_{10}^2v_1^2\omega_5^3\omega_{21} + 18\omega_{15}^2\omega_{12}c_s^2\omega_{10}^3v_1^2\omega_5^3 - 24\omega_{15}\omega_{12}\omega_{10}^3v_1^2v_2^2\omega_5\omega_{21} +$
$12\omega_{15}\omega_{12}\omega_{10}^2v_1^2v_2^2\omega_5^3 - 12\omega_{12}c_s^2\omega_{10}^2v_2^2\omega_5^3\omega_{21} + 24\omega_{15}\omega_{12}\omega_{10}^3v_1^2\omega_5\omega_{21} - 12\omega_{15}^2\omega_{10}^3v_1^2\omega_5^2 + 18\omega_{15}\omega_{12}c_s^2\omega_{10}^3v_2^2\omega_5^2\omega_{21} + 12\omega_{12}c_s^4\omega_{10}^3\omega_5^2\omega_{21} +$
$6\omega_{15}^2\omega_{12}\omega_{10}^3v_1^2v_2^2\omega_5^3 - 48\omega_{15}^2\omega_{12}c_s^4\omega_{10}\omega_5^2\omega_{21} - 36\omega_{12}c_s^2\omega_{10}^2v_1^2\omega_5^3\omega_{21} + 12\omega_{15}^2\omega_{12}\omega_{10}^3v_1^2\omega_5^2 - 24\omega_{15}^2\omega_{12}\omega_{10}^2v_1^2v_2^2\omega_5^2\omega_{21} + 12\omega_{12}\omega_{10}^3v_1^2\omega_5^2\omega_{21} -$
$18\omega_{15}^2c_s^2\omega_{10}^3v_1^2\omega_5^3 - 2\omega_{15}^2\omega_{12}c_s^2\omega_{10}^2v_2^2\omega_5^3\omega_{21} + 12\omega_{15}\omega_{12}c_s^4\omega_{10}^3\omega_5\omega_{21} - 18\omega_{15}^2\omega_{12}c_s^4\omega_{10}^2\omega_5^3 - 12\omega_{15}\omega_{12}c_s^2\omega_{10}^3\omega_5^2 - 6\omega_{15}^2\omega_{10}^3v_1^2v_2^2\omega_5^3 -$
$42\omega_{15}\omega_{12}c_s^4\omega_{10}^2\omega_5^3\omega_{21} + 108\omega_{15}\omega_{12}c_s^2\omega_{10}^3v_1^2\omega_5^2\omega_{21} + 12\omega_{15}^2\omega_{12}c_s^2\omega_{10}^3\omega_5^2\omega_{21} + 12\omega_{12}c_s^4\omega_{10}^2\omega_5^3\omega_{21} + 36\omega_{15}\omega_{12}\omega_{10}^3v_1^2v_2^2\omega_5^2\omega_{21} - 6\omega_{15}^2c_s^2\omega_{10}^2\omega_5^3\omega_{21} -$
$6\omega_{15}^2\omega_{12}c_s^2\omega_{10}^3\omega_5^3 + 24\omega_{15}^2\omega_{12}\omega_{10}^2v_1^2\omega_5^2\omega_{21} - 12\omega_{15}\omega_{12}c_s^2\omega_{10}^3v_2^2\omega_5\omega_{21} - 36\omega_{15}\omega_{12}\omega_{10}^3v_1^2\omega_5^2\omega_{21} + 12\omega_{15}\omega_{12}\omega_{10}^3v_1^2\omega_5^3 + 18\omega_{15}^2c_s^2\omega_{10}^2v_1^2\omega_5^3\omega_{21} +$
$36\omega_{15}\omega_{12}c_s^2\omega_{10}^2v_1^2\omega_5^3 + 12\omega_{15}\omega_{12}c_s^2\omega_{10}^3\omega_5^3 + 12\omega_{15}^2\omega_{10}^3v_1^2v_2^2\omega_5^2 - 12\omega_{12}\omega_{10}^3v_1^2v_2^2\omega_5^2\omega_{21} - 24\omega_{15}\omega_{12}\omega_{10}^2v_1^2\omega_5^3\omega_{21} + 36\omega_{15}^2c_s^2\omega_{10}^3v_1^2\omega_5^2 -$
$6\omega_{15}^2\omega_{12}\omega_{10}^3v_1^2\omega_5^3 - 12\omega_{12}c_s^2\omega_{10}^3\omega_5^3\omega_{21} + 12\omega_{15}^2\omega_{12}c_s^2\omega_{10}\omega_5^3\omega_{21} + 12\omega_{15}^2\omega_{12}\omega_{10}v_1^2v_2^2\omega_5^2\omega_{21} - 12\omega_{15}^2\omega_{12}c_s^2\omega_{10}^3v_2^2\omega_5^2\omega_{21} + 6\omega_{15}\omega_{12}c_s^2\omega_{10}^3\omega_5^3\omega_{21} +$
$150\omega_{15}^2\omega_{12}c_s^4\omega_{10}^2\omega_5^2\omega_{21} + 36\omega_{15}^2\omega_{12}c_s^2\omega_{10}v_1^2\omega_5^2\omega_{21} - 12\omega_{15}\omega_{12}\omega_{10}^3v_1^2\omega_5^2 + 12\omega_{12}\omega_{10}^2v_1^2\omega_5^3\omega_{21} - 36\omega_{12}c_s^2\omega_{10}^3v_1^2\omega_5^2\omega_{21} + 36\omega_{15}\omega_{12}c_s^4\omega_{10}^2\omega_5^3 +$
$12\omega_{15}^2\omega_{12}c_s^2\omega_{10}^3\omega_5^2 + 72\omega_{15}\omega_{12}c_s^2\omega_{10}^2v_1^2\omega_5^3\omega_{21} + 12\omega_{15}^2\omega_{12}v_1^2v_2^2\omega_5^3\omega_{21} - 6\omega_{15}^2\omega_{12}c_s^2\omega_{10}^2v_2^2\omega_5^3 - 18\omega_{15}^2\omega_{12}c_s^2\omega_{10}^2v_1^2\omega_5^3 - 36\omega_{15}^2c_s^2\omega_{10}^2v_1^2\omega_5^2\omega_{21} +$
$12\omega_{15}\omega_{12}\omega_{10}^3v_1^2\omega_5^3\omega_{21} - 12\omega_{15}\omega_{12}\omega_{10}^3v_1^2v_2^2\omega_5^3\omega_{21} + 12\omega_{15}\omega_{12}c_s^2\omega_{10}\omega_5^3\omega_{21} + 36\omega_{15}\omega_{12}c_s^4\omega_{10}^3\omega_5^2 + 6\omega_{15}^2\omega_{12}c_s^2\omega_{10}^2\omega_5^3 - 6\omega_{15}^2\omega_{12}\omega_{10}^2v_1^2\omega_5^3\omega_{21} +$
$72\omega_{15}^2\omega_{12}c_s^2\omega_{10}^2v_1^2\omega_5\omega_{21} + 12\omega_{15}^2c_s^2\omega_{10}^2\omega_5^2\omega_{21} + 12\omega_{15}^2c_s^2\omega_{10}^3v_2^2\omega_5^2 + 18\omega_{15}^2\omega_{12}c_s^4\omega_{10}^3\omega_5^3 - 12\omega_{15}\omega_{12}c_s^2\omega_{10}v_2^2\omega_5^3\omega_{21} - \omega_{15}^2\omega_{12}c_s^2\omega_{10}^3\omega_5^3\omega_{21} -$
$36\omega_{15}\omega_{12}c_s^2\omega_{10}^3v_1^2\omega_5^3\omega_{21} + 12\omega_{15}^2\omega_{12}c_s^2v_2^2\omega_5^3\omega_{21} - 12\omega_{12}\omega_{10}^3v_1^2\omega_5^3\omega_{21} + 6\omega_{15}^2\omega_{12}\omega_{10}^2v_1^2v_2^2\omega_5^3\omega_{21} + 12\omega_{15}\omega_{12}c_s^2\omega_{10}^2v_2^2\omega_5^3 + 18\omega_{15}^2\omega_{12}c_s^2\omega_{10}^2v_2^2\omega_5^2\omega_{21} +$
$12\omega_{15}^2\omega_{12}c_s^2\omega_{10}^2\omega_5\omega_{21} - 36\omega_{15}\omega_{12}c_s^2\omega_{10}^2v_1^2\omega_5^2\omega_{21} - 36\omega_{15}\omega_{12}c_s^4\omega_{10}^3\omega_5^3 - 96\omega_{15}^2\omega_{12}c_s^4\omega_{10}^3\omega_{21} + 180\omega_{15}^2\omega_{12}c_s^4\omega_{10}^3\omega_5\omega_{21} - 54\omega_{15}^2\omega_{12}c_s^2\omega_{10}v_1^2\omega_5^3\omega_{21} -$
$6\omega_{15}^2\omega_{12}c_s^4\omega_{10}^2\omega_5^3\omega_{21} - 18\omega_{15}\omega_{12}c_s^2\omega_{10}^3\omega_5^2\omega_{21} - 18\omega_{15}^2\omega_{12}\omega_{10}v_1^2v_2^2\omega_5^3\omega_{21} + \omega_{15}^2\omega_{12}c_s^2\omega_{10}^3v_2^2\omega_5^3\omega_{21} + 36\omega_{12}c_s^2\omega_{10}^3v_1^2\omega_5^3\omega_{21} + 12\omega_{12}\omega_{10}^3v_1^2v_2^2\omega_5^3\omega_{21} +$
$12\omega_{15}\omega_{12}\omega_{10}^2v_1^2\omega_5^2\omega_{21} + 12\omega_{12}c_s^2\omega_{10}^3\omega_5^2\omega_{21} - 36\omega_{15}^2\omega_{12}c_s^4\omega_{10}^3\omega_5^2 - 6\omega_{15}^2c_s^2\omega_{10}^3v_2^2\omega_5^3 - 12\omega_{15}^2\omega_{12}v_1^2\omega_5^3\omega_{21} - 12\omega_{15}\omega_{12}c_s^2\omega_{10}^2\omega_5^3$

$C_{21} = -9\omega_{15}\omega_9\omega_{12}^2\omega_{10}^3\omega_5^2\omega_{21} - 4\omega_{15}^2\omega_9\omega_{12}\omega_{10}^3\omega_5^2 + 26\omega_{15}^2\omega_9\omega_{12}^2c_s^2\omega_{10}^3\omega_5\omega_{21} - 4\omega_{15}\omega_9\omega_{12}^2\omega_{10}v_2^2\omega_5^3\omega_{21} + 3\omega_{15}^2\omega_9\omega_{12}^2c_s^2\omega_{10}^2\omega_5^3\omega_{21} -$
$3\omega_{15}^2\omega_9\omega_{12}^2\omega_{10}^2v_2^2\omega_5^2\omega_{21} + \omega_{15}^2\omega_9\omega_{12}\omega_{10}^3v_2^2\omega_5^3\omega_{21} - 8\omega_{15}\omega_9\omega_{12}^2c_s^2\omega_{10}\omega_5^3\omega_{21} - 8\omega_9\omega_{12}^2c_s^2\omega_{10}^3\omega_5^2\omega_{21} + 4\omega_{15}^2\omega_9\omega_{12}c_s^2\omega_{10}^3\omega_5^2 + 4\omega_9\omega_{12}^2\omega_{10}^3\omega_5^2\omega_{21} -$
$2\omega_{15}^2\omega_9\omega_{12}^2\omega_{10}\omega_5^2\omega_{21} + 4\omega_{15}\omega_9\omega_{12}^2\omega_{10}\omega_5^3\omega_{21} + 11\omega_{15}\omega_9\omega_{12}^2c_s^2\omega_{10}^3\omega_5^2\omega_{21} + 2\omega_{15}^2\omega_9\omega_{12}\omega_{10}^3\omega_5^3 + 4\omega_{15}\omega_9\omega_{12}^2\omega_{10}^2v_2^2\omega_5^3 +$
$12\omega_{15}^2\omega_9\omega_{12}c_s^2\omega_{10}^3\omega_5\omega_{21} - 2\omega_{15}^2\omega_9\omega_{12}^2\omega_{10}^2\omega_5\omega_{21} - 4\omega_{15}^2\omega_9\omega_{12}c_s^2\omega_{10}^2\omega_5^3\omega_{21} - 2\omega_{15}^2\omega_9\omega_{12}c_s^2\omega_{10}^3\omega_5^3 + 4\omega_{15}^2\omega_9\omega_{12}^2v_2^2\omega_5^3\omega_{21} - 4\omega_{15}^2\omega_9\omega_{12}^2\omega_5^3\omega_{21} +$
$5\omega_{15}^2\omega_9\omega_{12}^2\omega_{10}\omega_5^3\omega_{21} - 4\omega_9\omega_{12}^2\omega_{10}^3\omega_5^3\omega_{21} - 6\omega_{15}\omega_9\omega_{12}^2\omega_{10}^3v_2^2\omega_5\omega_{21} + 8\omega_9\omega_{12}^2c_s^2\omega_{10}^3\omega_5^3\omega_{21} + \omega_{15}^2\omega_9\omega_{12}^2\omega_{10}^2v_2^2\omega_5^3\omega_{21} - \omega_{15}^2\omega_9\omega_{12}^2c_s^2\omega_{10}^2\omega_5^2\omega_{21} -$
$2\omega_{15}^2\omega_9\omega_{12}^2\omega_{10}^2v_2^2\omega_5^3 - 2\omega_{15}^2\omega_9\omega_{12}\omega_{10}^3v_2^2\omega_5^2\omega_{21} + 4\omega_{15}^2\omega_9\omega_{12}\omega_{10}^3v_2^2\omega_5^2 + 3\omega_{15}\omega_9\omega_{12}^2\omega_{10}^3\omega_5^3\omega_{21} - 4\omega_{15}^2\omega_{12}^2c_s^2\omega_{10}^3\omega_5\omega_{21} + 8\omega_{15}^2\omega_9\omega_{12}c_s^2\omega_{10}^2\omega_5^2\omega_{21} +$
$\omega_{15}^2\omega_9\omega_{12}^2\omega_{10}^3\omega_5^2\omega_{21} - \omega_{15}^2\omega_9\omega_{12}^2\omega_{10}^3v_2^2\omega_5^2\omega_{21} - 5\omega_{15}\omega_9\omega_{12}^2c_s^2\omega_{10}^3\omega_5^3\omega_{21} - 2\omega_{15}^2\omega_9\omega_{12}\omega_{10}^3v_2^2\omega_5^3 + 12\omega_{15}^2\omega_9\omega_{12}^2c_s^2\omega_5^3\omega_{21} +$
$2\omega_{15}^2\omega_9\omega_{12}^2\omega_{10}^3v_2^2\omega_5\omega_{21} - 2\omega_{15}^2\omega_9\omega_{12}^2\omega_{10}^3\omega_5\omega_{21} - 4\omega_{15}\omega_9\omega_{12}^2\omega_{10}^3v_2^2\omega_5^3 - \omega_{15}^2\omega_9\omega_{12}^2\omega_{10}^2\omega_5^3\omega_{21} - 4\omega_{15}\omega_9\omega_{12}^2\omega_{10}^2\omega_5^3 + 8\omega_{15}^2\omega_9\omega_{12}c_s^2\omega_{10}^3\omega_5^3\omega_{21} -$
$4\omega_{15}^2\omega_9\omega_{12}^2c_s^2\omega_{10}^3\omega_5^2 + 4\omega_{15}^2\omega_{12}c_s^2\omega_{10}^3\omega_5^2\omega_{21} - 2\omega_{15}^2\omega_9c_s^2\omega_{10}^3\omega_5^3\omega_{21} - 16\omega_{15}^2\omega_9\omega_{12}^2c_s^2\omega_{10}^3\omega_{21} + 2\omega_{15}^2\omega_9\omega_{12}^2\omega_{10}v_2^2\omega_5^2\omega_{21} - 4\omega_9\omega_{12}^2\omega_{10}^3v_2^2\omega_5^2\omega_{21} +$
$2\omega_{15}\omega_9\omega_{12}^2c_s^2\omega_{10}^2\omega_5^2\omega_{21} + 7\omega_{15}\omega_9\omega_{12}^2\omega_{10}^2v_2^2\omega_5^3\omega_{21} + 4\omega_{15}\omega_9\omega_{12}^2c_s^2\omega_{10}^2\omega_5^3 + 2\omega_{15}^2\omega_9\omega_{12}^2c_s^2\omega_{10}\omega_5^2\omega_{21} - 4\omega_9\omega_{12}^2\omega_{10}^2v_2^2\omega_5^3\omega_{21} +$
$2\omega_{15}^2\omega_9\omega_{12}^2c_s^2\omega_{10}^3\omega_5^3 - \omega_{15}^2\omega_9\omega_{12}\omega_{10}^3\omega_5^3\omega_{21} + 4\omega_{15}\omega_9\omega_{12}^2\omega_{10}^3v_2^2\omega_5^2 + 9\omega_{15}\omega_9\omega_{12}^2\omega_{10}^3v_2^2\omega_5^2\omega_{21} - 6\omega_{15}^2\omega_9\omega_{12}^2c_s^2\omega_{10}^2\omega_5\omega_{21} + 2\omega_{15}\omega_9\omega_{12}^2\omega_{10}^2\omega_5^2\omega_{21} +$
$2\omega_{15}^2\omega_9\omega_{12}^2\omega_{10}^2\omega_5^3 + 2\omega_{15}^2\omega_{12}^2c_s^2\omega_{10}^3\omega_5^2\omega_{21} - 2\omega_{15}\omega_9\omega_{12}^2\omega_{10}^2v_2^2\omega_5^2\omega_{21} + 13\omega_{15}\omega_9\omega_{12}^2c_s^2\omega_{10}^2\omega_5^3\omega_{21} - 15\omega_{15}^2\omega_9\omega_{12}^2c_s^2\omega_{10}\omega_5^3\omega_{21} -$
$4\omega_{15}\omega_9\omega_{12}^2c_s^2\omega_{10}^3\omega_5^3 - 6\omega_{15}\omega_9\omega_{12}^2c_s^2\omega_{10}^3\omega_5\omega_{21} - 5\omega_{15}^2\omega_9\omega_{12}^2\omega_{10}v_2^2\omega_5^3\omega_{21} + 4\omega_9\omega_{12}^2\omega_{10}^3v_2^2\omega_5^3\omega_{21} + 4\omega_{15}^2\omega_9\omega_{12}^2\omega_{10}^3\omega_5^2 - 4\omega_{15}^2\omega_9\omega_{12}^2\omega_{10}^3v_2^2\omega_5^2 +$
$4\omega_{15}\omega_9\omega_{12}^2\omega_{10}^3\omega_5^3 + 3\omega_{15}^2\omega_9\omega_{12}^2\omega_{10}^2\omega_5^2\omega_{21} - 2\omega_{15}^2\omega_{12}c_s^2\omega_{10}^3\omega_5^3\omega_{21} + 4\omega_{15}^2\omega_9c_s^2\omega_{10}^3\omega_5^2\omega_{21} - 24\omega_{15}^2\omega_9\omega_{12}c_s^2\omega_{10}^3\omega_5^2\omega_{21} + 2\omega_{15}^2\omega_9\omega_{12}^2\omega_{10}^3v_2^2\omega_5^3 -$
$2\omega_{15}^2\omega_9\omega_{12}^2\omega_{10}^3\omega_5^3 - 8\omega_{15}^2\omega_9\omega_{12}^2c_s^2\omega_{10}^3\omega_5^2\omega_{21} + 6\omega_{15}\omega_9\omega_{12}^2\omega_{10}^3\omega_5\omega_{21} + 4\omega_{15}\omega_9\omega_{12}^2c_s^2\omega_{10}^3\omega_5^2 + 2\omega_{15}^2\omega_9\omega_{12}^2\omega_{10}^2v_2^2\omega_5\omega_{21} - 7\omega_{15}\omega_9\omega_{12}^2\omega_{10}^2\omega_5^3\omega_{21} +$
$4\omega_9\omega_{12}^2\omega_{10}^2\omega_5^3\omega_{21} - 3\omega_{15}\omega_9\omega_{12}^2\omega_{10}^3v_2^2\omega_5^3\omega_{21} - 2\omega_{15}^2\omega_9\omega_{12}^2c_s^2\omega_{10}^2\omega_5^3 - 8\omega_9\omega_{12}^2c_s^2\omega_{10}^2\omega_5^3\omega_{21} - 4\omega_{15}\omega_9\omega_{12}^2\omega_{10}^3\omega_5^2 + 2\omega_{15}^2\omega_9\omega_{12}\omega_{10}^3\omega_5^2\omega_{21}$

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

$12\omega_{15}\omega_{12}\omega_{10}^3v_1^2\omega_5^3 + 6\omega_{15}^2c_s^2\omega_{10}^2v_1^2\omega_5^3\omega_{21} + 12\omega_{15}\omega_{12}c_s^2\omega_{10}^2v_1^2\omega_5^3 + 12\omega_{15}\omega_{12}c_s^2\omega_{10}^3\omega_5^3 + 36\omega_{15}^2\omega_{10}^3v_1^2v_2^2\omega_5^2 - 36\omega_{12}\omega_{10}^3v_1^2v_2^2\omega_5^2\omega_{21} -$
$24\omega_{15}\omega_{12}\omega_{10}^2v_1^2\omega_5^3\omega_{21} + 12\omega_{15}^2c_s^2\omega_{10}^3v_1^2\omega_5^2 - 6\omega_{15}^2\omega_{12}\omega_{10}^3v_1^2\omega_5^3 - 6\omega_{15}^2\omega_{12}c_s^2\omega_{10}\omega_5^3\omega_{21} + 36\omega_{15}^2\omega_{12}\omega_{10}v_1^2v_2^2\omega_5^2\omega_{21} - 42\omega_{15}^2\omega_{12}c_s^2\omega_{10}^3v_2^2\omega_5^2\omega_{21} -$
$12\omega_{15}\omega_{12}c_s^2\omega_{10}^3\omega_5^3\omega_{21} + 24\omega_{15}^2\omega_{12}c_s^4\omega_{10}^2\omega_5^2\omega_{21} + 12\omega_{15}^2\omega_{12}c_s^2\omega_{10}v_1^2\omega_5^2\omega_{21} - 12\omega_{15}\omega_{12}\omega_{10}^3v_1^2\omega_5^2 + 12\omega_{12}\omega_{10}^2v_1^2\omega_5^3\omega_{21} - 12\omega_{12}c_s^2\omega_{10}^3v_1^2\omega_5^2\omega_{21} +$
$12\omega_{15}\omega_{12}c_s^4\omega_{10}^2\omega_5^3 + 12\omega_{15}^2\omega_{12}c_s^2\omega_{10}^3\omega_5^2 + 24\omega_{15}\omega_{12}c_s^2\omega_{10}^2v_1^2\omega_5^3\omega_{21} + 36\omega_{15}^2\omega_{12}v_1^2v_2^2\omega_5^3\omega_{21} - 18\omega_{15}^2\omega_{12}c_s^2\omega_{10}^2v_2^2\omega_5^3 - 6\omega_{15}^2\omega_{12}c_s^2\omega_{10}^2v_1^2\omega_5^3 -$
$12\omega_{15}^2c_s^2\omega_{10}^2v_1^2\omega_5^2\omega_{21} + 12\omega_{15}\omega_{12}\omega_{10}^3v_1^2\omega_5^3\omega_{21} - 36\omega_{15}\omega_{12}\omega_{10}^3v_1^2v_2^2\omega_5^3\omega_{21} + 12\omega_{15}\omega_{12}c_s^4\omega_{10}^3\omega_5^2 + 6\omega_{15}^2\omega_{12}c_s^2\omega_{10}^2\omega_5^3 - 6\omega_{15}^2\omega_{12}\omega_{10}^2v_1^2\omega_5^3\omega_{21} +$
$24\omega_{15}^2\omega_{12}c_s^2\omega_{10}^2v_1^2\omega_5\omega_{21} + 12\omega_{15}^2c_s^2\omega_{10}^2\omega_5^2\omega_{21} + 36\omega_{15}^2c_s^2\omega_{10}^3v_2^2\omega_5^2 + 6\omega_{15}^2\omega_{12}c_s^4\omega_{10}^3\omega_5^3 + 72\omega_{15}\omega_{12}c_s^2\omega_{10}v_2^2\omega_5^3\omega_{21} - 12\omega_{15}\omega_{12}c_s^2\omega_{10}^3v_1^2\omega_5^3\omega_{21} +$
$12\omega_{15}\omega_{12}c_s^4\omega_{10}^2\omega_5^2\omega_{21} - 12\omega_{12}\omega_{10}^3v_1^2\omega_5^3\omega_{21} + 18\omega_{15}^2\omega_{12}\omega_{10}^2v_1^2v_2^2\omega_5^3\omega_{21} + 36\omega_{15}\omega_{12}c_s^2\omega_{10}^2v_2^2\omega_5^3 + 180\omega_{15}^2\omega_{12}c_s^2\omega_{10}^2v_2^2\omega_5^2\omega_{21} +$
$12\omega_{15}^2\omega_{12}c_s^2\omega_{10}^2\omega_5\omega_{21} - 12\omega_{15}\omega_{12}c_s^2\omega_{10}^2v_1^2\omega_5^2\omega_{21} - 12\omega_{15}\omega_{12}c_s^4\omega_{10}^3\omega_5^3 - 12\omega_{15}^2\omega_{12}c_s^4\omega_{10}^3\omega_{21} + 18\omega_{15}^2\omega_{12}c_s^4\omega_{10}^3\omega_5\omega_{21} - 18\omega_{15}^2\omega_{12}c_s^2\omega_{10}v_1^2\omega_5^3\omega_{21} -$
$6\omega_{15}^2\omega_{12}c_s^4\omega_{10}^2\omega_5^3\omega_{21} + 24\omega_{15}\omega_{12}c_s^2\omega_{10}^3\omega_5^2\omega_{21} - 54\omega_{15}^2\omega_{12}\omega_{10}v_1^2v_2^2\omega_5^3\omega_{21} + 12\omega_{12}c_s^2\omega_{10}^3v_1^2\omega_5^3\omega_{21} + 36\omega_{12}\omega_{10}^3v_1^2v_2^2\omega_5^3\omega_{21} +$
$12\omega_{15}\omega_{12}\omega_{10}^2v_1^2\omega_5^2\omega_{21} + 12\omega_{15}^2\omega_{12}c_s^2\omega_{10}\omega_5^2\omega_{21} - 12\omega_{15}^2\omega_{12}c_s^4\omega_{10}^3\omega_5^2 - 18\omega_{15}^2c_s^2\omega_{10}^3v_2^2\omega_5^3 - 12\omega_{15}^2\omega_{12}v_1^2\omega_5^3\omega_{21} - 12\omega_{15}\omega_{12}c_s^2\omega_{10}^2\omega_5^3$

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

$C_{24} = 18\omega_{15}^2\omega_{10}^3v_2^2\omega_5^2 - 60\omega_{15}\omega_{10}^2v_2^2\omega_5^3 + 13\omega_{15}^2c_s^4\omega_{10}^3\omega_5^2 + 12\omega_{15}^2\omega_{10}^2v_2^4\omega_5^2 - 48\omega_{15}^2c_s^2\omega_{10}^2v_2^2\omega_5 - 27\omega_{15}\omega_{10}^3v_2^4\omega_5^3 - 48\omega_{15}^2c_s^2\omega_{10}^3v_2^2 -$
$6\omega_{15}^2c_s^2\omega_{10}^2\omega_5^2 - 12\omega_{15}^2c_s^2\omega_5^3 + 72\omega_{15}^2v_2^2\omega_5^3 - \omega_{15}^2c_s^4\omega_{10}^3\omega_5^3 - 4\omega_{15}^2\omega_{10}^3v_2^2\omega_5^3 + 24\omega_{15}\omega_{10}^2v_2^2\omega_5^2 + 6\omega_{15}^2c_s^2\omega_{10}^3\omega_5 - \omega_{15}^2c_s^2\omega_{10}^2\omega_5^3 + 19\omega_{15}^2\omega_{10}^2v_2^4\omega_5^3 +$
$48\omega_{15}\omega_{10}^3v_2^4\omega_5^2 - 5\omega_{15}^2c_s^2\omega_{10}^3\omega_5^2 + 12c_s^2\omega_{10}^3v_2^2\omega_5^3 + 60\omega_{15}^2c_s^2\omega_{10}^2v_2^2\omega_5^3 - 24\omega_{15}\omega_{10}^3v_2^4\omega_5 + 90\omega_{15}^2\omega_{10}v_2^2\omega_5^3 - 12\omega_{15}c_s^2\omega_{10}^2v_2^2\omega_5^2 + 6\omega_{15}^2c_s^4\omega_{10}^2\omega_5^2 +$
$12\omega_{10}^3v_2^2\omega_5^2 + 162\omega_{15}^2c_s^2\omega_{10}^2v_2^2\omega_5^2 - 12\omega_{10}^2v_2^4\omega_5^3 + 252\omega_{15}^2c_s^2v_2^2\omega_5^3 - 36\omega_{15}\omega_{10}v_2^4\omega_5^3 - 12c_s^2\omega_{10}^3v_2^2\omega_5^2 - 12\omega_{15}^2\omega_{10}^3v_2^2\omega_5 - 12\omega_{10}^3v_2^2\omega_5^3 +$
$\omega_{15}^2c_s^4\omega_{10}^2\omega_5^3 - 24\omega_{15}^2c_s^4\omega_{10}^3\omega_5 + 54\omega_{15}c_s^2\omega_{10}^2v_2^2\omega_5^3 - 12\omega_{15}c_s^2\omega_{10}^2\omega_5^2 - 306\omega_{15}^2c_s^2\omega_{10}v_2^2\omega_5^3 - 72\omega_{15}^2v_2^2\omega_5^3 + 12\omega_{15}^2c_s^4\omega_5^3 - 24\omega_{15}\omega_{10}^2v_2^4\omega_5^2 +$
$4\omega_{15}^2\omega_{10}^3v_2^4\omega_5^3 - 12\omega_{15}c_s^2\omega_{10}^3v_2^2\omega_5 - 12\omega_{15}^2c_s^4\omega_{10}\omega_5^3 - 48\omega_{15}\omega_{10}^3v_2^2\omega_5^2 - 19\omega_{15}^2\omega_{10}^2v_2^2\omega_5^3 - 18\omega_{15}c_s^4\omega_{10}^2\omega_5^2 + 102\omega_{15}^2c_s^2\omega_{10}^3v_2^2\omega_5 +$
$60\omega_{15}\omega_{10}^2v_2^4\omega_5^3 - 18\omega_{15}^2\omega_{10}^3v_2^4\omega_5^2 - 108\omega_{15}^2c_s^2\omega_{10}v_2^2\omega_5^2 - 12\omega_{15}c_s^2\omega_{10}^3\omega_5 + 6\omega_{15}c_s^2\omega_{10}^2\omega_5^3 + 6\omega_{15}c_s^4\omega_{10}^3\omega_5^3 + 27\omega_{15}\omega_{10}^3v_2^2\omega_5^3 - 36\omega_{15}c_s^2\omega_{10}v_2^2\omega_5^3 -$
$12\omega_{15}^2\omega_{10}^2v_2^2\omega_5^2 - 12\omega_{15}^2c_s^4\omega_{10}\omega_5^2 + 12\omega_{10}^2v_2^2\omega_5^3 + 12\omega_{15}c_s^4\omega_{10}^2\omega_5^2 - 21\omega_{15}c_s^2\omega_{10}^3v_2^2\omega_5^3 + 36\omega_{15}\omega_{10}v_2^2\omega_5^3 + 12\omega_{10}^3v_2^4\omega_5^3 + 12\omega_{15}^2c_s^2\omega_{10}\omega_5^3 +$
$12\omega_{15}^2\omega_{10}^3v_2^4\omega_5 - 81\omega_{15}^2c_s^2\omega_{10}^3v_2^2\omega_5^2 + 18\omega_{15}c_s^2\omega_{10}^3\omega_5^2 + 30\omega_{15}c_s^2\omega_{10}^3v_2^2\omega_5^2 - 6\omega_{15}c_s^4\omega_{10}^2\omega_5^3 + 24\omega_{15}\omega_{10}^3v_2^2\omega_5 + 12\omega_{15}c_s^4\omega_{10}^3\omega_5 + 12\omega_{15}^2c_s^4\omega_{10}^3 -$
$90\omega_{15}^2\omega_{10}v_2^4\omega_5^3 - 12c_s^2\omega_{10}^2v_2^2\omega_5^3 - 6\omega_{15}c_s^2\omega_{10}^3\omega_5^3 + 12\omega_{15}^2c_s^2\omega_{10}\omega_5^2 - 12\omega_{10}^3v_2^4\omega_5^2 + 12\omega_{15}^2c_s^2\omega_{10}^3v_2^2\omega_5^3$

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

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

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

$C_{28} = 4\omega_9^2\omega_{12}^2\omega_6v_1^2\omega_{13}\omega_7\omega_5 - 12\omega_9^2\omega_{12}\omega_6c_s^2\omega_{13}\omega_{14}\omega_8\omega_5 - 4\omega_9\omega_{12}^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5 + 4\omega_9^2\omega_{12}\omega_6v_1^2\omega_{13}\omega_7\omega_8\omega_5 - 4\omega_9^2\omega_{12}\omega_6v_1^2\omega_{13}\omega_7\omega_{14}\omega_8 -$
$9\omega_9^2\omega_{12}^2\omega_6c_s^2\omega_7\omega_{14}\omega_8\omega_5^2 + 4\omega_9\omega_{12}^2\omega_6v_1^2\omega_{13}\omega_7\omega_{14}\omega_5^2 + 4\omega_9\omega_{12}^2\omega_6\omega_{13}\omega_7\omega_{14}\omega_5 - 4\omega_9^2\omega_{12}^2\omega_6\omega_{13}\omega_7\omega_5 - 12\omega_9^2\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_7\omega_8\omega_5 -$
$12\omega_9^2\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_7\omega_5^2 + 12\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5 + 2\omega_9^2\omega_6v_1^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2 - 2\omega_9^2\omega_{12}^2\omega_6\omega_{14}\omega_8\omega_5^2 - 2\omega_9^2\omega_{12}\omega_6\omega_{13}\omega_{14}\omega_8\omega_5^2 -$
$4\omega_9\omega_{12}^2\omega_6\omega_{13}\omega_7\omega_{14}\omega_8 + 4\omega_9\omega_{12}^2v_1^2\omega_{13}\omega_{14}\omega_8\omega_5^2 + 12\omega_9\omega_{12}^2c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5 - 6\omega_9\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_{14}\omega_8\omega_5^2 - 4\omega_9^2\omega_{12}^2v_1^2\omega_7\omega_{14}\omega_8\omega_5 +$
$24\omega_9^2\omega_{12}\omega_6c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5 + 2\omega_9^2\omega_{12}^2\omega_6v_1^2\omega_{14}\omega_8\omega_5^2 - 4\omega_9^2\omega_{12}^2\omega_7\omega_{14}\omega_8\omega_5^2 - 8\omega_9\omega_{12}^2\omega_6v_1^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5 - 12\omega_9\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_{14}\omega_5^2 -$
$2\omega_9\omega_{12}^2\omega_6\omega_7\omega_{14}\omega_8\omega_5^2 - 4\omega_9\omega_{12}^2\omega_6v_1^2\omega_7\omega_{14}\omega_8\omega_5 + 4\omega_9^2\omega_{12}^2\omega_7\omega_{14}\omega_8\omega_5 + 3\omega_9\omega_{12}^2\omega_6v_1^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2 + 2\omega_9\omega_{12}^2\omega_6v_1^2\omega_7\omega_{14}\omega_8\omega_5^2 +$
$4\omega_9\omega_{12}^2\omega_6\omega_7\omega_{14}\omega_8\omega_5 + 4\omega_9^2\omega_{12}\omega_6\omega_{13}\omega_{14}\omega_8\omega_5 - 12\omega_9\omega_{12}^2c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2 - 4\omega_9\omega_{12}^2\omega_6v_1^2\omega_{13}\omega_{14}\omega_5^2 + 4\omega_9\omega_{12}^2\omega_6v_1^2\omega_{13}\omega_7\omega_{14}\omega_8 +$
$12\omega_9\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_{14}\omega_8\omega_5 - 6\omega_9^2\omega_{12}\omega_6c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2 + 6\omega_9^2\omega_{12}^2\omega_6c_s^2\omega_{14}\omega_8\omega_5^2 + 4\omega_9^2\omega_{12}^2v_1^2\omega_7\omega_{14}\omega_8\omega_5^2 + 4\omega_9^2\omega_{12}^2\omega_6\omega_{13}\omega_7\omega_5^2 +$
$6\omega_9^2\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_7\omega_8\omega_5^2 + 12\omega_9^2\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_7\omega_5 - 6\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2 - 4\omega_9^2\omega_6v_1^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5 + 4\omega_9\omega_{12}^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2 -$
$2\omega_9^2\omega_{12}\omega_6v_1^2\omega_{13}\omega_7\omega_8\omega_5^2 - 4\omega_9^2\omega_{12}^2\omega_6v_1^2\omega_{13}\omega_7\omega_5^2 + 6\omega_9^2\omega_{12}\omega_6c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2 + 4\omega_9^2\omega_{12}^2\omega_6v_1^2\omega_{13}\omega_5^2 - 4\omega_9\omega_{12}^2\omega_6\omega_{13}\omega_7\omega_{14}\omega_5^2 -$
$4\omega_9^2\omega_{12}^2\omega_6\omega_{13}\omega_5^2 - 4\omega_9\omega_{12}^2\omega_6v_1^2\omega_{13}\omega_7\omega_{14}\omega_5 + 12\omega_9^2\omega_{12}^2\omega_6c_s^2\omega_7\omega_{14}\omega_8\omega_5 + 12\omega_9\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_7\omega_{14}\omega_8 + 8\omega_9^2\omega_{12}\omega_6v_1^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5 -$
$8\omega_9^2\omega_{12}\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5 - 2\omega_9^2\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2 - 4\omega_9^2\omega_{12}\omega_6\omega_{13}\omega_7\omega_8\omega_5 - 4\omega_9^2\omega_{12}^2\omega_6\omega_7\omega_{14}\omega_8\omega_5 + 4\omega_9\omega_{12}^2v_1^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5 +$
$12\omega_9^2\omega_{12}^2c_s^2\omega_7\omega_{14}\omega_8\omega_5^2 + 4\omega_9^2\omega_{12}\omega_6\omega_{13}\omega_7\omega_{14}\omega_8 + 4\omega_9\omega_{12}^2\omega_6v_1^2\omega_{13}\omega_{14}\omega_8\omega_5 + 2\omega_9\omega_{12}^2\omega_6\omega_{13}\omega_{14}\omega_8\omega_5^2 - 2\omega_9^2\omega_{12}^2\omega_6\omega_{13}\omega_7\omega_8\omega_5^2 -$
$24\omega_9\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5 - 4\omega_{12}^2\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5 + 6\omega_9\omega_{12}^2\omega_6c_s^2\omega_7\omega_{14}\omega_8\omega_5^2 - 12\omega_9^2\omega_{12}^2c_s^2\omega_{14}\omega_8\omega_5^2 + 2\omega_9^2\omega_{12}\omega_6v_1^2\omega_{13}\omega_{14}\omega_8\omega_5^2 -$
$6\omega_9^2\omega_{12}\omega_6c_s^2\omega_{13}\omega_7\omega_8\omega_5^2 + 4\omega_9^2\omega_{12}^2\omega_6v_1^2\omega_7\omega_{14}\omega_8\omega_5 - 12\omega_9\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_7\omega_{14}\omega_5 - 3\omega_9\omega_{12}^2\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2 + 2\omega_9^2\omega_{12}^2\omega_6\omega_{13}\omega_8\omega_5^2 +$
$4\omega_{12}^2\omega_6v_1^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5 + 6\omega_9^2\omega_6c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2 - 2\omega_9^2\omega_{12}^2\omega_6v_1^2\omega_{13}\omega_8\omega_5^2 + 2\omega_9^2\omega_{12}^2\omega_6v_1^2\omega_{13}\omega_7\omega_8\omega_5^2 + 4\omega_9^2\omega_{12}^2\omega_{14}\omega_8\omega_5^2 -$
$2\omega_{12}^2\omega_6v_1^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2 - 12\omega_9^2\omega_6c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5 + 12\omega_9^2\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_5^2 - 4\omega_9^2\omega_{12}^2\omega_6v_1^2\omega_{13}\omega_7\omega_8\omega_5 + 12\omega_9^2\omega_{12}\omega_6c_s^2\omega_{13}\omega_7\omega_8\omega_5 -$
$4\omega_9^2\omega_{12}\omega_6v_1^2\omega_{13}\omega_{14}\omega_8\omega_5 - 6\omega_9^2\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_8\omega_5^2 + 12\omega_9\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_7\omega_{14}\omega_5^2 - 3\omega_9^2\omega_{12}^2\omega_6v_1^2\omega_7\omega_{14}\omega_8\omega_5^2 - 12\omega_9^2\omega_{12}\omega_6c_s^2\omega_{13}\omega_7\omega_{14}\omega_8 +$
$8\omega_9\omega_{12}^2\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5 - 4\omega_9\omega_{12}^2\omega_{13}\omega_{14}\omega_8\omega_5^2 + 4\omega_9^2\omega_{12}^2\omega_6\omega_{13}\omega_7\omega_8\omega_5 + 9\omega_9\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2 + 2\omega_{12}^2\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2 -$
$12\omega_9\omega_{12}^2\omega_6c_s^2\omega_7\omega_{14}\omega_8\omega_5 + 4\omega_9\omega_{12}^2\omega_6\omega_{13}\omega_{14}\omega_5^2 + 2\omega_9^2\omega_{12}\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2 + 12\omega_9\omega_{12}^2c_s^2\omega_{13}\omega_{14}\omega_8\omega_5^2 - 2\omega_9^2\omega_{12}\omega_6v_1^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2 -$

$4\omega_9^2\omega_{12}^2v_1^2\omega_{14}\omega_8\omega_5^2 + 4\omega_9^2\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5 + 2\omega_9^2\omega_{12}\omega_6\omega_{13}\omega_7\omega_8\omega_5^2 + 3\omega_9^2\omega_{12}^2\omega_6\omega_7\omega_{14}\omega_8\omega_5^2 - 4\omega_9\omega_{12}^2v_1^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2 -$
$12\omega_9^2\omega_{12}^2c_s^2\omega_7\omega_{14}\omega_8\omega_5 - 4\omega_9\omega_{12}^2\omega_6\omega_{13}\omega_{14}\omega_8\omega_5 - 2\omega_9\omega_{12}^2\omega_6v_1^2\omega_{13}\omega_{14}\omega_8\omega_5^2$

$C_{29} = 12\omega_9^2\omega_{12}^2\omega_6v_1^2\omega_{13}\omega_7\omega_5 - 4\omega_9^2\omega_{12}\omega_6c_s^2\omega_{13}\omega_{14}\omega_8\omega_5 - 4\omega_9\omega_{12}^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5 + 12\omega_9^2\omega_{12}\omega_6v_1^2\omega_{13}\omega_7\omega_8\omega_5 - 12\omega_9^2\omega_{12}\omega_6v_1^2\omega_{13}\omega_7\omega_{14}\omega_8 -$
$3\omega_9^2\omega_{12}^2\omega_6c_s^2\omega_7\omega_{14}\omega_8\omega_5^2 + 12\omega_9\omega_{12}^2\omega_6v_1^2\omega_{13}\omega_7\omega_{14}\omega_5^2 + 4\omega_9\omega_{12}^2\omega_6\omega_{13}\omega_7\omega_{14}\omega_5 - 4\omega_9^2\omega_{12}^2\omega_6\omega_{13}\omega_7\omega_5 - 4\omega_9^2\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_7\omega_8\omega_5 -$
$4\omega_9^2\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_7\omega_5^2 + 4\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5 + 6\omega_9^2\omega_6v_1^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2 - 2\omega_9^2\omega_{12}^2\omega_6\omega_{14}\omega_8\omega_5^2 - 2\omega_9^2\omega_{12}\omega_6\omega_{13}\omega_{14}\omega_8\omega_5^2 -$
$4\omega_9\omega_{12}^2\omega_6\omega_{13}\omega_7\omega_{14}\omega_8 + 12\omega_9\omega_{12}^2v_1^2\omega_{13}\omega_{14}\omega_8\omega_5^2 + 4\omega_9\omega_{12}^2c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5 - 2\omega_9\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_{14}\omega_8\omega_5^2 - 12\omega_9^2\omega_{12}^2v_1^2\omega_7\omega_{14}\omega_8\omega_5 +$
$8\omega_9^2\omega_{12}\omega_6c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5 + 6\omega_9^2\omega_{12}^2\omega_6v_1^2\omega_{14}\omega_8\omega_5^2 - 4\omega_9^2\omega_{12}^2\omega_7\omega_{14}\omega_8\omega_5^2 - 24\omega_9\omega_{12}^2\omega_6v_1^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5 - 4\omega_9\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_{14}\omega_5^2 -$
$2\omega_9\omega_{12}^2\omega_6\omega_7\omega_{14}\omega_8\omega_5^2 - 12\omega_9\omega_{12}^2\omega_6v_1^2\omega_7\omega_{14}\omega_8\omega_5 + 4\omega_9^2\omega_{12}^2\omega_7\omega_{14}\omega_8\omega_5 + 9\omega_9\omega_{12}^2\omega_6v_1^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2 + 6\omega_9\omega_{12}^2\omega_6v_1^2\omega_7\omega_{14}\omega_8\omega_5^2 +$
$4\omega_9\omega_{12}^2\omega_6\omega_7\omega_{14}\omega_8\omega_5 + 4\omega_9^2\omega_{12}\omega_6\omega_{13}\omega_{14}\omega_8\omega_5 - 4\omega_9\omega_{12}^2c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2 - 12\omega_9\omega_{12}^2\omega_6v_1^2\omega_{13}\omega_{14}\omega_5^2 + 12\omega_9\omega_{12}^2\omega_6v_1^2\omega_{13}\omega_7\omega_{14}\omega_8 +$
$4\omega_9\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_{14}\omega_8\omega_5 - 2\omega_9^2\omega_{12}\omega_6c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2 + 2\omega_9^2\omega_{12}^2\omega_6c_s^2\omega_{14}\omega_8\omega_5^2 + 12\omega_9^2\omega_{12}^2v_1^2\omega_7\omega_{14}\omega_8\omega_5^2 + 4\omega_9^2\omega_{12}^2\omega_6\omega_{13}\omega_7\omega_5^2 +$
$2\omega_9^2\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_7\omega_8\omega_5^2 + 4\omega_9^2\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_7\omega_5 - 2\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2 - 12\omega_9^2\omega_6v_1^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5 + 4\omega_9\omega_{12}^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2 -$
$6\omega_9^2\omega_{12}\omega_6v_1^2\omega_{13}\omega_7\omega_8\omega_5^2 - 12\omega_9^2\omega_{12}^2\omega_6v_1^2\omega_{13}\omega_7\omega_5^2 + 2\omega_9^2\omega_{12}\omega_6c_s^2\omega_{13}\omega_{14}\omega_8\omega_5^2 + 12\omega_9^2\omega_{12}^2\omega_6v_1^2\omega_{13}\omega_5^2 - 4\omega_9\omega_{12}^2\omega_6\omega_{13}\omega_7\omega_{14}\omega_5^2 -$
$4\omega_9^2\omega_{12}^2\omega_6\omega_{13}\omega_5^2 - 12\omega_9\omega_{12}^2\omega_6v_1^2\omega_{13}\omega_7\omega_{14}\omega_5 + 4\omega_9^2\omega_{12}^2\omega_6c_s^2\omega_7\omega_{14}\omega_8\omega_5 + 4\omega_9\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_7\omega_{14}\omega_8 + 24\omega_9^2\omega_{12}\omega_6v_1^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5 -$
$8\omega_9^2\omega_{12}\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5 - 2\omega_9^2\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2 - 4\omega_9^2\omega_{12}\omega_6\omega_{13}\omega_7\omega_8\omega_5 - 4\omega_9^2\omega_{12}^2\omega_6\omega_7\omega_{14}\omega_8\omega_5 + 12\omega_9\omega_{12}^2v_1^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5 +$
$4\omega_9^2\omega_{12}^2c_s^2\omega_7\omega_{14}\omega_8\omega_5^2 + 4\omega_9^2\omega_{12}\omega_6\omega_{13}\omega_7\omega_{14}\omega_8 + 12\omega_9\omega_{12}^2\omega_6v_1^2\omega_{13}\omega_{14}\omega_8\omega_5 + 2\omega_9\omega_{12}^2\omega_6\omega_{13}\omega_{14}\omega_8\omega_5^2 - 2\omega_9^2\omega_{12}^2\omega_6\omega_{13}\omega_7\omega_8\omega_5^2 -$
$8\omega_9\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5 - 4\omega_{12}^2\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5 + 2\omega_9\omega_{12}^2\omega_6c_s^2\omega_7\omega_{14}\omega_8\omega_5^2 - 4\omega_9^2\omega_{12}^2c_s^2\omega_{14}\omega_8\omega_5^2 + 6\omega_9^2\omega_{12}\omega_6v_1^2\omega_{13}\omega_{14}\omega_8\omega_5^2 -$
$2\omega_9^2\omega_{12}\omega_6c_s^2\omega_{13}\omega_7\omega_8\omega_5^2 + 12\omega_9^2\omega_{12}^2\omega_6v_1^2\omega_7\omega_{14}\omega_8\omega_5 - 4\omega_9\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_7\omega_{14}\omega_5 - 3\omega_9\omega_{12}^2\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2 + 2\omega_9^2\omega_{12}^2\omega_6\omega_{13}\omega_8\omega_5^2 +$
$12\omega_{12}^2\omega_6v_1^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5 + 2\omega_9^2\omega_6c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2 - 6\omega_9^2\omega_{12}^2\omega_6v_1^2\omega_{13}\omega_8\omega_5^2 + 6\omega_9^2\omega_{12}^2\omega_6v_1^2\omega_{13}\omega_7\omega_8\omega_5^2 + 4\omega_9^2\omega_{12}^2\omega_{14}\omega_8\omega_5^2 -$
$6\omega_{12}^2\omega_6v_1^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2 - 4\omega_9^2\omega_6c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5 + 4\omega_9^2\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_5^2 - 12\omega_9^2\omega_{12}^2\omega_6v_1^2\omega_{13}\omega_7\omega_8\omega_5 + 4\omega_9^2\omega_{12}\omega_6c_s^2\omega_{13}\omega_7\omega_8\omega_5 -$
$12\omega_9^2\omega_{12}\omega_6v_1^2\omega_{13}\omega_{14}\omega_8\omega_5 - 2\omega_9^2\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_8\omega_5^2 + 4\omega_9\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_7\omega_{14}\omega_5^2 - 9\omega_9^2\omega_{12}^2\omega_6v_1^2\omega_7\omega_{14}\omega_8\omega_5^2 - 4\omega_9^2\omega_{12}\omega_6c_s^2\omega_{13}\omega_7\omega_{14}\omega_8 +$
$8\omega_9\omega_{12}^2\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5 - 4\omega_9\omega_{12}^2\omega_{13}\omega_{14}\omega_8\omega_5^2 + 4\omega_9^2\omega_{12}^2\omega_6\omega_{13}\omega_7\omega_8\omega_5 + 3\omega_9\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2 + 2\omega_{12}^2\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2 -$
$4\omega_9\omega_{12}^2\omega_6c_s^2\omega_7\omega_{14}\omega_8\omega_5 + 4\omega_9\omega_{12}^2\omega_6\omega_{13}\omega_{14}\omega_5^2 + 2\omega_9^2\omega_{12}\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2 + 4\omega_9\omega_{12}^2c_s^2\omega_{13}\omega_{14}\omega_8\omega_5^2 - 6\omega_9^2\omega_{12}\omega_6v_1^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2 -$
$12\omega_9^2\omega_{12}^2v_1^2\omega_{14}\omega_8\omega_5^2 + 4\omega_9^2\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5 + 2\omega_9^2\omega_{12}\omega_6\omega_{13}\omega_7\omega_8\omega_5^2 + 3\omega_9^2\omega_{12}^2\omega_6\omega_7\omega_{14}\omega_8\omega_5^2 - 12\omega_9\omega_{12}^2v_1^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2 -$
$4\omega_9^2\omega_{12}^2c_s^2\omega_7\omega_{14}\omega_8\omega_5 - 4\omega_9\omega_{12}^2\omega_6\omega_{13}\omega_{14}\omega_8\omega_5 - 6\omega_9\omega_{12}^2\omega_6v_1^2\omega_{13}\omega_{14}\omega_8\omega_5^2$

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

$C_{31} = 12\omega_9\omega_{12}^2\omega_6^2\omega_7^2\omega_{14}\omega_8^2\omega_5 - 42\omega_9^2\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2 - 12\omega_9^2\omega_{12}^2\omega_6c_s^2\omega_7^2\omega_{14}\omega_8^2\omega_5 + 12\omega_{12}^2\omega_6^2v_1^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5 +$
$18\omega_9^2\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2 + 12\omega_9^2\omega_{12}\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2 - 36\omega_9^2\omega_{12}\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2 + 12\omega_9^2\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_7\omega_8\omega_5^2 + 12\omega_9^2\omega_{12}^2\omega_6\omega_7\omega_{14}\omega_8^2\omega_5^2 -$
$12\omega_9^2\omega_{12}^2\omega_6^2v_1^2\omega_{13}\omega_7^2\omega_8\omega_5^2 - 9\omega_9^2\omega_{12}^2\omega_6^2c_s^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2 - 6\omega_9^2\omega_{12}^2\omega_6v_1^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2 - 12\omega_9^2\omega_{12}^2\omega_6^2\omega_{13}\omega_7^2\omega_8\omega_5 - 54\omega_9\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5 -$
$6\omega_9^2\omega_{12}^2\omega_6^2\omega_7\omega_{14}\omega_8^2\omega_5^2 + 12\omega_9^2\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5 - \omega_9^2\omega_{12}^2\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2 - 12\omega_9^2\omega_{12}\omega_6c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2 - 24\omega_9^2\omega_{12}^2c_s^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2 -$
$12\omega_9\omega_{12}^2\omega_6^2v_1^2\omega_7^2\omega_{14}\omega_8^2\omega_5 + 6\omega_9^2\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_7^2\omega_8^2\omega_5^2 + 12\omega_9^2\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_7\omega_{14}\omega_5^2 + 42\omega_9^2\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2 +$
$18\omega_9^2\omega_{12}\omega_6^2v_1^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5 + 6\omega_9^2\omega_{12}^2\omega_6^2v_1^2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5^2 - 6\omega_9^2\omega_{12}^2\omega_6\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5 - 6\omega_9^2\omega_{12}\omega_6^2v_1^2\omega_{13}\omega_7^2\omega_8^2\omega_5^2 -$
$12\omega_9^2\omega_{12}^2\omega_6v_1^2\omega_7\omega_{14}\omega_8^2\omega_5^2 - 6\omega_9^2\omega_{12}^2\omega_6^2v_1^2\omega_{13}\omega_7\omega_8^2\omega_5^2 + 6\omega_9^2\omega_{12}^2\omega_6\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2 + 6\omega_9^2\omega_{12}^2\omega_6^2\omega_{13}\omega_7\omega_8^2\omega_5^2 - 6\omega_9^2\omega_{12}^2\omega_6^2v_1^2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5 -$
$3\omega_9^2\omega_{12}\omega_6^2v_1^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2 + 12\omega_9^2\omega_{12}\omega_6^2v_1^2\omega_{13}\omega_7^2\omega_8^2\omega_5 + 24\omega_9^2\omega_{12}\omega_6c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5 - 12\omega_9^2\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5^2 +$
$12\omega_9\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2 - 12\omega_9^2\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_8^2\omega_5 + 6\omega_9\omega_{12}^2\omega_6^2v_1^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2 - 12\omega_9^2\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_{14}\omega_8^2\omega_5^2 + 6\omega_9^2\omega_{12}^2\omega_6^2v_1^2\omega_7\omega_{14}\omega_8^2\omega_5^2 +$
$36\omega_9\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2 - 12\omega_9^2\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5 + 6\omega_9^2\omega_{12}^2\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2 + 12\omega_9^2\omega_{12}^2\omega_6^2c_s^2\omega_7^2\omega_{14}\omega_8^2\omega_5 + 12\omega_9^2\omega_{12}^2\omega_6^2v_1^2\omega_{13}\omega_7^2\omega_8\omega_5 +$
$6\omega_9^2\omega_{12}\omega_6v_1^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5 + 12\omega_9^2\omega_{12}^2\omega_6\omega_{13}\omega_7^2\omega_8^2\omega_5^2 + 12\omega_9^2\omega_{12}^2\omega_6c_s^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2 + 12\omega_9^2\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5 - 6\omega_9\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2 -$
$6\omega_{12}^2\omega_6^2v_1^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2 - 36\omega_9^2\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5 + 3\omega_9^2\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2 + 6\omega_9\omega_{12}^2\omega_6^2c_s^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2 - 12\omega_{12}^2\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5 +$
$6\omega_9^2\omega_{12}^2\omega_6v_1^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2 - 12\omega_9^2\omega_{12}^2\omega_6v_1^2\omega_{13}\omega_7^2\omega_8^2\omega_5 - 6\omega_9^2\omega_{12}^2\omega_6^2\omega_{13}\omega_7^2\omega_8^2\omega_5^2 - 12\omega_9^2\omega_{12}^2\omega_6\omega_7^2\omega_{14}\omega_8^2\omega_5^2 + 12\omega_9\omega_{12}^2\omega_6^2v_1^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2 +$
$6\omega_9^2\omega_{12}^2\omega_6^2c_s^2\omega_7\omega_{14}\omega_8^2\omega_5^2 - 18\omega_9\omega_{12}^2\omega_6^2v_1^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5 + 12\omega_9^2\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_5 + 12\omega_9\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2 +$
$30\omega_9^2\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5^2 - 18\omega_9^2\omega_{12}\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5 + 54\omega_9^2\omega_{12}\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5 - 6\omega_9^2\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2 - 12\omega_9^2\omega_{12}\omega_6^2\omega_{13}\omega_7^2\omega_8^2\omega_5 +$
$12\omega_9^2\omega_{12}\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_8^2\omega_5 - 12\omega_9^2\omega_{12}^2\omega_6^2\omega_{13}\omega_7\omega_8\omega_5^2 + 12\omega_9^2\omega_{12}^2\omega_6v_1^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2 - 12\omega_9\omega_{12}^2\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2 - 24\omega_9^2\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2 +$
$36\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5 + 6\omega_9^2\omega_6^2v_1^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2 - 6\omega_9^2\omega_{12}^2\omega_6^2v_1^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2 + 12\omega_9^2\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_8\omega_5 + 12\omega_9^2\omega_{12}^2\omega_6^2v_1^2\omega_7^2\omega_{14}\omega_8^2\omega_5 -$
$36\omega_9^2\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2 + 6\omega_9^2\omega_{12}^2\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5 - 4\omega_9\omega_{12}^2\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2 + 9\omega_9^2\omega_{12}^2\omega_6^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2 + 24\omega_9^2\omega_{12}^2c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2 +$
$24\omega_9^2\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8 - 9\omega_9^2\omega_{12}^2\omega_6^2v_1^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2 - 12\omega_9^2\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_8\omega_5^2 + 18\omega_9\omega_{12}^2\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5 + 54\omega_9^2\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5 -$
$6\omega_9^2\omega_{12}^2\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5^2 - 12\omega_9^2\omega_{12}^2\omega_6^2\omega_7^2\omega_{14}\omega_8^2\omega_5 + 12\omega_9^2\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2 - 24\omega_9^2\omega_{12}^2c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5 + \omega_9^2\omega_{12}^2\omega_6^2v_1^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2 -$
$12\omega_9\omega_{12}\omega_6^2v_1^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2 - 12\omega_9^2\omega_{12}^2\omega_6v_1^2\omega_7^2\omega_{14}\omega_8^2\omega_5 - 18\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2 - 12\omega_9^2\omega_6^2v_1^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5 + 12\omega_9^2\omega_{12}^2\omega_6^2v_1^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2 +$
$12\omega_9^2\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_{14}\omega_8\omega_5^2 - 6\omega_9^2\omega_{12}^2\omega_6\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2 - 12\omega_9^2\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_5^2 - 9\omega_9^2\omega_{12}\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2 -$
$54\omega_9^2\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5 + 3\omega_9^2\omega_{12}\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2 - 24\omega_9\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5 - 12\omega_9^2\omega_{12}^2\omega_6c_s^2\omega_7\omega_{14}\omega_8^2\omega_5^2 -$
$6\omega_9^2\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_7\omega_8^2\omega_5^2 - 6\omega_9^2\omega_{12}\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_8^2\omega_5^2 + 6\omega_9^2\omega_{12}^2\omega_6^2\omega_{13}\omega_7^2\omega_8^2\omega_5^2 + 12\omega_9^2\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5 + 6\omega_9^2\omega_{12}^2\omega_6^2v_1^2\omega_{13}\omega_7^2\omega_8^2\omega_5^2 -$
$12\omega_9\omega_{12}^2\omega_6^2c_s^2\omega_7^2\omega_{14}\omega_8^2\omega_5 + 6\omega_{12}^2\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2 + 12\omega_9^2\omega_{12}^2\omega_6\omega_7^2\omega_{14}\omega_8^2\omega_5 + 12\omega_9^2\omega_{12}^2\omega_6^2\omega_{13}\omega_7^2\omega_8^2\omega_5 + 4\omega_9\omega_{12}^2\omega_6^2v_1^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2$

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

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

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

$$C_{35} = 12\omega_{15}\omega_{12}\omega_6^2c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{14}\omega_8^2\omega_5^3 - 18\omega_{15}\omega_{12}\omega_6\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_5^3 + 6\omega_{15}\omega_{12}\omega_6^2\omega_{16}\omega_{10}v_1^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3 -$$
$$6\omega_{15}\omega_{12}\omega_6^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{17}\omega_8^2\omega_5^3 + 12\omega_{15}\omega_{12}\omega_6^2\omega_{10}v_2^2\omega_7^3\omega_{14}\omega_8^2\omega_5^3 + 12\omega_{12}\omega_6^2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{14}\omega_8^2\omega_5^3 + 6\omega_{15}\omega_6^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{17}\omega_8^2\omega_5^3 +$$
$$12\omega_{15}\omega_{12}\omega_6^2c_s^2\omega_{16}\omega_7^3\omega_{14}\omega_8^2\omega_5^3 - 48\omega_{15}\omega_{12}\omega_6^2\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^3 + 24\omega_{15}\omega_{12}\omega_6^2\omega_{16}v_2^2\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^3 +$$
$$24\omega_{15}\omega_{12}\omega_6^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_5 - 12\omega_{15}\omega_{12}\omega_6^2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{14}\omega_8\omega_5^2 - 12\omega_{15}\omega_{12}\omega_6\omega_{10}v_2^2\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_5^3 +$$
$$12\omega_{15}\omega_{12}\omega_6^2\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{17}\omega_{14}\omega_5^3 - 24\omega_{15}\omega_{12}\omega_6^2\omega_{16}\omega_{10}v_1^2\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5 - 12\omega_{12}\omega_6^2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{14}\omega_8^2\omega_5^2 +$$
$$24\omega_{15}\omega_{12}\omega_6^2\omega_{16}\omega_{10}v_2^2\omega_7\omega_{17}\omega_{14}\omega_8\omega_5^3 - 12\omega_{15}\omega_{12}\omega_6^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{17}\omega_8^2\omega_5^2 + 12\omega_{15}\omega_{12}\omega_6^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_5^3 + 36\omega_{15}\omega_{12}\omega_6\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_5^2 -$$
$$12\omega_{15}\omega_{12}\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3 + 12\omega_{15}\omega_{12}\omega_6v_2^2\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_5^3 - 12\omega_{15}\omega_{12}\omega_6^2v_2^2\omega_7^3\omega_{14}\omega_8^2\omega_5^3 + 12\omega_{15}\omega_{12}\omega_6^2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{14}\omega_8\omega_5^3 +$$
$$12\omega_{15}\omega_{12}\omega_6c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_5 + 12\omega_{15}\omega_{12}\omega_6^2c_s^2\omega_{10}\omega_7^3\omega_{14}\omega_8^2\omega_5^3 - 12\omega_{15}\omega_{12}\omega_6^2c_s^2\omega_7^3\omega_{14}\omega_8^2\omega_5^3 + 12\omega_{15}\omega_{12}\omega_6\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^3 +$$
$$12\omega_{15}\omega_{12}\omega_6^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{14}\omega_8^2\omega_5^2 - 6\omega_{15}\omega_{12}\omega_6^2\omega_{16}\omega_{10}v_1^2\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3 + 12\omega_{15}\omega_{12}\omega_6^2\omega_{16}\omega_{10}v_1^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2 -$$
$$\omega_{15}\omega_{12}\omega_6^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_5^3 - 12\omega_{15}\omega_6^2\omega_{16}\omega_{10}v_1^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2 - 18\omega_{15}\omega_{12}\omega_6c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_5^2 -$$
$$36\omega_{15}\omega_{12}\omega_6^2\omega_{16}\omega_{10}v_1^2\omega_7^3\omega_{17}\omega_{14}\omega_8\omega_5^2 - 6\omega_{15}\omega_6^2\omega_{16}\omega_{10}v_1^2\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3 - 12\omega_{15}\omega_{12}\omega_6^2\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{14}\omega_8\omega_5^3 -$$
$$12\omega_{15}\omega_{12}\omega_6^2c_s^2\omega_{10}\omega_7^2\omega_{14}\omega_8^2\omega_5^3 + 12\omega_{15}\omega_{12}\omega_6^2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{17}\omega_{14}\omega_5^2 + 12\omega_{15}\omega_{12}\omega_6^2\omega_{16}v_2^2\omega_7^3\omega_{14}\omega_8^2\omega_5^3 - 12\omega_{15}\omega_{12}\omega_6^2\omega_{16}\omega_{10}v_1^2\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5^2 -$$
$$24\omega_{15}\omega_{12}\omega_6\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_5 - 24\omega_{15}\omega_{12}\omega_6\omega_{16}v_2^2\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3 - 12\omega_{15}\omega_{12}\omega_6^2\omega_{10}v_2^2\omega_7^2\omega_{14}\omega_8^2\omega_5^3 +$$
$$10\omega_{15}\omega_{12}\omega_6c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_5^3 - 2\omega_{15}\omega_{12}\omega_6^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_5^2 + 6\omega_{15}\omega_6^2\omega_{16}\omega_{10}v_1^2\omega_7^3\omega_{17}\omega_8^2\omega_5^3 + 6\omega_{15}\omega_{12}\omega_6^2c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^3 +$$
$$24\omega_{15}\omega_{12}\omega_6^2\omega_{16}\omega_{10}v_1^2\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2 + 12\omega_{12}\omega_6\omega_{16}v_2^2\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_5^3 - 12\omega_{15}\omega_{12}\omega_6^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{14}\omega_8^2\omega_5^3 - 6\omega_{15}\omega_{12}\omega_6^2\omega_{16}\omega_{10}v_1^2\omega_7^3\omega_{17}\omega_8^2\omega_5^3 -$$
$$12\omega_{15}\omega_{12}\omega_6c_s^2\omega_{10}\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_5^3 + 18\omega_{15}\omega_{12}\omega_6^2\omega_{16}\omega_{10}v_1^2\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5^3 - 12\omega_{15}\omega_{12}\omega_6^2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{17}\omega_{14}\omega_5^3 +$$
$$12\omega_{15}\omega_{12}\omega_6^2c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^3 + 12\omega_{15}\omega_{12}\omega_6^2\omega_{16}\omega_{10}v_1^2\omega_7^3\omega_{17}\omega_{14}\omega_8\omega_5^3 + 12\omega_{15}\omega_6^2\omega_{16}\omega_{10}v_1^2\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2 +$$
$$12\omega_{15}\omega_{12}\omega_6^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{17}\omega_{14}\omega_8\omega_5^2 + 12\omega_{15}\omega_{12}\omega_6^2\omega_{16}\omega_{10}v_1^2\omega_7^3\omega_{17}\omega_{14}\omega_5^2 - 6\omega_{15}\omega_6^2c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3 +$$
$$12\omega_{15}\omega_{12}\omega_6^2\omega_{16}\omega_{10}v_1^2\omega_7^3\omega_{17}\omega_8\omega_5^3 + 12\omega_{15}\omega_{12}\omega_6^2\omega_{16}\omega_{10}v_1^2\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^2 + 12\omega_{12}\omega_6\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_5^2 +$$
$$12\omega_{15}\omega_{12}\omega_6^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{14}\omega_8^2\omega_5^3 - 12\omega_{15}\omega_{12}\omega_6^2\omega_{16}\omega_{10}v_1^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3 - 12\omega_{15}\omega_{12}\omega_6^2c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^3 +$$
$$12\omega_{15}\omega_{12}\omega_6c_s^2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5^3 + 6\omega_{15}\omega_{12}\omega_6^2c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3 - 24\omega_{15}\omega_{12}\omega_6\omega_{16}v_2^2\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_5^2 -$$
$$12\omega_{12}\omega_6^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{14}\omega_8^2\omega_5^2 + 12\omega_{15}\omega_{12}\omega_6^2\omega_{16}\omega_{10}v_1^2\omega_7\omega_{17}\omega_{14}\omega_8\omega_5^3 + 24\omega_{15}\omega_{12}\omega_6^2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{17}\omega_{14}\omega_8\omega_5 -$$
$$6\omega_{15}\omega_{12}\omega_6^2c_s^2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5^3 - 12\omega_{15}\omega_{12}\omega_6^2\omega_{16}\omega_{10}v_1^2\omega_7^3\omega_{17}\omega_8\omega_5^2 - 12\omega_{12}\omega_6\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_5^3 -$$
$$12\omega_{15}\omega_{12}\omega_6^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{14}\omega_8\omega_5^2 - 24\omega_{15}\omega_{12}\omega_6^2\omega_{16}\omega_{10}v_1^2\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^3 + 12\omega_{15}\omega_{12}\omega_6c_s^2\omega_{10}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3 -$$
$$12\omega_{15}\omega_{12}\omega_6^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{17}\omega_{14}\omega_8\omega_5^3 + 12\omega_{15}\omega_6^2c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2 - 12\omega_{15}\omega_{12}\omega_6^2\omega_{16}\omega_{10}v_1^2\omega_7^3\omega_{17}\omega_{14}\omega_5^3 +$$
$$12\omega_{15}\omega_{12}\omega_6^2\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{14}\omega_8^2\omega_5^3 - 12\omega_{12}\omega_6^2\omega_{16}v_2^2\omega_7^3\omega_{14}\omega_8^2\omega_5^3 - 18\omega_{15}\omega_{12}\omega_6^2c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2 - 18\omega_{15}\omega_{12}\omega_6c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3 +$$
$$12\omega_{12}\omega_6^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{14}\omega_8^2\omega_5^3 + 12\omega_{15}\omega_{12}\omega_6\omega_{16}v_2^2\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_5^3 - 24\omega_{15}\omega_{12}\omega_6^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{17}\omega_{14}\omega_8^2 - 12\omega_{12}\omega_6c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_5^3 +$$
$$12\omega_{15}\omega_{12}\omega_6^2\omega_{16}\omega_{10}v_1^2\omega_7^2\omega_{17}\omega_{14}\omega_5^3 + 12\omega_{15}\omega_{12}\omega_6\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{17}\omega_{14}\omega_8\omega_5^2 + 30\omega_{15}\omega_{12}\omega_6^2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{17}\omega_{14}\omega_8\omega_5^3 +$$
$$12\omega_{15}\omega_{12}\omega_6\omega_{10}v_2^2\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3 - 12\omega_{15}\omega_{12}\omega_6^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{17}\omega_8\omega_5^2 + 12\omega_{15}\omega_{12}\omega_6^2c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5 -$$
$$24\omega_{15}\omega_{12}\omega_6^2\omega_{16}v_2^2\omega_7^3\omega_{17}\omega_{14}\omega_8\omega_5^3 - 12\omega_{15}\omega_{12}\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_5^2 + 36\omega_{15}\omega_{12}\omega_6\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3 -$$
$$12\omega_{15}\omega_{12}\omega_6^2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{14}\omega_8^2\omega_5^3 + 12\omega_{15}\omega_{12}\omega_6^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{17}\omega_8\omega_5^3 + 24\omega_{15}\omega_{12}\omega_6^2\omega_{16}v_2^2\omega_7^3\omega_{17}\omega_{14}\omega_8\omega_5^2 -$$
$$12\omega_{15}\omega_{12}\omega_6^2\omega_{16}\omega_{10}v_1^2\omega_7^2\omega_{17}\omega_8\omega_5^3 - 12\omega_{15}\omega_{12}\omega_6^2c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{14}\omega_8\omega_5^3 - 48\omega_{15}\omega_{12}\omega_6^2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{17}\omega_{14}\omega_8\omega_5^2 -$$
$$12\omega_{15}\omega_{12}\omega_6\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{17}\omega_{14}\omega_8\omega_5^3 - 24\omega_{15}\omega_{12}\omega_6\omega_{16}\omega_{10}v_2^2\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5^3 + 12\omega_{12}\omega_6c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_5^2 +$$
$$12\omega_{15}\omega_{12}\omega_6^2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{14}\omega_8^2\omega_5^2 + 12\omega_{12}\omega_6c_s^2\omega_{16}\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_5^3 + 12\omega_{15}\omega_{12}\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_5^3 - 12\omega_{12}\omega_6^2c_s^2\omega_{16}\omega_7^3\omega_{14}\omega_8^2\omega_5^3$$

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

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

$$C_{37} = -2\omega_{15}\omega_6\omega_{16}^2\omega_{10}^3v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5 - 2\omega_6\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3 + 2\omega_{15}^2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_5^3 + 2\omega_{15}^2\omega_6\omega_{16}^2\omega_{10}^2v_2^2\omega_{17}\omega_8^2\omega_5^3 +$$
$$2\omega_{15}^2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5^2 + 2\omega_{15}^2\omega_6\omega_{16}\omega_{10}^3v_2^2\omega_7\omega_8^2\omega_5^3 + 2\omega_{15}\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8^2\omega_5^2 - 2\omega_{15}^2\omega_6\omega_{16}^2\omega_{10}^3\omega_7\omega_8\omega_5^3 + 15\omega_{15}^2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5 +$$
$$\omega_{15}^2\omega_6\omega_{16}\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^3 - \omega_{15}^2\omega_6\omega_{16}^2\omega_{10}^3v_2^2\omega_7\omega_{17}\omega_8\omega_5^3 + 3\omega_{15}^2\omega_6\omega_{16}\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3 + 2\omega_{15}^2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8^2\omega_5^2 + 2\omega_{15}^2\omega_6\omega_{16}\omega_{10}^3\omega_7^2\omega_8^2\omega_5^3 +$$
$$2\omega_{15}^2\omega_6\omega_{16}\omega_{10}^2v_2^2\omega_7^2\omega_8^2\omega_5^3 - 2\omega_{15}^2\omega_6\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^3 + 2\omega_{15}\omega_6\omega_{16}^2\omega_{10}^3v_2^2\omega_7^2\omega_8^2\omega_5^2 - 6\omega_{15}^2\omega_6c_s^2\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^3 - 9\omega_{15}^2\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^3 +$$
$$\omega_{15}^2\omega_6\omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5^3 + 2\omega_{15}\omega_6\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^3 - 2\omega_{15}^2\omega_6\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8^2\omega_5^3 - 4\omega_{15}^2\omega_6c_s^2\omega_{16}\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2 - 2\omega_{15}^2\omega_6\omega_{10}^3v_2^2\omega_7\omega_{17}\omega_8^2\omega_5^3 +$$
$$3\omega_{15}^2\omega_6\omega_{16}\omega_{10}^3v_2^2\omega_7\omega_{17}\omega_8^2\omega_5^3 - 2\omega_{15}^2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8^2\omega_5^3 - 4\omega_{15}\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3 + 6\omega_{15}^2\omega_6c_s^2\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8^2\omega_5^3 -$$
$$2\omega_{15}\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5 - 2\omega_{15}\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8^2\omega_5^3 + 3\omega_{15}^2\omega_6\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^3 + 4\omega_{15}^2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_{17}\omega_8\omega_5^3 -$$
$$11\omega_{15}^2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5^3 + \omega_{15}^2\omega_6\omega_{16}^2\omega_{10}^3v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5 - 2\omega_{15}^2c_s^2\omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^2 - 3\omega_{15}^2\omega_6c_s^2\omega_{16}\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^3 -$$
$$2\omega_{15}^2\omega_6\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3 - \omega_{15}^2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5 - 2\omega_{15}\omega_6\omega_{16}^2\omega_{10}^3v_2^2\omega_7^2\omega_8^2\omega_5^3 + 2\omega_{15}^2\omega_6\omega_{16}^2\omega_{10}v_2^2\omega_7\omega_{17}\omega_8^2\omega_5^3 - 2\omega_{15}\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^3 -$$
$$8\omega_{15}^2\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2 - 2\omega_{15}^2\omega_6\omega_{16}^2\omega_{10}^2\omega_{17}\omega_8^2\omega_5^3 + 2\omega_{15}^2\omega_6c_s^2\omega_{16}\omega_{10}^3\omega_7\omega_8^2\omega_5^3 + \omega_{15}^2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2 + 4\omega_{15}^2\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2 +$$
$$2\omega_{15}\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8^2\omega_5^3 - 2\omega_{15}^2\omega_6\omega_{16}^2\omega_{10}^3v_2^2\omega_7^2\omega_8\omega_5^3 - 2\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3 + 2\omega_{15}\omega_6\omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^2 + 2\omega_{15}^2\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8^2\omega_5^3 +$$
$$2\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3 + 2\omega_{15}^2c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2 + 4\omega_{15}\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2 - 6\omega_{15}^2\omega_6c_s^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3 - 2\omega_{15}^2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8\omega_5^3 -$$
$$3\omega_{15}^2\omega_6\omega_{16}^2\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8^2\omega_5^3 - 2\omega_{15}\omega_6\omega_{16}^2\omega_{10}^3v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3 - \omega_{15}^2\omega_6\omega_{16}^2\omega_{10}^3v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2 + 2\omega_{15}^2\omega_6\omega_{16}\omega_{10}^3\omega_{17}\omega_8^2\omega_5^3 -$$
$$2\omega_{15}^2\omega_6\omega_{16}^2\omega_{10}^3v_2^2\omega_7\omega_8^2\omega_5^3 + 2\omega_{15}^2\omega_6\omega_{16}^2\omega_{10}^3v_2^2\omega_7^2\omega_8\omega_5^2 + 4\omega_{15}^2\omega_6\omega_{16}^2v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3 - 2\omega_{15}\omega_6\omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^3 - 4\omega_{15}^2\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^3 -$$
$$2\omega_{15}^2\omega_6\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3 - 2\omega_{15}\omega_6\omega_{16}^2\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8^2\omega_5^3 - 2\omega_{15}^2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7\omega_8^2\omega_5^3 + 4\omega_{15}\omega_6\omega_{16}^2\omega_{10}^3v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2 -$$
$$2\omega_{15}^2\omega_6\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_8^2\omega_5^3 + 2\omega_{15}^2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8\omega_5^2 - 2\omega_{15}\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^3 - 8\omega_{15}^2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2 +$$
$$12\omega_{15}^2\omega_6c_s^2\omega_{16}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3 - 2\omega_{15}^2\omega_6\omega_{16}\omega_{10}^2\omega_7^2\omega_8^2\omega_5^3 - 2\omega_{15}^2c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^3 + 5\omega_{15}^2\omega_6\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^3 - 2\omega_{15}^2\omega_6\omega_{16}^2\omega_{10}^3v_2^2\omega_7^2\omega_8^2\omega_5^2 -$$
$$2\omega_{15}\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8^2\omega_5^3 + 2\omega_{15}^2\omega_6\omega_{16}^2\omega_{10}^3v_2^2\omega_7\omega_8\omega_5^3 + 4\omega_{15}^2\omega_6c_s^2\omega_{16}\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^2 + 2\omega_{15}^2\omega_6\omega_{10}^3v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3 + 2\omega_{15}^2\omega_6\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^3 -$$
$$2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^3 - 2\omega_{15}\omega_6\omega_{16}^2\omega_{10}v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3 + 6\omega_{15}^2\omega_6c_s^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^3 - 2\omega_{15}^2\omega_6c_s^2\omega_{16}\omega_{10}^3\omega_7^2\omega_8^2\omega_5^3 + 3\omega_{15}^2\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3 -$$
$$\omega_{15}^2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^3 - 4\omega_{15}^2\omega_6c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2 + 2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^3 - 2\omega_{15}\omega_6c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^3 -$$
$$2\omega_{15}^2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8^2\omega_5^2 - 4\omega_{15}^2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5 + \omega_{15}^2\omega_6\omega_{16}^2\omega_{10}^3v_2^2\omega_7^2\omega_{17}\omega_8\omega_5^3 - 3\omega_{15}^2\omega_6\omega_{16}\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^3 + 2\omega_{15}^2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7\omega_8\omega_5^3 -$$
$$2\omega_6\omega_{16}^2\omega_{10}^3v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2 - 13\omega_{15}^2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2 + 6\omega_{15}^2\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_{17}\omega_8^2\omega_5^3 - 5\omega_{15}^2\omega_6\omega_{16}^2\omega_{10}v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3 +$$
$$2\omega_{15}\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5 + \omega_{15}^2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2 + 8\omega_{15}^2\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2 + 4\omega_{15}\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3 +$$
$$2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2 + 9\omega_{15}^2\omega_6c_s^2\omega_{16}\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^3 + 2\omega_{15}^2\omega_6\omega_{16}^2\omega_{10}^3v_2^2\omega_7^2\omega_8^2\omega_5^3 - \omega_{15}^2\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3 + 8\omega_{15}^2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^3 +$$
$$2\omega_{15}^2c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2 + 2\omega_6\omega_{16}^2\omega_{10}^3v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3 - \omega_{15}^2\omega_6\omega_{16}\omega_{10}^3v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3 - \omega_{15}^2\omega_6\omega_{16}^2\omega_{10}^3v_2^2\omega_7^2\omega_{17}\omega_8\omega_5^2 -$$
$$2\omega_{15}^2\omega_6\omega_{16}\omega_{10}^3v_2^2\omega_{17}\omega_8^2\omega_5^3 + 2\omega_{15}^2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8^2\omega_5^3 - 2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2 + 2\omega_{15}\omega_6\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^3 - 15\omega_{15}^2\omega_6c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^3 -$$
$$2\omega_{15}\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8^2\omega_5^2 + 2\omega_{15}^2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8\omega_5^3 + \omega_{15}^2\omega_6\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3 + \omega_{15}^2\omega_6\omega_{16}^2\omega_{10}^3v_2^2\omega_7\omega_{17}\omega_8^2\omega_5^2 + 4\omega_{15}^2\omega_6c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2 +$$
$$2\omega_{15}\omega_6\omega_{16}^2\omega_{10}^3v_2^2\omega_7\omega_{17}\omega_8^2\omega_5^3 - 2\omega_{15}^2c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5 - 2\omega_{15}^2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_5^3 + 2\omega_{15}^2\omega_6\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3 - 2\omega_{15}^2\omega_6\omega_{16}\omega_{10}^3v_2^2\omega_7^2\omega_8^2\omega_5^3 -$$
$$2\omega_{15}\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^2 - 8\omega_{15}^2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2 - 4\omega_{15}^2\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5 - 2\omega_{15}^2\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8^2\omega_5^3 -$$
$$4\omega_{15}\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2 - 3\omega_{15}^2\omega_6\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3 - 6\omega_{15}^2\omega_6c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^3 - 2\omega_{15}^2\omega_6\omega_{16}\omega_{10}^3\omega_7\omega_8^2\omega_5^3 - \omega_{15}^2\omega_6\omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^2 +$$
$$11\omega_{15}^2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^2 - 4\omega_{15}^2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_{17}\omega_8^2\omega_5^2 + 2\omega_{15}\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^3 + 2\omega_{15}\omega_6\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_8^2\omega_5^3 +$$
$$2\omega_{15}^2\omega_6c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_8^2\omega_5^3 - 4\omega_{15}^2\omega_6\omega_{16}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3 + 2\omega_{15}^2\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^3 + 2\omega_{15}^2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_5^2 + 2\omega_{15}^2c_s^2\omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5^3 +$$
$$4\omega_{15}\omega_6\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3 - 2\omega_{15}^2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8\omega_5^2 + 2\omega_{15}\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8^2\omega_5^3 + 9\omega_{15}^2\omega_6c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3 - 2\omega_{15}\omega_6\omega_{16}^2\omega_{10}^3v_2^2\omega_7\omega_{17}\omega_8^2\omega_5^2 +$$
$$6\omega_{15}^2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5 + 2\omega_{15}^2\omega_6\omega_{16}^2\omega_{10}^3\omega_7\omega_8^2\omega_5^3 + 4\omega_{15}^2\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^3 - 6\omega_{15}^2\omega_6c_s^2\omega_{16}\omega_{10}^3\omega_{17}\omega_8^2\omega_5^3 + 2\omega_{15}\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^3$$

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

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

$$C_{39} = -2\omega_{15}\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3\omega_8^2\omega_5 + 2\omega_{15}^2\omega_6c_s^2\omega_{16}\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5 + 6\omega_{15}^2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5^2 + 11\omega_{15}^2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5 -$$
$$6\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2 + 4\omega_{15}^2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8 - 2\omega_{15}^2\omega_6\omega_{16}\omega_{10}^3v_2^2\omega_7\omega_{17}\omega_8^2\omega_5^2 + 2\omega_{15}^2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8^2\omega_5^2 + 2\omega_6\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2 +$$
$$6\omega_{15}^2\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{17}\omega_8^2 - 2\omega_{15}^2\omega_6c_s^2\omega_{16}\omega_{10}^3\omega_7^3\omega_8^2\omega_5^2 - 2\omega_{15}^2\omega_6c_s^2\omega_{10}^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2 + 4\omega_{15}^2\omega_6c_s^2\omega_{16}\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2 -$$
$$\omega_{15}\omega_6\omega_{16}^2\omega_{10}^3v_2^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2 - 2\omega_{15}\omega_6\omega_{16}^2\omega_{10}^2\omega_7^3\omega_8^2\omega_5^2 + 2\omega_{15}^2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_5 - 4\omega_{15}^2\omega_6\omega_{16}\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2 + 4\omega_{15}\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5 +$$
$$4\omega_{15}^2\omega_6\omega_{16}^2v_2^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2 + 2\omega_{15}^2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_8^2\omega_5^2 - 4\omega_{15}^2\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{17}\omega_8\omega_5^2 - 2\omega_{15}^2\omega_6\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2 + 2\omega_{15}\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2 -$$
$$2\omega_{15}^2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3\omega_8\omega_5 + \omega_{15}^2\omega_6\omega_{16}^2\omega_{10}^3v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5 - 2\omega_{15}^2c_s^2\omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^2 + 2\omega_{15}^2\omega_6\omega_{16}^2\omega_{10}^3v_2^2\omega_7^3\omega_8^2\omega_5^2 - \omega_{15}^2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5 -$$
$$3\omega_{15}\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5^2 - 4\omega_{15}^2\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2 + 12\omega_{15}^2\omega_6c_s^2\omega_{16}^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2 - 2\omega_{15}^2\omega_6\omega_{16}\omega_{10}^2v_2^2\omega_7^3\omega_{17}\omega_8^2\omega_5 -$$
$$2\omega_{15}^2\omega_6\omega_{16}\omega_{10}^3\omega_7^2\omega_8^2\omega_5^2 - 2\omega_{15}^2c_s^2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8\omega_5^2 - 2\omega_{15}^2\omega_6\omega_{16}\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5 + 2\omega_{15}^2\omega_6\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2 - 2\omega_6\omega_{16}^2\omega_{10}^2v_2^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2 +$$
$$\omega_{15}^2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2 + 4\omega_{15}^2\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2 - 2\omega_{15}^2\omega_6\omega_{16}^2\omega_{10}^3v_2^2\omega_7^3\omega_8^2\omega_5 - 2\omega_{15}^2\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_8^2\omega_5^2 + 9\omega_{15}\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5 +$$
$$2\omega_{15}^2c_s^2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8\omega_5 + 2\omega_{15}^2\omega_6\omega_{16}\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5^2 + 4\omega_{15}^2\omega_6\omega_{16}\omega_{10}^2v_2^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2 - 2\omega_{15}^2\omega_6\omega_{16}\omega_{10}^3v_2^2\omega_7^3\omega_8^2\omega_5^2 - 2\omega_{15}^2\omega_6\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5^2 +$$
$$2\omega_{15}^2\omega_6\omega_{16}\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5 + 2\omega_{15}^2c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2 - 2\omega_{15}^2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_5^2 - 2\omega_{15}^2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_8^2\omega_5 - 4\omega_{15}\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2 +$$
$$2\omega_{15}\omega_6\omega_{16}^2\omega_{10}\omega_7^3\omega_{17}\omega_8^2\omega_5^2 + 4\omega_{15}^2\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{17}\omega_8\omega_5 + 2\omega_{15}^2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3\omega_8\omega_5^2 - \omega_{15}^2\omega_6\omega_{16}^2\omega_{10}^3v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2 - 3\omega_{15}\omega_6\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2 +$$
$$2\omega_{15}^2\omega_6\omega_{16}^2\omega_{10}^3v_2^2\omega_7^2\omega_8\omega_5^2 + 3\omega_{15}\omega_6\omega_{16}^2\omega_{10}^3v_2^2\omega_7^3\omega_{17}\omega_8^2\omega_5 - 2\omega_{15}^2\omega_6c_s^2\omega_{16}\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5 - 2\omega_{15}^2\omega_6c_s^2\omega_{16}\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5^2 -$$
$$2\omega_{15}^2\omega_6\omega_{10}^2v_2^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2 + 2\omega_{15}\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3\omega_8^2\omega_5^2 + 2\omega_{15}^2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8\omega_5^2 + 2\omega_{15}^2\omega_6c_s^2\omega_{16}\omega_{10}^2\omega_7^3\omega_8^2\omega_5^2 - 8\omega_{15}^2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2 +$$
$$2\omega_{15}\omega_6\omega_{16}^2\omega_{10}^2v_2^2\omega_7^3\omega_8^2\omega_5^2 + 3\omega_{15}^2\omega_6\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{17}\omega_8^2\omega_5 - 11\omega_{15}^2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8\omega_5 - 2\omega_{15}^2\omega_6\omega_{16}^2\omega_{10}^3v_2^2\omega_7^2\omega_8^2\omega_5^2 - 2\omega_6\omega_{16}^2\omega_{10}^3v_2^2\omega_7^3\omega_{17}\omega_8^2\omega_5 +$$
$$\omega_{15}^2\omega_6\omega_{16}^2\omega_{10}^2v_2^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2 - 2\omega_{15}^2\omega_6c_s^2\omega_{16}\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^2 + 2\omega_{15}^2\omega_6\omega_{10}^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2 + 2\omega_{15}^2\omega_6\omega_{16}\omega_{10}^3v_2^2\omega_7^3\omega_{17}\omega_8^2\omega_5 +$$
$$2\omega_{15}^2\omega_6\omega_{16}\omega_{10}^2v_2^2\omega_7^3\omega_8^2\omega_5^2 - 2\omega_{15}^2\omega_6\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{17}\omega_8^2 + 2\omega_{15}^2\omega_6\omega_{16}\omega_{10}^3\omega_7^3\omega_8^2\omega_5^2 + 6\omega_{15}^2\omega_6c_s^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{17}\omega_8^2\omega_5 + 4\omega_{15}\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2 -$$
$$4\omega_{15}^2\omega_6c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2 - 2\omega_{15}^2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8^2\omega_5^2 - 4\omega_{15}^2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5 + 2\omega_{15}^2\omega_6\omega_{16}^2\omega_{10}v_2^2\omega_7^3\omega_{17}\omega_8^2\omega_5 +$$
$$4\omega_{15}^2\omega_6\omega_{16}\omega_{10}^3v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2 - 4\omega_{15}^2\omega_6\omega_{16}\omega_{10}^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2 - 2\omega_{15}^2\omega_6c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{17}\omega_8^2\omega_5^2 - 13\omega_{15}^2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2 +$$
$$2\omega_{15}^2\omega_6\omega_{16}^2\omega_{10}^3v_2^2\omega_7^3\omega_8\omega_5 - 2\omega_{15}^2\omega_6c_s^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2 - 2\omega_{15}\omega_6\omega_{16}^2\omega_{10}^3v_2^2\omega_7^3\omega_8^2\omega_5^2 - 6\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5 + \omega_{15}^2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2 +$$
$$8\omega_{15}^2\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2 + 2\omega_{15}^2\omega_6c_s^2\omega_{16}\omega_{10}^3\omega_7^2\omega_8^2\omega_5^2 - 4\omega_{15}^2\omega_6\omega_{16}^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2 + 2\omega_{15}^2\omega_6\omega_{16}\omega_{10}\omega_7^3\omega_{17}\omega_8^2\omega_5^2 - \omega_{15}^2\omega_6\omega_{16}^2\omega_{10}^3v_2^2\omega_7^3\omega_{17}\omega_8\omega_5 -$$
$$2\omega_{15}^2\omega_6\omega_{10}^3v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2 + 3\omega_{15}\omega_6\omega_{16}^2\omega_{10}^2v_2^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2 + 4\omega_{15}^2\omega_6c_s^2\omega_{16}\omega_{10}^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2 + 2\omega_{15}^2\omega_6\omega_{16}^2\omega_{10}^2v_2^2\omega_7^3\omega_{17}\omega_8^2 -$$
$$2\omega_{15}\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_8^2\omega_5^2 + 2\omega_{15}^2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_8\omega_5 - 2\omega_{15}^2\omega_6\omega_{16}^2\omega_{10}\omega_7^3\omega_{17}\omega_8^2\omega_5 + 2\omega_{15}^2c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2 + 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5 +$$
$$2\omega_{15}^2\omega_6\omega_{16}\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^2 - \omega_{15}^2\omega_6\omega_{16}^2\omega_{10}^3v_2^2\omega_7^2\omega_{17}\omega_8\omega_5^2 - 2\omega_{15}^2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3\omega_8^2\omega_5^2 - 9\omega_{15}^2\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{17}\omega_8^2\omega_5 + \omega_{15}^2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8\omega_5 +$$
$$\omega_{15}\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5^2 + 5\omega_{15}^2\omega_6\omega_{16}^2\omega_{10}\omega_7^3\omega_{17}\omega_8^2\omega_5^2 - 2\omega_{15}^2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_8\omega_5^2 + 2\omega_{15}\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_8^2\omega_5 + 2\omega_{15}^2\omega_6\omega_{10}^3v_2^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2 +$$
$$\omega_{15}^2\omega_6\omega_{16}^2\omega_{10}^3v_2^2\omega_7\omega_{17}\omega_8^2\omega_5^2 - 2\omega_{15}^2c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5 + 2\omega_{15}^2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3\omega_8^2\omega_5 - 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5^2 + 2\omega_{15}^2\omega_6c_s^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5^2 -$$
$$3\omega_{15}\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5 - 2\omega_{15}\omega_6\omega_{16}^2\omega_{10}v_2^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2 - 4\omega_{15}^2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2 + 3\omega_{15}^2\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2 -$$
$$\omega_{15}^2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8\omega_5^2 + 2\omega_{15}\omega_6\omega_{16}^2\omega_{10}^3v_2^2\omega_7^3\omega_8^2\omega_5 + 6\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5^2 - 8\omega_{15}^2\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5 - 6\omega_{15}\omega_6c_s^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{17}\omega_8^2\omega_5^2 -$$
$$2\omega_{15}^2\omega_6\omega_{16}^2\omega_{10}^3v_2^2\omega_7^3\omega_8\omega_5^2 + 2\omega_{15}^2\omega_6\omega_{16}^2\omega_{10}^2\omega_7^3\omega_8^2\omega_5^2 + \omega_{15}^2\omega_6\omega_{16}^2\omega_{10}^3v_2^2\omega_7^3\omega_{17}\omega_8\omega_5^2 - 2\omega_{15}^2\omega_6c_s^2\omega_{16}\omega_{10}^2\omega_7^3\omega_{17}\omega_8^2\omega_5 + 2\omega_{15}\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_8^2\omega_5^2 -$$
$$\omega_{15}^2\omega_6\omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^2 + 15\omega_{15}^2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^2 - 8\omega_{15}^2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_{17}\omega_8^2\omega_5^2 - 5\omega_{15}^2\omega_6\omega_{16}^2\omega_{10}v_2^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2 +$$
$$9\omega_{15}\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2 + 2\omega_{15}^2\omega_6\omega_{16}\omega_{10}^2\omega_7^3\omega_{17}\omega_8^2\omega_5 + 2\omega_{15}^2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_5^2 - 2\omega_{15}^2\omega_6\omega_{16}\omega_{10}^2\omega_7^3\omega_8^2\omega_5^2 + 2\omega_{15}^2\omega_6\omega_{16}\omega_{10}^3v_2^2\omega_7^2\omega_8^2\omega_5^2 -$$
$$2\omega_{15}^2\omega_6\omega_{16}\omega_{10}^3v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5 - 2\omega_{15}^2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8\omega_5^2 + 2\omega_{15}^2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5 - 2\omega_{15}^2\omega_6\omega_{16}^2\omega_{10}^2v_2^2\omega_7^3\omega_8^2\omega_5^2 -$$
$$6\omega_{15}\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2 - \omega_{15}^2\omega_6\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2 + 8\omega_{15}^2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8\omega_5^2 - 3\omega_{15}^2\omega_6\omega_{16}^2\omega_{10}^2v_2^2\omega_7^3\omega_{17}\omega_8^2\omega_5 +$$
$$2\omega_6\omega_{16}^2\omega_{10}^3v_2^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2 - 2\omega_{15}^2\omega_6\omega_{16}\omega_{10}^3v_2^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2 - 2\omega_{15}\omega_6\omega_{16}^2\omega_{10}^3v_2^2\omega_7^3\omega_{17}\omega_8^2 - 15\omega_{15}^2\omega_6c_s^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{17}\omega_8^2\omega_5^2$$

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

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

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

$C_{43} = -12\omega_{12}\omega_6^2\omega_{19}c_s^2v_1^2v_2\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5 + 12\omega_{12}\omega_6^2\omega_{19}v_1v_2^2\omega_7^2v_3^2\omega_{14}\omega_8\omega_5^2 - 6\omega_{12}\omega_6^2c_s^2v_1^2v_2\omega_7^2\omega_{14}\omega_8^2\omega_5^2 + 12\omega_{12}\omega_6^2\omega_{19}v_1^2v_2\omega_7^2v_3^2\omega_{20}\omega_8\omega_5 + 3\omega_{12}\omega_6^2v_1^2v_2\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 48\omega_{12}\omega_6\omega_{19}c_s^4v_2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5 - 6\omega_{12}\omega_6^2\omega_{19}c_s^2v_1v_2^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 12\omega_{12}\omega_6^2\omega_{19}c_s^2v_1\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5 + 6\omega_{12}\omega_6^2\omega_{19}v_1v_2^2\omega_7v_3^2\omega_{20}\omega_8^2\omega_5^2 + 6\omega_{12}\omega_6^2\omega_{19}c_s^2v_1^2v_2\omega_7^2\omega_{14}\omega_8^2\omega_5^2 - 3\omega_6^2\omega_{19}c_s^2v_1\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 - 3\omega_{12}\omega_6^2\omega_{19}v_1^2v_2\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 - 12\omega_{12}\omega_6^2\omega_{19}c_s^2v_1v_2^2\omega_7^2\omega_{20}\omega_8\omega_5 - 6\omega_6^2\omega_{19}c_s^2v_2\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5 + 6\omega_{12}\omega_6^2\omega_{19}c_s^2v_2\omega_7^2v_3^2\omega_{14}\omega_8^2\omega_5^2 - 6\omega_{12}\omega_6^2c_s^2v_2\omega_7^2v_3^2\omega_{14}\omega_8^2\omega_5^2 + 12\omega_{12}\omega_6^2\omega_{19}c_s^2v_2\omega_7v_3^2\omega_{20}\omega_8\omega_5^2 + 6\omega_{12}\omega_6^2c_s^2v_1v_2^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 6\omega_{12}\omega_6^2\omega_{19}c_s^2v_1v_2^2\omega_7\omega_{20}\omega_8^2\omega_5^2 + 6\omega_6^2\omega_{19}c_s^2v_1\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5^2 - 12\omega_{12}\omega_6^2\omega_{19}c_s^2v_2\omega_7v_3^2\omega_{14}\omega_8^2\omega_5^2 - 12\omega_{12}\omega_6^2\omega_{19}c_s^2v_1\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8\omega_5^2 - 12\omega_{12}\omega_6^2\omega_{19}c_s^2v_1v_2^2\omega_7\omega_{14}\omega_8\omega_5^2 - 6\omega_{12}\omega_6^2\omega_{19}v_1v_2^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 - 6\omega_6^2\omega_{19}c_s^2v_1^2v_2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5 - 12\omega_{12}\omega_6^2\omega_{19}c_s^2v_2\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5^2 + 12\omega_{12}\omega_6^2c_s^2v_2\omega_7v_3^2\omega_{14}\omega_8^2\omega_5^2 + 6\omega_{12}\omega_6^2\omega_{19}c_s^2v_1v_2^2\omega_7^2\omega_{14}\omega_8^2\omega_5 - 12\omega_6^2\omega_{19}v_1v_2^2\omega_7^2v_3^2\omega_{20}\omega_8\omega_5 - 3\omega_{12}\omega_6^2c_s^2v_1v_2^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 - 12\omega_{12}\omega_6^2\omega_{19}c_s^2v_2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8\omega_5^2 - 12\omega_{12}\omega_6^2\omega_{19}c_s^2v_1\omega_7^2v_3^2\omega_{14}\omega_8\omega_5 - 12\omega_{12}\omega_6^2\omega_{19}c_s^2v_1^2v_2\omega_7^2\omega_{20}\omega_8\omega_5^2 - 12\omega_{12}\omega_6^2\omega_{19}c_s^2v_1v_2^2\omega_7v_3^2\omega_{14}\omega_8\omega_5 + 3\omega_{12}\omega_6^2\omega_{19}c_s^2v_1v_2^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 - 12\omega_{12}\omega_6^2\omega_{19}c_s^2v_2\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8\omega_5 - 6\omega_{12}\omega_6^2\omega_{19}v_1v_2^2\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5^2 - 6\omega_{12}\omega_6^2\omega_{19}v_1^2v_2\omega_7^2v_3^2\omega_{14}\omega_8^2\omega_5 - 6\omega_{12}\omega_6^2\omega_{19}v_1v_2^2\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5 + 6\omega_{12}\omega_6^2v_1v_2^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 12\omega_{12}\omega_6^2\omega_{19}c_s^2v_1\omega_7v_3^2\omega_{20}\omega_{14}\omega_8\omega_5^2 + 12\omega_{12}\omega_6^2\omega_{19}c_s^2v_1\omega_7^2v_3^2\omega_{14}\omega_8\omega_5^2 - 12\omega_{12}\omega_6^2\omega_{19}c_s^2v_1^2v_2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2 + 12\omega_{12}\omega_6^2\omega_{19}v_1^2v_2\omega_7v_3^2\omega_{20}\omega_8\omega_5^2 + 12\omega_{12}\omega_6^2\omega_{19}c_s^2v_1^2v_2\omega_7^2\omega_{20}\omega_8\omega_5 - 6\omega_{12}\omega_6^2v_1^2v_2\omega_7^2v_3^2\omega_{14}\omega_8^2\omega_5^2 + 48\omega_{12}\omega_6\omega_{19}c_s^4v_2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2 - 6\omega_{12}\omega_6^2\omega_{19}c_s^2v_1^2v_2\omega_7\omega_{20}\omega_8^2\omega_5^2 + 12\omega_{12}\omega_6^2\omega_{19}c_s^2v_2\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8\omega_5 + 6\omega_{12}\omega_6^2\omega_{19}c_s^2v_1\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5^2 + 6\omega_{12}\omega_6^2\omega_{19}c_s^2v_1v_2^2\omega_7^2\omega_{20}\omega_8^2\omega_5^2 - 6\omega_{12}\omega_6^2\omega_{19}c_s^2v_1v_2^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2 - 3\omega_{12}\omega_6^2v_1v_2^2\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 3\omega_6^2\omega_{19}c_s^2v_1^2v_2\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 12\omega_{12}\omega_6^2\omega_{19}c_s^2v_2\omega_7^2v_3^2\omega_{20}\omega_8\omega_5 - 6\omega_{12}\omega_6^2\omega_{19}c_s^2v_1\omega_7^2v_3^2\omega_{14}\omega_8^2\omega_5 + 3\omega_6^2\omega_{19}c_s^2v_2\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 12\omega_{12}\omega_6^2\omega_{19}c_s^2v_1v_2^2\omega_7^2\omega_{20}\omega_8\omega_5^2 + 6\omega_{12}\omega_6^2\omega_{19}v_1^2v_2\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5 - 6\omega_{12}\omega_6^2v_1^2v_2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 24\omega_{12}\omega_6^2\omega_{19}c_s^4v_2\omega_7\omega_{20}\omega_{14}\omega_5 - 12\omega_6^2\omega_{19}c_s^2v_1\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5 - 12\omega_{12}\omega_6^2\omega_{19}c_s^2v_1v_2^2\omega_7^2\omega_{20}\omega_8^2\omega_5 + 6\omega_{12}\omega_6^2\omega_{19}c_s^2v_1v_2^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2 + 12\omega_{12}\omega_6^2\omega_{19}c_s^2v_1\omega_7^2v_3^2\omega_{14}\omega_8^2\omega_5 + 24\omega_{12}\omega_6^2\omega_{19}c_s^4v_2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5 + 6\omega_{12}\omega_6^2\omega_{19}c_s^2v_1v_2^2\omega_7\omega_{14}\omega_8^2\omega_5^2 + 6\omega_{12}\omega_6^2\omega_{19}c_s^2v_1\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5^2 - 12\omega_{12}\omega_6^2\omega_{19}c_s^2v_1v_2^2\omega_7^2\omega_{20}\omega_8^2\omega_5 + 12\omega_{12}\omega_6^2\omega_{19}c_s^2v_1v_2^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2 + 3\omega_{12}\omega_6^2c_s^2v_2\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 - 12\omega_{12}\omega_6^2\omega_{19}c_s^2v_2\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5 + 12\omega_{12}\omega_6^2\omega_{19}c_s^2v_1v_2^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2 + 12\omega_{12}\omega_6^2\omega_{19}c_s^2v_1\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 48\omega_{12}\omega_6^2\omega_{19}c_s^4v_2\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5 + 12\omega_6^2\omega_{19}c_s^2v_1^2v_2\omega_7^2\omega_{20}\omega_8^2\omega_5 + 12\omega_{12}\omega_6^2\omega_{19}c_s^2v_2\omega_7^2v_3^2\omega_{14}\omega_8\omega_5^2 + 6\omega_{12}\omega_6^2\omega_{19}c_s^2v_2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 - 24\omega_{12}\omega_{19}c_s^4v_2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2 - 12\omega_{12}\omega_6^2c_s^2v_1v_2^2\omega_7\omega_{14}\omega_8^2\omega_5^2 - 12\omega_{12}\omega_6^2\omega_{19}c_s^2v_1v_2^2\omega_7\omega_{14}\omega_8\omega_5 + 12\omega_{12}\omega_6^2\omega_{19}v_1v_2^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8\omega_5^2 + 6\omega_{12}\omega_6^2\omega_{19}c_s^2v_2\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5^2 + 12\omega_{12}\omega_6^2\omega_{19}v_1v_2^2\omega_7^2v_3^2\omega_{14}\omega_8^2\omega_5^2 + 6\omega_{12}\omega_6^2\omega_{19}c_s^2v_1^2v_2\omega_7^2\omega_{20}\omega_8^2\omega_5^2 - 3\omega_{12}\omega_6^2c_s^2v_1\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 6\omega_{12}\omega_6^2\omega_{19}c_s^2v_1\omega_7^2v_3^2\omega_{14}\omega_8^2\omega_5 + 12\omega_{12}\omega_6^2\omega_{19}v_1v_2^2\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5^2 + 12\omega_{12}\omega_6^2\omega_{19}v_1^2v_2\omega_7^2v_3^2\omega_{14}\omega_8\omega_5^2 + 12\omega_{12}\omega_6^2\omega_{19}c_s^2v_1v_2^2\omega_7^2\omega_{20}\omega_8^2\omega_5 - 12\omega_{12}\omega_6^2\omega_{19}c_s^2v_1v_2^2\omega_7\omega_{20}\omega_8\omega_5^2 + 24\omega_{12}\omega_{19}c_s^4v_2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 - 6\omega_{12}\omega_6^2\omega_{19}c_s^2v_1v_2^2\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5^2$

$C_{44} = 4\omega_9\omega_{12}\omega_6^2\omega_{19}c_s^2v_2^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2 + 4\omega_9\omega_{12}\omega_6\omega_{19}c_s^2v_1v_2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5 - 4\omega_9\omega_{12}\omega_6\omega_{19}c_s^2v_1v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2 - 2\omega_9\omega_{12}\omega_6^2\omega_{19}v_1v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 - \omega_9\omega_6^2\omega_{19}v_2^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 - 4\omega_9\omega_{12}\omega_6^2\omega_{19}c_s^2v_2^2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5 +$

$8\omega_9\omega_{12}\omega_6^2\omega_{19}v_1v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_8\omega_5 - \omega_9\omega_6^2\omega_{19}c_s^2v_2^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 6\omega_9\omega_{12}\omega_6^2\omega_{19}c_s^2v_1v_2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 +$
$4\omega_9\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_8\omega_5^2 - 4\omega_9\omega_{12}\omega_6^2\omega_{19}v_2^2\omega_{13}\omega_7v_3^2\omega_{20}\omega_8\omega_5^2 - 8\omega_9\omega_{12}\omega_{19}c_s^2v_1v_2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5 +$
$4\omega_9\omega_{12}\omega_6^2\omega_{19}c_s^2v_1v_2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 8\omega_9\omega_{12}\omega_6^2v_1v_2\omega_{13}\omega_7v_3^2\omega_{14}\omega_8^2\omega_5^2 + 4\omega_9\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_{13}\omega_7v_3^2\omega_{14}\omega_8^2\omega_5^2 +$
$2\omega_9\omega_6^2\omega_{19}c_s^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5 - 4\omega_9\omega_6^2\omega_{19}v_1v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5 - 2\omega_9\omega_{12}\omega_6^2\omega_{19}v_2^2\omega_{13}\omega_7^2v_3^2\omega_{14}\omega_8^2\omega_5^2 + 2\omega_9\omega_{12}\omega_6^2c_s^2\omega_{13}\omega_7^2v_3^2\omega_{14}\omega_8^2\omega_5^2 -$
$4\omega_9\omega_{12}\omega_6^2v_2^2\omega_{13}\omega_7v_3^2\omega_{14}\omega_8^2\omega_5^2 + 2\omega_9\omega_6^2\omega_{19}c_s^2v_2^2\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5^2 + 8\omega_9\omega_{12}\omega_6^2c_s^2v_1v_2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2 + 4\omega_9\omega_{12}\omega_6^2\omega_{19}v_2^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_8\omega_5^2 -$
$4\omega_9\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_{13}\omega_7v_3^2\omega_{20}\omega_8\omega_5^2 - 2\omega_9\omega_{12}\omega_6^2\omega_{19}c_s^2v_1v_2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 8\omega_9\omega_{12}\omega_6\omega_{19}c_s^2v_1v_2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5 +$
$4\omega_9\omega_{12}\omega_6^2\omega_{19}v_2^2\omega_{13}\omega_7v_3^2\omega_{14}\omega_8^2\omega_5^2 + 4\omega_9\omega_{12}\omega_6^2\omega_{19}v_2^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8\omega_5 - 4\omega_9\omega_{12}\omega_6^2v_1v_2\omega_{13}\omega_7^2v_3^2\omega_{14}\omega_8^2\omega_5^2 -$
$2\omega_9\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_{13}\omega_7^2v_3^2\omega_{14}\omega_8^2\omega_5^2 - 4\omega_9\omega_6^2\omega_{19}v_1v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5^2 + 2\omega_9\omega_{12}\omega_6^2v_2^2\omega_{13}\omega_7^2v_3^2\omega_{14}\omega_8^2\omega_5^2 + 4\omega_9\omega_{12}\omega_6^2\omega_{19}c_s^2v_2^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5 -$
$4\omega_9\omega_{12}\omega_6^2c_s^2\omega_{13}\omega_7v_3^2\omega_{14}\omega_8^2\omega_5^2 + 8\omega_{12}\omega_6^2\omega_{19}c_s^2v_1v_2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5 - 8\omega_9\omega_{12}\omega_6^2\omega_{19}c_s^2v_1v_2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5^2 +$
$4\omega_{12}\omega_6\omega_{19}c_s^2v_1v_2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 4\omega_9\omega_{12}\omega_6^2\omega_{19}c_s^2v_2^2\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5 - 4\omega_9\omega_{12}\omega_6^2c_s^2v_2^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2 -$
$4\omega_9\omega_{12}\omega_6^2\omega_{19}v_1v_2\omega_{13}\omega_7^2v_3^2\omega_{14}\omega_8^2\omega_5 - 4\omega_9\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8\omega_5^2 - 4\omega_9\omega_{12}\omega_6^2\omega_{19}c_s^2v_2^2\omega_{13}\omega_7\omega_{20}\omega_8\omega_5^2 -$
$4\omega_9\omega_6^2\omega_{19}c_s^2v_1v_2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5 - 4\omega_9\omega_{12}\omega_6^2\omega_{19}c_s^2v_1v_2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 4\omega_9\omega_{12}\omega_6^2\omega_{19}v_2^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 +$
$4\omega_9\omega_{12}\omega_6\omega_{19}c_s^2v_1v_2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 8\omega_9\omega_{12}\omega_6^2\omega_{19}c_s^2v_1v_2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5^2 - 2\omega_9\omega_6^2\omega_{19}c_s^2v_1v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 +$
$4\omega_9\omega_{12}\omega_6^2\omega_{19}c_s^2v_1v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_8\omega_5^2 - 8\omega_{12}\omega_6\omega_{19}c_s^2v_1v_2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 4\omega_9\omega_{12}\omega_6^2\omega_{19}v_1v_2\omega_{13}\omega_7^2v_3^2\omega_{14}\omega_8^2\omega_5^2 +$
$8\omega_9\omega_{12}\omega_6^2\omega_{19}v_1v_2\omega_{13}\omega_7v_3^2\omega_{20}\omega_8\omega_5^2 - 8\omega_9\omega_{12}\omega_6^2\omega_{19}c_s^2v_1v_2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2 + 2\omega_9\omega_6^2\omega_{19}c_s^2v_1v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 +$
$4\omega_9\omega_{12}\omega_6^2\omega_{19}c_s^2v_1v_2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_5^2 - 4\omega_9\omega_{12}\omega_6^2\omega_{19}v_2^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_8\omega_5 - 8\omega_9\omega_{12}\omega_6^2\omega_{19}c_s^2v_1v_2\omega_{13}\omega_7^2\omega_{20}\omega_8\omega_5^2 + 4\omega_9\omega_{12}\omega_6^2\omega_{19}c_s^2v_2^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_8\omega_5 +$
$8\omega_9\omega_{12}\omega_{19}c_s^2v_1v_2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 4\omega_9\omega_{12}\omega_6^2\omega_{19}v_1v_2\omega_{13}\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 8\omega_9\omega_{12}\omega_6\omega_{19}c_s^2v_1v_2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2 +$
$2\omega_9\omega_6^2\omega_{19}v_1v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 2\omega_9\omega_{12}\omega_6^2\omega_{19}v_2^2\omega_{13}\omega_7^2v_3^2\omega_{14}\omega_8^2\omega_5 - \omega_9\omega_6^2\omega_{19}c_s^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 +$
$4\omega_9\omega_{12}\omega_6^2\omega_{19}c_s^2v_2^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2 - 4\omega_9\omega_6^2\omega_{19}c_s^2v_2^2\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5 + 4\omega_9\omega_{12}\omega_6^2\omega_{19}v_1v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5 -$
$4\omega_9\omega_{12}\omega_6\omega_{19}c_s^2v_1v_2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 - 8\omega_9\omega_{12}\omega_6^2\omega_{19}v_1v_2\omega_{13}\omega_7v_3^2\omega_{14}\omega_8^2\omega_5^2 + 2\omega_9\omega_6^2\omega_{19}v_2^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 +$
$2\omega_9\omega_6^2\omega_{19}c_s^2v_2^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5 - 8\omega_9\omega_{12}\omega_6^2\omega_{19}c_s^2v_1v_2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5 + 4\omega_9\omega_{12}\omega_6^2\omega_{19}c_s^2v_2^2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5^2 -$
$8\omega_9\omega_{12}\omega_6^2\omega_{19}v_1v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_8\omega_5^2 - 8\omega_9\omega_{12}\omega_6^2\omega_{19}v_1v_2\omega_{13}\omega_7v_3^2\omega_{20}\omega_{14}\omega_8\omega_5^2 + 4\omega_9\omega_{12}\omega_6^2\omega_{19}c_s^2v_1v_2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5 +$
$4\omega_9\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5 - 2\omega_9\omega_{12}\omega_6^2\omega_{19}c_s^2v_2^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 8\omega_9\omega_6\omega_{19}c_s^2v_1v_2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5 -$
$4\omega_9\omega_{12}\omega_6^2\omega_{19}v_2^2\omega_{13}\omega_7^2v_3^2\omega_{14}\omega_8\omega_5 + 8\omega_9\omega_{12}\omega_6^2\omega_{19}v_1v_2\omega_{13}\omega_7v_3^2\omega_{14}\omega_8^2\omega_5^2 + 8\omega_9\omega_{12}\omega_6^2\omega_{19}c_s^2v_1v_2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8 -$
$6\omega_9\omega_{12}\omega_6\omega_{19}c_s^2v_1v_2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 - 8\omega_9\omega_{12}\omega_6^2\omega_{19}v_1v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8\omega_5 + 4\omega_9\omega_{12}\omega_6^2\omega_{19}v_1v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5^2 -$
$2\omega_9\omega_{12}\omega_6^2\omega_{19}c_s^2v_2^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2 + 2\omega_9\omega_6^2\omega_{19}v_2^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5^2 - 8\omega_9\omega_{12}\omega_6^2\omega_{19}v_1v_2\omega_{13}\omega_7^2v_3^2\omega_{14}\omega_8\omega_5^2 + 4\omega_9\omega_{12}\omega_6^2\omega_{19}c_s^2v_2^2\omega_{13}\omega_7^2\omega_{20}\omega_8\omega_5^2 -$
$4\omega_9\omega_{12}\omega_6^2\omega_{19}c_s^2v_1v_2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2 + 8\omega_9\omega_{12}\omega_6\omega_{19}c_s^2v_1v_2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 8\omega_9\omega_{12}\omega_6^2\omega_{19}c_s^2v_1v_2\omega_{13}\omega_7^2v_3^2\omega_{14}\omega_8^2\omega_5^2 +$
$4\omega_9\omega_{12}\omega_6^2\omega_{19}c_s^2v_1v_2\omega_{13}\omega_7^2v_3^2\omega_{14}\omega_8\omega_5 + 8\omega_9\omega_{12}\omega_6\omega_{19}c_s^2v_1v_2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 8\omega_9\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_{13}\omega_7v_3^2\omega_{14}\omega_8\omega_5^2 -$
$2\omega_9\omega_{12}\omega_6^2\omega_{19}c_s^2v_2^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2 + 2\omega_9\omega_6^2\omega_{19}v_2^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5^2 - 8\omega_9\omega_{12}\omega_6^2\omega_{19}v_1v_2\omega_{13}\omega_7^2v_3^2\omega_{14}\omega_8\omega_5^2 + 4\omega_9\omega_{12}\omega_6^2\omega_{19}c_s^2v_2^2\omega_{13}\omega_7^2\omega_{20}\omega_8\omega_5^2 -$
$4\omega_9\omega_{12}\omega_6^2\omega_{19}c_s^2v_1v_2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5 + 8\omega_9\omega_{12}\omega_6\omega_{19}c_s^2v_1v_2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 8\omega_9\omega_{12}\omega_6^2\omega_{19}v_1v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 -$
$4\omega_9\omega_{12}\omega_6^2\omega_{19}c_s^2v_1v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5 + 2\omega_9\omega_{12}\omega_6^2\omega_{19}c_s^2v_2^2\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5^2 + 2\omega_9\omega_{12}\omega_6^2v_1v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 -$
$4\omega_9\omega_6^2\omega_{19}c_s^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5 + 2\omega_9\omega_{12}\omega_6^2c_s^2v_2^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 8\omega_9\omega_{12}\omega_6^2\omega_{19}v_1v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8\omega_5^2 -$
$4\omega_9\omega_{12}\omega_6^2\omega_{19}c_s^2v_2^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2 + 12\omega_9\omega_{12}\omega_6\omega_{19}c_s^2v_1v_2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^2 - 8\omega_9\omega_{12}\omega_6^2\omega_{19}v_1v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5 +$
$2\omega_9\omega_{12}\omega_6^2\omega_{19}c_s^2v_2^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5 - 4\omega_9\omega_6^2\omega_{19}v_2^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5 - 16\omega_9\omega_{12}\omega_6^2\omega_{19}c_s^2v_1v_2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2 +$
$2\omega_9\omega_{12}\omega_6^2\omega_{19}v_2^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5^2 - 2\omega_9\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5^2 + 2\omega_9\omega_{12}\omega_6^2c_s^2v_1v_2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 +$
$4\omega_9\omega_{12}\omega_6^2\omega_{19}v_2^2\omega_{13}\omega_7^2v_3^2\omega_{14}\omega_8^2\omega_5^2 - 4\omega_9\omega_6\omega_{19}c_s^2v_1v_2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 - 4\omega_9\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_{13}\omega_7v_3^2\omega_{14}\omega_8\omega_5^2$

$C_{45} = 4\omega_{12}\omega_{19}c_s^4\omega_7^3\omega_{20}\omega_8^2\omega_5^2 - 4\omega_{12}\omega_{19}v_1v_2\omega_7^3v_3^2\omega_{20}\omega_8^2\omega_5^3 - 8\omega_{12}\omega_{19}c_s^2v_1^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5 - 2\omega_{12}c_s^2v_1^2\omega_7^3\omega_{14}\omega_8^2\omega_5^3 +$
$8\omega_{12}\omega_{19}v_1v_2\omega_7^2v_3^2\omega_{14}\omega_8^2\omega_5^3 - 8\omega_{12}\omega_{19}c_s^2v_1v_2\omega_7^2\omega_{14}\omega_8\omega_5^3 + 4\omega_{19}v_1v_2\omega_7^3v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 2\omega_{12}\omega_{19}c_s^2\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3 +$
$4\omega_{12}v_1v_2\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3 - 2\omega_{12}c_s^2v_1v_2\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^3 - 8\omega_{12}\omega_{19}c_s^2v_1v_2\omega_7^3\omega_{20}\omega_{14}\omega_8\omega_5^3 + 8\omega_{12}\omega_{19}v_1v_2\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8\omega_5^3 -$
$4\omega_{12}\omega_{19}c_s^2\omega_7^3v_3^2\omega_{20}\omega_8\omega_5^3 + 4\omega_{12}\omega_{19}c_s^4\omega_7^3\omega_{14}\omega_8\omega_5^3 - 8\omega_{12}\omega_{19}v_1v_2\omega_7^3v_3^2\omega_{14}\omega_8\omega_5^2 + 4\omega_{12}\omega_{19}c_s^2\omega_7^3v_3^2\omega_{20}\omega_{14}\omega_5^2 - 8\omega_{19}v_1v_2\omega_7^3v_3^2\omega_{20}\omega_8^2\omega_5^2 +$
$4\omega_{12}\omega_{19}c_s^2\omega_7^3v_3^2\omega_{20}\omega_{14}\omega_8\omega_5 + 4\omega_{12}\omega_{19}v_1^2\omega_7^3v_3^2\omega_{20}\omega_{14}\omega_8\omega_5^3 + 4\omega_{12}\omega_{19}c_s^4\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^3 - 2\omega_{19}v_1v_2\omega_7^3v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3 -$
$4\omega_{12}\omega_{19}c_s^2v_1v_2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3 - 2\omega_{12}\omega_{19}c_s^2\omega_7^3v_3^2\omega_{20}\omega_8^2\omega_5^3 + 8\omega_{12}\omega_{19}c_s^2v_1v_2\omega_7^3\omega_{20}\omega_8^2\omega_5^2 + 2\omega_{12}\omega_{19}c_s^2v_1^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3 +$
$4\omega_{12}\omega_{19}c_s^2v_1^2\omega_7^2\omega_{14}\omega_8\omega_5^3 - 4\omega_{12}\omega_{19}c_s^2\omega_7^3v_3^2\omega_{20}\omega_{14}\omega_8^2 + 4\omega_{12}\omega_{19}c_s^2v_1v_2\omega_7^2\omega_{20}\omega_8^2\omega_5^3 + 8\omega_{12}\omega_{19}c_s^2v_1v_2\omega_7^3\omega_{20}\omega_{14}\omega_8\omega_5^2 - 2\omega_{12}v_1^2\omega_7^3v_3^2\omega_{14}\omega_8^2\omega_5^3 +$
$8\omega_{12}\omega_{19}v_1v_2\omega_7^3v_3^2\omega_{14}\omega_8\omega_5^3 - 4\omega_{12}\omega_{19}c_s^4\omega_7^3\omega_{14}\omega_8\omega_5^2 + 4\omega_{12}\omega_{19}c_s^2\omega_7^3v_3^2\omega_{20}\omega_8\omega_5^2 - 8\omega_{12}\omega_{19}v_1v_2\omega_7^2v_3^2\omega_{20}\omega_8\omega_5^3 + 8\omega_{12}\omega_{19}c_s^2\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 +$
$8\omega_{12}\omega_{19}c_s^2v_1^2\omega_7^3\omega_{20}\omega_{14}\omega_8\omega_5 - 2\omega_{12}v_1^2\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3 + 2\omega_{12}\omega_{19}c_s^4\omega_7^2\omega_{20}\omega_8^2\omega_5^3 + 8\omega_{12}\omega_{19}c_s^2\omega_7^3v_3^2\omega_{20}\omega_{14}\omega_8\omega_5^3 - 2\omega_{12}\omega_{19}c_s^4\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5 -$
$4\omega_{12}\omega_{19}c_s^2v_1^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 4\omega_{19}c_s^2v_1^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 4\omega_{19}c_s^2\omega_7^3v_3^2\omega_{20}\omega_8^2\omega_5^2 + 2\omega_{12}\omega_{19}v_1v_2\omega_7^3v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3 - 8\omega_{19}c_s^2v_1v_2\omega_7^3\omega_{20}\omega_8^2\omega_5^2 +$
$4\omega_{12}\omega_{19}v_1^2\omega_7^3v_3^2\omega_{14}\omega_8\omega_5^2 + 4\omega_{12}c_s^2\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 - 8\omega_{12}\omega_{19}c_s^2v_1v_2\omega_7^3\omega_{14}\omega_8\omega_5^2 - 16\omega_{12}\omega_{19}c_s^2v_1^2\omega_7^3\omega_{20}\omega_{14}\omega_8\omega_5^2 -$
$4\omega_{12}\omega_{19}c_s^2\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5 + 2\omega_{12}\omega_{19}v_1^2\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3 + 4\omega_{12}c_s^4\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 - 8\omega_{12}\omega_{19}c_s^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 -$
$4\omega_{12}\omega_{19}v_1^2\omega_7^2v_3^2\omega_{14}\omega_8^2\omega_5^3 - 4\omega_{12}\omega_{19}c_s^2v_1v_2\omega_7^3\omega_{20}\omega_8^2\omega_5^3 - 4\omega_{12}\omega_{19}c_s^2v_1^2\omega_7^3\omega_{14}\omega_8\omega_5^3 - 4\omega_{12}\omega_{19}c_s^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3 - 2\omega_{19}c_s^4\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3 +$
$2\omega_{12}\omega_{19}v_1^2\omega_7^3v_3^2\omega_{20}\omega_8^2\omega_5^3 + 8\omega_{12}\omega_{19}c_s^2v_1^2\omega_7^3\omega_{20}\omega_{14}\omega_8\omega_5^3 + 8\omega_{12}\omega_{19}c_s^2v_1v_2\omega_7^3\omega_{14}\omega_8\omega_5^3 - 2\omega_{12}c_s^2\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3 + 4\omega_{12}\omega_{19}v_1^2\omega_7^2v_3^2\omega_{20}\omega_8\omega_5^3 -$
$4\omega_{12}\omega_{19}v_1^2\omega_7^3v_3^2\omega_{14}\omega_8\omega_5^3 + 4\omega_{12}c_s^2v_1^2\omega_7^2\omega_{14}\omega_8^2\omega_5^3 + 4\omega_{19}c_s^2v_1v_2\omega_7^3\omega_{20}\omega_8^2\omega_5^3 - 4\omega_{12}\omega_{19}v_1v_2\omega_7^3v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 - 2\omega_{19}c_s^2\omega_7^3v_3^2\omega_{20}\omega_8^2\omega_5^3 -$

$12\omega_{12}\omega_{19}c_s^2\omega_7^3v_3^2\omega_{20}\omega_{14}\omega_8\omega_5^2 - 2\omega_{19}c_s^2v_1^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3 + 6\omega_{12}\omega_{19}c_s^2v_1^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^3 + 8\omega_{12}\omega_{19}c_s^2v_1^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 -$
$4\omega_{12}\omega_{19}v_1^2\omega_7^3v_3^2\omega_{20}\omega_8^2\omega_5^2 + 4\omega_{19}c_s^4\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 4\omega_{12}\omega_{19}c_s^2v_1^2\omega_7^3\omega_{14}\omega_8\omega_5^2 - 8\omega_{12}v_1v_2\omega_7^2v_3^2\omega_{14}\omega_8^2\omega_5^3 + 8\omega_{12}\omega_{19}c_s^2v_1v_2\omega_7^3\omega_{20}\omega_8^2\omega_5^2 -$
$4\omega_{12}\omega_{19}c_s^4\omega_7^2\omega_{14}\omega_8\omega_5^3 + 2\omega_{12}\omega_{19}v_1^2\omega_7^3v_3^2\omega_{14}\omega_8^2\omega_5^3 - 2\omega_{12}\omega_{19}v_1^2\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5^3 - \omega_{12}\omega_{19}c_s^2v_1^2\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^3 - 4\omega_{12}\omega_{19}c_s^2v_1v_2\omega_7^3\omega_{14}\omega_8^2\omega_5^3 +$
$\omega_{12}v_1^2\omega_7^3v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3 + 4\omega_{12}\omega_{19}c_s^2v_1^2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^3 - 2\omega_{12}c_s^4\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 4\omega_{12}\omega_{19}c_s^2v_1^2\omega_7^3\omega_{20}\omega_{14}\omega_5^2 + 8\omega_{12}\omega_{19}v_1v_2\omega_7^3v_3^2\omega_{20}\omega_{14}\omega_8\omega_5^2 -$
$2\omega_{12}\omega_{19}c_s^2v_1^2\omega_7^3\omega_{14}\omega_8^2\omega_5^2 - 8\omega_{12}\omega_{19}c_s^2v_1v_2\omega_7^3\omega_{20}\omega_8\omega_5^2 + 8\omega_{12}\omega_{19}c_s^2\omega_7v_3^2\omega_{20}\omega_{14}\omega_8\omega_5^3 + 4\omega_{12}\omega_{19}v_1^2\omega_7^3v_3^2\omega_{20}\omega_8\omega_5^2 + \omega_{19}c_s^2\omega_7^3v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3 -$
$2\omega_{19}c_s^2v_1v_2\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^3 + 4\omega_{12}\omega_{19}c_s^2v_1^2\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^2 - 2\omega_{19}c_s^2v_1^2\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 4\omega_{12}\omega_{19}c_s^4\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5 - 8\omega_{12}c_s^2v_1v_2\omega_7^2\omega_{14}\omega_8^2\omega_5^3 +$
$4\omega_{12}\omega_{19}c_s^4\omega_7^2\omega_{14}\omega_8^2\omega_5^3 - 4\omega_{12}\omega_{19}c_s^2v_1^2\omega_7^3\omega_{20}\omega_{14}\omega_5^3 - 8\omega_{12}\omega_{19}v_1v_2\omega_7^3v_3^2\omega_{20}\omega_{14}\omega_8\omega_5^3 - 4\omega_{12}\omega_{19}c_s^4\omega_7^2\omega_{20}\omega_8\omega_5^3 - 2\omega_{12}v_1v_2\omega_7^3v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 -$
$\omega_{12}\omega_{19}c_s^2\omega_7^3v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3 - 4\omega_{12}\omega_{19}v_1^2\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8\omega_5^3 + 4\omega_{12}\omega_{19}c_s^2v_1v_2\omega_7^3\omega_{14}\omega_8^2\omega_5^2 + 2\omega_{12}\omega_{19}c_s^2v_1^2\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 2\omega_{12}c_s^4\omega_7^3\omega_{14}\omega_8^2\omega_5^3 +$
$4\omega_{12}v_1v_2\omega_7^3v_3^2\omega_{14}\omega_8^2\omega_5^3 - 2\omega_{12}\omega_{19}v_1^2\omega_7^3v_3^2\omega_{14}\omega_8^2\omega_5^2 + \omega_{19}c_s^2v_1^2\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^3 + 4\omega_{19}c_s^2v_1v_2\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^2 - 4\omega_{12}\omega_{19}v_1^2\omega_7^3v_3^2\omega_{20}\omega_8\omega_5^3 -$
$2\omega_{19}c_s^2\omega_7^3v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 - 12\omega_{12}\omega_{19}c_s^2v_1^2\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^3 + 8\omega_{12}\omega_{19}c_s^2v_1v_2\omega_7^3\omega_{20}\omega_8\omega_5^3 + 2\omega_{12}\omega_{19}c_s^2v_1^2\omega_7^3\omega_{14}\omega_8^2\omega_5^3 + 4\omega_{12}\omega_{19}v_1^2\omega_7^2v_3^2\omega_{14}\omega_8\omega_5^3 -$
$4\omega_{12}c_s^4\omega_7^2\omega_{14}\omega_8^2\omega_5^3 - 2\omega_{19}v_1^2\omega_7^3v_3^2\omega_{20}\omega_8^2\omega_5^3 + 2\omega_{12}\omega_{19}c_s^4\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3 - 8\omega_{12}\omega_{19}v_1v_2\omega_7^3v_3^2\omega_{20}\omega_8\omega_5^2 + 4\omega_{12}c_s^2v_1v_2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3 +$
$\omega_{19}v_1^2\omega_7^3v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3 + 4\omega_{12}\omega_{19}c_s^4\omega_7^3\omega_{20}\omega_8\omega_5^3 - 4\omega_{19}c_s^4\omega_7^3\omega_{20}\omega_8^2\omega_5^2 + 4\omega_{12}\omega_{19}c_s^2v_1^2\omega_7^2\omega_{20}\omega_{14}\omega_5^3 + 4\omega_{12}\omega_{19}c_s^2\omega_7^2v_3^2\omega_{20}\omega_8\omega_5^3 +$
$8\omega_{12}\omega_{19}c_s^2v_1v_2\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^3 - 4\omega_{12}\omega_{19}c_s^2v_1^2\omega_7^2\omega_{14}\omega_8^2\omega_5^3 - 8\omega_{12}\omega_{19}c_s^2v_1v_2\omega_7^2\omega_{20}\omega_8\omega_5^3 + 2\omega_{12}\omega_{19}v_1^2\omega_7^3v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 +$
$\omega_{12}c_s^2\omega_7^3v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3 + 4\omega_{12}\omega_{19}c_s^4\omega_7^3\omega_{20}\omega_{14}\omega_8\omega_5^2 + 4\omega_{12}\omega_{19}c_s^4\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 4\omega_{12}\omega_{19}v_1v_2\omega_7^2v_3^2\omega_{20}\omega_8^2\omega_5^3 + 4\omega_{12}\omega_{19}c_s^2\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8\omega_5^2 -$
$4\omega_{12}\omega_{19}v_1v_2\omega_7^3v_3^2\omega_{14}\omega_8^2\omega_5^3 + 2\omega_{12}\omega_{19}c_s^4\omega_7^3\omega_{14}\omega_8^2\omega_5^2 - 4\omega_{12}\omega_{19}c_s^2\omega_7^3v_3^2\omega_{20}\omega_8^2\omega_5^2 - 4\omega_{12}\omega_{19}c_s^2v_1v_2\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 2\omega_{19}c_s^4\omega_7^3\omega_{20}\omega_8^2\omega_5^3 +$
$4\omega_{12}v_1^2\omega_7^2v_3^2\omega_{14}\omega_8^2\omega_5^3 - 8\omega_{12}\omega_{19}v_1v_2\omega_7^2v_3^2\omega_{14}\omega_8\omega_5^3 - 4\omega_{12}\omega_{19}c_s^4\omega_7^3\omega_{20}\omega_8\omega_5^2 - 2\omega_{19}v_1^2\omega_7^3v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 8\omega_{12}\omega_{19}v_1v_2\omega_7^3v_3^2\omega_{20}\omega_8\omega_5^3 +$
$4\omega_{12}\omega_{19}c_s^2\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_5^3 - 12\omega_{12}\omega_{19}c_s^4\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 8\omega_{12}\omega_{19}c_s^2v_1v_2\omega_7^2\omega_{14}\omega_8^2\omega_5^3 + 4\omega_{19}v_1^2\omega_7^3v_3^2\omega_{20}\omega_8^2\omega_5^2 + 2\omega_{12}\omega_{19}c_s^2\omega_7^3v_3^2\omega_{20}\omega_8^2\omega_5^3 -$
$2\omega_{12}\omega_{19}c_s^4\omega_7^3\omega_{14}\omega_8^2\omega_5^3 + 4\omega_{12}\omega_{19}v_1v_2\omega_7^3v_3^2\omega_{14}\omega_8^2\omega_5^2 - 4\omega_{12}\omega_{19}v_1v_2\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3 + 2\omega_{12}\omega_{19}c_s^2v_1v_2\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^3 -$
$2\omega_{12}\omega_{19}c_s^4\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^3 + 4\omega_{12}\omega_{19}c_s^2v_1\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^3 - 16\omega_{12}\omega_{19}c_s^2\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8\omega_5^3 + \omega_{12}c_s^2v_1^2\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^3 +$
$6\omega_{12}\omega_{19}c_s^2\omega_7^3v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5 - \omega_{12}\omega_{19}v_1^2\omega_7^3v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3 - 4\omega_{12}\omega_{19}c_s^4\omega_7^3\omega_{20}\omega_{14}\omega_8\omega_5^3 - 2\omega_{12}c_s^2\omega_7^3v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2$

$C_{46} = 4\omega_{12}\omega_6^2\omega_{19}c_s^2v_2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} + 2\omega_{12}\omega_6^2c_s^2v_1\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 2\omega_6^2\omega_{19}c_s^2v_1\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} -$
$4\omega_{12}\omega_6^2\omega_{19}v_1^2v_2\omega_7^2\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} + 4\omega_{12}\omega_6^2\omega_{19}c_s^2v_1\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} - \omega_6^2\omega_{19}c_s^2v_1\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 2\omega_{12}\omega_6^2\omega_{19}c_s^2v_2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 -$
$\omega_6^2\omega_{19}v_1v_2^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 2\omega_{12}\omega_6^2\omega_{19}v_1^2v_2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 2\omega_{12}\omega_6^2\omega_{19}c_s^2v_1\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$4\omega_{12}\omega_6\omega_{19}c_s^2v_2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2 - 4\omega_{12}\omega_6^2\omega_{19}v_1^2v_2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} - 4\omega_{12}\omega_6\omega_{19}c_s^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$4\omega_{12}\omega_6\omega_{19}c_s^2v_2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} - 4\omega_{12}\omega_{19}c_s^2v_2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} + \omega_{12}\omega_6^2v_1^2v_2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$4\omega_{12}\omega_6^2\omega_{19}c_s^2v_1\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18} - 2\omega_{12}\omega_6^2\omega_{19}v_1^2v_2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} - 2\omega_{12}\omega_6\omega_{19}c_s^2v_2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5 -$
$2\omega_{12}\omega_6^2\omega_{19}c_s^2v_2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 4\omega_{12}\omega_6^2\omega_{19}c_s^2v_1\omega_7^2\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} - 4\omega_{12}\omega_6^2\omega_{19}c_s^2v_2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 2\omega_{12}\omega_6^2\omega_{19}c_s^2v_2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5 +$
$4\omega_6^2\omega_{19}v_1^2v_2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18} - 2\omega_{12}\omega_6c_s^2v_2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 4\omega_{12}\omega_6^2\omega_{19}c_s^2v_1\omega_7^2\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} +$
$4\omega_{12}\omega_6^2\omega_{19}v_1^2v_2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} - 2\omega_{12}\omega_6^2\omega_{19}v_1v_2^2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 4\omega_{12}\omega_6^2\omega_{19}v_1v_2^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} -$
$2\omega_{12}\omega_6^2\omega_{19}v_1v_2^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - \omega_{12}\omega_6^2\omega_{19}c_s^2v_2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 10\omega_{12}\omega_6^2\omega_{19}c_s^2v_2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} +$
$3\omega_{12}\omega_6^2\omega_{19}c_s^2v_2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2 - 2\omega_6^2\omega_{19}v_1^2v_2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} - 4\omega_{12}\omega_6^2\omega_{19}c_s^2v_2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18} +$
$2\omega_{12}\omega_6^2\omega_{19}c_s^2v_2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 4\omega_{12}\omega_6^2\omega_{19}v_1v_2^2\omega_7^2\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} - 4\omega_{12}\omega_6^2\omega_{19}c_s^2v_1\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} -$
$2\omega_{12}\omega_6^2\omega_{19}c_s^2v_1\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 8\omega_{12}\omega_6^2\omega_{19}c_s^2v_2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} - 4\omega_{12}\omega_6^2\omega_{19}v_1v_2^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} -$
$4\omega_6^2\omega_{19}v_1v_2^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18} - 2\omega_6^2\omega_{19}c_s^2v_2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 4\omega_{12}\omega_6\omega_{19}c_s^2v_2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5 - 4\omega_{12}\omega_6^2\omega_{19}c_s^2v_2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$\omega_{12}\omega_6^2c_s^2v_2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 4\omega_{12}\omega_6^2c_s^2v_1\omega_7\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 4\omega_{12}\omega_6^2\omega_{19}c_s^2v_1\omega_7\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} + 4\omega_{12}\omega_6^2\omega_{19}v_1^2v_2\omega_7\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} -$
$2\omega_{12}\omega_6^2\omega_{19}v_1v_2^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} + 2\omega_{12}\omega_6^2v_1v_2^2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 4\omega_{12}\omega_6^2\omega_{19}c_s^2v_1\omega_7\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$2\omega_{12}\omega_6^2\omega_{19}v_1^2v_2\omega_7\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 2\omega_{12}\omega_6^2c_s^2v_1\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 2\omega_{12}\omega_6^2\omega_{19}c_s^2v_1\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} +$
$4\omega_{12}\omega_6\omega_{19}c_s^2v_2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2 + 2\omega_{12}\omega_6^2\omega_{19}v_1v_2^2\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} + 2\omega_{12}\omega_6^2\omega_{19}c_s^2v_2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$4\omega_6^2\omega_{19}c_s^2v_2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18} + 4\omega_{12}\omega_6^2\omega_{19}c_s^2v_2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} + 4\omega_{12}\omega_6^2\omega_{19}v_1v_2^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} + 2\omega_6^2\omega_{19}v_1v_2^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$6\omega_{12}\omega_6^2\omega_{19}c_s^2v_2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} + \omega_{12}\omega_6^2\omega_{19}v_1v_2^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 2\omega_{12}\omega_6^2v_1v_2^2\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$4\omega_{12}\omega_6^2\omega_{19}v_1v_2^2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} + 4\omega_{12}\omega_6^2\omega_{19}c_s^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} + 4\omega_{12}\omega_6^2\omega_{19}c_s^2v_1\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} +$
$2\omega_{12}\omega_6\omega_{19}c_s^2v_2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + \omega_{12}\omega_6^2\omega_{19}c_s^2v_1\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 2\omega_{12}\omega_6^2\omega_{19}c_s^2v_2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} -$
$2\omega_{12}\omega_6^2\omega_{19}v_1v_2^2\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 4\omega_{12}\omega_6^2\omega_{19}v_1^2v_2\omega_7\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 2\omega_{12}\omega_6^2\omega_{19}c_s^2v_1\omega_7\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$4\omega_{12}\omega_6^2\omega_{19}c_s^2v_1\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} - 2\omega_{12}\omega_6^2\omega_{19}c_s^2v_1\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 2\omega_{12}\omega_6^2\omega_{19}v_1^2v_2\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$2\omega_{12}\omega_6^2\omega_{19}c_s^2v_2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_5\omega_{18} - 2\omega_{12}\omega_6^2\omega_{19}c_s^2v_2\omega_7\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + \omega_6^2\omega_{19}c_s^2v_2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$2\omega_{12}\omega_6\omega_{19}c_s^2v_2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} - 2\omega_{12}\omega_6^2v_1^2v_2\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 2\omega_{12}\omega_6^2\omega_{19}v_1^2v_2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} -$
$2\omega_{12}\omega_6^2v_1^2v_2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 2\omega_{12}\omega_6\omega_{19}c_s^2v_2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} - 2\omega_6^2\omega_{19}v_1^2v_2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$4\omega_{12}\omega_6^2\omega_{19}c_s^2v_1\omega_7^2\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} - 4\omega_{12}\omega_6^2\omega_{19}v_1^2v_2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} - 4\omega_{12}\omega_6^2\omega_{19}v_1v_2^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} -$
$4\omega_{12}\omega_6^2v_1v_2^2\omega_7\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 2\omega_6^2\omega_{19}c_s^2v_1\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} - 4\omega_6^2\omega_{19}c_s^2v_1\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18} + 4\omega_{12}\omega_6^2\omega_{19}v_1^2v_2\omega_7^2\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} -$
$4\omega_{12}\omega_6^2\omega_{19}c_s^2v_1\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} - 4\omega_{12}\omega_6^2\omega_{19}v_1^2v_2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18} + 2\omega_{12}\omega_6^2\omega_{19}c_s^2v_1\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} +$
$2\omega_6^2\omega_{19}v_1v_2^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} + 4\omega_{12}\omega_6c_s^2v_2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 4\omega_{12}\omega_6\omega_{19}c_s^2v_2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$2\omega_{12}\omega_6^2\omega_{19}v_1^2v_2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 3\omega_{12}\omega_6\omega_{19}c_s^2v_2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 4\omega_{12}\omega_{19}c_s^2v_2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$2\omega_{12}\omega_6\omega_{19}c_s^2v_2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} + 4\omega_{12}\omega_6^2\omega_{19}v_1^2v_2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} + 4\omega_{12}\omega_6^2\omega_{19}v_1v_2^2\omega_7\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}$

$C_{47} = -2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_1\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_8\omega_5^2 + 2\omega_{15}\omega_{19}c_s^2\omega_{10}v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 + 2\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_1v_2^2\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_8\omega_5 -$
$2\omega_{15}\omega_{19}c_s^2\omega_{10}v_1v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 + 2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_1\omega_7^2v_3^2\omega_{23}\omega_{17}\omega_8\omega_5^2 + 2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5 +$

$\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_1v_2^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5 - 2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_1\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5 - 2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_1v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5 -$
$2\omega_{15}\omega_{16}\omega_{10}v_1^2v_2^2\omega_7^2v_3\omega_{23}\omega_{17}\omega_8^2\omega_5^2 + 4\omega_{15}\omega_{19}c_s^4\omega_{16}\omega_{10}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2 - \omega_{15}c_s^2\omega_{16}\omega_{10}v_1^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 +$
$\omega_{19}c_s^2\omega_{16}\omega_{10}v_1\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 2\omega_{15}\omega_{19}c_s^2v_1^2\omega_7^3v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_1^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 +$
$2\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_1^2v_2^2\omega_7^2v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_1v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 2\omega_{19}\omega_{16}\omega_{10}v_1^2v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5 +$
$2\omega_{15}c_s^2\omega_{16}\omega_{10}v_1v_2^2\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 2\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_1^2v_2^2\omega_7^3v_3\omega_{23}\omega_{17}\omega_8\omega_5 - 2\omega_{15}c_s^2\omega_{16}\omega_{10}v_1^2\omega_7^2v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2 -$
$\omega_{15}\omega_{16}\omega_{10}v_1v_2^2\omega_7^3v_3^2\omega_{23}\omega_{17}\omega_8^2\omega_5^2 - \omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_1^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5 + \omega_{15}\omega_{19}\omega_{16}\omega_{10}v_1v_2^2\omega_7^3v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2 -$
$2\omega_{15}\omega_{19}c_s^2\omega_{10}v_1\omega_7^3v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 2\omega_{15}\omega_{19}c_s^2\omega_{10}v_1\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_1v_2^2\omega_7^2\omega_{23}\omega_{17}\omega_8^2\omega_5^2 +$
$\omega_{15}\omega_{16}\omega_{10}v_1v_2^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_1^2\omega_7^2v_3\omega_{23}\omega_{17}\omega_8^2\omega_5^2 - 2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_1\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2 -$
$2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_1^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 + 2\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_1v_2^2\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_1v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5^2 +$
$2\omega_{15}\omega_{19}c_s^2\omega_{10}v_1\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2 - 2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_8\omega_5^2 + 2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^3v_3\omega_{23}\omega_{17}\omega_8\omega_5^2 -$
$2\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_1v_2^2\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2 + \omega_{15}\omega_{19}\omega_{16}\omega_{10}v_1v_2^2\omega_7^3v_3^2\omega_{23}\omega_{17}\omega_8^2\omega_5^2 - 2\omega_{19}c_s^2\omega_{16}\omega_{10}v_1^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5 -$
$\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_1\omega_7^3v_3^2\omega_{23}\omega_{17}\omega_8^2\omega_5 + \omega_{19}c_s^2\omega_{16}\omega_{10}v_1v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - \omega_{15}\omega_{19}c_s^2\omega_{16}v_1^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 +$
$2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_1^2\omega_7^2v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - \omega_{19}c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_1v_2^2\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2 -$
$2\omega_{15}c_s^2\omega_{16}\omega_{10}v_1^2\omega_7^2v_3\omega_{23}\omega_{17}\omega_8^2\omega_5^2 + 8\omega_{15}\omega_{19}c_s^4\omega_{16}\omega_{10}v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5 + 2\omega_{15}c_s^2\omega_{16}\omega_{10}v_1v_2^2\omega_7^2\omega_{23}\omega_{17}\omega_8^2\omega_5^2 +$
$2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5 - \omega_{15}\omega_{16}\omega_{10}v_1v_2^2\omega_7^3v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_1v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5 +$
$2\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_1^2v_2^2\omega_7^2v_3\omega_{23}\omega_{17}\omega_8^2\omega_5^2 - 2\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_1^2v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 + 2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2 +$
$2\omega_{15}\omega_{19}c_s^2\omega_{10}v_2^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + \omega_{15}\omega_{19}\omega_{16}\omega_{10}v_1^2v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 2\omega_{15}\omega_{16}\omega_{10}v_1^2v_2^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 -$
$2\omega_{15}\omega_{19}c_s^2\omega_{10}v_2^2\omega_7^2v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_1^2\omega_7^3v_3\omega_{23}\omega_{17}\omega_8\omega_5 + 12\omega_{15}\omega_{19}c_s^4\omega_{16}\omega_{10}v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 -$
$2\omega_{15}\omega_{16}\omega_{10}v_1^2v_2^2\omega_7^2v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 2\omega_{19}c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 - 2\omega_{19}c_s^2\omega_{16}\omega_{10}v_1v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 +$
$2\omega_{15}\omega_{19}c_s^2\omega_{16}v_1^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 + 2\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_1^2v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5 - 2\omega_{15}c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^2v_3\omega_{23}\omega_{17}\omega_8^2\omega_5^2 +$
$2\omega_{15}\omega_{19}\omega_{10}v_1^2v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 - \omega_{15}\omega_{19}c_s^2\omega_{16}v_1v_1\omega_7^3v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_1^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 -$
$\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_1^2v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5 + 2\omega_{19}c_s^2\omega_{16}\omega_{10}v_1v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5 - 2\omega_{15}\omega_{19}\omega_{16}v_1v_2^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2 +$
$2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_1v_2^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_8\omega_5^2 - 2\omega_{19}c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5 - 2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_1^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_8\omega_5^2 +$
$2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_1^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 - 4\omega_{15}\omega_{19}c_s^4\omega_{16}\omega_{10}v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5 - 2\omega_{19}\omega_{16}v_1^2v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 -$
$2\omega_{15}\omega_{19}c_s^2\omega_{16}v_1v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 - \omega_{15}\omega_{19}\omega_{16}\omega_{10}v_1v_2^2\omega_7^3v_3^2\omega_{23}\omega_{17}\omega_8^2\omega_5 + 2\omega_{19}c_s^2\omega_{16}\omega_{10}v_1^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 +$
$\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_1\omega_7^3v_3^2\omega_{23}\omega_{17}\omega_8^2\omega_5^2 - 2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_1^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 + 2\omega_{15}\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 +$
$2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 - 2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_1^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 + \omega_{15}\omega_{19}c_s^2v_1\omega_7^3v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_1^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 +$
$\omega_{15}c_s^2\omega_{16}\omega_{10}v_1\omega_7^3v_3^2\omega_{23}\omega_{17}\omega_8^2\omega_5^2 + 2\omega_{15}c_s^2\omega_{16}\omega_{10}v_1^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + \omega_{19}c_s^2\omega_{16}v_1^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 +$
$\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_1\omega_7^3v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_1^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5 + 2\omega_{15}\omega_{19}c_s^2\omega_{10}v_1^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 +$
$2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^2v_3\omega_{23}\omega_{17}\omega_8^2\omega_5^2 - 2\omega_{15}\omega_{19}\omega_{10}v_1^2v_2^2\omega_7^2v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_1v_2^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2 +$
$2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_1v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 - \omega_{15}\omega_{19}\omega_{16}\omega_{10}v_1v_2^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2 +$
$2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_1v_2^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 2\omega_{15}\omega_{19}c_s^2\omega_{10}v_1\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2 + 2\omega_{19}\omega_{16}\omega_{10}v_1^2v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 -$
$\omega_{19}c_s^2\omega_{16}\omega_{10}v_1\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5 - 8\omega_{15}\omega_{19}c_s^4\omega_{16}\omega_{10}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5 + 2\omega_{15}\omega_{19}v_1v_2^2\omega_7^3v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2 -$
$2\omega_{15}c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^2v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 2\omega_{15}\omega_{19}c_s^2v_1\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2 + 2\omega_{19}\omega_{16}\omega_{10}v_1^2v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 -$
$2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_1^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2 + 2\omega_{15}\omega_{19}c_s^2\omega_{10}v_1^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 + 2\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_1^2v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 -$
$2\omega_{15}\omega_{19}c_s^2\omega_{10}v_1^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 2\omega_{15}\omega_{19}c_s^2v_1^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 - \omega_{15}\omega_{19}\omega_{16}\omega_{10}v_1^2v_2^2\omega_7^3v_3\omega_{23}\omega_{17}\omega_8^2\omega_5^2 +$
$2\omega_{15}\omega_{19}c_s^2v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + \omega_{19}c_s^2\omega_{16}\omega_{10}v_1^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5 - \omega_{15}\omega_{19}\omega_{16}v_1^2v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 +$
$\omega_{15}\omega_{16}\omega_{10}v_1^2v_2^2\omega_7^3v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_1^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_8\omega_5 - 2\omega_{15}\omega_{19}c_s^2v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 -$
$\omega_{19}\omega_{16}v_1v_2^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 2\omega_{15}\omega_{19}c_s^2\omega_{10}v_1v_2^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 2\omega_{15}\omega_{19}c_s^2\omega_{10}v_2^2\omega_7^3v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2 -$
$\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_1^2\omega_7^3v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 2\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_1v_2^2\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 2\omega_{15}c_s^2\omega_{16}\omega_{10}v_1\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 -$
$2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_1\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_8^2\omega_5 + 2\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_1v_2^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2 - 2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^2v_3\omega_{23}\omega_{17}\omega_8\omega_5^2 -$
$2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_8\omega_5^2 - \omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_1\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 2\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_1v_2^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2 -$
$2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_1\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2 + 2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_8\omega_5^2 - 2\omega_{19}c_s^2\omega_{16}v_1^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 -$
$\omega_{19}c_s^2\omega_{16}v_1\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 2\omega_{15}\omega_{16}\omega_{10}v_1v_2^2\omega_7^2v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - \omega_{19}\omega_{16}\omega_{10}v_1v_2^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5 +$
$\omega_{15}c_s^2\omega_{16}\omega_{10}v_1^2\omega_7^3v_3\omega_{23}\omega_{17}\omega_8^2\omega_5^2 + 2\omega_{15}\omega_{19}\omega_{10}v_1^2v_2^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 2\omega_{15}\omega_{16}\omega_{10}v_1v_2^2\omega_7^2v_3^2\omega_{23}\omega_{17}\omega_8^2\omega_5^2 +$
$\omega_{15}c_s^2\omega_{16}\omega_{10}v_1^2\omega_7^3v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 2\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_1^2v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_8\omega_5 - 2\omega_{15}\omega_{19}c_s^2v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 -$
$\omega_{19}\omega_{16}\omega_{10}v_1^2v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_1^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 + 2\omega_{19}\omega_{16}\omega_{10}v_1v_2^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_8^2\omega_5 -$
$\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_1^2\omega_7^3v_3\omega_{23}\omega_{17}\omega_8^2\omega_5^2 - 2\omega_{19}c_s^2\omega_{16}\omega_{10}v_1\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2 - 2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_1v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2 +$
$2\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_1^2v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5 + 2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 2\omega_{15}\omega_{19}c_s^2\omega_{10}v_2^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 -$
$2\omega_{15}\omega_{19}v_1v_2^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + \omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 2\omega_{15}c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 -$

$\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_1v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - \omega_{15}\omega_{19}\omega_{16}\omega_{10}v_1^2v_2^2\omega_7^3v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 8\omega_{15}\omega_{19}c_s^4\omega_{16}\omega_{10}v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2 -$
$\omega_{15}\omega_{19}\omega_{16}v_1v_2^2\omega_7^3v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + \omega_{15}\omega_{19}\omega_{16}v_1v_2^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 2\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_1v_2^2\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_8\omega_5^2 -$
$2\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_1v_2^2\omega_7^3v_3^2\omega_{23}\omega_{17}\omega_8\omega_5^2 + 2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_1\omega_7^3v_3^2\omega_{23}\omega_{17}\omega_8\omega_5 + \omega_{19}\omega_{16}v_1^2v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 +$
$\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_1v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^2 - 2\omega_{15}\omega_{19}c_s^2\omega_{16}v_1\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2 + 2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 -$
$\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^3v_3\omega_{23}\omega_{17}\omega_8^2\omega_5^2 + 2\omega_{15}\omega_{19}\omega_{10}v_1^2v_2^2\omega_7^3v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + \omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_1v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5 -$
$\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5 + \omega_{15}c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^3v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - \omega_{15}c_s^2\omega_{16}\omega_{10}v_1v_2^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2 -$
$2\omega_{15}\omega_{19}\omega_{10}v_1^2v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 2\omega_{15}c_s^2\omega_{16}\omega_{10}v_1\omega_7^2v_3^2\omega_{23}\omega_{17}\omega_8^2\omega_5^2 + 2\omega_{15}\omega_{19}\omega_{10}v_1v_2^2\omega_7^2v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2 +$
$\omega_{19}\omega_{16}\omega_{10}v_1^2v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5 - \omega_{15}c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_1^2v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_8\omega_5^2 +$
$\omega_{15}\omega_{19}c_s^2\omega_{16}v_1\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 2\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_1^2v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_8\omega_5^2 +$
$\omega_{15}c_s^2\omega_{16}\omega_{10}v_1v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 2\omega_{15}\omega_{19}v_1^2v_2^2\omega_7^3v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 2\omega_{15}\omega_{19}c_s^2\omega_{10}v_1^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 -$
$2\omega_{19}\omega_{16}\omega_{10}v_1v_2^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2 + 4\omega_{15}\omega_{19}c_s^4\omega_{16}\omega_{10}v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2 + \omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_1^2\omega_7^3v_3\omega_{23}\omega_{17}\omega_8^2\omega_5 +$
$2\omega_{19}c_s^2\omega_{16}\omega_{10}v_1\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_8^2\omega_5 + 2\omega_{15}\omega_{19}c_s^2\omega_{10}v_1v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2 - 2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_1\omega_7^2v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2 +$
$\omega_{15}\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 4\omega_{15}\omega_{19}c_s^4\omega_{16}\omega_{10}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_5 - \omega_{15}\omega_{19}c_s^2\omega_{16}v_1v_2^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2 -$
$2\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_1^2v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2 + 2\omega_{15}\omega_{19}c_s^2\omega_{10}v_1^2\omega_7^3v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_8\omega_5 -$
$2\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_1v_2^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5 + 2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_1v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5 + \omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_1\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5 -$
$8\omega_{15}\omega_{19}c_s^4\omega_{16}\omega_{10}v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_1\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2 - 2\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_1v_2^2\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_8^2\omega_5 -$
$2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_1\omega_7^2v_3^2\omega_{23}\omega_{17}\omega_8^2\omega_5^2 - 2\omega_{15}\omega_{19}\omega_{10}v_1v_2^2\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 2\omega_{15}\omega_{19}\omega_{16}v_1^2v_2^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 +$
$2\omega_{15}\omega_{19}c_s^2\omega_{10}v_1^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 2\omega_{15}\omega_{19}c_s^2v_1v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 - 2\omega_{15}\omega_{19}c_s^2v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 +$
$2\omega_{15}c_s^2\omega_{16}\omega_{10}v_1\omega_7^2v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_1v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2 + 2\omega_{19}\omega_{16}v_1v_2^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2 +$
$2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_1^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2 + \omega_{19}\omega_{16}\omega_{10}v_1v_2^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 2\omega_{15}\omega_{19}\omega_{10}v_1v_2^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2 -$
$2\omega_{15}\omega_{19}c_s^2\omega_{10}v_1v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_1^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5 - \omega_{15}c_s^2\omega_{16}\omega_{10}v_1v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^2 +$
$2\omega_{15}\omega_{19}v_1v_2^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2 + \omega_{15}c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^3v_3\omega_{23}\omega_{17}\omega_8^2\omega_5^2 + 2\omega_{15}\omega_{19}v_1^2v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 2\omega_{15}\omega_{19}c_s^2v_1\omega_7^3v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2 +$
$\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_1^2v_2^2\omega_7^3v_3\omega_{23}\omega_{17}\omega_8^2\omega_5 - 2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 + 4\omega_{15}\omega_{19}c_s^4\omega_{16}\omega_{10}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8 + 2\omega_{19}c_s^2\omega_{16}v_1v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 -$
$2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_1^2\omega_7^2v_3\omega_{23}\omega_{17}\omega_8\omega_5^2 + 2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_1\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - \omega_{15}\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 +$
$2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_1^3\omega_7^3v_3\omega_{23}\omega_{20}\omega_8\omega_5^2 - 2\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_1v_2^2\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + \omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_1\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 -$
$\omega_{15}c_s^2\omega_{16}\omega_{10}v_1\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - \omega_{19}c_s^2\omega_{16}\omega_{10}v_1^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_1^2v_2^2\omega_7^2\omega_{23}\omega_{17}\omega_8\omega_5^2 -$
$\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^3v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + \omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_1v_2^2\omega_7^3v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 6\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2$

$C_{48} = -6\omega_{15}\omega_6^2\omega_{19}\omega_{16}\omega_{10}v_2^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 - 24\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}v_1\omega_7^2v_3\omega_{23}\omega_{17}\omega_8\omega_5^3 + 24\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}v_1\omega_7^3v_3\omega_{23}\omega_{20}\omega_8\omega_5^3 -$
$24\omega_{15}\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}v_2^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 + 6\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 - 6\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 -$
$12\omega_{15}\omega_6^2\omega_{19}\omega_{10}v_2^2\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 - 24\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}v_1\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^3 + 12\omega_{15}\omega_6^2\omega_{16}\omega_{10}v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{17}\omega_8^2\omega_5^3 +$
$12\omega_{15}\omega_6^2\omega_{19}\omega_{16}\omega_{10}v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 + 12\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 - 6\omega_{15}\omega_6^2\omega_{16}\omega_{10}v_2^2\omega_7^3v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3 +$
$24\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5 + 24\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{10}v_1\omega_7^3v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^3 + 12\omega_6^2\omega_{19}\omega_{16}v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 +$
$24\omega_6^2\omega_{19}\omega_{16}\omega_{10}v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^3 - 12\omega_{15}\omega_6^2c_s^4\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8^2\omega_5^3 + 12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^3 +$
$12\omega_{15}\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^3 + 12\omega_{15}\omega_6^2\omega_{19}\omega_{16}\omega_{10}v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{17}\omega_8^2\omega_5^2 - 24\omega_6^2\omega_{19}\omega_{16}v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^3 +$
$12\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_8\omega_5^2 - 24\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 48\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^3 +$
$12\omega_{15}\omega_6^2\omega_{19}\omega_{16}\omega_{10}v_2^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_8^2\omega_5^3 + 12\omega_6^2\omega_{19}\omega_{16}\omega_{10}v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 12\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_5^2 -$
$12\omega_{15}\omega_6^2\omega_{19}\omega_{16}\omega_{10}v_2^2\omega_7^2v_3^3\omega_{23}\omega_{17}\omega_8^2\omega_5^3 + 12\omega_{15}\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2 - 12\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3 -$
$12\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 - 12\omega_{15}\omega_6^2\omega_{19}\omega_{16}\omega_{10}v_1v_2^2\omega_7^3v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^3 + 12\omega_{15}\omega_6^2\omega_{19}\omega_{10}v_2^2\omega_7^2v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3 +$
$12\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_5^3 - 24\omega_{15}\omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 12\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5^3 +$
$12\omega_{15}\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 - 6\omega_{15}\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^3 + 12\omega_6^2\omega_{19}c_s^2\omega_{16}v_1\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 -$
$12\omega_{15}\omega_6^2c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 - 12\omega_{15}\omega_6^2\omega_{19}\omega_{16}\omega_{10}v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{17}\omega_8^2\omega_5^3 - 12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 -$
$12\omega_{15}\omega_6^2\omega_{19}\omega_{10}v_2^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_8^2\omega_5^3 - 6\omega_{15}\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5 - 12\omega_{15}\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8\omega_5^3 +$
$24\omega_{15}\omega_6^2\omega_{19}\omega_{16}\omega_{10}v_1v_2^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^3 - 24\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{10}v_1\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 - 12\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23}\omega_{17}\omega_8^2\omega_5^3 +$
$12\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5 + 24\omega_{15}\omega_6^2\omega_{16}\omega_{10}v_1v_2^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 - 24\omega_6^2\omega_{19}\omega_{16}\omega_{10}v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 +$
$6\omega_{15}\omega_6^2\omega_{16}\omega_{10}v_2^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 - 12\omega_{15}\omega_6^2\omega_{19}\omega_{16}\omega_{10}v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 12\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{10}v_2^2\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3 +$
$24\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}v_1\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2 + 12\omega_{15}\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^3 - 12\omega_{15}\omega_6^2\omega_{19}\omega_{16}\omega_{10}v_2^2\omega_7^2v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3 -$
$24\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}v_1\omega_7^3v_3\omega_{23}\omega_{20}\omega_8\omega_5^2 + 6\omega_{15}\omega_6^2\omega_{19}\omega_{16}\omega_{10}v_2^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 6\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 -$
$6\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 24\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{10}v_1\omega_7^2v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^3 + 12\omega_{15}\omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 -$
$6\omega_{15}\omega_6^2\omega_{16}\omega_{10}v_2^2\omega_7^2v_3^2\omega_{23}\omega_{17}\omega_8^2\omega_5^3 + 12\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23}\omega_{17}\omega_8\omega_5^2 + 6\omega_{15}\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^2 -$
$12\omega_{15}\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^3 + 12\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 12\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_5^3 -$
$12\omega_6^2\omega_{19}\omega_{16}\omega_{10}v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 - 12\omega_{15}\omega_6^2\omega_{19}\omega_{16}\omega_{10}v_2^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2 + 12\omega_{15}\omega_6^2\omega_{16}\omega_{10}v_1v_2^2\omega_7^3v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^3 -$
$12\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_8\omega_5^3 - 12\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_8^2\omega_5^3 + 12\omega_{15}\omega_6^2\omega_{19}c_s^2v_2^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^3 -$
$12\omega_{15}\omega_6^2\omega_{19}\omega_{16}\omega_{10}v_2^2\omega_7^3v_3^2\omega_{23}\omega_{17}\omega_8\omega_5^3 + 12\omega_{15}\omega_6^2\omega_{19}\omega_{16}\omega_{10}v_2^2\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_8\omega_5^3 - 24\omega_{15}\omega_6^2\omega_{19}\omega_{10}v_1v_2^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^3 -$
$12\omega_{15}\omega_6^2\omega_{16}\omega_{10}v_2^2\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 + 24\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2 - 12\omega_{15}\omega_6^2\omega_{16}\omega_{10}v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 -$
$12\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 + 12\omega_{15}\omega_6^2c_s^2\omega_{16}\omega_{10}v_1\omega_7^3v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^3 + 24\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{10}v_1\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 +$
$12\omega_{15}\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^3 + 24\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}v_1\omega_7^2v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^3 + 6\omega_{15}\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 -$
$6\omega_{15}\omega_6^2c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^3 - 12\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}v_1\omega_7^3v_3\omega_{23}\omega_{17}\omega_8^2\omega_5^3 - 24\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}v_1\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 +$
$6\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 - 36\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}v_1\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2 + 42\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^3 +$
$12\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_8^2\omega_5^3 - 12\omega_6^2\omega_{19}\omega_{16}\omega_{10}v_2^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_8^2\omega_5^3 + 12\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{16}v_1\omega_7^3v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^3 +$
$12\omega_{15}\omega_6^2\omega_{19}c_s^4\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^3 - 6\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^3 + 24\omega_{15}\omega_6^2\omega_{19}\omega_{16}v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^3 -$
$24\omega_{15}\omega_6^2\omega_{19}\omega_{16}\omega_{10}v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_8\omega_5^2 + 12\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{10}\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_8^2\omega_5^3 - 12\omega_{15}\omega_6\omega_{19}c_s^2\omega_{10}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 +$
$12\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 - 12\omega_{15}\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^2 + 36\omega_{15}\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 -$
$12\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{10}\omega_7^3v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3 - 12\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{10}v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 - 24\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^3 +$

$12\omega_{15}\omega_6^2\omega_{19}v_2^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_8^2\omega_5^3 - 24\omega_{15}\omega_6^2\omega_{19}v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^3 + 12\omega_{15}\omega_6^2\omega_{19}\omega_{10}v_2^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 -$
$12\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}v_1\omega_7^3v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^3 + 24\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}v_1\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^3 - 12\omega_{15}\omega_6\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 -$
$24\omega_{15}\omega_6^2\omega_{19}c_s^2v_1\omega_7^3v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^3 + 12\omega_{15}\omega_6^2\omega_{19}\omega_{16}\omega_{10}v_2^2\omega_7^3v_3^2\omega_{23}\omega_{17}\omega_8\omega_5^2 - 6\omega_{15}\omega_6^2c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^3 -$
$24\omega_{15}\omega_6^2\omega_{19}\omega_{16}\omega_{10}v_1v_2^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 + 12\omega_{15}\omega_6^2\omega_{19}\omega_{16}\omega_{10}v_2^2\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 - 12\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_8^2\omega_5^3 +$
$12\omega_{15}\omega_6^2c_s^2\omega_{16}\omega_{10}\omega_7^2v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3 - 12\omega_{15}\omega_6^2\omega_{19}\omega_{16}v_2^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_8^2\omega_5^3 + 24\omega_{15}\omega_6^2\omega_{19}\omega_{16}\omega_{10}v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_8\omega_5^3 -$
$24\omega_{15}\omega_6^2\omega_{19}\omega_{16}\omega_{10}v_1v_2^2\omega_7^2v_3\omega_{23}\omega_{17}\omega_8\omega_5^3 + 12\omega_{15}\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8^2\omega_5^3 + 24\omega_{15}\omega_6^2\omega_{19}\omega_{10}v_1v_2^2\omega_7^3v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^3 +$
$12\omega_6^2\omega_{19}\omega_{16}\omega_{10}v_2^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2 + 12\omega_{15}\omega_6\omega_{19}c_s^4\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 + 12\omega_{15}\omega_6^2c_s^4\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 +$
$12\omega_{15}\omega_6^2c_s^2\omega_{16}\omega_{10}v_1\omega_7^3v_3\omega_{23}\omega_{17}\omega_8^2\omega_5^3 + 24\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}v_1\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^3 - 60\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2 +$
$24\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^3 - 18\omega_{15}\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 + 12\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}v_1\omega_7^3v_3\omega_{23}\omega_{17}\omega_8^2\omega_5^2 -$
$\omega_{15}\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 + 12\omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 + 6\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 -$
$12\omega_{15}\omega_6^2\omega_{19}c_s^4\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8^2\omega_5^3 - 12\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{16}v_1\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 + 12\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_5^2 -$
$12\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 12\omega_{15}\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^3 + 12\omega_{15}\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 -$
$12\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 + 12\omega_{15}\omega_6^2\omega_{16}\omega_{10}v_2^2\omega_7^2v_3^2\omega_{23}\omega_{17}\omega_8^2\omega_5^3 + 12\omega_{15}\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 +$
$24\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}v_2^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^3 - 24\omega_{15}\omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 - 6\omega_6^2\omega_{19}\omega_{16}v_2^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 +$
$24\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{10}v_1\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^3 - 12\omega_{15}\omega_6^2\omega_{19}\omega_{16}\omega_{10}v_2^2\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^3 - 24\omega_{15}\omega_6^2\omega_{16}\omega_{10}v_1v_2^2\omega_7^2v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^3 +$
$12\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_8\omega_5^3 + 12\omega_{15}\omega_6^2c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3 - 24\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}v_1\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 -$
$6\omega_{15}\omega_6^2\omega_{19}\omega_{16}\omega_{10}v_2^2\omega_7^3v_3^2\omega_{23}\omega_{17}\omega_8^2\omega_5^2 - 24\omega_{15}\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5 + 24\omega_{15}\omega_6^2\omega_{19}\omega_{16}\omega_{10}v_1v_2^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^3 -$
$12\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{10}\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 + 12\omega_{15}\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5 + 12\omega_{15}\omega_6^2\omega_{19}\omega_{10}v_2^2\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_8^2\omega_5^3 -$
$24\omega_{15}\omega_6^2\omega_{19}\omega_{16}\omega_{10}v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^3 - 24\omega_{15}\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 + 24\omega_{15}\omega_6^2\omega_{19}\omega_{16}\omega_{10}v_1v_2^2\omega_7^2v_3\omega_{23}\omega_{17}\omega_8^2\omega_5^3 -$
$12\omega_{15}\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8\omega_5^3 - 12\omega_{15}\omega_6^2\omega_{19}\omega_{16}v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 - 6\omega_{15}\omega_6^2c_s^2\omega_{16}\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 +$
$6\omega_{15}\omega_6^2c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 - 12\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_8^2\omega_5^3 - 24\omega_6^2\omega_{19}c_s^2\omega_{16}v_1\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^3 -$
$24\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}v_1\omega_7^3v_3\omega_{23}\omega_{17}\omega_8\omega_5^2 - 12\omega_{15}\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^3 + 6\omega_{15}\omega_6^2\omega_{19}\omega_{16}\omega_{10}v_2^2\omega_7^3v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3 +$
$6\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 6\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{17}\omega_8^2\omega_5^3 - 12\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 +$
$6\omega_6^2\omega_{19}\omega_{16}\omega_{10}v_2^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 + 6\omega_{15}\omega_6^2\omega_{19}\omega_{16}\omega_{10}v_2^2\omega_7^3v_3^2\omega_{23}\omega_{17}\omega_8^2\omega_5^3 - 12\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_8^2\omega_5^3 -$
$12\omega_{15}\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^3 - 12\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2 - 12\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5 -$
$12\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_5^3 - 12\omega_{15}\omega_6^2c_s^2\omega_{16}\omega_{10}v_1\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 + 6\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 +$
$24\omega_{15}\omega_6^2\omega_{19}\omega_{16}\omega_{10}v_1v_2^2\omega_7^2v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^3 - 12\omega_{15}\omega_6^2\omega_{19}\omega_{10}v_2^2\omega_7^3v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3 + 12\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 +$
$24\omega_{15}\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 + 12\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 + 12\omega_{15}\omega_6^2c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23}\omega_{17}\omega_8^2\omega_5^3 -$
$12\omega_{15}\omega_6^2\omega_{19}c_s^2v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 - 6\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 - 24\omega_{15}\omega_6^2\omega_{16}\omega_{10}v_1v_2^2\omega_7^2v_3\omega_{23}\omega_{17}\omega_8^2\omega_5^3 -$
$6\omega_6^2\omega_{19}\omega_{16}\omega_{10}v_2^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 12\omega_{15}\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2 - 24\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}v_1\omega_7^2v_3\omega_{23}\omega_{20}\omega_8\omega_5^3 +$
$24\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}v_1\omega_7^3v_3\omega_{23}\omega_{17}\omega_8\omega_5^3 + 24\omega_{15}\omega_6^2\omega_{19}\omega_{16}\omega_{10}v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 + 12\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2 +$
$6\omega_{15}\omega_6^2c_s^2\omega_{16}\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 - 24\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{10}v_1\omega_7^2v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^3 + 24\omega_{15}\omega_6^2\omega_{19}\omega_{10}v_1v_2^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 +$
$12\omega_{15}\omega_6^2\omega_{16}\omega_{10}v_2^2\omega_7^2v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3 - 24\omega_{15}\omega_6^2c_s^2\omega_{16}\omega_{10}v_1\omega_7^2v_3\omega_{23}\omega_{17}\omega_8^2\omega_5^3 + 18\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5 +$
$24\omega_{15}\omega_6^2c_s^2\omega_{16}\omega_{10}v_1\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 + 6\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^3 - 12\omega_{15}\omega_6\omega_{19}c_s^4\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 -$
$6\omega_{15}\omega_6^2c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 24\omega_{15}\omega_6^2\omega_{19}\omega_{16}\omega_{10}v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^3 + 12\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{10}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 + 24\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^3 +$
$12\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{10}\omega_7^2v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3 - 18\omega_{15}\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 + 12\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_7^3v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3 -$
$12\omega_{15}\omega_6^2c_s^2\omega_{16}\omega_{10}\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 + 12\omega_6^2\omega_{19}\omega_{16}v_2^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_8^2\omega_5^3 - 12\omega_{15}\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5^2 -$
$6\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 + 24\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{16}v_1\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^3 + 12\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{10}v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 +$
$6\omega_{15}\omega_6^2c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^3 + 12\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_8^2\omega_5^3 - 12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^3 -$
$12\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}v_1\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 + 12\omega_{15}\omega_6^2\omega_{19}\omega_{16}\omega_{10}v_2^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_8\omega_5^2 + 24\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}v_1\omega_7^2v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^3 +$
$24\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 24\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^3 - 60\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^3 +$
$12\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_5^3 - 18\omega_{15}\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 24\omega_{15}\omega_6^2\omega_{19}c_s^2v_1\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 +$
$12\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}v_1\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 - 12\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3 - 6\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 -$
$24\omega_{15}\omega_6^2\omega_{19}\omega_{16}\omega_{10}v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^3 - 24\omega_{15}\omega_6^2\omega_{19}v_1v_2^2\omega_7^3v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^3 + 12\omega_{15}\omega_6^2\omega_{19}v_2^2\omega_7^3v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3 +$
$12\omega_{15}\omega_6^2\omega_{19}\omega_{16}\omega_{10}v_2^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^3 - 24\omega_{15}\omega_6^2\omega_{19}c_s^2v_1\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^3 + 24\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 -$
$12\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_8^2\omega_5^3 - 24\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}v_1\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^3 - 18\omega_{15}\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 -$
$12\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_8^2\omega_5^3 + 12\omega_{15}\omega_6\omega_{19}c_s^2v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 - 24\omega_{15}\omega_6^2\omega_{19}\omega_{16}\omega_{10}v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{17}\omega_8\omega_5^2 +$
$12\omega_{15}\omega_6\omega_{19}c_s^4\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 - 12\omega_{15}\omega_6^2\omega_{19}\omega_{16}\omega_{10}v_2^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_8\omega_5^3 + 12\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}v_1\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 +$
$12\omega_{15}\omega_6^2\omega_{19}\omega_{16}\omega_{10}v_2^2\omega_7^2v_3^2\omega_{23}\omega_{17}\omega_8\omega_5^3 + 12\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 - 12\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{10}v_2^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^3 -$
$12\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2 - 12\omega_{15}\omega_6^2\omega_{19}c_s^4\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^3 + 12\omega_{15}\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5^3 +$
$12\omega_{15}\omega_6^2c_s^2\omega_{16}\omega_{10}\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 6\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^3 - 24\omega_{15}\omega_6^2c_s^2\omega_{16}\omega_{10}v_1\omega_7^2v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^3 +$
$12\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 - 12\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 + 24\omega_{15}\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^3 +$
$36\omega_{15}\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 24\omega_{15}\omega_6^2\omega_{19}v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 - 6\omega_{15}\omega_6^2\omega_{19}\omega_{16}v_2^2\omega_7^3v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3$

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

$$2\omega_{15}\omega_{6}\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 4\omega_{15}\omega_{6}\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2v_1\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5^2 - 2\omega_{6}\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5 +$$
$$4\omega_{15}\omega_{6}\omega_{19}\omega_{16}\omega_{10}^2v_1\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2 + 4\omega_{15}\omega_{6}\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 2\omega_{15}\omega_{6}c_s^2\omega_{16}^2\omega_{10}^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 -$$
$$4\omega_{15}\omega_{6}\omega_{16}^2\omega_{10}^2v_1^2\omega_7^2v_3\omega_{23}\omega_{17}\omega_8^2\omega_5^2 + 4\omega_{15}\omega_{6}\omega_{19}\omega_{16}^2\omega_{10}^2v_1^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5 - 4\omega_{6}\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5 +$$
$$2\omega_{15}\omega_{6}\omega_{19}\omega_{16}^2\omega_{10}^2v_1\omega_7^3v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 4\omega_{15}\omega_{6}\omega_{16}^2\omega_{10}^2v_1^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 2\omega_{15}\omega_{6}\omega_{19}c_s^2\omega_{16}^2\omega_{10}v_1\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2 -$$
$$2\omega_{6}\omega_{19}\omega_{16}^2\omega_{10}^2v_1^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 4\omega_{15}\omega_{6}\omega_{19}\omega_{16}^2\omega_{10}^2v_1\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 4\omega_{15}\omega_{6}\omega_{19}\omega_{16}^2\omega_{10}^2v_1^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5 +$$
$$4\omega_{15}\omega_{6}\omega_{19}c_s^2\omega_{16}\omega_{10}^2v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 4\omega_{15}\omega_{6}\omega_{19}c_s^2\omega_{16}\omega_{10}^2v_1\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 4\omega_{15}\omega_{6}\omega_{19}\omega_{16}^2\omega_{10}^2v_1\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 +$$
$$2\omega_{15}\omega_{6}\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2v_1\omega_7^3v_3\omega_{23}\omega_{17}\omega_8^2\omega_5^2 + 4\omega_{6}\omega_{19}\omega_{16}^2\omega_{10}^2v_1^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 + 8\omega_{15}\omega_{6}\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5 +$$
$$4\omega_{15}\omega_{6}\omega_{19}c_s^2\omega_{16}^2\omega_{10}v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2 + 4\omega_{15}\omega_{6}\omega_{19}c_s^2\omega_{16}\omega_{10}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5 + 4\omega_{15}\omega_{6}\omega_{19}\omega_{16}\omega_{10}^2v_1\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 -$$
$$2\omega_{15}\omega_{6}\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_5^2 + 2\omega_{15}\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 4\omega_{15}\omega_{6}\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2v_3\omega_{23}\omega_{17}\omega_8^2\omega_5^2 -$$
$$4\omega_{15}\omega_{6}\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 - 4\omega_{15}\omega_{6}\omega_{16}^2\omega_{10}^2v_1^2\omega_7^2v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 4\omega_{15}\omega_{6}\omega_{19}\omega_{16}\omega_{10}v_1\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2 +$$
$$4\omega_{15}\omega_{6}\omega_{19}c_s^2\omega_{16}\omega_{10}^2\omega_7^3v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 4\omega_{15}\omega_{6}\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2v_1\omega_7^2\omega_{23}\omega_{17}\omega_8^2\omega_5^2 + 2\omega_{6}\omega_{19}\omega_{16}^2\omega_{10}v_1^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 +$$
$$12\omega_{15}\omega_{6}\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 4\omega_{15}\omega_{6}\omega_{19}\omega_{16}\omega_{10}^2v_1\omega_7^3v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 4\omega_{15}\omega_{6}\omega_{19}\omega_{16}^2\omega_{10}^2v_1^2\omega_7^3v_3\omega_{23}\omega_{17}\omega_8\omega_5^2 -$$
$$4\omega_{15}\omega_{6}\omega_{19}\omega_{16}^2\omega_{10}^2v_1^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_8\omega_5^2 + 4\omega_{15}\omega_{6}\omega_{19}\omega_{16}\omega_{10}^2v_1^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 - 4\omega_{15}\omega_{6}\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5 -$$
$$4\omega_{15}\omega_{6}\omega_{19}c_s^2\omega_{16}\omega_{10}^2v_1\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 4\omega_{15}\omega_{6}\omega_{19}\omega_{16}\omega_{10}^2v_1\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 4\omega_{15}\omega_{6}c_s^2\omega_{16}^2\omega_{10}^2v_1\omega_7^2\omega_{23}\omega_{17}\omega_8^2\omega_5^2 +$$
$$4\omega_{6}\omega_{19}\omega_{16}^2\omega_{10}v_1\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2 + 4\omega_{15}\omega_{6}\omega_{19}c_s^2\omega_{16}\omega_{10}^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5 -$$
$$4\omega_{15}\omega_{6}\omega_{19}\omega_{16}^2\omega_{10}^2v_1^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_5 - 12\omega_{15}\omega_{6}\omega_{19}c_s^2\omega_{16}\omega_{10}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 4\omega_{15}\omega_{6}\omega_{19}\omega_{16}\omega_{10}v_1^2\omega_7^3v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2 +$$
$$2\omega_{15}\omega_{6}\omega_{19}\omega_{16}^2\omega_{10}v_1\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 4\omega_{6}\omega_{19}c_s^2\omega_{16}^2\omega_{10}v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 8\omega_{15}\omega_{6}\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 -$$
$$2\omega_{15}\omega_{6}\omega_{16}^2\omega_{10}^2v_1\omega_7^3v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 4\omega_{15}\omega_{6}\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 4\omega_{6}\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 -$$
$$4\omega_{15}\omega_{6}\omega_{19}\omega_{16}^2\omega_{10}^2v_1^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2 - 4\omega_{15}\omega_{6}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 4\omega_{15}\omega_{6}\omega_{19}\omega_{16}^2\omega_{10}^2v_1^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 +$$
$$4\omega_{15}\omega_{6}\omega_{19}\omega_{16}^2\omega_{10}^2v_1^2\omega_7^2v_3\omega_{23}\omega_{17}\omega_8^2\omega_5^2 + 2\omega_{15}\omega_{6}\omega_{19}c_s^2\omega_{16}\omega_{10}^2\omega_7^3v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 2\omega_{6}\omega_{19}\omega_{16}^2\omega_{10}^2v_1^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5 +$$
$$4\omega_{15}\omega_{6}\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2v_1\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8 - 2\omega_{15}\omega_{6}\omega_{19}\omega_{16}^2\omega_{10}^2v_1\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 4\omega_{15}\omega_{6}c_s^2\omega_{16}^2\omega_{10}^2v_1\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2 +$$
$$4\omega_{15}\omega_{6}\omega_{19}\omega_{16}^2\omega_{10}^2v_1\omega_7^2v_3^2\omega_{23}\omega_{17}\omega_8\omega_5^2 - 4\omega_{15}\omega_{6}\omega_{19}\omega_{16}^2\omega_{10}^2v_1\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_8\omega_5^2 - 12\omega_{15}\omega_{6}\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5 -$$
$$4\omega_{15}\omega_{6}\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 - 2\omega_{15}\omega_{6}\omega_{16}^2\omega_{10}^2v_1^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 2\omega_{15}\omega_{6}\omega_{19}c_s^2\omega_{16}^2\omega_{10}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 +$$
$$2\omega_{15}\omega_{6}\omega_{19}\omega_{16}^2\omega_{10}^2v_1^2\omega_7^2v_3\omega_{23}\omega_{17}\omega_8^2\omega_5^2 - 4\omega_{15}\omega_{6}\omega_{19}c_s^2\omega_{16}\omega_{10}v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 4\omega_{15}\omega_{6}\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 -$$
$$2\omega_{15}\omega_{6}\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2v_1\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^2 - 2\omega_{15}\omega_{6}c_s^2\omega_{16}^2\omega_{10}^2v_1\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^2 - 4\omega_{15}\omega_{6}\omega_{19}c_s^2\omega_{16}\omega_{10}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2 +$$
$$2\omega_{15}\omega_{6}\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5 - 2\omega_{6}\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 4\omega_{15}\omega_{6}\omega_{19}\omega_{16}^2\omega_{10}^2v_1\omega_7^2v_3^2\omega_{23}\omega_{17}\omega_8^2\omega_5^2 +$$
$$4\omega_{15}\omega_{6}\omega_{19}\omega_{16}^2\omega_{10}^2v_1\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2 + 4\omega_{15}\omega_{6}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 4\omega_{15}\omega_{6}\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2 -$$
$$2\omega_{15}\omega_{6}\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2v_1\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^2 - 4\omega_{15}\omega_{6}\omega_{19}c_s^2\omega_{16}^2\omega_{10}v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 4\omega_{15}\omega_{6}\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5 -$$
$$2\omega_{15}\omega_{6}\omega_{19}c_s^2\omega_{16}^2\omega_{10}\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 2\omega_{15}\omega_{6}\omega_{16}^2\omega_{10}^2v_1^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 4\omega_{15}\omega_{6}\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 -$$
$$2\omega_{15}\omega_{6}\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3v_3\omega_{23}\omega_{17}\omega_8^2\omega_5^2 + 4\omega_{15}\omega_{6}\omega_{19}c_s^2\omega_{16}\omega_{10}v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 4\omega_{6}\omega_{19}c_s^2\omega_{16}\omega_{10}^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 -$$
$$4\omega_{15}\omega_{6}\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2v_1\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_8\omega_5^2 + 4\omega_{15}\omega_{6}\omega_{19}c_s^2\omega_{16}\omega_{10}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 14\omega_{15}\omega_{6}\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2 -$$
$$8\omega_{15}\omega_{6}\omega_{19}c_s^2\omega_{16}^2\omega_{10}v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5 + 4\omega_{15}\omega_{6}\omega_{19}\omega_{16}\omega_{10}^2v_1^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 4\omega_{6}\omega_{19}\omega_{16}^2\omega_{10}v_1^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 +$$
$$4\omega_{15}\omega_{6}\omega_{19}\omega_{16}^2\omega_{10}^2v_1\omega_7^3v_3^2\omega_{23}\omega_{17}\omega_8\omega_5 + 4\omega_{15}\omega_{6}\omega_{19}c_s^2\omega_{16}\omega_{10}^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 4\omega_{15}\omega_{6}\omega_{19}c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 -$$
$$4\omega_{15}\omega_{6}\omega_{19}\omega_{16}\omega_{10}^2v_1\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2 + 4\omega_{6}\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5 + 4\omega_{15}\omega_{6}\omega_{19}c_s^2\omega_{16}\omega_{10}^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 -$$
$$4\omega_{15}\omega_{6}\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_8\omega_5 - 4\omega_{15}\omega_{6}\omega_{19}c_s^2\omega_{16}\omega_{10}^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5 + 8\omega_{15}\omega_{6}\omega_{19}c_s^2\omega_{16}^2\omega_{10}v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 -$$
$$2\omega_{6}\omega_{19}\omega_{16}^2\omega_{10}v_1\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 2\omega_{15}\omega_{6}\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5 + 4\omega_{15}\omega_{6}\omega_{19}\omega_{16}^2\omega_{10}^2v_1\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2 -$$
$$4\omega_{15}\omega_{6}\omega_{19}\omega_{16}^2\omega_{10}^2v_1\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 4\omega_{6}\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 4\omega_{15}\omega_{6}\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 +$$
$$2\omega_{15}\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2 - 4\omega_{15}\omega_{6}\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2v_3\omega_{23}\omega_{17}\omega_8\omega_5^2 + 4\omega_{15}\omega_{6}\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_8\omega_5^2 +$$
$$8\omega_{15}\omega_{6}\omega_{19}c_s^2\omega_{16}\omega_{10}^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 4\omega_{15}\omega_{6}\omega_{19}\omega_{16}\omega_{10}^2v_1^3\omega_7^3v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 2\omega_{15}\omega_{6}\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2v_1\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2 +$$
$$4\omega_{15}\omega_{6}\omega_{16}^2\omega_{10}^2v_1\omega_7^2v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 6\omega_{15}\omega_{6}\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2 - 4\omega_{15}\omega_{6}\omega_{19}\omega_{16}\omega_{10}v_1^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 +$$
$$4\omega_{15}\omega_{6}\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2v_1\omega_7^2\omega_{23}\omega_{17}\omega_8\omega_5^2 - 4\omega_{15}\omega_{6}\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2 - 4\omega_{6}\omega_{19}\omega_{16}^2\omega_{10}^2v_1\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2 -$$
$$4\omega_{15}\omega_{6}\omega_{19}\omega_{16}\omega_{10}^2v_1^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 2\omega_{15}\omega_{6}\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2v_1^2\omega_7^3v_3\omega_{23}\omega_{17}\omega_8^2\omega_5^2 + 4\omega_{15}\omega_{6}\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2v_1^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 +$$
$$2\omega_{15}\omega_{6}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 4\omega_{15}\omega_{6}\omega_{19}c_s^2\omega_{16}\omega_{10}^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 + 2\omega_{6}\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5 -$$
$$2\omega_{15}\omega_{6}\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 2\omega_{15}\omega_{6}\omega_{19}\omega_{16}^2\omega_{10}^2v_1^2\omega_7^3v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 4\omega_{15}\omega_{6}\omega_{19}c_s^2\omega_{16}^2\omega_{10}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5 -$$
$$4\omega_{15}\omega_{6}\omega_{19}\omega_{16}^2\omega_{10}^2v_1\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5 - 4\omega_{15}\omega_{6}\omega_{19}\omega_{16}^2\omega_{10}^2v_1\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_8^2\omega_5 + 2\omega_{15}\omega_{6}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3v_3\omega_{23}\omega_{17}\omega_8^2\omega_5^2 -$$
$$2\omega_{6}\omega_{19}c_s^2\omega_{16}^2\omega_{10}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 4\omega_{15}\omega_{6}\omega_{19}c_s^2\omega_{10}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 4\omega_{15}\omega_{6}\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2 +$$
$$2\omega_{15}\omega_{6}\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2v_1\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^2 - 4\omega_{15}\omega_{6}\omega_{16}^2\omega_{10}^2v_1\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 4\omega_{15}\omega_{6}\omega_{19}\omega_{16}^2\omega_{10}^2v_1^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 +$$
$$4\omega_{15}\omega_{6}\omega_{16}^2\omega_{10}^2v_1\omega_7^2v_3^2\omega_{23}\omega_{17}\omega_8^2\omega_5^2 + 2\omega_{15}\omega_{6}\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3v_3\omega_{23}\omega_{17}\omega_8^2\omega_5 + 2\omega_{6}\omega_{19}\omega_{16}^2\omega_{10}^2v_1\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 -$$
$$2\omega_{15}\omega_{6}\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2v_1\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 4\omega_{15}\omega_{6}\omega_{19}\omega_{16}^2\omega_{10}^2v_1^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 4\omega_{15}\omega_{6}\omega_{19}\omega_{16}\omega_{10}^2v_1\omega_7^2v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2 +$$
$$4\omega_{15}\omega_{6}\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 4\omega_{15}\omega_{6}\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 4\omega_{15}\omega_{6}\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2 +$$
$$2\omega_{15}\omega_{6}\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2v_1\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^2 - 4\omega_{15}\omega_{6}\omega_{16}^2\omega_{10}^2v_1\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 4\omega_{15}\omega_{6}\omega_{19}\omega_{16}^2\omega_{10}^2v_1^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 +$$
$$4\omega_{15}\omega_{6}\omega_{16}^2\omega_{10}^2v_1\omega_7^2v_3^2\omega_{23}\omega_{17}\omega_8^2\omega_5^2 + 2\omega_{15}\omega_{6}\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3v_3\omega_{23}\omega_{17}\omega_8^2\omega_5 + 2\omega_{6}\omega_{19}\omega_{16}^2\omega_{10}^2v_1\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 -$$
$$2\omega_{15}\omega_{6}\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2v_1\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 2\omega_{15}\omega_{6}\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_5^2 + 4\omega_{15}\omega_{6}\omega_{19}\omega_{16}\omega_{10}v_1^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 -$$
$$2\omega_{15}\omega_{6}\omega_{16}^2\omega_{10}^2v_1\omega_7^2v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 4\omega_{15}\omega_{6}\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 4\omega_{15}\omega_{6}\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 -$$
$$4\omega_{15}\omega_{6}\omega_{19}\omega_{16}^2\omega_{10}^2v_1^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2 - 4\omega_{15}\omega_{6}c_s^2\omega_{16}^2\omega_{10}^2v_1\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2 +$$
$$4\omega_{15}\omega_{6}\omega_{19}\omega_{16}^2\omega_{10}^2v_1\omega_7^2v_3^2\omega_{23}\omega_{17}\omega_8\omega_5^2 - 4\omega_{15}\omega_{6}\omega_{19}\omega_{16}^2\omega_{10}^2v_1\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_8\omega_5^2 - 12\omega_{15}\omega_{6}\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5 -$$
$$4\omega_{15}\omega_{6}\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 - 2\omega_{15}\omega_{6}\omega_{16}^2\omega_{10}^2v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 2\omega_{15}\omega_{6}\omega_{19}c_s^2\omega_{16}\omega_{10}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 +$$
$$2\omega_{15}\omega_{6}\omega_{19}\omega_{16}^2\omega_{10}^2v_1^2\omega_7^2v_3\omega_{23}\omega_{17}\omega_8^2\omega_5^2 - 4\omega_{15}\omega_{6}\omega_{19}\omega_{16}^2\omega_{10}^2v_1^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 4\omega_{15}\omega_{6}\omega_{19}\omega_{16}\omega_{10}v_1^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 +$$
$$4\omega_{15}\omega_{6}\omega_{19}\omega_{16}^2\omega_{10}^2v_1^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_8\omega_5 + 4\omega_{15}\omega_{6}\omega_{19}\omega_{16}^2\omega_{10}v_1^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 - 4\omega_{15}\omega_{6}\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2$$

$$C_{50} = -\omega_{15}\omega_{19}^2\omega_{16}\omega_{10}v_1^2v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5 - 2\omega_{15}\omega_{19}^2c_s^2v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 - 2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23}\omega_{17}\omega_8^2\omega_5^2 -$$

$$2\omega_{15}\omega_{19}^2\omega_{16}\omega_{10}v_1^2v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5 + 2\omega_{15}\omega_{19}^2c_s^2\omega_{16}v_1\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 8\omega_{15}\omega_{19}^2c_s^2\omega_{16}\omega_{10}v_1\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5 +$$
$$2\omega_{15}\omega_{19}^2\omega_{16}\omega_{10}v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5 - 2\omega_{15}\omega_{19}^2c_s^2\omega_{16}\omega_{10}v_1^2\omega_7^2\omega_{23}\omega_{17}\omega_8\omega_5^2 - 8\omega_{15}\omega_{19}^2c_s^2\omega_{16}\omega_{10}v_1v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 -$$
$$2\omega_{15}\omega_{19}^2c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_8\omega_5^2 - 4\omega_{15}\omega_{19}^2\omega_{10}v_1v_2^2\omega_7^3v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 4\omega_{19}^2c_s^2\omega_{16}v_1\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 - 2\omega_{15}\omega_{19}^2\omega_{10}v_1^2v_2^2\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2 +$$
$$2\omega_{15}\omega_{19}^2c_s^2\omega_{16}\omega_{10}v_1^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2 + 2\omega_{15}\omega_{19}^2\omega_{16}v_1^2v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 - \omega_{15}\omega_{19}^2c_s^2\omega_{16}\omega_{10}v_1^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2 +$$
$$2\omega_{19}^2c_s^2\omega_{16}\omega_{10}v_1\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + \omega_{19}^2c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5 - 2\omega_{15}\omega_{19}^2c_s^2\omega_{16}\omega_{10}v_1\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_5^2 -$$
$$2\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{17}\omega_8^2\omega_5^2 - \omega_{19}^2c_s^2\omega_{16}\omega_{10}v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 2\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 +$$
$$4\omega_{15}\omega_{19}^2\omega_{16}\omega_{10}v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 - 4\omega_{15}\omega_{19}^2c_s^2\omega_{16}\omega_{10}v_1\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5 - 2\omega_{15}\omega_{19}^2c_s^2\omega_{16}\omega_{10}v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5 -$$
$$2\omega_{15}\omega_{19}^2c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5 + 2\omega_{15}\omega_{19}^2\omega_{16}v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 4\omega_{15}\omega_{19}^2\omega_{16}\omega_{10}v_1v_2^2\omega_7^2v_3\omega_{23}\omega_{17}\omega_8^2\omega_5^2 +$$
$$4\omega_{15}\omega_{19}^2\omega_{16}\omega_{10}v_1v_2^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 12\omega_{15}\omega_{19}^2c_s^2\omega_{16}\omega_{10}v_1\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2 - \omega_{15}\omega_{19}^2\omega_{16}\omega_{10}v_1^2v_2^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2 -$$
$$2\omega_{15}\omega_{19}^2c_s^2\omega_{10}v_1^2\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 2\omega_{15}\omega_{19}^2c_s^2\omega_{10}v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 2\omega_{15}\omega_{19}^2\omega_{16}\omega_{10}v_1^2v_2^2\omega_7^2\omega_{23}\omega_{17}\omega_8\omega_5^2 -$$
$$2\omega_{15}\omega_{19}^2c_s^2\omega_{16}v_1\omega_7^3v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - \omega_{15}\omega_{19}^2\omega_{16}\omega_{10}v_1^2v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^2 + 2\omega_{15}\omega_{19}^2\omega_{16}\omega_{10}v_1^2v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2 -$$
$$2\omega_{15}\omega_{19}^2c_s^2\omega_{10}v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2 + 2\omega_{19}^2c_s^2\omega_{16}\omega_{10}v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 - 4\omega_{15}\omega_{19}^2\omega_{16}v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 - 4\omega_{19}^2c_s^2\omega_{16}\omega_{10}v_1\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 -$$
$$2\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_1v_2^2\omega_7^3v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 4\omega_{19}^2\omega_{16}\omega_{10}v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5 - 4\omega_{15}\omega_{19}^2\omega_{16}\omega_{10}v_1v_2^2\omega_7^2v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2 -$$
$$\omega_{15}\omega_{19}^2c_s^2\omega_{16}\omega_{10}v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5 + 2\omega_{19}^2\omega_{16}\omega_{10}v_1^2v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 + \omega_{15}\omega_{19}^2c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 +$$
$$4\omega_{15}\omega_{19}^2\omega_{10}v_1v_2^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 + \omega_{19}^2c_s^2\omega_{16}v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 10\omega_{15}\omega_{19}^2c_s^2\omega_{16}\omega_{10}v_1\omega_7v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 -$$
$$2\omega_{15}\omega_{19}^2c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 - 2\omega_{19}^2c_s^2\omega_{16}v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 + 4\omega_{15}\omega_{19}^2c_s^2\omega_{16}\omega_{10}v_1\omega_7^2v_3\omega_{23}\omega_{20}\omega_8\omega_5^2 +$$
$$2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - \omega_{15}\omega_{19}^2c_s^2\omega_{16}\omega_{10}v_1^2\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^2 + 4\omega_{15}\omega_{19}^2\omega_{16}\omega_{10}v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{17}\omega_8\omega_5 +$$
$$2\omega_{15}\omega_{19}^2c_s^2v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 2\omega_{15}\omega_{19}c_s^2v_2^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - \omega_{19}^2\omega_{16}\omega_{10}v_1^2v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 -$$
$$4\omega_{15}\omega_{19}^2\omega_{10}v_1v_2^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 2\omega_{19}^2\omega_{16}\omega_{10}v_1^2v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5 + \omega_{15}\omega_{19}^2c_s^2\omega_{16}\omega_{10}v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5 +$$
$$\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_1^2v_2^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - \omega_{15}\omega_{19}^2\omega_{16}v_1^2v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + \omega_{15}\omega_{19}^2c_s^2\omega_{16}\omega_{10}v_1^2\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5 -$$
$$4\omega_{15}\omega_{19}^2\omega_{16}\omega_{10}v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{17}\omega_8\omega_5^2 - 6\omega_{15}\omega_{19}^2c_s^2\omega_{16}\omega_{10}v_1\omega_7v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5 + 4\omega_{15}\omega_{19}^2\omega_{16}\omega_{10}v_1v_2^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_8\omega_5^2 +$$
$$2\omega_{15}\omega_{19}^2c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5 + 2\omega_{15}\omega_{19}^2c_s^2\omega_{16}\omega_{10}v_1\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8 + 4\omega_{15}\omega_{19}^2c_s^2\omega_{10}v_1\omega_7^2v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 -$$
$$2\omega_{19}^2c_s^2\omega_{16}v_1\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + \omega_{19}^2\omega_{16}\omega_{10}v_1^2v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5 + 2\omega_{15}\omega_{19}^2\omega_{16}\omega_{10}v_1^2v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2 +$$
$$2\omega_{15}\omega_{19}^2c_s^2\omega_{10}v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 + 2\omega_{15}\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 + \omega_{15}\omega_{19}^2\omega_{16}\omega_{10}v_1^2v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5 +$$
$$4\omega_{15}\omega_{19}^2\omega_{10}v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 4\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_1\omega_7v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 2\omega_{15}\omega_{19}^2\omega_{10}v_1^2v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 +$$
$$\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_1^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 2\omega_{19}^2c_s^2\omega_{16}\omega_{10}v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5 + 2\omega_{15}\omega_{19}^2c_s^2v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 -$$
$$2\omega_{19}^2\omega_{16}v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_1\omega_7^3v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 4\omega_{19}^2c_s^2\omega_{16}\omega_{10}v_1\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5 -$$
$$4\omega_{19}^2\omega_{16}\omega_{10}v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 + 2\omega_{15}\omega_{19}^2c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23}\omega_{17}\omega_8^2\omega_5^2 + 2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_1^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 +$$
$$\omega_{15}\omega_{19}^2c_s^2\omega_{16}\omega_{10}v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 2\omega_{15}\omega_{19}^2\omega_{10}v_1^2v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 + \omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 -$$
$$4\omega_{15}\omega_{19}^2c_s^2\omega_{16}\omega_{10}v_1\omega_7^2v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 4\omega_{15}\omega_{19}^2c_s^2v_1\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 + \omega_{19}^2c_s^2\omega_{16}\omega_{10}v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5 + 4\omega_{15}\omega_{19}^2v_1v_2^2\omega_7^3v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2 +$$
$$2\omega_{15}\omega_{19}^2c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2 + 2\omega_{15}\omega_{19}^2c_s^2\omega_{16}\omega_{10}v_1^2v_2^2\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 2\omega_{15}\omega_{19}^2c_s^2\omega_{16}\omega_{10}v_1\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_5 +$$
$$2\omega_{15}\omega_{19}^2c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5^2 - 4\omega_{15}\omega_{19}^2\omega_{16}\omega_{10}v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5 + 4\omega_{15}\omega_{19}^2c_s^2\omega_{16}\omega_{10}v_1\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 -$$
$$2\omega_{15}\omega_{19}^2v_1^2v_2^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 2\omega_{15}\omega_{19}^2c_s^2\omega_{16}\omega_{10}v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 + 4\omega_{15}\omega_{19}^2c_s^2\omega_{16}\omega_{10}v_1\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5 +$$
$$\omega_{15}\omega_{19}^2c_s^2\omega_{16}v_1^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + \omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_1^2\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^2 - 4\omega_{15}\omega_{19}^2c_s^2\omega_{10}v_1\omega_7^3v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2 +$$
$$2\omega_{15}\omega_{19}^2c_s^2\omega_{10}v_1^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 2\omega_{15}\omega_{19}^2\omega_{16}\omega_{10}v_1^2v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^2 + \omega_{15}\omega_{19}^2\omega_{16}\omega_{10}v_1^2v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 +$$
$$2\omega_{15}\omega_{19}^2c_s^2\omega_{10}v_2^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 2\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_1^2v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 2\omega_{15}\omega_{19}^2\omega_{16}\omega_{10}v_1^2v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 +$$
$$6\omega_{15}\omega_{19}^2c_s^2\omega_{16}\omega_{10}v_1\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2 - 4\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_1v_2^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + \omega_{15}\omega_{19}\omega_{16}\omega_{10}v_1^2v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^2 -$$
$$\omega_{19}^2c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 2\omega_{19}^2c_s^2\omega_{16}\omega_{10}v_1\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5 - 2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_1\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5 +$$
$$\omega_{15}\omega_{19}^2\omega_{16}v_1^2v_2^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 4\omega_{19}^2\omega_{16}v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 - \omega_{15}\omega_{19}^2c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^2 - \omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 +$$
$$4\omega_{15}\omega_{19}^2\omega_{16}\omega_{10}v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_8\omega_5 - 2\omega_{15}\omega_{19}^2c_s^2\omega_{16}\omega_{10}v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 - 4\omega_{15}\omega_{19}^2c_s^2\omega_{16}\omega_{10}v_1\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 -$$
$$2\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 - 4\omega_{15}\omega_{19}^2\omega_{10}v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 - 2\omega_{15}\omega_{19}^2c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 -$$
$$4\omega_{15}\omega_{19}^2v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 2\omega_{15}\omega_{19}^2\omega_{10}v_1^2v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2 + 2\omega_{15}\omega_{19}^2v_1^2v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 -$$
$$2\omega_{15}\omega_{19}^2c_s^2\omega_{16}\omega_{10}v_1\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2 + 4\omega_{15}\omega_{19}^2c_s^2\omega_{16}\omega_{10}v_1\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5 - 2\omega_{15}\omega_{19}^2c_s^2v_1^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2 -$$
$$2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_1^2\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 4\omega_{15}\omega_{19}^2\omega_{16}\omega_{10}v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2 - 2\omega_{15}\omega_{19}^2c_s^2\omega_{16}\omega_{10}v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 +$$
$$2\omega_{19}^2c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 - 2\omega_{15}\omega_{19}^2c_s^2\omega_{10}v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2 - \omega_{15}\omega_{19}^2c_s^2\omega_{16}v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 2\omega_{15}\omega_{19}^2\omega_{16}\omega_{10}v_1^2v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 -$$
$$2\omega_{15}\omega_{19}^2\omega_{16}\omega_{10}v_1^2v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2 - 2\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_1^2v_2^2\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 2\omega_{19}^2\omega_{16}\omega_{10}v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5 +$$
$$2\omega_{15}\omega_{19}^2\omega_{16}\omega_{10}v_1v_2^2\omega_7^3v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 4\omega_{15}\omega_{19}^2c_s^2v_1\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 12\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_1\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 +$$
$$4\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_1v_2^2\omega_7^2v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 2\omega_{15}c_s^2\omega_{16}\omega_{10}v_1\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 2\omega_{15}\omega_{19}^2c_s^2\omega_{16}\omega_{10}v_1^2\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5 +$$
$$2\omega_{15}\omega_{19}^2\omega_{16}\omega_{10}v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{17}\omega_8^2\omega_5^2 - 2\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_1^2v_2^2\omega_7^2\omega_{23}\omega_{17}\omega_8^2\omega_5^2 - 4\omega_{15}\omega_{19}^2\omega_{16}\omega_{10}v_1v_2^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 +$$
$$4\omega_{15}\omega_{19}^2c_s^2\omega_{10}v_1\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 2\omega_{15}\omega_{19}^2c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5 + 2\omega_{15}\omega_{19}^2c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5 +$$
$$4\omega_{15}\omega_{19}\omega_{16}\omega_{10}v_1v_2^2\omega_7^2v_3\omega_{23}\omega_{17}\omega_8^2\omega_5^2 + 2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_1^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 2\omega_{15}\omega_{19}^2c_s^2v_1^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2 -$$
$$2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_1^2\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 4\omega_{15}\omega_{19}^2c_s^2\omega_{16}\omega_{10}v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 2\omega_{15}\omega_{19}^2c_s^2\omega_{16}\omega_{10}v_1\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 +$$
$$2\omega_{19}^2c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 - 2\omega_{15}\omega_{19}^2c_s^2\omega_{10}v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2 - \omega_{15}\omega_{19}^2c_s^2\omega_{16}v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 2\omega_{15}\omega_{19}^2\omega_{16}\omega_{10}v_1^2v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 -$$
$$2\omega_{15}\omega_{19}^2\omega_{16}\omega_{10}v_1^2v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2 - 2\omega_{15}\omega_{19}^2c_s^2\omega_{10}v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 4\omega_{15}\omega_{19}^2c_s^2\omega_{10}v_1\omega_7^2v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2 +$$
$$2\omega_{15}\omega_{19}^2c_s^2\omega_{16}\omega_{10}v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5 - 4\omega_{15}\omega_{19}^2c_s^2\omega_{10}v_1\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 2\omega_{15}\omega_{19}^2\omega_{10}v_1^2v_2^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2 +$$
$$6\omega_{15}\omega_{19}^2c_s^2\omega_{16}\omega_{10}v_1\omega_7v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 4\omega_{15}\omega_{19}^2c_s^2\omega_{16}\omega_{10}v_1\omega_7^2v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 + 2\omega_{15}\omega_{19}^2c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 +$$
$$2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_1^2\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^2 - 2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2 +$$
$$2\omega_{15}\omega_{19}^2c_s^2\omega_{16}\omega_{10}v_1^2\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + \omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^2 + \omega_{15}\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 2\omega_{19}^2\omega_{16}v_1^2v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 -$$
$$2\omega_{19}^2c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5 - 2\omega_{15}\omega_{19}^2\omega_{10}v_1^2v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + \omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2 +$$
$$2\omega_{15}\omega_{19}^2c_s^2\omega_{16}\omega_{10}v_1\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5 - 4\omega_{15}\omega_{19}^2\omega_{16}\omega_{10}v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5 + \omega_{19}^2\omega_{16}v_1^2v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 +$$

$2\omega_{15}\omega_{19}^2\omega_{16}\omega_{10}v_1^2v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5 + 2\omega_{15}\omega_{19}^2c_s^2\omega_{16}v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 + 2\omega_{15}\omega_{19}^2\omega_{16}\omega_{10}v_1^2v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5 -$
$2\omega_{15}\omega_{19}^2v_1^2v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 + 2\omega_{15}\omega_{19}^2c_s^2\omega_{16}\omega_{10}v_1\omega_7^3v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 2\omega_{19}^2\omega_{16}\omega_{10}v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 -$
$2\omega_{15}\omega_{19}^2c_s^2\omega_{16}\omega_{10}v_1^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - \omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 4\omega_{15}\omega_{19}^2c_s^2v_1\omega_7^3v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2 +$
$4\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_1\omega_7^2v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 4\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_1\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5 + 2\omega_{15}\omega_{19}^2c_s^2\omega_{16}\omega_{10}v_1^2\omega_7^2\omega_{23}\omega_{17}\omega_8^2\omega_5^2 +$
$2\omega_{15}\omega_{19}^2c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2 + 4\omega_{15}\omega_{19}^2v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 - 4\omega_{15}\omega_{19}^2\omega_{16}\omega_{10}v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_8\omega_5^2 +$
$2\omega_{15}\omega_{19}^2c_s^2\omega_{16}\omega_{10}v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5 + 4\omega_{15}\omega_{19}^2c_s^2\omega_{16}\omega_{10}v_1\omega_7^3v_3\omega_{23}\omega_{20}\omega_8\omega_5 + 4\omega_{15}c_s^2\omega_{16}\omega_{10}v_1\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 +$
$\omega_{15}\omega_{19}^2c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5 + 4\omega_{15}\omega_{19}^2\omega_{16}\omega_{10}v_1v_2^2\omega_7^2v_3\omega_{23}\omega_{17}\omega_8\omega_5^2 + 4\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}v_1\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 +$
$2\omega_{15}\omega_{19}^2c_s^2\omega_{10}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 + 2\omega_{15}\omega_{19}^2\omega_{16}\omega_{10}v_1^2v_2^2\omega_7^2\omega_{23}\omega_{17}\omega_8^2\omega_5^2 - \omega_{15}\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 -$
$4\omega_{15}\omega_{19}^2c_s^2\omega_{10}v_1\omega_7^3v_3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 - 4\omega_{15}\omega_{19}^2\omega_{16}\omega_{10}v_1v_2^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2 + 2\omega_{15}\omega_{19}^2c_s^2\omega_{16}\omega_{10}v_1\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2$

$C_{51} = 24\omega_{19}\omega_{16}\omega_{10}^2v_2^2\omega_7^3v_3^2\omega_{23} - 18\omega_{19}c_s^2\omega_{16}\omega_{10}^2\omega_7^3\omega_{23} + 18\omega_{19}c_s^4\omega_{16}^2\omega_{10}^3\omega_7^3 + 12\omega_{19}c_s^4\omega_{10}^2\omega_7^3\omega_{23} - 12\omega_{19}c_s^2\omega_{16}^2\omega_{10}v_2^2\omega_7^3\omega_{23} +$
$12\omega_{19}c_s^2\omega_{16}\omega_{10}^3\omega_7\omega_{23} - 12\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3v_3^2 - 12\omega_{19}\omega_{16}^2\omega_7^3v_3^2\omega_{23} - 36\omega_{19}c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2v_3^2 - 42\omega_{19}c_s^4\omega_{16}\omega_{10}^2\omega_7^3\omega_{23} - 6c_s^2\omega_{16}^2\omega_{10}^3v_2^2\omega_7^3 -$
$48\omega_{19}c_s^4\omega_{16}^2\omega_{10}\omega_7^2\omega_{23} - 6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3v_3^2\omega_{23} - 12\omega_{19}\omega_{16}^2\omega_{10}^3v_2^2\omega_7^2v_3^2 + 24\omega_{19}\omega_{16}^2\omega_{10}^2v_2^2\omega_7v_3^2\omega_{23} + 12\omega_{19}\omega_{16}\omega_{10}^2v_2^2\omega_7^3v_3^2 - 12\omega_{19}c_s^2\omega_{16}\omega_{10}^2\omega_7^3 +$
$12\omega_{19}c_s^4\omega_{16}\omega_{10}^3\omega_7\omega_{23} - 36c_s^4\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23} - 6\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^2v_3^2 + 12\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{23} - 12c_s^2\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_{23} + 12\omega_{19}\omega_{16}\omega_{10}^2v_2^2\omega_7^3v_3^2 -$
$24\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3v_3^2\omega_{23} + 108\omega_{19}c_s^2\omega_{16}\omega_{10}^3\omega_7^2v_3^2\omega_{23} - 6\omega_{19}\omega_{16}^2\omega_{10}^2v_2^2\omega_7^3v_3^2 - 12\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2v_2^2\omega_7\omega_{23} - \omega_{19}c_s^2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{23} +$
$12\omega_{19}c_s^2\omega_{16}^2v_2^2\omega_7^3\omega_{23} - 36\omega_{19}c_s^4\omega_{16}^2\omega_{10}^3\omega_7^2 + 18c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3v_3^2\omega_{23} - 84\omega_{19}c_s^4\omega_{16}^2\omega_{10}^2\omega_7\omega_{23} - 12\omega_{19}\omega_{16}\omega_{10}v_2^2\omega_7^3v_3^2\omega_{23} - 36\omega_{19}c_s^2\omega_{10}^3\omega_7^2v_3^2\omega_{23} -$
$12\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2v_3^2\omega_{23} - 12\omega_{19}\omega_{10}^3v_2^2\omega_7^2v_3^2\omega_{23} + 12c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23} - 12\omega_{19}c_s^2\omega_{10}^3\omega_7^2\omega_{23} + 12c_s^2\omega_{16}^2\omega_{10}^3v_2^2\omega_7^2 + 5\omega_{19}c_s^4\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{23} -$
$12\omega_{19}c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23} - 12\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2v_3^2\omega_{23} + 24\omega_{19}\omega_{16}\omega_{10}^3\omega_7v_3^2\omega_{23} + 6\omega_{19}\omega_{16}^2\omega_{10}^3v_2^2\omega_7^3v_3^2 + 12\omega_{19}c_s^2\omega_{16}^3\omega_{10}v_2^2\omega_7\omega_{23} -$
$36\omega_{19}c_s^4\omega_{16}^2\omega_{10}\omega_7^3\omega_{23} - 12\omega_{19}c_s^2\omega_{16}^2\omega_7^3\omega_{23} + 12\omega_{19}\omega_{16}\omega_{10}^3\omega_7^3v_3^2\omega_{23} + 12\omega_{19}c_s^2\omega_{16}\omega_{10}^3\omega_7^3 - 36\omega_{19}c_s^2\omega_{16}\omega_{10}^2\omega_7^2v_3^2\omega_{23} + 18\omega_{19}c_s^2\omega_{16}^2\omega_{10}^3\omega_7^3v_3^2 +$
$12\omega_{19}c_s^2\omega_{16}\omega_{10}^3v_2^2\omega_7^2 - 18\omega_{19}\omega_{16}^2\omega_{10}v_2^2\omega_7^3v_3^2\omega_{23} - 6\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2v_2^2\omega_7^3 + 12\omega_{19}c_s^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23} - 18\omega_{19}c_s^4\omega_{16}^2\omega_{10}^2\omega_7^3 - 12\omega_{19}\omega_{10}^2v_2^2\omega_7^3v_3^2\omega_{23} +$
$12\omega_{16}^2\omega_{10}^2\omega_7^2v_3^2\omega_{23} - 54\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_3^2\omega_{23} + 12\omega_{19}\omega_{10}^3\omega_7^2v_3^2\omega_{23} - 12c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2 - 88\omega_{19}c_s^4\omega_{16}^2\omega_{10}^3\omega_{10}^2\omega_{23} - 24\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7v_3^2\omega_{23} +$
$12\omega_{19}c_s^2\omega_{10}^3\omega_7^2\omega_{23} + 36\omega_{19}c_s^2\omega_{16}\omega_{10}^2\omega_7^3v_3^2 + 6\omega_{19}\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2v_3^2\omega_{23} - 36\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_3^2\omega_{23} - 12\omega_{19}c_s^2\omega_{16}\omega_{10}^3\omega_7^2 - 6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23} +$
$36\omega_{19}\omega_{16}\omega_{10}^3v_2^2\omega_7^2v_3^2\omega_{23} + 12\omega_{19}\omega_{16}^2v_2^2\omega_7^3v_3^2\omega_{23} - 12\omega_{19}\omega_{16}\omega_{10}^3v_2^2\omega_7^3v_3^2 - 12\omega_{19}c_s^2\omega_{16}\omega_{10}^3v_2^2\omega_7\omega_{23} + 6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^3 -$
$72\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2v_3^2\omega_{23} + 12\omega_{19}c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{23} - 12\omega_{19}c_s^2\omega_{16}\omega_{10}^3v_2^2\omega_7^3 + 18c_s^4\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23} + 36\omega_{19}c_s^2\omega_{16}^2\omega_7^3v_3^2\omega_{23} + 6c_s^2\omega_{16}^2\omega_{10}^2v_2^2\omega_7^3\omega_{23} +$
$12\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^2v_3^2 + 12\omega_{19}\omega_{10}^3v_2^2\omega_7^3v_3^2\omega_{23} + 18\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3v_3^2\omega_{23} + 36\omega_{19}c_s^2\omega_{10}^3\omega_7^3v_3^2\omega_{23} + 12\omega_{19}\omega_{10}^2\omega_7^3v_3^2\omega_{23} - 12\omega_{16}^2\omega_{10}^3\omega_7^2v_3^2 +$
$180\omega_{19}c_s^4\omega_{16}^2\omega_{10}\omega_7\omega_{23} - 6\omega_{19}c_s^2\omega_{16}^2\omega_{10}^3\omega_7^3 + 6\omega_{16}^2\omega_{10}^2v_2^2\omega_7^3v_3^2\omega_{23} + 36\omega_{19}c_s^2\omega_{16}\omega_{10}^3\omega_7^2v_3^2 - 6\omega_{19}c_s^4\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23} - 12\omega_{19}c_s^2\omega_{10}^3v_2^2\omega_7^2\omega_{23} +$
$12\omega_{19}c_s^2\omega_{10}^2\omega_7^3\omega_{23} - 2\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2v_2^2\omega_7^3\omega_{23} - 12\omega_{19}c_s^2\omega_{16}^2\omega_{10}^3\omega_7\omega_{23} + 6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3v_3^2 + 18\omega_{19}c_s^2\omega_{16}\omega_{10}^3v_2^2\omega_7^2\omega_{23} + 36\omega_{19}c_s^4\omega_{16}\omega_{10}^2\omega_7^3 -$
$36c_s^2\omega_{16}^2\omega_{10}\omega_7^2v_3^2\omega_{23} + 2\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23} - 36\omega_{19}c_s^2\omega_{16}\omega_{10}^3\omega_7^3v_3^2\omega_{23} + 12\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2v_3^2\omega_{23} + 18\omega_{19}c_s^2\omega_{16}\omega_{10}^2v_2^2\omega_7^3\omega_{23} +$
$30\omega_{19}c_s^4\omega_{16}\omega_{10}^3\omega_7^3\omega_{23} - 24\omega_{19}\omega_{16}\omega_{10}^3v_2^2\omega_7v_3^2\omega_{23} + 12\omega_{19}c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2 - 12\omega_{19}c_s^2\omega_{16}^2\omega_{10}^3v_2^2\omega_7^2\omega_{23} + 24\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2v_3^2\omega_{23} +$
$12\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3v_3^2\omega_{23} - 12\omega_{19}c_s^4\omega_{10}^3\omega_7^3\omega_{23} + 6\omega_{19}c_s^2\omega_{16}\omega_{10}^3\omega_7^3\omega_{23} - 12\omega_{19}\omega_{16}\omega_{10}^2v_2^2\omega_7^2v_3^2\omega_{23} - 6\omega_{16}^2\omega_{10}^3v_2^2\omega_7^3v_3^2 - 96\omega_{19}c_s^4\omega_{16}^2\omega_{10}^3\omega_{23} +$
$72\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7v_3^2\omega_{23} - 12\omega_{19}c_s^2\omega_{10}^2v_2^2\omega_7^3\omega_{23} + 12\omega_{19}\omega_{16}\omega_{10}^3\omega_7^3v_3^2 - 18c_s^2\omega_{16}^2\omega_{10}^3\omega_7^3v_3^2 - 18\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23} + 18\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3v_3^2\omega_{23} +$
$18\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_{23} - 12\omega_{19}c_s^2\omega_{16}^2\omega_{10}^3v_2^2\omega_7^2 + 12\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23} + 36\omega_{19}c_s^4\omega_{16}^2\omega_7^3\omega_{23} - 6\omega_{19}c_s^2\omega_{16}\omega_{10}^3v_2^2\omega_7^3\omega_{23} +$
$12\omega_{19}c_s^2\omega_{16}\omega_{10}^2v_2^2\omega_7^3 - 36\omega_{19}c_s^4\omega_{16}\omega_{10}^3\omega_7^3 - 36\omega_{19}c_s^2\omega_{16}\omega_{10}^3\omega_7^3v_3^2 - 24\omega_{19}\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2v_3^2\omega_{23} + 6\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3 + 36c_s^4\omega_{16}^2\omega_{10}^3\omega_7^2 +$
$150\omega_{19}c_s^4\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23} + 12\omega_{19}c_s^2\omega_{10}^3v_2^2\omega_7^3\omega_{23} + 12\omega_{19}c_s^4\omega_{16}\omega_{10}^3\omega_7^3\omega_{23} - 12\omega_{19}\omega_{16}\omega_{10}^3v_2^2\omega_7^3v_3^2\omega_{23} + 6\omega_{16}^2\omega_{10}^3\omega_7^3v_3^2 + 6\omega_{19}c_s^2\omega_{16}^2\omega_{10}^3v_2^2\omega_7^3 +$
$36\omega_{19}c_s^4\omega_{16}\omega_{10}^3\omega_7^2 + 12\omega_{19}\omega_{16}^2\omega_{10}v_2^2\omega_7^2v_3^2\omega_{23} + 36c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2v_3^2 - 12\omega_{19}\omega_{16}\omega_{10}^3\omega_7^2v_3^2 - 72\omega_{19}c_s^2\omega_{16}\omega_{10}^3\omega_7v_3^2\omega_{23} + 12\omega_{19}c_s^4\omega_{10}^3\omega_7^2\omega_{23} -$
$12\omega_{19}\omega_{10}^3\omega_7^3v_3^2\omega_{23} - 36\omega_{19}c_s^2\omega_{10}^2\omega_7^3v_3^2\omega_{23} + 12\omega_{16}^2\omega_{10}^3v_2^2\omega_7^2v_3^2 + 36\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2v_3^2\omega_{23} - 6\omega_{16}^2\omega_{10}^2\omega_7^3v_3^2\omega_{23} - 18\omega_{19}c_s^2\omega_{16}\omega_{10}^3\omega_7^2\omega_{23} +$
$72\omega_{19}c_s^2\omega_{16}\omega_{10}^2\omega_7^3v_3^2\omega_{23} - 36\omega_{19}\omega_{16}\omega_{10}^3\omega_7^2v_3^2\omega_{23} - 18c_s^4\omega_{16}^2\omega_{10}^3\omega_7^3 - 42\omega_{19}c_s^4\omega_{16}\omega_{10}^3\omega_7^2\omega_{23} + \omega_{19}c_s^2\omega_{16}^2\omega_{10}^3v_2^2\omega_7^3\omega_{23} - 18\omega_{19}c_s^2\omega_{16}^2\omega_{10}\omega_7^3v_3^2$

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

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

$$
\begin{aligned}
C_{54} = {}& 6\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8 - 24\omega_6\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} + 24\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} - 4\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5 + \\
& 12\omega_6\omega_{19}c_s^2\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18} + 2\omega_6\omega_{19}^2\omega_7^2v_3^2\omega_{11}^2\omega_8\omega_5\omega_{18} + 4\omega_{19}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8\omega_{18} + 4\omega_6\omega_{19}^2\omega_7v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5 + 4\omega_6\omega_{19}^2\omega_7^2v_3^2\omega_{11}^2\omega_{18} - \\
& 6\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18} - 2\omega_6\omega_{19}^2\omega_7^2\omega_{11}^2\omega_8\omega_5\omega_{18} + 12\omega_6\omega_{19}^2c_s^2\omega_7\omega_{11}^2\omega_5\omega_{18} + 6\omega_6\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18} - 2\omega_6\omega_{19}^2\omega_7^2v_3^2\omega_{11}^2\omega_8\omega_{18} - \\
& 12\omega_6\omega_{19}c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 4\omega_6\omega_{19}^2\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18} + 12\omega_6\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18} - 12\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18} + 4\omega_6\omega_{19}^2\omega_7v_3^2\omega_{20}\omega_8\omega_5\omega_{18} - \\
& 6\omega_6\omega_{19}c_s^2\omega_7^2\omega_{11}^2\omega_8\omega_5\omega_{18} + 4\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5 - 4\omega_{19}^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} + 4\omega_6\omega_{19}^2\omega_7v_3^2\omega_{11}^2\omega_5\omega_{18} - 4\omega_6\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5 + \\
& 2\omega_6\omega_7^2v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 12\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_5\omega_{18} - 4\omega_6\omega_{19}\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18} - 12\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5 + 4\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8 - \\
& 2\omega_6\omega_{19}^2\omega_7^2v_3^2\omega_{20}\omega_8\omega_5\omega_{18} - 4\omega_6\omega_{19}^2\omega_7^2\omega_{11}^2\omega_{18} - 2\omega_6\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18} + 4\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} + 6\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5 + \\
& 2\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_8\omega_5\omega_{18} + 8\omega_6\omega_{19}\omega_7v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 9\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} + 4\omega_6\omega_{19}\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} - \\
& 12\omega_6\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5 - 4\omega_6\omega_{19}^2\omega_7\omega_{11}^2\omega_5\omega_{18} - 4\omega_6\omega_{19}^2\omega_7\omega_{20}\omega_8\omega_5\omega_{18} + 4\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18} - 8\omega_6\omega_{19}^2\omega_7v_3^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} - \\
& 6\omega_6\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} - 4\omega_{19}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} - 12\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8 - 3\omega_6\omega_{19}^2\omega_7^2v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5 - 4\omega_6\omega_{19}^2\omega_7^2v_3^2\omega_{11}^2\omega_5\omega_{18} - \\
& 2\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8 - 4\omega_6\omega_{19}^2\omega_7v_3^2\omega_{11}^2\omega_8\omega_5\omega_{18} + 12\omega_6\omega_{19}^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} + 12\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5 + 3\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5 - \\
& 4\omega_6\omega_{19}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{18} - 12\omega_6\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}\omega_5\omega_{18} + 2\omega_6\omega_{19}\omega_7^2\omega_{11}^2\omega_8\omega_5\omega_{18} + 4\omega_6\omega_{19}^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5 + 12\omega_6\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_8\omega_5\omega_{18} - \\
& 8\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} - 4\omega_{19}^2\omega_7^2v_3^2\omega_{20}\omega_{11}^2\omega_8 - 12\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{11}^2\omega_5\omega_{18} - 4\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18} - 4\omega_6\omega_7v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + \\
& 6\omega_6c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} - 12\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_{18} - 2\omega_6\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} - 9\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5 + 4\omega_6\omega_{19}^2\omega_7\omega_{20}\omega_{11}\omega_5\omega_{18} - \\
& 4\omega_6\omega_{19}\omega_7v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_{18} + 4\omega_{19}^2\omega_7^2v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5 - 4\omega_6\omega_{19}^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} + 4\omega_6\omega_{19}^2\omega_7v_3^2\omega_{20}\omega_{11}\omega_8\omega_{18} + 12\omega_6\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5 + \\
& 2\omega_6\omega_{19}^2\omega_7^2\omega_{11}^2\omega_8\omega_{18} - 4\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_5\omega_{18} + 3\omega_6\omega_{19}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} - 2\omega_6\omega_{19}\omega_7^2v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} - 4\omega_6\omega_{19}v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + \\
& 4\omega_6\omega_{19}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_5\omega_{18} - 2\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5 - 3\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} - 6\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_8\omega_5\omega_{18} - 12\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} + \\
& 4\omega_{19}^2\omega_7v_3^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} + 2\omega_6\omega_{19}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8\omega_5 + 4\omega_6\omega_{19}\omega_7v_3^2\omega_{11}^2\omega_8\omega_5\omega_{18} - 12\omega_6\omega_{19}^2c_s^2\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18} - 4\omega_6\omega_{19}^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18} - \\
& 4\omega_6\omega_{19}^2\omega_7v_3^2\omega_{20}\omega_{11}\omega_5\omega_{18} - 6\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{11}^2\omega_8\omega_{18} + 12\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} + 8\omega_6\omega_{19}^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} - 2\omega_6\omega_{19}\omega_7^2v_3^2\omega_{11}^2\omega_8\omega_5\omega_{18} - \\
& 4\omega_6\omega_{19}^2\omega_7v_3^2\omega_{20}\omega_{11}\omega_8\omega_5 + 2\omega_6\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 12\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{11}^2\omega_{18} - 12\omega_6c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 2\omega_6\omega_{19}^2\omega_7^2v_3^2\omega_{20}\omega_{11}^2\omega_8 + \\
& 2\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18} + 4\omega_6\omega_{19}^2\omega_7^2\omega_{11}^2\omega_5\omega_{18} + 6\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{11}^2\omega_8\omega_5\omega_{18} + 12\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18} + 4\omega_6\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} - \\
& 2\omega_6\omega_{19}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8\omega_{18} + 4\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_{18} - 4\omega_{19}^2\omega_7v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5 + 2\omega_6\omega_{19}\omega_7^2v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_{18} + 4\omega_6\omega_{19}^2v_3^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}
\end{aligned}
$$

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

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

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

$$C_{57} = 2\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8 - 8\omega_6\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} + 8\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} - 4\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5 +$$
$$4\omega_6\omega_{19}c_s^2\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18} + 6\omega_6\omega_{19}^2\omega_7^2v_3^2\omega_{11}^2\omega_8\omega_5\omega_{18} + 12\omega_{19}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8\omega_{18} + 12\omega_6\omega_{19}^2\omega_7v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5 + 12\omega_6\omega_{19}^2\omega_7^2v_3^2\omega_{11}^2\omega_{18} -$$
$$2\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18} - 2\omega_6\omega_{19}^2\omega_7^2\omega_{11}^2\omega_8\omega_5\omega_{18} + 4\omega_6\omega_{19}^2c_s^2\omega_7\omega_{11}^2\omega_5\omega_{18} + 2\omega_6\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18} - 6\omega_6\omega_{19}^2\omega_7^2v_3^2\omega_{11}^2\omega_8\omega_{18} -$$
$$4\omega_6\omega_{19}c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 4\omega_6\omega_{19}^2\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18} + 4\omega_6\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18} - 4\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18} + 12\omega_6\omega_{19}^2\omega_7v_3^2\omega_{20}\omega_8\omega_5\omega_{18} -$$
$$2\omega_6\omega_{19}c_s^2\omega_7^2\omega_{11}^2\omega_8\omega_5\omega_{18} + 4\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5 - 4\omega_{19}^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} + 12\omega_6\omega_{19}^2\omega_7v_3^2\omega_{11}^2\omega_5\omega_{18} - 4\omega_6\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5 +$$
$$6\omega_6\omega_7^2v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 4\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_5\omega_{18} - 4\omega_6\omega_{19}\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18} - 4\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5 + 4\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8 -$$
$$6\omega_{19}^2\omega_7^2v_3^2\omega_{20}\omega_8\omega_5\omega_{18} - 4\omega_6\omega_{19}^2\omega_7^2\omega_{11}^2\omega_{18} - 2\omega_6\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18} + 4\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} + 2\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5 +$$
$$2\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_8\omega_5\omega_{18} + 24\omega_6\omega_{19}\omega_7v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 3\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} + 4\omega_6\omega_{19}\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} -$$
$$4\omega_6\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5 - 4\omega_6\omega_{19}^2\omega_7\omega_{11}^2\omega_5\omega_{18} - 4\omega_6\omega_{19}^2\omega_7\omega_{20}\omega_8\omega_5\omega_{18} + 4\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18} - 24\omega_6\omega_{19}^2\omega_7v_3^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} -$$
$$2\omega_6\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} - 12\omega_{19}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} - 4\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8 - 9\omega_6\omega_{19}^2\omega_7^2v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5 - 12\omega_6\omega_{19}^2\omega_7^2v_3^2\omega_{11}^2\omega_5\omega_{18} -$$
$$2\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8 - 12\omega_6\omega_{19}^2\omega_7v_3^2\omega_{11}^2\omega_8\omega_5\omega_{18} + 4\omega_6\omega_{19}^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} + 4\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5 + 3\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5 -$$
$$12\omega_6\omega_{19}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{18} - 4\omega_6\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}\omega_5\omega_{18} + 2\omega_6\omega_{19}\omega_7^2\omega_{11}^2\omega_8\omega_5\omega_{18} + 4\omega_6\omega_{19}^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5 + 4\omega_6\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_8\omega_5\omega_{18} -$$
$$8\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} - 12\omega_{19}^2\omega_7^2v_3^2\omega_{20}\omega_{11}^2\omega_8 - 4\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{11}^2\omega_5\omega_{18} - 4\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18} - 12\omega_6\omega_7v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} +$$
$$2\omega_6c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} - 4\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_{18} - 2\omega_6\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} - 3\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5 + 4\omega_6\omega_{19}^2\omega_7\omega_{20}\omega_{11}\omega_5\omega_{18} -$$
$$12\omega_6\omega_{19}\omega_7v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_{18} + 12\omega_{19}^2\omega_7^2v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5 - 4\omega_6\omega_{19}^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} + 12\omega_6\omega_{19}^2\omega_7v_3^2\omega_{20}\omega_{11}\omega_8\omega_{18} + 4\omega_6\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5 +$$
$$2\omega_6\omega_{19}^2\omega_7^2\omega_{11}^2\omega_8\omega_{18} - 4\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_5\omega_{18} + 9\omega_6\omega_{19}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} - 6\omega_6\omega_{19}\omega_7^2v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} - 12\omega_6\omega_{19}v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} +$$
$$12\omega_6\omega_{19}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_5\omega_{18} - 2\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5 - 3\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} - 2\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_8\omega_5\omega_{18} - 4\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} +$$
$$12\omega_{19}^2\omega_7v_3^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} + 6\omega_6\omega_{19}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8\omega_5 + 12\omega_6\omega_{19}\omega_7v_3^2\omega_{11}^2\omega_8\omega_5\omega_{18} - 4\omega_6\omega_{19}^2c_s^2\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18} - 4\omega_6\omega_{19}^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18} -$$
$$12\omega_6\omega_{19}^2\omega_7v_3^2\omega_{20}\omega_{11}\omega_5\omega_{18} - 2\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{11}^2\omega_8\omega_{18} + 4\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} + 8\omega_6\omega_{19}^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} - 6\omega_6\omega_{19}\omega_7^2v_3^2\omega_{11}^2\omega_8\omega_5\omega_{18} -$$
$$12\omega_6\omega_{19}^2\omega_7v_3^2\omega_{20}\omega_{11}\omega_8\omega_5 + 2\omega_6\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 4\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{11}^2\omega_{18} - 4\omega_6c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 6\omega_6\omega_{19}^2\omega_7^2v_3^2\omega_{20}\omega_{11}^2\omega_8 +$$
$$2\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18} + 4\omega_6\omega_{19}^2\omega_7^2\omega_{11}^2\omega_5\omega_{18} + 2\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{11}^2\omega_8\omega_5\omega_{18} + 4\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18} + 4\omega_6\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} -$$
$$6\omega_6\omega_{19}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8\omega_{18} + 4\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_{18} - 12\omega_{19}^2\omega_7v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5 + 6\omega_6\omega_{19}^2\omega_7^2v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_{18} + 12\omega_6\omega_{19}^2v_3^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}$$

$$C_{58} = -36\omega_{19}^2c_s^4\omega_{10}\omega_7^2\omega_{23}\omega_{11} - 12\omega_{19}^2\omega_{10}v_2^2\omega_7^3v_3^2\omega_{11}^2 - 5\omega_{19}^2c_s^2\omega_{16}\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{11} + 36\omega_{19}^2c_s^2v_2^2\omega_7^3\omega_{11}^2 - 12\omega_{19}^2c_s^2\omega_{10}\omega_7^2v_3^2\omega_{23}\omega_{11} -$$
$$6\omega_{19}^2\omega_{16}v_2^2\omega_7^3v_3^2\omega_{23}\omega_{11} + 12\omega_{19}^2\omega_{10}v_2^2\omega_7^2\omega_{23}\omega_{11} + 36\omega_{19}^2c_s^2\omega_{10}v_2^2\omega_7^2\omega_{11}^2 - 12\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7v_3^2\omega_{23}\omega_{11}^2 - 108\omega_{19}^2c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23}\omega_{11} +$$
$$12\omega_{19}^2c_s^2\omega_{10}\omega_7^2\omega_{23}\omega_{11} + 5\omega_{19}^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11} - 18\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2 - 12\omega_{19}^2c_s^2\omega_{10}\omega_7^3v_3^2\omega_{11}^2 - 12\omega_{19}^2c_s^2\omega_{16}\omega_{10}\omega_7^2v_3^2\omega_{23}\omega_{11}^2 -$$
$$12\omega_{19}^2c_s^2\omega_{16}\omega_{10}\omega_7^2v_3^2\omega_{11}^2 - 6\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}\omega_{11}^2 - 12\omega_{19}^2c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{11}^2 + 6\omega_{19}\omega_{16}\omega_{10}v_2^2\omega_7^3v_3^2\omega_{23}\omega_{11} + 18\omega_{19}^2c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{11} -$$
$$12\omega_{19}^2c_s^2\omega_{10}\omega_7^2\omega_{11}^2 - 24\omega_{19}^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{11} - 12\omega_{19}^2\omega_{10}v_2^2\omega_7^2\omega_{11}^2 - 36c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23}\omega_{11}^2 - 6\omega_{19}^2\omega_{16}v_2^2\omega_7^3v_3^2\omega_{11}^2 +$$
$$156\omega_{19}^2c_s^4\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{11}^2 + 12\omega_{19}\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23}\omega_{11} + 24\omega_{19}\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{11}^2 - 12\omega_{19}^2\omega_{10}v_2^2\omega_7^2v_3^2\omega_{23}\omega_{11} - 24\omega_{19}^2\omega_{16}\omega_{10}v_2^2\omega_7\omega_{23}\omega_{11} -$$
$$18\omega_{19}c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{11}^2 - 42\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2 - 6\omega_{19}^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{11} + 18\omega_{19}c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}\omega_{11} - 15\omega_{19}^2c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11} +$$
$$6c_s^2\omega_{16}\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{11}^2 + 48\omega_{19}\omega_{16}\omega_{10}v_2^2\omega_7^2v_3^2\omega_{23}\omega_{11}^2 - 18\omega_{19}^2c_s^4\omega_{16}\omega_7^3\omega_{11}^2 - 6\omega_{19}\omega_{16}\omega_{10}v_2^2\omega_7^3v_3^2\omega_{11}^2 - 72\omega_{19}c_s^2\omega_{16}\omega_{10}v_2^2\omega_7\omega_{23}\omega_{11}^2 -$$
$$48\omega_{19}\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23}\omega_{11}^2 - 36\omega_{19}^2c_s^4\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{11} + 6\omega_{19}^2c_s^2\omega_{16}\omega_7^3v_3^2\omega_{23}\omega_{11} - 6c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2 + 24\omega_{19}^2\omega_{16}\omega_{10}v_2^2\omega_7^2v_3^2\omega_{23}\omega_{11} -$$
$$12\omega_{19}^2\omega_{16}\omega_{10}v_2^2\omega_7^2v_3^2\omega_{11}^2 - 45\omega_{19}c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}\omega_{11}^2 + 3\omega_{19}^2c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2 - 36\omega_{19}^2c_s^2\omega_{10}v_2^2\omega_7^3\omega_{11}^2 - 12\omega_{19}\omega_{16}\omega_{10}v_2^2\omega_7^2v_3^2\omega_{23}\omega_{11} +$$
$$12\omega_{19}^2\omega_{16}\omega_{10}v_2^2\omega_7^2v_3^2\omega_{23} - 9\omega_{19}\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}\omega_{11} + 72\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{11} - 36\omega_{19}^2c_s^2v_2^2\omega_7^3\omega_{23}\omega_{11} - 15\omega_{19}\omega_{16}\omega_{10}v_2^2\omega_7^3v_3^2\omega_{23}\omega_{11}^2 +$$
$$12\omega_{19}^2c_s^2\omega_7^3v_3^2\omega_{11}^2 - 12c_s^2\omega_{16}\omega_{10}\omega_7^2v_3^2\omega_{23}\omega_{11}^2 + 12\omega_{19}^2\omega_{10}v_2^2\omega_7^3v_3^2\omega_{23}\omega_{11} + 36\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11}^2 + 24\omega_{19}^2\omega_{16}v_2^2\omega_7^2v_3^2\omega_{23}\omega_{11} -$$
$$\omega_{19}^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2 - 36\omega_{19}^2c_s^4\omega_7^3\omega_{23}\omega_{11} - 6\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_3^2\omega_{11}^2 + 12\omega_{19}^2v_2^2\omega_7^3\omega_{23}\omega_{11} + 18\omega_{19}^2c_s^2\omega_{16}\omega_{10}\omega_7^2v_3^2\omega_{23}\omega_{11} +$$
$$12\omega_{19}^2c_s^2\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{11} + 12\omega_{19}^2c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{11} - 6c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2 + 36\omega_{19}c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{11}^2 + 12\omega_{19}^2\omega_{10}v_2^2\omega_7^3\omega_{11}^2 +$$
$$\omega_{19}^2c_s^2\omega_{16}\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{11}^2 - 36\omega_{19}^2c_s^2\omega_{10}v_2^2\omega_7^2\omega_{23}\omega_{11} + 12\omega_{19}^2c_s^2\omega_{10}\omega_7^3\omega_{11}^2 - 36\omega_{19}c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23}\omega_{11} + 12\omega_{19}^2c_s^2\omega_{16}\omega_{10}\omega_7v_3^2\omega_{23}\omega_{11}^2 +$$
$$15\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2 - 12\omega_{19}\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11}^2 - 6\omega_{19}\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}\omega_{11} + 6\omega_{19}^2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23} + 6\omega_{16}\omega_{10}v_2^2\omega_7^3v_3^2\omega_{23}\omega_{11}^2 -$$
$$6\omega_{19}^2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{11}^2 + 12\omega_{19}\omega_{16}\omega_{10}v_2^2\omega_7^2v_3^2\omega_{11}^2 + 24\omega_{19}\omega_{16}\omega_{10}v_2^2\omega_7\omega_{23}\omega_{11}^2 + 36\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^2\omega_{11}^2 + 18\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2v_3^2\omega_{23}\omega_{11}^2 +$$
$$54\omega_{19}^2c_s^4\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11} - 6\omega_{19}^2c_s^2\omega_{16}\omega_7^3v_3^2\omega_{11}^2 + 6\omega_{19}\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11} - 12\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{11}^2 - 12\omega_{19}^2v_2^2\omega_7^3\omega_{11}^2 + 36\omega_{19}^2c_s^4\omega_7^3\omega_{11}^2 +$$
$$18c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}\omega_{11}^2 + 27\omega_{19}^2c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^3\omega_{23}\omega_{11} - 12\omega_{19}^2c_s^2\omega_{10}\omega_7^3\omega_{23}\omega_{11} - 18\omega_{19}^2c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11} - 6\omega_{19}^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{11}^2 -$$
$$36\omega_{19}^2c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{11}^2 - 24\omega_{19}\omega_{16}\omega_{10}v_2^2\omega_7v_3^2\omega_{23}\omega_{11}^2 + 36\omega_{19}^2c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23} + 12\omega_{19}^2c_s^2\omega_{10}\omega_7^2v_3^2\omega_{11}^2 + 12\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23}\omega_{11}^2 +$$
$$6\omega_{19}^2c_s^2\omega_{16}\omega_{10}\omega_7^3v_3^2\omega_{11}^2 + 36\omega_{19}^2c_s^4\omega_{10}\omega_7^2\omega_{11}^2 + 3\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2 + 18\omega_{19}^2c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{11}^2 + 6\omega_{19}^2c_s^2\omega_{16}\omega_7^3\omega_{11}^2 + 12\omega_{19}^2\omega_{10}v_2^2\omega_7^2v_3^2\omega_{11}^2 +$$
$$12\omega_{19}\omega_{16}v_2^2\omega_7^3v_3^2\omega_{23}\omega_{11}^2 - 12\omega_{19}\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{11}^2 + 36\omega_{19}^2c_s^4\omega_{10}\omega_7^3\omega_{23}\omega_{11} + 9\omega_{19}^2\omega_{16}\omega_{10}v_2^2\omega_7^3v_3^2\omega_{23}\omega_{11} - 12\omega_{19}^2\omega_{10}v_2^2\omega_7^3\omega_{23}\omega_{11} +$$
$$6\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{11}^2 - 96\omega_{19}^2c_s^4\omega_{16}\omega_{10}\omega_{23}\omega_{11}^2 + 36\omega_{19}^2c_s^2\omega_{10}v_2^2\omega_7^3\omega_{23}\omega_{11} + 12\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2v_3^2\omega_{11}^2 + 12\omega_{19}^2c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2 +$$
$$12\omega_{19}^2v_2^2\omega_7^3v_3^2\omega_{11}^2 + 12\omega_{19}^2\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{11}^2 + 12\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{11}^2 - 18\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{11}^2 - 24\omega_{19}\omega_{16}v_2^2\omega_7^2v_3^2\omega_{23}\omega_{11}^2 +$$
$$12c_s^4\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2 - 12\omega_{19}^2c_s^2\omega_7^3\omega_{11}^2 + 72\omega_{19}^2c_s^2\omega_{16}\omega_{10}v_2^2\omega_7\omega_{23}\omega_{11} - 36\omega_{19}^2\omega_{16}\omega_{10}v_2^2\omega_7^2v_3^2\omega_{23}\omega_{11} - 12\omega_{19}^2\omega_{16}\omega_{10}v_2^2\omega_7^2\omega_{23} -$$
$$18\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^3\omega_{11}^2 - 3\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{11}^2 - 18\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11} - 12\omega_{16}\omega_{10}v_2^2\omega_7^2v_3^2\omega_{23}\omega_{11}^2 + 6\omega_{19}\omega_{16}v_2^2\omega_7^3\omega_{11}^2 -$$

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

$C_{59} = -24\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}^2 - 18\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3v_3^2\omega_{23}\omega_{11}^2 + 12\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{11}^2 - 24\omega_{19}^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{11}^2 - 42\omega_{19}^2c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11} +$
$12\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}^2 + 12\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2 - 12\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3v_3^2\omega_{11}^2 + 12\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11} - 12\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3v_3^2\omega_{23}\omega_{11} -$
$12\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}^2 - 24\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}^2 - 72\omega_{19}^2c_s^2\omega_{16}^2\omega_{10}\omega_7\omega_{23}\omega_{11}^2 + 24\omega_{19}^2c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{11}^2 + 12\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{11}^2 +$
$12\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7v_3^2\omega_{23}\omega_{11}^2 + 12\omega_{19}^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}^2 - 12\omega_{19}^2c_s^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{11}^2 - 24\omega_{19}^2\omega_{16}\omega_{10}^2\omega_7^3v_3^2\omega_{11}^2 - 12\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2 +$
$24\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}^2 + 12\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7v_3^2\omega_{23}\omega_{11} - 24\omega_{19}^2c_s^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}^2 - 132\omega_{19}^2c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}^2 + 24\omega_{19}^2\omega_{16}\omega_{10}^2\omega_7^3\omega_{11}^2 -$
$24\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2v_3^2\omega_{23}\omega_{11}^2 - 48c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}^2 - 84\omega_{19}^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2 - 24\omega_{19}^2c_s^2\omega_{16}\omega_{10}^2\omega_7^3\omega_{11}^2 + 66\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2v_3^2\omega_{23}\omega_{11}^2 -$
$24\omega_{19}^2c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2 - 66\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}^2 + 12\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^3v_3^2\omega_{11}^2 + 6\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11} + 6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3v_3^2\omega_{23}\omega_{11} -$
$66\omega_{19}^2c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}^2 + 18\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11} - 36\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}\omega_{11}^2 - 6\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^3v_3^2\omega_{23} - 24\omega_{16}^2\omega_{10}^2\omega_7^2v_3^2\omega_{23}\omega_{11}^2 -$
$96\omega_{19}^2c_s^2\omega_{16}^2\omega_{10}^2\omega_{23}\omega_{11}^2 + 72\omega_{19}^2c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{23}\omega_{11}^2 - 12\omega_{19}^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}^2 + 12\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7^2v_3^2\omega_{23}\omega_{11}^2 + 24\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{11}^2 -$
$12\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{11}^2 - 12\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}^2 - 12\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{11}^2 + 12\omega_{19}c_s^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2 + 24\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}^2 -$
$12\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23} - 24\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{11}^2 - 12\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^2v_3^2\omega_{23}\omega_{11}^2 + 24\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2v_3^2\omega_{11}^2 - 24\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{11}^2 + 24\omega_{19}^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{11}^2 +$
$36\omega_{19}^2c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23} + 36\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}\omega_{11}^2 + 12\omega_{19}^2\omega_{16}\omega_{10}^2\omega_7^3v_3^2\omega_{23}\omega_{11}^2 - 24\omega_{19}^2c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{11}^2 - 6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11} -$
$12\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}\omega_{11} + 90\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}^2 + 156\omega_{19}^2c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}\omega_{11}^2 - \omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}^2 + 12\omega_{19}^2c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11} +$
$4\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^3v_3^2\omega_{23}\omega_{11} - 12\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11} - 12\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}\omega_{11}^2 + 6\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23} + 12\omega_{19}^2c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}\omega_{11} -$
$24\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^2v_3^2\omega_{11}^2 - 12\omega_{19}^2\omega_{16}\omega_{10}^2\omega_7^2v_3^2\omega_{23}\omega_{11}^2 + 12\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^2v_3^2\omega_{23} - 12\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{11}^2 - 4\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11} +$
$24\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{11}^2 + 3\omega_{19}^2c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}^2 + \omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^3v_3^2\omega_{23}\omega_{11}^2 - 18\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^2v_3^2\omega_{23}\omega_{11} + 48\omega_{19}^2c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2 +$
$24\omega_{19}^2c_s^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2 + 24\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3v_3^2\omega_{11}^2 + 18\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}^2 + 84\omega_{19}^2c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2 - 12\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7^3v_3^2\omega_{11}^2 +$
$12\omega_{16}^2\omega_{10}^2\omega_7^3v_3^2\omega_{23}\omega_{11}^2 + 24c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}^2 - 36\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7v_3^2\omega_{23}\omega_{11}^2 + 12\omega_{19}^2c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{11}^2 + 24\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2 +$
$24\omega_{19}^2\omega_{16}\omega_{10}^2\omega_7^2v_3^2\omega_{11}^2 + 12\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{11}^2 + 24\omega_{19}^2c_s^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}^2 + 60\omega_{19}^2c_s^2\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}^2 - 18\omega_{19}^2c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}$

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

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

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

$$24\omega_{19}c_s^2\omega_7^2 + 24\omega_7^2v_3^2 - 24\omega_{19}c_s^2\omega_7v_3^2 - 96\omega_{19}^2c_s^2v_3^2 + 3\omega_{19}^2\omega_7^3v_3^4 + 18\omega_{19}\omega_7^3v_3^2 + 6\omega_{19}^2c_s^2\omega_7^3v_3^2 - 6\omega_{19}c_s^2\omega_7^3 - 24\omega_{19}^2\omega_7v_3^2 - 12\omega_7^3v_3^2 - 3\omega_{19}^2c_s^4\omega_7^3 + 12c_s^2\omega_7^3v_3^2 - 48\omega_{19}\omega_7v_3^4 - 24\omega_{19}c_s^2\omega_7 - 72\omega_{19}^2c_s^2\omega_7^2v_3^2 - 72\omega_{19}\omega_7^2v_3^2 - 24\omega_{19}^2\omega_7^2v_3^4 + 24\omega_{19}^2c_s^4\omega_7^2$$

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

2.2.5 Conservation of momentum: ρv_3

attached text file: `output_d3q27_nse_mrt1_symbolic_pde_03.txt`

$$v_3\frac{\partial\rho}{\partial t} + \rho\frac{\partial v_3}{\partial t} + \frac{\delta_l v_1 v_3}{\delta_t}\frac{\partial\rho}{\partial x_1} + \frac{\delta_l\rho v_3}{\delta_t}\frac{\partial v_1}{\partial x_1} + \frac{\delta_l\rho v_1}{\delta_t}\frac{\partial v_3}{\partial x_1} + \frac{\delta_l v_2 v_3}{\delta_t}\frac{\partial\rho}{\partial x_2} + \frac{\delta_l\rho v_3}{\delta_t}\frac{\partial v_2}{\partial x_2} + \frac{\delta_l\rho v_2}{\delta_t}\frac{\partial v_3}{\partial x_2} + (c_s^2+v_3^2)\frac{\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_3} +$$
$$\frac{2\delta_l\rho v_3}{\delta_t}\frac{\partial v_3}{\partial x_3} + (-2+\omega_6)\frac{\delta_l^2c_s^2}{2\omega_6\delta_t}\frac{\partial\rho}{\partial x_1}\frac{\partial v_3}{\partial x_1} + (-2+\omega_6)\frac{\delta_l^2c_s^2}{2\omega_6\delta_t}\frac{\partial\rho}{\partial x_1}\frac{\partial v_1}{\partial x_3} + (-2+\omega_7)\frac{\delta_l^2c_s^2}{2\delta_t\omega_7}\frac{\partial\rho}{\partial x_2}\frac{\partial v_3}{\partial x_2} + (-2+\omega_7)\frac{\delta_l^2c_s^2}{2\delta_t\omega_7}\frac{\partial\rho}{\partial x_2}\frac{\partial v_2}{\partial x_3}$$
$$+ (-2-2c_s^2\omega_{11}+4c_s^2-3v_3^2\omega_{11}+\omega_{11}+6v_3^2)\frac{\delta_l^2}{\delta_t\omega_{11}}\frac{\partial\rho}{\partial x_3}\frac{\partial v_3}{\partial x_3} + (2-\omega_{11})\frac{3\delta_l^2\rho v_3}{\delta_t\omega_{11}}\left(\frac{\partial v_3}{\partial x_3}\right)^2 + (-2+\omega_6)\frac{\delta_l^2c_s^2\rho}{2\omega_6\delta_t}\frac{\partial^2 v_3}{\partial x_1^2} +$$
$$(-2+\omega_7)\frac{\delta_l^2c_s^2\rho}{2\delta_t\omega_7}\frac{\partial^2 v_3}{\partial x_2^2} + (-2+\omega_6)\frac{\delta_l^2c_s^2\rho}{2\omega_6\delta_t}\frac{\partial^2 v_1}{\partial x_1\partial x_3} + (-2+\omega_7)\frac{\delta_l^2c_s^2\rho}{2\delta_t\omega_7}\frac{\partial^2 v_2}{\partial x_2\partial x_3} +$$
$$(-2-3c_s^2\omega_{11}+6c_s^2-v_3^2\omega_{11}+\omega_{11}+2v_3^2)\frac{\delta_l^2v_3}{2\delta_t\omega_{11}}\frac{\partial^2\rho}{\partial x_3^2} + (-2-c_s^2\omega_{11}+2c_s^2-3v_3^2\omega_{11}+\omega_{11}+6v_3^2)\frac{\delta_l^2\rho}{2\delta_t\omega_{11}}\frac{\partial^2 v_3}{\partial x_3^2} +$$
$$C_1\frac{\delta_l^3v_1v_3}{12\omega_9\omega_6\delta_t\omega_{13}}\frac{\partial^3\rho}{\partial x_1^3} + C_2\frac{\delta_l^3\rho v_3}{12\omega_9\omega_6\delta_t\omega_{13}}\frac{\partial^3 v_1}{\partial x_1^3} + C_3\frac{\delta_l^3\rho v_1}{6\omega_6^2\delta_t\omega_{13}}\frac{\partial^3 v_3}{\partial x_1^3} +$$
$$(-\omega_6\omega_7\omega_8\omega_5 - 6\omega_7\omega_8 + 6\omega_7\omega_5 - 6\omega_6\omega_8 + 6\omega_6\omega_7\omega_8 - 6\omega_6\omega_7\omega_5 + 6\omega_6\omega_5)\frac{\delta_l^3c_s^2\rho v_3}{6\omega_6\delta_t\omega_7\omega_8\omega_5}\frac{\partial^3 v_2}{\partial x_1^2\partial x_2} +$$
$$(-\omega_6^2\omega_7 - \omega_7\omega_8 + \omega_6\omega_7 + \omega_6^2 - \omega_6\omega_8 + \omega_6\omega_7\omega_8)\frac{\delta_l^3c_s^2\rho v_2}{\omega_6^2\delta_t\omega_7\omega_8}\frac{\partial^3 v_3}{\partial x_1^2\partial x_2} +$$
$$(-\omega_6\omega_7\omega_8\omega_5 - 6\omega_7\omega_8 + 6\omega_7\omega_5 - 6\omega_6\omega_8 + 6\omega_6\omega_7\omega_8 - 6\omega_6\omega_7\omega_5 + 6\omega_6\omega_5)\frac{\delta_l^3c_s^2\rho v_3}{6\omega_6\delta_t\omega_7\omega_8\omega_5}\frac{\partial^3 v_1}{\partial x_1\partial x_2^2} +$$
$$(\omega_7^2 - \omega_7\omega_8 + \omega_6\omega_7 - \omega_6\omega_7^2 - \omega_6\omega_8 + \omega_6\omega_7\omega_8)\frac{\delta_l^3c_s^2\rho v_1}{\omega_6\delta_t\omega_7^2\omega_8}\frac{\partial^3 v_3}{\partial x_1\partial x_2^2} + C_4\frac{\delta_l^3v_2v_3}{12\delta_t\omega_{16}\omega_{10}\omega_7}\frac{\partial^3\rho}{\partial x_2^3} + C_5\frac{\delta_l^3\rho v_3}{12\delta_t\omega_{16}\omega_{10}\omega_7}\frac{\partial^3 v_2}{\partial x_2^3} +$$
$$C_6\frac{\delta_l^3\rho v_2}{6\delta_t\omega_{16}\omega_7^2}\frac{\partial^3 v_3}{\partial x_2^3} + (-12+12\omega_6-\omega_6^2)\frac{\delta_l^3c_s^4}{6\omega_6^2\delta_t}\frac{\partial^3\rho}{\partial x_1^2\partial x_3} + (2\omega_6 - 2\omega_{13} + \omega_6\omega_{13} - \omega_6^2)\frac{\delta_l^3c_s^2\rho v_1}{\omega_6^2\delta_t\omega_{13}}\frac{\partial^3 v_1}{\partial x_1^2\partial x_3} +$$
$$(12\omega_6\omega_{11} - \omega_6^2\omega_{11}\omega_{18} + 12\omega_6\omega_{11}\omega_{18} + 12\omega_6^2 - 12\omega_6\omega_{18} - 12\omega_6^2\omega_{11} - 12\omega_{11}\omega_{18})\frac{\delta_l^3c_s^2\rho v_3}{6\omega_6^2\delta_t\omega_{11}\omega_{18}}\frac{\partial^3 v_3}{\partial x_1^2\partial x_3} +$$
$$(-\omega_6^2\omega_7 - \omega_7\omega_8 + \omega_6\omega_7 + \omega_6^2 - \omega_6\omega_8 + \omega_6\omega_7\omega_8)\frac{\delta_l^3c_s^2\rho v_2}{\omega_6^2\delta_t\omega_7\omega_8}\frac{\partial^3 v_1}{\partial x_1\partial x_2\partial x_3} +$$
$$(\omega_7^2 - \omega_7\omega_8 + \omega_6\omega_7 - \omega_6\omega_7^2 - \omega_6\omega_8 + \omega_6\omega_7\omega_8)\frac{\delta_l^3c_s^2\rho v_1}{\omega_6\delta_t\omega_7^2\omega_8}\frac{\partial^3 v_2}{\partial x_1\partial x_2\partial x_3} + (-12-\omega_7^2+12\omega_7)\frac{\delta_l^3c_s^4}{6\delta_t\omega_7^2}\frac{\partial^3\rho}{\partial x_2^2\partial x_3} +$$
$$(-\omega_7^2 - 2\omega_{16} + \omega_{16}\omega_7 + 2\omega_7)\frac{\delta_l^3c_s^2\rho v_2}{\delta_t\omega_{16}\omega_7^2}\frac{\partial^3 v_2}{\partial x_2^2\partial x_3} +$$
$$(12\omega_{19}\omega_7\omega_{11} + 12\omega_7^2 - 12\omega_{19}\omega_7 + 12\omega_7\omega_{11} - 12\omega_7^2\omega_{11} - 12\omega_{19}\omega_{11} - \omega_{19}\omega_7^2\omega_{11})\frac{\delta_l^3c_s^2\rho v_3}{6\omega_{19}\delta_t\omega_7^2\omega_{11}}\frac{\partial^3 v_3}{\partial x_2^2\partial x_3} +$$
$$C_7\frac{\delta_l^3v_1v_3}{\omega_6\delta_t\omega_{11}^2\omega_{18}}\frac{\partial^3\rho}{\partial x_1\partial x_3^2} + C_8\frac{\delta_l^3\rho v_3}{12\omega_6^2\delta_t\omega_{11}^2\omega_{18}}\frac{\partial^3 v_1}{\partial x_1\partial x_3^2} + C_9\frac{\delta_l^3\rho v_1}{\omega_6\delta_t\omega_{11}^2\omega_{18}}\frac{\partial^3 v_3}{\partial x_1\partial x_3^2} + C_{10}\frac{\delta_l^3v_2v_3}{\omega_{19}\delta_t\omega_7\omega_{11}^2}\frac{\partial^3\rho}{\partial x_2\partial x_3^2} +$$
$$C_{11}\frac{\delta_l^3\rho v_3}{12\omega_{19}\delta_t\omega_7^2\omega_{11}^2}\frac{\partial^3 v_2}{\partial x_2\partial x_3^2} + C_{12}\frac{\delta_l^3\rho v_2}{\omega_{19}\delta_t\omega_7\omega_{11}^2}\frac{\partial^3 v_3}{\partial x_2\partial x_3^2} + C_{13}\frac{\delta_l^3}{12\delta_t\omega_{11}^2}\frac{\partial^3\rho}{\partial x_3^3} +$$
$$(-24-36c_s^2\omega_{11}+11v_3^2\omega_{11}^2+36c_s^2-60v_3^2\omega_{11}+5c_s^2\omega_{11}^2-4\omega_{11}^2+24\omega_{11}+60v_3^2)\frac{\delta_l^3\rho v_3}{6\delta_t\omega_{11}^2}\frac{\partial^3 v_3}{\partial x_3^3} + C_{14}\frac{\delta_l^4v_3}{24\omega_9^2\omega_6^2\delta_t\omega_{13}^2}\frac{\partial^4\rho}{\partial x_1^4} +$$
$$C_{15}\frac{\delta_l^4\rho v_1v_3}{12\omega_9^2\omega_6^2\delta_t\omega_{13}^2}\frac{\partial^4 v_1}{\partial x_1^4} + C_{16}\frac{\delta_l^4\rho}{24\omega_6^3\delta_t\omega_{13}^2}\frac{\partial^4 v_3}{\partial x_1^4} + C_{17}\frac{\delta_l^4v_1v_2v_3}{4\omega_9^2\omega_{12}\omega_6^2\delta_t\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5}\frac{\partial^4\rho}{\partial x_1^3\partial x_2} +$$
$$C_{18}\frac{\delta_l^4\rho v_2v_3}{4\omega_9^2\omega_{12}\omega_6^2\delta_t\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5}\frac{\partial^4 v_1}{\partial x_1^3\partial x_2} + C_{19}\frac{\delta_l^4\rho v_1v_3}{12\omega_9^2\omega_{12}\omega_6^2\delta_t\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2}\frac{\partial^4 v_2}{\partial x_1^3\partial x_2} + C_{20}\frac{\delta_l^4\rho v_1v_2}{2\omega_6^3\delta_t\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2}\frac{\partial^4 v_3}{\partial x_1^3\partial x_2} +$$
$$C_{21}\frac{\delta_l^4c_s^4v_3}{6\omega_6^2\delta_t\omega_7^2\omega_8^2\omega_5^2}\frac{\partial^4\rho}{\partial x_1^2\partial x_2^2} + C_{22}\frac{\delta_l^4c_s^2\rho v_1v_3}{2\omega_9\omega_{12}\omega_6^2\delta_t\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2}\frac{\partial^4 v_1}{\partial x_1^2\partial x_2^2} + C_{23}\frac{\delta_l^4c_s^2\rho v_2v_3}{2\omega_{15}\omega_6^2\delta_t\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2}\frac{\partial^4 v_2}{\partial x_1^2\partial x_2^2} +$$
$$C_{24}\frac{\delta_l^4c_s^2\rho}{2\omega_6^3\delta_t\omega_{16}\omega_{13}\omega_7^3\omega_{17}\omega_{14}\omega_8^2}\frac{\partial^4 v_3}{\partial x_1^2\partial x_2^2} + C_{25}\frac{\delta_l^4v_1v_2v_3}{4\omega_{15}\omega_6\delta_t\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5}\frac{\partial^4\rho}{\partial x_1\partial x_2^3} + C_{26}\frac{\delta_l^4\rho v_2v_3}{12\omega_{15}\omega_6^2\delta_t\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2}\frac{\partial^4 v_1}{\partial x_1\partial x_2^3} +$$
$$C_{27}\frac{\delta_l^4\rho v_1v_3}{4\omega_{15}\omega_6\delta_t\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5}\frac{\partial^4 v_2}{\partial x_1\partial x_2^3} + C_{28}\frac{\delta_l^4\rho v_1v_2}{2\omega_6^2\delta_t\omega_{16}^2\omega_{17}^3\omega_8^2}\frac{\partial^4 v_3}{\partial x_1\partial x_2^3} + C_{29}\frac{\delta_l^4v_3}{24\delta_t\omega_{16}^2\omega_{10}^2\omega_7^2}\frac{\partial^4\rho}{\partial x_2^4} + C_{30}\frac{\delta_l^4\rho v_2v_3}{12\delta_t\omega_{16}^2\omega_{10}^2\omega_7^2}\frac{\partial^4 v_2}{\partial x_2^4} +$$
$$C_{31}\frac{\delta_l^4\rho}{24\delta_t\omega_{16}^2\omega_7^3}\frac{\partial^4 v_3}{\partial x_2^4} + C_{32}\frac{\delta_l^4v_1}{12\omega_9^2\omega_6^3\omega_{22}\delta_t\omega_{13}^2\omega_{11}\omega_{18}}\frac{\partial^4\rho}{\partial x_1^3\partial x_3} + C_{33}\frac{\delta_l^4\rho}{12\omega_9^2\omega_6^3\omega_{22}\delta_t\omega_{13}^2\omega_{11}\omega_{18}}\frac{\partial^4 v_1}{\partial x_1^3\partial x_3} +$$

$$C_{34}\frac{\delta_l^4\rho v_1 v_3}{12\omega_9^2\omega_6^3\omega_{22}\delta_t\omega_{13}^2\omega_{11}^2\omega_{18}^2}\frac{\partial^4 v_3}{\partial x_1^3\partial x_3} + C_{35}\frac{\delta_l^4}{2\omega_6^3\omega_{22}\omega_{19}\delta_t\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}}\frac{\partial^4\rho}{\partial x_1^2\partial x_2\partial x_3} +$$
$$C_{36}\frac{\delta_l^4\rho}{2\omega_6^3\omega_{22}\omega_{19}\delta_t\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}}\frac{\partial^4 v_1}{\partial x_1^2\partial x_2\partial x_3} + C_{37}\frac{\delta_l^4\rho}{12\omega_6^3\omega_{22}\omega_{19}\delta_t\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}}\frac{\partial^4 v_2}{\partial x_1^2\partial x_2\partial x_3} +$$
$$C_{38}\frac{\delta_l^4\rho v_3}{2\omega_6^3\omega_{22}\omega_{19}\delta_t\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2}\frac{\partial^4 v_3}{\partial x_1^2\partial x_2\partial x_3} + C_{39}\frac{\delta_l^4}{2\omega_6^2\omega_{19}\delta_t\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}}\frac{\partial^4\rho}{\partial x_1\partial x_2^2\partial x_3} +$$
$$C_{40}\frac{\delta_l^4\rho}{12\omega_6^3\omega_{19}\delta_t\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}}\frac{\partial^4 v_1}{\partial x_1\partial x_2^2\partial x_3} + C_{41}\frac{\delta_l^4\rho v_2}{\omega_6^2\omega_{19}\delta_t\omega_{16}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}}\frac{\partial^4 v_2}{\partial x_1\partial x_2^2\partial x_3} +$$
$$C_{42}\frac{\delta_l^4\rho}{2\omega_6^2\omega_{19}^2\delta_t\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}}\frac{\partial^4 v_3}{\partial x_1\partial x_2^2\partial x_3} + C_{43}\frac{\delta_l^4 v_2}{12\omega_{19}\delta_t\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}}\frac{\partial^4\rho}{\partial x_2^3\partial x_3} +$$
$$C_{44}\frac{\delta_l^4\rho}{12\omega_{19}\delta_t\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}}\frac{\partial^4 v_2}{\partial x_2^3\partial x_3} + C_{45}\frac{\delta_l^4\rho v_2 v_3}{12\omega_{19}^2\delta_t\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}^2}\frac{\partial^4 v_3}{\partial x_2^3\partial x_3} + C_{46}\frac{\delta_l^4 v_3}{12\omega_6^3\omega_{22}\delta_t\omega_{13}\omega_{11}^3\omega_{18}^2}\frac{\partial^4\rho}{\partial x_1^2\partial x_3^2} +$$
$$C_{47}\frac{\delta_l^4\rho v_1 v_3}{2\omega_9\omega_6^3\omega_{22}\delta_t\omega_{13}^2\omega_{11}^3\omega_{18}^2}\frac{\partial^4 v_1}{\partial x_1^2\partial x_3^2} + C_{48}\frac{\delta_l^4\rho}{12\omega_6^3\omega_{22}\delta_t\omega_{13}\omega_{11}^3\omega_{18}^2}\frac{\partial^4 v_3}{\partial x_1^2\partial x_3^2} + C_{49}\frac{\delta_l^4 v_1 v_2 v_3}{\omega_6^2\omega_{19}^2\delta_t\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2}\frac{\partial^4\rho}{\partial x_1\partial x_2\partial x_3^2} +$$
$$C_{50}\frac{\delta_l^4\rho v_2 v_3}{2\omega_6^3\omega_{19}^2\delta_t\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2}\frac{\partial^4 v_1}{\partial x_1\partial x_2\partial x_3^2} + C_{51}\frac{\delta_l^4\rho v_1 v_3}{2\omega_6^2\omega_{19}^2\delta_t\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2}\frac{\partial^4 v_2}{\partial x_1\partial x_2\partial x_3^2} +$$
$$C_{52}\frac{\delta_l^4\rho v_1 v_2}{\omega_6^2\omega_{19}^2\delta_t\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2}\frac{\partial^4 v_3}{\partial x_1\partial x_2\partial x_3^2} + C_{53}\frac{\delta_l^4 v_3}{12\omega_{19}^2\delta_t\omega_{16}\omega_7^3\omega_{23}\omega_{11}^3}\frac{\partial^4\rho}{\partial x_2^2\partial x_3^2} + C_{54}\frac{\delta_l^4\rho v_2 v_3}{2\omega_{19}^2\delta_t\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}^3}\frac{\partial^4 v_2}{\partial x_2^2\partial x_3^2} +$$
$$C_{55}\frac{\delta_l^4\rho}{12\omega_{19}^2\delta_t\omega_{16}\omega_7^3\omega_{23}\omega_{11}^3}\frac{\partial^4 v_3}{\partial x_2^2\partial x_3^2} + C_{56}\frac{\delta_l^4 v_1}{4\omega_6^2\delta_t\omega_{11}^3\omega_{18}^2}\frac{\partial^4\rho}{\partial x_1\partial x_3^3} + C_{57}\frac{\delta_l^4\rho}{12\omega_6^3\delta_t\omega_{11}^3\omega_{18}^2}\frac{\partial^4 v_1}{\partial x_1\partial x_3^3} + C_{58}\frac{\delta_l^4\rho v_1 v_3}{4\omega_6^2\delta_t\omega_{11}^3\omega_{18}^2}\frac{\partial^4 v_3}{\partial x_1\partial x_3^3} +$$
$$C_{59}\frac{\delta_l^4 v_2}{4\omega_{19}^2\delta_t\omega_7^2\omega_{11}^3}\frac{\partial^4\rho}{\partial x_2\partial x_3^3} + C_{60}\frac{\delta_l^4\rho}{12\omega_{19}^2\delta_t\omega_7^3\omega_{11}^3}\frac{\partial^4 v_2}{\partial x_2\partial x_3^3} + C_{61}\frac{\delta_l^4\rho v_2 v_3}{4\omega_{19}^2\delta_t\omega_7^2\omega_{11}^3}\frac{\partial^4 v_3}{\partial x_2\partial x_3^3} + C_{62}\frac{\delta_l^4 v_3}{12\delta_t\omega_{11}^3}\frac{\partial^4\rho}{\partial x_3^4} + C_{63}\frac{\delta_l^4\rho}{12\delta_t\omega_{11}^3}\frac{\partial^4 v_3}{\partial x_3^4}$$
$$= 0,$$

where:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$24\omega_9^2\omega_6c_s^4 + 48\omega_9^2\omega_6c_s^4\omega_{13} - 30\omega_9^2\omega_6^2v_1^4\omega_{13} + \omega_9^2\omega_6^2c_s^2\omega_{13}^2 + 48\omega_9v_1^4\omega_{13}^2 - 216\omega_9^2c_s^2v_1^2\omega_{13} - 72\omega_6v_1^2\omega_{13}^2 + 14\omega_9\omega_6^2c_s^4\omega_{13}^2 + 72\omega_9^2\omega_6^2c_s^2v_1^2 -$
$24\omega_9\omega_6^2v_1^2\omega_{13} - 12\omega_9^2\omega_6^2c_s^2 - 12\omega_9^2\omega_6^2c_s^2v_1^2\omega_{13}^2 + 12\omega_6^2c_s^2\omega_{13}^2 - 96\omega_9\omega_6v_1^4\omega_{13}^2 + 3\omega_9^2\omega_6^2v_1^2\omega_{13}^2 + 24\omega_9c_s^4\omega_{13}^2 + 216\omega_9c_s^2v_1^2\omega_{13}^2 - 12\omega_9^2\omega_6^2c_s^4\omega_{13} +$
$24\omega_9^2\omega_6c_s^2 + 24\omega_9^2c_s^2\omega_{13} + 432\omega_9^2\omega_6c_s^2v_1^2\omega_{13} + 96\omega_9^2\omega_6v_1^4\omega_{13} + 12\omega_9^2\omega_6^2c_s^4 + 48\omega_9\omega_6v_1^2\omega_{13} - 144\omega_9\omega_6c_s^2v_1^2\omega_{13} - 144\omega_9^2\omega_6c_s^2v_1^2 -$
$48\omega_9\omega_6c_s^4\omega_{13}^2 + 36\omega_6^2v_1^2\omega_{13}^2 + 288\omega_6c_s^2v_1^2\omega_{13}^2 + 36\omega_9\omega_6^2v_1^4\omega_{13}^2 - 24\omega_6c_s^2\omega_{13}^2 - 14\omega_9\omega_6^2c_s^2\omega_{13}^2 + 72\omega_6v_1^4\omega_{13}^2 + 24\omega_9\omega_6^2v_1^4\omega_{13} + 12\omega_9^2\omega_6^2v_1^4 +$
$96\omega_9\omega_6v_1^2\omega_{13}^2 - 12\omega_6^2c_s^4\omega_{13}^2 - 432\omega_9\omega_6c_s^2v_1^2\omega_{13}^2 - 48\omega_9^2v_1^4\omega_{13} - 48\omega_9^2\omega_6c_s^2\omega_{13} + 30\omega_9^2\omega_6^2v_1^2\omega_{13} + 24\omega_9^2\omega_6v_1^2 - \omega_9^2\omega_6^2c_s^4\omega_{13}^2 - 48\omega_9v_1^2\omega_{13}^2$

$C_{15} = 72\omega_9\omega_6\omega_{13}^2 - 120\omega_9\omega_6c_s^2\omega_{13}^2 + 61\omega_9\omega_6^2v_1^2\omega_{13}^2 - 36\omega_9\omega_{13}^2 + 24\omega_9^2\omega_6^2v_1^2 + 2\omega_9^2\omega_6^2\omega_{13}^2 + 60\omega_9c_s^2\omega_{13}^2 - 33\omega_9^2\omega_6^2c_s^2\omega_{13} + 24\omega_6^2\omega_{13}^2 + 24\omega_9^2\omega_6 +$
$168\omega_9^2\omega_6v_1^2\omega_{13} - 84\omega_9^2v_1^2\omega_{13} - 12\omega_9^2\omega_6^2 + 21\omega_9^2\omega_6^2\omega_{13} - 3\omega_9^2\omega_6^2c_s^2\omega_{13}^2 + 120\omega_6v_1^2\omega_{13}^2 + 36\omega_9\omega_6^2v_1^2\omega_{13} + 24\omega_9^2\omega_6^2c_s^2 - 36\omega_6^2c_s^2\omega_{13}^2 + 24\omega_9\omega_6\omega_{13} -$
$24\omega_9\omega_6c_s^2\omega_{13} - 5\omega_9^2\omega_6^2v_1^2\omega_{13}^2 + 36\omega_9^2\omega_{13} - 48\omega_9^2\omega_6c_s^2 - 60\omega_9^2c_s^2\omega_{13} - 12\omega_9\omega_6^2\omega_{13} - 72\omega_9\omega_6v_1^2\omega_{13} - 60\omega_6^2v_1^2\omega_{13}^2 + 12\omega_9\omega_6^2c_s^2\omega_{13} - 72\omega_9^2\omega_6\omega_{13} +$
$72\omega_6c_s^2\omega_{13}^2 + 39\omega_9\omega_6^2c_s^2\omega_{13}^2 - 48\omega_6\omega_{13}^2 - 168\omega_9\omega_6v_1^2\omega_{13}^2 + 120\omega_9^2\omega_6c_s^2\omega_{13} - 25\omega_9\omega_6^2\omega_{13}^2 - 51\omega_9^2\omega_6^2v_1^2\omega_{13} - 48\omega_9^2\omega_6v_1^2 + 84\omega_9v_1^2\omega_{13}^2$

$C_{16} = 24\omega_6^2c_s^2\omega_{13} + 24\omega_6^2v_1^2 - 24\omega_6^2v_1^4\omega_{13}^2 + 6\omega_6^3c_s^4\omega_{13} + 48\omega_6v_1^2\omega_{13} - 48\omega_6c_s^4\omega_{13}^2 - 3\omega_6^3v_1^2\omega_{13}^2 - 72\omega_6^2c_s^2v_1^2\omega_{13}^2 - 12\omega_6^3c_s^2v_1^2\omega_{13} - 96c_s^2v_1^2\omega_{13}^2 +$
$6\omega_6^3c_s^2v_1^2\omega_{13}^2 - 24\omega_6^2c_s^2v_1^2 - 12\omega_6^3v_1^2 + 48\omega_6^2c_s^2v_1^2\omega_{13} + 24c_s^4\omega_{13}^2 - 24\omega_6v_1^2\omega_{13}^2 - 3\omega_6^3c_s^4\omega_{13}^2 + 18\omega_6^3v_1^2\omega_{13} + 24\omega_6c_s^4\omega_{13} - 8\omega_6^2c_s^2\omega_{13}^2 +$
$72\omega_6^2v_1^4\omega_{13} + 12\omega_6^3v_1^4 - 24\omega_6^2c_s^4\omega_{13} + 24\omega_6^2v_1^2\omega_{13}^2 - 48\omega_6v_1^4\omega_{13} + 156\omega_6c_s^2v_1^2\omega_{13}^2 - 6\omega_6^3c_s^2\omega_{13} + 3\omega_6^3v_1^4\omega_{13}^2 + 12\omega_6c_s^2\omega_{13}^2 + \omega_6^3c_s^2\omega_{13}^2 +$
$24\omega_6v_1^4\omega_{13}^2 - 24\omega_6c_s^2v_1^2\omega_{13} - 24\omega_6c_s^2\omega_{13} - 18\omega_6^3v_1^4\omega_{13} + 24\omega_6^2c_s^4\omega_{13}^2 - 24\omega_6^2v_1^4 - 72\omega_6^2v_1^2\omega_{13} + 12\omega_6^3c_s^2v_1^2$

$C_{17} = 2\omega_9\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5 - 4\omega_9\omega_{12}\omega_6\omega_{13}^2\omega_{14}\omega_8\omega_5 + 4\omega_9\omega_{12}\omega_6v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8 - 12\omega_9^2\omega_{12}\omega_6c_s^2\omega_{13}\omega_{14}\omega_8\omega_5 + 2\omega_{12}\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5 +$
$4\omega_9^2\omega_{12}\omega_6v_1^2\omega_{13}\omega_7\omega_8\omega_5 + 2\omega_9^2\omega_{12}\omega_6^2v_1^2\omega_7\omega_{14}\omega_8\omega_5 + 12\omega_9\omega_{12}\omega_6c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5 + 4\omega_9\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5 + 4\omega_{12}\omega_6v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5 +$
$4\omega_9^2\omega_{12}\omega_6\omega_{13}^2\omega_7\omega_8\omega_5 + 8\omega_9\omega_{12}\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5 + 6\omega_9^2\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_8\omega_5 - 2\omega_9^2\omega_{12}\omega_6^2\omega_{13}^2\omega_7\omega_8\omega_5 + 24\omega_9^2\omega_{12}\omega_6c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5 -$
$4\omega_9\omega_{12}\omega_6v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_5 - 24\omega_9\omega_{12}\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5 + 2\omega_9\omega_{12}\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5 - 12\omega_9^2\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8 - 6\omega_9^2\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_8\omega_5 -$
$9\omega_9^2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5 - 2\omega_9^2\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5 - 3\omega_9\omega_{12}\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5 + 4\omega_9^2\omega_{12}\omega_6^2v_1^2\omega_{13}^2\omega_5 - 12\omega_9^2\omega_{12}\omega_6c_s^2\omega_{13}^2\omega_7\omega_8\omega_5 -$
$2\omega_9^2\omega_{12}\omega_6^2v_1^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5 + 4\omega_9\omega_{12}\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_5 + 4\omega_9^2\omega_{12}\omega_6\omega_{13}\omega_{14}\omega_8\omega_5 - 4\omega_9\omega_{12}\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5 - 2\omega_9^2\omega_{12}\omega_6^2v_1^2\omega_{13}^2\omega_8\omega_5 +$
$3\omega_9\omega_{12}\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5 + 12\omega_9^2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8 + 2\omega_9^2\omega_6^2v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_5 + 4\omega_9^2\omega_6v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5 - 4\omega_9\omega_{12}\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8 -$
$2\omega_9^2\omega_{12}\omega_6^2v_1^2\omega_{13}\omega_7\omega_8\omega_5 - 4\omega_9^2\omega_{12}\omega_6v_1^2\omega_7\omega_{14}\omega_8\omega_5 - 2\omega_9^2\omega_{12}\omega_6^2\omega_{13}\omega_{14}\omega_8\omega_5 - 4\omega_{12}\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5 + 6\omega_9^2\omega_{12}\omega_6^2c_s^2\omega_{13}\omega_{14}\omega_8\omega_5 -$
$12\omega_9\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5 - 2\omega_9\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5 + 4\omega_9^2\omega_6^2\omega_{13}^2\omega_{14}\omega_8 - 6\omega_9\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5 + 4\omega_9\omega_{12}v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5 -$
$6\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5 + 4\omega_9^2\omega_{12}\omega_6^2\omega_{13}^2\omega_7\omega_5 - 12\omega_9^2\omega_{12}c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5 + 4\omega_9^2\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8 + 8\omega_9^2\omega_{12}\omega_6v_1^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5 -$
$8\omega_9^2\omega_{12}\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5 - 4\omega_9^2\omega_{12}\omega_6\omega_{13}\omega_7\omega_8\omega_5 - 12\omega_9^2\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8 + 6\omega_9^2\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5 - 3\omega_9^2\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5 +$
$4\omega_9\omega_{12}\omega_6^2v_1^2\omega_{13}^2\omega_{14}\omega_8 - 4\omega_9^2\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8 + 12\omega_9\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_5 - 4\omega_9^2\omega_{12}\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_5 - 4\omega_9^2\omega_{12}\omega_6v_1^2\omega_{13}^2\omega_7\omega_8\omega_5 -$
$8\omega_9\omega_{12}\omega_6v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5 + 3\omega_9^2\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5 + 4\omega_9^2\omega_{12}\omega_{13}\omega_7\omega_{14}\omega_8\omega_5 + 4\omega_9^2\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8 + 6\omega_9\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5 +$
$4\omega_9^2\omega_{12}\omega_6v_1^2\omega_{13}^2\omega_7\omega_5 + 2\omega_9^2\omega_{12}\omega_6^2\omega_{13}\omega_7\omega_8\omega_5 + 2\omega_9^2\omega_{12}\omega_6^2v_1^2\omega_{13}\omega_{14}\omega_8\omega_5 - 6\omega_9^2\omega_{12}\omega_6^2c_s^2\omega_{13}\omega_7\omega_8\omega_5 - 12\omega_9^2\omega_{12}\omega_6c_s^2\omega_7\omega_{14}\omega_8\omega_5 -$
$12\omega_9\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8 + 12\omega_{12}\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5 + 2\omega_9^2\omega_{12}\omega_6^2\omega_{13}^2\omega_8\omega_5 - 2\omega_9\omega_{12}\omega_6^2v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_5 - 4\omega_9\omega_{12}\omega_6^2v_1^2\omega_{13}^2\omega_{14}\omega_5 -$
$4\omega_9^2\omega_{12}\omega_6^2\omega_{13}^2\omega_5 - 4\omega_9\omega_{12}\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_5 + 12\omega_9^2\omega_{12}\omega_6c_s^2\omega_{13}^2\omega_7\omega_5 - 4\omega_9^2\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5 - 4\omega_9\omega_6v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5 +$
$12\omega_9^2\omega_{12}\omega_6c_s^2\omega_{13}\omega_7\omega_8\omega_5 + 6\omega_9^2\omega_{12}\omega_6^2c_s^2\omega_7\omega_{14}\omega_8\omega_5 - 4\omega_9^2\omega_{12}\omega_6v_1^2\omega_{13}\omega_{14}\omega_8\omega_5 - 2\omega_9^2\omega_{12}\omega_6^2\omega_7\omega_{14}\omega_8\omega_5 + 12\omega_9\omega_{12}\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8 -$
$4\omega_9\omega_{12}\omega_6^2\omega_{13}^2\omega_{14}\omega_8 - 4\omega_9^2\omega_{12}v_1^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5 - 12\omega_9\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_5 - 4\omega_9\omega_{12}\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8 + 4\omega_9\omega_{12}\omega_6v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_5 -$
$2\omega_{12}\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5 + 12\omega_9\omega_{12}c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5 + 4\omega_9^2\omega_{12}\omega_6\omega_7\omega_{14}\omega_8\omega_5 - 6\omega_9^2\omega_{12}\omega_6^2c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5 - 4\omega_9^2\omega_6v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8 +$
$2\omega_9^2\omega_{12}\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5 - 4\omega_9^2\omega_6^2v_1^2\omega_{13}^2\omega_{14}\omega_8 + 4\omega_9\omega_{12}\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8 - 4\omega_9^2\omega_{12}\omega_6\omega_{13}^2\omega_7\omega_5 + 12\omega_9^2\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5 +$
$4\omega_9\omega_{12}\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_5 - 12\omega_9^2\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_5 + 4\omega_9\omega_{12}\omega_6^2\omega_{13}^2\omega_{14}\omega_5 - 12\omega_9\omega_{12}\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_5 + 2\omega_9^2\omega_{12}\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_8\omega_5 +$
$9\omega_9\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5 + 12\omega_9\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8 + 12\omega_9^2\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_5$

$C_{18} = 6\omega_9\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5 - 4\omega_9\omega_{12}\omega_6\omega_{13}^2\omega_{14}\omega_8\omega_5 + 12\omega_9\omega_{12}\omega_6v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8 - 4\omega_9^2\omega_{12}\omega_6c_s^2\omega_{13}\omega_{14}\omega_8\omega_5 + 2\omega_{12}\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5 +$
$12\omega_9^2\omega_{12}\omega_6v_1^2\omega_{13}\omega_7\omega_8\omega_5 + 6\omega_9^2\omega_{12}\omega_6^2v_1^2\omega_7\omega_{14}\omega_8\omega_5 + 4\omega_9\omega_{12}\omega_6c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5 + 4\omega_9\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5 + 12\omega_{12}\omega_6v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5 +$
$4\omega_9^2\omega_{12}\omega_6\omega_{13}^2\omega_7\omega_8\omega_5 + 8\omega_9\omega_{12}\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5 + 2\omega_9^2\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_8\omega_5 - 2\omega_9^2\omega_{12}\omega_6^2\omega_{13}^2\omega_7\omega_8\omega_5 + 8\omega_9^2\omega_{12}\omega_6c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5 -$
$12\omega_9\omega_{12}\omega_6v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_5 - 8\omega_9\omega_{12}\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5 + 2\omega_9\omega_{12}\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5 - 4\omega_9^2\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8 - 2\omega_9^2\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_8\omega_5 -$
$3\omega_9^2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5 - 2\omega_9^2\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5 - 3\omega_9\omega_{12}\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5 + 12\omega_9^2\omega_{12}\omega_6^2v_1^2\omega_{13}^2\omega_5 - 4\omega_9^2\omega_{12}\omega_6c_s^2\omega_{13}^2\omega_7\omega_8\omega_5 -$
$6\omega_9^2\omega_{12}\omega_6^2v_1^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5 + 12\omega_9\omega_{12}\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_5 + 4\omega_9^2\omega_{12}\omega_6\omega_{13}\omega_{14}\omega_8\omega_5 - 4\omega_9\omega_{12}\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5 - 6\omega_9^2\omega_{12}\omega_6^2v_1^2\omega_{13}^2\omega_8\omega_5 +$
$9\omega_9\omega_{12}\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5 + 4\omega_9^2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8 + 6\omega_9^2\omega_6^2v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_5 + 12\omega_9^2\omega_6v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5 - 12\omega_9\omega_{12}\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8 -$
$6\omega_9^2\omega_{12}\omega_6^2v_1^2\omega_{13}\omega_7\omega_8\omega_5 - 12\omega_9^2\omega_{12}\omega_6v_1^2\omega_7\omega_{14}\omega_8\omega_5 - 2\omega_9^2\omega_{12}\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5 - 4\omega_{12}\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5 + 2\omega_9^2\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5 -$
$4\omega_9\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5 - 2\omega_9^2\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5 + 4\omega_9^2\omega_6^2\omega_{13}^2\omega_{14}\omega_8 - 2\omega_9\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5 + 12\omega_9\omega_{12}v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5 -$
$2\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5 + 4\omega_9^2\omega_{12}\omega_6^2\omega_{13}^2\omega_7\omega_5 - 4\omega_9^2\omega_{12}c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5 + 12\omega_9^2\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8 + 24\omega_9^2\omega_{12}\omega_6v_1^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5 -$
$8\omega_9^2\omega_{12}\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5 - 4\omega_9^2\omega_{12}\omega_6\omega_{13}\omega_7\omega_8\omega_5 - 4\omega_9^2\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8 + 2\omega_9^2\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5 - 9\omega_9^2\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5 +$
$12\omega_9\omega_{12}\omega_6^2v_1^2\omega_{13}^2\omega_{14}\omega_8 - 4\omega_9^2\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8 + 4\omega_9\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_5 - 12\omega_9^2\omega_{12}\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_5 - 12\omega_9^2\omega_{12}\omega_6v_1^2\omega_{13}^2\omega_7\omega_8\omega_5 -$
$24\omega_9\omega_{12}\omega_6v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5 + 3\omega_9^2\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5 + 4\omega_9^2\omega_{12}\omega_{13}\omega_7\omega_{14}\omega_8\omega_5 + 4\omega_9^2\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8 + 2\omega_9\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5 +$
$12\omega_9^2\omega_{12}\omega_6v_1^2\omega_{13}^2\omega_7\omega_5 + 2\omega_9^2\omega_{12}\omega_6^2\omega_{13}\omega_7\omega_8\omega_5 + 6\omega_9^2\omega_{12}\omega_6^2v_1^2\omega_{13}\omega_{14}\omega_8\omega_5 - 2\omega_9^2\omega_{12}\omega_6^2c_s^2\omega_{13}\omega_7\omega_8\omega_5 - 4\omega_9^2\omega_{12}\omega_6c_s^2\omega_7\omega_{14}\omega_8\omega_5 -$
$4\omega_9\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8 + 4\omega_{12}\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5 + 2\omega_9^2\omega_{12}\omega_6^2\omega_{13}^2\omega_8\omega_5 - 6\omega_9\omega_{12}\omega_6^2v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_5 - 12\omega_9\omega_{12}\omega_6^2v_1^2\omega_{13}^2\omega_{14}\omega_5 -$
$4\omega_9^2\omega_{12}\omega_6^2\omega_{13}^2\omega_5 - 4\omega_9\omega_{12}\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_5 + 4\omega_9^2\omega_{12}\omega_6c_s^2\omega_{13}^2\omega_7\omega_5 - 4\omega_9^2\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5 - 12\omega_9\omega_6v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5 +$
$4\omega_9^2\omega_{12}\omega_6c_s^2\omega_{13}\omega_7\omega_8\omega_5 + 2\omega_9^2\omega_{12}\omega_6^2c_s^2\omega_7\omega_{14}\omega_8\omega_5 - 12\omega_9^2\omega_{12}\omega_6v_1^2\omega_{13}\omega_{14}\omega_8\omega_5 - 2\omega_9^2\omega_{12}\omega_6^2\omega_7\omega_{14}\omega_8\omega_5 + 4\omega_9\omega_{12}\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8 -$
$4\omega_9\omega_{12}\omega_6^2\omega_{13}^2\omega_{14}\omega_8 - 12\omega_9^2\omega_{12}v_1^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5 - 4\omega_9\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_5 - 4\omega_9\omega_{12}\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8 + 12\omega_9\omega_{12}\omega_6v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_5 -$
$6\omega_{12}\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5 + 4\omega_9\omega_{12}c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5 + 4\omega_9^2\omega_{12}\omega_6\omega_7\omega_{14}\omega_8\omega_5 - 2\omega_9^2\omega_{12}\omega_6^2c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5 - 12\omega_9^2\omega_6v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8 +$
$2\omega_9^2\omega_{12}\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5 - 12\omega_9^2\omega_6^2v_1^2\omega_{13}^2\omega_{14}\omega_8 + 4\omega_9\omega_{12}\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8 - 4\omega_9^2\omega_{12}\omega_6\omega_{13}^2\omega_7\omega_5 + 4\omega_9^2\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5 +$
$4\omega_9\omega_{12}\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_5 - 4\omega_9^2\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_5 + 4\omega_9\omega_{12}\omega_6^2\omega_{13}^2\omega_{14}\omega_5 - 4\omega_9\omega_{12}\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_5 + 6\omega_9^2\omega_{12}\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_8\omega_5 +$
$3\omega_9\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5 + 4\omega_9\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8 + 4\omega_9^2\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_5$

$C_{19} = 12\omega_9\omega_6\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2 + 6\omega_9^2\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2 - 6\omega_9^2\omega_{12}\omega_6^2v_1^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5 + 6\omega_{12}\omega_6^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2 -$
$6\omega_9^2\omega_{12}\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^2 + 6\omega_9^2\omega_{12}\omega_6^2v_1^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2 + 6\omega_9\omega_6^2v_1^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2 - 12\omega_9^2\omega_{12}\omega_6c_s^2\omega_{13}^2\omega_7^2\omega_8^2\omega_5^2 + 12\omega_{12}\omega_6v_1^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2 -$

$12\omega_9^2\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8^2\omega_5 - 12\omega_9^2\omega_6v_1^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5 + 12\omega_9^2\omega_{12}\omega_6v_1^2\omega_{13}^2\omega_7^2\omega_8\omega_5^2 + 54\omega_9^2\omega_{12}\omega_6c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2 +$
$18\omega_9\omega_{12}\omega_6\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2 + 42\omega_9^2\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5 - 6\omega_9^2\omega_{12}\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5 - 24\omega_9^2\omega_{12}c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5 - 9\omega_9^2\omega_6^2c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2 -$
$6\omega_9^2\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2 - 6\omega_9^2\omega_{12}\omega_6^2v_1^2\omega_{13}\omega_7^2\omega_8^2\omega_5^2 - 54\omega_9\omega_{12}\omega_6c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2 + 30\omega_9^2\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8\omega_5^2 - 6\omega_9^2\omega_{12}\omega_6^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8\omega_5^2 +$
$12\omega_9^2\omega_6^2c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5 + 12\omega_9^2\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5 - 12\omega_9^2\omega_{12}\omega_6^2v_1^2\omega_{13}^2\omega_7^2\omega_8\omega_5^2 + 12\omega_9^2\omega_{12}\omega_6\omega_{13}^2\omega_7^2\omega_8^2\omega_5^2 - 3\omega_9^2\omega_{12}\omega_6^2v_1^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2 -$
$4\omega_9\omega_{12}\omega_6^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2 - 12\omega_9^2\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8\omega_5 - 24\omega_9\omega_{12}\omega_6c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5 + 24\omega_9^2\omega_{12}\omega_6c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5 -$
$24\omega_9^2\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2 + 12\omega_9^2\omega_6v_1^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2 + 4\omega_9\omega_{12}\omega_6^2v_1^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2 - 6\omega_9^2\omega_{12}\omega_6v_1^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8\omega_5^2 +$
$6\omega_9^2\omega_{12}\omega_6\omega_{13}^2\omega_7^2\omega_{14}\omega_8\omega_5^2 - 12\omega_9\omega_{12}\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2 - 12\omega_9^2\omega_{12}\omega_6^2\omega_{13}^2\omega_7\omega_8\omega_5^2 + 12\omega_9^2\omega_{12}\omega_6v_1^2\omega_{13}\omega_7^2\omega_8^2\omega_5^2 + 12\omega_9^2\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_8\omega_5^2 +$
$54\omega_9^2\omega_{12}\omega_6c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5 - 6\omega_9\omega_6^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2 - 12\omega_9\omega_6c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2 - 6\omega_9^2\omega_{12}\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_8^2\omega_5^2 - 12\omega_9^2\omega_{12}\omega_6v_1^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2 -$
$12\omega_{12}\omega_6\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2 + 12\omega_9^2\omega_{12}\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^2 - 12\omega_9^2\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5 - 6\omega_9^2\omega_{12}\omega_6^2\omega_{13}^2\omega_7^2\omega_8^2\omega_5^2 + \omega_9^2\omega_{12}\omega_6^2v_1^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2 +$
$6\omega_9^2\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7^2\omega_8^2\omega_5^2 - 36\omega_9^2\omega_{12}c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2 + 12\omega_9^2\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_5^2 + 12\omega_9\omega_{12}v_1^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2 - 18\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2 +$
$12\omega_9\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5 + 12\omega_9^2\omega_{12}\omega_6c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8\omega_5 + 12\omega_9^2\omega_{12}\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_8\omega_5^2 + 12\omega_9^2\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2 +$
$12\omega_9^2\omega_{12}\omega_6c_s^2\omega_{13}\omega_7^2\omega_8^2\omega_5^2 + 18\omega_9^2\omega_{12}\omega_6v_1^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2 - 18\omega_9^2\omega_{12}\omega_6\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2 - 12\omega_9^2\omega_6c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5 + 12\omega_9^2\omega_{12}\omega_6^2\omega_{13}^2\omega_7^2\omega_8\omega_5^2 +$
$6\omega_9^2\omega_{12}\omega_6^2v_1^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8\omega_5^2 - 12\omega_9^2\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7^2\omega_8\omega_5^2 - 18\omega_9\omega_{12}\omega_6v_1^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2 - 9\omega_9^2\omega_6^2v_1^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2 -$
$12\omega_9^2\omega_{12}\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5 + 24\omega_9^2\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2 + 6\omega_9^2\omega_{12}\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5 - 12\omega_9^2\omega_{12}\omega_6\omega_{13}^2\omega_7^2\omega_8\omega_5^2 + 6\omega_9\omega_6^2c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2 +$
$6\omega_9^2\omega_{12}\omega_6^2v_1^2\omega_{13}^2\omega_7^2\omega_8^2\omega_5^2 + 24\omega_9^2\omega_{12}c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8\omega_5^2 - 42\omega_9^2\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^2 + 12\omega_9^2\omega_{12}\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2 + 6\omega_9^2\omega_{12}\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^2 -$
$36\omega_9^2\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5 + 6\omega_9^2\omega_{12}\omega_6^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5 + 9\omega_9^2\omega_6^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2 + 6\omega_9^2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2 - 12\omega_9^2\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_5^2 +$
$36\omega_{12}\omega_6c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2 + 6\omega_9^2\omega_{12}\omega_6^2\omega_{13}^2\omega_7\omega_8^2\omega_5^2 + 12\omega_9^2\omega_6\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5 - 6\omega_9^2\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_8^2\omega_5^2 - 36\omega_9^2\omega_{12}\omega_6c_s^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2 -$
$12\omega_9\omega_6v_1^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2 - 12\omega_9^2\omega_{12}\omega_6v_1^2\omega_{13}^2\omega_7^2\omega_8^2\omega_5^2 - 12\omega_9^2\omega_6\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2 + 6\omega_9^2\omega_{12}\omega_6v_1^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5 - 6\omega_9^2\omega_{12}\omega_6\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5 +$
$12\omega_9^2\omega_{12}\omega_6c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_5^2 - 6\omega_{12}\omega_6^2v_1^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2 + 36\omega_9\omega_{12}c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2 + 12\omega_9^2\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5 -$
$12\omega_9^2\omega_{12}v_1^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2 - \omega_9^2\omega_{12}\omega_6^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2 + 3\omega_9^2\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2 + 18\omega_9^2\omega_{12}\omega_6^2c_s^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2 - 12\omega_9^2\omega_6^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5 -$
$12\omega_9^2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5 - 6\omega_9^2\omega_{12}\omega_6^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2 - 12\omega_9^2\omega_{12}\omega_6\omega_{13}\omega_7^2\omega_8^2\omega_5^2 - 9\omega_9^2\omega_{12}\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2 + 3\omega_9^2\omega_{12}\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2 +$
$12\omega_9^2\omega_6^2v_1^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5 - 6\omega_9^2\omega_{12}\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_8^2\omega_5^2 + 6\omega_9^2\omega_{12}\omega_6^2\omega_{13}\omega_7^2\omega_8^2\omega_5^2 + 12\omega_9^2\omega_{12}\omega_6\omega_7^2\omega_{14}\omega_8^2\omega_5^2 - 54\omega_9^2\omega_{12}\omega_6c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8\omega_5^2 +$
$12\omega_9^2\omega_{12}\omega_6c_s^2\omega_{13}^2\omega_7^2\omega_8\omega_5^2 + 12\omega_9\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2 - 12\omega_9^2\omega_{12}\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5 - 24\omega_9^2\omega_{12}\omega_6c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2 + 12\omega_9^2\omega_6c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2$

$C_{20} = -2\omega_6^2v_1^2\omega_{13}\omega_7\omega_{14}\omega_8^2 + 2\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_8 - 4\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2 - \omega_6^3v_1^2\omega_{13}^2\omega_7\omega_8^2 - 2\omega_6^2c_s^2\omega_7^2\omega_{14}\omega_8^2 + 4\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2 + 2\omega_6^2\omega_7^2\omega_{14}\omega_8^2 +$
$2\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_{14} - \omega_6^3\omega_{13}\omega_7\omega_{14}\omega_8^2 - \omega_6^3\omega_{13}^2\omega_7^2\omega_8^2 - \omega_6^2v_1^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8 + 2\omega_6^2c_s^2\omega_{13}^2\omega_7^2\omega_{14} - 6\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2 - 2\omega_6^2v_1^2\omega_{13}^2\omega_7^2\omega_8^2 +$
$\omega_6v_1^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2 + 2\omega_6^2c_s^2\omega_{13}^2\omega_7^2\omega_8 - \omega_6^3\omega_{13}^2\omega_7^2\omega_{14}\omega_8 - \omega_6^3v_1^2\omega_{13}\omega_7^2\omega_8^2 + 2\omega_6\omega_{13}\omega_7^2\omega_{14}\omega_8^2 - 2\omega_6^2\omega_{13}^2\omega_7^2\omega_8 + 4\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8 +$
$5\omega_6^3c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8 - 2\omega_6^2c_s^2\omega_{13}^2\omega_7^2\omega_8^2 - 2\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8^2 + 7\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2 + 2\omega_6^2\omega_{13}^2\omega_7^2\omega_8^2 + 2\omega_6^3\omega_{13}^2\omega_7^2\omega_8 - \omega_6^3c_s^2\omega_{13}\omega_7^2\omega_8^2 -$
$\omega_6^2v_1^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2 - \omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2 + 2\omega_6^2v_1^2\omega_{13}^2\omega_7^2\omega_8 - \omega_6^3v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8 + \omega_6^3c_s^2\omega_{13}\omega_7\omega_{14}\omega_8^2 + 2\omega_6^3v_1^2\omega_{13}^2\omega_7\omega_8 - \omega_6^3\omega_7^2\omega_{14}\omega_8^2 -$
$\omega_6^3v_1^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2 - 2\omega_6^2v_1^2\omega_7^2\omega_{14}\omega_8^2 - \omega_6^3c_s^2\omega_{13}^2\omega_7\omega_8^2 - 2\omega_6c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2 - 5\omega_6^2c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2 - 2\omega_6^2\omega_{13}\omega_7^2\omega_8^2 - 2\omega_6^3v_1^2\omega_{13}^2\omega_7^2\omega_8 -$
$7\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8 + 2\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_8^2 + \omega_6^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2 + \omega_6^3v_1^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8 + 6\omega_6c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8 + \omega_6^2v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2 + \omega_6^3c_s^2\omega_{13}^2\omega_7^2\omega_8^2 +$
$\omega_6^3v_1^2\omega_7^2\omega_{14}\omega_8^2 - \omega_6\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2 - 2\omega_6v_1^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2 - \omega_6^3c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2 + \omega_6^3v_1^2\omega_{13}\omega_7\omega_{14}\omega_8^2 - 2\omega_6^3\omega_{13}^2\omega_7\omega_8 + \omega_6^3\omega_{13}^2\omega_7\omega_8^2 + 2\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8^2 +$
$\omega_6^3c_s^2\omega_7^2\omega_{14}\omega_8^2 + 4\omega_6^2v_1^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2 + \omega_6^3\omega_{13}\omega_7^2\omega_{14}\omega_8^2 - 2\omega_6^2c_s^2\omega_{13}\omega_7\omega_{14}\omega_8^2 - 8c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2 + 2\omega_6^2v_1^2\omega_{13}\omega_7^2\omega_8^2 + 2\omega_6^3c_s^2\omega_{13}^2\omega_{14}\omega_8 +$
$\omega_6^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8 + 13\omega_6c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2 - 2\omega_6^3c_s^2\omega_{13}^2\omega_7^2\omega_8 + \omega_6^3\omega_{13}\omega_7^2\omega_8^2 - 11\omega_6^2c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8 + \omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8 + \omega_6^3v_1^2\omega_{13}^2\omega_7^2\omega_8^2 - 2\omega_6^3c_s^2\omega_{13}^2\omega_7^2\omega_{14}$

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

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

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

$C_{24} = -\omega_6^3\omega_{16}v_1^2\omega_{13}\omega_7^3\omega_{17}\omega_8^2 + \omega_6^2\omega_{16}v_2^2\omega_{13}\omega_7^3\omega_{14}\omega_8^2 + 2\omega_6c_s^2\omega_{16}\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2 + 2\omega_6^2c_s^2\omega_{16}\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2 + 4\omega_6^2\omega_{16}v_2^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2 +$
$2\omega_6^3\omega_{16}v_2^2\omega_{13}\omega_7^2\omega_{17}\omega_{14} + 2\omega_6^2\omega_{16}v_1^2\omega_{13}\omega_7^3\omega_{17}\omega_{14} - 4\omega_6^3\omega_{16}v_1^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8 + \omega_6^3v_2^2\omega_{13}\omega_7^3\omega_{14}\omega_8^2 - 4\omega_6^2\omega_{16}v_2^2\omega_{13}\omega_7^3\omega_{17}\omega_{14}\omega_8 +$
$\omega_6^3c_s^2\omega_{13}\omega_7^3\omega_{14}\omega_8^2 - 2\omega_{16}v_2^2\omega_{13}\omega_7^3\omega_{17}\omega_{14}\omega_8^2 + \omega_6^3\omega_{16}v_1^2\omega_7^3\omega_{17}\omega_8^2 - 2\omega_6^2\omega_{16}v_1^2\omega_{13}\omega_7^3\omega_{17}\omega_8 + 2\omega_6^3\omega_{16}v_2^2\omega_{13}\omega_7^3\omega_{14}\omega_8 + \omega_6^3c_s^2\omega_{16}\omega_{13}\omega_7^2\omega_{17}\omega_8^2 -$
$\omega_6^2v_2^2\omega_{13}\omega_7^3\omega_{17}\omega_{14}\omega_8^2 - \omega_6^3c_s^2\omega_{16}\omega_{13}\omega_7^3\omega_{14}\omega_8^2 - 2\omega_6^2\omega_{16}v_1^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2 - 4\omega_6\omega_{16}v_1^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2 + 4\omega_6\omega_{16}v_1^2\omega_{13}\omega_7^3\omega_{17}\omega_{14}\omega_8 +$
$2\omega_6^2\omega_{16}v_1^2\omega_7^2\omega_{17}\omega_{14}\omega_8^2 - \omega_6^2c_s^2\omega_{13}\omega_7^3\omega_{17}\omega_{14}\omega_8^2 + 4\omega_6^3\omega_{16}v_2^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8 - 2\omega_6^2c_s^2\omega_{16}\omega_{13}\omega_7^3\omega_{14}\omega_8 + 2\omega_6^3c_s^2\omega_{16}\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8 +$
$\omega_6^2c_s^2\omega_{16}\omega_{13}\omega_7^3\omega_{14}\omega_8^2 + \omega_6^3c_s^2\omega_{16}\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2 + 2\omega_6^2v_2^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2 + 2\omega_6^3c_s^2\omega_{16}\omega_{13}\omega_7^3\omega_{14}\omega_8 - 2\omega_6^3c_s^2\omega_{16}\omega_{13}\omega_7^3\omega_{17}\omega_{14}\omega_8 -$

$2\omega_6^3c_s^2\omega_{16}\omega_{13}\omega_7^2\omega_{17}\omega_8 + 2\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2 + \omega_6^3c_s^2\omega_{16}\omega_7^3\omega_{17}\omega_8^2 - \omega_6^3\omega_{16}v_1^2\omega_7^2\omega_{17}\omega_{14}\omega_8^2 - 2\omega_6^3\omega_{16}v_1^2\omega_{13}\omega_7^3\omega_{17}\omega_{14} -$
$\omega_6^3\omega_{16}v_1^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2 - \omega_6^2\omega_{16}v_2^2\omega_{13}\omega_7^3\omega_{17}\omega_{14}\omega_8^2 - \omega_6c_s^2\omega_{16}\omega_{13}\omega_7^3\omega_{17}\omega_{14}\omega_8^2 + 2\omega_6^2\omega_{16}v_1^2\omega_{13}\omega_7^3\omega_{17}\omega_8^2 - \omega_6^3\omega_{16}v_2^2\omega_{13}\omega_7^3\omega_{14}\omega_8^2 +$
$2\omega_6^3\omega_{16}v_1^2\omega_{13}\omega_7^3\omega_{17}\omega_8 - 2\omega_6^2\omega_{16}v_2^2\omega_{13}\omega_7^3\omega_{14}\omega_8 - 2\omega_6^3\omega_{16}v_1^2\omega_{13}\omega_{17}\omega_{14}\omega_8^2 + 2\omega_6^2\omega_{16}v_2^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8 + 2\omega_6^3\omega_{16}v_1^2\omega_{13}\omega_7^3\omega_{17}\omega_{14}\omega_8 +$
$2\omega_{6}\omega_{16}v_2^2\omega_{13}\omega_7^3\omega_{17}\omega_{14}\omega_8 + 2\omega_6^3\omega_{16}v_1^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8 - 2\omega_6^2c_s^2\omega_{16}\omega_{13}\omega_7^3\omega_{17}\omega_8 + 2\omega_6^2c_s^2\omega_{16}\omega_{13}\omega_7^3\omega_{17}\omega_{14}\omega_8 - 4\omega_6^2\omega_{16}v_2^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2 -$
$6\omega_6^2c_s^2\omega_{16}\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2 + 2\omega_6^3c_s^2\omega_{16}\omega_{13}\omega_7^2\omega_{14}\omega_8^2 - \omega_6^3c_s^2\omega_{16}\omega_{13}\omega_7^3\omega_{17}\omega_8^2 - 2\omega_{6}\omega_{16}v_2^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2 + 2\omega_6^2c_s^2\omega_{16}\omega_7^2\omega_{17}\omega_{14}\omega_8^2 -$
$6\omega_6^2\omega_{16}v_1^2\omega_{13}\omega_7^3\omega_{17}\omega_{14}\omega_8 - 2\omega_6^3v_2^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2 - 6\omega_6^3\omega_{16}v_2^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8 - 2\omega_6^3\omega_{16}v_2^2\omega_{13}\omega_7^2\omega_{14}\omega_8 - 2\omega_6^2\omega_{16}v_1^2\omega_7^3\omega_{17}\omega_8^2 -$
$2\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2 + \omega_6^3\omega_{16}v_1^2\omega_{13}\omega_7^2\omega_{17}\omega_8^2 - 2\omega_6^3\omega_{16}v_2^2\omega_{13}\omega_7^3\omega_{17}\omega_{14} + 4\omega_6^2\omega_{16}v_1^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2 - 2\omega_6^3\omega_{16}v_1^2\omega_{13}\omega_7^2\omega_{17}\omega_8 +$
$2\omega_6^3\omega_{16}v_2^2\omega_{13}\omega_7^3\omega_{17}\omega_{14}\omega_8 + 2\omega_6^2\omega_{16}v_1^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8 - \omega_6^3c_s^2\omega_{16}\omega_7^2\omega_{17}\omega_{14}\omega_8^2 + 2\omega_6^2\omega_{16}v_2^2\omega_{13}\omega_7^3\omega_{17}\omega_{14} - \omega_6^3c_s^2\omega_{16}\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2 +$
$2\omega_6^3\omega_{16}v_1^2\omega_{13}\omega_7^2\omega_{17}\omega_{14} + 2\omega_6^3\omega_{16}v_2^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2 - 2\omega_6^2c_s^2\omega_{16}\omega_7^3\omega_{17}\omega_8^2 + 2\omega_6^3c_s^2\omega_{16}\omega_{13}\omega_7^3\omega_{17}\omega_8 - 2\omega_6^3c_s^2\omega_{16}\omega_{13}\omega_7^2\omega_{14}\omega_8 +$
$3\omega_{6}\omega_{16}v_2^2\omega_{13}\omega_7^3\omega_{17}\omega_{14}\omega_8^2 + 2\omega_6^2c_s^2\omega_{16}\omega_{13}\omega_7^3\omega_{17}\omega_8^2 + 3\omega_6^3\omega_{16}v_1^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2 + \omega_6^2c_s^2\omega_{16}\omega_{13}\omega_7^3\omega_{17}\omega_{14}\omega_8^2$

$C_{25} = -4\omega_{15}\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8 + 12\omega_{15}\omega_6c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5 + 8\omega_{15}\omega_6\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8\omega_5 - 4\omega_{15}\omega_6\omega_{16}^2\omega_7\omega_{17}\omega_8\omega_5 +$
$6\omega_{15}c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5 - 4\omega_{15}\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5 + 2\omega_{15}\omega_6\omega_{16}\omega_{10}^2\omega_7^2\omega_8\omega_5 + 12\omega_{15}\omega_6c_s^2\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8 + 12\omega_{15}\omega_6c_s^2\omega_{16}^2\omega_{10}\omega_{17}\omega_8\omega_5 +$
$6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5 - 4\omega_{15}\omega_6\omega_{16}^2\omega_{10}^2\omega_7\omega_5 + 4\omega_{15}\omega_6\omega_{16}^2\omega_{10}v_2^2\omega_{17}\omega_8\omega_5 + 2\omega_{15}\omega_6\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8\omega_5 + 4\omega_{15}\omega_6\omega_{16}^2\omega_{10}v_2^2\omega_7\omega_{17}\omega_8 +$
$4\omega_{15}\omega_6\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8 + 4\omega_6\omega_{16}^2\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8\omega_5 + 2\omega_{15}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8\omega_5 + 4\omega_{15}\omega_6\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5 + 9\omega_{15}\omega_6c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5 +$
$4\omega_{15}\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_5 + 12\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8 - 12\omega_{15}\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_8\omega_5 + 3\omega_{15}\omega_6\omega_{16}^2\omega_{10}v_2^2\omega_7^2\omega_{17}\omega_8\omega_5 - 4\omega_{15}\omega_6\omega_{16}^2\omega_{10}v_2^2\omega_7\omega_{17}\omega_5 +$
$8\omega_{15}\omega_6\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5 - 4\omega_{15}\omega_6\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_5 - 12\omega_{15}\omega_6c_s^2\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_5 - 2\omega_{15}\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8\omega_5 - 2\omega_{15}\omega_6\omega_{16}\omega_{10}^2v_2^2\omega_7^2\omega_8\omega_5 -$
$2\omega_{15}\omega_{16}^2\omega_{10}v_2^2\omega_7^2\omega_{17}\omega_8\omega_5 + 4\omega_6\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5 - 4\omega_6\omega_{16}^2\omega_{10}v_2^2\omega_7\omega_{17}\omega_8\omega_5 - 12c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8 - 2\omega_{15}\omega_6\omega_{16}^2v_2^2\omega_7^2\omega_{17}\omega_8\omega_5 -$
$4\omega_{15}\omega_6\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_5 - 4\omega_{15}\omega_6\omega_{16}\omega_{10}^2v_2^2\omega_{17}\omega_8\omega_5 + 4\omega_{15}\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_5 + 2\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8\omega_5 - 6\omega_{15}\omega_6c_s^2\omega_{16}^2\omega_7^2\omega_{17}\omega_8\omega_5 -$
$12\omega_6c_s^2\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5 + 2\omega_{15}\omega_6\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_8\omega_5 - 4\omega_6\omega_{16}^2\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8 + 4\omega_{15}\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5 - 6\omega_{15}c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5 -$
$8\omega_{15}\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5 - 2\omega_{15}\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_8\omega_5 + 12\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5 - 4\omega_{15}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_5 - 4\omega_6\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5 +$
$4\omega_6\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8 - 4\omega_{15}\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8\omega_5 + 12\omega_{15}\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_5 + 6\omega_{15}\omega_6c_s^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5 - 6\omega_{15}\omega_6c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5 +$
$4\omega_{15}\omega_6\omega_{16}\omega_{10}^2\omega_{17}\omega_8\omega_5 + 12\omega_{15}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_5 + 4\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8 - 4\omega_{15}\omega_6\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8\omega_5 + 2\omega_{15}\omega_6\omega_{16}^2\omega_7^2\omega_{17}\omega_8\omega_5 -$
$12\omega_{15}c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5 + 2\omega_{15}\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5 + 4\omega_6\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8 - 4\omega_{15}\omega_6\omega_{16}^2\omega_{10}^2v_2^2\omega_7\omega_8\omega_5 - 2\omega_{15}\omega_6\omega_{16}\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8\omega_5 -$
$2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5 - 12\omega_{15}\omega_6c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_5 + 4\omega_{15}\omega_6\omega_{16}^2\omega_{10}^2v_2^2\omega_7\omega_5 - 8\omega_{15}\omega_6\omega_{16}^2\omega_{10}v_2^2\omega_7\omega_{17}\omega_8\omega_5 - 3\omega_{15}\omega_6\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5 -$
$24\omega_{15}\omega_6c_s^2\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5 - 3\omega_6\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8\omega_5 - 2\omega_{15}\omega_6\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5 - 12\omega_{15}\omega_6c_s^2\omega_{16}\omega_{10}^2\omega_{17}\omega_8\omega_5 - 4\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8 +$
$6\omega_6c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5 - 4\omega_{15}\omega_{16}^2\omega_{10}v_2^2\omega_7^2\omega_{17}\omega_5 - 2\omega_{15}\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5 - 4\omega_{15}\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5 - 6\omega_{15}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8\omega_5 +$
$12\omega_{15}c_s^2\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5 + 12\omega_{15}\omega_6c_s^2\omega_{16}^2\omega_7\omega_{17}\omega_8\omega_5 - 6\omega_{15}\omega_6c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_8\omega_5 - 12\omega_{15}c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_5 - 4\omega_{15}\omega_6\omega_{16}^2\omega_{10}v_2^2\omega_7^2\omega_{17}\omega_8 +$
$4\omega_{15}\omega_6\omega_{16}^2v_2^2\omega_7\omega_{17}\omega_8\omega_5 - 4\omega_{15}\omega_6\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8 - 4\omega_{15}\omega_6\omega_{16}^2\omega_{10}\omega_{17}\omega_8\omega_5 - 2\omega_6\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5 + 4\omega_{15}\omega_{16}^2\omega_{10}v_2^2\omega_7\omega_{17}\omega_8\omega_5 +$
$2\omega_6\omega_{16}^2\omega_{10}v_2^2\omega_7^2\omega_{17}\omega_8\omega_5 - 12\omega_{15}\omega_6c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8 - 12\omega_{15}\omega_6c_s^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5 - 4\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8 + 12\omega_{15}c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8 +$
$24\omega_{15}\omega_6c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5 + 3\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5 + 4\omega_{15}\omega_{16}^2\omega_{10}v_2^2\omega_7^2\omega_{17}\omega_8 + 2\omega_{15}\omega_{16}\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8\omega_5 + 4\omega_{15}\omega_6\omega_{16}^2\omega_{10}^2\omega_7\omega_8\omega_5 -$
$9\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5 + 4\omega_{15}\omega_6\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_8\omega_5 + 12\omega_{15}\omega_6c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_5 + 2\omega_{15}\omega_6\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5 + 4\omega_{15}\omega_6\omega_{16}^2\omega_{10}v_2^2\omega_7^2\omega_{17}\omega_5 +$
$4\omega_{15}\omega_6\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_5 + 4\omega_{15}\omega_6\omega_{16}^2\omega_{10}\omega_7^2\omega_5 + 6\omega_{15}\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8\omega_5 - 12\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8$

$C_{26} = 12\omega_{15}\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7\omega_8^2\omega_5^2 + 18\omega_{15}\omega_6^2\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8^2\omega_5^2 + 6\omega_{15}\omega_6^2\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_8^2\omega_5^2 - 18\omega_{15}\omega_6^2c_s^2\omega_{16}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2 +$
$12\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5 - 12\omega_{15}\omega_6^2c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5 - 12\omega_{15}\omega_6^2\omega_{16}\omega_{10}^2v_2^2\omega_{17}\omega_8^2\omega_5^2 - 12\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5 +$
$12\omega_{15}\omega_6^2c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5 - 6\omega_{15}\omega_6^2\omega_{16}^2v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2 + 3\omega_{15}\omega_6^2c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2 + 12\omega_{15}\omega_6^2c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_5^2 +$
$12\omega_6^2c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5 + 12\omega_{15}\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5 + 12\omega_6^2\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8^2\omega_5^2 + 12\omega_{15}\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_5^2 +$
$12\omega_{15}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2 - 6\omega_{15}\omega_6^2\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5 + 12\omega_6^2\omega_{16}^2\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8^2\omega_5^2 - 6\omega_{15}\omega_6\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8\omega_5^2 -$
$12\omega_{15}\omega_6^2\omega_{16}^2\omega_{10}\omega_{17}\omega_8^2\omega_5^2 - 6\omega_{15}\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2 + 18\omega_{15}\omega_6^2c_s^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2 - 6\omega_{15}\omega_6^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5 + 12\omega_{15}\omega_6\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_8\omega_5^2 +$
$12\omega_{15}\omega_6^2c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2 + 12\omega_{15}\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8\omega_5^2 + 6\omega_6\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2 - 6\omega_{15}\omega_6^2\omega_{16}^2\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8\omega_5^2 +$
$12\omega_{15}\omega_6^2c_s^2\omega_{16}^2\omega_{10}^2v_2^2\omega_7\omega_8\omega_5^2 - 12\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2 - 12\omega_{15}\omega_6^2\omega_{16}\omega_{10}^2\omega_7\omega_8^2\omega_5^2 - 24\omega_{15}\omega_6^2c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8^2 - 24\omega_{15}\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2 +$
$24\omega_{15}\omega_6^2c_s^2\omega_{16}^2\omega_{10}^2\omega_{17}\omega_8\omega_5^2 + 4\omega_{15}\omega_6^2\omega_{16}^2\omega_{10}v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2 - 18\omega_{15}\omega_6^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2 + 6\omega_{15}\omega_6^2\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2 -$
$12\omega_{15}\omega_6^2c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8\omega_5^2 + 12\omega_{15}\omega_6^2\omega_{16}^2\omega_{10}v_2^2\omega_{17}\omega_8^2\omega_5^2 - 12\omega_6^2\omega_{16}^2\omega_{10}v_2^2\omega_7\omega_{17}\omega_8^2\omega_5^2 + 36\omega_{15}\omega_6^2c_s^2\omega_{16}^2\omega_{10}\omega_{17}\omega_8^2\omega_5^2 - 6\omega_{15}\omega_6^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2 -$
$12\omega_{15}\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8\omega_5^2 - 12\omega_6^2\omega_{16}^2\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8^2\omega_5 + \omega_{15}\omega_6^2\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2 + 12\omega_{15}\omega_6^2c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5 -$
$12\omega_6^2c_s^2\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8^2\omega_5^2 + 12\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5 - 12\omega_6\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5 + 12\omega_{15}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2 + 6\omega_{15}\omega_6^2\omega_{16}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2 -$
$6\omega_{15}\omega_6^2\omega_{16}\omega_{10}^2v_2^2\omega_7^2\omega_8^2\omega_5^2 - 12\omega_{15}\omega_6c_s^2\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8^2\omega_5 + 6\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2 - 54\omega_{15}\omega_6^2c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2 +$
$12\omega_6^2c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2 - 42\omega_{15}\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2 + 18\omega_{15}\omega_6^2\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8^2\omega_5^2 - 6\omega_{15}\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8^2\omega_5^2 -$
$36\omega_{15}\omega_6^2c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5 - 12\omega_{15}\omega_6^2c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_8^2\omega_5^2 - 6\omega_{15}\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5 - 9\omega_{15}\omega_6^2c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2 -$
$6\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2 + 12\omega_6^2c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5 - 6\omega_6^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2 - 12\omega_{15}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5 + 12\omega_{15}\omega_6^2c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_8\omega_5^2 +$
$12\omega_{15}\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{8}\omega_5^2 - 12\omega_{15}\omega_6^2c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5 - 12\omega_{15}\omega_6^2\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2 + 12\omega_{15}\omega_6^2c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5 +$
$36\omega_{15}\omega_6^2c_s^2\omega_{16}\omega_{10}^2\omega_{17}\omega_8^2\omega_5^2 + 54\omega_{15}\omega_6^2c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2 - 12\omega_{15}\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{8}\omega_5^2 + 6\omega_{15}\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2 -$
$4\omega_{15}\omega_6^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2 - 9\omega_6^2c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2 + 12\omega_{15}\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2 + 54\omega_{15}\omega_6^2c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5 -$
$12\omega_{15}\omega_6^2\omega_{16}^2\omega_7\omega_{17}\omega_8^2\omega_5^2 + 42\omega_{15}\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5 + 30\omega_{15}\omega_6^2c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2 + 6\omega_{15}\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2\omega_8^2\omega_5^2 + 24\omega_{15}\omega_6^2c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2$

$C_{27} = -4\omega_{15}\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8 + 4\omega_{15}\omega_6c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5 + 24\omega_{15}\omega_6\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8\omega_5 - 4\omega_{15}\omega_6\omega_{16}^2\omega_7\omega_{17}\omega_8\omega_5 +$
$2\omega_{15}c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5 - 4\omega_{15}\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5 + 2\omega_{15}\omega_6\omega_{16}\omega_{10}^2\omega_7^2\omega_8\omega_5 + 4\omega_{15}\omega_6c_s^2\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8 + 4\omega_{15}\omega_6c_s^2\omega_{16}^2\omega_{10}\omega_{17}\omega_8\omega_5 +$

$2c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5 - 4\omega_{15}\omega_6\omega_{16}^2\omega_{10}^2\omega_7\omega_5 + 12\omega_{15}\omega_6\omega_{16}^2\omega_{10}v_2^2\omega_{17}\omega_8\omega_5 + 6\omega_{15}\omega_6\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8\omega_5 + 12\omega_{15}\omega_6\omega_{16}^2\omega_{10}v_2^2\omega_7\omega_{17}\omega_8 +$
$4\omega_{15}\omega_6\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8 + 12\omega_6\omega_{16}^2\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8\omega_5 + 2\omega_{15}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8\omega_5 + 4\omega_{15}\omega_6\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5 + 3\omega_{15}\omega_6c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5 +$
$4\omega_{15}\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_5 + 4\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8 - 4\omega_{15}\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_8\omega_5 + 9\omega_{15}\omega_6\omega_{16}^2\omega_{10}v_2^2\omega_7^2\omega_{17}\omega_8\omega_5 - 12\omega_{15}\omega_6\omega_{16}^2\omega_{10}v_2^2\omega_7\omega_{17}\omega_5 +$
$8\omega_{15}\omega_6\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5 - 4\omega_{15}\omega_6\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_5 - 4\omega_{15}\omega_6c_s^2\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_5 - 2\omega_{15}\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8\omega_5 - 6\omega_{15}\omega_6\omega_{16}\omega_{10}^2v_2^2\omega_7^2\omega_8\omega_5 -$
$6\omega_{15}\omega_{16}^2\omega_{10}v_2^2\omega_7^2\omega_{17}\omega_8\omega_5 + 4\omega_6\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5 - 12\omega_6\omega_{16}^2\omega_{10}v_2^2\omega_7\omega_{17}\omega_8\omega_5 - 4c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8 - 6\omega_{15}\omega_6\omega_{16}^2v_2^2\omega_7^2\omega_{17}\omega_8\omega_5 -$
$12\omega_{15}\omega_6\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_5 - 12\omega_{15}\omega_6\omega_{16}\omega_{10}^2v_2^2\omega_{17}\omega_8\omega_5 + 12\omega_{15}\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_5 + 6\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8\omega_5 - 2\omega_{15}\omega_6c_s^2\omega_{16}^2\omega_7^2\omega_{17}\omega_8\omega_5 -$
$4\omega_6c_s^2\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5 + 6\omega_{15}\omega_6\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_8\omega_5 - 12\omega_6\omega_{16}^2\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8 + 4\omega_{15}\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5 - 2\omega_{15}c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5 -$
$8\omega_{15}\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5 - 6\omega_{15}\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_8\omega_5 + 4\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5 - 4\omega_{15}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_5 - 4\omega_6\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5 +$
$4\omega_6\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8 - 12\omega_{15}\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8\omega_5 + 4\omega_{15}\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_5 + 2\omega_{15}\omega_6c_s^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5 - 2\omega_{15}\omega_6c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5 +$
$4\omega_{15}\omega_6\omega_{16}\omega_{10}^2\omega_{17}\omega_8\omega_5 + 4\omega_{15}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_5 + 4\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8 - 12\omega_{15}\omega_6\omega_{10}^2v_2^2\omega_7\omega_{17}\omega_8\omega_5 + 2\omega_{15}\omega_6\omega_{16}^2\omega_7^2\omega_{17}\omega_8\omega_5 -$
$4\omega_{15}c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5 + 2\omega_{15}\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5 + 12\omega_6\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8 - 12\omega_{15}\omega_6\omega_{16}^2\omega_{10}^2v_2^2\omega_7\omega_8\omega_5 - 6\omega_{15}\omega_6\omega_{16}\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8\omega_5 -$
$2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5 - 4\omega_{15}\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_5 + 12\omega_{15}\omega_6\omega_{16}^2\omega_{10}^2v_2^2\omega_7\omega_5 - 24\omega_{15}\omega_6\omega_{16}^2\omega_{10}v_2^2\omega_7\omega_{17}\omega_8\omega_5 - 3\omega_{15}\omega_6\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5 -$
$8\omega_{15}\omega_6c_s^2\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5 - 9\omega_6\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8\omega_5 - 2\omega_{15}\omega_6\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5 - 4\omega_{15}\omega_6c_s^2\omega_{16}\omega_{10}^2\omega_{17}\omega_8\omega_5 - 4\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8 +$
$2\omega_6c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5 - 12\omega_{15}\omega_{16}^2\omega_{10}v_2^2\omega_7^2\omega_{17}\omega_5 - 2\omega_{15}\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5 - 4\omega_{15}\omega_6\omega_{16}\omega_{10}^2\omega_{17}\omega_8\omega_5 - 2\omega_{15}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8\omega_5 +$
$4\omega_{15}c_s^2\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5 + 4\omega_{15}\omega_6c_s^2\omega_{16}^2\omega_7\omega_{17}\omega_8\omega_5 - 2\omega_{15}\omega_6c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_8\omega_5 - 4\omega_{15}c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_5 - 12\omega_{15}\omega_6\omega_{16}^2\omega_{10}v_2^2\omega_7^2\omega_{17}\omega_8 +$
$12\omega_{15}\omega_6\omega_{16}^2v_2^2\omega_7\omega_{17}\omega_8\omega_5 - 4\omega_{15}\omega_6\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8 - 4\omega_{15}\omega_6\omega_{16}^2\omega_{10}\omega_{17}\omega_8\omega_5 - 2\omega_6\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5 + 12\omega_{15}\omega_{16}^2\omega_{10}v_2^2\omega_7\omega_{17}\omega_8\omega_5 +$
$6\omega_6\omega_{16}^2\omega_{10}v_2^2\omega_7^2\omega_{17}\omega_8\omega_5 - 4\omega_{15}\omega_6c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8 - 4\omega_{15}\omega_6c_s^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5 - 12\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8 + 4\omega_{15}c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8 +$
$8\omega_{15}\omega_6c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5 + 3\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5 + 12\omega_{15}\omega_{16}^2\omega_{10}v_2^2\omega_7^2\omega_{17}\omega_8 + 6\omega_{15}\omega_{16}\omega_{10}^2v_2^2\omega_7^2\omega_{17}\omega_8\omega_5 + 4\omega_{15}\omega_6\omega_{16}^2\omega_{10}^2\omega_7\omega_8\omega_5 -$
$3\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5 + 12\omega_{15}\omega_6\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_8\omega_5 + 4\omega_{15}\omega_6c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_5 + 2\omega_{15}\omega_6\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5 +$
$12\omega_{15}\omega_6\omega_{16}^2\omega_{10}v_2^2\omega_7^2\omega_{17}\omega_5 + 4\omega_{15}\omega_6\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_5 + 4\omega_{15}\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_5 + 2\omega_{15}\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8\omega_5 - 4\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8$

$C_{28} = 13\omega_6^2c_s^2\omega_{16}^2\omega_7\omega_{17}\omega_8^2 + \omega_6^2\omega_{16}^2v_2^2\omega_7^3\omega_{17}\omega_8 + 5\omega_6^2c_s^2\omega_{16}^2\omega_7^3\omega_{17}\omega_8 + \omega_6^2\omega_{16}^2v_2^2\omega_7\omega_{17}\omega_8^2 + \omega_6^2c_s^2\omega_7^3\omega_{17}\omega_8^2 - \omega_6^2\omega_{16}^2\omega_7\omega_{17}\omega_8^2 -$
$2\omega_6^2c_s^2\omega_{16}^2\omega_7^3\omega_8 - 2\omega_6^2\omega_{16}^2v_2^2\omega_7^3\omega_8 - \omega_6^2\omega_7^3\omega_{17}\omega_8^2 - \omega_6^2\omega_{16}^2\omega_7^3\omega_{17}\omega_8 + 2\omega_6^2\omega_{16}^2\omega_7^3\omega_8 - 2\omega_6^2v_2^2\omega_7^2\omega_{17}\omega_8^2 + 2\omega_6c_s^2\omega_{16}^2\omega_7^3\omega_8 + \omega_6\omega_{16}v_2^2\omega_7^3\omega_{17}\omega_8^2 +$
$2\omega_6\omega_{16}^2v_2^2\omega_7^3\omega_8 + \omega_6\omega_{16}^2\omega_7^3\omega_{17}\omega_8 + 2\omega_6^2\omega_{16}^2\omega_7^2\omega_8^2 - 2\omega_6c_s^2\omega_{16}\omega_7^2\omega_{17}\omega_8^2 - 2\omega_6^2c_s^2\omega_{16}^2\omega_7^2\omega_8 - 2\omega_6^2\omega_{16}v_2^2\omega_7\omega_{17}\omega_8^2 - 2\omega_6^2\omega_{16}^2v_2^2\omega_7^2\omega_8^2 -$
$2\omega_6^2\omega_{16}^2\omega_7^2\omega_8 - \omega_6^2\omega_{16}v_2^2\omega_7^3\omega_{17}\omega_8^2 - 4\omega_6^2\omega_{16}\omega_7^2\omega_{17}\omega_8^2 + 2\omega_6^2c_s^2\omega_{16}^2\omega_7^2\omega_8 + 2\omega_6^2\omega_{16}^2v_2^2\omega_7^2\omega_8 - \omega_6c_s^2\omega_{16}^2\omega_7^3\omega_8^2 - \omega_6\omega_{16}^2v_2^2\omega_7^3\omega_8^2 + 2c_s^2\omega_{16}^2\omega_7^3\omega_{17}\omega_8 +$
$4\omega_6^2c_s^2\omega_{16}\omega_7^2\omega_{17}\omega_8^2 + \omega_6^2c_s^2\omega_{16}^2\omega_7^3\omega_8^2 - \omega_6\omega_{16}^2v_2^2\omega_7^3\omega_{17}\omega_8 - 6\omega_6c_s^2\omega_{16}^2\omega_7\omega_{17}\omega_8^2 + \omega_6^2\omega_{16}^2v_2^2\omega_7^3\omega_8^2 - \omega_6^2\omega_{16}^2\omega_7^3\omega_8^2 - 7\omega_6c_s^2\omega_{16}^2\omega_7^3\omega_{17}\omega_8 +$
$6\omega_6^2c_s^2\omega_{16}^2\omega_7\omega_{17}\omega_8 + 2\omega_6\omega_{16}\omega_7^2\omega_{17}\omega_8^2 + 2\omega_6^2c_s^2\omega_{16}^2\omega_7^2\omega_{17} - 2\omega_6\omega_{16}^2\omega_7^3\omega_8 - 8\omega_6^2c_s^2\omega_{16}^2\omega_{17}\omega_8^2 + \omega_6c_s^2\omega_{16}\omega_7^3\omega_{17}\omega_8^2 + 2\omega_6^2\omega_{16}\omega_7\omega_{17}\omega_8^2 -$
$2c_s^2\omega_{16}^2\omega_7^2\omega_{17}\omega_8^2 - 2\omega_6\omega_{16}v_2^2\omega_7^2\omega_{17}\omega_8^2 + \omega_6^2v_2^2\omega_7^3\omega_{17}\omega_8^2 - 2\omega_6^2c_s^2\omega_{16}\omega_7\omega_{17}\omega_8^2 + \omega_6^2\omega_{16}\omega_7^3\omega_8^2 + 2\omega_6^2\omega_{16}v_2^2\omega_7^2\omega_8^2 + \omega_6\omega_{16}^2v_2^2\omega_7^2\omega_{17}\omega_8^2 -$
$2\omega_6^2c_s^2\omega_7^2\omega_{17}\omega_8^2 + 7\omega_6c_s^2\omega_{16}^2\omega_7^2\omega_{17}\omega_8^2 - \omega_6^2c_s^2\omega_{16}\omega_7^3\omega_8^2 + \omega_6^2\omega_{16}^2\omega_7^2\omega_{17}\omega_8 + 2\omega_6^2\omega_7^2\omega_{17}\omega_8^2 - \omega_6^2\omega_{16}^2v_2^2\omega_7^2\omega_{17}\omega_8 - 11\omega_6^2c_s^2\omega_{16}^2\omega_7^2\omega_{17}\omega_8 -$
$\omega_6^2\omega_{16}^2v_2^2\omega_7^2\omega_{17}\omega_8^2 - \omega_6\omega_{16}\omega_7^3\omega_{17}\omega_8^2 - 5\omega_6^2c_s^2\omega_{16}^2\omega_7^2\omega_{17}\omega_8^2 + 4\omega_6c_s^2\omega_{16}^2\omega_7^2\omega_{17}\omega_8 - 2\omega_6^2c_s^2\omega_{16}^2\omega_7^3\omega_{17} + \omega_6^2\omega_{16}^2\omega_7^2\omega_{17}\omega_8^2 - \omega_6^2c_s^2\omega_{16}\omega_7^3\omega_{17}\omega_8^2 +$
$2\omega_6c_s^2\omega_{16}^2\omega_7^3\omega_{17} - \omega_6\omega_{16}^2\omega_7^2\omega_{17}\omega_8^2 + 4\omega_6^2\omega_{16}v_2^2\omega_7^2\omega_{17}\omega_8^2 + \omega_6^2\omega_{16}\omega_7^3\omega_{17}\omega_8^2 + \omega_6\omega_{16}^2\omega_7^3\omega_8^2 + 2\omega_6^2c_s^2\omega_{16}\omega_7^2\omega_8^2 - 2\omega_6^2\omega_{16}\omega_7^2\omega_8^2 - \omega_6^2\omega_{16}v_2^2\omega_7^3\omega_8^2$

$C_{29} = c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2 - 96\omega_{16}\omega_{10}^2v_2^2\omega_7 + 12\omega_{10}^2v_2^4\omega_7^2 - 12c_s^2\omega_{10}^2\omega_7^2 - 126c_s^2\omega_{16}\omega_{10}^2v_2^2\omega_7^2 + 48\omega_{16}^2\omega_{10}v_2^4 + 24\omega_{16}\omega_{10}v_2^4\omega_7^2 - 48c_s^4\omega_{16}^2\omega_{10}\omega_7 -$
$72\omega_{16}^2v_2^2\omega_7 - 36\omega_{16}^2\omega_{10}v_2^2\omega_7^2 + 288c_s^2\omega_{16}^2v_2^2\omega_7 + 24c_s^2\omega_{16}\omega_{10}^2 + 48c_s^4\omega_{16}\omega_{10}^2\omega_7 - 432c_s^2\omega_{16}^2\omega_{10}v_2^2\omega_7 - 48\omega_{16}\omega_{10}^2v_2^4 - 24c_s^4\omega_{10}^2\omega_7 + 150c_s^2\omega_{16}^2\omega_{10}v_2^2\omega_7^2 -$
$12c_s^4\omega_{16}\omega_{10}^2\omega_7^2 + 12c_s^4\omega_{10}^2\omega_7^2 - 3\omega_{16}^2\omega_{10}^2v_2^4\omega_7^2 + 96\omega_{16}^2\omega_{10}v_2^2\omega_7 - 144c_s^2\omega_{16}^2v_2^2\omega_7^2 + 432c_s^2\omega_{16}\omega_{10}^2v_2^2\omega_7 - 48\omega_{16}\omega_{10}v_2^4\omega_7 + 14c_s^4\omega_{16}^2\omega_{10}\omega_7^2 +$
$36\omega_{16}^2v_2^2\omega_7^2 - 24\omega_{10}^2v_2^4\omega_7 - 24c_s^4\omega_{16}\omega_{10}^2 + 30\omega_{16}\omega_{10}^2v_2^2\omega_7^2 + 24c_s^2\omega_{10}^2\omega_7 + 36\omega_{16}^2\omega_{10}v_2^4\omega_7^2 - 12c_s^2\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2 - c_s^4\omega_{16}^2\omega_{10}\omega_7^2 + 48c_s^2\omega_{16}^2\omega_{10}\omega_7 +$
$72c_s^2\omega_{10}^2v_2^2\omega_7^2 - 24c_s^2\omega_{16}^2\omega_7 + 96\omega_{16}\omega_{10}^2v_2^4\omega_7 - 24c_s^2\omega_{16}^2\omega_{10} - 12\omega_{10}^2v_2^2\omega_7^2 - 12c_s^4\omega_{16}^2\omega_7^2 - 144c_s^2\omega_{16}\omega_{10}v_2^2\omega_7 - 24\omega_{16}\omega_{10}v_2^2\omega_7^2 - 48c_s^2\omega_{16}\omega_{10}^2\omega_7 +$
$72\omega_{16}^2v_2^4\omega_7 - 48\omega_{16}^2\omega_{10}v_2^2 + 12c_s^2\omega_{16}\omega_{10}^2\omega_7^2 + 48\omega_{16}\omega_{10}v_2^2\omega_7 - 36\omega_{16}^2v_2^4\omega_7^2 + 24\omega_{10}^2v_2^2\omega_7 - 30\omega_{16}\omega_{10}^2v_2^4\omega_7^2 + 72c_s^2\omega_{16}\omega_{10}v_2^2\omega_7^2 + 24c_s^4\omega_{16}^2\omega_7 -$
$216c_s^2\omega_{16}\omega_{10}^2v_2^2 + 24c_s^4\omega_{16}^2\omega_{10} - 14c_s^2\omega_{16}^2\omega_{10}\omega_7^2 - 144c_s^2\omega_{10}^2v_2^2\omega_7 + 3\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2 + 12c_s^2\omega_{16}^2\omega_7^2 + 48\omega_{16}\omega_{10}^2v_2^2 - 96\omega_{16}^2\omega_{10}v_2^4\omega_7 + 216c_s^2\omega_{16}^2\omega_{10}v_2^2$

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

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

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

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

$$C_{33} = 18\omega_9^2\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18} + 6\omega_6^3\omega_{22}\omega_{13}^2v_3^2\omega_{11}\omega_{18} - 18\omega_9\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_{18} + 6\omega_9^2\omega_6^3c_s^2\omega_{13}^2\omega_{18} + 36\omega_6^2\omega_{22}v_1^2\omega_{13}^2v_3^2\omega_{11}\omega_{18} +$$
$$12\omega_9^2\omega_6^3\omega_{13}^2v_3^2\omega_{11} - 18\omega_9^2\omega_6^3v_1^2\omega_{13}v_3^2\omega_{11}\omega_{18} - 12\omega_9\omega_6^2\omega_{22}c_s^2\omega_{13}v_3^2\omega_{11}\omega_{18} + 12\omega_9\omega_6^3\omega_{22}c_s^2\omega_{13}^2v_3^2\omega_{11} + 36\omega_9^2\omega_6^3c_s^2v_1^2\omega_{13}^2 +$$
$$36\omega_9\omega_6^2\omega_{22}\omega_{13}^2v_3^2\omega_{11}\omega_{18} + 36\omega_9\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}^2\omega_{11} + 6\omega_9\omega_6^3\omega_{22}\omega_{13}^2v_3^2\omega_{18} + 24\omega_9^2\omega_6\omega_{22}\omega_{13}v_3^2\omega_{11}\omega_{18} + 18\omega_9^2\omega_6\omega_{22}c_s^4\omega_{13}^2\omega_{11}\omega_{18} -$$
$$36\omega_9^2\omega_6^3v_1^2\omega_{13}^2v_3^2\omega_{11} + 6\omega_9^2\omega_6^3c_s^2\omega_{13}\omega_{11}\omega_{18} + 18\omega_9^2\omega_6^3c_s^2v_1^2\omega_{13}^2\omega_{11}\omega_{18} - 12\omega_9\omega_6^3\omega_{22}c_s^2\omega_{13}^2v_3^2 + 12\omega_9^2\omega_6^2\omega_{13}^2v_3^2\omega_{11}\omega_{18} - 6\omega_9\omega_6^3\omega_{22}\omega_{13}v_3^2\omega_{11}\omega_{18} -$$
$$36\omega_9\omega_6\omega_{22}c_s^2v_1^2\omega_{13}^2\omega_{11}\omega_{18} - 5\omega_9\omega_6^3\omega_{22}c_s^4\omega_{13}^2\omega_{11}\omega_{18} + 24\omega_9^2\omega_6^2\omega_{22}c_s^2v_1^2\omega_{11}\omega_{18} - 45\omega_9^2\omega_6^3\omega_{22}v_1^2\omega_{13}v_3^2\omega_{11}\omega_{18} - 36\omega_9^2\omega_6^2v_1^2\omega_{13}^2v_3^2\omega_{11}\omega_{18} +$$
$$36\omega_9^2\omega_6^3v_1^2\omega_{13}^2v_3^2 - 12\omega_9\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_{11} + 12\omega_9^2\omega_6^2\omega_{22}v_3^2\omega_{11}\omega_{18} + 6\omega_9^2\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_{11}\omega_{18} - 24\omega_9^2\omega_6^2\omega_{22}c_s^2\omega_{13}v_3^2\omega_{18} +$$
$$27\omega_9\omega_6^3\omega_{22}v_1^2\omega_{13}^2v_3^2\omega_{11}\omega_{18} + 12\omega_9\omega_6^3\omega_{22}c_s^2\omega_{13}^2 + 12\omega_9^2\omega_6^2c_s^2\omega_{13}^2\omega_{11}\omega_{18} - 36\omega_9^2\omega_6^2\omega_{22}v_1^2v_3^2\omega_{11}\omega_{18} + 24\omega_9\omega_6^2\omega_{22}c_s^2\omega_{13}^2v_3^2\omega_{18} - 12\omega_9^2\omega_6^3c_s^2\omega_{13}^2v_3^2\omega_{11} -$$
$$24\omega_9^2\omega_6\omega_{22}c_s^2\omega_{13}v_3^2\omega_{11}\omega_{18} + 24\omega_9\omega_6\omega_{22}c_s^2\omega_{13}^2v_3^2\omega_{11}\omega_{18} - 6\omega_9^2\omega_6^3c_s^4\omega_{13}^2\omega_{18} - 48\omega_9^2\omega_6^2\omega_{22}\omega_{13}v_3^2\omega_{11}\omega_{18} - 5\omega_9^2\omega_6^2\omega_{22}c_s^4\omega_{13}^2\omega_{11}\omega_{18} +$$
$$12\omega_9^2\omega_6^3c_s^4\omega_{13}^2 - 72\omega_9^2\omega_6^2\omega_{22}v_1^2\omega_{13}v_3^2\omega_{18} - 108\omega_9\omega_6^2\omega_{22}v_1^2\omega_{13}^2v_3^2\omega_{11}\omega_{18} + 6\omega_9^2\omega_6^3c_s^2\omega_{13}^2v_3^2\omega_{11}\omega_{18} + 72\omega_9\omega_6^2\omega_{22}v_1^2\omega_{13}^2v_3^2\omega_{18} -$$
$$12\omega_9^2\omega_6^2\omega_{22}c_s^2v_3^2\omega_{11}\omega_{18} + 36\omega_9^2\omega_6^2c_s^2v_1^2\omega_{13}\omega_{11}\omega_{18} + 24\omega_9^2\omega_6^2\omega_{22}\omega_{13}v_3^2\omega_{18} + 144\omega_9^2\omega_6^2\omega_{22}v_1^2\omega_{13}v_3^2\omega_{11}\omega_{18} + 12\omega_9\omega_6^2\omega_{22}\omega_{13}^2v_3^2\omega_{11} -$$
$$48\omega_9^2\omega_{22}c_s^2v_1^2\omega_{13}^2\omega_{11}\omega_{18} + 12\omega_9\omega_6\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_{18} + 60\omega_9^2\omega_6\omega_{22}c_s^2v_1^2\omega_{13}\omega_{11}\omega_{18} + 6\omega_9^2\omega_6^3\omega_{13}v_3^2\omega_{11}\omega_{18} + 6\omega_9^2\omega_6^3c_s^4\omega_{13}^2\omega_{11}\omega_{18} -$$
$$15\omega_9^2\omega_6^2\omega_{22}c_s^2v_1^2\omega_{13}^2\omega_{11}\omega_{18} - 12\omega_9^2\omega_6\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18} + 12\omega_9\omega_6^3\omega_{22}c_s^4\omega_{13}^2\omega_{11} + 6\omega_9\omega_6^3\omega_{22}c_s^2\omega_{13}v_3^2\omega_{11}\omega_{18} + 36\omega_9\omega_6^3\omega_{22}v_1^2\omega_{13}^2v_3^2\omega_{11} +$$
$$12\omega_9^2\omega_6^2c_s^2\omega_{13}v_3^2\omega_{11}\omega_{18} - 24\omega_9\omega_6\omega_{22}\omega_{13}^2v_3^2\omega_{11}\omega_{18} + 12\omega_9^2\omega_6^2c_s^4\omega_{13}\omega_{11}\omega_{18} - 12\omega_9^2\omega_6^2\omega_{13}^2v_3^2\omega_{11} - 36\omega_9^2\omega_6^3c_s^2v_1^2\omega_{13}^2\omega_{11} - 18\omega_6^3\omega_{22}v_1^2\omega_{13}^2v_3^2\omega_{11}\omega_{18} +$$
$$12\omega_9\omega_6^3\omega_{22}\omega_{13}^2v_3^2 + 12\omega_9^2\omega_6^3c_s^2\omega_{13}^2v_3^2 - 18\omega_9^2\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_{11}\omega_{18} - 12\omega_9^2\omega_6^3\omega_{22}\omega_{13}v_3^2\omega_{18} + 18\omega_9^2\omega_6^3v_1^2\omega_{13}^2v_3^2\omega_{11}\omega_{18} - 36\omega_9\omega_6^2\omega_{22}c_s^2\omega_{13}^2v_3^2\omega_{11}\omega_{18} -$$
$$12\omega_9^2\omega_6^3\omega_{22}c_s^2v_1^2\omega_{11}\omega_{18} + 6\omega_9^2\omega_6^3\omega_{13}^2v_3^2\omega_{18} + 12\omega_9\omega_6^2\omega_{22}\omega_{13}v_3^2\omega_{11}\omega_{18} + 18\omega_9\omega_6^2\omega_{22}c_s^4\omega_{13}^2\omega_{11}\omega_{18} - 6\omega_9\omega_6^3\omega_{22}c_s^2\omega_{13}^2v_3^2\omega_{18} +$$
$$18\omega_9^2\omega_6^3\omega_{22}v_1^2v_3^2\omega_{11}\omega_{18} + 12\omega_9^2\omega_6^3\omega_{22}c_s^2\omega_{13}v_3^2\omega_{18} + 48\omega_9^2\omega_6^2\omega_{22}c_s^2\omega_{13}v_3^2\omega_{11}\omega_{18} - 72\omega_9^2\omega_6\omega_{22}v_1^2\omega_{13}v_3^2\omega_{11}\omega_{18} - 15\omega_9\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}^2\omega_{11}\omega_{18} -$$
$$36\omega_9\omega_6^2\omega_{22}c_s^2v_1^2\omega_{13}^2\omega_{11} + 12\omega_9^2\omega_6^3c_s^2\omega_{13}^2\omega_{11} - 12\omega_9\omega_6^3\omega_{22}c_s^4\omega_{13}^2 + 12\omega_9^2\omega_6^2c_s^2\omega_{13}^2v_3^2\omega_{11} - 36\omega_9^2\omega_6^2c_s^2v_1^2\omega_{13}^2\omega_{11}\omega_{18} - 36\omega_9\omega_6^3\omega_{22}v_1^2\omega_{13}^2v_3^2 +$$
$$72\omega_9\omega_6\omega_{22}v_1^2\omega_{13}^2v_3^2\omega_{11}\omega_{18} - 6\omega_9^2\omega_6^3c_s^4\omega_{13}\omega_{11}\omega_{18} - 6\omega_9\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_{18} - 102\omega_9^2\omega_6^2\omega_{22}c_s^2v_1^2\omega_{13}\omega_{11}\omega_{18} + 18\omega_9\omega_6^3\omega_{22}v_1^2\omega_{13}v_3^2\omega_{11}\omega_{18} +$$
$$60\omega_9^2\omega_6\omega_{22}c_s^2v_1^2\omega_{13}^2\omega_{11}\omega_{18} + 36\omega_9^2\omega_6^2c_s^2v_1^2\omega_{13}^2\omega_{11} - 12\omega_9^2\omega_6^3\omega_{13}^2v_3^2 - 12\omega_9\omega_6^2\omega_{22}c_s^4\omega_{13}^2\omega_{11} - 9\omega_9\omega_6^3\omega_{22}\omega_{13}^2v_3^2\omega_{11}\omega_{18} - 6\omega_6^3\omega_{22}c_s^2\omega_{13}^2v_3^2\omega_{11}\omega_{18} -$$
$$12\omega_9\omega_6^2\omega_{22}c_s^2\omega_{13}^2v_3^2\omega_{11} + 36\omega_9^2\omega_6^2v_1^2\omega_{13}v_3^2\omega_{11}\omega_{18} - 36\omega_9\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}^2 + 12\omega_9^2\omega_6^2c_s^4\omega_{13}^2\omega_{11} + 18\omega_9\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}^2\omega_{18} - 12\omega_9^2\omega_6^2\omega_{13}v_3^2\omega_{11}\omega_{18} -$$
$$12\omega_9^2\omega_6^2c_s^4\omega_{13}^2\omega_{11}\omega_{18} + 5\omega_9\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_{18} - 12\omega_6^2\omega_{22}\omega_{13}^2v_3^2\omega_{11}\omega_{18} - 6\omega_9^2\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18} - 18\omega_9^2\omega_6^3v_1^2\omega_{13}^2v_3^2\omega_{18} -$$
$$12\omega_9\omega_6^3\omega_{22}\omega_{13}^2v_3^2\omega_{11} - 36\omega_9\omega_6^2\omega_{22}v_1^2\omega_{13}^2v_3^2\omega_{11} + \omega_9^2\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_{18} + 12\omega_6^2\omega_{22}c_s^2\omega_{13}^2v_3^2\omega_{11}\omega_{18} - 36\omega_9\omega_6^2\omega_{22}v_1^2\omega_{13}v_3^2\omega_{11}\omega_{18} -$$
$$6\omega_9^2\omega_6^3c_s^2\omega_{13}v_3^2\omega_{11}\omega_{18} - 12\omega_9^2\omega_{22}c_s^4\omega_{13}^2\omega_{11}\omega_{18} + 30\omega_9^2\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_{11}\omega_{18} - 6\omega_9^2\omega_6^3c_s^2\omega_{13}^2v_3^2\omega_{18} - 12\omega_9^2\omega_6^3c_s^4\omega_{13}^2\omega_{11} + 6\omega_9^2\omega_6^3\omega_{22}c_s^2v_3^2\omega_{11}\omega_{18} -$$
$$18\omega_9^2\omega_6^3c_s^2v_1^2\omega_{13}\omega_{11}\omega_{18} - 18\omega_9\omega_6^3\omega_{22}v_1^2\omega_{13}^2v_3^2\omega_{18} - 12\omega_9\omega_6\omega_{22}c_s^4\omega_{13}^2\omega_{11}\omega_{18} - 12\omega_9^2\omega_6^2c_s^2\omega_{13}^2v_3^2\omega_{11}\omega_{18} - 15\omega_9^2\omega_6^3\omega_{22}c_s^2\omega_{13}v_3^2\omega_{11}\omega_{18} +$$
$$6\omega_9\omega_6^3\omega_{22}c_s^4\omega_{13}^2\omega_{18} + 12\omega_9^2\omega_6\omega_{22}c_s^4\omega_{13}\omega_{11}\omega_{18} + 36\omega_9^2\omega_6^3\omega_{22}v_1^2\omega_{13}v_3^2\omega_{18} - 6\omega_9^2\omega_6^3c_s^2\omega_{13}^2\omega_{11}\omega_{18} - 18\omega_9^2\omega_6^3c_s^2v_1^2\omega_{13}^2\omega_{18} - 6\omega_9^2\omega_6^3\omega_{22}v_3^2\omega_{11}\omega_{18} +$$
$$9\omega_9\omega_6^3\omega_{22}c_s^2\omega_{13}^2v_3^2\omega_{11}\omega_{18} - 12\omega_9^2\omega_6^3c_s^2\omega_{13}^2 + 12\omega_9\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_{11} - 12\omega_9^2\omega_6^2c_s^2\omega_{13}\omega_{11}\omega_{18} + 36\omega_9^2\omega_6^2v_1^2\omega_{13}^2v_3^2\omega_{11} - 24\omega_9\omega_6^2\omega_{22}\omega_{13}^2v_3^2\omega_{18} -$$
$$12\omega_9^2\omega_6^2c_s^2\omega_{13}^2\omega_{11} - 6\omega_9^2\omega_6^3\omega_{13}^2v_3^2\omega_{11}\omega_{18} + 15\omega_9^2\omega_6^3\omega_{22}\omega_{13}v_3^2\omega_{11}\omega_{18} - \omega_9^2\omega_6^3\omega_{22}c_s^4\omega_{13}^2\omega_{11}\omega_{18} + 54\omega_9\omega_6^2\omega_{22}c_s^2v_1^2\omega_{13}^2\omega_{11}\omega_{18}$$

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

$C_{35} = 4\omega_6^3\omega_{22}\omega_{19}c_s^4v_2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_{18} + \omega_6^3\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{19}c_s^2v_1\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} +$
$\omega_6^3\omega_{19}c_s^2v_1v_2^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_{18} - 8\omega_6^3\omega_{22}\omega_{19}c_s^4v_2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} - 2\omega_6^3\omega_{22}c_s^2v_1\omega_{13}\omega_7^2v_3^2\omega_{14}\omega_8^2\omega_{18} -$
$\omega_6^3\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^3\omega_{22}c_s^2v_1^2v_2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} +$
$\omega_6^3\omega_{22}c_s^2v_1v_2^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^3\omega_{19}v_1^2v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2 + 2\omega_6^3\omega_{19}c_s^2v_1\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 -$
$\omega_6^3\omega_{22}c_s^2v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_{18} - \omega_6^3\omega_{22}\omega_{19}c_s^2v_1v_2^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8^2 +$
$2\omega_6^3\omega_{22}\omega_{19}v_1v_2^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2 + \omega_6^3\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} - \omega_6^3\omega_{19}c_s^2v_1v_2^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} +$
$2\omega_6^3\omega_{22}\omega_{19}v_1v_2^2\omega_{13}\omega_7^2v_3^2\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{22}\omega_{19}v_1v_2^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}c_s^2v_1^2v_2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8^2\omega_{18} +$
$2\omega_6^3\omega_{22}c_s^2v_1\omega_{13}\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{22}\omega_{19}v_1^2v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}v_1^2v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 +$
$2\omega_6^2\omega_{22}\omega_{19}c_s^2v_1v_2^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}v_1^2v_2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + \omega_6^3\omega_{22}c_s^2v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} +$
$2\omega_6^3\omega_{22}\omega_{22}v_1v_2^2\omega_{13}\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} - \omega_6^3\omega_{22}\omega_{19}c_s^2v_1v_2^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + \omega_6^3\omega_{22}\omega_{19}v_1v_2^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} +$
$2\omega_6^2\omega_{22}\omega_{19}c_s^2v_1^2v_2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^3\omega_{19}v_1v_2^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 + 2\omega_6^2\omega_{22}\omega_{19}c_s^2v_1v_2^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 +$
$2\omega_6^2\omega_{22}\omega_{19}c_s^2v_1^2v_2\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8^2 - 2\omega_6^3\omega_{22}\omega_{19}v_1v_2^2\omega_{13}\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^3\omega_{22}c_s^2v_1^2v_2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_{18} -$
$2\omega_6^2\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{22}\omega_{19}c_s^2v_1^2v_2\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_6^2\omega_{22}\omega_{19}c_s^2v_1v_2^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} +$
$2\omega_6^3\omega_{22}\omega_{19}v_1^2v_2\omega_{13}\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8\omega_{18} + 12\omega_6\omega_{22}\omega_{19}c_s^4v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - \omega_6^3\omega_{22}\omega_{19}c_s^2v_1\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} -$
$2\omega_6^2\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8\omega_{18} + 8\omega_6^2\omega_{22}\omega_{19}c_s^4v_2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - \omega_6^3\omega_{22}v_1^2v_2\omega_{13}\omega_7v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} +$
$2\omega_6^3\omega_{22}\omega_{19}c_s^2v_1^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7^2v_3^2\omega_{14}\omega_8^2 - 2\omega_6^3\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} -$
$2\omega_6^2\omega_{22}\omega_{19}c_s^2v_1v_2^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}v_1^2v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8\omega_{18} + 2\omega_6^2\omega_{22}\omega_{19}c_s^2v_2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} +$
$\omega_6^3\omega_{22}\omega_{19}v_1v_2^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^3\omega_{19}c_s^2v_1^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 + 2\omega_6^3\omega_{22}\omega_{19}c_s^2v_1v_2^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_{18} -$
$2\omega_6^2\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{22}\omega_{19}c_s^2v_1^2v_2\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8\omega_{18} - 4\omega_6^3\omega_{22}\omega_{19}c_s^4v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_{18} -$
$2\omega_6^3\omega_{22}c_s^2v_1^2v_2\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}c_s^2v_1v_2^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2 + 2\omega_6^2\omega_{19}c_s^2v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 -$
$\omega_6^3\omega_{19}c_s^2v_1^2v_2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{22}\omega_{19}v_1v_2^2\omega_{13}\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8\omega_{18} + \omega_6^3\omega_{22}\omega_{19}c_s^2v_1v_2^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8^2\omega_{18} -$
$2\omega_6^2\omega_{22}\omega_{19}c_s^2v_2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}v_1^2v_2\omega_{13}\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8^2 - \omega_6^3\omega_{19}v_1^2v_2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} -$
$\omega_6^3\omega_{22}\omega_{19}v_1v_2^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + \omega_6^3\omega_{22}\omega_{19}v_1^2v_2\omega_{13}\omega_7v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8\omega_{18} +$
$2\omega_6^3\omega_{22}\omega_{19}c_s^2v_1^2v_2\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{19}v_1v_2^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{22}\omega_{19}v_1^2v_2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} -$
$4\omega_6^2\omega_{22}\omega_{19}c_s^4v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{22}\omega_{19}c_s^2v_1v_2^2\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8\omega_{18} - 2\omega_6^2\omega_{22}\omega_{19}c_s^2v_1\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} +$
$2\omega_6^2\omega_{22}\omega_{19}c_s^2v_1^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - \omega_6^3\omega_{19}c_s^2v_2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}v_1^2v_2\omega_{13}\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8\omega_{18} -$
$4\omega_6\omega_{22}\omega_{19}c_s^4v_2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - \omega_6^3\omega_{22}\omega_{19}v_1v_2^2\omega_{13}\omega_7v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}v_1^2v_2\omega_{13}\omega_7v_3^2\omega_{20}\omega_{11}\omega_8\omega_{18} -$
$2\omega_6^2\omega_{19}v_1^2v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{22}\omega_{19}c_s^2v_1^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 - 2\omega_6^2\omega_{22}\omega_{19}c_s^2v_1^2v_2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} +$
$2\omega_6^2\omega_{19}v_1^2v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 - 2\omega_6^2\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}c_s^2v_1^2v_2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18} -$
$2\omega_6^2\omega_{22}\omega_{19}v_1v_2^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}c_s^2v_1v_2^2\omega_{13}\omega_7v_3^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}v_1^2v_2\omega_{13}\omega_7^2v_3^2\omega_{14}\omega_8^2\omega_{18} -$
$2\omega_6^2\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8\omega_{18} - 2\omega_6^3\omega_{19}v_1v_2^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2 - 2\omega_6^3\omega_{22}\omega_{19}v_1^2v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2 +$
$\omega_6^3\omega_{22}\omega_{19}c_s^2v_1^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7v_3^2\omega_{11}\omega_{14}\omega_8\omega_{18} +$
$\omega_6^3\omega_{22}\omega_{19}c_s^2v_1v_2^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}c_s^2v_1v_2^2\omega_{13}\omega_7^2v_3^2\omega_{14}\omega_8^2 - \omega_6^3\omega_{19}c_s^2v_1v_2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_{18} -$
$2\omega_6^3\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} + \omega_6^3\omega_{22}v_1v_2^2\omega_{13}\omega_7v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 4\omega_6^3\omega_{22}\omega_{19}c_s^4v_2\omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} +$
$\omega_6^3\omega_{22}c_s^2v_1\omega_{13}\omega_7v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + \omega_6^3\omega_{19}c_s^2v_1\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_{18} - \omega_6^3\omega_{22}c_s^2v_1v_2^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} +$
$2\omega_6^3\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7v_3^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{19}v_1v_2^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}c_s^2v_1v_2^2\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} +$
$4\omega_6^3\omega_{22}\omega_{19}c_s^4v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} - 2\omega_6^2\omega_{22}\omega_{19}v_1^2v_2\omega_{13}\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8^2 -$
$2\omega_6^3\omega_{22}\omega_{19}v_1v_2^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} - \omega_6^3\omega_{22}\omega_{19}c_s^2v_1^2v_2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8^2\omega_{18} - 4\omega_6^2\omega_{22}\omega_{19}c_s^4v_2\omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} +$
$2\omega_6^3\omega_{22}\omega_{22}v_1v_2^2\omega_{13}\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} + \omega_6^3\omega_{22}\omega_{19}c_s^2v_1\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}v_1^2v_2\omega_{13}\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} -$
$8\omega_6^2\omega_{22}\omega_{19}c_s^4v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}c_s^2v_1^2v_2\omega_{13}\omega_7^2\omega_{14}\omega_8^2 + 2\omega_6^2\omega_{22}\omega_{19}c_s^2v_1v_2^2\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} -$
$2\omega_6^2\omega_{22}\omega_{19}c_s^2v_1^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_6^2\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} + \omega_6^3\omega_{22}\omega_{19}c_s^2v_1^2v_2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} -$
$2\omega_6^3\omega_{22}v_1^2v_2\omega_{13}\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} - \omega_6^3\omega_{22}c_s^2v_1\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 4\omega_6^2\omega_{22}\omega_{19}c_s^4v_2\omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} +$
$2\omega_6^3\omega_{22}\omega_{19}v_1^2v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 - 2\omega_6^3\omega_{22}\omega_{19}c_s^2v_1v_2^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 -$
$2\omega_6^3\omega_{22}\omega_{19}v_1^2v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + \omega_6^3\omega_{22}\omega_{19}c_s^2v_1\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} +$
$2\omega_6^2\omega_{19}c_s^2v_2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + \omega_6^3\omega_{22}\omega_{19}c_s^2v_1\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}v_1^2v_2\omega_{13}\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} -$
$8\omega_6^2\omega_{22}\omega_{19}c_s^4v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}c_s^2v_1^2v_2\omega_{13}\omega_7^2\omega_{14}\omega_8^2 + 2\omega_6^2\omega_{22}\omega_{19}c_s^2v_1v_2^2\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} -$
$2\omega_6^2\omega_{22}\omega_{19}c_s^2v_1^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_6^2\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} + \omega_6^3\omega_{22}\omega_{19}c_s^2v_1^2v_2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} -$
$2\omega_6^3\omega_{22}v_1^2v_2\omega_{13}\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} - \omega_6^3\omega_{22}c_s^2v_1\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}v_1^2v_2\omega_{13}\omega_7^2v_3^2\omega_{14}\omega_8^2\omega_{18} +$
$2\omega_6^2\omega_{22}\omega_{19}c_s^2v_1\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + \omega_6^3\omega_{19}c_s^2v_1\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} +$
$\omega_6^3\omega_{22}\omega_{19}c_s^2v_2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + \omega_6^3\omega_{22}\omega_{19}c_s^2v_1\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}v_1^2v_2\omega_{13}\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8^2 -$
$8\omega_6^2\omega_{22}\omega_{19}c_s^4v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}c_s^2v_1^2v_2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_{18} + \omega_6^3\omega_{19}c_s^2v_1\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} +$
$2\omega_6^2\omega_{19}c_s^2v_2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + \omega_6^3\omega_{22}\omega_{19}c_s^2v_1\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}v_1^2v_2\omega_{13}\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} -$
$8\omega_6^2\omega_{22}\omega_{19}c_s^4v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}c_s^2v_1^2v_2\omega_{13}\omega_7^2\omega_{14}\omega_8^2 + 2\omega_6^2\omega_{22}\omega_{19}c_s^2v_1v_2^2\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} -$
$2\omega_6^2\omega_{22}\omega_{19}c_s^2v_1^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_6^2\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} + \omega_6^3\omega_{22}\omega_{19}c_s^2v_1^2v_2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} -$
$2\omega_6^3\omega_{22}v_1^2v_2\omega_{13}\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} - \omega_6^3\omega_{22}c_s^2v_1\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}v_1^2v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 -$
$2\omega_6^3\omega_{19}v_1^2v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 + 2\omega_6^3\omega_{22}\omega_{19}v_1v_2^2\omega_{13}\omega_7v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} - \omega_6^3\omega_{22}\omega_{19}v_1^2v_2\omega_{13}\omega_7v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} -$

$2\omega_6^2\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 + \omega_6^3\omega_{22}c_s^2v_1v_2^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}c_s^2v_1^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18} +$
$\omega_6^3\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 + 2\omega_6^3\omega_{19}c_s^2v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2 -$
$2\omega_6^3\omega_{22}c_s^2v_1v_2^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^3\omega_{22}c_s^2v_2\omega_{13}\omega_7v_3^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} + \omega_6^3\omega_{19}c_s^2v_1^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} +$
$2\omega_6^2\omega_{22}\omega_{19}v_1v_2^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}c_s^2v_1v_2^2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8\omega_{18} - 2\omega_6^2\omega_{22}\omega_{19}c_s^2v_1v_2^2\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8^2 -$
$2\omega_6^2\omega_{22}\omega_{19}c_s^2v_1v_2^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} - \omega_6^3\omega_{22}\omega_{19}c_s^2v_1v_2^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{19}c_s^2v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} -$
$\omega_6^3\omega_{22}c_s^2v_1^2v_2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + \omega_6^3\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - \omega_6^3\omega_{19}c_s^2v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_{18} -$
$2\omega_6^3\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7v_3^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} - \omega_6^3\omega_{22}\omega_{19}v_1v_2^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_{18} +$
$2\omega_6^3\omega_{22}\omega_{19}v_1^2v_2\omega_{13}\omega_7^2v_3^2\omega_{14}\omega_8^2 - \omega_6^3\omega_{19}c_s^2v_1\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 4\omega_6\omega_{22}\omega_{19}c_s^4v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} -$
$2\omega_6^3\omega_{22}\omega_{19}v_1^2v_2\omega_{13}\omega_7v_3^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^3\omega_{19}c_s^2v_1^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2 - \omega_6^3\omega_{19}v_1^2v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_{18} +$
$\omega_6^3\omega_{22}\omega_{19}v_1^2v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{19}c_s^2v_1v_2^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + \omega_6^3\omega_{22}v_1v_2^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_{18} -$
$\omega_6^3\omega_{22}\omega_{19}c_s^2v_1^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^3\omega_{22}v_1^2v_2\omega_{13}\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{22}\omega_{19}v_1v_2^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} +$
$2\omega_6^2\omega_{22}\omega_{19}c_s^2v_1v_2^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} + \omega_6^3\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - \omega_6^3\omega_{22}\omega_{19}c_s^2v_2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} -$
$2\omega_6^3\omega_{22}\omega_{19}c_s^2v_1v_2^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 - 2\omega_6^3\omega_{22}c_s^2v_2\omega_{13}\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 4\omega_6^2\omega_{22}\omega_{19}c_s^4v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_{18} +$
$2\omega_6^2\omega_{19}c_s^2v_1^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 + 2\omega_6^3\omega_{22}v_1^2v_2\omega_{13}\omega_7^2v_3^2\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{19}c_s^2v_1^2v_2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + \omega_6^3\omega_{22}c_s^2v_1\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_{18} -$
$2\omega_6^3\omega_{19}c_s^2v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 - \omega_6^3\omega_{22}\omega_{19}c_s^2v_1v_2^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{22}\omega_{19}v_1^2v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 +$
$2\omega_6^2\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} - \omega_6^3\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} + \omega_6^3\omega_{22}c_s^2v_1^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} -$
$2\omega_6^3\omega_{22}\omega_{19}c_s^2v_1^2v_2\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_6^2\omega_{19}v_1^2v_2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{22}\omega_{19}v_1^2v_2\omega_{13}\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8^2 -$
$\omega_6^3\omega_{22}c_s^2v_2\omega_{13}\omega_7v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^3\omega_{19}c_s^2v_1\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2 - 2\omega_6^3\omega_{22}\omega_{19}v_1^2v_2\omega_{13}\omega_7v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} +$
$2\omega_6^3\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{22}\omega_{19}v_1v_2^2\omega_{13}\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}c_s^2v_1v_2^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18} -$
$\omega_6^3\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8\omega_{18} +$
$\omega_6^3\omega_{22}v_1^2v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{22}\omega_{19}c_s^2v_1\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + \omega_6^3\omega_{22}\omega_{19}c_s^2v_1^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_{18} +$
$2\omega_6^3\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8^2 - 2\omega_6^3\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2 + 2\omega_6^3\omega_{22}\omega_{19}c_s^2v_1^2v_2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8\omega_{18} +$
$2\omega_6^2\omega_{22}\omega_{19}v_1v_2^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} - 2\omega_6^2\omega_{19}c_s^2v_1\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 + 2\omega_6^2\omega_{22}\omega_{19}v_1^2v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8\omega_{18} +$
$2\omega_6^3\omega_{22}\omega_{19}c_s^2v_1v_2^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18} - \omega_6^3\omega_{22}c_s^2v_1^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7v_3^2\omega_{20}\omega_{11}\omega_8\omega_{18} -$
$2\omega_6^3\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7^2v_3^2\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}v_1v_2^2\omega_{13}\omega_7v_3^2\omega_{20}\omega_{11}\omega_8\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}c_s^2v_1v_2^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2 -$
$2\omega_6^3\omega_{22}\omega_{19}c_s^2v_1^2v_2\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8^2 - 2\omega_6^2\omega_{19}v_1v_2^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 - \omega_6^3\omega_{22}\omega_{19}c_s^2v_1^2v_2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} +$
$2\omega_6^3\omega_{22}\omega_{19}c_s^2v_1v_2^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} - \omega_6^3\omega_{22}\omega_{19}v_1^2v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - \omega_6^3\omega_{19}v_1v_2^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} -$
$2\omega_6^2\omega_{22}\omega_{19}c_s^2v_1v_2^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{22}\omega_{19}c_s^2v_1^2v_2\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8\omega_{18} +$
$2\omega_6^2\omega_{22}\omega_{19}v_1v_2^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + \omega_6^3\omega_{22}\omega_{19}c_s^2v_2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}v_1v_2^2\omega_{13}\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8\omega_{18}$

$C_{36} =$
$\omega_6^3\omega_{19}c_s^2v_2^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_{18} - \omega_6^3\omega_{19}c_s^2v_2^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^3\omega_{22}c_s^2v_2^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_{18} + \omega_6^3\omega_{19}c_s^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} +$
$2\omega_6^3\omega_{22}c_s^2v_2^2\omega_{13}^2\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} - 6\omega_6\omega_{22}\omega_{19}c_s^2v_1v_2\omega_{13}^2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} +$
$2\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}c_s^2v_2^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18} + 4\omega_6^2\omega_{22}\omega_{19}c_s^2v_1v_2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} -$
$4\omega_6^2\omega_{22}\omega_{19}c_s^2v_1v_2\omega_{13}^2\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}c_s^2v_2^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2 + 4\omega_6^2\omega_{22}\omega_{19}v_1v_2\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8\omega_{18} -$
$2\omega_6^2\omega_{22}\omega_{19}v_2^2\omega_{13}^2\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8^2 + 2\omega_6^2\omega_{22}\omega_{19}c_s^2v_2^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} -$
$4\omega_6^3\omega_{22}\omega_{19}c_s^2v_1v_2\omega_{13}^2\omega_7^2\omega_{11}\omega_{14}\omega_8^2 - 2\omega_6^3\omega_{22}\omega_{19}v_2^2\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}v_2^2\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2 +$
$\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_{18} + 4\omega_6^2\omega_{19}v_1v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 4\omega_6^3\omega_{22}\omega_{19}v_1v_2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} +$
$2\omega_6^3\omega_{22}\omega_{19}c_s^2v_1v_2\omega_{13}^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}v_2^2\omega_{13}^2\omega_7^2v_3^2\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{22}\omega_{19}c_s^2v_1v_2\omega_{13}^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} +$
$4\omega_6^2\omega_{22}\omega_{19}c_s^2v_1v_2\omega_{13}^2\omega_7\omega_{11}\omega_{14}\omega_8\omega_{18} - 2\omega_6^2\omega_{19}c_s^2v_2^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 + 2\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 -$
$2\omega_6^3\omega_{22}\omega_{19}c_s^2v_1v_2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^3\omega_{22}c_s^2v_1v_2\omega_{13}^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8\omega_{18} +$
$4\omega_6^2\omega_{19}c_s^2v_1v_2\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 + \omega_6^3\omega_{22}\omega_{19}v_2^2\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} - 4\omega_6^2\omega_{22}\omega_{19}v_1v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} -$
$4\omega_6^3\omega_{22}\omega_{19}v_1v_2\omega_{13}^2\omega_7v_3^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 4\omega_6^2\omega_{22}\omega_{19}v_1v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2 -$
$2\omega_6^3\omega_{19}v_1v_2\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{19}v_2^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - \omega_6^3\omega_{22}\omega_{19}v_2^2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} -$
$\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - \omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7^2v_3^2\omega_{14}\omega_8^2\omega_{18} + 4\omega_6^3\omega_{22}v_1v_2\omega_{13}^2\omega_7^2v_3^2\omega_{14}\omega_8^2\omega_{18} +$
$4\omega_6^2\omega_{22}\omega_{19}c_s^2v_1v_2\omega_{13}^2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + \omega_6^3\omega_{22}v_2^2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{22}\omega_{19}v_2^2\omega_{13}^2\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8\omega_{18} +$
$2\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7v_3^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} + \omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{19}c_s^2v_2^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} +$
$4\omega_6^2\omega_{22}\omega_{19}v_1v_2\omega_{13}^2\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8^2 + 4\omega_6^3\omega_{22}v_1v_2\omega_{13}^2\omega_7v_3^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}c_s^2v_1v_2\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} -$
$4\omega_6^3\omega_{22}\omega_{19}c_s^2v_1v_2\omega_{13}^2\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}c_s^2v_2^2\omega_{13}^2\omega_7v_3^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} +$
$2\omega_6^2\omega_{22}\omega_{19}c_s^2v_1v_2\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 4\omega_6^2\omega_{22}\omega_{19}v_1v_2\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_6^3\omega_{19}c_s^2v_1v_2\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} -$
$2\omega_6^3\omega_{22}\omega_{19}c_s^2v_2^2\omega_{13}^2\omega_7\omega_{11}\omega_{14}\omega_8\omega_{18} - \omega_6^3\omega_{19}v_2^2\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}c_s^2v_1v_2\omega_{13}^2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_{18} +$
$4\omega_6^3\omega_{22}\omega_{19}c_s^2v_1v_2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2 - 2\omega_6^3\omega_{22}\omega_{19}c_s^2v_2^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} - 2\omega_6^3\omega_{22}c_s^2v_1v_2\omega_{13}^2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} +$
$4\omega_6^2\omega_{19}c_s^2v_1v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - \omega_6^3\omega_{22}\omega_{19}c_s^2v_2^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}v_2^2\omega_{13}^2\omega_7^2v_3^2\omega_{14}\omega_8^2 +$
$2\omega_6^3\omega_{22}\omega_{19}c_s^2v_2^2\omega_{13}^2\omega_7^2\omega_{11}\omega_{14}\omega_8\omega_{18} + 10\omega_6\omega_{22}\omega_{19}c_s^2v_1v_2\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 4\omega_6^3\omega_{22}\omega_{19}c_s^2v_1v_2\omega_{13}^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2 +$
$4\omega_6^2\omega_{22}\omega_{19}v_1v_2\omega_{13}^2\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}c_s^2v_1v_2\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_{18} + 2\omega_6^2\omega_{22}\omega_{19}c_s^2v_2^2\omega_{13}^2\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} -$

$4\omega_6^3\omega_{22}\omega_{19}c_s^2v_1v_2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{22}\omega_{19}c_s^2v_2^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^3\omega_{19}c_s^2v_2^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2 + 2\omega_6^3\omega_{19}c_s^2v_2^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 -$
$2\omega_6^2\omega_{22}\omega_{19}v_2^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} - 12\omega_6^2\omega_{22}\omega_{19}c_s^2v_1v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + \omega_6^3\omega_{22}v_2^2\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_{18} -$
$\omega_6^3\omega_{22}\omega_{19}c_s^2v_2^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{19}c_s^2\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7^2v_3^2\omega_{14}\omega_8^2 +$
$2\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{22}\omega_{19}c_s^2v_2^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{22}\omega_{19}v_2^2\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 +$
$2\omega_6^3\omega_{22}\omega_{19}v_2^2\omega_{13}^2\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8^2 + 4\omega_6^3\omega_{22}\omega_{19}c_s^2v_1v_2\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 - \omega_6^3\omega_{22}\omega_{19}v_2^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} -$
$4\omega_6^2\omega_{22}\omega_{19}v_1v_2\omega_{13}^2\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{22}\omega_{19}c_s^2v_2^2\omega_{13}^2\omega_7^2\omega_{11}\omega_{14}\omega_8\omega_{18} - 4\omega_6^2\omega_{19}v_1v_2\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} -$
$2\omega_6^3\omega_{22}\omega_{19}c_s^2v_1v_2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}c_s^2v_2^2\omega_{13}^2\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 6\omega_6\omega_{22}\omega_{19}c_s^2v_1v_2\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} +$
$\omega_6^3\omega_{22}\omega_{19}c_s^2v_2^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^3\omega_{19}c_s^2\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2 + \omega_6^3\omega_{22}\omega_{19}v_2^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} - \omega_6^3\omega_{19}c_s^2\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} -$
$\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^3\omega_{22}v_1v_2\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_{18} - 4\omega_6^2\omega_{19}c_s^2v_1v_2\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} -$
$2\omega_6^3\omega_{19}c_s^2v_1v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}v_1v_2\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{22}\omega_{19}c_s^2v_2^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} -$
$2\omega_6^3\omega_{22}\omega_{19}v_2^2\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 + 2\omega_6^3\omega_{19}c_s^2\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 - 4\omega_6^3\omega_{22}\omega_{19}v_1v_2\omega_{13}^2\omega_7^2v_3^2\omega_{14}\omega_8^2\omega_{18} +$
$2\omega_6^2\omega_{22}\omega_{19}c_s^2v_1v_2\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_{18} - 4\omega_6^3\omega_{22}\omega_{19}v_1v_2\omega_{13}^2\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}v_2^2\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8\omega_{18} +$
$2\omega_6^2\omega_{22}\omega_{19}c_s^2v_1v_2\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 4\omega_6^3\omega_{22}\omega_{19}v_1v_2\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2 + 2\omega_6^2\omega_{22}\omega_{19}v_2^2\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} -$
$2\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}c_s^2v_2^2\omega_{13}^2\omega_7^2\omega_{11}\omega_{14}\omega_8^2 - 8\omega_6^3\omega_{22}\omega_{19}c_s^2v_1v_2\omega_{13}^2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} -$
$2\omega_6^3\omega_{19}c_s^2v_1v_2\omega_{13}^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_{18} + 4\omega_6^2\omega_{19}v_1v_2\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 + 2\omega_6^3\omega_{22}v_2^2\omega_{13}^2\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} + \omega_6^3\omega_{19}v_2^2\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_{18} +$
$2\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8\omega_{18} + 4\omega_6\omega_{22}\omega_{19}c_s^2v_1v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_7\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} +$
$4\omega_6^3\omega_{22}\omega_{19}v_1v_2\omega_{13}^2\omega_7\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8\omega_{18} + 2\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}v_1v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} -$
$2\omega_6^3\omega_{22}\omega_{19}v_2^2\omega_{13}^2\omega_7\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_6^2\omega_{22}\omega_{19}c_s^2v_2^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{19}v_2^2\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 +$
$2\omega_6^3\omega_{22}\omega_{19}c_s^2v_2^2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 4\omega_6^2\omega_{22}c_s^2v_2^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 4\omega_6^2\omega_{22}\omega_{19}v_1v_2\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} +$
$2\omega_6^2\omega_{19}v_2^2\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{22}\omega_{19}v_2^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 4\omega_6^2\omega_{22}\omega_{19}c_s^2v_1v_2\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 +$
$\omega_6^3\omega_{22}\omega_{19}c_s^2v_2^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^3\omega_{19}v_2^2\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2 - \omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} +$
$2\omega_6^3\omega_{19}v_2^2\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 + 4\omega_6^2\omega_{22}\omega_{19}c_s^2v_1v_2\omega_{13}^2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + \omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} +$
$2\omega_6^3\omega_{22}\omega_{19}c_s^2v_2^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_{18} - 4\omega_6^3\omega_{19}c_s^2v_1v_2\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 + 2\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8\omega_{18} +$
$2\omega_6^3\omega_{22}\omega_{19}c_s^2v_2^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2 + 2\omega_6^3\omega_{22}\omega_{19}v_2^2\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8\omega_{18} -$
$2\omega_6^3\omega_{22}\omega_{19}v_2^2\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8\omega_{18} + 4\omega_6^3\omega_{22}\omega_{19}v_1v_2\omega_{13}^2\omega_7v_3^2\omega_{11}\omega_{14}\omega_8\omega_{18} - 4\omega_6^3\omega_{22}c_s^2v_1v_2\omega_{13}^2\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} +$
$2\omega_6^2\omega_{22}\omega_{19}v_2^2\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} - 4\omega_6^3\omega_{22}\omega_{19}v_1v_2\omega_{13}^2\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8^2 + 2\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} +$
$\omega_6^3\omega_{19}c_s^2\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_{18} + \omega_6^3\omega_{19}c_s^2v_2^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}v_2^2\omega_{13}^2\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8\omega_{18} -$
$4\omega_6^3\omega_{22}\omega_{19}v_1v_2\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8\omega_{18} - 2\omega_6^3\omega_{22}v_2^2\omega_{13}^2\omega_7v_3^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 6\omega_6^3\omega_{22}\omega_{19}c_s^2v_1v_2\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} +$
$4\omega_6^3\omega_{22}\omega_{19}c_s^2v_1v_2\omega_{13}^2\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{22}\omega_{19}v_2^2\omega_{13}^2\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} -$
$2\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7v_3^2\omega_{11}\omega_{14}\omega_8\omega_{18} - 2\omega_6^2\omega_{19}c_s^2\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 + \omega_6^3\omega_{22}c_s^2v_2^2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^3\omega_{22}v_2^2\omega_{13}^2\omega_7^2v_3^2\omega_{14}\omega_8^2\omega_{18} -$
$2\omega_6^3\omega_{19}v_1v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{22}\omega_{19}c_s^2v_2^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 - \omega_6^3\omega_{22}\omega_{19}c_s^2v_2^2\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} -$
$2\omega_6^2\omega_{22}\omega_{19}c_s^2v_2^2\omega_{13}^2\omega_7^2\omega_{11}\omega_{14}\omega_8^2 + 4\omega_6^2\omega_{22}\omega_{19}c_s^2v_1v_2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + \omega_6^3\omega_{22}c_s^2v_2^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_{18} +$
$\omega_6^3\omega_{22}\omega_{19}c_s^2v_2^2\omega_{13}^2\omega_7\omega_{20}\omega_{11}\omega_8^2\omega_{18} + 4\omega_6^3\omega_{22}\omega_{19}v_1v_2\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 4\omega_6^3\omega_{22}\omega_{19}c_s^2v_1v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} -$
$2\omega_6^2\omega_{19}c_s^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - \omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{19}c_s^2v_2^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} -$
$\omega_6^3\omega_{22}v_2^2\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 4\omega_6^3\omega_{22}c_s^2v_1v_2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_7^2v_3^2\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^3\omega_{22}v_1v_2\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} -$
$2\omega_6^3\omega_{22}\omega_{19}v_1v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} + \omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + \omega_6^3\omega_{22}\omega_{19}v_2^2\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} -$
$4\omega_6^2\omega_{22}\omega_{19}v_1v_2\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{22}\omega_{19}c_s^2v_2^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18} + 4\omega_6^2\omega_{22}\omega_{19}c_s^2v_1v_2\omega_{13}^2\omega_7^2\omega_{11}\omega_{14}\omega_8\omega_{18} +$
$4\omega_6^2\omega_{22}\omega_{19}c_s^2v_1v_2\omega_{13}^2\omega_7^2\omega_{11}\omega_{14}\omega_8^2 - 2\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + \omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} -$
$\omega_6^3\omega_{22}\omega_{19}c_s^2v_2^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}v_1v_2\omega_{13}^2\omega_7v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - \omega_6^3\omega_{22}\omega_{19}v_2^2\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_{18} +$
$4\omega_6^3\omega_{22}c_s^2v_1v_2\omega_{13}^2\omega_7\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 4\omega_6^3\omega_{22}\omega_{19}v_1v_2\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 + 4\omega_6^3\omega_{19}v_1v_2\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2 -$
$4\omega_6^3\omega_{22}\omega_{19}c_s^2v_1v_2\omega_{13}^2\omega_7\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2$

$C_{37} = 6\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 2\omega_6^2\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2\omega_{22}\omega_{19}c_s^2v_1^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^2\omega_{22}\omega_{19}c_s^2v_1^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6^2\omega_{22}\omega_{19}c_s^2v_1v_2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 60\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} +$
$6\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6^3\omega_{22}\omega_{19}c_s^2v_1v_2\omega_{13}\omega_7^3\omega_{14}\omega_8^2\omega_5^2 - 12\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} +$
$24\omega_6^3\omega_{22}\omega_{19}v_1v_2\omega_{13}\omega_7^3v_3^2\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} + 24\omega_6^3\omega_{22}\omega_{19}v_1v_2\omega_{13}\omega_7^3v_3^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2 + 12\omega_6^2\omega_{19}v_1^2\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$24\omega_6\omega_{22}\omega_{19}c_s^2v_1^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 6\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_7^3\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} + 12\omega_6\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 24\omega_6^2\omega_{22}\omega_{19}c_s^2v_1v_2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^3\omega_{19}v_1v_2\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}v_1^2\omega_{13}\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} - 24\omega_6^2\omega_{22}\omega_{19}c_s^2v_1v_2\omega_{13}\omega_7^3\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} -$
$6\omega_6^3\omega_{22}\omega_{19}v_1^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_7^3\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}v_1v_2\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^2\omega_{22}\omega_{19}c_s^2v_1^2\omega_{13}\omega_7^3\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} - 6\omega_6^3\omega_{19}c_s^2v_1^2\omega_{13}\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} -$
$6\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 6\omega_6^3\omega_{22}v_1^2\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$12\omega_6^3\omega_{22}\omega_{19}v_1v_2\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 6\omega_6^3\omega_{19}c_s^2v_1^2\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}c_s^2v_1^2\omega_{13}\omega_7^3\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^2\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5 + 12\omega_6^3\omega_{22}\omega_{19}c_s^2v_1^2\omega_{13}\omega_7^3\omega_{14}\omega_8^2\omega_5^2 - 6\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^3\omega_{22}\omega_{19}c_s^3v_1v_2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 24\omega_6^3\omega_{19}c_s^2v_1v_2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2 + 6\omega_6^3\omega_{22}\omega_{19}v_1^2\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$12\omega_6^3\omega_{22}v_1v_2\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 10\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} - 12\omega_6^3\omega_{19}v_1^2\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2 +$
$24\omega_6^3\omega_{22}\omega_{19}v_1v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} - 24\omega_6^3\omega_{19}c_s^2v_1v_2\omega_{13}\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^2 - 12\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2 -$
$24\omega_6^3\omega_{22}\omega_{19}c_s^2v_1v_2\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} + 18\omega_6^3\omega_{22}\omega_{19}c_s^2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6^2\omega_{22}\omega_{19}v_1v_2\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$12\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}v_1^2\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 6\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$36\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}c_s^2v_1^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2 - 24\omega_6^3\omega_{22}\omega_{19}v_1v_2\omega_{13}\omega_7^3v_3^2\omega_{14}\omega_8^2\omega_5^2 -$
$36\omega_6^3\omega_{22}\omega_{19}c_s^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} - 6\omega_6^3\omega_{22}v_1^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^2\omega_{19}c_s^2v_1^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$12\omega_6^3\omega_{22}c_s^2v_1v_2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^3\omega_{14}\omega_8^2\omega_5^2 + 12\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^3\omega_{11}\omega_{14}\omega_8^2\omega_5^2 +$
$12\omega_6^3\omega_{22}\omega_{19}c_s^2v_1v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}v_1v_2\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} -$
$12\omega_6^3\omega_{22}\omega_{19}v_1^2\omega_{13}\omega_7^3v_3^2\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7^3\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{19}v_1^2\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 +$

$6\omega_6^3\omega_{22}\omega_{19}v_1^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}v_1v_2\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} +$
$24\omega_6^3\omega_{22}\omega_{19}c_s^2v_1^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} - 12\omega_6^2\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} + 24\omega_6^3\omega_{22}\omega_{19}c_s^2v_1v_2\omega_{13}\omega_7^3\omega_{11}\omega_{14}\omega_8^2\omega_5^2 +$
$12\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_5^2\omega_{18} - 12\omega_6^2\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^3\omega_{11}\omega_{14}\omega_8^2\omega_5^2 - 24\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18} +$
$12\omega_6^2\omega_{22}\omega_{19}v_1^2\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{19}v_1v_2\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 24\omega_6^3\omega_{22}c_s^2v_1v_2\omega_{13}\omega_7^3\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}c_s^2v_1^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_5^2\omega_{18} + 24\omega_6^2\omega_{22}\omega_{19}v_1v_2\omega_{13}\omega_7^3v_3^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$24\omega_6^3\omega_{22}\omega_{19}c_s^2v_1v_2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} + 24\omega_6^2\omega_{19}v_1v_2\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6^2\omega_{19}v_1v_2\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2 -$
$18\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} - 24\omega_6^3\omega_{22}\omega_{19}c_s^2v_1v_2\omega_{13}\omega_7^3\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 6\omega_6^3\omega_{22}\omega_{19}v_1^2\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$24\omega_6^2\omega_{22}\omega_{19}v_1v_2\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} + 12\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5 - 60\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} -$
$12\omega_6^2\omega_{19}v_1^2\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{22}c_s^2v_1v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6^2\omega_{19}c_s^2v_1v_2\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$12\omega_6^3\omega_{19}c_s^2\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2 + 12\omega_6^2\omega_{22}\omega_{19}v_1^2\omega_{13}\omega_7^3v_3^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2 + 12\omega_6^2\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^3\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$12\omega_6^2\omega_{22}\omega_{19}v_1^2\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2 - 6\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 24\omega_6\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$6\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{22}v_1v_2\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}v_1^2\omega_{13}\omega_7^3v_3^2\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} +$
$24\omega_6^2\omega_{19}c_s^2v_1v_2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}c_s^2v_1^2\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} + 6\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$12\omega_6^3\omega_{22}\omega_{19}v_1^2\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 - 24\omega_6^3\omega_{22}\omega_{19}c_s^2v_1v_2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2 + 12\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_7^3\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}c_s^2v_1^2\omega_{13}\omega_7^3\omega_{11}\omega_{14}\omega_8^2\omega_5^2 - 24\omega_6^3\omega_{22}\omega_{19}v_1v_2\omega_{13}\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} +$
$12\omega_6^2\omega_{22}\omega_{19}v_1^2\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 6\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^2\omega_{22}\omega_{19}v_1^2\omega_{13}\omega_7^3v_3^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$18\omega_6^2\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 6\omega_6^3\omega_{19}c_s^2\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6^3\omega_{19}v_1v_2\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 -$
$12\omega_6^2\omega_{22}\omega_{19}c_s^2v_1^2\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 24\omega_6^2\omega_{22}\omega_{19}c_s^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 6\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$24\omega_6^2\omega_{22}\omega_{19}c_s^2v_1v_2\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 24\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18} - 6\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^3\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} - 12\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7^3\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^2\omega_{19}c_s^2\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2\omega_{19}c_s^2v_1^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2 + 12\omega_6^2\omega_{22}\omega_{19}v_1^2\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} -$
$12\omega_6^3\omega_{22}\omega_{19}c_s^2v_1v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}v_1v_2\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}v_1v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} -$
$12\omega_6^2\omega_{22}\omega_{19}c_s^4\omega_7^3\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}c_s^2v_1v_2\omega_7^3\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 6\omega_6^3\omega_{22}\omega_{19}v_1^2\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$24\omega_6^2\omega_{22}\omega_{19}v_1v_2\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2 + 36\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}c_s^2v_1v_2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} -$
$24\omega_6^2\omega_{19}v_1v_2\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18} + 12\omega_6^2\omega_{22}\omega_{19}c_s^4\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^2\omega_{22}\omega_{19}c_s^2v_1^2\omega_{13}\omega_7^3\omega_{11}\omega_{14}\omega_8^2\omega_5^2 - 12\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_5^2\omega_{18} - 24\omega_6^2\omega_{22}\omega_{19}c_s^2v_1v_2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2 +$
$12\omega_6\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} - 24\omega_6^2\omega_{22}\omega_{19}v_1v_2\omega_{13}\omega_7^3v_3^2\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} - 24\omega_6^3\omega_{22}v_1v_2\omega_{13}\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^2\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}c_s^2v_1^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_5^2\omega_{18} + 24\omega_6^3\omega_{22}\omega_{19}v_1v_2\omega_{13}\omega_7^3v_3^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 24\omega_6^3\omega_{22}\omega_{19}c_s^2v_1v_2\omega_{13}\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 12\omega_6^3\omega_{19}c_s^2v_1v_2\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$6\omega_6^3\omega_{19}v_1^2\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5 + 24\omega_6^3\omega_{22}\omega_{19}c_s^2v_1v_2\omega_{13}\omega_7^3\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} -$
$6\omega_6^3\omega_{19}v_1^2\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2\omega_{22}\omega_{19}c_s^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} - 6\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} - 12\omega_6^2\omega_{22}\omega_{19}v_1^2\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} +$
$12\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2\omega_{22}\omega_{19}v_1^2\omega_{13}\omega_7^3v_3^2\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} - 6\omega_6^3\omega_{22}\omega_{19}v_1^2\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} -$
$12\omega_6^2\omega_{22}\omega_{19}c_s^2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3\omega_{22}v_1^2\omega_{13}\omega_7^3v_3^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 6\omega_6^3\omega_{22}\omega_{19}c_s^2v_1^2\omega_{13}\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$24\omega_6\omega_{22}\omega_{19}c_s^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5 +$
$6\omega_6^3\omega_{22}\omega_{19}c_s^2v_1^2\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 24\omega_6^3\omega_{22}\omega_{19}v_1v_2\omega_{13}\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 6\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$12\omega_6^2\omega_{19}c_s^2\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}v_1^2\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6^2\omega_{22}\omega_{19}c_s^2v_1v_2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^2\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^3\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} + 24\omega_6^2\omega_{22}\omega_{19}v_1v_2\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2\omega_{19}v_1^2\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2 - 12\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} +$
$24\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18} + 24\omega_6^3\omega_{22}\omega_{19}c_s^2v_1v_2\omega_{13}\omega_7^3\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 24\omega_6^2\omega_{22}\omega_{19}c_s^2v_1v_2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} +$
$12\omega_6^3\omega_{22}v_1^2\omega_{13}\omega_7^2v_3^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 6\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} -$
$24\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6^3\omega_{22}c_s^2v_1v_2\omega_{13}\omega_7^3\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6^2\omega_{22}\omega_{19}v_1v_2\omega_{13}\omega_7^3v_3^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2 +$
$12\omega_6^2\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} - 48\omega_6^2\omega_{22}\omega_{19}c_s^2v_1^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} +$
$24\omega_6^3\omega_{22}v_1v_2\omega_{13}\omega_7^3v_3^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 24\omega_6^3\omega_{22}\omega_{19}v_1v_2\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 - 12\omega_6^3\omega_{22}\omega_{19}c_s^2v_1^2\omega_{13}\omega_7^3\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} -$
$24\omega_6^2\omega_{22}\omega_{19}v_1v_2\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6^3\omega_{22}\omega_{19}c_s^2v_1v_2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} - 6\omega_6^3\omega_{19}c_s^2\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$6\omega_6^2\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 42\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} +$
$24\omega_6^3\omega_{22}\omega_{19}v_1v_2\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} - 24\omega_6^2\omega_{19}c_s^2v_1v_2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2 + 24\omega_6^2\omega_{22}\omega_{19}c_s^2v_1v_2\omega_{13}\omega_7^3\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^3\omega_{22}\omega_{19}v_1^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} - 6\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^2\omega_{22}\omega_{19}c_s^2v_1^2\omega_{13}\omega_7^3\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2 + 12\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}c_s^2v_1v_2\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^3\omega_{19}c_s^2v_1^2\omega_{13}\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^2 - 12\omega_6^3\omega_{22}\omega_{19}c_s^2v_1^2\omega_{13}\omega_7^3\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}c_s^2v_1v_2\omega_{13}\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$

$18\omega_6^2\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} + 24\omega_6^3\omega_{22}\omega_{19}c_s^2v_1v_2\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} +$
$24\omega_6^2\omega_{22}\omega_{19}v_1v_2\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}c_s^2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} - 6\omega_6^3\omega_{22}\omega_{19}v_1^2\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$24\omega_6^2\omega_{22}\omega_{19}c_s^2v_1v_2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2 - 6\omega_6^3\omega_{19}v_1^2\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18} +$
$12\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_5^2\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}v_1v_2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^2\omega_{22}\omega_{19}c_s^2v_1^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2 -$
$12\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18} - 12\omega_6^3\omega_{19}c_s^2v_1v_2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$18\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} - 24\omega_6^3\omega_{22}\omega_{19}v_1v_2\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2 - 24\omega_6^3\omega_{22}c_s^2v_1v_2\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$6\omega_6^3\omega_{22}v_1^2\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2\omega_{19}c_s^2v_1^2\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 6\omega_6^3\omega_{19}c_s^2v_1^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$6\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{22}c_s^2v_1v_2\omega_{13}\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}v_1^2\omega_{13}\omega_7^3v_3^2\omega_{14}\omega_8^2\omega_5^2 -$
$12\omega_6^3\omega_{22}\omega_{19}v_1^2\omega_{13}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} + 12\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6^3\omega_{22}\omega_{19}v_1v_2\omega_{13}\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} -$
$24\omega_6^3\omega_{22}\omega_{19}c_s^2v_1v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5 + 12\omega_6^3\omega_{22}\omega_{19}c_s^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_5^2\omega_{18}$

$C_{38} = -4\omega_6^2\omega_{22}c_s^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^3\omega_{22}v_1^2v_2\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{22}v_1^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2 -$
$4\omega_6^2\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6^3\omega_{22}\omega_{19}v_1^2v_2\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{22}c_s^2v_2\omega_{13}\omega_7\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 +$
$4\omega_6^2\omega_{19}v_1^2v_2\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{22}\omega_{19}v_1^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{19}c_s^2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 +$
$4\omega_6^3\omega_{22}\omega_{19}v_1v_2^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} + 4\omega_6^2\omega_{22}\omega_{19}v_1v_2^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2 + 4\omega_6^2\omega_{22}\omega_{19}v_1^2v_2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 +$
$2\omega_6^3\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6^3\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18} + 4\omega_6^3\omega_{19}v_1^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} +$
$2\omega_6^3\omega_{19}v_1v_2^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 9\omega_6^3\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2 + 4\omega_6^2\omega_{19}c_s^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18} -$
$2\omega_6^3\omega_{22}\omega_{19}v_1^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^2\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{19}c_s^2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2 -$
$2\omega_6^3\omega_{22}\omega_{19}v_1^2v_2\omega_{13}\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6^3\omega_{22}\omega_{19}v_1^2v_2\omega_{13}\omega_7\omega_{20}\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2 - 4\omega_6^3\omega_{22}\omega_{19}v_1v_2^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18} +$
$4\omega_6^3\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} - 4\omega_6^3\omega_{19}v_1^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}c_s^2v_2\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 -$
$4\omega_6^3\omega_{22}\omega_{19}v_1v_2^2\omega_{13}\omega_7^2\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{22}\omega_{19}c_s^2v_1\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6^2\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7^2\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18} +$
$2\omega_6^2\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8\omega_{18}^2 + 4\omega_6^2\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2 + 4\omega_6^3\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 +$
$4\omega_6^2\omega_{22}\omega_{19}v_1^2v_2^2\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 12\omega_6^2\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18} - 2\omega_6^3\omega_{19}v_1v_2^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 -$
$4\omega_6^3\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}^2 + 4\omega_6^2\omega_{22}c_s^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6^3\omega_{22}v_1^2v_2\omega_{13}\omega_7^2\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 +$
$4\omega_6^2\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 + 4\omega_6^2\omega_{22}\omega_{19}v_1^2v_2\omega_{13}\omega_7^2\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2 + 4\omega_6^2\omega_{22}\omega_{19}c_s^2v_1\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 +$
$2\omega_6^3\omega_{22}\omega_{19}v_1v_2^2\omega_{13}\omega_7^2\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7^2\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6^3\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 -$
$2\omega_6^3\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^2\omega_{22}\omega_{19}v_1v_2^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{22}v_1v_2^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 +$
$2\omega_6^3\omega_{22}\omega_{19}v_1^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6^2\omega_{22}\omega_{19}v_1v_2^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^2\omega_{22}\omega_{19}v_1v_2^2\omega_{13}\omega_7^2\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 -$
$2\omega_6^3\omega_{22}\omega_{19}c_s^2v_2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{19}c_s^2v_1\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^2\omega_{22}\omega_{19}v_1^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 -$
$4\omega_6^3\omega_{22}\omega_{19}v_1^2v_2\omega_{13}\omega_7^2\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18} + 4\omega_6^3\omega_{22}\omega_{19}v_1v_2^2\omega_{13}\omega_7^2\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^3\omega_{22}\omega_{19}v_1v_2^2\omega_{13}\omega_7^2\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 -$
$2\omega_6^3\omega_{22}c_s^2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6^3\omega_{22}\omega_{19}v_1v_2^2\omega_{13}\omega_7\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{22}\omega_{19}v_1^2v_2\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 -$
$4\omega_6\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6^3\omega_{19}c_s^2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} + 4\omega_6^3\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7^2\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2 +$
$4\omega_6^3\omega_{22}\omega_{19}v_1^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^2\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{19}v_1v_2^2\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 +$
$4\omega_6^3\omega_{22}v_1^2v_2\omega_{13}\omega_7^2\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 6\omega_6\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{19}v_1v_2^2\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 +$
$4\omega_6^2\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7^2\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^2\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7\omega_{20}\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{19}v_1^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 -$
$2\omega_6^3\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^3\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^3\omega_{19}v_1^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2 +$
$2\omega_6^3\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - \omega_6^2\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6^3\omega_{22}\omega_{19}v_1^2v_2\omega_{13}\omega_7^2\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 +$
$4\omega_6^3\omega_{19}c_s^2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18} - 4\omega_6^3\omega_{22}\omega_{19}v_1^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} - 4\omega_6^2\omega_{22}\omega_{19}v_1^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2 -$
$2\omega_6^3\omega_{22}\omega_{19}v_1v_2^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{19}v_1^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6^3\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 +$
$2\omega_6^3\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 8\omega_6^2\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6^2\omega_{19}c_s^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 +$
$4\omega_6^3\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6^3\omega_{19}v_1v_2^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} + 2\omega_6^3\omega_{22}v_1v_2^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2 +$
$4\omega_6^2\omega_{19}c_s^2v_2\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^3\omega_{22}\omega_{19}v_1^2v_2\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} - 2\omega_6^3\omega_{22}c_s^2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 +$
$2\omega_6^2\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_5\omega_{18}^2 - 4\omega_6^3\omega_{22}\omega_{19}v_1v_2^2\omega_{13}\omega_7^2\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 -$
$4\omega_6^2\omega_{22}\omega_{19}v_1^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^3\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7^2\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 -$
$4\omega_6^2\omega_{22}\omega_{19}v_1^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{22}v_1v_2^2\omega_{13}\omega_7^2\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^2\omega_{22}\omega_{19}v_1v_2^2\omega_{13}\omega_7^2\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 -$
$4\omega_6^2\omega_{22}\omega_{19}v_1^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2 - 12\omega_6^3\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5 - 4\omega_6^2\omega_{22}\omega_{19}c_s^2v_2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 +$
$4\omega_6^3\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6^3\omega_{22}c_s^2v_1\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{22}\omega_{19}v_1v_2^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 -$
$4\omega_6^2\omega_{19}c_s^2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18} - 8\omega_6^2\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2 +$
$4\omega_6^2\omega_{22}\omega_{19}v_1v_2^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18} - 2\omega_6^2\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_{18}^2 + 2\omega_6^3\omega_{19}c_s^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 -$
$4\omega_6^2\omega_{19}c_s^2v_1\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^3\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_{18}^2 +$
$4\omega_6^2\omega_{22}\omega_{19}v_1^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^3\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^3\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 -$
$4\omega_6^2\omega_{22}\omega_{19}v_1^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^3\omega_{22}\omega_{19}v_1v_2^2\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^3\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18} -$
$4\omega_6^2\omega_{19}v_1v_2^2\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{22}c_s^2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^3\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2 -$
$4\omega_6^2\omega_{22}\omega_{19}v_1v_2^2\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_5\omega_{18}^2 - 4\omega_6^2\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 -$
$4\omega_6^3\omega_{22}\omega_{19}v_1v_2^2\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} - 8\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{22}c_s^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 +$
$4\omega_6^2\omega_{22}c_s^2v_2\omega_{13}\omega_7\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6^2\omega_{22}\omega_{19}c_s^2v_1\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^2\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_{18}^2 -$
$2\omega_6^3\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^2\omega_{19}c_s^2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 12\omega_6^3\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7\omega_{20}\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2 -$

$4\omega_6^3\omega_{19}c_s^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18} - 4\omega_6^2\omega_{22}\omega_{19}v_1v_2^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6^2\omega_{22}\omega_{19}v_1^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18} +$
$2\omega_6^3\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7\omega_{20}\omega_{11}^2\omega_{14}\omega_5\omega_{18}^2 - 4\omega_6^3\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2 +$
$4\omega_6^3\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}^2 + 4\omega_6^3\omega_{22}\omega_{19}v_1v_2^2\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6^2\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 +$
$4\omega_6^2\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^2\omega_{19}v_1v_2^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 +$
$4\omega_6\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18} + 4\omega_6^3\omega_{22}\omega_{19}v_1^2v_2\omega_{13}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 + 4\omega_6^3\omega_{19}c_s^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} +$
$2\omega_6^3\omega_{22}\omega_{19}v_1^2v_2\omega_{13}\omega_7\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{22}\omega_{19}v_1v_2^2\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6^2\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 +$
$4\omega_6^3\omega_{22}\omega_{19}v_1^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{19}v_1^2v_2\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8\omega_{18}^2 +$
$4\omega_6^3\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7^2\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18} + 4\omega_6^2\omega_{19}v_1^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18} - 4\omega_6^2\omega_{22}\omega_{19}c_s^2v_2\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 -$
$4\omega_6^3\omega_{22}v_1v_2^2\omega_{13}\omega_7\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6^3\omega_{22}c_s^2v_1\omega_{13}\omega_7\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6^2\omega_{22}\omega_{19}v_1v_2^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 +$
$4\omega_6^3\omega_{22}\omega_{19}v_1v_2^2\omega_{13}\omega_7^2\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}c_s^2v_1\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6^3\omega_{22}\omega_{19}v_1^2v_2\omega_{13}\omega_7^2\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2 -$
$4\omega_6^3\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{22}c_s^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{22}\omega_{19}v_1^2v_2^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 +$
$4\omega_6^3\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7^2\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{22}\omega_{19}v_1^2v_2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6^2\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 +$
$4\omega_6^2\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5 - 4\omega_6^2\omega_{22}\omega_{19}v_1^2v_2\omega_{13}\omega_7^2\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{22}v_1^2v_2\omega_{13}\omega_7\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2$

$C_{39} = -2\omega_6^2\omega_{19}c_s^2\omega_{16}v_1\omega_7^3v_3^2\omega_{23}\omega_{17}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{19}c_s^2\omega_{16}v_1\omega_7^3v_3^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2 - 2\omega_6^2\omega_{19}\omega_{16}v_1^2v_2^2\omega_7^2v_3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} +$
$2\omega_6^2\omega_{19}\omega_{16}v_1^2v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} - \omega_6\omega_{19}c_s^2\omega_{16}v_1\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2 - 2\omega_6^2\omega_{16}v_1v_2^2\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} +$
$2\omega_6^2c_s^2\omega_{16}v_2^2\omega_7^3v_3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - \omega_6^2\omega_{19}v_1v_2^2\omega_7^3v_3^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6\omega_{19}\omega_{16}v_1^2v_2^2\omega_7^3v_3\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} -$
$2\omega_6^2c_s^2\omega_{16}v_1v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 4\omega_6^2\omega_{19}c_s^4\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{18} + 2\omega_6^2\omega_{16}v_1^2v_2^2\omega_7^3v_3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} -$
$\omega_6^2\omega_{19}c_s^2v_1\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{19}\omega_{16}v_1v_2^2\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_6^2\omega_{19}v_1^2v_2^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} -$
$2\omega_6^2c_s^2\omega_{16}v_2^2\omega_7^2v_3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 4\omega_6^2\omega_{19}c_s^4\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - \omega_6^2\omega_{19}v_1v_2^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} -$
$\omega_6\omega_{19}\omega_{16}v_1v_2^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2 + \omega_6^2\omega_{19}\omega_{16}v_1^2v_2^2\omega_7^3v_3\omega_{20}\omega_{17}\omega_8^2\omega_{18} + 2\omega_6\omega_{19}c_s^2\omega_{16}v_1v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} -$
$2\omega_6^2\omega_{16}v_1^2v_2^2\omega_7^2v_3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2c_s^2\omega_{16}v_1^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} -$
$\omega_6^2\omega_{19}c_s^2v_1\omega_7^3v_3^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6\omega_{19}\omega_{16}v_1v_2^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3v_3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} -$
$2\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} - 2\omega_6^2\omega_{19}c_s^2\omega_{16}v_1v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} - \omega_6^2\omega_{19}c_s^2\omega_{16}v_1\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} -$
$2\omega_6^2\omega_{19}c_s^2\omega_{16}v_1^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3v_3\omega_{23}\omega_{17}\omega_8^2 + 2\omega_6^2\omega_{19}c_s^2\omega_{16}v_1v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_8^2 -$
$\omega_6^2\omega_{19}c_s^2v_1v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{19}c_s^2\omega_{16}v_1^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} + \omega_6^2\omega_{19}c_s^2\omega_{16}v_1^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2 +$
$2\omega_6^2\omega_{19}\omega_{16}v_1v_2^2\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} - 2\omega_6^2\omega_{19}c_s^2\omega_{16}v_1v_2^3\omega_7^2v_3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} + \omega_6^2\omega_{19}c_s^2\omega_{16}v_1\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} -$
$\omega_6^2\omega_{19}c_s^2v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{19}c_s^2\omega_{16}v_1^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6\omega_{19}c_s^2\omega_{16}v_1v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2 -$
$2\omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3v_3\omega_{23}\omega_{17}\omega_{11}\omega_8^2 - 2\omega_6^2\omega_{19}c_s^2\omega_{16}v_1\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_6^2\omega_{19}c_s^2\omega_{16}v_1v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} -$
$2\omega_6^2\omega_{19}c_s^2\omega_{16}v_1^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + \omega_6^2\omega_{19}c_s^2v_1v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2c_s^2\omega_{16}v_1\omega_7^3v_3^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} +$
$2\omega_6^2\omega_{19}c_s^2\omega_{16}v_1v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + \omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2 - \omega_6\omega_{19}c_s^2\omega_{16}v_1v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2 +$
$2\omega_6^2\omega_{16}v_1v_2^2\omega_7^2v_3^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + \omega_6\omega_{19}c_s^2\omega_{16}v_1^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6\omega_{19}\omega_{16}v_1v_2^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} +$
$2\omega_6^2\omega_{19}\omega_{16}v_1^2v_2^3\omega_7^2v_3\omega_{23}\omega_{17}\omega_{11}\omega_8^2 - 2\omega_6^2c_s^2\omega_{16}v_1\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{19}\omega_{16}v_1v_2^2\omega_7^3v_3^2\omega_{23}\omega_{17}\omega_8^2 +$
$2\omega_6^2\omega_{19}\omega_{16}v_1^2v_2^3\omega_7^2v_3\omega_{23}\omega_{17}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{19}v_1^2v_2^2\omega_7^2v_3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 4\omega_6\omega_{19}c_s^4\omega_{16}v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} -$
$2\omega_6^2\omega_{16}v_1v_2^2\omega_7^3v_3^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{19}v_1^2v_2^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{19}c_s^2\omega_{16}v_1\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} -$
$\omega_6^2\omega_{19}c_s^2\omega_{16}v_1v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{16}v_1^2v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{19}c_s^2\omega_{16}v_1\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2 +$
$2\omega_6^2c_s^2\omega_{16}v_1\omega_7^2v_3^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{19}c_s^2v_1v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - \omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2 +$
$\omega_6^2\omega_{19}c_s^2\omega_{16}v_1\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} + 2\omega_6^2\omega_{16}v_1v_2^2\omega_7^2v_3^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} -$
$2\omega_6^2\omega_{16}v_1^2v_2^2\omega_7^2v_3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - \omega_6\omega_{19}\omega_{16}v_1^2v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2c_s^2\omega_{16}v_1\omega_7^2v_3^2\omega_{23}\omega_{17}\omega_8^2\omega_{18} +$
$\omega_6^2\omega_{19}c_s^2v_1\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{19}c_s^2\omega_{16}v_1v_2^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6\omega_{19}c_s^2\omega_{16}v_1\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} +$
$2\omega_6^2c_s^2\omega_{16}v_1\omega_7^2v_3^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - \omega_6\omega_{19}c_s^2\omega_{16}v_1^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6\omega_{19}\omega_{16}v_1v_2^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} +$
$\omega_6^2\omega_{19}v_1v_2^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{19}\omega_{16}v_1^2v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6\omega_{19}c_s^2\omega_{16}v_1^2\omega_7^3v_3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} +$
$2\omega_6^2c_s^2\omega_{16}v_1\omega_7^3v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_{18} + \omega_6^2\omega_{19}v_1^2v_2^2\omega_7^3v_3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + \omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} -$
$2\omega_6^2\omega_{16}v_1v_2^2\omega_7^3v_3^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - \omega_6^2\omega_{19}c_s^2\omega_{16}v_1v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{19}c_s^2v_1^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} +$
$\omega_6^2\omega_{19}c_s^2\omega_{16}v_1v_2^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2 - 2\omega_6^2\omega_{16}v_1^2v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} -$
$\omega_6^2\omega_{19}c_s^2\omega_{16}v_1^2v_2^2\omega_7^2v_3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - \omega_6\omega_{19}\omega_{16}v_1^2v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2c_s^2\omega_{16}v_1^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_{18} +$
$2\omega_6^2\omega_{19}c_s^2v_1\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6\omega_{19}\omega_{16}v_1^2v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} - 2\omega_6\omega_{19}c_s^2\omega_{16}v_1v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} +$
$\omega_6^2\omega_{19}c_s^2\omega_{16}v_1\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2 - 2\omega_6^2c_s^2\omega_{16}v_2^2\omega_7^2v_3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{19}v_1v_2^2\omega_7^2v_3^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} +$
$\omega_6^2\omega_{19}c_s^2\omega_{16}v_1\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{19}\omega_{16}v_1^2v_2^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} + 2\omega_6^2\omega_{19}c_s^2\omega_{16}v_1\omega_7^3v_3^2\omega_{23}\omega_{17}\omega_8^2 +$
$2\omega_6^2\omega_{19}\omega_{16}v_1^2v_2^2\omega_7^3v_3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_6^2\omega_{16}v_1^2v_2^2\omega_7^3v_3\omega_{20}\omega_{17}\omega_8^2\omega_{18} + \omega_6^2\omega_{19}\omega_{16}v_1v_2^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2 +$
$2\omega_6^2c_s^2\omega_{16}v_2^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 8\omega_6\omega_{19}c_s^4\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + \omega_6^2\omega_{19}\omega_{16}v_1v_2^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_{18} +$
$2\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} - 2\omega_6^2\omega_{19}c_s^2\omega_{16}v_1v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} - 2\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^2v_3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} +$
$2\omega_6^2\omega_{19}c_s^2v_1\omega_7^2v_3^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_6\omega_{19}c_s^2\omega_{16}v_1v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} +$
$2\omega_6^2c_s^2\omega_{16}v_1\omega_7^3v_3^2\omega_{23}\omega_{17}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{16}v_1^2v_2^2\omega_7^3v_3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{19}\omega_{16}v_1^2v_2^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} -$
$2\omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3v_3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_6^2c_s^2\omega_{16}v_1v_2^2\omega_7^3v_3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{19}\omega_{16}v_1^2v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2 +$
$2\omega_6^2\omega_{19}v_1v_2^2\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} + \omega_6^2\omega_{19}c_s^2v_1\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 8\omega_6^2\omega_{19}c_s^4\omega_{16}v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} +$

$$2\omega_6^2c_s^2\omega_{16}v_2^2\omega_7^3v_3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + \omega_6\omega_{19}c_s^2\omega_{16}v_1v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + \omega_6\omega_{19}\omega_{16}v_1^2v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} -
2\omega_6^2c_s^2\omega_{16}v_1^2\omega_7^3v_3\omega_{23}\omega_{17}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{16}v_1v_2^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_{18} + 2\omega_6\omega_{19}\omega_{16}v_1^2v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} -
\omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{19}\omega_{16}v_1v_2^2\omega_7^3v_3^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2 - \omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3v_3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} +
\omega_6^2\omega_{19}c_s^2\omega_{16}v_1v_2^2\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{19}c_s^2v_1^2\omega_7^2v_3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{19}\omega_{16}v_1v_2^2\omega_7^3v_3^2\omega_{23}\omega_{17}\omega_8^2\omega_{18} +
2\omega_6^2\omega_{19}c_s^2v_1v_2^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{19}\omega_{16}v_1^2v_2^2\omega_7^3v_3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{19}\omega_{16}v_1^2v_2^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} -
2\omega_6^2\omega_{19}c_s^2v_1^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} + \omega_6^2\omega_{19}c_s^2\omega_{16}v_1v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2c_s^2\omega_{16}v_1\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_{18} +
2\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^2v_3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - \omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} - \omega_6^2\omega_{19}c_s^2\omega_{16}v_1^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_{18} +
2\omega_6^2\omega_{16}v_1^2v_2^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3v_3\omega_{23}\omega_{17}\omega_{11}\omega_8^2 + 2\omega_6^2\omega_{19}\omega_{16}v_1^2v_2^2\omega_7^2v_3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} -
2\omega_6^2\omega_{19}c_s^2\omega_{16}v_1v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2 + 2\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3v_3\omega_{23}\omega_{17}\omega_8^2\omega_{18} - \omega_6^2\omega_{19}c_s^2\omega_{16}v_1^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2 -
2\omega_6^2\omega_{19}c_s^2\omega_{16}v_1^2\omega_7^3v_3\omega_{23}\omega_{17}\omega_8^2 - 2\omega_6^2\omega_{19}c_s^2\omega_{16}v_1v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{19}c_s^2v_1v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} -
4\omega_6^2\omega_{19}c_s^4\omega_{16}v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - \omega_6^2\omega_{19}c_s^2v_1^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{19}v_1v_2^2\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} +
2\omega_6^2\omega_{19}\omega_{16}v_1^2v_2^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_6\omega_{19}\omega_{16}v_1^2v_2^2\omega_7^3v_3\omega_{23}\omega_{17}\omega_{11}\omega_8^2 + 2\omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3v_3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} -
2\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6\omega_{19}c_s^2\omega_{16}v_1v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{19}c_s^2\omega_{16}v_1v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} -
2\omega_6^2\omega_{19}c_s^2v_1\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2c_s^2\omega_{16}v_1^2\omega_7^3v_3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} +
\omega_6^2\omega_{19}c_s^2\omega_{16}v_1\omega_7^3v_3^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6\omega_{19}\omega_{16}v_1v_2^2\omega_7^3v_3^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + \omega_6^2\omega_{19}\omega_{16}v_1^2v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} -
2\omega_6\omega_{19}c_s^2\omega_{16}v_1^2\omega_7^3v_3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_6^2c_s^2\omega_{16}v_1v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{19}c_s^2\omega_{16}v_1^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} +
\omega_6^2\omega_{19}\omega_{16}v_1v_2^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{19}\omega_{16}v_1v_2^2\omega_7^2v_3^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{19}c_s^2\omega_{16}v_1^2\omega_7^2v_3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} -
\omega_6^2\omega_{19}c_s^2\omega_{16}v_1v_2^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{19}c_s^2\omega_{16}v_1v_2^2\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} + \omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3v_3\omega_{20}\omega_{17}\omega_8^2\omega_{18} -
2\omega_6^2c_s^2\omega_{16}v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - \omega_6^2\omega_{19}\omega_{16}v_1v_2^2\omega_7^3v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_{18} - 8\omega_6^2\omega_{19}c_s^4\omega_{16}v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} +
2\omega_6\omega_{19}c_s^2\omega_{16}v_1\omega_7^3v_3^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2 - 2\omega_6\omega_{19}c_s^2\omega_{16}v_1\omega_7^3v_3^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + \omega_6^2\omega_{19}\omega_{16}v_1v_2^2\omega_7^3v_3^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} +
4\omega_6^2\omega_{19}c_s^4\omega_{16}v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_6^2c_s^2\omega_{16}v_1^2\omega_7^3v_3\omega_{20}\omega_{17}\omega_8^2\omega_{18} - 2\omega_6^2c_s^2\omega_{16}v_1^2\omega_7^2v_3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} +
4\omega_6\omega_{19}c_s^4\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{18} + 4\omega_6^2\omega_{19}c_s^4\omega_{16}v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{18} + \omega_6^2\omega_{19}c_s^2\omega_{16}v_1\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} -
2\omega_6^2c_s^2\omega_{16}v_1v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_{18} + 2\omega_6^2c_s^2\omega_{16}v_1v_2^2\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{19}c_s^2\omega_{16}v_1\omega_7^2v_3^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} +
2\omega_6^2c_s^2\omega_{16}v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{19}c_s^2\omega_{16}v_1\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{19}c_s^2\omega_{16}v_1v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} +
2\omega_6^2\omega_{19}c_s^2\omega_{16}v_1^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + \omega_6^2\omega_{19}c_s^2\omega_{16}v_1^2\omega_7^3v_3\omega_{20}\omega_{17}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{19}\omega_{16}v_1v_2^2\omega_7^3v_3^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} +
2\omega_6^2\omega_{19}c_s^2\omega_{16}v_1^2\omega_7^3v_3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_6^2\omega_{19}c_s^2\omega_{16}v_1^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} - 2\omega_6^2c_s^2\omega_{16}v_1v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} -
2\omega_6^2\omega_{19}\omega_{16}v_1v_2^2\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{19}c_s^2\omega_{16}v_1\omega_7^2v_3^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2c_s^2\omega_{16}v_1^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} -
2\omega_6\omega_{19}c_s^2\omega_{16}v_1^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} + 2\omega_6^2c_s^2\omega_{16}v_1v_2^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{16}v_1v_2^2\omega_7^3v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_{18} -
\omega_6\omega_{19}\omega_{16}v_1v_2^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2c_s^2\omega_{16}v_1^2\omega_7^2v_3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{16}v_1^2v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_{18} -
2\omega_6^2\omega_{19}c_s^2\omega_{16}v_1v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_6^2\omega_{19}c_s^2\omega_{16}v_1\omega_7^3v_3^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{19}\omega_{16}v_1v_2^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} -
2\omega_6^2\omega_{19}c_s^2\omega_{16}v_1\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} - \omega_6^2\omega_{19}v_1^2v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2c_s^2\omega_{16}v_1^2\omega_7^3v_3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} -
2\omega_6^2c_s^2\omega_{16}v_2^2\omega_7^3v_3\omega_{20}\omega_{17}\omega_8^2\omega_{18} + 2\omega_6^2c_s^2\omega_{16}v_1v_2^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_{18} - \omega_6^2\omega_{19}c_s^2\omega_{16}v_1\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2 +
\omega_6\omega_{19}c_s^2\omega_{16}v_1\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6\omega_{19}c_s^2\omega_{16}v_1^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_6^2\omega_{16}v_1v_2^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} -
2\omega_6^2\omega_{19}\omega_{16}v_1v_2^2\omega_7^2v_3^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 4\omega_{19}c_s^4\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - \omega_6\omega_{19}c_s^2\omega_{16}v_1\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} -
\omega_6^2\omega_{19}\omega_{16}v_1^2v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{19}\omega_{16}v_1^2v_2^2\omega_7^2v_3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + \omega_6^2\omega_{19}c_s^2v_1^2\omega_7^3v_3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} +
2\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^2v_3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{19}\omega_{16}v_1v_2^2\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2c_s^2\omega_{16}v_1v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_{18} -
2\omega_6^2c_s^2\omega_{16}v_2^2\omega_7^3v_3\omega_{23}\omega_{17}\omega_8^2\omega_{18} + 2\omega_6\omega_{19}\omega_{16}v_1^2v_2^2\omega_7^3v_3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{16}v_1v_2^2\omega_7^3v_3^2\omega_{23}\omega_{17}\omega_8^2\omega_{18} +
\omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} + \omega_6\omega_{19}\omega_{16}v_1v_2^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - \omega_6\omega_{19}c_s^2\omega_{16}v_1v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} +
2\omega_6^2c_s^2\omega_{16}v_1\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + \omega_6\omega_{19}c_s^2\omega_{16}v_1^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2 + \omega_6^2\omega_{19}\omega_{16}v_1^2v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2 +
2\omega_6^2\omega_{19}c_s^2\omega_{16}v_1^2\omega_7^3v_3\omega_{23}\omega_{17}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{19}c_s^2\omega_{16}v_1^2\omega_7^3v_3\omega_{23}\omega_{17}\omega_{11}\omega_8^2 + 8\omega_6\omega_{19}c_s^4\omega_{16}v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} +
2\omega_6^2\omega_{19}c_s^2\omega_{16}v_1\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - \omega_6^2\omega_{19}\omega_{16}v_1^2v_2^2\omega_7^3v_3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + \omega_6^2\omega_{19}c_s^2\omega_{16}v_1^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} +
2\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{19}c_s^2\omega_{16}v_1v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + \omega_6^2\omega_{19}c_s^2v_1^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} +
2\omega_6^2\omega_{19}c_s^2v_2^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3v_3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18}$$

$$C_{40} = -12\omega_6^3\omega_{19}c_s^4\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 24\omega_6^3\omega_{19}\omega_{16}v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{18} - 6\omega_6^3\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 -
24\omega_6^3\omega_{19}c_s^4\omega_{16}\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6^3\omega_{16}v_1v_2^2\omega_7^2v_3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3c_s^2\omega_{16}\omega_7^2v_3^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +
12\omega_6^3\omega_{19}c_s^2\omega_{16}v_1\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2\omega_{19}c_s^2\omega_{16}v_1\omega_7^3v_3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} +
12\omega_6^3c_s^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} + 12\omega_6^3c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{18} +
6\omega_6^3\omega_{19}c_s^2\omega_{16}\omega_7^3v_3^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 36\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} + 12\omega_6^3\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} -
12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2 + 6\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 60\omega_6^3\omega_{19}c_s^2\omega_{16}\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} +
10\omega_6^3\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} - 24\omega_6^2\omega_{19}c_s^2\omega_{16}v_1\omega_7^3v_3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} + 6\omega_6^3\omega_{19}\omega_{16}v_2^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2 -
24\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 24\omega_6^3\omega_{19}c_s^2\omega_{16}v_1\omega_7^3v_3\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3\omega_{16}v_2^2\omega_7^3v_3^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} -
12\omega_6^3\omega_{19}\omega_{16}v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6^3\omega_{19}c_s^2\omega_{16}\omega_7v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} + 12\omega_6^3\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} +
24\omega_6^3c_s^2\omega_{16}v_1\omega_7^3v_3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3\omega_{19}\omega_{16}v_2^2\omega_7^2v_3^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6^3\omega_{16}v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} -
12\omega_6^2\omega_{19}c_s^2\omega_{16}v_1\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2\omega_{19}\omega_{16}v_2^2\omega_7^3v_3^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2 + 24\omega_6^3\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} -
6\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2 + 12\omega_6^3c_s^4\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} + 12\omega_6^2\omega_{19}\omega_{16}v_2^2\omega_7^3v_3^2\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} +
12\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_5^2\omega_{18} + 24\omega_6^3\omega_{19}\omega_{16}v_1v_2^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} - 12\omega_6^3\omega_{19}c_s^2v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} -
12\omega_6^3c_s^2\omega_{16}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} + 12\omega_6^3\omega_{16}v_2^2\omega_7^2v_3^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 60\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} -
12\omega_6^3\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{19}c_s^2\omega_{16}\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} -
24\omega_6^3c_s^2\omega_{16}v_1\omega_7^2v_3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 2\omega_6^3\omega_{19}c_s^4\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{19}\omega_{16}v_2^2\omega_7^3v_3^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} -
12\omega_6^3\omega_{19}\omega_{16}v_2^2\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2\omega_{19}\omega_{16}v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 6\omega_6^3\omega_{19}c_s^2\omega_{16}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 -
12\omega_6^3\omega_{19}v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 6\omega_6^2\omega_{19}c_s^4\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} +
6\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} + 24\omega_6^3\omega_{16}v_1v_2^2\omega_7^3v_3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} -
12\omega_6^3\omega_{19}c_s^2\omega_{16}\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 12\omega_6^3\omega_{16}v_2^2\omega_7^3v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} - 6\omega_6^2\omega_{19}\omega_{16}v_2^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} -$$

$12\omega_6^3\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 6\omega_6^3\omega_{19}c_s^2\omega_{16}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 36\omega_6^3\omega_{19}c_s^2\omega_{16}\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} -$
$12\omega_6^3\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} + 12\omega_6^3\omega_{19}\omega_{16}v_2^2\omega_7^2v_3^2\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} - 24\omega_6^2\omega_{19}\omega_{16}v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} +$
$24\omega_6^3\omega_{19}c_s^2\omega_{16}\omega_7v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} + 12\omega_6^3\omega_{19}\omega_{16}v_2^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} - 12\omega_6^3\omega_{19}\omega_{16}v_2^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} +$
$12\omega_6^3\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} + 12\omega_6^3\omega_{19}\omega_{16}v_2^2\omega_7^3v_3^2\omega_{23}\omega_{17}\omega_8^2\omega_5^2 - 12\omega_6^3\omega_{19}c_s^2\omega_{16}v_1\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} -$
$6\omega_6^2\omega_{19}c_s^2v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3\omega_{19}\omega_{16}v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2 - 24\omega_6^3\omega_{19}c_s^2\omega_{16}v_1\omega_7^2v_3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} +$
$12\omega_6^3\omega_{16}v_2^2\omega_7^3v_3^2\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6^3\omega_{19}v_1v_2^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6^3\omega_{19}c_s^2\omega_{16}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18} +$
$24\omega_6^3\omega_{19}c_s^2\omega_{16}v_1\omega_7^3v_3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2 - 6\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2 + 12\omega_6^3\omega_{19}c_s^2\omega_7^2v_3^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$6\omega_6^3\omega_{19}\omega_{16}v_2^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{19}c_s^4\omega_{16}\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$24\omega_6^3\omega_{19}c_s^2\omega_{16}v_1\omega_7^3v_3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} - 12\omega_6^2\omega_{19}\omega_{16}v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{19}\omega_{16}v_2^2\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$24\omega_6^3\omega_{19}\omega_{16}v_1v_2^2\omega_7^2v_3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6^3\omega_{19}c_s^2v_1\omega_7^2v_3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6^3c_s^2\omega_{16}v_1\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^2c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18} - 6\omega_6^3\omega_{19}\omega_{16}v_2^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 6\omega_6^3\omega_{19}c_s^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} -$
$12\omega_6^3\omega_{19}c_s^2\omega_{16}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} + 12\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} - 12\omega_6^3\omega_{19}c_s^4\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} -$
$24\omega_6^3\omega_{19}c_s^2\omega_{16}v_1\omega_7^3v_3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3c_s^2\omega_{16}\omega_7^3v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} - 6\omega_6\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2 + 6\omega_6^3\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 24\omega_6^3\omega_{19}c_s^2\omega_{16}v_1\omega_7^2v_3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^2\omega_{16}v_2^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} - 12\omega_6^3\omega_{19}c_s^2v_1\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$24\omega_6^3\omega_{19}\omega_{16}v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2 + 24\omega_6^3\omega_{19}c_s^2\omega_{16}v_2^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} + 12\omega_6^3\omega_{19}\omega_{16}v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} -$
$6\omega_6^3\omega_{19}v_2^2\omega_7^3v_3^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{19}c_s^4\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} - 12\omega_6^3c_s^2\omega_{16}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} -$
$12\omega_6^3c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{19}c_s^2\omega_{16}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5 + 24\omega_6^3\omega_{19}c_s^2\omega_{16}v_1\omega_7^2v_3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^3\omega_{19}c_s^2\omega_{16}\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{19}c_s^2\omega_{16}v_1\omega_7^3v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5 -$
$6\omega_6^3\omega_{19}c_s^2\omega_{16}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6^3\omega_{19}\omega_{16}v_1v_2^2\omega_7^2v_3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} -$
$12\omega_6^3\omega_{19}c_s^2\omega_{16}v_1\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2 + 12\omega_6^3\omega_{19}c_s^2\omega_{16}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18} - 24\omega_6^3\omega_{19}\omega_{16}v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{17}\omega_8^2\omega_5^2 +$
$12\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5 - 6\omega_6^3\omega_{19}v_2^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 24\omega_6^3\omega_{19}\omega_{16}v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} +$
$6\omega_6^3\omega_{19}c_s^4\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 24\omega_6^3\omega_{19}c_s^2\omega_{16}v_1\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} + 12\omega_6^3\omega_{19}c_s^2\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} -$
$24\omega_6^3\omega_{19}v_1v_2^2\omega_7^2v_3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3\omega_{19}v_2^2\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{19}\omega_{16}v_1v_2^2\omega_7^3v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^3c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3\omega_{19}\omega_{16}v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} - 24\omega_6^3\omega_{19}\omega_{16}v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{19}\omega_{16}v_2^2\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3c_s^2\omega_{16}\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3c_s^2\omega_{16}\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} -$
$12\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} + 24\omega_6^3\omega_{19}c_s^2\omega_{16}v_1\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} - 6\omega_6^3\omega_{19}c_s^2\omega_7^3v_3^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 24\omega_6^3c_s^2\omega_{16}v_1\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} +$
$18\omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6^3\omega_{19}c_s^2\omega_{16}v_1\omega_7^2v_3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} + 12\omega_6^3\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^2 -$
$24\omega_6^3\omega_{19}\omega_{16}v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} + 12\omega_6^3c_s^2\omega_{16}\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} + 24\omega_6^3\omega_{19}c_s^2\omega_{16}v_1\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{19}v_1v_2^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 24\omega_6^3\omega_{19}c_s^2\omega_{16}v_1\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} -$
$12\omega_6^3\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18} + 24\omega_6^3\omega_{16}v_1v_2^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3\omega_{19}\omega_{16}v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^3\omega_{19}c_s^2v_1\omega_7^3v_3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 24\omega_6^3\omega_{19}\omega_{16}v_1v_2^2\omega_7^2v_3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6^3\omega_{16}v_1v_2^2\omega_7^3v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^3\omega_{19}v_1v_2^2\omega_7^3v_3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 42\omega_6^3\omega_{19}c_s^2\omega_{16}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} - 12\omega_6^3\omega_{19}\omega_{16}v_2^2\omega_7^3v_3^2\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{18} -$
$12\omega_6^3\omega_{19}c_s^2\omega_{16}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5 - 12\omega_6^3c_s^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{19}c_s^2v_2^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} -$
$24\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18} - 6\omega_6^3\omega_{19}c_s^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3c_s^4\omega_{16}\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} - 24\omega_6^3c_s^2\omega_{16}v_1\omega_7^3v_3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} + 24\omega_6^3\omega_{16}v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^3\omega_{19}v_2^2\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6^3\omega_{19}\omega_{16}v_1v_2^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} - 12\omega_6^2\omega_{19}\omega_{16}v_2^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} + 24\omega_6^3\omega_{19}\omega_{16}v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} - 24\omega_6^3\omega_{19}c_s^2\omega_{16}\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18} -$
$12\omega_6^3\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2 + 12\omega_6^3c_s^2\omega_{16}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18} + 12\omega_6^3\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^3\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5 - 6\omega_6^3\omega_{19}c_s^2\omega_{16}\omega_7^3v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6^3\omega_{19}c_s^2\omega_{16}v_1\omega_7^2v_3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} -$
$12\omega_6^3\omega_{19}c_s^2\omega_{16}v_1\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3\omega_{19}c_s^2\omega_{16}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_5^2\omega_{18} + 24\omega_6^3\omega_{19}c_s^4\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} -$
$48\omega_6^3\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} + 12\omega_6^3c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} +$
$12\omega_6^3c_s^2\omega_{16}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} - 6\omega_6^3\omega_{19}c_s^2v_2^2\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} -$
$12\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6^3c_s^2\omega_{16}v_1\omega_7^2v_3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6^3c_s^2\omega_{16}v_1\omega_7^3v_3\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{18} +$
$6\omega_6^3\omega_{19}\omega_{16}v_2^2\omega_7^3v_3^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6^3\omega_{19}c_s^2\omega_{16}v_1\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} - 24\omega_6\omega_{19}c_s^2\omega_{16}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} -$
$24\omega_6^2\omega_{19}c_s^2\omega_{16}v_1\omega_7^3v_3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} + 12\omega_6^3\omega_{16}v_2^2\omega_7^2v_3^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$6\omega_6^3\omega_{19}v_2^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 18\omega_6^3\omega_{19}c_s^4\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} + 12\omega_6^2\omega_{19}\omega_{16}v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2 -$
$12\omega_6^3\omega_{19}c_s^2\omega_{16}\omega_7^2v_3^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 6\omega_6^3\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6^3\omega_{16}v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{18} -$
$6\omega_6^2\omega_{19}\omega_{16}v_2^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2 - 12\omega_6^3\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 6\omega_6^3\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} -$
$18\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} + 24\omega_6^2\omega_{19}c_s^2\omega_{16}v_1\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} + 6\omega_6^3\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 24\omega_6^2\omega_{19}c_s^2\omega_{16}v_1\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2 +$
$24\omega_6^3\omega_{16}v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 6\omega_6^3\omega_{19}\omega_{16}v_2^2\omega_7^3v_3^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3c_s^2\omega_{16}\omega_7^3v_3^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} -$
$12\omega_6^3\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{19}\omega_{16}v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 12\omega_6^3\omega_{19}\omega_{16}v_2^2\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} -$
$24\omega_6^2\omega_{19}\omega_{16}v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} - 24\omega_6^3\omega_{19}c_s^2\omega_{16}v_1\omega_7^3v_3\omega_{23}\omega_{17}\omega_8^2\omega_5^2 + 12\omega_6^2\omega_{19}c_s^2v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$

$24\omega_6\omega_{19}c_s^2\omega_{16}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} + 12\omega_6^3\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} - 12\omega_6^3\omega_{19}c_s^2\omega_{16}\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^2\omega_{19}c_s^2\omega_{16}v_1\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2 - 12\omega_6^3\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_5^2\omega_{18} - 12\omega_6^3\omega_{19}\omega_{16}v_2^2\omega_7^3v_3^2\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} +$
$12\omega_6^3\omega_{19}c_s^4\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} + 12\omega_6^3\omega_{19}c_s^2\omega_{16}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 12\omega_6^3c_s^2\omega_{16}v_2^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$6\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 18\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^2\omega_{19}\omega_{16}v_2^2\omega_7^3v_3^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} -$
$12\omega_6^3\omega_{16}v_2^2\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6^3\omega_{19}\omega_{16}v_1v_2^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6^3\omega_{16}v_1v_2^2\omega_7^2v_3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$24\omega_6^3\omega_{19}c_s^2v_1\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 6\omega_6^3\omega_{19}\omega_{16}v_2^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 6\omega_6^3\omega_{19}\omega_{16}v_2^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$24\omega_6^3c_s^2\omega_{16}v_1\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2\omega_{19}c_s^4\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 6\omega_6^3\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^3\omega_{19}c_s^2\omega_{16}v_1\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 12\omega_6^3\omega_{19}c_s^2\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3\omega_{19}c_s^2\omega_{16}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} +$
$12\omega_6^3\omega_{19}c_s^2\omega_{16}\omega_7^2v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} + 24\omega_6^3c_s^2\omega_{16}v_1\omega_7^3v_3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3\omega_{19}\omega_{16}v_2^2\omega_7^2v_3^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} -$
$\omega_6^3\omega_{19}c_s^4\omega_{16}\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 24\omega_6^2\omega_{19}\omega_{16}v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 6\omega_6^3\omega_{19}c_s^2v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} -$
$12\omega_6^3\omega_{16}v_2^2\omega_7^3v_3^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2\omega_{19}\omega_{16}v_2^2\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} + 12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} -$
$6\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_7^3v_3^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3\omega_{19}\omega_{16}v_2^2\omega_7^3v_3^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2 - 12\omega_6^3\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^2$

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

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

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

$$2\omega_6^2\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + \omega_6^2\omega_{19}^2\omega_{16}v_1^2v_2^2\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} - 2\omega_6^2\omega_{19}^2c_s^2v_1^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} -$$
$$\omega_6^2\omega_{19}^2c_s^2\omega_{16}v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - 2\omega_6\omega_{19}^2\omega_{16}v_1^2v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 2\omega_6^2\omega_{19}^2\omega_{16}v_1^2v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18} -$$
$$4\omega_6\omega_{19}^2\omega_{16}v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18} - 2\omega_6^2\omega_{19}^2c_s^2\omega_{16}v_1\omega_7^3v_3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} + 2\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} -$$
$$2\omega_6^2\omega_{19}^2\omega_{16}v_1^2v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} - 4\omega_6^2c_s^2\omega_{16}v_1\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 4\omega_6^2\omega_{19}\omega_{16}v_1v_2^2\omega_7^2v_3\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} -$$
$$2\omega_6\omega_{19}^2\omega_{16}v_1^2v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}^2\omega_8^2\omega_5 - 4\omega_6\omega_{19}^2c_s^2\omega_{16}v_1\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 2\omega_6^2\omega_{19}^2v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} -$$
$$2\omega_6\omega_{19}^2c_s^2\omega_{16}v_1^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18} - 2\omega_6^2\omega_{19}^2\omega_{16}v_1^2v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - 4\omega_6^2\omega_{19}^2c_s^2\omega_{16}v_1\omega_7^2v_3\omega_{23}\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18} -$$
$$2\omega_6^2\omega_{19}\omega_{16}v_1^2v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 2\omega_6^2\omega_{19}^2c_s^2v_1\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + \omega_6^2\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} -$$
$$2\omega_6^2\omega_{19}^2\omega_{16}v_1^2v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5 - 2\omega_6\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} - 2\omega_6^2\omega_{19}^2c_s^2\omega_{16}v_1\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_5\omega_{18} -$$
$$2\omega_6^2\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} - 2\omega_6^2\omega_{19}^2c_s^2\omega_{16}v_1^2\omega_7^2\omega_{23}\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18} + 2\omega_6\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} -$$
$$4\omega_6^2\omega_{19}^2c_s^2\omega_{16}v_1\omega_7^3v_3\omega_{23}\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} - 14\omega_6^2\omega_{19}^2c_s^2\omega_{16}v_1\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18} + 4\omega_6^2\omega_{19}c_s^2\omega_{16}v_1\omega_7^3v_3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} -$$
$$2\omega_6\omega_{19}^2\omega_{16}v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5 + 2\omega_6^2\omega_{19}^2\omega_{16}v_1^2v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + \omega_6\omega_{19}^2c_s^2\omega_{16}v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18} -$$
$$\omega_6^2\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} + \omega_6^2\omega_{19}^2c_s^2v_1^2\omega_7^3\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 2\omega_6^2\omega_{19}^2c_s^2\omega_{16}v_1^2\omega_7^2\omega_{23}\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18} -$$
$$4\omega_6^2\omega_{19}^2\omega_{16}v_1v_2^2\omega_7^2v_3\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 2\omega_6^2\omega_{19}^2c_s^2\omega_{16}v_1^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}^2\omega_8^2\omega_5 - 12\omega_6^2\omega_{19}c_s^2\omega_{16}v_1\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} -$$
$$2\omega_6\omega_{19}^2c_s^2\omega_{16}v_1\omega_7^3v_3\omega_{23}\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 2\omega_6^2\omega_{19}^2v_1^2v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 2\omega_6^2\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} -$$
$$2\omega_6^2\omega_{19}^2\omega_{16}v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5 + 2\omega_6^2\omega_{19}c_s^2\omega_{16}v_1^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 4\omega_6\omega_{19}^2\omega_{16}v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18} -$$
$$12\omega_6\omega_{19}^2c_s^2\omega_{16}v_1\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18} - 4\omega_6^2\omega_{19}^2c_s^2\omega_{16}v_1\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5 - 4\omega_6^2\omega_{19}^2c_s^2\omega_{16}v_1\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18} -$$
$$2\omega_6^2\omega_{19}\omega_{16}v_1^2v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} + 4\omega_6^2\omega_{19}^2\omega_{16}v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 2\omega_6^2\omega_{19}^2c_s^2\omega_{16}v_1^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18} +$$
$$\omega_6^2\omega_{19}^2c_s^2v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - 4\omega_6\omega_{19}c_s^2\omega_{16}v_1\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - 4\omega_6^2\omega_{19}^2\omega_{16}v_1v_2^2\omega_7^2v_3\omega_{23}\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18} +$$
$$2\omega_6^2\omega_{19}^2c_s^2\omega_{16}v_1^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 2\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 4\omega_6^2\omega_{19}c_s^2\omega_{16}v_1\omega_7^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} -$$
$$\omega_6^2\omega_{19}^2c_s^2v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - 2\omega_6^2\omega_{19}\omega_{16}v_1^2v_2^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - 4\omega_6^2\omega_{19}^2c_s^2\omega_{16}v_1\omega_7^2v_3\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} -$$
$$2\omega_6^2\omega_{19}^2\omega_{16}v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 2\omega_6\omega_{19}^2c_s^2\omega_{16}v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18} + \omega_6^2\omega_{19}^2\omega_{16}v_1^2v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5 +$$
$$\omega_6\omega_{19}^2c_s^2\omega_{16}v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5 - 2\omega_6\omega_{19}^2\omega_{16}v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - 4\omega_6^2\omega_{19}^2c_s^2\omega_{16}v_1\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} -$$
$$2\omega_6^2\omega_{19}^2c_s^2\omega_{16}v_1\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5 + 2\omega_6^2\omega_{19}^2c_s^2\omega_{16}v_1^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} + 6\omega_6^2\omega_{19}^2c_s^2\omega_{16}v_1\omega_7v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18} +$$
$$4\omega_6^2\omega_{19}^2\omega_{16}v_1v_2^2\omega_7^2v_3\omega_{23}\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18} + \omega_6^2\omega_{19}^2c_s^2\omega_{16}v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 4\omega_6\omega_{19}^2\omega_{16}v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{17}\omega_{11}^2\omega_8^2\omega_5 +$$
$$4\omega_6^2\omega_{19}\omega_{16}v_1v_2^2\omega_7^3v_3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} - 12\omega_6^2\omega_{19}c_s^2\omega_{16}v_1\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} + 2\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} -$$
$$4\omega_6^2\omega_{19}^2\omega_{16}v_1v_2^2\omega_7^3v_3\omega_{23}\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} - 2\omega_6\omega_{19}^2c_s^2\omega_{16}v_1\omega_7^3v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5$$

$$C_{43} = -12c_s^2\omega_{16}^2\omega_{10}^2v_2^2\omega_7^3\omega_{11} + 12\omega_{19}\omega_{16}\omega_{10}^2v_2^2\omega_7^3v_3^2\omega_{23} + 72\omega_{19}c_s^2\omega_{16}^2\omega_{10}\omega_7v_3^2\omega_{23}\omega_{11} - 12c_s^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11} - 3\omega_{19}c_s^2\omega_{16}\omega_{10}^2v_2^2\omega_7^3\omega_{23}\omega_{11} -$$
$$36c_s^4\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{11} - 36\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2v_3^2\omega_{11} + 6\omega_{19}c_s^2\omega_{16}^2\omega_{10}v_2^2\omega_7^3\omega_{23} + 36c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3v_3^2 - 12\omega_{19}\omega_{16}^2\omega_7^2v_3^2\omega_{23}\omega_{11} -$$
$$12\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}\omega_{11} + 12c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{11} + 15\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2v_3^2\omega_{23}\omega_{11} + 12\omega_{19}c_s^4\omega_{16}\omega_{10}^2\omega_7\omega_{23}\omega_{11} + 12\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2v_2^2\omega_7\omega_{23}\omega_{11} +$$
$$6\omega_{19}\omega_{16}^2\omega_{10}^2v_2^2\omega_7^3v_3^2\omega_{11} + 24\omega_{19}\omega_{16}^2\omega_{10}v_2^2\omega_7v_3^2\omega_{23}\omega_{11} - 6\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{11} + 6\omega_{19}\omega_{16}\omega_{10}v_2^2\omega_7^3v_3^2\omega_{23}\omega_{11} + 156\omega_{19}c_s^4\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}\omega_{11} -$$
$$12\omega_{19}c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{11} + 12\omega_{19}\omega_{10}^2\omega_7^2v_3^2\omega_{23}\omega_{11} - 12\omega_{16}^2\omega_{10}^2\omega_7^2v_3^2\omega_{11} - 12c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3 + 48\omega_{19}\omega_{16}\omega_{10}^2v_2^2\omega_7^2v_3^2\omega_{23}\omega_{11} +$$
$$36\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2v_3^2\omega_{23}\omega_{11} - 12\omega_{19}c_s^2\omega_{16}^2\omega_{10}v_2^2\omega_7\omega_{23}\omega_{11} - 12\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3v_3^2\omega_{23} + 36c_s^2\omega_{16}^2\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{11} - 6\omega_{19}\omega_{16}^2\omega_{10}^2v_2^2\omega_7^3v_3^2 +$$
$$36c_s^4\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11} + 12\omega_{16}^2\omega_{10}v_2^2\omega_7^3v_3^2\omega_{23}\omega_{11} + 36\omega_{19}c_s^4\omega_{16}\omega_{10}^2\omega_7^2\omega_{11} - 24\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2v_3^2\omega_{23} + 6\omega_{19}c_s^2\omega_{10}^2v_2^2\omega_7^3\omega_{23}\omega_{11} +$$
$$36\omega_{19}c_s^2\omega_{16}\omega_{10}^2\omega_7^2v_3^2\omega_{11} - 12c_s^2\omega_{16}^2\omega_{10}v_2^2\omega_7^2\omega_{23}\omega_{11} + 12\omega_{19}c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{23}\omega_{11} - 36c_s^2\omega_{16}^2\omega_{10}\omega_7^2v_3^2\omega_{23}\omega_{11} + 12\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2v_3^2\omega_{11} +$$
$$18\omega_{19}c_s^4\omega_{16}^2\omega_{10}\omega_7^3\omega_{23} - 9\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{11} - 15\omega_{19}\omega_{16}\omega_{10}^2v_2^2\omega_7^3v_3^2\omega_{23}\omega_{11} + 3\omega_{19}c_s^2\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}\omega_{11} - 72\omega_{19}c_s^2\omega_{16}\omega_{10}^2\omega_7^2v_3^2\omega_{23} -$$
$$6\omega_{19}c_s^4\omega_{10}^2\omega_7^3\omega_{23}\omega_{11} - 12c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{11} - 6\omega_{19}\omega_{10}^2\omega_7^3v_3^2\omega_{23}\omega_{11} - 12\omega_{19}\omega_{16}\omega_{10}v_2^2\omega_7^2v_3^2\omega_{23}\omega_{11} + 12\omega_{19}\omega_{16}\omega_{10}\omega_7^2v_3^2\omega_{23}\omega_{11} -$$
$$36c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3v_3^2\omega_{11} - 5\omega_{19}c_s^2\omega_{16}^2\omega_{10}v_2^2\omega_7^3\omega_{23}\omega_{11} - 72\omega_{19}c_s^2\omega_{16}\omega_{10}^2\omega_7v_3^2\omega_{23}\omega_{11} - 6\omega_{19}\omega_{16}^2\omega_{10}v_2^2\omega_7^3v_3^2\omega_{23} + 6\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3v_3^2\omega_{11} -$$
$$6\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2v_2^2\omega_7^3 - 6\omega_{19}c_s^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23} - 18\omega_{19}c_s^4\omega_{16}^2\omega_{10}^2\omega_7^3 - 18\omega_{19}c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11} + 12c_s^2\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_{11} -$$
$$18\omega_{19}c_s^2\omega_{16}^2\omega_{10}\omega_7^3v_3^2\omega_{23} + 3\omega_{19}c_s^4\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11} - 6\omega_{19}c_s^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11} + 36c_s^4\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{11} - 12\omega_{16}^2\omega_{10}v_2^2\omega_7^2v_3^2\omega_{23}\omega_{11} +$$
$$6\omega_{19}\omega_{16}^2\omega_7^3v_3^2\omega_{23}\omega_{11} + \omega_{19}c_s^2\omega_{16}^2\omega_{10}^2v_2^2\omega_7^3\omega_{23}\omega_{11} - 6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3v_3^2\omega_{11} - 12\omega_{16}^2\omega_{10}^2\omega_7^3v_3^2 - 18\omega_{19}c_s^4\omega_{16}\omega_{10}^2\omega_7^3\omega_{11} +$$
$$15\omega_{19}c_s^4\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}\omega_{11} + 54\omega_{19}c_s^4\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11} + 12\omega_{16}^2\omega_{10}\omega_7^3v_3^2\omega_{23} - \omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11} + 6\omega_{19}c_s^2\omega_{16}\omega_{10}^2\omega_7^3\omega_{11} -$$
$$12\omega_{19}c_s^2\omega_{16}\omega_{10}^2v_2^2\omega_7\omega_{23}\omega_{11} - 6\omega_{19}\omega_{16}\omega_{10}^2v_2^2\omega_7^3v_3^2\omega_{11} - 48\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2v_3^2\omega_{23}\omega_{11} - 12\omega_{19}c_s^2\omega_{10}^2v_2^2\omega_7^2\omega_{23}\omega_{11} + 6\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3v_3^2\omega_{23} +$$
$$12\omega_{19}c_s^2\omega_{16}\omega_{10}^2v_2^2\omega_7^2\omega_{11} - 36\omega_{19}\omega_{16}\omega_{10}v_2^2\omega_7^2v_3^2\omega_{23}\omega_{11} - 96\omega_{19}c_s^4\omega_{16}^2\omega_{10}\omega_{23}\omega_{11} + 12c_s^2\omega_{16}^2\omega_{10}v_2^2\omega_7^3\omega_{23}\omega_{11} - 18\omega_{19}c_s^2\omega_{16}\omega_{10}^2\omega_7^3v_3^2\omega_{11} +$$
$$12\omega_{16}^2\omega_{10}^2\omega_7^3v_3^2\omega_{11} + 18\omega_{19}c_s^2\omega_{10}^2\omega_7^3v_3^2\omega_{23}\omega_{11} + 6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3v_3^2 + 18\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{11} + 12\omega_{19}c_s^2\omega_{16}^2\omega_{10}\omega_7\omega_{23}\omega_{11} -$$
$$36c_s^4\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11} - 12\omega_{19}\omega_{10}^2v_2^2\omega_7^2v_3^2\omega_{23}\omega_{11} - 108\omega_{19}c_s^2\omega_{16}^2\omega_{10}\omega_7^2v_3^2\omega_{23}\omega_{11} + 24\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2v_3^2\omega_{23} + 12c_s^2\omega_{16}^2\omega_{10}^2v_2^2\omega_7^3 +$$
$$12c_s^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23} - 45\omega_{19}c_s^2\omega_{16}\omega_{10}^2\omega_7^3v_3^2\omega_{23}\omega_{11} + 36c_s^4\omega_{16}^2\omega_{10}^2\omega_7^3 - 6\omega_{19}\omega_{16}^2v_2^2\omega_7^3v_3^2\omega_{23}\omega_{11} - 12\omega_{16}^2\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{11} - 36\omega_{19}c_s^4\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{11} -$$
$$12\omega_{19}\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2v_3^2\omega_{11} - 24\omega_{19}\omega_{16}^2\omega_{10}\omega_7v_3^2\omega_{23}\omega_{11} - 24\omega_{19}\omega_{16}\omega_{10}^2v_2^2\omega_7v_3^2\omega_{23}\omega_{11} + 18\omega_{19}c_s^2\omega_{16}\omega_{10}^2v_2^2\omega_7^2\omega_{23}\omega_{11} - 24\omega_{19}\omega_{16}\omega_{10}^2v_2^2\omega_7^2v_3^2\omega_{23} +$$
$$12c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11} - 36c_s^2\omega_{16}^2\omega_{10}\omega_7^3v_3^2\omega_{23} - 36c_s^4\omega_{16}^2\omega_{10}\omega_7^3\omega_{23} - 12\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2v_2^2\omega_7^2\omega_{11} - 12\omega_{16}^2\omega_{10}v_2^2\omega_7^3v_3^2\omega_{23} -$$
$$18\omega_{19}c_s^2\omega_{16}^2\omega_7^3v_3^2\omega_{23}\omega_{11} - 36\omega_{19}c_s^4\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11} + 12\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{11} + 18\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3v_3^2\omega_{11} + 12\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11} -$$
$$15\omega_{19}c_s^4\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11} + 12\omega_{16}^2\omega_{10}\omega_7^2v_3^2\omega_{23}\omega_{11} + 12\omega_{19}\omega_{16}\omega_{10}^2v_2^2\omega_7^2v_3^2\omega_{11} + 144\omega_{19}c_s^2\omega_{16}\omega_{10}^2\omega_7^2v_3^2\omega_{23}\omega_{11} + 12\omega_{19}\omega_{16}^2v_2^2\omega_7^2v_3^2\omega_{23}\omega_{11} +$$
$$12\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2v_3^2\omega_{11} + 6\omega_{19}c_s^2\omega_{16}^2\omega_{10}\omega_7^3 + 36\omega_{19}c_s^2\omega_{16}^2\omega_7^2v_3^2\omega_{23}\omega_{11} - 12\omega_{19}c_s^2\omega_{16}^2\omega_{10}v_2^2\omega_7^2\omega_{23}\omega_{11} + 12\omega_{16}^2\omega_{10}v_2^2\omega_7^3v_3^2 -$$
$$6\omega_{19}c_s^2\omega_{16}\omega_{10}^2v_2^2\omega_7^3\omega_{11} - 42\omega_{19}c_s^4\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}\omega_{11} - 12\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2v_3^2\omega_{11} + 24\omega_{19}\omega_{16}^2\omega_{10}v_2^2\omega_7^2v_3^2\omega_{23} - 12c_s^2\omega_{16}^2\omega_{10}v_2^2\omega_7^3\omega_{23} +$$
$$18\omega_{19}c_s^2\omega_{16}^2\omega_{10}v_2^2\omega_7^2\omega_{23}\omega_{11} + 36c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2v_3^2\omega_{11} + 24\omega_{19}\omega_{16}\omega_{10}^2\omega_7v_3^2\omega_{23}\omega_{11} - 6\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{11} + 12\omega_{19}c_s^2\omega_{10}^2v_2^2\omega_{23}\omega_{11} +$$
$$9\omega_{19}\omega_{16}^2\omega_{10}v_2^2\omega_7^3v_3^2\omega_{23}\omega_{11} + 6\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2v_2^2\omega_7^3\omega_{11} - 60\omega_{19}c_s^4\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11} + 72\omega_{19}c_s^2\omega_{16}^2\omega_{10}\omega_7^2v_3^2\omega_{23} + 5\omega_{19}c_s^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11} +$$
$$36\omega_{19}c_s^2\omega_{16}\omega_{10}^2\omega_7^3v_3^2\omega_{23} + 18\omega_{19}c_s^4\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{11} - 18\omega_{19}c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}\omega_{11} - 12\omega_{16}^2\omega_{10}^2v_2^2\omega_7^3v_3^2\omega_{11} + 27\omega_{19}c_s^2\omega_{16}^2\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{11} +$$
$$6\omega_{19}\omega_{10}^2v_2^2\omega_7^3v_3^2\omega_{23}\omega_{11} + 12\omega_{19}c_s^4\omega_{10}^2\omega_7^2\omega_{23}\omega_{11} - 36\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2v_3^2\omega_{23}\omega_{11} - 36\omega_{19}c_s^2\omega_{10}^2\omega_7^2v_3^2\omega_{23}\omega_{11} - 18\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3v_3^2$$

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

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

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

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

$12\omega_6^2\omega_{22}v_1^2v_3^2\omega_{11}^2\omega_{18}^2 + 12\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_{11}^3 + 12\omega_6^2\omega_{22}c_s^2\omega_{11}^2\omega_{18}^2 + 12\omega_6^3\omega_{22}v_1^2\omega_{13}\omega_{11}^2 - 12\omega_6\omega_{22}c_s^2\omega_{13}\omega_{11}^3\omega_{18}^2 - 6\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_{11}^2\omega_{18}^2 +$
$18\omega_6^2\omega_{22}c_s^2\omega_{13}v_3^2\omega_{11}^2\omega_{18}^2 + 18\omega_6^3\omega_{22}v_1^2\omega_{13}\omega_{11}\omega_{18}^2 - 36\omega_6^2\omega_{22}c_s^2v_1^2\omega_{11}^2\omega_{18}^2 - 12\omega_6^3v_1^2\omega_{13}v_3^2\omega_{11}^3\omega_{18} + 108\omega_6^2\omega_{22}c_s^2v_1^2\omega_{13}\omega_{11}^3\omega_{18} +$
$24\omega_6\omega_{22}v_1^2\omega_{13}\omega_{11}^3\omega_{18} + 12\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18} + 12\omega_6^2c_s^2v_3^2\omega_{11}^3\omega_{18}^2 + 18\omega_6^3\omega_{22}c_s^2\omega_{13}v_3^2\omega_{11}^2\omega_{18} + 24\omega_6\omega_{22}v_1^2\omega_{13}v_3^2\omega_{11}^2\omega_{18}^2 + 6\omega_6^3v_1^2\omega_{11}^3\omega_{18}^2 +$
$18\omega_6^3c_s^4\omega_{13}\omega_{11}^3\omega_{18}^2 - 12\omega_6^2c_s^2\omega_{13}v_3^2\omega_{11}^3\omega_{18}^2 - 18\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{11}^3\omega_{18} + 12\omega_6^2v_1^2\omega_{13}\omega_{11}^3\omega_{18}^2 + 30\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_{11}^3\omega_{18} + 18\omega_6^2\omega_{22}c_s^2\omega_{13}v_3^2\omega_{11}^3\omega_{18} -$
$12\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_{18}^2 - 12\omega_6^3\omega_{22}v_1^2\omega_{13}v_3^2\omega_{11}\omega_{18} - 72\omega_6^2\omega_{22}c_s^2v_1^2\omega_{13}\omega_{11}^2\omega_{18}^2 - 6\omega_6^3v_1^2\omega_{13}v_3^2\omega_{11}^2\omega_{18}^2 - 12\omega_6^3\omega_{22}v_1^2\omega_{13}\omega_{11}^3 + 12\omega_6^2\omega_{22}v_1^2\omega_{13}\omega_{11}^2\omega_{18} -$
$36\omega_6^2c_s^2v_1^2\omega_{13}\omega_{11}^3\omega_{18}^2 - 12\omega_6^2\omega_{22}v_1^2\omega_{13}v_3^2\omega_{11}^3 + 36\omega_6^3c_s^4\omega_{13}\omega_{11}^2\omega_{18} - 18\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2 - 12\omega_6^2c_s^2\omega_{13}\omega_{11}^3\omega_{18} - 24\omega_6\omega_{22}v_1^2\omega_{13}\omega_{11}^2\omega_{18}^2 +$
$12\omega_6^2\omega_{22}v_1^2\omega_{13}v_3^2\omega_{11}\omega_{18}^2 + 72\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_{11}^2\omega_{18} + 12\omega_6^3\omega_{22}v_1^2\omega_{13}v_3^2\omega_{18}^2 + \omega_6^3\omega_{22}c_s^2\omega_{13}v_3^2\omega_{11}^3\omega_{18}^2 - 24\omega_6\omega_{22}v_1^2\omega_{13}v_3^2\omega_{11}^3\omega_{18}$

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

$C_{48} = 24\omega_6^3\omega_{22}c_s^2\omega_{13}v_3^2\omega_{11}^2 - 84\omega_6\omega_{22}c_s^2\omega_{13}v_3^2\omega_{11}^2\omega_{18}^2 - 12\omega_6^2c_s^4\omega_{13}\omega_{11}^3\omega_{18}^2 + 72\omega_6^3\omega_{22}v_1^2\omega_{13}v_3^2\omega_{11}^2\omega_{18} + 12\omega_6^2\omega_{22}c_s^2v_1^2\omega_{13}\omega_{11}\omega_{18}^2 +$
$12\omega_6^3\omega_{22}v_1^2\omega_{13}\omega_{11}^3\omega_{18} - 24\omega_6\omega_{22}c_s^2v_1^2\omega_{13}\omega_{11}^3\omega_{18} + 6\omega_6^3c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2 - 36\omega_6^2v_1^2\omega_{13}v_3^2\omega_{11}^3\omega_{18}^2 - 18\omega_6^3c_s^2v_3^2\omega_{11}^3\omega_{18}^2 + 12\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_{11}^2\omega_{18} -$
$12\omega_6^2c_s^2\omega_{11}^3\omega_{18}^2 + 12\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18}^2 - 12\omega_6^3v_1^2\omega_{13}\omega_{11}^2\omega_{18} - 12\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_{11}^2 - 36\omega_6^3c_s^2\omega_{13}v_3^2\omega_{11}^3\omega_{18} - 12\omega_6\omega_{22}c_s^4\omega_{13}\omega_{11}^2\omega_{18}^2 -$
$72\omega_6^2\omega_{22}v_1^2\omega_{13}v_3^2\omega_{11}^2\omega_{18}^2 - 6\omega_6^3c_s^2v_1^2\omega_{13}\omega_{11}^2\omega_{18}^2 + 18\omega_6^3\omega_{22}c_s^2v_3^2\omega_{11}^2\omega_{18}^2 - 6\omega_6^3\omega_{22}c_s^2\omega_{11}^2\omega_{18}^2 - 12\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_{11}\omega_{18} + 12\omega_6^3c_s^2\omega_{13}\omega_{11}^3\omega_{18} -$
$6\omega_6^3c_s^4\omega_{11}^3\omega_{18}^2 - 4\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_{11}^3\omega_{18}^2 + 60\omega_6\omega_{22}c_s^2\omega_{13}v_3^2\omega_{11}^3\omega_{18} - 6\omega_6^3\omega_{22}v_1^2\omega_{13}\omega_{11}^2\omega_{18}^2 + 24\omega_6\omega_{22}c_s^2v_1^2\omega_{13}\omega_{11}^2\omega_{18}^2 + 6\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_{11}\omega_{18}^2 -$
$108\omega_6^2\omega_{22}c_s^2\omega_{13}v_3^2\omega_{11}\omega_{18}^2 - 24\omega_6^3\omega_{22}c_s^2\omega_{13}v_3^2\omega_{11}^3 - 48\omega_{22}c_s^2\omega_{13}v_3^2\omega_{11}^3\omega_{18}^2 - 18\omega_6^3c_s^2\omega_{13}v_3^2\omega_{11}^2\omega_{18}^2 + 72\omega_6^3\omega_{22}c_s^2\omega_{13}v_3^2\omega_{11}\omega_{18} +$
$12\omega_6^2\omega_{22}v_1^2\omega_{13}\omega_{11}^3 + 12\omega_6\omega_{22}c_s^4\omega_{13}\omega_{11}^3\omega_{18} + 12\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_{11}^2\omega_{18} - 12\omega_6^3c_s^2v_1^2\omega_{13}\omega_{11}^3\omega_{18} + 108\omega_6^2\omega_{22}v_1^2\omega_{13}v_3^2\omega_{11}^3\omega_{18} - 6\omega_6^3v_1^2\omega_{13}\omega_{11}^3\omega_{18}^2 +$
$12\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_{11}^3 + 6\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2 + 18\omega_6\omega_{22}c_s^4\omega_{13}\omega_{11}^3\omega_{18}^2 + 36\omega_6^3c_s^2\omega_{13}v_3^2\omega_{11}^2\omega_{18} + 18\omega_6^3\omega_{22}c_s^2\omega_{13}v_3^2\omega_{11}\omega_{18}^2 +$
$36\omega_6^3\omega_{22}v_1^2\omega_{13}v_3^2\omega_{11}^3 + 6\omega_6^3c_s^2v_1^2\omega_{13}\omega_{11}^3\omega_{18}^2 + 12\omega_6^3v_1^2\omega_{13}\omega_{11}^3\omega_{18} + 12\omega_6^2c_s^4\omega_{11}^3\omega_{18}^2 - 12\omega_6^3\omega_{22}v_1^2\omega_{13}\omega_{18}^2 - 6\omega_6^3c_s^2\omega_{13}\omega_{11}^3\omega_{18}^2 -$
$24\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_{11}^3\omega_{18} - 24\omega_6^3\omega_{22}v_1^2\omega_{13}\omega_{11}^2\omega_{18} + 6\omega_6^3\omega_{22}c_s^4\omega_{11}^2\omega_{18}^2 - 36\omega_6^3\omega_{22}v_1^2\omega_{13}v_3^2\omega_{11}^3\omega_{18} + 84\omega_6\omega_{22}c_s^2\omega_{13}v_3^2\omega_{11}^3\omega_{18}^2 + 6\omega_6^3v_1^2\omega_{13}\omega_{11}^2\omega_{18}^2 +$
$6\omega_6^3c_s^2\omega_{11}^3\omega_{18}^2 - 18\omega_6^3v_1^2v_3^2\omega_{11}^3\omega_{18}^2 - 12\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_{11}^3\omega_{18} - 6\omega_6^3c_s^2v_1^2\omega_{11}^3\omega_{18}^2 + 18\omega_6^3c_s^2\omega_{13}v_3^2\omega_{11}^3\omega_{18}^2 - 36\omega_6^3\omega_{22}v_1^2\omega_{13}v_3^2\omega_{11}^2 -$
$36\omega_6^2\omega_{22}v_1^2\omega_{13}v_3^2\omega_{11}^2\omega_{18} + 12\omega_6^2c_s^2v_1^2\omega_{13}\omega_{11}^2\omega_{18} - 18\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_{11}\omega_{18}^2 + 18\omega_6^3\omega_{22}v_1^2\omega_{13}v_3^2\omega_{11}^2\omega_{18}^2 + 12\omega_6^2c_s^4\omega_{13}\omega_{11}^3\omega_{18} +$
$12\omega_6^2\omega_{22}v_1^2\omega_{11}^2\omega_{18}^2 + 18\omega_6^3\omega_{22}v_1^2v_3^2\omega_{11}^2\omega_{18}^2 - 12\omega_{22}c_s^4\omega_{13}\omega_{11}^3\omega_{18}^2 + 6\omega_6^3\omega_{22}c_s^2v_1^2\omega_{11}^2\omega_{18}^2 + 36\omega_6^2v_1^2\omega_{13}v_3^2\omega_{11}^3\omega_{18} - 12\omega_6^3c_s^2\omega_{13}\omega_{11}^2\omega_{18} -$
$12\omega_6^2\omega_{22}v_1^2\omega_{13}\omega_{11}\omega_{18}^2 + 24\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_{11}^2\omega_{18}^2 + 12\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_{18}^2 - 6\omega_6^3c_s^4\omega_{13}\omega_{11}^2\omega_{18}^2 - 12\omega_6^2\omega_{22}c_s^4\omega_{11}^2\omega_{18}^2 + 12\omega_6^2c_s^2v_1^2\omega_{13}\omega_{11}^3\omega_{18} -$
$12\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{11}^2\omega_{18} + 6\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_{11}^2\omega_{18}^2 + 12\omega_6^2c_s^2\omega_{13}\omega_{11}^3\omega_{18}^2 - 12\omega_6^2\omega_{22}c_s^2v_1^2\omega_{13}\omega_{11}^3 + 78\omega_6^3\omega_{22}c_s^2\omega_{13}v_3^2\omega_{11}^3\omega_{18} - \omega_6^3\omega_{22}c_s^4\omega_{13}\omega_{11}^3\omega_{18}^2 -$
$42\omega_6^2\omega_{22}c_s^2\omega_{13}v_3^2\omega_{11}^3\omega_{18}^2 + 12\omega_6\omega_{22}c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2 - 12\omega_6^2v_1^2\omega_{13}\omega_{11}^3\omega_{18} - 54\omega_6^3\omega_{22}v_1^2\omega_{13}v_3^2\omega_{11}\omega_{18}^2 - 12\omega_6^2\omega_{22}c_s^2v_1^2\omega_{13}\omega_{11}^2\omega_{18} +$
$36\omega_6^3v_1^2\omega_{13}v_3^2\omega_{11}^2\omega_{18} - 12\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_{11}\omega_{18}^2 + 24\omega_6^2\omega_{22}c_s^2\omega_{13}v_3^2\omega_{11}^3 + 24\omega_6^2\omega_{22}v_1^2\omega_{13}\omega_{11}^2\omega_{18}^2 - 12\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_{11}^3\omega_{18} -$
$18\omega_6^3\omega_{22}c_s^2\omega_{13}v_3^2\omega_{11}^2\omega_{18}^2 - 6\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18}^2 - 6\omega_6^3\omega_{22}v_1^2\omega_{11}^2\omega_{18}^2 - 12\omega_6^3c_s^4\omega_{13}\omega_{11}^3\omega_{18} - 36\omega_6^2\omega_{22}c_s^2v_3^2\omega_{11}^2\omega_{18}^2 + 36\omega_6^2c_s^2\omega_{13}v_3^2\omega_{11}^3\omega_{18} +$
$12\omega_6^2c_s^2v_1^2\omega_{11}^3\omega_{18}^2 - 36\omega_6^2\omega_{22}v_1^2\omega_{13}\omega_{11}^3\omega_{18} - 12\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_{11}^2\omega_{18} + 60\omega_6^2\omega_{22}c_s^2\omega_{13}v_3^2\omega_{11}^2\omega_{18} - 12\omega_6^2v_1^2\omega_{11}^3\omega_{18}^2 - 12\omega_6\omega_{22}c_s^2\omega_{13}\omega_{11}^3\omega_{18} +$
$18\omega_6^3v_1^2\omega_{13}v_3^2\omega_{11}^3\omega_{18}^2 + 36\omega_6^2v_1^2v_3^2\omega_{11}^3\omega_{18}^2 + 12\omega_6^3\omega_{22}v_1^2\omega_{13}\omega_{11}\omega_{18} - 36\omega_6^2\omega_{22}v_1^2v_3^2\omega_{11}^2\omega_{18}^2 + 12\omega_6^2\omega_{22}c_s^2\omega_{11}^2\omega_{18}^2 + 12\omega_6^3\omega_{22}v_1^2\omega_{13}\omega_{11}^2 -$
$6\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_{11}^2\omega_{18}^2 + 180\omega_6^2\omega_{22}c_s^2\omega_{13}v_3^2\omega_{11}^2\omega_{18}^2 + 18\omega_6^3\omega_{22}v_1^2\omega_{13}\omega_{11}\omega_{18}^2 - 12\omega_6^2\omega_{22}c_s^2v_1^2\omega_{11}^2\omega_{18}^2 - 36\omega_6^3v_1^2\omega_{13}v_3^2\omega_{11}^3\omega_{18} +$
$36\omega_6^2\omega_{22}c_s^2v_1^2\omega_{13}\omega_{11}^3\omega_{18} + 24\omega_6\omega_{22}v_1^2\omega_{13}\omega_{11}^3\omega_{18} + 36\omega_6^2c_s^2v_3^2\omega_{11}^3\omega_{18}^2 - 144\omega_6^3\omega_{22}c_s^2\omega_{13}v_3^2\omega_{11}^2\omega_{18} + 72\omega_6\omega_{22}v_1^2\omega_{13}v_3^2\omega_{11}^2\omega_{18}^2 + 6\omega_6^3v_1^2\omega_{11}^3\omega_{18}^2 +$
$6\omega_6^3c_s^4\omega_{13}\omega_{11}^3\omega_{18}^2 - 36\omega_6^2c_s^2\omega_{13}v_3^2\omega_{11}^3\omega_{18}^2 + 24\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{11}^3\omega_{18} + 12\omega_6^2v_1^2\omega_{13}\omega_{11}^3\omega_{18}^2 + 12\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_{11}^3\omega_{18} - 132\omega_6^2\omega_{22}c_s^2\omega_{13}v_3^2\omega_{11}^3\omega_{18} -$
$36\omega_6^3\omega_{22}v_1^2\omega_{13}v_3^2\omega_{11}\omega_{18} - 24\omega_6^2\omega_{22}c_s^2v_1^2\omega_{13}\omega_{11}^2\omega_{18}^2 - 18\omega_6^3v_1^2\omega_{13}v_3^2\omega_{11}^2\omega_{18} - 12\omega_6^3\omega_{22}v_1^2\omega_{13}\omega_{11}^3 + 12\omega_6^2\omega_{22}v_1^2\omega_{13}\omega_{11}^2\omega_{18} -$
$12\omega_6^2c_s^2v_1^2\omega_{13}\omega_{11}^3\omega_{18}^2 - 36\omega_6^2\omega_{22}v_1^2\omega_{13}v_3^2\omega_{11}^3 + 12\omega_6^3c_s^4\omega_{13}\omega_{11}^2\omega_{18} - 24\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2 - 12\omega_6^3c_s^2\omega_{13}\omega_{11}^3\omega_{18} - 24\omega_6\omega_{22}v_1^2\omega_{13}\omega_{11}^2\omega_{18}^2 +$
$36\omega_6^2\omega_{22}v_1^2\omega_{13}v_3^2\omega_{11}^2\omega_{18}^2 + 24\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_{11}^2\omega_{18} + 36\omega_6^3\omega_{22}v_1^2\omega_{13}v_3^2\omega_{18}^2 - 72\omega_6\omega_{22}v_1^2\omega_{13}v_3^2\omega_{11}^3\omega_{18}$

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

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

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

$C_{51} = -2\omega_6^2\omega_{19}^2c_s^2\omega_7^3\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^2\omega_{19}^2\omega_7^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^2\omega_{19}^2\omega_7^3v_3^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5 - 8\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 +$
$2\omega_6\omega_{19}^2\omega_7^3v_3^2\omega_{11}^3\omega_8^2\omega_5\omega_{18} + 2\omega_6\omega_{19}c_s^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^2\omega_7^2v_3^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^2\omega_{19}^2c_s^2\omega_7^3\omega_{20}\omega_{11}^3\omega_5\omega_{18}^2 - 2\omega_6^2\omega_7^3v_3^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 +$
$\omega_6^2\omega_{19}^2\omega_7v_3^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - \omega_6^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - \omega_6^2\omega_{19}^2\omega_7^2v_3^2\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2 - 4\omega_6^2\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 +$
$2\omega_6^2\omega_{19}\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6\omega_{19}^2\omega_7^3\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6^2\omega_{19}^2c_s^2\omega_7^3\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 + 2\omega_6^2\omega_{19}^2\omega_7^3\omega_{11}^3\omega_8\omega_5\omega_{18}^2 + 2\omega_6\omega_{19}\omega_7^3v_3^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 -$
$\omega_6^2\omega_{19}^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2 - 2\omega_6^2c_s^2\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - 6\omega_6\omega_{19}^2c_s^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5 - 2\omega_6^2\omega_{19}^2c_s^2\omega_7^3\omega_{11}^3\omega_8^2\omega_5\omega_{18} +$
$3\omega_6\omega_{19}^2\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^2\omega_{19}c_s^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 2\omega_{19}^2\omega_7^3v_3^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18} + 6\omega_{19}^2c_s^2\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 -$
$2\omega_6^2\omega_{19}^2\omega_7^3v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18} - 2\omega_6^2\omega_{19}\omega_7^3v_3^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 11\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 5\omega_6^2\omega_{19}^2\omega_7^3\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2 -$
$2\omega_6^2\omega_{19}^2\omega_7^3v_3^2\omega_{11}^3\omega_8\omega_5\omega_{18}^2 + 2\omega_6\omega_{19}\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 6\omega_6^2\omega_{19}^2c_s^2\omega_7^3\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18} + 2\omega_6\omega_{19}^2c_s^2\omega_7^3\omega_{11}^3\omega_8\omega_5\omega_{18}^2 - 6\omega_{19}^2c_s^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18} -$
$2\omega_6^2\omega_{19}\omega_7^3v_3^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 2\omega_{19}^2\omega_7^3v_3^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 3\omega_6\omega_{19}^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18} - 2\omega_6^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 6\omega_6^2\omega_{19}^2c_s^2\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5 -$
$2\omega_6^2\omega_{19}^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5 + 4\omega_6\omega_{19}^2c_s^2\omega_7^3\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 + 12\omega_6^2\omega_{19}^2c_s^2\omega_7^3\omega_{20}\omega_8^2\omega_5\omega_{18}^2 - 8\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^2\omega_{19}\omega_7^3v_3^2\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 -$
$15\omega_6^2\omega_{19}^2c_s^2\omega_7^3\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^2\omega_{19}c_s^2\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - \omega_6\omega_{19}^2\omega_7^3v_3^2\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2 +$
$2\omega_6^2\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 11\omega_6\omega_{19}^2c_s^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2 - 2\omega_6^2\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_{18}^2 + 4\omega_6^2\omega_{19}\omega_7^3v_3^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 -$

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

$C_{52} = -2\omega_6^2\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - \omega_6^2\omega_{19}^2\omega_7^2\omega_{11}^3\omega_8\omega_{18}^2 - \omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_{18}^2 + \omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{11}^2\omega_8\omega_{18}^2 + \omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8 -$
$3\omega_6^2\omega_{19}^2\omega_7v_3^2\omega_{20}\omega_{11}^2\omega_{18}^2 - 2\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_8\omega_{18}^2 - \omega_6\omega_{19}^2\omega_7^2\omega_{11}^3\omega_8\omega_{18} - \omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{11}^3\omega_8\omega_{18}^2 - 3\omega_6^2\omega_{19}^2\omega_7^2v_3^2\omega_{20}\omega_{11}^3\omega_8\omega_{18} +$
$6\omega_6^2\omega_{19}\omega_7^2v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - \omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_{18}^2 + \omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{11}^2\omega_8\omega_{18} - 3\omega_6^2\omega_{19}^2\omega_7v_3^2\omega_{11}^3\omega_8\omega_{18}^2 - 9\omega_6^2\omega_{19}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2 +$
$6\omega_6\omega_{19}^2\omega_7v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 + 3\omega_6^2\omega_{19}^2\omega_7^2v_3^2\omega_{20}\omega_{11}^2\omega_{18}^2 + \omega_6^2\omega_{19}c_s^2\omega_7\omega_{11}^3\omega_8\omega_{18}^2 + \omega_6\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 + \omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2 +$
$\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8 + 3\omega_6^2\omega_{19}^2\omega_7^2v_3^2\omega_{11}^3\omega_8\omega_{18}^2 + \omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - \omega_6^2\omega_{19}c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 - \omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2 +$
$\omega_6^2\omega_{19}\omega_7^2\omega_{11}^3\omega_8\omega_{18}^2 - 3\omega_6^2\omega_7^2v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 + 3\omega_6\omega_{19}\omega_7^2v_3^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 + 6\omega_6^2\omega_{19}^2\omega_7^2v_3^2\omega_{20}\omega_8\omega_{18}^2 - \omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 +$
$3\omega_6\omega_{19}^2\omega_7^2v_3^2\omega_{11}^3\omega_{18}^2 - 3\omega_6^2\omega_{19}^2\omega_7^2v_3^2\omega_{20}\omega_{11}^2\omega_8 + \omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18} - \omega_6^2\omega_{19}^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - \omega_6^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 + \omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18} +$
$2\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18} - 6\omega_6\omega_{19}^2\omega_7^2v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - \omega_6^2\omega_{19}^2c_s^2\omega_7\omega_{11}^3\omega_8\omega_{18}^2 + 3\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2 - \omega_6^2\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_{18}^2 -$
$3\omega_6^2\omega_{19}\omega_7^2v_3^2\omega_{11}^3\omega_8\omega_{18}^2 + \omega_6^2\omega_{19}^2\omega_7^2\omega_{11}^3\omega_{18}^2 - \omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8 - \omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 + \omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 + 2\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 -$
$\omega_6\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18} - \omega_6^2c_s^2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 + \omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 - \omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8 - 3\omega_6^2\omega_{19}^2\omega_7^2v_3^2\omega_{11}^3\omega_8\omega_{18} -$
$3\omega_6\omega_{19}\omega_7v_3^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 - 3\omega_6^2\omega_{19}^2\omega_7^2v_3^2\omega_{11}^3\omega_{18}^2 + 3\omega_6^2\omega_{19}^2\omega_7^2v_3^2\omega_{20}\omega_{11}^3\omega_8 + \omega_6\omega_{19}^2\omega_7^2\omega_{11}^3\omega_8\omega_{18}^2 + 2\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18} +$
$\omega_6^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 - 2\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 + \omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{11}^3\omega_8\omega_{18} - \omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{11}^2\omega_8\omega_{18}^2 + \omega_6^2\omega_{19}^2c_s^2\omega_7\omega_{11}^3\omega_{18}^2 - 3\omega_{19}^2\omega_7^2v_3^2\omega_{20}\omega_{11}^3\omega_8\omega_{18} +$
$\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2 - 3\omega_6^2\omega_{19}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8\omega_{18} - \omega_6\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 + \omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_{18}^2 - \omega_6^2\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18} -$
$3\omega_6^2\omega_{19}v_3^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 + \omega_6^2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 - \omega_6^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18} + 3\omega_6^2\omega_{19}^2\omega_7v_3^2\omega_{20}\omega_{11}^3\omega_8\omega_{18} + \omega_6^2\omega_{19}^2\omega_7^2\omega_{11}^3\omega_8\omega_{18} +$
$3\omega_6^2\omega_{19}\omega_7v_3^2\omega_{11}^3\omega_8\omega_{18}^2 - \omega_6\omega_{19}^2\omega_7^2\omega_{11}^3\omega_{18}^2 - \omega_6^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18}^2 + 3\omega_6^2\omega_{19}^2\omega_7v_3^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2 - 2\omega_6\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 +$
$2\omega_6^2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 + 6\omega_6\omega_{19}^2\omega_7^2v_3^2\omega_{20}\omega_{11}^3\omega_8\omega_{18} - \omega_6^2\omega_{19}\omega_7^2\omega_{11}^2\omega_8\omega_{18}^2 + 3\omega_6^2\omega_7^2v_3^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 - \omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2 -$
$\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - \omega_6^2\omega_{19}^2\omega_7\omega_{11}^3\omega_{18}^2 - \omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18} + 3\omega_6\omega_{19}^2\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2 - 2\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18} -$
$\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18} - 3\omega_6\omega_{19}\omega_7^2v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 + \omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8 + \omega_6^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_{18}^2 + 2\omega_6\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 +$
$3\omega_6\omega_{19}^2\omega_7^2v_3^2\omega_{11}^3\omega_8\omega_{18} - 3\omega_6^2\omega_{19}^2\omega_7^2v_3^2\omega_{11}^2\omega_8\omega_{18}^2 - \omega_6\omega_{19}\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 + \omega_6^2\omega_{19}^2\omega_7\omega_{11}^3\omega_8\omega_{18}^2 + 6\omega_6^2\omega_{19}^2\omega_7^2v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_{18} +$
$3\omega_6^2\omega_{19}^2v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - \omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{11}^3\omega_{18}^2 - 2\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - 3\omega_6\omega_{19}^2\omega_7^2v_3^2\omega_{20}\omega_{11}^3\omega_8 - \omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{11}^3\omega_8\omega_{18} -$
$3\omega_6^2\omega_{19}\omega_7^2v_3^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 + \omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 + 3\omega_{19}^2\omega_7^2v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - \omega_6^2\omega_{19}\omega_7\omega_{11}^3\omega_8\omega_{18}^2 + \omega_6^2\omega_{19}^2\omega_7^2\omega_{11}^2\omega_8\omega_{18}^2 -$
$6\omega_6^2\omega_{19}^2\omega_7v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 + 2\omega_6^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 + \omega_6\omega_{19}^2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18} + \omega_6^2\omega_{19}\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 - \omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{11}^3\omega_8\omega_{18}^2 -$
$\omega_6^2\omega_{19}^2\omega_7^2\omega_{11}^2\omega_8\omega_{18} + \omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{11}^3\omega_{18}^2 - 3\omega_6^2\omega_{19}^2\omega_7v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_{18} + \omega_6^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18} + \omega_6^2\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18} + 3\omega_6^2\omega_{19}^2\omega_7v_3^2\omega_{11}^3\omega_{18}^2 +$
$2\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_8\omega_{18}^2 - \omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8 + 6\omega_6^2\omega_{19}\omega_7v_3^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 + \omega_6^2\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18}^2 + \omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_{18}^2 +$
$3\omega_6^2\omega_{19}^2\omega_7^2v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - 3\omega_6^2\omega_{19}\omega_7^2v_3^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2 - \omega_6^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 + \omega_6\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 + \omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{11}^3\omega_8\omega_{18}^2 -$
$2\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - 3\omega_6^2\omega_7v_3^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 - 3\omega_6\omega_{19}^2\omega_7^2v_3^2\omega_{11}^3\omega_8\omega_{18}^2 - 3\omega_6\omega_{19}^2\omega_7v_3^2\omega_{20}\omega_{11}^3\omega_8\omega_{18} + \omega_6^2\omega_{19}^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 -$
$\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 + 3\omega_6^2\omega_{19}^2\omega_7^2v_3^2\omega_{11}^2\omega_8\omega_{18} - 3\omega_6\omega_{19}^2\omega_7^2v_3^2\omega_{20}\omega_{11}^2\omega_{18}^2 - \omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18} + \omega_6^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 -$
$2\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18} + 2\omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 + 3\omega_6^2\omega_{19}\omega_7^2v_3^2\omega_{11}^2\omega_8\omega_{18}^2 - 3\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2 + \omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}$

$C_{53} =$
$6\omega_{19}^2\omega_{16}v_2^2\omega_7^3v_3^2\omega_{11}^3 + 180\omega_{19}^2c_s^4\omega_{16}\omega_7\omega_{23}\omega_{11}^3 - 72\omega_{19}c_s^2\omega_{16}v_2^2\omega_7\omega_{23}\omega_{11}^3 + 36\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{11}^2 - 18\omega_{19}^2\omega_{16}v_2^2\omega_7^3v_3^2\omega_{23}\omega_{11} + 6\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{11}^3 -$
$12\omega_{19}^2c_s^2\omega_{16}\omega_7\omega_{23}\omega_{11}^3 - 24\omega_{19}^2\omega_{16}v_2^2\omega_7^2v_3^2\omega_{23}\omega_{11}^2 + 18\omega_{19}^2c_s^4\omega_{16}\omega_7^3\omega_{11}^3 - 12\omega_{19}^2c_s^2\omega_{16}\omega_7^2v_3^2\omega_{11}^3 - 12c_s^2\omega_{16}\omega_7^3v_3^2\omega_{23}\omega_{11}^2 + 18\omega_{19}^2c_s^4\omega_7^3\omega_{23}\omega_{11}^2 -$
$12\omega_{16}v_2^2\omega_7^2v_3^2\omega_{23}\omega_{11}^3 + 30\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{11}^3 - 6\omega_{19}^2v_2^2\omega_7^3\omega_{23}\omega_{11}^2 - 36\omega_{19}\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{11}^3 + \omega_{19}^2c_s^2\omega_{16}\omega_7^3v_3^2\omega_{23}\omega_{11}^3 - 12\omega_{19}c_s^2\omega_{16}\omega_7v_3^2\omega_{23}\omega_{11}^3 +$
$18\omega_{19}^2c_s^2v_2^2\omega_7^3\omega_{23}\omega_{11}^2 - 72\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{11}^2 - 36\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{11}^3 - 18\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{11}^2 - 36\omega_{19}^2c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{11} - 12\omega_{19}^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{11} +$
$12\omega_{19}^2\omega_{16}v_2^2\omega_7^3v_3^2\omega_{23} - 6\omega_{19}^2\omega_{16}v_2^2\omega_7^3v_3^2\omega_{11}^2 - 36c_s^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{11}^3 - 84\omega_{19}^2c_s^4\omega_{16}\omega_7\omega_{23}\omega_{11}^2 - 18\omega_{19}^2c_s^2v_2^2\omega_7^3\omega_{11}^3 + 12\omega_{19}^2c_s^2\omega_7^2\omega_{23}\omega_{11}^2 -$
$36\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11} + 36\omega_{19}^2c_s^4\omega_{16}\omega_7^3\omega_{23} - 2\omega_{19}^2c_s^2\omega_{16}\omega_7^3v_3^2\omega_{23}\omega_{11}^2 + 12\omega_{19}\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{11}^2 - 42\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{11}^2 + 12\omega_{19}^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{11} +$
$12c_s^2\omega_{16}\omega_7^3v_3^2\omega_{23}\omega_{11}^3 + 12\omega_{19}^2c_s^2\omega_{16}\omega_7\omega_{23}\omega_{11}^2 - 18\omega_{19}^2c_s^4\omega_{16}\omega_7^3\omega_{11}^2 - 12\omega_{19}^2c_s^2\omega_{16}\omega_7^3v_3^2\omega_{23}\omega_{11} + 12\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{11} + 2\omega_{19}^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{11}^2 -$
$36\omega_{19}^2c_s^4\omega_{16}\omega_7^2\omega_{11}^3 + 12\omega_{19}^2v_2^2\omega_7^2v_3^2\omega_{11}^3 + 12\omega_{19}\omega_{16}v_2^2\omega_7^3v_3^2\omega_{11}^2 + 12c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}^3 + 12\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{11} - 6\omega_{19}^2c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{11}^2 +$
$36\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{11} - 12c_s^2\omega_{16}\omega_7^2v_3^2\omega_{23}\omega_{11}^3 + 24\omega_{19}^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{11}^2 - 12\omega_{16}v_2^2\omega_7^3v_3^2\omega_{23}\omega_{11}^2 + 12c_s^4\omega_{16}\omega_7^2\omega_{23}\omega_{11}^3 + 72\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11}^2 -$
$12\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11}^3 + 18\omega_{19}^2c_s^2\omega_{16}\omega_7^2v_3^2\omega_{23}\omega_{11}^2 + 12\omega_{19}^2\omega_{16}v_2^2\omega_7^2v_3^2\omega_{23}\omega_{11} - 12\omega_{19}\omega_{16}v_2^2\omega_7^3v_3^2\omega_{11}^3 + 12\omega_{19}c_s^4\omega_{16}\omega_7\omega_{23}\omega_{11}^3 - 96\omega_{19}^2c_s^4\omega_{16}\omega_{23}\omega_{11}^3 -$
$\omega_{19}^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{11}^3 - 24\omega_{19}\omega_{16}v_2^2\omega_7v_3^2\omega_{23}\omega_{11}^3 + 36\omega_{19}^2c_s^2v_2^2\omega_7^2\omega_{11}^3 - 36\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11}^3 + 12\omega_{19}c_s^2\omega_{16}\omega_7^2v_3^2\omega_{11}^3 - 12\omega_{19}^2c_s^2\omega_{16}\omega_7^2v_3^2\omega_{23}\omega_{11}^3 +$

$12\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11}^2 + 12\omega_{19}c_s^2\omega_{16}\omega_7\omega_{23}\omega_{11}^3 + 12\omega_{16}v_2^2\omega_7^3v_3^2\omega_{23}\omega_{11}^3 - 6\omega_{19}^2c_s^2\omega_7^3v_3^2\omega_{11}^3 + 36\omega_{19}c_s^4\omega_{16}\omega_7^2\omega_{11}^3 + 5\omega_{19}^2c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{11}^3 +$
$6\omega_{19}^2\omega_{16}v_2^2\omega_7^3v_3^2\omega_{23}\omega_{11}^2 + 12\omega_{19}^2c_s^2\omega_{16}\omega_7^3v_3^2\omega_{23} - 24\omega_{19}\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11}^2 + 6\omega_{19}^2c_s^2\omega_7^3v_3^2\omega_{23}\omega_{11}^2 - 12\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{11}^2 + 6\omega_{19}^2v_2^2\omega_7^3v_3^2\omega_{23}\omega_{11}^2 +$
$24\omega_{19}^2\omega_{16}v_2^2\omega_7v_3^2\omega_{23}\omega_{11}^2 - 12\omega_{19}c_s^2\omega_{16}\omega_7^3v_3^2\omega_{23}\omega_{11} - 6\omega_{19}^2c_s^2\omega_{16}\omega_7^3v_3^2\omega_{11}^2 + 12\omega_{19}^2\omega_{16}v_2^2\omega_7^2\omega_{11}^3 + 18\omega_{19}^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11} - 48\omega_{19}^2c_s^4\omega_{16}\omega_7^2\omega_{23}\omega_{11} -$
$36\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{11}^3 - 36\omega_{19}^2c_s^2v_2^2\omega_7^2\omega_{23}\omega_{11}^2 + 18\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11}^2 - 12\omega_{19}\omega_{16}v_2^2\omega_7^3v_3^2\omega_{23}\omega_{11}^3 - 6\omega_{19}^2c_s^2\omega_{16}\omega_7^3\omega_{11}^3 - 24\omega_{19}^2\omega_{16}v_2^2\omega_7\omega_{23}\omega_{11}^2 +$
$36c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11}^3 - 6\omega_{19}^2c_s^2\omega_7^3\omega_{23}\omega_{11}^2 - 36\omega_{19}^2c_s^4\omega_7^2\omega_{23}\omega_{11}^2 - 12\omega_{19}\omega_{16}v_2^2\omega_7^2\omega_{11}^3 + 6\omega_{19}^2c_s^2\omega_{16}\omega_7^3v_3^2\omega_{11}^3 + 12\omega_{19}\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11}^3 +$
$12\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{11}^3 - 36\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^2\omega_{11}^3 + 12\omega_{19}^2v_2^2\omega_7^2\omega_{23}\omega_{11}^2 - 12\omega_{19}^2c_s^2\omega_7^2\omega_{11}^3 - 42\omega_{19}c_s^4\omega_{16}\omega_7^2\omega_{23}\omega_{11}^3 - 18\omega_{19}^2c_s^4\omega_7^3\omega_{11}^3 -$
$36c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11}^2 - 12\omega_{19}^2\omega_{16}v_2^2\omega_7^2v_3^2\omega_{11}^3 + 6\omega_{19}^2c_s^2\omega_{16}\omega_7^3\omega_{11}^2 + 24\omega_{19}\omega_{16}v_2^2\omega_7^3v_3^2\omega_{23}\omega_{11}^2 + 6\omega_{19}^2v_2^2\omega_7^3\omega_{11}^3 - 18\omega_{19}c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}^3 +$
$36\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{11}^2 + 18\omega_{19}c_s^2\omega_{16}\omega_7^2v_3^2\omega_{23}\omega_{11}^3 - 12\omega_{19}^2c_s^2\omega_{16}\omega_7^3\omega_{23} + 12\omega_{19}^2c_s^2\omega_{16}\omega_7^2\omega_{11}^3 + 12c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{11}^2 - 12\omega_{19}\omega_{16}v_2^2\omega_7^3v_3^2\omega_{23}\omega_{11} -$
$12\omega_{19}^2c_s^2\omega_{16}\omega_7v_3^2\omega_{23}\omega_{11}^2 - 12\omega_{19}c_s^2\omega_{16}\omega_7^3v_3^2\omega_{11}^3 + 108\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{11}^3 - 6\omega_{19}^2\omega_{16}v_2^2\omega_7^3\omega_{11}^3 - 88\omega_{19}^2c_s^4\omega_{16}\omega_7^2\omega_{23}\omega_{11}^3 +$
$36\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^2\omega_{11}^3 + 12\omega_{19}^2c_s^2\omega_7^2v_3^2\omega_{11}^3 + 36\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23} + 24\omega_{19}\omega_{16}v_2^2\omega_7\omega_{23}\omega_{11}^3 - 12\omega_{19}\omega_{16}v_2^2\omega_7^3\omega_{11}^2 - 6\omega_{19}c_s^2\omega_{16}\omega_7^3v_3^2\omega_{23}\omega_{11}^3 +$
$12c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{11}^2 + 12\omega_{19}\omega_{16}v_2^2\omega_7^2v_3^2\omega_{11}^3 - 12\omega_{19}\omega_{16}v_2^2\omega_7^2v_3^2\omega_{23}\omega_{11}^2 + 12\omega_{19}^2c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}^3 - 18\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^3\omega_{11}^2 - 6\omega_{19}^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11}^2 -$
$12\omega_{19}^2v_2^2\omega_7^2v_3^2\omega_{23}\omega_{11}^2 - 54\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11} + 6\omega_{19}^2\omega_{16}v_2^2\omega_7^3\omega_{11}^2 + 150\omega_{19}^2c_s^4\omega_{16}\omega_7^2\omega_{23}\omega_{11}^2 - 12\omega_{19}^2c_s^2\omega_7^2v_3^2\omega_{23}\omega_{11}^2 + 12\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{11}^3 -$
$12\omega_{19}^2\omega_{16}v_2^2\omega_7^3\omega_{23} - 36\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{11}^2 + 12\omega_{19}c_s^2\omega_{16}\omega_7^3v_3^2\omega_{11}^2 + 12\omega_{19}^2c_s^2\omega_{16}\omega_7v_3^2\omega_{23}\omega_{11}^3 + 36\omega_{19}^2c_s^4\omega_7^2\omega_{11}^3 - 12\omega_{19}^2v_2^2\omega_7^2\omega_{11}^3 +$
$72\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7\omega_{23}\omega_{11}^2 - 12c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{11}^3 + 18\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^3\omega_{11}^3 - 18\omega_{19}^2c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}^2 - 12\omega_{19}c_s^2\omega_{16}\omega_7^2\omega_{11}^3 + 6\omega_{19}^2c_s^2\omega_7^3\omega_{11}^3 +$
$36\omega_{19}\omega_{16}v_2^2\omega_7^2v_3^2\omega_{23}\omega_{11}^3 + 12\omega_{19}\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11} - 12c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{11}^3 + 12\omega_{19}\omega_{16}v_2^2\omega_7^3\omega_{11}^3 + 18\omega_{19}c_s^2\omega_{16}\omega_7^3v_3^2\omega_{23}\omega_{11}^2 - 6\omega_{19}^2v_2^2\omega_7^3v_3^2\omega_{11}^3$

$C_{54} = 26\omega_{19}^2c_s^2\omega_{16}^2\omega_{10}\omega_7\omega_{23}\omega_{11}^3 + 11\omega_{19}c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}^3 + 2\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{11}^2 + 2\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7v_3^2\omega_{23}\omega_{11}^2 - 4\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23} +$
$2\omega_{19}^2c_s^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{11}^3 + 6\omega_{19}\omega_{16}^2\omega_{10}\omega_7\omega_{23}\omega_{11}^3 + 4\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2v_3^2\omega_{11}^3 + 4\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{11}^3 - 3\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{11}^3 - \omega_{19}^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2 +$
$2\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7v_3^2\omega_{23}\omega_{11}^3 - 15\omega_{19}^2c_s^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11} + 4\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}^3 - 2\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{11}^3 + 2\omega_{19}c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2 -$
$6\omega_{19}^2c_s^2\omega_{16}^2\omega_{10}\omega_7\omega_{23}\omega_{11}^2 + 4\omega_{19}c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{11}^3 + 12\omega_{19}^2c_s^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23} + 12\omega_{19}^2c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{11}^3 - 4\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{11}^2 +$
$7\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{11}^2 + 4\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11} - 2\omega_{19}^2c_s^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{11}^2 - \omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}^3 + 4\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2v_3^2\omega_{11}^3 - 4\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{11}^3 -$
$7\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2 + 2\omega_{19}^2c_s^2\omega_{16}^2\omega_7^2\omega_{23}\omega_{11}^3 - 4\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{11} + 4\omega_{19}^2c_s^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}^3 + 8\omega_{19}^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}^3 -$
$4\omega_{19}^2c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{11}^3 + 5\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11} + 3\omega_{19}^2c_s^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2 + 4\omega_{19}c_s^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{11}^2 - 2\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7\omega_{23}\omega_{11}^2 -$
$2\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2v_3^2\omega_{23}\omega_{11}^2 + 8c_s^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}^3 - 4\omega_{19}^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2 - 16\omega_{19}^2c_s^2\omega_{16}^2\omega_{10}\omega_{23}\omega_{11}^3 + 3\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}^3 -$
$2\omega_{19}^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{11}^3 + 4\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{11}^3 - 8c_s^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2 - 4\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7^2v_3^2\omega_{11}^3 - 4\omega_{19}c_s^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{11}^3 + 9\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2v_3^2\omega_{23}\omega_{11}^3 -$
$2\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7\omega_{23}\omega_{11}^3 - 4\omega_{19}^2c_s^2\omega_{16}^2\omega_7\omega_{23}\omega_{11}^3 + 2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11}^3 - 2\omega_{19}^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{11}^3 + 4\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3v_3^2\omega_{11}^2 - 5\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{11} -$
$3\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7^2v_3^2\omega_{23}\omega_{11}^2 + 2\omega_{19}^2c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11} + 3\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2 - 4\omega_{16}^2\omega_{10}\omega_7^2v_3^2\omega_{23}\omega_{11}^3 + 13\omega_{19}c_s^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2 -$
$4\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}^3 - 4\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3v_3^2\omega_{11}^3 - 5\omega_{19}c_s^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}^3 + 2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{11}^3 + 4\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2 + \omega_{19}^2\omega_{16}\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{11}^3 +$
$\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}^3 - \omega_{19}^2\omega_{16}^2\omega_{10}\omega_7^2v_3^2\omega_{23}\omega_{11}^3 + 2\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7^3v_3^2\omega_{11}^3 - 6\omega_{19}c_s^2\omega_{16}^2\omega_{10}\omega_7\omega_{23}\omega_{11}^3 - 8\omega_{19}^2c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}^3 +$
$8\omega_{19}^2c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2 + 4\omega_{19}^2c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{11}^3 - 2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2v_3^2\omega_{23}\omega_{11}^3 - 4\omega_{16}^2\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{11}^2 + 4\omega_{19}^2c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}^3 -$
$9\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}^3 - \omega_{19}^2c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2 + 2\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7^2v_3^2\omega_{23}\omega_{11} - 2\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11} + 4\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7^3v_3^2\omega_{23} -$
$2\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7^3v_3^2\omega_{11}^2 - 4\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{11}^3 - 8c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}^3 - 8\omega_{19}c_s^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11} - 6\omega_{19}\omega_{16}^2\omega_{10}\omega_7v_3^2\omega_{23}\omega_{11}^3 + 2\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2 +$
$4\omega_{16}^2\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{11}^3 - 2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3v_3^2\omega_{11}^3 + \omega_{19}^2\omega_{16}^2\omega_{10}\omega_7^3v_3^2\omega_{23}\omega_{11}^2 - 2\omega_{19}^2c_s^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}^3 - 24\omega_{19}^2c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11}^3$

$C_{55} = 18\omega_{19}^2\omega_{16}v_2^2\omega_7^3v_3^2\omega_{11}^3 + 18\omega_{19}^2c_s^4\omega_{16}\omega_7\omega_{23}\omega_{11}^3 - 24\omega_{19}c_s^2\omega_{16}v_2^2\omega_7\omega_{23}\omega_{11}^3 + 12\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{11}^2 - 54\omega_{19}^2\omega_{16}v_2^2\omega_7^3v_3^2\omega_{23}\omega_{11} -$
$12\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{11}^3 - 72\omega_{19}^2\omega_{16}v_2^2\omega_7^2v_3^2\omega_{23}\omega_{11}^2 + 6\omega_{19}^2c_s^4\omega_{16}\omega_7^3\omega_{11}^3 - 36\omega_{19}^2c_s^2\omega_{16}\omega_7^2v_3^2\omega_{11}^3 - 48\omega_{19}^2c_s^2\omega_{16}v_3^2\omega_{23}\omega_{11}^3 + 24c_s^2\omega_{16}\omega_7^3v_3^2\omega_{23}\omega_{11}^2 +$
$6\omega_{19}^2c_s^4\omega_7^3\omega_{23}\omega_{11}^2 - 36\omega_{16}v_2^2\omega_7^2v_3^2\omega_{23}\omega_{11}^3 + 12\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{11}^3 - 6\omega_{19}^2v_2^2\omega_7^3\omega_{23}\omega_{11}^2 - 36\omega_{19}\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{11}^3 + 60\omega_{19}c_s^2\omega_{16}\omega_7v_3^2\omega_{23}\omega_{11}^3 +$
$6\omega_{19}^2c_s^2v_2^2\omega_7^3\omega_{23}\omega_{11}^2 - 24\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{11}^2 - 12\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{11}^3 + 12\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{11}^2 + 6\omega_{19}^2c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{11} - 12\omega_{19}^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{11} +$
$36\omega_{19}^2\omega_{16}v_2^2\omega_7^3v_3^2\omega_{23} - 18\omega_{19}^2\omega_{16}v_2^2\omega_7^3v_3^2\omega_{11}^2 - 12c_s^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{11}^3 - 12\omega_{19}^2c_s^4\omega_{16}\omega_7\omega_{23}\omega_{11}^2 - 6\omega_{19}^2c_s^2v_2^2\omega_7^3\omega_{11}^3 + 12\omega_{19}^2c_s^2\omega_7^2\omega_{23}\omega_{11}^2 -$
$108\omega_{19}^2c_s^2\omega_{16}\omega_7^2v_3^2\omega_{23}\omega_{11} - 12\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11} - 18\omega_{19}^2c_s^2\omega_{16}\omega_7^3v_3^2\omega_{23}\omega_{11}^2 + 12\omega_{19}\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{11}^2 - 12\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{11}^2 -$
$6\omega_{19}^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{11} - 24c_s^2\omega_{16}\omega_7^3v_3^2\omega_{23}\omega_{11}^3 + 12\omega_{19}^2c_s^2\omega_{16}\omega_7\omega_{23}\omega_{11}^2 - 6\omega_{19}^2c_s^4\omega_{16}\omega_7^3\omega_{11}^2 + 18\omega_{19}^2c_s^2\omega_{16}\omega_7^3v_3^2\omega_{23}\omega_{11} + 6\omega_{19}^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{11}^2 -$
$12\omega_{19}^2c_s^4\omega_{16}\omega_7^2\omega_{11}^3 + 36\omega_{19}^2v_2^2\omega_7^2v_3^2\omega_{11}^3 + 36\omega_{19}\omega_{16}v_2^2\omega_7^3v_3^2\omega_{11}^2 - 6\omega_{19}^2c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{11}^2 + 12\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{11} + 24c_s^2\omega_{16}\omega_7^2v_3^2\omega_{23}\omega_{11}^3 +$
$24\omega_{19}^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{11}^2 - 36\omega_{16}v_2^2\omega_7^3v_3^2\omega_{23}\omega_{11}^2 + 24\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11}^2 - 12\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11}^3 + 180\omega_{19}^2c_s^2\omega_{16}\omega_7^2v_3^2\omega_{23}\omega_{11}^2 +$
$36\omega_{19}^2\omega_{16}v_2^2\omega_7^2v_3^2\omega_{23}\omega_{11} - 36\omega_{19}\omega_{16}v_2^2\omega_7^3v_3^2\omega_{11}^3 + 12\omega_{19}c_s^4\omega_{16}\omega_7\omega_{23}\omega_{11}^3 - 12\omega_{19}^2c_s^4\omega_{16}\omega_{23}\omega_{11}^3 - 72\omega_{19}\omega_{16}v_2^2\omega_7v_3^2\omega_{23}\omega_{11}^3 + 12\omega_{19}^2c_s^2v_2^2\omega_7^2\omega_{11}^3 -$
$12\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11}^3 + 36\omega_{19}c_s^2\omega_{16}\omega_7^2v_3^2\omega_{11}^3 - 42\omega_{19}^2c_s^2\omega_{16}\omega_7^2v_3^2\omega_{23}\omega_{11}^3 + 12\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11}^2 - 12\omega_{19}c_s^2\omega_{16}\omega_7\omega_{23}\omega_{11}^3 + 36\omega_{16}v_2^2\omega_7^3v_3^2\omega_{23}\omega_{11}^3 -$
$18\omega_{19}^2c_s^2\omega_7^3v_3^2\omega_{11}^3 + 12\omega_{19}c_s^4\omega_{16}\omega_7^2\omega_{11}^3 - \omega_{19}^2c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{11}^3 + 18\omega_{19}^2\omega_{16}v_2^2\omega_7^3v_3^2\omega_{23}\omega_{11}^2 + 12\omega_{19}^2c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{11} + 12\omega_{19}c_s^4\omega_{16}\omega_7^2\omega_{23}\omega_{11}^2 -$
$24\omega_{19}\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11}^2 + 18\omega_{19}^2c_s^2\omega_7^3v_3^2\omega_{23}\omega_{11}^2 - 12\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{11}^2 + 18\omega_{19}^2v_2^2\omega_7^3v_3^2\omega_{23}\omega_{11}^2 + 72\omega_{19}^2\omega_{16}v_2^2\omega_7v_3^2\omega_{23}\omega_{11}^2 + 72\omega_{19}c_s^2\omega_{16}\omega_7^3v_3^2\omega_{23}\omega_{11} -$
$18\omega_{19}^2c_s^2\omega_{16}\omega_7^3v_3^2\omega_{11}^2 + 12\omega_{19}^2\omega_{16}v_2^2\omega_7^2\omega_{11}^3 + 18\omega_{19}^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11} + 60\omega_{19}c_s^2\omega_{16}\omega_7^2v_3^2\omega_{23}\omega_{11}^2 - 12\omega_{19}^2c_s^4\omega_{16}\omega_7^2\omega_{23}\omega_{11} - 12\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{11}^3 -$
$12\omega_{19}c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}^2 - 12\omega_{19}^2c_s^2v_2^2\omega_7^2\omega_{23}\omega_{11}^2 + 6\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11}^2 - 36\omega_{19}\omega_{16}v_2^2\omega_7^3v_3^2\omega_{23}\omega_{11}^3 - 6\omega_{19}^2c_s^2\omega_{16}\omega_7^3\omega_{11}^3 - 24\omega_{19}^2\omega_{16}v_2^2\omega_7\omega_{23}\omega_{11}^2 +$
$12c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11}^3 - 6\omega_{19}^2c_s^2\omega_7^3\omega_{23}\omega_{11}^2 - 12\omega_{19}^2c_s^4\omega_7^2\omega_{23}\omega_{11}^2 - 12\omega_{19}\omega_{16}v_2^2\omega_7^2\omega_{11}^3 + 18\omega_{19}^2c_s^2\omega_{16}\omega_7^3v_3^2\omega_{11}^3 + 12\omega_{19}\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11}^3 +$
$12\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{11}^3 - 12\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^2\omega_{11}^3 + 12\omega_{19}^2v_2^2\omega_7^2\omega_{23}\omega_{11}^2 - 12\omega_{19}^2c_s^2\omega_7^2\omega_{11}^3 - 24\omega_{19}c_s^4\omega_{16}\omega_7^2\omega_{23}\omega_{11}^3 - 6\omega_{19}^2c_s^4\omega_7^3\omega_{11}^3 - 12c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11}^2 -$
$36\omega_{19}^2\omega_{16}v_2^2\omega_7^2v_3^2\omega_{11}^3 + 6\omega_{19}^2c_s^2\omega_{16}\omega_7^3\omega_{11}^2 + 72\omega_{19}\omega_{16}v_2^2\omega_7^3v_3^2\omega_{23}\omega_{11}^2 + 6\omega_{19}^2v_2^2\omega_7^3\omega_{11}^3 + 24\omega_{19}c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}^3 + 12\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{11}^2 -$
$132\omega_{19}c_s^2\omega_{16}\omega_7^2v_3^2\omega_{23}\omega_{11}^3 + 12\omega_{19}^2c_s^2\omega_{16}\omega_7^2\omega_{11}^3 - 36\omega_{19}\omega_{16}v_2^2\omega_7^3v_3^2\omega_{23}\omega_{11} - 84\omega_{19}^2c_s^2\omega_{16}\omega_7v_3^2\omega_{23}\omega_{11}^2 - 36\omega_{19}c_s^2\omega_{16}\omega_7^3v_3^2\omega_{11}^3 +$
$36\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{11}^3 - 6\omega_{19}^2\omega_{16}v_2^2\omega_7^3\omega_{11}^3 - 4\omega_{19}^2c_s^4\omega_{16}\omega_7^2\omega_{23}\omega_{11}^3 + 12\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^2\omega_{11}^3 + 36\omega_{19}^2c_s^2\omega_7^2v_3^2\omega_{11}^3 + 12\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23} +$
$24\omega_{19}\omega_{16}v_2^2\omega_7\omega_{23}\omega_{11}^3 - 12\omega_{19}\omega_{16}v_2^2\omega_7^3\omega_{11}^2 + 78\omega_{19}c_s^2\omega_{16}\omega_7^3v_3^2\omega_{23}\omega_{11}^3 + 36\omega_{19}\omega_{16}v_2^2\omega_7^2v_3^2\omega_{11}^3 - 36\omega_{19}\omega_{16}v_2^2\omega_7^2v_3^2\omega_{23}\omega_{11}^2 -$
$6\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^3\omega_{11}^2 - 6\omega_{19}^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11}^2 - 36\omega_{19}^2v_2^2\omega_7^2v_3^2\omega_{23}\omega_{11}^2 - 18\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11} + 6\omega_{19}^2\omega_{16}v_2^2\omega_7^3\omega_{11}^2 + 24\omega_{19}^2c_s^4\omega_{16}\omega_7^2\omega_{23}\omega_{11}^2 -$
$36\omega_{19}^2c_s^2\omega_7^2v_3^2\omega_{23}\omega_{11}^2 + 12\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{11}^3 - 12\omega_{19}^2\omega_{16}v_2^2\omega_7^3\omega_{23} - 12\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{11}^2 + 36\omega_{19}c_s^2\omega_{16}\omega_7^3v_3^2\omega_{11}^2 + 84\omega_{19}^2c_s^2\omega_{16}\omega_7v_3^2\omega_{23}\omega_{11}^3 +$
$12\omega_{19}^2c_s^4\omega_7^2\omega_{11}^3 - 12\omega_{19}^2v_2^2\omega_7^2\omega_{11}^3 + 24\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7\omega_{23}\omega_{11}^2 + 6\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^3\omega_{11}^3 - 24\omega_{19}^2c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}^2 - 12\omega_{19}c_s^2\omega_{16}\omega_7^2\omega_{11}^3 +$
$6\omega_{19}^2c_s^2\omega_7^3\omega_{11}^3 + 108\omega_{19}\omega_{16}v_2^2\omega_7^2v_3^2\omega_{23}\omega_{11}^3 + 12\omega_{19}\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11} + 12\omega_{19}\omega_{16}v_2^2\omega_7^3\omega_{11}^3 - 144\omega_{19}c_s^2\omega_{16}\omega_7^3v_3^2\omega_{23}\omega_{11}^2 - 18\omega_{19}^2v_2^2\omega_7^3v_3^2\omega_{11}^3$

$C_{56} = 4c_s^4\omega_{11}^2\omega_{18}^2 - 24\omega_6^2v_3^2\omega_{18}^2 + 20\omega_6^2v_3^2\omega_{11}\omega_{18} + 4\omega_6^2c_s^4\omega_{11}^2\omega_{18}^2 - 24\omega_6^2c_s^2v_3^2\omega_{11}^2 - 72\omega_6^2c_s^2v_3^2\omega_{11}\omega_{18} + 4\omega_6c_s^2\omega_{11}^3 + 20\omega_6v_3^2\omega_{11}^2\omega_{18}^2 +$
$4\omega_6^2v_3^4\omega_{11}^3 - 36\omega_6^2v_3^4\omega_{11}\omega_{18}^2 - 8\omega_6^2c_s^2\omega_{11}^2\omega_{18} - 16\omega_6v_3^4\omega_{11}^2\omega_{18} - 4\omega_6c_s^2\omega_{11}\omega_{18}^2 - 4c_s^4\omega_{11}^3\omega_{18} - 4\omega_6^2v_3^4\omega_{11}^2 - 20\omega_6v_3^2\omega_{11}^3\omega_{18} + 24\omega_6^2c_s^2v_3^2\omega_{11}^3 -$
$4\omega_6^2c_s^4\omega_{11}^3\omega_{18} - 4c_s^2\omega_{11}^2\omega_{18}^2 - 4\omega_6^2c_s^2\omega_{11}^2\omega_{18}^2 - 20\omega_6^2v_3^4\omega_{11}\omega_{18} + 72\omega_6c_s^2v_3^2\omega_{11}\omega_{18}^2 - 20\omega_6v_3^4\omega_{11}^2\omega_{18}^2 - 4\omega_6^2c_s^4\omega_{11}^2 + 8\omega_6^2c_s^4\omega_{11}^2\omega_{18} +$
$36\omega_6^2v_3^2\omega_{11}\omega_{18}^2 - 144\omega_6^2c_s^2v_3^2\omega_{11}\omega_{18}^2 + 4c_s^2\omega_{11}^3\omega_{18} + 4\omega_6c_s^4\omega_{11}\omega_{18}^2 + 16\omega_6v_3^2\omega_{11}^2\omega_{18} - 8\omega_6^2c_s^2\omega_{18}^2 + 4\omega_6v_3^2\omega_{11}^3 + 20\omega_6v_3^4\omega_{11}^3\omega_{18} + 4\omega_6^2c_s^4\omega_{11}^3 +$

$4\omega_6^2c_s^2\omega_{11}^3\omega_{18} + 96\omega_6^2c_s^2v_3^2\omega_{18}^2 - 4\omega_6^2c_s^4\omega_{11}\omega_{18} - 13\omega_6^2v_3^2\omega_{11}^2\omega_{18}^2 - 8\omega_6c_s^4\omega_{11}^2\omega_{18}^2 - 36c_s^2v_3^2\omega_{11}^3\omega_{18} + 51\omega_6^2c_s^2v_3^2\omega_{11}^2\omega_{18}^2 + 4\omega_6^2v_3^2\omega_{11}^2 -$
$8v_3^2\omega_{11}^2\omega_{18}^2 + 84\omega_6c_s^2v_3^2\omega_{11}^3\omega_{18} - 24\omega_6c_s^2v_3^2\omega_{11}^3 + 8\omega_6c_s^4\omega_{11}^3\omega_{18} + 36c_s^2v_3^2\omega_{11}^2\omega_{18}^2 - 51\omega_6^2c_s^2v_3^2\omega_{11}^3\omega_{18} + 24\omega_6^2v_3^4\omega_{18}^2 + 13\omega_6^2v_3^2\omega_{11}^3\omega_{18} +$
$12\omega_6^2c_s^2\omega_{11}\omega_{18}^2 + 32\omega_6^2v_3^4\omega_{11}^2\omega_{18} + 8v_3^2\omega_{11}^3\omega_{18} - 4\omega_6c_s^4\omega_{11}^3 - 4\omega_6^2v_3^2\omega_{11}^3 - 84\omega_6c_s^2v_3^2\omega_{11}^2\omega_{18}^2 + 20\omega_6v_3^4\omega_{11}\omega_{18}^2 + 13\omega_6^2v_3^4\omega_{11}^2\omega_{18}^2 +$
$4\omega_6^2c_s^2\omega_{11}\omega_{18} - 48\omega_6c_s^2v_3^2\omega_{11}^2\omega_{18} + 8\omega_6^2c_s^4\omega_{18}^2 + 8\omega_6c_s^2\omega_{11}^2\omega_{18}^2 - 4\omega_6v_3^4\omega_{11}^3 - 4\omega_6^2c_s^2\omega_{11}^3 + 8v_3^4\omega_{11}^2\omega_{18}^2 - 8\omega_6c_s^2\omega_{11}^3\omega_{18} - 13\omega_6^2v_3^4\omega_{11}^3\omega_{18} -$
$32\omega_6^2v_3^2\omega_{11}^2\omega_{18} - 12\omega_6^2c_s^4\omega_{11}\omega_{18}^2 + 4\omega_6^2c_s^2\omega_{11}^2 - 20\omega_6v_3^2\omega_{11}\omega_{18}^2 + 120\omega_6^2c_s^2v_3^2\omega_{11}^2\omega_{18} - 8v_3^4\omega_{11}^3\omega_{18}$

$C_{57} = 12\omega_6v_3^4\omega_{11}^3\omega_{18}^2 - 12\omega_6^3v_3^2\omega_{11}^3 + 12\omega_6^3c_s^2v_3^2\omega_{11}^3\omega_{18}^2 + 90\omega_6^3v_3^2\omega_{11}\omega_{18}^2 - 5\omega_6^2c_s^2\omega_{11}^3\omega_{18}^2 - 6\omega_6^3c_s^4\omega_{11}^2\omega_{18} + 6\omega_6^2c_s^4\omega_{11}^2\omega_{18}^2 - 6\omega_6^3c_s^2\omega_{11}^3\omega_{18} +$
$72\omega_6^3v_3^4\omega_{18}^2 - 12\omega_6^2v_3^4\omega_{11}^3 + 54\omega_6^3c_s^2v_3^2\omega_{11}^2\omega_{18} + 12\omega_6^3v_3^2\omega_{11}^2 - \omega_6^3c_s^4\omega_{11}^3\omega_{18}^2 - 12\omega_6^2c_s^2\omega_{11}^2\omega_{18} + 24\omega_6v_3^2\omega_{11}^3\omega_{18} - 36\omega_6^3v_3^4\omega_{11}\omega_{18} -$
$12\omega_6^2c_s^2v_3^2\omega_{11}^3 - \omega_6^3c_s^2\omega_{11}^2\omega_{18}^2 - 18\omega_6^2c_s^4\omega_{11}^3\omega_{18} - 12\omega_6v_3^2\omega_{11}^3\omega_{18}^2 + 13\omega_6^2c_s^4\omega_{11}^3\omega_{18}^2 + 6\omega_6^3c_s^2\omega_{11}^2\omega_{18} - 90\omega_6^3v_3^4\omega_{11}\omega_{18}^2 + 12\omega_6^3c_s^2v_3^2\omega_{11}^3 -$
$6\omega_6^2c_s^2\omega_{11}^2\omega_{18} + 6\omega_6^3c_s^4\omega_{11}^3\omega_{18} + 60\omega_6^3c_s^2v_3^2\omega_{11}^2\omega_{18}^2 + 12c_s^4\omega_{11}^3\omega_{18}^2 + 12\omega_6^2c_s^4\omega_{11}^2\omega_{18} - 108\omega_6^2c_s^2v_3^2\omega_{11}\omega_{18}^2 - 24\omega_6v_3^4\omega_{11}^3\omega_{18} - 12\omega_6^3c_s^2v_3^2\omega_{11}^2 +$
$12\omega_6^3c_s^4\omega_{18}^2 + \omega_6^3c_s^4\omega_{11}^2\omega_{18}^2 + 18\omega_6^2c_s^2\omega_{11}^3\omega_{18} + 36\omega_6^3v_3^2\omega_{11}\omega_{18} - 21\omega_6^3c_s^2v_3^2\omega_{11}^3\omega_{18} - 12\omega_6^3v_3^4\omega_{11}^2 - 12\omega_6^2v_3^2\omega_{11}^2\omega_{18}^2 - 27\omega_6^3v_3^4\omega_{11}^3\omega_{18} +$
$162\omega_6^2c_s^2v_3^2\omega_{11}^2\omega_{18}^2 + 6\omega_6c_s^2\omega_{11}^3\omega_{18}^2 - 12\omega_6c_s^2v_3^2\omega_{11}^3\omega_{18} - 12\omega_6^3c_s^4\omega_{11}\omega_{18}^2 - 18\omega_6^2v_3^4\omega_{11}^3\omega_{18}^2 - 60\omega_6^3v_3^2\omega_{11}^2\omega_{18} + 12\omega_6c_s^4\omega_{11}^3\omega_{18} +$
$30\omega_6^2c_s^2v_3^2\omega_{11}^3\omega_{18} + 12\omega_6^3v_3^4\omega_{11}^3 + 19\omega_6^3v_3^4\omega_{11}^2\omega_{18}^2 - 48\omega_6^2v_3^2\omega_{11}^3\omega_{18} - 306\omega_6^3c_s^2v_3^2\omega_{11}\omega_{18}^2 - 72\omega_6^3v_3^2\omega_{18}^2 + 12\omega_6^2c_s^2\omega_{11}\omega_{18}^2 - 4\omega_6^3v_3^2\omega_{11}^3\omega_{18}^2 -$
$24\omega_6^2v_3^4\omega_{11}^2\omega_{18} + 12\omega_6^2v_3^3\omega_{11}^3 - 48\omega_6c_s^2v_3^2\omega_{11}^2\omega_{18}^2 + 12\omega_6^2v_3^4\omega_{11}^2\omega_{18}^2 + 27\omega_6^3v_3^2\omega_{11}^3\omega_{18} - 36\omega_6^3c_s^2v_3^2\omega_{11}\omega_{18} - 24\omega_6c_s^4\omega_{11}^3\omega_{18}^2 - 81\omega_6^2c_s^2v_3^2\omega_{11}^3\omega_{18}^2 -$
$12\omega_6^3c_s^2\omega_{18}^2 + 18\omega_6^2v_3^2\omega_{11}^3\omega_{18}^2 + 60\omega_6^3v_3^4\omega_{11}^2\omega_{18} + 12\omega_6^3c_s^2\omega_{11}\omega_{18}^2 + 102\omega_6c_s^2v_3^2\omega_{11}^3\omega_{18}^2 - 12\omega_6c_s^2\omega_{11}^3\omega_{18} - 19\omega_6^3v_3^2\omega_{11}^2\omega_{18}^2 + 48\omega_6^2v_3^4\omega_{11}^3\omega_{18} +$
$252\omega_6^3c_s^2v_3^2\omega_{18}^2 + 4\omega_6^3v_3^4\omega_{11}^3\omega_{18}^2 + 24\omega_6^2v_3^2\omega_{11}^2\omega_{18} - 12\omega_6^2c_s^4\omega_{11}\omega_{18}^2 - 48c_s^2v_3^2\omega_{11}^3\omega_{18}^2 - 12\omega_6^2c_s^2v_3^2\omega_{11}^2\omega_{18}$

$C_{58} = 80\omega_6^2v_3^2\omega_{18}^2 - 64\omega_6^2v_3^2\omega_{11}\omega_{18} - 16\omega_6c_s^2\omega_{11}^3 - 68\omega_6v_3^2\omega_{11}^2\omega_{18}^2 + 28\omega_6\omega_{11}^2\omega_{18}^2 + 56\omega_6^2c_s^2\omega_{11}^2\omega_{18} + 32\omega_6c_s^2\omega_{11}\omega_{18}^2 - 32\omega_6^2\omega_{18}^2 +$
$68\omega_6v_3^2\omega_{11}^3\omega_{18} - 28\omega_6\omega_{11}^3\omega_{18} + 48\omega_6^2\omega_{11}\omega_{18}^2 + 20c_s^2\omega_{11}^2\omega_{18}^2 + 24\omega_6^2\omega_{11}\omega_{18} + 25\omega_6^2c_s^2\omega_{11}^2\omega_{18}^2 - 12\omega_{11}^2\omega_{18}^2 - 120\omega_6^2v_3^2\omega_{11}\omega_{18}^2 - 20c_s^2\omega_{11}^3\omega_{18} -$
$48\omega_6v_3^2\omega_{11}^2\omega_{18} + 48\omega_6^2c_s^2\omega_{18}^2 + 16\omega_6\omega_{11}^2\omega_{18} - 16\omega_6v_3^2\omega_{11}^3 + 8\omega_6\omega_{11}^3 + 12\omega_{11}^3\omega_{18} - 25\omega_6^2c_s^2\omega_{11}^3\omega_{18} + 43\omega_6^2v_3^2\omega_{11}^2\omega_{18}^2 - 16\omega_6^2v_3^2\omega_{11}^2 + 28v_3^2\omega_{11}^2\omega_{18}^2 -$
$8\omega_6^2\omega_{11}^3 - 40\omega_6^2\omega_{11}^2\omega_{18} - 43\omega_6^2v_3^2\omega_{11}^3\omega_{18} - 72\omega_6^2c_s^2\omega_{11}\omega_{18}^2 - 28v_3^2\omega_{11}^3\omega_{18} + 8\omega_6^2\omega_{11}^2 + 16\omega_6^2v_3^2\omega_{11}^3 - 16\omega_6c_s^2\omega_{11}^2\omega_{18} - 32\omega_6^2c_s^2\omega_{11}\omega_{18} -$
$44\omega_6c_s^2\omega_{11}^2\omega_{18}^2 - 17\omega_6^2\omega_{11}^2\omega_{18}^2 + 16\omega_6^2c_s^2\omega_{11}^3 + 44\omega_6c_s^2\omega_{11}^3\omega_{18} + 104\omega_6^2v_3^2\omega_{11}^2\omega_{18} + 17\omega_6^2\omega_{11}^3\omega_{18} - 16\omega_6^2c_s^2\omega_{11}^2 + 64\omega_6v_3^2\omega_{11}\omega_{18}^2 - 24\omega_6\omega_{11}\omega_{18}^2$

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

$C_{60} = 102\omega_{19}^2c_s^2\omega_7v_3^2\omega_{11}^3 - 6\omega_{19}c_s^4\omega_7^3\omega_{11}^2 - 12c_s^2\omega_7^2v_3^2\omega_{11}^3 + 24\omega_{19}\omega_7v_3^2\omega_{11}^3 - 24\omega_{19}^2c_s^4\omega_7\omega_{11}^3 - 12\omega_7^3v_3^4\omega_{11}^2 - 36\omega_{19}c_s^2\omega_7^3v_3^2\omega_{11} -$
$90\omega_{19}^2\omega_7^3v_3^4\omega_{11} - 12\omega_{19}c_s^2\omega_7^2\omega_{11}^2 + 12\omega_7^3v_3^4\omega_{11}^3 + 36\omega_{19}\omega_7^3v_3^2\omega_{11} - 306\omega_{19}^2c_s^2\omega_7^3v_3^2\omega_{11} + 6\omega_{19}c_s^4\omega_7^3\omega_{11}^2 - 48\omega_{19}^2c_s^2\omega_7v_3^2\omega_{11}^2 - 12\omega_{19}c_s^2\omega_7v_3^2\omega_{11}^3 +$
$12\omega_7^2v_3^2\omega_{11}^3 + 18\omega_{19}c_s^2\omega_7^2\omega_{11}^3 + 12\omega_{19}^2\omega_7v_3^4\omega_{11}^3 + 6\omega_{19}c_s^2\omega_7^3\omega_{11}^2 - 24\omega_{19}\omega_7^2v_3^4\omega_{11}^2 + 4\omega_{19}^2\omega_7^3v_3^4\omega_{11}^3 + 6\omega_{19}^2c_s^2\omega_7\omega_{11}^3 - 48\omega_{19}^2c_s^2v_3^2\omega_{11}^3 -$
$21\omega_{19}c_s^2\omega_7^3v_3^2\omega_{11}^3 + 12\omega_{19}^2c_s^4\omega_{11}^3 - 60\omega_{19}\omega_7^3v_3^2\omega_{11}^2 + 18\omega_{19}^2\omega_7^2v_3^2\omega_{11}^3 + 60\omega_{19}^2c_s^2\omega_7^3v_3^2\omega_{11}^2 + 12\omega_{19}c_s^4\omega_7^2\omega_{11}^2 + 54\omega_{19}c_s^2\omega_7^3v_3^2\omega_{11}^2 +$
$48\omega_{19}\omega_7^2v_3^4\omega_{11}^3 + 19\omega_{19}^2\omega_7^3v_3^4\omega_{11}^2 - 6\omega_{19}c_s^2\omega_7^3\omega_{11}^3 - 18\omega_{19}c_s^4\omega_7^2\omega_{11}^3 - 12\omega_{19}^2c_s^2\omega_7^3 + 12\omega_{19}^2c_s^2\omega_7^3v_3^2\omega_{11}^3 - 72\omega_{19}^2\omega_7^3v_3^2 + 27\omega_{19}\omega_7^3v_3^2\omega_{11}^3 -$
$12\omega_{19}^2\omega_7^2v_3^2\omega_{11}^2 - 12\omega_7^3v_3^2\omega_{11}^3 - 36\omega_{19}\omega_7^3v_3^4\omega_{11} - 6\omega_{19}^2c_s^2\omega_7^2\omega_{11}^2 - 108\omega_{19}^2c_s^2\omega_7^2v_3^2\omega_{11} - 12\omega_7^2v_3^4\omega_{11}^3 + 12\omega_{19}c_s^4\omega_7\omega_{11}^3 + \omega_{19}^2c_s^4\omega_7^3\omega_{11}^2 -$
$12c_s^2\omega_7^3v_3^2\omega_{11}^2 - 12\omega_{19}^2\omega_7v_3^2\omega_{11}^3 - 24\omega_{19}\omega_7v_3^4\omega_{11}^3 + 12\omega_{19}^2c_s^2\omega_7^3\omega_{11} + 72\omega_{19}^2\omega_7^3v_3^4 + 12\omega_7^3v_3^2\omega_{11}^2 - 5\omega_{19}^2c_s^2\omega_7^2\omega_{11}^3 + 12c_s^2\omega_7^3v_3^2\omega_{11}^3 - \omega_{19}^2c_s^4\omega_7^3\omega_{11}^3 +$
$252\omega_{19}^2c_s^2\omega_7^3v_3^2 - 12\omega_{19}^2c_s^4\omega_7^2\omega_{11} + 90\omega_{19}^2\omega_7^3v_3^2\omega_{11} + 6\omega_{19}^2c_s^4\omega_7^2\omega_{11}^2 - 19\omega_{19}^2\omega_7^3v_3^2\omega_{11}^2 - 48\omega_{19}\omega_7^2v_3^2\omega_{11}^3 - 81\omega_{19}^2c_s^2\omega_7^2v_3^2\omega_{11}^3 - 12\omega_{19}c_s^2\omega_7^2v_3^2\omega_{11}^2 -$
$12\omega_{19}c_s^2\omega_7\omega_{11}^3 + 12\omega_{19}^2c_s^4\omega_7^3 - \omega_{19}^2c_s^2\omega_7^3\omega_{11}^2 + 12\omega_{19}^2\omega_7^2v_3^4\omega_{11}^2 - 27\omega_{19}\omega_7^3v_3^4\omega_{11}^3 + 162\omega_{19}^2c_s^2\omega_7^2v_3^2\omega_{11}^2 - 4\omega_{19}^2\omega_7^3v_3^2\omega_{11}^3 + 24\omega_{19}\omega_7^2v_3^2\omega_{11}^2 +$
$13\omega_{19}^2c_s^4\omega_7^2\omega_{11}^3 - 12\omega_{19}^2c_s^4\omega_7^3\omega_{11} - 18\omega_{19}^2\omega_7^2v_3^4\omega_{11}^3 + 12\omega_{19}^2c_s^2\omega_7^2\omega_{11} + 60\omega_{19}\omega_7^3v_3^4\omega_{11}^2 + 30\omega_{19}c_s^2\omega_7^2v_3^2\omega_{11}^3$

$C_{61} = 68\omega_{19}\omega_7v_3^2\omega_{11}^3 - 120\omega_{19}^2\omega_7^2v_3^2\omega_{11} + 32\omega_{19}^2c_s^2\omega_7\omega_{11} + 56\omega_{19}c_s^2\omega_7^2\omega_{11}^2 - 16\omega_7^2v_3^2\omega_{11}^2 - 20\omega_{19}c_s^2\omega_{11}^3 - 12\omega_{19}^2\omega_{11}^2 + 80\omega_{19}^2\omega_7^2v_3^2 -$
$48\omega_{19}\omega_7v_3^2\omega_{11}^2 - 16c_s^2\omega_7\omega_{11}^3 + 8\omega_7\omega_{11}^3 + 16\omega_7^2v_3^2\omega_{11}^3 - 25\omega_{19}c_s^2\omega_7^2\omega_{11}^3 + 48\omega_{19}^2\omega_7^2\omega_{11} - 28\omega_{19}v_3^2\omega_{11}^3 - 28\omega_{19}\omega_7\omega_{11}^3 - 17\omega_{19}^2\omega_7^2\omega_{11}^2 +$
$48\omega_{19}^2c_s^2\omega_7^2 - 44\omega_{19}^2c_s^2\omega_7\omega_{11}^2 + 16\omega_{19}\omega_7\omega_{11}^2 - 32\omega_{19}c_s^2\omega_7^2\omega_{11} + 43\omega_{19}^2\omega_7^2v_3^2\omega_{11}^2 - 40\omega_{19}\omega_7^2\omega_{11}^2 + 25\omega_{19}^2c_s^2\omega_7^2\omega_{11}^2 - 64\omega_{19}\omega_7^2v_3^2\omega_{11} + 28\omega_{19}^2v_3^2\omega_{11}^2 +$
$28\omega_{19}^2\omega_7^2\omega_{11}^2 + 17\omega_{19}\omega_7^2\omega_{11}^3 - 68\omega_{19}^2\omega_7v_3^2\omega_{11}^2 - 32\omega_{19}^2\omega_7^2 + 64\omega_{19}^2\omega_7v_3^2\omega_{11} + 20\omega_{19}^2c_s^2\omega_{11}^2 + 16c_s^2\omega_7^2\omega_{11}^3 - 43\omega_{19}\omega_7^2v_3^2\omega_{11}^3 + 44\omega_{19}c_s^2\omega_7\omega_{11}^3 -$
$8\omega_7^2\omega_{11}^3 - 24\omega_{19}^2\omega_7\omega_{11} + 104\omega_{19}\omega_7^2v_3^2\omega_{11}^2 - 16c_s^2\omega_7^2\omega_{11}^2 + 12\omega_{19}\omega_{11}^3 - 72\omega_{19}^2c_s^2\omega_7^2\omega_{11} + 24\omega_{19}\omega_7^2\omega_{11} - 16\omega_7v_3^2\omega_{11}^3 - 16\omega_{19}c_s^2\omega_7\omega_{11}^2 + 8\omega_7^2\omega_{11}^2$

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

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

2.3 MRT2

2.3.1 Definitions

Collision operator $\boldsymbol{C}$:

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

where

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

$\omega_1, \omega_2, \cdots, \omega_{27} \in (0, 2)$.
Matrix $\mathbf{M}_2$ corresponds to the transformation matrix to the raw moment basis defined by

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

and is given by

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

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

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

i.e.,

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

2.3.2 Conservation of mass: ρ

attached text file: `output_d3q27_nse_mrt2_symbolic_pde_00.txt`

$$\frac{\partial \rho}{\partial t} + \frac{v_1\delta_l}{\delta_t}\frac{\partial \rho}{\partial x_1} + \frac{\rho\delta_l}{\delta_t}\frac{\partial v_1}{\partial x_1} + \frac{v_2\delta_l}{\delta_t}\frac{\partial \rho}{\partial x_2} + \frac{\rho\delta_l}{\delta_t}\frac{\partial v_2}{\partial x_2} + \frac{v_3\delta_l}{\delta_t}\frac{\partial \rho}{\partial x_3} + \frac{\rho\delta_l}{\delta_t}\frac{\partial v_3}{\partial x_3} + (-1 + 3c_s^2 + v_1^2)\frac{v_1\delta_l^3}{12\delta_t}\frac{\partial^3 \rho}{\partial x_1^3} +$$
$$(-1 + c_s^2 + 3v_1^2)\frac{\rho\delta_l^3}{12\delta_t}\frac{\partial^3 v_1}{\partial x_1^3} - \frac{c_s^2\rho\delta_l^3}{6\delta_t}\frac{\partial^3 v_2}{\partial x_1^2\partial x_2} - \frac{c_s^2\rho\delta_l^3}{6\delta_t}\frac{\partial^3 v_1}{\partial x_1\partial x_2^2} + (-1 + 3c_s^2 + v_2^2)\frac{v_2\delta_l^3}{12\delta_t}\frac{\partial^3 \rho}{\partial x_2^3} + (-1 + c_s^2 + 3v_2^2)\frac{\rho\delta_l^3}{12\delta_t}\frac{\partial^3 v_2}{\partial x_2^3} -$$
$$\frac{c_s^2\rho\delta_l^3}{6\delta_t}\frac{\partial^3 v_3}{\partial x_1^2\partial x_3} - \frac{c_s^2\rho\delta_l^3}{6\delta_t}\frac{\partial^3 v_3}{\partial x_2^2\partial x_3} - \frac{c_s^2\rho\delta_l^3}{6\delta_t}\frac{\partial^3 v_1}{\partial x_1\partial x_3^2} - \frac{c_s^2\rho\delta_l^3}{6\delta_t}\frac{\partial^3 v_2}{\partial x_2\partial x_3^2} + (-1 + v_3^2 + 3c_s^2)\frac{v_3\delta_l^3}{12\delta_t}\frac{\partial^3 \rho}{\partial x_3^3} + (-1 + 3v_3^2 + c_s^2)\frac{\rho\delta_l^3}{12\delta_t}\frac{\partial^3 v_3}{\partial x_3^3}$$
$$+ (24c_s^2v_1^2 + 6v_1^4 + 3v_1^2\omega_9 - 2c_s^2 + c_s^2\omega_9 - 3v_1^4\omega_9 + 2c_s^4 - 12c_s^2v_1^2\omega_9 - 6v_1^2 - c_s^4\omega_9)\frac{\delta_l^4}{24\delta_t\omega_9}\frac{\partial^4 \rho}{\partial x_1^4} +$$
$$(-4 - 5v_1^2\omega_9 + 6c_s^2 - 3c_s^2\omega_9 + 10v_1^2 + 2\omega_9)\frac{\rho v_1\delta_l^4}{12\delta_t\omega_9}\frac{\partial^4 v_1}{\partial x_1^4} +$$
$$(-\omega_{12} + \omega_{12}v_1^2 - v_1^2\omega_9 - 3c_s^2\omega_9 + 3\omega_{12}c_s^2 + \omega_9)\frac{v_1v_2\delta_l^4}{4\omega_{12}\delta_t\omega_9}\frac{\partial^4 \rho}{\partial x_1^3\partial x_2} +$$
$$(-\omega_{12} + 3\omega_{12}v_1^2 - 3v_1^2\omega_9 - c_s^2\omega_9 + \omega_{12}c_s^2 + \omega_9)\frac{\rho v_2\delta_l^4}{4\omega_{12}\delta_t\omega_9}\frac{\partial^4 v_1}{\partial x_1^3\partial x_2} + (-\omega_{12}\omega_5 + 3\omega_{12}c_s^2\omega_5\omega_9 + 3\omega_5\omega_9 - 3v_1^2\omega_5\omega_9 -$$

$$6\omega_{12}c_s^2\omega_9 + \omega_{12}v_1^2\omega_5 - 3c_s^2\omega_5\omega_9 - \omega_{12}\omega_5\omega_9 + \omega_{12}v_1^2\omega_5\omega_9 + 3\omega_{12}c_s^2\omega_5)\frac{\rho v_1\delta_l^4}{12\omega_{12}\delta_t\omega_5\omega_9}\frac{\partial^4 v_2}{\partial x_1^3\partial x_2} + (-2+\omega_5)\frac{c_s^4\delta_l^4}{6\delta_t\omega_5}\frac{\partial^4\rho}{\partial x_1^2\partial x_2^2}$$
$$+ (-\omega_{12}+\omega_5)\frac{c_s^2\rho v_1\delta_l^4}{2\omega_{12}\delta_t\omega_5}\frac{\partial^4 v_1}{\partial x_1^2\partial x_2^2} + (\omega_5-\omega_{15})\frac{c_s^2\rho v_2\delta_l^4}{2\delta_t\omega_5\omega_{15}}\frac{\partial^4 v_2}{\partial x_1^2\partial x_2^2} +$$
$$(-\omega_{10}v_2^2 - 3c_s^2\omega_{10} + 3c_s^2\omega_{15} + \omega_{10} + v_2^2\omega_{15} - \omega_{15})\frac{v_1v_2\delta_l^4}{4\delta_t\omega_{10}\omega_{15}}\frac{\partial^4\rho}{\partial x_1\partial x_2^3} + (3\omega_{10}\omega_5 - \omega_5\omega_{15} + 3c_s^2\omega_{10}\omega_5\omega_{15} +$$
$$3c_s^2\omega_5\omega_{15} + v_2^2\omega_5\omega_{15} - 3\omega_{10}v_2^2\omega_5 - 6c_s^2\omega_{10}\omega_{15} - 3c_s^2\omega_{10}\omega_5 - \omega_{10}\omega_5\omega_{15} + \omega_{10}v_2^2\omega_5\omega_{15})\frac{\rho v_2\delta_l^4}{12\delta_t\omega_{10}\omega_5\omega_{15}}\frac{\partial^4 v_1}{\partial x_1\partial x_2^3} +$$
$$(-3\omega_{10}v_2^2 - c_s^2\omega_{10} + c_s^2\omega_{15} + \omega_{10} + 3v_2^2\omega_{15} - \omega_{15})\frac{\rho v_1\delta_l^4}{4\delta_t\omega_{10}\omega_{15}}\frac{\partial^4 v_2}{\partial x_1\partial x_2^3} +$$
$$(3\omega_{10}v_2^2 + 6v_2^4 + 24c_s^2v_2^2 + c_s^2\omega_{10} - 2c_s^2 - c_s^4\omega_{10} + 2c_s^4 - 3\omega_{10}v_2^4 - 6v_2^2 - 12c_s^2\omega_{10}v_2^2)\frac{\delta_l^4}{24\delta_t\omega_{10}}\frac{\partial^4\rho}{\partial x_2^4} +$$
$$(-4 - 5\omega_{10}v_2^2 - 3c_s^2\omega_{10} + 6c_s^2 + 2\omega_{10} + 10v_2^2)\frac{\rho v_2\delta_l^4}{12\delta_t\omega_{10}}\frac{\partial^4 v_2}{\partial x_2^4} +$$
$$(3c_s^2\omega_{13} - v_1^2\omega_9 - 3c_s^2\omega_9 - \omega_{13} + \omega_{13}v_1^2 + \omega_9)\frac{v_3v_1\delta_l^4}{4\delta_t\omega_{13}\omega_9}\frac{\partial^4\rho}{\partial x_1^3\partial x_3} +$$
$$(c_s^2\omega_{13} - 3v_1^2\omega_9 - c_s^2\omega_9 - \omega_{13} + 3\omega_{13}v_1^2 + \omega_9)\frac{v_3\rho\delta_l^4}{4\delta_t\omega_{13}\omega_9}\frac{\partial^4 v_1}{\partial x_1^3\partial x_3} + (-\omega_6\omega_{13} + \omega_6\omega_{13}v_1^2\omega_9 + 3\omega_6\omega_9 - \omega_6\omega_{13}\omega_9 +$$
$$3\omega_6c_s^2\omega_{13} - 3\omega_6v_1^2\omega_9 - 3\omega_6c_s^2\omega_9 + \omega_6\omega_{13}v_1^2 - 6c_s^2\omega_{13}\omega_9 + 3\omega_6c_s^2\omega_{13}\omega_9)\frac{\rho v_1\delta_l^4}{12\omega_6\delta_t\omega_{13}\omega_9}\frac{\partial^4 v_3}{\partial x_1^3\partial x_3} +$$
$$(-\omega_8+\omega_5)\frac{v_3c_s^2\rho\delta_l^4}{2\delta_t\omega_8\omega_5}\frac{\partial^4 v_2}{\partial x_1^2\partial x_2\partial x_3} + (\omega_6-\omega_8)\frac{c_s^2\rho v_2\delta_l^4}{2\omega_6\delta_t\omega_8}\frac{\partial^4 v_3}{\partial x_1^2\partial x_2\partial x_3} + (-\omega_8+\omega_5)\frac{v_3c_s^2\rho\delta_l^4}{2\delta_t\omega_8\omega_5}\frac{\partial^4 v_1}{\partial x_1\partial x_2^2\partial x_3} +$$
$$(\omega_7-\omega_8)\frac{c_s^2\rho v_1\delta_l^4}{2\delta_t\omega_7\omega_8}\frac{\partial^4 v_3}{\partial x_1\partial x_2^2\partial x_3} + (-\omega_{10}v_2^2 + 3c_s^2\omega_{16} - 3c_s^2\omega_{10} + \omega_{16}v_2^2 - \omega_{16} + \omega_{10})\frac{v_3v_2\delta_l^4}{4\delta_t\omega_{16}\omega_{10}}\frac{\partial^4\rho}{\partial x_2^3\partial x_3} +$$
$$(-3\omega_{10}v_2^2 + c_s^2\omega_{16} - c_s^2\omega_{10} + 3\omega_{16}v_2^2 - \omega_{16} + \omega_{10})\frac{v_3\rho\delta_l^4}{4\delta_t\omega_{16}\omega_{10}}\frac{\partial^4 v_2}{\partial x_2^3\partial x_3} + (-\omega_{16}\omega_7 + \omega_{16}\omega_{10}\omega_7v_2^2 + 3\omega_{10}\omega_7 +$$
$$3c_s^2\omega_{16}\omega_{10}\omega_7 + \omega_{16}\omega_7v_2^2 + 3c_s^2\omega_{16}\omega_7 - \omega_{16}\omega_{10}\omega_7 - 3c_s^2\omega_{10}\omega_7 - 6c_s^2\omega_{16}\omega_{10} - 3\omega_{10}\omega_7v_2^2)\frac{\rho v_2\delta_l^4}{12\delta_t\omega_{16}\omega_{10}\omega_7}\frac{\partial^4 v_3}{\partial x_2^3\partial x_3} +$$
$$(-2+\omega_6)\frac{c_s^4\delta_l^4}{6\omega_6\delta_t}\frac{\partial^4\rho}{\partial x_1^2\partial x_3^2} + (\omega_6-\omega_{13})\frac{c_s^2\rho v_1\delta_l^4}{2\omega_6\delta_t\omega_{13}}\frac{\partial^4 v_1}{\partial x_1^2\partial x_3^2} + (\omega_6-\omega_{18})\frac{v_3c_s^2\rho\delta_l^4}{2\omega_6\delta_t\omega_{18}}\frac{\partial^4 v_3}{\partial x_1^2\partial x_3^2} + (\omega_6-\omega_8)\frac{c_s^2\rho v_2\delta_l^4}{2\omega_6\delta_t\omega_8}\frac{\partial^4 v_1}{\partial x_1\partial x_2\partial x_3^2} +$$
$$(\omega_7-\omega_8)\frac{c_s^2\rho v_1\delta_l^4}{2\delta_t\omega_7\omega_8}\frac{\partial^4 v_2}{\partial x_1\partial x_2\partial x_3^2} + (-2+\omega_7)\frac{c_s^4\delta_l^4}{6\delta_t\omega_7}\frac{\partial^4\rho}{\partial x_2^2\partial x_3^2} + (-\omega_{16}+\omega_7)\frac{c_s^2\rho v_2\delta_l^4}{2\delta_t\omega_{16}\omega_7}\frac{\partial^4 v_2}{\partial x_2^2\partial x_3^2} + (-\omega_{19}+\omega_7)\frac{v_3c_s^2\rho\delta_l^4}{2\omega_{19}\delta_t\omega_7}\frac{\partial^4 v_3}{\partial x_2^2\partial x_3^2}$$
$$+ (-v_3^2\omega_{11} + 3c_s^2\omega_{18} - 3c_s^2\omega_{11} + \omega_{11} + v_3^2\omega_{18} - \omega_{18})\frac{v_3v_1\delta_l^4}{4\delta_t\omega_{11}\omega_{18}}\frac{\partial^4\rho}{\partial x_1\partial x_3^3} + (-3\omega_6c_s^2\omega_{11} + \omega_6v_3^2\omega_{18} - \omega_6\omega_{18} +$$
$$\omega_6v_3^2\omega_{11}\omega_{18} - \omega_6\omega_{11}\omega_{18} + 3\omega_6\omega_{11} - 3\omega_6v_3^2\omega_{11} - 6c_s^2\omega_{11}\omega_{18} + 3\omega_6c_s^2\omega_{11}\omega_{18} + 3\omega_6c_s^2\omega_{18})\frac{v_3\rho\delta_l^4}{12\omega_6\delta_t\omega_{11}\omega_{18}}\frac{\partial^4 v_1}{\partial x_1\partial x_3^3} +$$
$$(-3v_3^2\omega_{11} + c_s^2\omega_{18} - c_s^2\omega_{11} + \omega_{11} + 3v_3^2\omega_{18} - \omega_{18})\frac{\rho v_1\delta_l^4}{4\delta_t\omega_{11}\omega_{18}}\frac{\partial^4 v_3}{\partial x_1\partial x_3^3} +$$
$$(v_3^2\omega_{19} - \omega_{19} - v_3^2\omega_{11} + 3\omega_{19}c_s^2 - 3c_s^2\omega_{11} + \omega_{11})\frac{v_3v_2\delta_l^4}{4\omega_{19}\delta_t\omega_{11}}\frac{\partial^4\rho}{\partial x_2\partial x_3^3} + (v_3^2\omega_{19}\omega_7\omega_{11} - 3c_s^2\omega_7\omega_{11} + 3\omega_{19}c_s^2\omega_7 +$$
$$v_3^2\omega_{19}\omega_7 - \omega_{19}\omega_7\omega_{11} - 3v_3^2\omega_7\omega_{11} - \omega_{19}\omega_7 + 3\omega_{19}c_s^2\omega_7\omega_{11} + 3\omega_7\omega_{11} - 6\omega_{19}c_s^2\omega_{11})\frac{v_3\rho\delta_l^4}{12\omega_{19}\delta_t\omega_7\omega_{11}}\frac{\partial^4 v_2}{\partial x_2\partial x_3^3} +$$
$$(3v_3^2\omega_{19} - \omega_{19} - 3v_3^2\omega_{11} + \omega_{19}c_s^2 - c_s^2\omega_{11} + \omega_{11})\frac{\rho v_2\delta_l^4}{4\omega_{19}\delta_t\omega_{11}}\frac{\partial^4 v_3}{\partial x_2\partial x_3^3} +$$
$$(-6v_3^2 - c_s^4\omega_{11} - 2c_s^2 + 3v_3^2\omega_{11} + 24v_3^2c_s^2 + c_s^2\omega_{11} + 2c_s^4 - 12v_3^2c_s^2\omega_{11} - 3v_3^4\omega_{11} + 6v_3^4)\frac{\delta_l^4}{24\delta_t\omega_{11}}\frac{\partial^4\rho}{\partial x_3^4} +$$
$$(-4 + 10v_3^2 + 6c_s^2 - 5v_3^2\omega_{11} - 3c_s^2\omega_{11} + 2\omega_{11})\frac{v_3\rho\delta_l^4}{12\delta_t\omega_{11}}\frac{\partial^4 v_3}{\partial x_3^4} = 0.$$

2.3.3 Conservation of momentum: ρv_1

attached text file: `output_d3q27_nse_mrt2_symbolic_pde_01.txt`

$$v_1\frac{\partial\rho}{\partial t} + \rho\frac{\partial v_1}{\partial t} + (c_s^2+v_1^2)\frac{\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_1} + \frac{2\rho v_1\delta_l}{\delta_t}\frac{\partial v_1}{\partial x_1} + \frac{v_1v_2\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_2} + \frac{\rho v_2\delta_l}{\delta_t}\frac{\partial v_1}{\partial x_2} + \frac{\rho v_1\delta_l}{\delta_t}\frac{\partial v_2}{\partial x_2} + \frac{v_3v_1\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_3} + \frac{v_3\rho\delta_l}{\delta_t}\frac{\partial v_1}{\partial x_3} +$$
$$\frac{\rho v_1\delta_l}{\delta_t}\frac{\partial v_3}{\partial x_3} + (-2 - 3v_1^2\omega_9 + 4c_s^2 - 2c_s^2\omega_9 + 6v_1^2 + \omega_9)\frac{\delta_l^2}{\delta_t\omega_9}\frac{\partial\rho}{\partial x_1}\frac{\partial v_1}{\partial x_1} + (2-\omega_9)\frac{3\rho v_1\delta_l^2}{\delta_t\omega_9}\left(\frac{\partial v_1}{\partial x_1}\right)^2 +$$
$$(-2+\omega_5)\frac{c_s^2\delta_l^2}{2\delta_t\omega_5}\frac{\partial\rho}{\partial x_2}\frac{\partial v_2}{\partial x_1} + (-2+\omega_5)\frac{c_s^2\delta_l^2}{2\delta_t\omega_5}\frac{\partial\rho}{\partial x_2}\frac{\partial v_1}{\partial x_2} + (-2+\omega_6)\frac{c_s^2\delta_l^2}{2\omega_6\delta_t}\frac{\partial\rho}{\partial x_3}\frac{\partial v_3}{\partial x_1} + (-2+\omega_6)\frac{c_s^2\delta_l^2}{2\omega_6\delta_t}\frac{\partial\rho}{\partial x_3}\frac{\partial v_1}{\partial x_3} +$$
$$(-2 - v_1^2\omega_9 + 6c_s^2 - 3c_s^2\omega_9 + 2v_1^2 + \omega_9)\frac{v_1\delta_l^2}{2\delta_t\omega_9}\frac{\partial^2\rho}{\partial x_1^2} + (-2 - 3v_1^2\omega_9 + 2c_s^2 - c_s^2\omega_9 + 6v_1^2 + \omega_9)\frac{\rho\delta_l^2}{2\delta_t\omega_9}\frac{\partial^2 v_1}{\partial x_1^2} +$$
$$(-2+\omega_5)\frac{c_s^2\rho\delta_l^2}{2\delta_t\omega_5}\frac{\partial^2 v_2}{\partial x_1\partial x_2} + (-2+\omega_5)\frac{c_s^2\rho\delta_l^2}{2\delta_t\omega_5}\frac{\partial^2 v_1}{\partial x_2^2} + (-2+\omega_6)\frac{c_s^2\rho\delta_l^2}{2\omega_6\delta_t}\frac{\partial^2 v_3}{\partial x_1\partial x_3} + (-2+\omega_6)\frac{c_s^2\rho\delta_l^2}{2\omega_6\delta_t}\frac{\partial^2 v_1}{\partial x_3^2} + C_1\frac{\delta_l^3}{12\delta_t\omega_9^2}\frac{\partial^3\rho}{\partial x_1^3} +$$

$$
\begin{aligned}
&(-24+5c_s^2\omega_9^2-60v_1^2\omega_9+36c_s^2-36c_s^2\omega_9+11v_1^2\omega_9^2-4\omega_9^2+60v_1^2+24\omega_9)\frac{\rho v_1\delta_l^3}{6\delta_t\omega_9^2}\frac{\partial^3 v_1}{\partial x_1^3} + C_2\frac{v_1v_2\delta_l^3}{\omega_{12}\delta_t\omega_5\omega_9^2}\frac{\partial^3\rho}{\partial x_1^2\partial x_2} + \\
&C_3\frac{\rho v_2\delta_l^3}{\omega_{12}\delta_t\omega_5\omega_9^2}\frac{\partial^3 v_1}{\partial x_1^2\partial x_2} + C_4\frac{\rho v_1\delta_l^3}{12\omega_{12}\delta_t\omega_5^2\omega_9^2}\frac{\partial^3 v_2}{\partial x_1^2\partial x_2} + (-12-\omega_5^2+12\omega_5)\frac{c_s^4\delta_l^3}{6\delta_t\omega_5^2}\frac{\partial^3\rho}{\partial x_1\partial x_2^2} + \\
&(-12\omega_{12}\omega_5+12\omega_5\omega_9-12\omega_{12}\omega_9-\omega_{12}\omega_5^2\omega_9+12\omega_{12}\omega_5\omega_9-12\omega_5^2\omega_9+12\omega_5^2)\frac{c_s^2\rho v_1\delta_l^3}{6\omega_{12}\delta_t\omega_5^2\omega_9}\frac{\partial^3 v_1}{\partial x_1\partial x_2^2} + \\
&(\omega_5\omega_{15}-\omega_5^2+2\omega_5-2\omega_{15})\frac{c_s^2\rho v_2\delta_l^3}{\delta_t\omega_5^2\omega_{15}}\frac{\partial^3 v_2}{\partial x_1\partial x_2^2} + C_5\frac{v_1v_2\delta_l^3}{12\delta_t\omega_{10}\omega_5\omega_{15}}\frac{\partial^3\rho}{\partial x_2^3} + C_6\frac{\rho v_2\delta_l^3}{6\delta_t\omega_5^2\omega_{15}}\frac{\partial^3 v_1}{\partial x_2^3} + C_7\frac{\rho v_1\delta_l^3}{12\delta_t\omega_{10}\omega_5\omega_{15}}\frac{\partial^3 v_2}{\partial x_2^3} + \\
&C_8\frac{v_3v_1\delta_l^3}{\omega_6\delta_t\omega_{13}\omega_9^2}\frac{\partial^3\rho}{\partial x_1^2\partial x_3} + C_9\frac{v_3\rho\delta_l^3}{\omega_6\delta_t\omega_{13}\omega_9^2}\frac{\partial^3 v_1}{\partial x_1^2\partial x_3} + C_{10}\frac{\rho v_1\delta_l^3}{12\omega_6^2\delta_t\omega_{13}\omega_9^2}\frac{\partial^3 v_3}{\partial x_1^2\partial x_3} + \\
&(\omega_6\omega_5+\omega_6\omega_8\omega_5-\omega_6\omega_5^2-\omega_8\omega_5+\omega_5^2-\omega_6\omega_8)\frac{v_3c_s^2\rho\delta_l^3}{\omega_6\delta_t\omega_8\omega_5^2}\frac{\partial^3 v_2}{\partial x_1\partial x_2\partial x_3} + \\
&(\omega_6\omega_5+\omega_6\omega_8\omega_5+\omega_6^2-\omega_8\omega_5-\omega_6\omega_8-\omega_6^2\omega_5)\frac{c_s^2\rho v_2\delta_l^3}{\omega_6^2\delta_t\omega_8\omega_5}\frac{\partial^3 v_3}{\partial x_1\partial x_2\partial x_3} + \\
&(\omega_6\omega_5+\omega_6\omega_8\omega_5-\omega_6\omega_5^2-\omega_8\omega_5+\omega_5^2-\omega_6\omega_8)\frac{v_3c_s^2\rho\delta_l^3}{\omega_6\delta_t\omega_8\omega_5^2}\frac{\partial^3 v_1}{\partial x_2^2\partial x_3} + \\
&(6\omega_6\omega_8\omega_5+6\omega_6\omega_7+6\omega_7\omega_5-6\omega_8\omega_5-\omega_6\omega_7\omega_8\omega_5-6\omega_6\omega_7\omega_5-6\omega_6\omega_8)\frac{c_s^2\rho v_1\delta_l^3}{6\omega_6\delta_t\omega_7\omega_8\omega_5}\frac{\partial^3 v_3}{\partial x_2^2\partial x_3} + \\
&(-12+12\omega_6-\omega_6^2)\frac{c_s^4\delta_l^3}{6\omega_6^2\delta_t}\frac{\partial^3\rho}{\partial x_1\partial x_3^2} + \\
&(-12\omega_{13}\omega_9-12\omega_6\omega_{13}+12\omega_6^2-\omega_6^2\omega_{13}\omega_9+12\omega_6\omega_9+12\omega_6\omega_{13}\omega_9-12\omega_6^2\omega_9)\frac{c_s^2\rho v_1\delta_l^3}{6\omega_6^2\delta_t\omega_{13}\omega_9}\frac{\partial^3 v_1}{\partial x_1\partial x_3^2} + \\
&(2\omega_6-\omega_6^2+\omega_6\omega_{18}-2\omega_{18})\frac{v_3c_s^2\rho\delta_l^3}{\omega_6^2\delta_t\omega_{18}}\frac{\partial^3 v_3}{\partial x_1\partial x_3^2} + (\omega_6\omega_5+\omega_6\omega_8\omega_5+\omega_6^2-\omega_8\omega_5-\omega_6\omega_8-\omega_6^2\omega_5)\frac{c_s^2\rho v_2\delta_l^3}{\omega_6^2\delta_t\omega_8\omega_5}\frac{\partial^3 v_1}{\partial x_2\partial x_3^2} + \\
&(6\omega_6\omega_8\omega_5+6\omega_6\omega_7+6\omega_7\omega_5-6\omega_8\omega_5-\omega_6\omega_7\omega_8\omega_5-6\omega_6\omega_7\omega_5-6\omega_6\omega_8)\frac{c_s^2\rho v_1\delta_l^3}{6\omega_6\delta_t\omega_7\omega_8\omega_5}\frac{\partial^3 v_2}{\partial x_2\partial x_3^2} + C_{11}\frac{v_3v_1\delta_l^3}{12\omega_6\delta_t\omega_{11}\omega_{18}}\frac{\partial^3\rho}{\partial x_3^3} \\
&+ C_{12}\frac{v_3\rho\delta_l^3}{6\omega_6^2\delta_t\omega_{18}}\frac{\partial^3 v_1}{\partial x_3^3} + C_{13}\frac{\rho v_1\delta_l^3}{12\omega_6\delta_t\omega_{11}\omega_{18}}\frac{\partial^3 v_3}{\partial x_3^3} + C_{14}\frac{v_1\delta_l^4}{12\delta_t\omega_9^3}\frac{\partial^4\rho}{\partial x_1^4} + C_{15}\frac{\rho\delta_l^4}{12\delta_t\omega_9^3}\frac{\partial^4 v_1}{\partial x_1^4} + C_{16}\frac{v_2\delta_l^4}{4\omega_{12}^2\delta_t\omega_5^2\omega_9^3}\frac{\partial^4\rho}{\partial x_1^3\partial x_2} + \\
&C_{17}\frac{\rho v_1v_2\delta_l^4}{4\omega_{12}^2\delta_t\omega_5^2\omega_9^3}\frac{\partial^4 v_1}{\partial x_1^3\partial x_2} + C_{18}\frac{\rho\delta_l^4}{12\omega_{12}^2\delta_t\omega_5^3\omega_9^3}\frac{\partial^4 v_2}{\partial x_1^3\partial x_2} + C_{19}\frac{v_1\delta_l^4}{12\omega_{12}^2\delta_t\omega_5^3\omega_{21}\omega_{15}\omega_9^3}\frac{\partial^4\rho}{\partial x_1^2\partial x_2^2} + C_{20}\frac{\rho\delta_l^4}{12\omega_{12}^2\delta_t\omega_5^3\omega_{21}\omega_{15}\omega_9^3}\frac{\partial^4 v_1}{\partial x_1^2\partial x_2^2} + \\
&C_{21}\frac{\rho v_1v_2\delta_l^4}{2\omega_{12}^2\delta_t\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9^3}\frac{\partial^4 v_2}{\partial x_1^2\partial x_2^2} + C_{22}\frac{v_2\delta_l^4}{12\omega_{12}\delta_t\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9}\frac{\partial^4\rho}{\partial x_1\partial x_2^3} + C_{23}\frac{\rho v_1v_2\delta_l^4}{12\omega_{12}^2\delta_t\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2}\frac{\partial^4 v_1}{\partial x_1\partial x_2^3} + \\
&C_{24}\frac{\rho\delta_l^4}{12\omega_{12}\delta_t\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9}\frac{\partial^4 v_2}{\partial x_1\partial x_2^3} + C_{25}\frac{v_1\delta_l^4}{24\delta_t\omega_{10}^2\omega_5^2\omega_{15}^2}\frac{\partial^4\rho}{\partial x_2^4} + C_{26}\frac{\rho\delta_l^4}{24\delta_t\omega_5^2\omega_{15}^2}\frac{\partial^4 v_1}{\partial x_2^4} + C_{27}\frac{\rho v_1v_2\delta_l^4}{12\delta_t\omega_{10}^2\omega_5^2\omega_{15}^2}\frac{\partial^4 v_2}{\partial x_2^4} + \\
&C_{28}\frac{v_3\delta_l^4}{4\omega_6^2\delta_t\omega_{13}^2\omega_9^3}\frac{\partial^4\rho}{\partial x_1^3\partial x_3} + C_{29}\frac{v_3\rho v_1\delta_l^4}{4\omega_6^2\delta_t\omega_{13}^2\omega_9^3}\frac{\partial^4 v_1}{\partial x_1^3\partial x_3} + C_{30}\frac{\rho\delta_l^4}{12\omega_6^3\delta_t\omega_{13}^2\omega_9^3}\frac{\partial^4 v_3}{\partial x_1^3\partial x_3} + C_{31}\frac{v_3v_1v_2\delta_l^4}{\omega_{12}^2\omega_6^2\delta_t\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^3}\frac{\partial^4\rho}{\partial x_1^2\partial x_2\partial x_3} + \\
&C_{32}\frac{v_3\rho v_2\delta_l^4}{\omega_{12}^2\omega_6^2\delta_t\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^3}\frac{\partial^4 v_1}{\partial x_1^2\partial x_2\partial x_3} + C_{33}\frac{v_3\rho v_1\delta_l^4}{2\omega_{12}^2\omega_6^2\delta_t\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^3}\frac{\partial^4 v_2}{\partial x_1^2\partial x_2\partial x_3} + C_{34}\frac{\rho v_1v_2\delta_l^4}{2\omega_{12}^2\omega_6^3\delta_t\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3}\frac{\partial^4 v_3}{\partial x_1^2\partial x_2\partial x_3} \\
&+ C_{35}\frac{2v_3c_s^4\delta_l^4}{\omega_6^2\delta_t\omega_8^2\omega_5^3}\frac{\partial^4\rho}{\partial x_1\partial x_2^2\partial x_3} + C_{36}\frac{v_3c_s^2\rho v_1\delta_l^4}{2\omega_{12}^2\omega_6^2\delta_t\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2}\frac{\partial^4 v_1}{\partial x_1\partial x_2^2\partial x_3} + C_{37}\frac{v_3c_s^2\rho v_2\delta_l^4}{\omega_6^2\delta_t\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2}\frac{\partial^4 v_2}{\partial x_1\partial x_2^2\partial x_3} + \\
&C_{38}\frac{c_s^2\rho\delta_l^4}{12\omega_{12}\omega_6^3\delta_t\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9}\frac{\partial^4 v_3}{\partial x_1\partial x_2^2\partial x_3} + C_{39}\frac{v_3v_1v_2\delta_l^4}{4\omega_6\delta_t\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2}\frac{\partial^4\rho}{\partial x_2^3\partial x_3} + C_{40}\frac{v_3\rho v_2\delta_l^4}{2\omega_6^2\delta_t\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2}\frac{\partial^4 v_1}{\partial x_2^3\partial x_3} + \\
&C_{41}\frac{v_3\rho v_1\delta_l^4}{4\omega_6\delta_t\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2}\frac{\partial^4 v_2}{\partial x_2^3\partial x_3} + C_{42}\frac{\rho v_1v_2\delta_l^4}{12\omega_6^2\delta_t\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2}\frac{\partial^4 v_3}{\partial x_2^3\partial x_3} + C_{43}\frac{v_1\delta_l^4}{12\omega_6^3\omega_{22}\delta_t\omega_{13}^2\omega_{18}\omega_9^3}\frac{\partial^4\rho}{\partial x_1^2\partial x_3^2} + \\
&C_{44}\frac{\rho\delta_l^4}{12\omega_6^3\omega_{22}\delta_t\omega_{13}^2\omega_{18}\omega_9^3}\frac{\partial^4 v_1}{\partial x_1^2\partial x_3^2} + C_{45}\frac{v_3\rho v_1\delta_l^4}{2\omega_6^3\omega_{22}\delta_t\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^3}\frac{\partial^4 v_3}{\partial x_1^2\partial x_3^2} + C_{46}\frac{\delta_l^4}{2\omega_{12}\omega_6^3\omega_{22}\delta_t\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9}\frac{\partial^4\rho}{\partial x_1\partial x_2\partial x_3^2} + \\
&C_{47}\frac{\rho\delta_l^4}{2\omega_{12}\omega_6^3\omega_{22}\delta_t\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2}\frac{\partial^4 v_1}{\partial x_1\partial x_2\partial x_3^2} + C_{48}\frac{\rho\delta_l^4}{12\omega_{12}\omega_6^3\omega_{22}\delta_t\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9}\frac{\partial^4 v_2}{\partial x_1\partial x_2\partial x_3^2} + \\
&C_{49}\frac{v_3\rho\delta_l^4}{\omega_{12}\omega_6^3\omega_{22}\delta_t\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9}\frac{\partial^4 v_3}{\partial x_1\partial x_2\partial x_3^2} + C_{50}\frac{\delta_l^4}{12\omega_6^2\delta_t\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}}\frac{\partial^4\rho}{\partial x_2^2\partial x_3^2} + \\
&C_{51}\frac{\rho\delta_l^4}{4\omega_6^3\delta_t\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_{15}}\frac{\partial^4 v_1}{\partial x_2^2\partial x_3^2} + C_{52}\frac{\rho v_2\delta_l^4}{2\omega_6^2\delta_t\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}}\frac{\partial^4 v_2}{\partial x_2^2\partial x_3^2} + \\
&C_{53}\frac{\rho\delta_l^4}{4\omega_6^2\omega_{19}\delta_t\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}}\frac{\partial^4 v_3}{\partial x_2^2\partial x_3^2} + C_{54}\frac{v_3\delta_l^4}{12\omega_6^3\omega_{22}\delta_t\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9}\frac{\partial^4\rho}{\partial x_1\partial x_3^3} + C_{55}\frac{v_3\rho v_1\delta_l^4}{12\omega_6^3\omega_{22}\delta_t\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2}\frac{\partial^4 v_1}{\partial x_1\partial x_3^3} + \\
&C_{56}\frac{\rho\delta_l^4}{12\omega_6^3\omega_{22}\delta_t\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9}\frac{\partial^4 v_3}{\partial x_1\partial x_3^3} + C_{57}\frac{v_3v_1v_2\delta_l^4}{4\omega_6^2\omega_{19}\delta_t\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2}\frac{\partial^4\rho}{\partial x_2\partial x_3^3} + C_{58}\frac{v_3\rho v_2\delta_l^4}{2\omega_6^3\delta_t\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2}\frac{\partial^4 v_1}{\partial x_2\partial x_3^3} + \\
&C_{59}\frac{v_3\rho v_1\delta_l^4}{12\omega_6^2\omega_{19}\delta_t\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2}\frac{\partial^4 v_2}{\partial x_2\partial x_3^3} + C_{60}\frac{\rho v_1v_2\delta_l^4}{4\omega_6^2\omega_{19}\delta_t\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2}\frac{\partial^4 v_3}{\partial x_2\partial x_3^3} + C_{61}\frac{v_1\delta_l^4}{24\omega_6^2\delta_t\omega_{11}^2\omega_{18}^2}\frac{\partial^4\rho}{\partial x_3^4} + \\
&C_{62}\frac{\rho\delta_l^4}{24\omega_6^3\delta_t\omega_{18}^2}\frac{\partial^4 v_1}{\partial x_3^4} + C_{63}\frac{v_3\rho v_1\delta_l^4}{12\omega_6^2\delta_t\omega_{11}^2\omega_{18}^2}\frac{\partial^4 v_3}{\partial x_3^4} = 0,
\end{aligned}
$$

where:

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

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

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

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

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

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

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

$C_8 = -\omega_6\omega_9^2 - \omega_{13}\omega_9 - 3c_s^2\omega_9^2 - \omega_6\omega_{13} - \omega_6\omega_{13}v_1^2\omega_9 - v_1^2\omega_9^2 + \omega_{13}v_1^2\omega_9 + \omega_6\omega_9 + \omega_6\omega_{13}\omega_9 + 3\omega_6c_s^2\omega_{13} + 3\omega_6c_s^2\omega_9^2 - \omega_6v_1^2\omega_9 - 3\omega_6c_s^2\omega_9 + \omega_6\omega_{13}v_1^2 + \omega_9^2 + \omega_6v_1^2\omega_9^2 + 3c_s^2\omega_{13}\omega_9 - 3\omega_6c_s^2\omega_{13}\omega_9$

$C_9 = -\omega_6\omega_9^2 - \omega_{13}\omega_9 - c_s^2\omega_9^2 - \omega_6\omega_{13} - 3\omega_6\omega_{13}v_1^2\omega_9 - 3v_1^2\omega_9^2 + 3\omega_{13}v_1^2\omega_9 + \omega_6\omega_9 + \omega_6\omega_{13}\omega_9 + \omega_6c_s^2\omega_{13} + \omega_6c_s^2\omega_9^2 - 3\omega_6v_1^2\omega_9 - \omega_6c_s^2\omega_9 + 3\omega_6\omega_{13}v_1^2 + \omega_9^2 + 3\omega_6v_1^2\omega_9^2 + c_s^2\omega_{13}\omega_9 - \omega_6c_s^2\omega_{13}\omega_9$

$C_{10} = 12\omega_6^2\omega_{13}v_1^2 + 12\omega_6^2v_1^2\omega_9^2 + 12\omega_6\omega_9^2 - 12\omega_6^2c_s^2\omega_9 - 11\omega_6^2c_s^2\omega_{13}\omega_9^2 + 6\omega_6\omega_{13}v_1^2\omega_9^2 + 3\omega_6^2\omega_{13}\omega_9^2 + 6\omega_6^2\omega_{13}\omega_9 + 36\omega_6^2c_s^2\omega_{13} - 18\omega_6^2c_s^2\omega_{13}\omega_9 - 12\omega_6^2v_1^2\omega_9 + 12\omega_6^2c_s^2\omega_9^2 + 42\omega_6c_s^2\omega_{13}\omega_9^2 + 12\omega_6^2\omega_9 - 24c_s^2\omega_{13}\omega_9^2 - 3\omega_6^2\omega_{13}v_1^2\omega_9^2 - 12\omega_6c_s^2\omega_9^2 - 12\omega_6v_1^2\omega_9^2 - 12\omega_6^2\omega_{13} - 6\omega_6^2\omega_{13}v_1^2\omega_9 - 12\omega_6^2\omega_9^2 - 24\omega_6c_s^2\omega_{13}\omega_9 - 6\omega_6\omega_{13}\omega_9^2$

$C_{11} = 18\omega_6c_s^2\omega_{11} - 6\omega_6v_3^2\omega_{18} + 6\omega_6\omega_{18} - 12v_3^2\omega_{11} + \omega_6v_3^2\omega_{11}\omega_{18} + 36c_s^2\omega_{18} - \omega_6\omega_{11}\omega_{18} - 36c_s^2\omega_{11} + 12\omega_{11} + 12v_3^2\omega_{18} - 6\omega_6\omega_{11} + 6\omega_6v_3^2\omega_{11} - 12\omega_{18} + 3\omega_6c_s^2\omega_{11}\omega_{18} - 18\omega_6c_s^2\omega_{18}$

$C_{12} = 3\omega_6^2v_3^2 + 6\omega_6 - 3\omega_6^2 + 3\omega_6v_3^2\omega_{18} - 3\omega_6^2c_s^2\omega_{18} - 3\omega_6\omega_{18} + 3\omega_6^2c_s^2 - 12c_s^2\omega_{18} - 6\omega_6c_s^2 + \omega_6^2\omega_{18} - 6\omega_6v_3^2 + 15\omega_6c_s^2\omega_{18} - \omega_6^2v_3^2\omega_{18}$

$C_{13} = 6\omega_6c_s^2\omega_{11} - 18\omega_6v_3^2\omega_{18} + 6\omega_6\omega_{18} - 36v_3^2\omega_{11} + 3\omega_6v_3^2\omega_{11}\omega_{18} + 12c_s^2\omega_{18} - \omega_6\omega_{11}\omega_{18} - 12c_s^2\omega_{11} + 12\omega_{11} + 36v_3^2\omega_{18} - 6\omega_6\omega_{11} + 18\omega_6v_3^2\omega_{11} - 12\omega_{18} + \omega_6c_s^2\omega_{11}\omega_{18} - 6\omega_6c_s^2\omega_{18}$

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

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

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

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

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

$$\begin{gathered}
C_{19} = 36\omega_{12}v_1^2v_2^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3 + 36\omega_{12}c_s^4\omega_5^3\omega_{15}\omega_9^2 - 12\omega_{12}^2c_s^2v_1^2\omega_5\omega_{21}\omega_{15}\omega_9^2 - 18\omega_{12}^2c_s^4\omega_5^3\omega_9^3 + 36c_s^2v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_9^3 + 12\omega_{12}^2v_1^2v_2^2\omega_5^2\omega_9^3 - \\
84\omega_{12}^2c_s^4\omega_5\omega_{21}\omega_{15}\omega_9^2 - 12\omega_{12}v_2^2\omega_5^2\omega_{15}\omega_9^3 - 96\omega_{12}^2c_s^4\omega_{21}\omega_{15}\omega_9^3 - 36\omega_{12}c_s^2v_2^2\omega_5^3\omega_{15}\omega_9^3 + 12\omega_{12}^2c_s^2v_1^2\omega_5^2\omega_9^3 - 12\omega_{12}^2v_2^2\omega_5^2\omega_9^3 - \\
24\omega_{12}^2v_2^2\omega_5\omega_{21}\omega_{15}\omega_9^2 - 12\omega_{12}c_s^2\omega_5^2\omega_{15}\omega_9^3 - 12\omega_{12}^2v_1^2v_2^2\omega_5^2\omega_{15}\omega_9^3 - 12\omega_{12}^2c_s^2\omega_5^2\omega_9^3 + 12\omega_{12}^2v_1^2v_2^2\omega_5^3\omega_{21}\omega_{15} + 12\omega_{12}^2c_s^2\omega_5\omega_{21}\omega_{15}\omega_9^2 + \\
18\omega_{12}^2c_s^4\omega_5^3\omega_{15}\omega_9^3 - 6\omega_{12}c_s^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9^3 - 36\omega_{12}^2c_s^2v_2^2\omega_5^2\omega_{21}\omega_9^2 - 36c_s^2v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2 + 12\omega_{12}^2v_2^2\omega_5^2\omega_{15}\omega_9^3 + 180\omega_{12}^2c_s^4\omega_5\omega_{21}\omega_{15}\omega_9^3 + \\
12v_2^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3 - 12\omega_{12}^2v_2^2\omega_5^3\omega_{21}\omega_{15} + 12\omega_{12}^2c_s^2\omega_5^2\omega_{15}\omega_9^3 + 12\omega_{12}^2c_s^2v_1^2\omega_5\omega_{21}\omega_{15}\omega_9^3 - 12\omega_{12}^2c_s^2\omega_5^3\omega_{21}\omega_{15} + 18\omega_{12}^2c_s^2v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2 - \\
36\omega_{12}c_s^4\omega_5^3\omega_{15}\omega_9^3 - 12\omega_{12}^2c_s^2v_1^2\omega_5^2\omega_{15}\omega_9^3 + 12\omega_{12}^2c_s^2v_1^2\omega_5^3\omega_{21}\omega_{15} - 12\omega_{12}v_1^2v_2^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2 + 12c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3 - 12\omega_{12}v_1^2v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_9 - \\
12\omega_{12}^2c_s^2\omega_5\omega_{21}\omega_{15}\omega_9^3 - 18\omega_{12}^2c_s^4\omega_5^3\omega_{15}\omega_9^2 - 72\omega_{12}c_s^2v_2^2\omega_5\omega_{21}\omega_{15}\omega_9^3 + 18\omega_{12}c_s^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2 + 12c_s^4\omega_5^2\omega_{21}\omega_{15}\omega_9^3 + 36\omega_{12}^2c_s^2v_2^2\omega_5^2\omega_{21}\omega_{15}\omega_9 + \\
36\omega_{12}c_s^2v_2^2\omega_5^3\omega_{15}\omega_9^2 + 6\omega_{12}^2c_s^2v_1^2\omega_5^3\omega_{21}\omega_9^2 - 12c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^3 + 24\omega_{12}v_1^2v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2 - 12\omega_{12}c_s^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9 + 12\omega_{12}c_s^4\omega_5\omega_{21}\omega_{15}\omega_9^3 - \\
6\omega_{12}^2c_s^2v_1^2\omega_5^3\omega_9^3 - 6\omega_{12}^2c_s^2\omega_5^3\omega_{21}\omega_9^2 + 12\omega_{12}c_s^2v_1^2\omega_5^2\omega_{15}\omega_9^3 - 72\omega_{12}^2c_s^2v_2^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2 + 6\omega_{12}^2c_s^2\omega_5^3\omega_9^3 - 6\omega_{12}^2v_2^2\omega_5^3\omega_{21}\omega_9^2 + 6\omega_{12}^2v_2^2\omega_5^3\omega_9^3 - \\
12v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_9^3 + 12\omega_{12}c_s^2\omega_5\omega_{21}\omega_{15}\omega_9^3 + 36\omega_{12}^2c_s^4\omega_5^2\omega_9^3 - 54\omega_{12}^2c_s^2v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_9 - 12c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9^3 - 6\omega_{12}^2v_1^2v_2^2\omega_5^3\omega_9^3 - \\
18\omega_{12}^2c_s^2v_2^2\omega_5^3\omega_{15}\omega_9^2 + 24\omega_{12}v_2^2\omega_5\omega_{21}\omega_{15}\omega_9^3 - 36c_s^2v_2^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3 + 12v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2 - 12\omega_{12}v_1^2v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_9^3 + 12c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2 + \\
12\omega_{12}v_1^2v_2^2\omega_5^2\omega_{15}\omega_9^3 - 36\omega_{12}^2c_s^4\omega_5^2\omega_{21}\omega_9^2 + 18\omega_{12}c_s^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3 + 18\omega_{12}^2c_s^2v_2^2\omega_5^3\omega_{15}\omega_9^3 + 12c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9^2 + 6\omega_{12}^2v_1^2v_2^2\omega_5^3\omega_{21}\omega_9^2 + \\
24\omega_{12}^2v_1^2v_2^2\omega_5\omega_{21}\omega_{15}\omega_9^2 - 18\omega_{12}^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2 - 36\omega_{12}c_s^2v_2^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2 - 24\omega_{12}v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2 - 36\omega_{12}^2c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9 - \\
18\omega_{12}c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2 + 6\omega_{12}^2v_1^2v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2 - 12\omega_{12}v_2^2\omega_5^3\omega_{15}\omega_9^2 + 24\omega_{12}^2v_2^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2 - 12\omega_{12}c_s^2\omega_5^3\omega_{15}\omega_9^2 - 6\omega_{12}^2v_1^2v_2^2\omega_5^3\omega_{15}\omega_9^2 - \\
12v_1^2v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2 - 12\omega_{12}^2c_s^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9 + 18\omega_{12}^2c_s^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2 + 18\omega_{12}^2v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_9 - 6\omega_{12}^2c_s^2\omega_5^3\omega_{15}\omega_9^3 - 6\omega_{12}^2v_2^2\omega_5^3\omega_{15}\omega_9^3 + \\
12\omega_{12}^2v_1^2v_2^2\omega_5^2\omega_{21}\omega_{15}\omega_9 + 150\omega_{12}^2c_s^4\omega_5^2\omega_{21}\omega_{15}\omega_9^2 + 6\omega_{12}^2c_s^2v_1^2\omega_5^3\omega_{15}\omega_9^3 - 24\omega_{12}v_1^2v_2^2\omega_5\omega_{21}\omega_{15}\omega_9^3 + 36\omega_{12}c_s^4\omega_5^2\omega_{15}\omega_9^3 + 12\omega_{12}^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9 - \\
42\omega_{12}c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9^2 - 36\omega_{12}c_s^2v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_9 + 6\omega_{12}^2v_1^2v_2^2\omega_5^3\omega_{15}\omega_9^3 + 12\omega_{12}c_s^2\omega_5^3\omega_{15}\omega_9^3 + 12v_1^2v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_9^3 + 36\omega_{12}c_s^2v_2^2\omega_5^2\omega_{15}\omega_9^3 + \\
6\omega_{12}c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^3 + 12\omega_{12}v_2^2\omega_5^3\omega_{15}\omega_9^3 + 12\omega_{12}v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_9^3 + 108\omega_{12}c_s^2v_2^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3 + 12\omega_{12}^2c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3 + 18\omega_{12}^2c_s^2v_2^2\omega_5^3\omega_{21}\omega_9^2 + \\
36\omega_{12}^2c_s^4\omega_5^3\omega_{21}\omega_{15} - 36\omega_{12}^2c_s^4\omega_5^2\omega_{15}\omega_9^3 + 30\omega_{12}c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9^3 - 6\omega_{12}^2c_s^2v_1^2\omega_5^3\omega_{15}\omega_9^2 + 6\omega_{12}^2v_2^2\omega_5^3\omega_{15}\omega_9^2 - 88\omega_{12}^2c_s^4\omega_5^2\omega_{21}\omega_{15}\omega_9^3 - \\
12c_s^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3 - 12\omega_{12}^2c_s^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3 - 18\omega_{12}^2c_s^2v_2^2\omega_5^3\omega_9^3 + 6\omega_{12}^2c_s^2\omega_5^3\omega_{15}\omega_9^2 - \omega_{12}^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^3 + 36\omega_{12}^2c_s^2v_2^2\omega_5^3\omega_{21}\omega_{15} - \\
36\omega_{12}c_s^2v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_9^3 - 36\omega_{12}^2c_s^2v_2^2\omega_5^2\omega_{15}\omega_9^3 + 18\omega_{12}^2c_s^4\omega_5^3\omega_{21}\omega_9^2 - 36\omega_{12}v_2^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3 - 12\omega_{12}v_1^2v_2^2\omega_5^3\omega_{15}\omega_9^3 - 18\omega_{12}c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3 - \\
12\omega_{12}^2v_1^2v_2^2\omega_5^2\omega_{21}\omega_9^2 - 12v_1^2v_2^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3 + \omega_{12}^2c_s^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9^3 + 12\omega_{12}c_s^2v_1^2\omega_5^3\omega_{15}\omega_9^2 + 72\omega_{12}^2c_s^2v_2^2\omega_5\omega_{21}\omega_{15}\omega_9^2 + 12c_s^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9^3 + \\
5\omega_{12}^2c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9^3 - 42\omega_{12}c_s^4\omega_5^2\omega_{21}\omega_{15}\omega_9^3 - 6\omega_{12}^2v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2 - 24\omega_{12}^2v_1^2v_2^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2 + 36\omega_{12}^2c_s^2v_2^2\omega_5^2\omega_9^3 - 48\omega_{12}^2c_s^4\omega_5^2\omega_{21}\omega_{15}\omega_9 + \\
12\omega_{12}v_1^2v_2^2\omega_5^3\omega_{15}\omega_9^2 + 12\omega_{12}v_2^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2 + 72\omega_{12}c_s^2v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2 + 2\omega_{12}^2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2 + 12\omega_{12}c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9 - \\
12\omega_{12}c_s^2v_1^2\omega_5\omega_{21}\omega_{15}\omega_9^3 - 12\omega_{12}^2c_s^2v_1^2\omega_5^2\omega_{21}\omega_9^2 + 12\omega_{12}v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_9 + 12\omega_{12}^2v_2^2\omega_5^2\omega_{21}\omega_9^2 - 6\omega_{12}^2c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9^2 + 12\omega_{12}c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9 - \\
12c_s^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2 - 18\omega_{12}^2v_1^2v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_9 - 2\omega_{12}^2c_s^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2 + 12\omega_{12}^2c_s^2\omega_5^2\omega_{21}\omega_9^2 - 12\omega_{12}c_s^2v_1^2\omega_5^3\omega_{15}\omega_9^3 - 12\omega_{12}^2v_2^2\omega_5^2\omega_{21}\omega_{15}\omega_9
\end{gathered}$$

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

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

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

$C_{22} = 24\omega_{12}\omega_{10}^2v_1^2\omega_5\omega_{21}\omega_{15}\omega_9 - 12\omega_{12}\omega_{10}^2v_1^2v_2^2\omega_5^2\omega_{21}\omega_9 - 42\omega_{12}c_s^4\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}\omega_9 - 12\omega_{12}c_s^2\omega_{10}^2v_2^2\omega_5\omega_{21}\omega_{15}\omega_9 + 6\omega_{12}c_s^2\omega_{10}^2\omega_5^3\omega_{15}^2 +$
$6\omega_{12}c_s^2\omega_{10}^2v_2^2\omega_5^3\omega_{21}\omega_9 + 24\omega_{12}\omega_{10}v_1^2v_2^2\omega_5^2\omega_{21}\omega_{15}^2 + 72\omega_{12}c_s^2\omega_{10}v_1^2\omega_5^2\omega_{21}\omega_{15}^2 + 18\omega_{12}c_s^2\omega_{10}v_2^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9 - 18\omega_{12}c_s^2\omega_{10}^2v_1^2\omega_5^3\omega_{15}\omega_9 -$
$36c_s^4\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9 - 12\omega_{12}\omega_{10}^2v_1^2v_2^2\omega_5^2\omega_{15}\omega_9 + \omega_{12}c_s^2\omega_{10}^2v_2^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9 + 6\omega_{12}c_s^2\omega_{10}^2v_2^2\omega_5^3\omega_{15}^2\omega_9 + 36\omega_{12}\omega_{10}v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9 -$
$24\omega_{12}\omega_{10}^2v_1^2v_2^2\omega_5^2\omega_{21}\omega_{15} - 12\omega_{12}\omega_{10}v_1^2v_2^2\omega_5^2\omega_{21}\omega_{15}\omega_9 + 6\omega_{12}\omega_{10}^2v_1^2\omega_5^3\omega_{15}^2 - 6\omega_{12}c_s^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2 - 45\omega_{12}c_s^2\omega_{10}^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9 -$
$18\omega_{12}c_s^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}\omega_9 + 24\omega_{12}\omega_{10}^2v_1^2\omega_5^2\omega_{21}\omega_{15} + 6\omega_{12}c_s^2\omega_{10}^2\omega_5^3\omega_{15}\omega_9 + 12c_s^2\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9 + 12\omega_{12}\omega_{10}^2v_1^2\omega_5^2\omega_{15}^2\omega_9 -$
$36\omega_{12}c_s^2\omega_{10}v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9 - 18\omega_{12}c_s^4\omega_{10}^2\omega_5^3\omega_{15}\omega_9 - 36c_s^4\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9 + 18\omega_{12}c_s^4\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2 + 12\omega_{10}v_1^2v_2^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9 +$
$12\omega_{10}v_1^2\omega_5^3\omega_{21}\omega_{15}^2 - 6\omega_{12}\omega_{10}^2v_1^2v_2^2\omega_5^3\omega_{15}^2 + 12\omega_{12}\omega_{10}^2v_1^2\omega_5^2\omega_{21}\omega_9 - 36c_s^2\omega_{10}^2v_1^2\omega_5^3\omega_{15}^2\omega_9 + 12c_s^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9 + 36c_s^2\omega_{10}v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9 +$
$18\omega_{12}c_s^2\omega_{10}v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9 - 36\omega_{12}c_s^2\omega_{10}^2v_1^2\omega_5^2\omega_{15}^2\omega_9 - 6\omega_{12}\omega_{10}^2v_1^2v_2^2\omega_5^3\omega_{15}\omega_9 - 36\omega_{12}c_s^4\omega_{10}\omega_5\omega_{21}\omega_{15}^2\omega_9 + 144\omega_{12}c_s^2\omega_{10}^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9 +$
$6\omega_{12}\omega_{10}v_1^2v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_9 + 12\omega_{12}c_s^2\omega_{10}^2v_2^2\omega_5^2\omega_{15}\omega_9 + 3\omega_{12}c_s^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}\omega_9 - 72\omega_{12}c_s^2\omega_{10}^2v_1^2\omega_5^2\omega_{21}\omega_{15} - 36\omega_{12}c_s^2\omega_{10}^2v_1^2\omega_5^2\omega_{21}\omega_9 -$
$36c_s^2\omega_{10}v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9 + 72\omega_{12}c_s^2\omega_{10}v_1^2\omega_5\omega_{21}\omega_{15}^2\omega_9 - 12c_s^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9 + 6\omega_{12}c_s^2\omega_{10}v_2^2\omega_5^3\omega_{21}\omega_{15}^2 - 12\omega_{10}^2v_1^2\omega_5^3\omega_{15}^2 -$
$12\omega_{12}c_s^2\omega_{10}^2\omega_5\omega_{21}\omega_{15}^2\omega_9 - 12\omega_{10}v_1^2v_2^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9 + 24\omega_{12}\omega_{10}v_1^2v_2^2\omega_5\omega_{21}\omega_{15}^2\omega_9 - 36\omega_{12}c_s^4\omega_{10}^2\omega_5^2\omega_{15}^2\omega_9 + 12c_s^2\omega_{10}^2v_2^2\omega_5^2\omega_{15}^2\omega_9 -$
$24\omega_{12}\omega_{10}v_1^2\omega_5^2\omega_{21}\omega_{15}^2 - 6\omega_{12}c_s^2\omega_{10}^2v_2^2\omega_5^3\omega_{15}^2 + 12\omega_{12}c_s^2\omega_{10}^2\omega_5^2\omega_{21}\omega_9 + 15\omega_{12}c_s^4\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}\omega_9 - 12\omega_{10}^2v_1^2v_2^2\omega_5^3\omega_{15}^2\omega_9 +$
$12\omega_{12}c_s^2\omega_{10}\omega_5\omega_{21}\omega_{15}^2\omega_9 - 12\omega_{10}v_1^2v_2^2\omega_5^3\omega_{21}\omega_{15}^2 + 12\omega_{12}c_s^4\omega_{10}^2\omega_5^2\omega_{21}\omega_9 + 156\omega_{12}c_s^4\omega_{10}^2\omega_5\omega_{21}\omega_{15}^2\omega_9 - 36c_s^2\omega_{10}v_1^2\omega_5^3\omega_{21}\omega_{15}^2 -$
$12\omega_{12}c_s^2\omega_{10}^2v_2^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9 + 12\omega_{12}c_s^2\omega_{10}^2\omega_5^2\omega_{15}^2\omega_9 - 9\omega_{12}\omega_{10}v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9 - 24\omega_{12}\omega_{10}^2v_1^2v_2^2\omega_5\omega_{21}\omega_{15}\omega_9 + 36c_s^2\omega_{10}^2v_1^2\omega_5^3\omega_{15}^2 +$
$6\omega_{12}\omega_{10}^2v_1^2\omega_5^3\omega_{15}\omega_9 + 12\omega_{10}^2v_1^2\omega_5^3\omega_{15}^2\omega_9 - 12c_s^2\omega_{10}^2\omega_5^3\omega_{15}^2 - 5\omega_{12}c_s^2\omega_{10}v_2^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9 + 36c_s^4\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9 + 3\omega_{12}c_s^4\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9 +$
$12c_s^2\omega_{10}^2v_2^2\omega_5^3\omega_{15}^2 - 18\omega_{12}c_s^4\omega_{10}^2\omega_5^3\omega_{15}^2 - 24\omega_{12}\omega_{10}v_1^2\omega_5\omega_{21}\omega_{15}^2\omega_9 - 15\omega_{12}\omega_{10}^2v_1^2v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_9 + 36c_s^4\omega_{10}^2\omega_5^2\omega_{15}^2\omega_9 + 36\omega_{12}c_s^4\omega_{10}^2\omega_5^2\omega_{15}\omega_9 -$
$12\omega_{12}c_s^2\omega_{10}v_2^2\omega_5\omega_{21}\omega_{15}^2\omega_9 - 12c_s^2\omega_{10}v_2^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9 + 36c_s^2\omega_{10}^2v_1^2\omega_5^2\omega_{15}^2\omega_9 - 6\omega_{12}\omega_{10}^2v_1^2\omega_5^3\omega_{21}\omega_9 - 12c_s^2\omega_{10}^2\omega_5^2\omega_{15}^2\omega_9 - 12\omega_{12}\omega_{10}^2v_1^2\omega_5^3\omega_{21}\omega_{15} -$
$12\omega_{12}c_s^2\omega_{10}^2\omega_5^2\omega_{15}\omega_9 - 6\omega_{12}\omega_{10}v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9 - 18\omega_{12}c_s^2\omega_{10}^2v_1^2\omega_5^3\omega_{15}^2 + 12\omega_{12}c_s^4\omega_{10}^2\omega_5\omega_{21}\omega_{15}\omega_9 + 18\omega_{12}c_s^2\omega_{10}^2v_2^2\omega_5^2\omega_{21}\omega_{15}\omega_9 -$
$12c_s^2\omega_{10}v_2^2\omega_5^3\omega_{21}\omega_{15}^2 - 48\omega_{12}\omega_{10}^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9 - 6\omega_{12}\omega_{10}^2v_1^2\omega_5^3\omega_{15}^2\omega_9 + 5\omega_{12}c_s^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9 - 18\omega_{12}c_s^2v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9 +$
$6\omega_{12}\omega_{10}^2v_1^2v_2^2\omega_5^3\omega_{15}^2\omega_9 + 27\omega_{12}c_s^2\omega_{10}v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9 + 36\omega_{12}c_s^2\omega_{10}^2v_1^2\omega_5^2\omega_{15}\omega_9 - 12\omega_{12}v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9 + 12\omega_{12}\omega_{10}^2v_1^2v_2^2\omega_5^3\omega_{21}\omega_{15} -$
$12\omega_{12}c_s^2\omega_{10}^2v_2^2\omega_5^2\omega_{15}^2\omega_9 - \omega_{12}c_s^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9 + 9\omega_{12}\omega_{10}v_1^2v_2^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9 - 15\omega_{12}c_s^4\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9 + 6\omega_{12}\omega_{10}^2v_1^2v_2^2\omega_5^3\omega_{21}\omega_9 -$
$18\omega_{12}c_s^2\omega_{10}v_1^2\omega_5^3\omega_{21}\omega_{15}^2 - 12\omega_{10}v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9 + 12\omega_{12}v_1^2v_2^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9 - 6\omega_{12}\omega_{10}v_1^2v_2^2\omega_5^3\omega_{21}\omega_{15}^2 - 12\omega_{12}c_s^2\omega_{10}^2v_2^2\omega_5^2\omega_{21}\omega_9 +$
$12\omega_{12}c_s^2\omega_{10}\omega_5\omega_{21}\omega_{15}\omega_9 - 6\omega_{12}c_s^2\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9 + 12\omega_{12}c_s^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9 - 36\omega_{12}\omega_{10}v_1^2v_2^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9 + 12c_s^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2 -$
$6\omega_{12}c_s^4\omega_{10}^2\omega_5^3\omega_{21}\omega_9 + 6\omega_{12}v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9 - 108\omega_{12}c_s^2\omega_{10}v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9 - 12\omega_{10}^2v_1^2\omega_5^2\omega_{15}^2\omega_9 - 12\omega_{12}\omega_{10}^2v_1^2\omega_5^2\omega_{15}\omega_9 + 36\omega_{12}c_s^2v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9 -$
$72\omega_{12}c_s^2\omega_{10}^2v_1^2\omega_5\omega_{21}\omega_{15}\omega_9 - 6\omega_{12}c_s^2\omega_{10}^2\omega_5^3\omega_{21}\omega_9 + 6\omega_{12}\omega_{10}v_1^2\omega_5^3\omega_{21}\omega_{15}^2 - 36c_s^4\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2 - 6\omega_{12}v_1^2v_2^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9 +$
$18\omega_{12}c_s^4\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9 - 12c_s^2\omega_{10}^2v_2^2\omega_5^3\omega_{15}^2\omega_9 + 12\omega_{10}v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9 + 12\omega_{10}^2v_1^2v_2^2\omega_5^2\omega_{15}^2\omega_9 + 54\omega_{12}c_s^4\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9 - 96\omega_{12}c_s^4\omega_{10}^2\omega_{21}\omega_{15}^2\omega_9 +$
$12\omega_{10}^2v_1^2v_2^2\omega_5^3\omega_{15}^2 + 12c_s^2\omega_{10}v_2^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9 + 18\omega_{12}c_s^2\omega_{10}^2v_1^2\omega_5^3\omega_{21}\omega_9 - 60\omega_{12}c_s^4\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9 + 12\omega_{12}c_s^2\omega_{10}^2v_2^2\omega_5\omega_{21}\omega_{15}^2\omega_9 +$
$48\omega_{12}\omega_{10}^2v_1^2v_2^2\omega_5^2\omega_{21}\omega_{15}\omega_9 - 18\omega_{12}c_s^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9 + 36c_s^4\omega_{10}^2\omega_5^3\omega_{15}^2 + 12\omega_{12}\omega_{10}^2v_1^2v_2^2\omega_5^2\omega_{15}\omega_9 + 15\omega_{12}\omega_{10}^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9 +$
$18\omega_{12}c_s^2\omega_{10}^2v_1^2\omega_5^3\omega_{15}^2\omega_9 + 36\omega_{12}c_s^2\omega_{10}^2v_1^2\omega_5^3\omega_{21}\omega_{15} - 6\omega_{12}c_s^2\omega_{10}^2v_2^2\omega_5^3\omega_{15}\omega_9 + 12\omega_{12}\omega_{10}v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9 - 3\omega_{12}c_s^2\omega_{10}^2v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_9$

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

$C_{24} = 24\omega_{12}\omega_{10}^2v_1^2\omega_5\omega_{21}\omega_{15}\omega_9 - 36\omega_{12}\omega_{10}^2v_1^2v_2^2\omega_5^2\omega_{21}\omega_9 - 18\omega_{12}c_s^4\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}\omega_9 + 60\omega_{12}c_s^2\omega_{10}^2v_2^2\omega_5\omega_{21}\omega_{15}\omega_9 + 6\omega_{12}c_s^2\omega_{10}^2\omega_5^3\omega_{15}^2 -$
$12\omega_{12}c_s^2\omega_{10}^2v_2^2\omega_5^3\omega_{21}\omega_9 + 72\omega_{12}\omega_{10}v_1^2v_2^2\omega_5^2\omega_{21}\omega_{15}^2 + 24\omega_{12}c_s^2\omega_{10}v_1^2\omega_5^2\omega_{21}\omega_{15}^2 + 54\omega_{12}c_s^2\omega_{10}v_2^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9 - 6\omega_{12}c_s^2\omega_{10}^2v_1^2\omega_5^3\omega_{15}\omega_9 -$
$12c_s^4\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9 - 48\omega_{12}c_s^2\omega_{10}^2v_2^2\omega_{21}\omega_{15}^2\omega_9 - 36\omega_{12}\omega_{10}^2v_1^2v_2^2\omega_5^2\omega_{15}^2\omega_9 + 18\omega_{12}c_s^2\omega_{10}^2v_2^2\omega_5^3\omega_{15}^2\omega_9 + 36\omega_{12}\omega_{10}v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9 -$
$72\omega_{12}\omega_{10}^2v_1^2v_2^2\omega_5^2\omega_{21}\omega_{15} - 36\omega_{12}\omega_{10}v_1^2v_2^2\omega_5^2\omega_{21}\omega_{15}\omega_9 + 6\omega_{12}\omega_{10}^2v_1^2\omega_5^3\omega_{15}^2 - 6\omega_{12}c_s^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2 - 15\omega_{12}c_s^2\omega_{10}^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9 +$
$18\omega_{12}c_s^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}\omega_9 + 24\omega_{12}\omega_{10}^2v_1^2\omega_5^2\omega_{21}\omega_{15} + 6\omega_{12}c_s^2\omega_{10}^2\omega_5^3\omega_{15}\omega_9 + 12c_s^2\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9 + 12\omega_{12}\omega_{10}^2v_1^2\omega_5^2\omega_{15}^2\omega_9 -$
$12\omega_{12}c_s^2\omega_{10}v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9 - 6\omega_{12}c_s^4\omega_{10}^2\omega_5^3\omega_{15}\omega_9 - 12c_s^4\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9 + 6\omega_{12}c_s^4\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2 + 36\omega_{10}v_1^2v_2^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9 + 12\omega_{10}v_1^2\omega_5^3\omega_{21}\omega_{15}^2 -$
$18\omega_{12}\omega_{10}^2v_1^2v_2^2\omega_5^3\omega_{15}^2 + 12\omega_{12}\omega_{10}^2v_1^2\omega_5^2\omega_{21}\omega_9 - 12c_s^2\omega_{10}^2v_1^2\omega_5^3\omega_{15}^2\omega_9 + 12c_s^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9 + 12c_s^2\omega_{10}v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9 +$
$6\omega_{12}c_s^2\omega_{10}v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9 - 12\omega_{12}c_s^2\omega_{10}^2v_1^2\omega_5^2\omega_{15}^2\omega_9 - 18\omega_{12}\omega_{10}^2v_1^2v_2^2\omega_5^3\omega_{15}\omega_9 - 12\omega_{12}c_s^4\omega_{10}\omega_5\omega_{21}\omega_{15}^2\omega_9 + 48\omega_{12}c_s^2\omega_{10}^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9 +$

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

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

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

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

$C_{28} = 4\omega_6^2v_1^2\omega_9^2 + 4c_s^4\omega_{13}^2\omega_9^2 + 32\omega_6^2\omega_{13}v_1^4\omega_9^2 + 24\omega_6^2c_s^2v_1^2\omega_9^3 + 36\omega_6^2\omega_{13}^2v_1^2\omega_9 - 4\omega_6c_s^2\omega_{13}^2\omega_9 - 84\omega_6c_s^2\omega_{13}^2v_1^2\omega_9^2 - 20\omega_6\omega_{13}v_1^2\omega_9^3 - 8\omega_6^2c_s^2\omega_{13}\omega_9^2 -$
$13\omega_6^2\omega_{13}v_1^4\omega_9^3 - 24\omega_6^2c_s^2v_1^2\omega_9^2 - 8\omega_6c_s^4\omega_{13}^2\omega_9^2 - 4\omega_6^2c_s^4\omega_{13}\omega_9 + 51\omega_6^2c_s^2\omega_{13}^2v_1^2\omega_9^2 - 4\omega_6^2v_1^2\omega_9^3 + 20\omega_6\omega_{13}^2v_1^4\omega_9 - 8\omega_6^2c_s^2\omega_{13}^2 + 24\omega_6^2\omega_{13}^2v_1^4 +$
$4\omega_6^2c_s^2\omega_{13}\omega_9^3 + 8\omega_{13}v_1^2\omega_9^3 + 16\omega_6\omega_{13}v_1^2\omega_9^2 - 4\omega_6c_s^4\omega_9^3 + 36c_s^2\omega_{13}^2v_1^2\omega_9^2 - 4\omega_6v_1^4\omega_9^3 - 4c_s^2\omega_{13}^2\omega_9^2 - 4\omega_6^2c_s^2\omega_9^3 + 4\omega_6c_s^4\omega_{13}^2\omega_9 - 144\omega_6^2c_s^2\omega_{13}^2v_1^2\omega_9 -$
$20\omega_6\omega_{13}^2v_1^4\omega_9^2 + 8\omega_6^2c_s^4\omega_{13}\omega_9^2 + 8\omega_6c_s^2\omega_{13}^2\omega_9^2 - 13\omega_6^2\omega_{13}^2v_1^2\omega_9^2 + 72\omega_6c_s^2\omega_{13}^2v_1^2\omega_9 + 4\omega_6^2c_s^2\omega_{13}\omega_9 - 4\omega_6^2c_s^4\omega_{13}\omega_9^3 + 8\omega_{13}^2v_1^4\omega_9^2 + 4\omega_6^2c_s^2\omega_9^2 -$
$20\omega_6^2\omega_{13}v_1^4\omega_9 + 13\omega_6^2\omega_{13}v_1^2\omega_9^3 + 4c_s^2\omega_{13}\omega_9^3 - 20\omega_6\omega_{13}^2v_1^2\omega_9 + 4\omega_6^2v_1^4\omega_9^3 + 12\omega_6^2c_s^2\omega_{13}^2\omega_9 + 8\omega_6^2c_s^4\omega_{13}^2 - 72\omega_6^2c_s^2\omega_{13}v_1^2\omega_9 - 16\omega_6\omega_{13}v_1^4\omega_9^2 -$
$24\omega_6c_s^2v_1^2\omega_9^3 - 8\omega_{13}v_1^4\omega_9^3 + 4\omega_6c_s^2\omega_9^3 - 4\omega_6^2v_1^4\omega_9^2 - 36c_s^2\omega_{13}v_1^2\omega_9^3 - 8\omega_6c_s^2\omega_{13}\omega_9^3 - 32\omega_6^2\omega_{13}v_1^2\omega_9^2 - 36\omega_6^2\omega_{13}^2v_1^4\omega_9 + 20\omega_6\omega_{13}v_1^4\omega_9^3 +$
$4\omega_6^2c_s^4\omega_{13}^2\omega_9^2 + 13\omega_6^2\omega_{13}^2v_1^4\omega_9^2 - 4c_s^4\omega_{13}\omega_9^3 + 96\omega_6^2c_s^2\omega_{13}^2v_1^2 - 51\omega_6^2c_s^2\omega_{13}v_1^2\omega_9^3 - 12\omega_6^2c_s^4\omega_{13}^2\omega_9 - 8\omega_{13}^2v_1^2\omega_9^2 - 48\omega_6c_s^2\omega_{13}v_1^2\omega_9^2 + 20\omega_6^2\omega_{13}v_1^2\omega_9 -$
$4\omega_6^2c_s^4\omega_9^2 - 24\omega_6^2\omega_{13}^2v_1^2 + 4\omega_6v_1^2\omega_9^3 + 120\omega_6^2c_s^2\omega_{13}v_1^2\omega_9^2 + 8\omega_6c_s^4\omega_{13}\omega_9^3 + 4\omega_6^2c_s^4\omega_9^3 - 4\omega_6^2c_s^2\omega_{13}^2\omega_9^2 + 84\omega_6c_s^2\omega_{13}v_1^2\omega_9^3 + 20\omega_6\omega_{13}^2v_1^2\omega_9^2$

$C_{29} = -16\omega_6^2v_1^2\omega_9^2 - 120\omega_6^2\omega_{13}^2v_1^2\omega_9 + 28\omega_6\omega_{13}^2\omega_9^2 + 32\omega_6c_s^2\omega_{13}^2\omega_9 + 17\omega_6^2\omega_{13}\omega_9^3 + 68\omega_6\omega_{13}v_1^2\omega_9^3 + 56\omega_6^2c_s^2\omega_{13}\omega_9^2 + 8\omega_6\omega_9^3 + 16\omega_6^2v_1^2\omega_9^3 +$
$48\omega_6^2c_s^2\omega_{13}^2 - 25\omega_6^2c_s^2\omega_{13}\omega_9^3 - 28\omega_{13}v_1^2\omega_9^3 - 48\omega_6\omega_{13}v_1^2\omega_9^2 - 40\omega_6^2\omega_{13}\omega_9^2 + 24\omega_6^2\omega_{13}\omega_9 + 12\omega_{13}\omega_9^3 + 20c_s^2\omega_{13}^2\omega_9^2 + 16\omega_6^2c_s^2\omega_9^3 - 44\omega_6c_s^2\omega_{13}^2\omega_9^2 +$
$43\omega_6^2\omega_{13}^2v_1^2\omega_9^2 - 24\omega_6\omega_{13}^2\omega_9 - 32\omega_6^2c_s^2\omega_{13}\omega_9 - 16\omega_6^2c_s^2\omega_9^2 - 43\omega_6^2\omega_{13}v_1^2\omega_9^3 - 20c_s^2\omega_{13}\omega_9^3 - 16\omega_6c_s^2\omega_{13}\omega_9^2 - 12\omega_{13}^2\omega_9^2 + 64\omega_6\omega_{13}^2v_1^2\omega_9 -$
$72\omega_6^2c_s^2\omega_{13}^2\omega_9 - 16\omega_6c_s^2\omega_9^3 + 44\omega_6c_s^2\omega_{13}\omega_9^3 + 48\omega_6^2\omega_{13}^2\omega_9 + 104\omega_6^2\omega_{13}v_1^2\omega_9^2 - 32\omega_6^2\omega_{13}^2 - 8\omega_6^2\omega_9^3 + 28\omega_{13}^2v_1^2\omega_9^2 - 28\omega_6\omega_{13}\omega_9^3 - 17\omega_6^2\omega_{13}^2\omega_9^2 -$
$64\omega_6^2\omega_{13}v_1^2\omega_9 + 80\omega_6^2\omega_{13}^2v_1^2 - 16\omega_6v_1^2\omega_9^3 + 8\omega_6^2\omega_9^2 + 16\omega_6\omega_{13}\omega_9^2 + 25\omega_6^2c_s^2\omega_{13}^2\omega_9^2 - 68\omega_6\omega_{13}^2v_1^2\omega_9^2$

$C_{30} = -81\omega_6^2c_s^2\omega_{13}^2v_1^2\omega_9^3 - 24\omega_6c_s^4\omega_{13}^2\omega_9^3 - 24\omega_6^2\omega_{13}v_1^4\omega_9^2 - 19\omega_6^3\omega_{13}^2v_1^2\omega_9^2 - 12\omega_6^2c_s^2v_1^2\omega_9^3 - 21\omega_6^3c_s^2\omega_{13}v_1^2\omega_9^3 - 12\omega_6^3v_1^4\omega_9^2 - 36\omega_6^3\omega_{13}v_1^4\omega_9 -$
$48\omega_6c_s^2\omega_{13}^2v_1^2\omega_9^2 + 24\omega_6\omega_{13}v_1^2\omega_9^3 + 6\omega_6^3c_s^4\omega_{13}\omega_9^3 - 12\omega_6^2c_s^2\omega_{13}\omega_9^2 + 48\omega_6^3\omega_{13}v_1^4\omega_9^3 - 4\omega_6^3\omega_{13}^2v_1^2\omega_9^3 + 12c_s^4\omega_{13}^2\omega_9^3 + 162\omega_6^2c_s^2\omega_{13}^2v_1^2\omega_9^2 + 12\omega_6^2v_1^2\omega_9^3 +$
$18\omega_6^2c_s^2\omega_{13}\omega_9^3 + 102\omega_6c_s^2\omega_{13}^2v_1^2\omega_9^3 - 6\omega_6^3c_s^4\omega_{13}\omega_9^2 + 12\omega_6^3c_s^4\omega_{13}^2 + 54\omega_6^3c_s^2\omega_{13}v_1^2\omega_9^2 + 12\omega_6^3v_1^4\omega_9^3 + 6\omega_6c_s^2\omega_{13}^2\omega_9^3 - 27\omega_6^3\omega_{13}v_1^4\omega_9^3 + 18\omega_6^2\omega_{13}^2v_1^2\omega_9^3 -$
$36\omega_6^3c_s^2\omega_{13}v_1^2\omega_9 - 12\omega_6^3c_s^2v_1^2\omega_9^2 - 72\omega_6^3\omega_{13}^2v_1^2 - 108\omega_6^2c_s^2\omega_{13}^2v_1^2\omega_9 + 12\omega_6^2c_s^4\omega_{13}\omega_9^2 - 6\omega_6^3c_s^2\omega_{13}\omega_9^3 + 60\omega_6^3\omega_{13}v_1^4\omega_9^2 + 12\omega_6^3c_s^2v_1^2\omega_9^3 - 12\omega_6^2\omega_{13}^2v_1^2\omega_9^2 -$
$48c_s^2\omega_{13}^2v_1^2\omega_9^3 + 6\omega_6^3c_s^2\omega_{13}\omega_9^2 + 12\omega_6\omega_{13}^2v_1^4\omega_9^3 - 18\omega_6^2c_s^4\omega_{13}\omega_9^3 + 90\omega_6^3\omega_{13}^2v_1^2\omega_9 + 4\omega_6^3\omega_{13}^2v_1^4\omega_9^3 - 48\omega_6^2\omega_{13}v_1^2\omega_9^3 - 306\omega_6^3c_s^2\omega_{13}^2v_1^2\omega_9 +$
$72\omega_6^3\omega_{13}^2v_1^4 - 12\omega_6^2v_1^4\omega_9^3 + 12\omega_6^2c_s^2\omega_{13}^2\omega_9 + 13\omega_6^2c_s^4\omega_{13}^2\omega_9^3 - \omega_6^3c_s^2\omega_{13}^2\omega_9^2 - 12\omega_6^3c_s^2\omega_{13}^2 - 12\omega_6^3v_1^2\omega_9^3 - 12\omega_6^3c_s^4\omega_{13}^2\omega_9 - 12\omega_6c_s^2\omega_{13}\omega_9^3 +$
$252\omega_6^3c_s^2\omega_{13}v_1^2 + 19\omega_6^3\omega_{13}^2v_1^4\omega_9^2 + 24\omega_6\omega_{13}v_1^2\omega_9^2 + 12\omega_6^3v_1^2\omega_9^2 + 36\omega_6^3\omega_{13}v_1^2\omega_9 - 24\omega_6\omega_{13}v_1^4\omega_9^3 + 6\omega_6^2c_s^4\omega_{13}\omega_9^2 + 12\omega_6^2\omega_{13}v_1^4\omega_9^2 - 60\omega_6^3\omega_{13}v_1^2\omega_9^2 +$
$30\omega_6^2c_s^2\omega_{13}v_1^2\omega_9^3 - 12\omega_6^2c_s^4\omega_{13}^2\omega_9 + \omega_6^3c_s^4\omega_{13}^2\omega_9^2 - 5\omega_6^2c_s^2\omega_{13}^2\omega_9^3 - 12\omega_6\omega_{13}^2v_1^2\omega_9^3 + 12\omega_6^3c_s^2\omega_{13}^2v_1^2\omega_9^3 - 90\omega_6^3\omega_{13}^2v_1^4\omega_9 + 12\omega_6^3c_s^2\omega_{13}^2\omega_9 -$
$12\omega_6^2c_s^2\omega_{13}v_1^2\omega_9^2 - 18\omega_6^2\omega_{13}^2v_1^4\omega_9^3 + 12\omega_6c_s^4\omega_{13}\omega_9^3 + 27\omega_6^3\omega_{13}v_1^2\omega_9^3 + 60\omega_6^3c_s^2\omega_{13}^2v_1^2\omega_9^2 - 6\omega_6^2c_s^2\omega_{13}^2\omega_9^2 - 12\omega_6c_s^2\omega_{13}v_1^2\omega_9^3 - \omega_6^3c_s^4\omega_{13}^2\omega_9^3$

$$C_{31} = \omega_{12}^2\omega_6^2\omega_{13}^2\omega_{14}\omega_5\omega_9^2 - \omega_{12}^2\omega_6^2\omega_{14}\omega_8\omega_5^2\omega_9^3 - 2\omega_{12}^2\omega_6\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^2 - \omega_{12}\omega_6^2\omega_{13}^2\omega_8\omega_5\omega_9^3 - 3\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_8\omega_5^2\omega_9^3 -$$
$$3\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_5^2\omega_9^3 - 3\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^3 - \omega_6^2\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_5\omega_9^3 - 2\omega_{12}^2\omega_6^2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^2 + \omega_{12}^2\omega_{6}\omega_{13}^2v_1^2\omega_5^2\omega_9^3 +$$
$$3\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2 - 3\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_{14}\omega_5\omega_9^2 - \omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^3 + 3\omega_{12}^2\omega_6^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^3 - \omega_{12}^2\omega_{6}\omega_{13}^2\omega_5^2\omega_9^3 - \omega_{12}^2\omega_6^2\omega_{13}^2v_1^2\omega_8\omega_5\omega_9^3 +$$
$$\omega_{12}\omega_6^2\omega_{13}^2v_1^2\omega_8\omega_5^2\omega_9^2 - 3\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2 + \omega_{12}^2\omega_6^2\omega_{13}\omega_8\omega_5^2\omega_9^3 + \omega_{12}^2\omega_6^2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^3 + 3\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_8\omega_5^2\omega_9^2 -$$
$$3\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_{14}\omega_8\omega_5\omega_9^3 + 6\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^2 - \omega_{12}^2\omega_6\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9 - 2\omega_{12}^2\omega_6^2\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_5\omega_9^2 - \omega_{12}\omega_6^2\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_5^2\omega_9 -$$
$$\omega_{12}\omega_6^2\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_9^3 + \omega_{12}^2\omega_6^2\omega_{14}\omega_8\omega_5^2\omega_9^2 - \omega_{12}^2\omega_{6}\omega_{13}\omega_8\omega_5^2\omega_9^3 - \omega_{12}^2\omega_6^2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^2 + \omega_{12}^2\omega_{6}\omega_{14}\omega_8\omega_5^2\omega_9^3 - \omega_{12}^2\omega_{13}v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^3 +$$
$$3\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^3 - \omega_{12}\omega_6^2\omega_{13}^2v_1^2\omega_8\omega_5^2\omega_9^3 + \omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2 + 3\omega_{12}^2\omega_6c_s^2\omega_{13}^2\omega_5^2\omega_9^3 + 6\omega_{12}^2\omega_6c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^2 - 3\omega_{12}^2\omega_6^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2 -$$
$$\omega_{12}^2\omega_6^2\omega_{13}^2v_1^2\omega_5^2\omega_9^3 - 2\omega_{12}\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^3 - \omega_{12}^2\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2 - 2\omega_{12}^2\omega_6\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^3 - 3\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_9^3 -$$
$$3\omega_{12}\omega_6c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2 + 6\omega_{12}\omega_6^2c_s^2\omega_{13}\omega_{14}\omega_8\omega_5\omega_9^3 - \omega_{12}^2\omega_6^2\omega_{13}v_1^2\omega_{14}\omega_8\omega_5\omega_9^2 + 2\omega_{12}^2\omega_6\omega_{13}v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^3 + 3\omega_{12}^2\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9 -$$
$$3\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9 - \omega_{12}\omega_6\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_5\omega_9^3 + 2\omega_{12}\omega_6^2\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^2 + 2\omega_{12}^2\omega_6\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^2 - 3\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_8\omega_5^2\omega_9^3 +$$
$$\omega_{12}^2\omega_6^2\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_5\omega_9 - \omega_{12}\omega_6\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^3 + \omega_{12}^2\omega_6^2\omega_{13}v_1^2\omega_{14}\omega_8\omega_5\omega_9^3 + \omega_{12}^2\omega_6^2\omega_{13}\omega_8\omega_5\omega_9^3 - \omega_{12}^2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^2 +$$
$$3\omega_{12}\omega_6c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^3 - \omega_{12}^2\omega_6^2\omega_{13}^2\omega_5\omega_9^3 - 9\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9 + 3\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_8\omega_5^2\omega_9^3 - 3\omega_{12}^2\omega_6c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^3 -$$
$$\omega_{12}\omega_6^2\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^3 + 3\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_8\omega_5^2\omega_9^2 + \omega_{12}^2\omega_6\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_5^2\omega_9 - 3\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_8\omega_5\omega_9^3 - \omega_{12}^2\omega_6^2\omega_{13}^2v_1^2\omega_{14}\omega_5\omega_9^2 +$$
$$\omega_{12}^2\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^2 + \omega_{12}^2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^3 + \omega_{12}^2\omega_6^2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9 + \omega_{12}^2\omega_6^2\omega_{13}^2\omega_5^2\omega_9^3 + 3\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9 + 6\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2 -$$
$$3\omega_{12}\omega_6c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^3 - \omega_{12}^2\omega_6^2\omega_{13}^2\omega_8\omega_5^2\omega_9^3 - \omega_{12}^2\omega_6^2\omega_{13}v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^3 + \omega_{12}\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9 + \omega_{12}\omega_6\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2 +$$
$$3\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_8\omega_5^2\omega_9^3 + 2\omega_{12}\omega_6^2\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_5\omega_9^3 - \omega_{12}\omega_6\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^2 - 3\omega_{12}^2\omega_6c_s^2\omega_{13}^2\omega_8\omega_5^2\omega_9^2 - \omega_{12}^2\omega_6\omega_{13}^2v_1^2\omega_8\omega_5^2\omega_9^3 +$$
$$\omega_{12}^2\omega_6^2\omega_{13}^2v_1^2\omega_{14}\omega_5^2\omega_9^2 + 3\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2 + 3\omega_{12}^2\omega_6c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_9^2 + \omega_{12}^2\omega_6\omega_{13}^2\omega_5^2\omega_9^3 + 3\omega_{12}^2\omega_6c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9 -$$
$$3\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^3 + 2\omega_{12}^2\omega_6^2\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_5^2 - \omega_{12}^2\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_9^2 + \omega_{12}^2\omega_6\omega_{13}^2\omega_5^2\omega_9^3 - 3\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_8\omega_5^2\omega_9^2 -$$
$$2\omega_{12}^2\omega_6\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^2 - 3\omega_{12}^2\omega_6^2\omega_{13}^2v_1^2\omega_{14}\omega_8^2\omega_9^2 - \omega_{12}\omega_6\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^3 + 3\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_8\omega_5\omega_9^3 - 3\omega_{12}^2c_s^2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^3 +$$
$$\omega_{12}\omega_6\omega_{13}^2v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3 + 6\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^2 - \omega_6^2\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^2 - 3\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_9^2 + \omega_{12}^2\omega_6^2\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^3 -$$
$$\omega_{12}^2\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^3 - 3\omega_{12}^2\omega_6^2\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_9^2 - 2\omega_{12}^2\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2 + \omega_{12}^2\omega_6^2\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_9^2 - \omega_{12}^2\omega_6^2\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_9^3 - 13\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^3 - 2\omega_{12}\omega_6c_s^2\omega_{13}^2\omega_{14}\omega_8^2\omega_5^3\omega_9^2 -$$
$$2\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9 - 4\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_{14}\omega_8^2\omega_5^2\omega_9 - 2\omega_{12}^2\omega_6^2\omega_{13}\omega_7\omega_8^3\omega_5^2\omega_9^2 + 2\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_{14}\omega_8^2\omega_5^3\omega_9^3 + 2\omega_{12}\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9 -$$
$$2\omega_{12}^2\omega_{13}\omega_7v_1^2\omega_{14}\omega_8^2\omega_5^3\omega_9^3 - 4\omega_{12}^2\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3 - \omega_{12}^2\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^3 - 2\omega_{12}\omega_6^2\omega_{13}\omega_7v_1^2\omega_{14}\omega_8^2\omega_5^3\omega_9^2 - 4\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3 -$$

$$C_{32} = \omega_{12}^2\omega_6^2\omega_{13}^2\omega_{14}\omega_5\omega_9^2 - \omega_{12}^2\omega_6^2\omega_{14}\omega_8\omega_5^2\omega_9^3 - 6\omega_{12}^2\omega_6\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^2 - \omega_{12}\omega_6^2\omega_{13}^2\omega_8\omega_5\omega_9^3 - \omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_8\omega_5^2\omega_9^3 - \omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_5^2\omega_9^3 -$$
$$\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^3 - 3\omega_6^2\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_5\omega_9^3 - 2\omega_{12}^2\omega_6^2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^2 + 3\omega_{12}^2\omega_6\omega_{13}^2v_1^2\omega_5^2\omega_9^3 + \omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2 -$$
$$\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_5\omega_9^2 - \omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^3 + \omega_{12}^2\omega_6^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2 - \omega_{12}^2\omega_6^2\omega_{13}^2v_1^2\omega_5^2\omega_9^3 - \omega_{12}^2\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^3 - \omega_{12}^2\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2 -$$
$$\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_8^2\omega_5^2\omega_9^2 + 2\omega_{12}^2\omega_6c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^2 - \omega_{12}^2\omega_6^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2 - 3\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_8\omega_5^2\omega_9^3 + 2\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^2 -$$
$$\omega_{12}^2\omega_6\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9 - 6\omega_{12}^2\omega_6^2\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_5\omega_9^2 - 3\omega_{12}\omega_6^2\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_5^2\omega_9 - 3\omega_{12}\omega_6^2\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_9^3 + \omega_{12}^2\omega_6^2\omega_{14}\omega_8\omega_5^2\omega_9^2 - \omega_{12}^2\omega_6\omega_{13}\omega_8\omega_5^2\omega_9^3 -$$
$$\omega_{12}^2\omega_6^2\omega_{13}\omega_8\omega_5^2\omega_9^2 + \omega_{12}^2\omega_6\omega_{14}\omega_8\omega_5^2\omega_9^3 - 3\omega_{12}^2\omega_{13}v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^3 + \omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^3 - 3\omega_{12}\omega_6^2\omega_{13}^2v_1^2\omega_8\omega_5^2\omega_9^3 + \omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2 +$$
$$\omega_{12}^2\omega_6^2\omega_{13}^2\omega_5^2\omega_9^3 + 2\omega_{12}^2\omega_6c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^2 - \omega_{12}^2\omega_6^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2 - 3\omega_{12}^2\omega_6^2\omega_{13}v_1^2\omega_{14}\omega_8\omega_5\omega_9^3 - 2\omega_{12}\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^3 - \omega_{12}^2\omega_6^2\omega_{13}\omega_{14}\omega_8^2\omega_5^2\omega_9^2 -$$
$$2\omega_{12}^2\omega_6\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^3 - \omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_9^3 - \omega_{12}\omega_6c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2 + 2\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^3 - 3\omega_{12}^2\omega_6^2\omega_{13}v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^3 +$$
$$6\omega_{12}^2\omega_6\omega_{13}v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^3 + 3\omega_{12}^2\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9 - \omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9 - 3\omega_{12}\omega_6\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_5\omega_9^3 + 6\omega_{12}\omega_6^2\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^2 +$$
$$2\omega_{12}^2\omega_6\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2 - \omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_8\omega_5^2\omega_9^3 + 3\omega_{12}^2\omega_6^2\omega_{13}v_1^2\omega_{14}\omega_8\omega_5\omega_9 + \omega_{12}\omega_6\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^3 + 3\omega_{12}^2\omega_6^2\omega_{13}v_1^2\omega_{14}\omega_8\omega_5\omega_9^3 +$$
$$\omega_{12}^2\omega_6^2\omega_{13}^2\omega_8\omega_5^2\omega_9^3 - \omega_{12}^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2 + \omega_{12}\omega_6c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^3 - \omega_{12}^2\omega_6^2\omega_{13}^2\omega_5\omega_9^3 - 3\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9 + \omega_{12}^2\omega_6c_s^2\omega_{13}\omega_8\omega_5^2\omega_9^3 -$$
$$\omega_{12}^2\omega_6c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^3 - 3\omega_{12}^2\omega_6^2\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^3 + \omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_8\omega_5^2\omega_9^2 + 3\omega_{12}^2\omega_6\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_5^2\omega_9 - \omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_8\omega_5\omega_9^3 -$$
$$3\omega_{12}^2\omega_6^2\omega_{13}^2v_1^2\omega_{14}\omega_5\omega_9^2 + 3\omega_{12}^2\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^2 + \omega_{12}^2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^3 + \omega_{12}^2\omega_6^2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9 + \omega_{12}^2\omega_6^2\omega_{13}^2\omega_5^2\omega_9^3 + \omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9 +$$
$$2\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9 - \omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^3 - \omega_{12}^2\omega_6^2\omega_{13}^2\omega_8\omega_5^2\omega_9^3 - 3\omega_{12}^2\omega_6^2\omega_{13}v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^3 + \omega_{12}\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9 +$$
$$\omega_{12}\omega_6\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2 + \omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_8\omega_5^2\omega_9^3 + 6\omega_{12}\omega_6^2\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_5\omega_9^3 - 3\omega_{12}\omega_6\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^2 - \omega_{12}^2\omega_6c_s^2\omega_{13}^2\omega_{14}\omega_5^2\omega_9^2 -$$
$$3\omega_{12}^2\omega_6\omega_{13}^2v_1^2\omega_8\omega_5^2\omega_9^3 + 3\omega_{12}^2\omega_6^2\omega_{13}^2v_1^2\omega_{14}\omega_5^2\omega_9^2 + \omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_9^2 + \omega_{12}^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2 + \omega_{12}^2\omega_6\omega_{13}\omega_{14}\omega_8\omega_5\omega_9^3 - 3\omega_{12}^2\omega_6v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^3 +$$
$$\omega_{12}^2\omega_6^2\omega_{13}^2\omega_8\omega_5^2\omega_9^3 + 6\omega_{12}^2\omega_6^2\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^2 - 3\omega_{12}^2\omega_6\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_5\omega_9^3 - \omega_{12}^2\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9 + \omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2 -$$
$$\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^3 - 3\omega_{12}^2\omega_6^2\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^3 + 3\omega_{12}^2\omega_6^2\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^2 - \omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^3 + 3\omega_{12}^2\omega_6^2\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^2 -$$
$$\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^3 + 3\omega_{12}\omega_6^2\omega_{13}^2v_1^2\omega_8\omega_5\omega_9^3 - 3\omega_{12}^2\omega_6^2\omega_{13}^2v_1^2\omega_8\omega_5^2\omega_9^2 + \omega_{12}^2\omega_6\omega_{13}^2\omega_{14}\omega_5^2\omega_9^3 - 3\omega_{12}^2\omega_6^2\omega_{13}v_1^2\omega_{14}\omega_8\omega_5^2\omega_9 +$$
$$2\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2 + \omega_{12}\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^3 + 2\omega_{12}^2\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2 + 3\omega_{12}^2\omega_6^2\omega_{13}^2v_1^2\omega_5\omega_9^3 - 2\omega_{12}^2\omega_6c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2 + \omega_{12}\omega_6^2\omega_{13}^2\omega_8\omega_5^2\omega_9^3 +$$
$$6\omega_{12}^2\omega_6\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_5\omega_9^2 + 3\omega_{12}^2\omega_6^2\omega_{13}v_1^2\omega_8\omega_5^2\omega_9^2 - \omega_{12}^2\omega_6^2\omega_{13}^2\omega_{14}\omega_5^2\omega_9^2 + \omega_{12}^2\omega_6^2\omega_{13}\omega_{14}\omega_8\omega_5\omega_9^2 - 3\omega_{12}^2\omega_6^2v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^2 + \omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_5\omega_9^3 +$$
$$\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_{14}\omega_8\omega_5\omega_9^3 + 3\omega_6^2\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^3 - \omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9 - 2\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^2 + \omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_5^2\omega_9^2 +$$
$$\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^3 - 3\omega_{12}^2\omega_6c_s^2\omega_{13}^2\omega_8\omega_5^2\omega_9^3 - 2\omega_{12}\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2 - \omega_{12}^2\omega_6\omega_{13}^2v_1^2\omega_{14}\omega_5^2\omega_9^2 + \omega_{12}^2\omega_6^2\omega_{13}^2v_1^2\omega_8\omega_5^2\omega_9^3 + \omega_{12}\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_9^3$$

$$C_{33} = 2\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_8^2\omega_5^3\omega_9^3 + 2\omega_{12}^2\omega_6c_s^2\omega_{13}^2\omega_7\omega_8\omega_5^3\omega_9^3 + 2\omega_{12}^2\omega_6^2\omega_{13}^2\omega_7\omega_8^2\omega_5^3\omega_9^2 + 4\omega_{12}^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^3\omega_9^3 + 4\omega_{12}^2\omega_6^2\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8^2\omega_5^3 -$$
$$2\omega_{12}\omega_6^2\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8^2\omega_5\omega_9^3 - \omega_{12}^2\omega_6^2\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^3 - 2\omega_{12}\omega_6\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8^2\omega_5^3\omega_9^2 + 4\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3 -$$
$$2\omega_{12}^2\omega_6^2\omega_{13}\omega_7v_1^2\omega_{14}\omega_8^2\omega_5^3\omega_9 - 2\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_{14}\omega_8^2\omega_5\omega_9^3 + 3\omega_{12}^2\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2 + 12\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3 - 2\omega_{12}^2\omega_6\omega_7v_1^2\omega_{14}\omega_8^2\omega_5^3\omega_9^3 +$$
$$15\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^3 + 2\omega_{12}^2\omega_6^2\omega_{13}\omega_7\omega_8^2\omega_5^3\omega_9^3 + 2\omega_{12}^2\omega_6\omega_{13}^2\omega_7v_1^2\omega_8\omega_5^3\omega_9^3 + 2\omega_{12}^2\omega_6^2\omega_{13}^2\omega_7v_1^2\omega_8^2\omega_5^3\omega_9^3 + 2\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_7\omega_8^2\omega_5^3\omega_9^2 -$$
$$9\omega_{12}^2\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2 + 2\omega_{12}\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^3 + 4\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2 - 3\omega_{12}^2\omega_6\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8^2\omega_5^3\omega_9^2 +$$
$$2\omega_{12}^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^3 + 2\omega_{12}\omega_6\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8^2\omega_5^3\omega_9^3 + \omega_{12}^2\omega_6^2\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8^2\omega_5\omega_9^3 - 2\omega_{12}^2\omega_6^2\omega_{13}^2\omega_7\omega_8^2\omega_5^3\omega_9^3 - 2\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_8^2\omega_5^3\omega_9^2 -$$
$$2\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_7\omega_8^2\omega_5^3\omega_9^3 - 2\omega_{12}^2\omega_6^2\omega_{13}^2\omega_7v_1^2\omega_8^2\omega_5^3\omega_9^2 - 6\omega_{12}^2\omega_6c_s^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^3 - 13\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^3 - 2\omega_{12}\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2 -$$
$$2\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^3 - 4\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2 - 2\omega_{12}^2\omega_6^2\omega_{13}\omega_7\omega_8^3\omega_5^2\omega_9^2 + 2\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3 + 2\omega_{12}\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9 -$$
$$2\omega_{12}^2\omega_{13}\omega_7v_1^2\omega_{14}\omega_8^2\omega_5^3\omega_9^3 - 4\omega_{12}^2\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3 - \omega_{12}^2\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^3\omega_9^3 - 2\omega_{12}^2\omega_6c_s^2\omega_{13}^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3 - 4\omega_{12}\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3 -$$

$$
\begin{aligned}
&4\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^3\omega_9^2 - 2\omega_{12}\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3 - 8\omega_{12}^2\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2 - 2\omega_{12}^2\omega_6^2\omega_{13}^2\omega_7v_1^2\omega_8^2\omega_5^2\omega_9^3 - \\
&4\omega_{12}\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2 + 2\omega_{12}^2\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_5^3\omega_9^3 + 2\omega_{12}^2\omega_6\omega_{13}^2\omega_7\omega_8^2\omega_5^3\omega_9^3 - \omega_{12}^2\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^3 - \omega_{12}^2\omega_6^2\omega_{13}\omega_7v_1^2\omega_{14}\omega_8^2\omega_5^3\omega_9^3 + \\
&2\omega_{12}^2\omega_6\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8^2\omega_5^3\omega_9 + 2\omega_{12}^2\omega_6^2\omega_{13}\omega_7v_1^2\omega_8^2\omega_5^3\omega_9^2 + 9\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^3 + \omega_{12}^2\omega_6\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3 + \\
&\omega_{12}^2\omega_6^2\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8\omega_5^3\omega_9^3 - 2\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_8^2\omega_5^2\omega_9^3 - 3\omega_{12}^2\omega_6\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^3 - \omega_{12}^2\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3 - 2\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^3\omega_9^3 + \\
&2\omega_{12}\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^3 + \omega_{12}^2\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^3 - 2\omega_{12}^2\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9 + 11\omega_{12}^2\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3 - 2\omega_{12}^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2 + \\
&8\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^3\omega_9^3 + 6\omega_{12}^2\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9 - 8\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_9^3 + 2\omega_{12}^2\omega_6^2\omega_{13}^2\omega_7\omega_8^2\omega_5^2\omega_9^3 - 2\omega_{12}^2\omega_6^2\omega_{13}\omega_7v_1^2\omega_8^2\omega_5^3\omega_9^3 - \\
&2\omega_{12}\omega_6\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3 + 3\omega_{12}^2\omega_6^2\omega_{13}\omega_7v_1^2\omega_{14}\omega_8^2\omega_5^3\omega_9^2 - 2\omega_{12}^2\omega_6\omega_{13}\omega_7\omega_8^2\omega_5^3\omega_9^3 - 2\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_5^3\omega_9^3 - 2\omega_{12}^2\omega_6\omega_{13}^2\omega_7\omega_8\omega_5^3\omega_9^3 + \\
&2\omega_{12}\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2 + 2\omega_6^2\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8^2\omega_5^3\omega_9^3 + 3\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2 - 2\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^3 - \\
&2\omega_{12}\omega_6^2\omega_{13}^2\omega_7v_1^2\omega_8^2\omega_5^3\omega_9^3 + 2\omega_{12}^2\omega_6^2\omega_{13}^2\omega_7v_1^2\omega_8\omega_5^2\omega_9^3 - 4\omega_{12}^2\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^3 - 4\omega_{12}^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3 + 2\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_8\omega_5^2\omega_9^3 - \\
&2\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_8^2\omega_5^3\omega_9^3 + \omega_{12}^2\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^3 - 2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2 + 4\omega_{12}\omega_6^2\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8^2\omega_5^3\omega_9^2 - 4\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3 - \\
&6\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9 - 4\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9 + 2\omega_{12}^2\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^3 + 4\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2 + \\
&2\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3 + 2\omega_{12}\omega_6^2\omega_{13}^2\omega_7v_1^2\omega_8^2\omega_5^3\omega_9^2 - 2\omega_6^2\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8^2\omega_5^3\omega_9^2 + \omega_{12}^2\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3 + 2\omega_{12}^2\omega_6c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^3\omega_9^3 + \\
&5\omega_{12}^2\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9 - 6\omega_{12}^2c_s^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^3 - 2\omega_{12}\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^3 + 2\omega_{12}^2\omega_6\omega_{13}\omega_7v_1^2\omega_8^2\omega_5^3\omega_9^3 + 2\omega_{12}^2\omega_6\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^3 + \\
&4\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2 + \omega_{12}^2\omega_6^2\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8^2\omega_5^3\omega_9^2 - 2\omega_{12}\omega_6^2\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8^2\omega_5^3\omega_9^3 + 2\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_8^2\omega_5^3\omega_9^2 - 2\omega_{12}\omega_6^2\omega_{13}^2\omega_7\omega_8^2\omega_5^2\omega_9^3 + \\
&2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^3 - 3\omega_{12}^2\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2 - 2\omega_{12}^2\omega_6^2\omega_{13}^2\omega_7\omega_8\omega_5^2\omega_9^3 - 3\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^3 - \omega_{12}^2\omega_6^2\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3 - \\
&\omega_{12}^2\omega_6\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8\omega_5^3\omega_9^3 - 5\omega_{12}^2\omega_6^2\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8^2\omega_5^3\omega_9 + 3\omega_{12}^2\omega_6\omega_{13}\omega_7v_1^2\omega_{14}\omega_8^2\omega_5^3\omega_9^3 - 2\omega_{12}^2\omega_6c_s^2\omega_{13}^2\omega_7\omega_8^2\omega_5^3\omega_9^3 + \\
&2\omega_{12}^2\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9 + 2\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_8^2\omega_5^2\omega_9^3 - 2\omega_{12}\omega_6^2\omega_{13}^2\omega_7\omega_8^2\omega_5^3\omega_9^2 - 2\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_8\omega_5^3\omega_9^3 - 2\omega_{12}^2\omega_6^2\omega_{13}^2\omega_7v_1^2\omega_8\omega_5^3\omega_9^3 + \\
&2\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2 - 2\omega_{12}^2\omega_6^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^3 + 2\omega_{12}\omega_6^2\omega_{13}^2\omega_7v_1^2\omega_8^2\omega_5^2\omega_9^3 + 4\omega_{12}^2\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^3\omega_9^2 + 4\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3 + \\
&8\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2 + 6\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^3 - 6\omega_{12}^2\omega_6^2c_s^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2 - 2\omega_{12}^2\omega_6\omega_{13}^2\omega_7v_1^2\omega_8^2\omega_5^3\omega_9^3 - 2\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9 + \\
&2\omega_{12}\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^3 + 2\omega_{12}^2\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8^2\omega_5^3\omega_9^2 + 2\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_5^2\omega_9^3 + 2\omega_{12}^2\omega_6^2\omega_7v_1^2\omega_{14}\omega_8^2\omega_5^3\omega_9^3 - \omega_{12}^2\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2 - \\
&2\omega_6^2\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3 - 2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3 + 2\omega_{12}\omega_6^2\omega_{13}^2\omega_7\omega_8^2\omega_5^3\omega_9^3 + 2\omega_{12}^2\omega_6^2\omega_{13}^2\omega_7\omega_8\omega_5^3\omega_9^3 + 6\omega_{12}^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2 - \\
&2\omega_{12}\omega_6^2\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8^2\omega_5^3\omega_9 + 4\omega_{12}\omega_6^2\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3 + 9\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2 - 2\omega_{12}^2\omega_6^2\omega_7v_1^2\omega_{14}\omega_8^2\omega_5^3\omega_9^2 + \\
&2\omega_{12}\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3 + \omega_{12}^2\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^3\omega_9^3 + 2\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3 + 2\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_7\omega_8^2\omega_5^3\omega_9^3 + 6\omega_{12}^2\omega_6^2c_s^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^3 - \\
&15\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9 + 2\omega_{12}^2\omega_6^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2 - 2\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^3 - 8\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3 - 11\omega_{12}^2\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^3\omega_9^3
\end{aligned}
$$

$$
\begin{aligned}
C_{34} = \;&2\omega_{12}^2\omega_6^3\omega_{13}^2\omega_7v_1^2\omega_8\omega_5\omega_9^3 + 2\omega_6^3\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3 - 2\omega_{12}^2\omega_6^3\omega_{13}^2\omega_7v_1^2\omega_8^2\omega_5^2\omega_9^2 - 2\omega_{12}^2\omega_6^3c_s^2\omega_{13}\omega_7\omega_8^2\omega_5^2\omega_9^3 + 2\omega_{12}^2\omega_6\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3 + \\
&2\omega_{12}^2\omega_6^3\omega_{13}^2\omega_7\omega_8\omega_5^2\omega_9^3 - 11\omega_{12}^2\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^3 - \omega_{12}^2\omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^3 + 4\omega_{12}^2\omega_6^2\omega_{13}\omega_7v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3 - \omega_{12}^2\omega_6^2\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^3 + \\
&3\omega_{12}^2\omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^2 - 2\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3 - 3\omega_{12}\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3 + 2\omega_{12}\omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9 + 2\omega_{12}\omega_6^3\omega_{13}^2\omega_7\omega_8^2\omega_5^2\omega_9^3 + \\
&3\omega_{12}^2\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2 - 6\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2 + 2\omega_{12}^2\omega_6^3\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2 - 2\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8^2\omega_5\omega_9^3 + 11\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^3 - \\
&2\omega_{12}^2\omega_6^3c_s^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9 - 2\omega_{12}^2\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_8^2\omega_5^2\omega_9^2 - 2\omega_{12}^2\omega_6^3\omega_{13}\omega_7v_1^2\omega_{14}\omega_8^2\omega_5\omega_9^2 + 2\omega_{12}^2\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_8\omega_5\omega_9^3 + 3\omega_{12}\omega_6^3\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2 + \\
&4\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2 + 2\omega_{12}^2\omega_6^3\omega_{13}^2\omega_7\omega_8^2\omega_5\omega_9^3 + 2\omega_{12}^2\omega_6^2\omega_{13}\omega_7v_1^2\omega_8^2\omega_5^2\omega_9^3 - 2\omega_{12}\omega_6^3\omega_{13}^2\omega_7\omega_8^2\omega_5^2\omega_9^2 + 9\omega_{12}\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2 + \\
&4\omega_{12}^2\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2 + \omega_{12}^2\omega_6^2\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8^2\omega_5\omega_9^3 + 2\omega_{12}^2\omega_6^3c_s^2\omega_{13}\omega_7\omega_8^2\omega_5^2\omega_9^2 + 2\omega_{12}^2\omega_6^3\omega_{13}^2\omega_7v_1^2\omega_8^2\omega_5^2\omega_9^3 + 2\omega_{12}^2\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^3 + \\
&6\omega_{12}^2\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_9^2 - 2\omega_6^3\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2 + 2\omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^3 - \omega_{12}\omega_6^3\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3 + \omega_{12}^2\omega_6^3\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2 + \\
&2\omega_{12}^2\omega_6^3\omega_{13}\omega_7v_1^2\omega_{14}\omega_8^2\omega_5\omega_9^3 + 2\omega_{12}^2\omega_6^3\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8^2\omega_9^2 - 13\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^3 + 4\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^3 - \\
&8\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^2 - \omega_{12}^2\omega_6^3\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8\omega_5\omega_9^3 + 2\omega_{12}^2\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_8^2\omega_5^2\omega_9^3 + 2\omega_{12}\omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_9^3 + 2\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^3 - \\
&2\omega_{12}^2\omega_6^3\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3 + 6\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3 - 2\omega_{12}^2\omega_6c_s^2\omega_{13}^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3 - 2\omega_{12}^2\omega_6^2\omega_{13}\omega_7\omega_8^2\omega_5^2\omega_9^3 - 5\omega_{12}^2\omega_6^3\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9 - \\
&2\omega_{12}^2\omega_6^3\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^3 - 4\omega_{12}^2\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2 + 2\omega_{12}\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_8^2\omega_5\omega_9^3 - 2\omega_{12}^2\omega_6^3c_s^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3 - 2\omega_{12}^2\omega_6^2\omega_{13}^2\omega_7v_1^2\omega_8^2\omega_5^2\omega_9^3 + \\
&4\omega_{12}^2\omega_6^3\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8^2\omega_5^2 - 2\omega_{12}^2\omega_6^3\omega_{13}\omega_7v_1^2\omega_8^2\omega_5^2\omega_9^3 - \omega_{12}^2\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^3 - 6\omega_{12}\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9 + \omega_{12}\omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3 + \\
&2\omega_{12}^2\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_5\omega_9^3 + 12\omega_{12}^2\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2 + \omega_{12}^2\omega_6\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3 - 2\omega_{12}^2\omega_6^3c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^3 - 2\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_8^2\omega_5^2\omega_9^3 + \\
&2\omega_{12}\omega_6^3\omega_{13}^2\omega_7v_1^2\omega_8^2\omega_5\omega_9^3 + 2\omega_{12}^2\omega_6^3\omega_{13}\omega_7v_1^2\omega_8^2\omega_5^2\omega_9^2 - \omega_{12}^2\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3 + \omega_{12}^2\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^3 + 15\omega_{12}^2\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3 + \\
&2\omega_{12}^2\omega_6^3\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^2 + 4\omega_{12}^2\omega_6^3c_s^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2 + 2\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_7\omega_8^2\omega_5^2\omega_9^3 - 2\omega_{12}\omega_6^3\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9 - 4\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_9^3 + \\
&2\omega_{12}^2\omega_6^2\omega_{13}^2\omega_7\omega_8^2\omega_5^2\omega_9^3 - 3\omega_{12}\omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2 - 15\omega_{12}^2\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9 - 2\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^3 - 2\omega_{12}^2\omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9 - \\
&2\omega_{12}^2\omega_6^2\omega_7v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3 - 2\omega_{12}\omega_6^3\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8^2\omega_9^3 - 2\omega_{12}^2\omega_6^3\omega_{13}\omega_7v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9 + 2\omega_{12}^2\omega_6^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3 + 2\omega_{12}^2\omega_6^2\omega_{13}^2\omega_7v_1^2\omega_8\omega_5^2\omega_9^3 - \\
&2\omega_{12}^2\omega_6^3c_s^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^2 + 2\omega_{12}\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_8^2\omega_5^2\omega_9^2 - 4\omega_{12}^2\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^3 - 4\omega_{12}^2\omega_6^3\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2 - 8\omega_{12}^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3 + \\
&2\omega_{12}\omega_6^3\omega_{13}^2\omega_7v_1^2\omega_8^2\omega_5^2\omega_9^2 + 2\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_8\omega_5^2\omega_9^3 - 6\omega_{12}\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_9^3 + 5\omega_{12}^2\omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9 + 6\omega_{12}^2\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9 + \\
&4\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3 - 2\omega_{12}^2\omega_6\omega_{13}\omega_7v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3 - 2\omega_{12}\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_8^2\omega_5^2\omega_9^3 - 4\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9 + \\
&2\omega_{12}^2\omega_6^3c_s^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^3 - 2\omega_{12}^2\omega_6^2c_s^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3 + 2\omega_{12}^2\omega_6^3\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3 + 2\omega_{12}^2\omega_6^3\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8^2\omega_5\omega_9 + \\
&6\omega_{12}^2\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^3 - 4\omega_{12}^2\omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2 + \omega_{12}^2\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3 + 2\omega_{12}^2\omega_6^3c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^3 - 2\omega_{12}^2\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_5^2\omega_9^3 - \\
&3\omega_{12}\omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^3 - 2\omega_{12}^2\omega_6^2\omega_{13}^2\omega_7\omega_8\omega_5^2\omega_9^3 - 2\omega_{12}\omega_6^3\omega_{13}^2\omega_7v_1^2\omega_8^2\omega_5^2\omega_9^3 - \omega_{12}^2\omega_6^2\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3 - 4\omega_{12}^2\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2 - \\
&2\omega_{12}^2\omega_6^3\omega_7v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2 - 2\omega_{12}^2\omega_6^3\omega_{13}^2\omega_7\omega_8^2\omega_5^2\omega_9^3 - 2\omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3 - 4\omega_{12}^2\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3 - 2\omega_{12}^2\omega_6^3\omega_{13}^2\omega_7v_1^2\omega_8^2\omega_5\omega_9^3 + \\
&2\omega_{12}^2\omega_6^3c_s^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3 + \omega_{12}^2\omega_6^3\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^3 - 2\omega_{12}^2\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_8^2\omega_5\omega_9^3 - 4\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3 + 8\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2 + \\
&2\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^3 + 3\omega_{12}\omega_6^3\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8^2\omega_5\omega_9^3 - 3\omega_{12}^2\omega_6^3\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8^2\omega_5\omega_9^2 - 2\omega_{12}^2\omega_6^3\omega_{13}\omega_7v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3 - 2\omega_{12}^2\omega_6^3\omega_{13}\omega_7\omega_8^2\omega_5^2\omega_9^2 - \\
&6\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^3 + 2\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_5^2\omega_9^3 - 2\omega_{12}^2\omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_9^2 - 2\omega_{12}^2\omega_6^3c_s^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2 - 2\omega_{12}^2\omega_6^3\omega_{13}^2\omega_7v_1^2\omega_8\omega_5^2\omega_9^3 - \\
&2\omega_6^3\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8^2\omega_5\omega_9^3 + 2\omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2 + 4\omega_{12}^2\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_9^3 + 9\omega_{12}\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^3 - 2\omega_{12}\omega_6^3\omega_{13}^2\omega_7\omega_8^2\omega_5\omega_9^3 + \\
&2\omega_{12}^2\omega_6^3\omega_7v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3 + 2\omega_{12}^2\omega_6^3\omega_{13}^2\omega_7\omega_8^2\omega_5^2\omega_9^2 - 9\omega_{12}^2\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^2 - \omega_{12}^2\omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2 + \omega_{12}^2\omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^3 - \\
&2\omega_{12}^2\omega_6^2\omega_{13}\omega_7v_1^2\omega_{14}\omega_8^2\omega_5\omega_9^3 - 2\omega_{12}^2\omega_6^3\omega_{13}^2\omega_7\omega_8\omega_5\omega_9^3 + 8\omega_{12}^2\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^3 + 2\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3 + 2\omega_{12}^2\omega_6^3\omega_{13}\omega_7\omega_8^2\omega_5^2\omega_9^3 - \\
&2\omega_{12}^2\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_8\omega_5^2\omega_9^3 + 4\omega_{12}^2\omega_6^3\omega_{13}\omega_7v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2 + 2\omega_{12}^2\omega_6^3\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9 - 8\omega_{12}^2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3 + 4\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2
\end{aligned}
$$

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

$$
\begin{aligned}
C_{36} = \;&-4\omega_{12}^2\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^3\omega_9 + 12\omega_{12}^2\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^2 + 2\omega_{12}^2\omega_6^2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^2 + 4\omega_{12}^2\omega_6^2\omega_7\omega_8^2\omega_5^3\omega_9^2 - 4\omega_{12}^2\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2 - \\
&4\omega_{12}^2\omega_6\omega_7\omega_8^2\omega_5^3\omega_9^2 - 2\omega_{12}^2\omega_6^2\omega_{13}\omega_{14}\omega_8^2\omega_5\omega_9^2 + 8\omega_{12}^2\omega_6\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2 + 4\omega_{12}\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2 - 10\omega_{12}^2\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2 + \\
&2\omega_{12}^2\omega_6\omega_{13}\omega_{14}\omega_8\omega_5^3\omega_9^2 - 4\omega_{12}^2\omega_6^2\omega_{13}\omega_7\omega_8^2\omega_5^3\omega_9^2 + 4\omega_{12}^2\omega_6^2\omega_{13}\omega_7\omega_8^2\omega_5^3\omega_9 + 4\omega_{12}^2\omega_6\omega_{13}\omega_7\omega_8^2\omega_5^3\omega_9^2 - 2\omega_{12}^2\omega_6^2\omega_{13}\omega_{14}\omega_8\omega_5^3\omega_9^2 - \\
&4\omega_{12}^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2 - 8\omega_{12}^2\omega_6\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9 - 8\omega_{12}^2\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_9^2 + 4\omega_{12}^2\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9 - 8\omega_{12}\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9 -
\end{aligned}
$$

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

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

$C_{38} = -12\omega_6^3\omega_{13}\omega_7v_1^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9 + 12\omega_{12}\omega_6^3\omega_7v_1^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15} - 12\omega_{12}\omega_6^3c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9 - 24\omega_{12}\omega_6^3\omega_{13}\omega_7^2v_1^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15} +$
$12\omega_{12}\omega_6^3\omega_{13}\omega_7v_1^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15} + 12\omega_{12}\omega_6^3c_s^2\omega_{13}\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 12\omega_6^3\omega_{13}\omega_7^2v_1^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_9 - 36\omega_{12}\omega_6^3\omega_{13}\omega_7^2v_2^2\omega_{17}\omega_{14}\omega_8\omega_5^2\omega_{15}\omega_9 -$
$12\omega_{12}\omega_6^3\omega_{13}\omega_7^2v_2^2\omega_{14}\omega_8^2\omega_5^2\omega_9 + 18\omega_{12}\omega_6\omega_{13}\omega_7^2v_2^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9 - 12\omega_{12}\omega_{13}\omega_7^2v_2^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9 - 24\omega_{12}\omega_6^3c_s^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_{15}\omega_9 +$
$12\omega_{12}\omega_6^3\omega_{13}\omega_7v_1^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9 - 12\omega_6^3c_s^2\omega_{13}\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 12\omega_{12}\omega_6^3c_s^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 12\omega_{12}\omega_6^3c_s^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15} -$
$12\omega_6^3c_s^2\omega_{13}\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_9 + 6\omega_{12}\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9 - 18\omega_{12}\omega_6^3c_s^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_{15}\omega_9 -$
$24\omega_{12}\omega_6^2\omega_{13}\omega_7^2v_2^2\omega_{17}\omega_{14}\omega_8^2\omega_5\omega_{15}\omega_9 + 24\omega_{12}\omega_6^3c_s^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5\omega_{15}\omega_9 + 6\omega_{12}\omega_6^3\omega_{13}\omega_7^2v_2^2\omega_{14}\omega_8^2\omega_5^3\omega_9 - 12\omega_6^3c_s^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9 -$
$\omega_{12}\omega_6^3c_s^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9 - 12\omega_{12}\omega_6^2c_s^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_9 + 12\omega_{12}\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_9 - 12\omega_{12}\omega_6^3\omega_{13}\omega_7^2v_2^2\omega_{14}\omega_8\omega_5^2\omega_{15}\omega_9 -$
$6\omega_{12}\omega_6^2\omega_{13}\omega_7^2v_2^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9 - 12\omega_{12}\omega_6^3c_s^2\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9 + 12\omega_{12}\omega_6^3c_s^2\omega_{13}\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_9 -$
$12\omega_{12}\omega_6^2\omega_{13}\omega_7^2v_2^2\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9 + 12\omega_{12}\omega_6^3c_s^2\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15} + 12\omega_6^3c_s^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15} + 12\omega_{12}\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5\omega_{15}\omega_9 -$
$6\omega_{12}\omega_6^3c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9 + 24\omega_{12}\omega_6^3\omega_{13}\omega_7^2v_1^2\omega_{17}\omega_{14}\omega_8\omega_5^2\omega_{15} - 12\omega_{12}\omega_6^2\omega_{13}\omega_7^2v_1^2\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_9 - 12\omega_{12}\omega_6^2\omega_{13}v_1^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9 -$
$24\omega_{12}\omega_6^3\omega_{13}\omega_7v_1^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_{15} - 12\omega_{12}\omega_6^3\omega_7^2v_1^2\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 12\omega_{12}\omega_6^3\omega_{13}\omega_7v_1^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9 - 12\omega_{12}\omega_6^3\omega_{13}v_1^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_{15}\omega_9 +$
$6\omega_{12}\omega_6^3c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^3\omega_9 - 12\omega_{12}\omega_6^3\omega_{13}\omega_7^2v_1^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_9 + 12\omega_{12}\omega_6^2\omega_7v_1^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9 + 12\omega_{12}\omega_6^3c_s^2\omega_{13}\omega_7^2\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_9 +$
$12\omega_{12}\omega_6^2\omega_{13}\omega_7^2v_2^2\omega_{17}\omega_{14}\omega_8\omega_5^2\omega_{15}\omega_9 - 6\omega_{12}\omega_6^3\omega_{13}\omega_7^2v_2^2\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9 + 12\omega_6^3\omega_{13}\omega_7v_1^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15} + 12\omega_{12}\omega_6^3c_s^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^2\omega_{15}\omega_9 -$
$6\omega_{12}\omega_6c_s^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9 - 12\omega_{12}\omega_6^3\omega_{13}\omega_7^2v_1^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_9 - 12\omega_{12}\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9 - 12\omega_{12}\omega_6^3\omega_{13}\omega_7^2v_1^2\omega_{17}\omega_{14}\omega_5^3\omega_{15}\omega_9 -$
$48\omega_{12}\omega_6^3\omega_{13}\omega_7^2v_1^2\omega_{17}\omega_{14}\omega_8\omega_5^2\omega_{15}\omega_9 + 12\omega_{12}\omega_6^3\omega_{13}\omega_7^2v_2^2\omega_{17}\omega_{14}\omega_5^2\omega_{15}\omega_9 + 36\omega_{12}\omega_6^3\omega_{13}\omega_7v_1^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_{15}\omega_9 +$
$12\omega_{12}\omega_6^3\omega_7^2v_1^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_9 + 12\omega_{12}\omega_6^2\omega_{13}\omega_7^2v_2^2\omega_{17}\omega_{14}\omega_5^3\omega_{15}\omega_9 - 12\omega_{12}\omega_6^3c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_{15}\omega_9 - 18\omega_{12}\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_{15}\omega_9 +$
$12\omega_{12}\omega_6\omega_{13}\omega_7^2v_2^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9 + 12\omega_{12}\omega_6^2\omega_{13}\omega_7^2v_2^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_9 + 10\omega_{12}\omega_6^3c_s^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9 + 12\omega_6^3c_s^2\omega_{13}\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_9 +$
$12\omega_{12}\omega_6^3c_s^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_9 - 12\omega_6^3\omega_{13}\omega_7^2v_1^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_9 - 12\omega_{12}\omega_6^2\omega_7^2v_1^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_9 + 12\omega_{12}\omega_6c_s^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9 -$
$12\omega_{12}\omega_6\omega_{13}\omega_7^2v_2^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_{15}\omega_9 + 12\omega_{12}\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9 + 12\omega_{12}\omega_6^3\omega_{13}\omega_7^2v_2^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9 -$
$48\omega_{12}\omega_6^2\omega_{13}\omega_7^2v_1^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9 + 24\omega_{12}\omega_6^2\omega_{13}\omega_7^2v_1^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15} - 24\omega_{12}\omega_6^3\omega_{13}\omega_7v_1^2\omega_{17}\omega_{14}\omega_8^2\omega_5\omega_{15}\omega_9 -$
$24\omega_{12}\omega_6^2\omega_{13}\omega_7v_1^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15} + 12\omega_{12}\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_9 + 12\omega_6^3\omega_{13}\omega_7v_1^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_{15}\omega_9 + 24\omega_{12}\omega_6^3\omega_{13}\omega_7^2v_1^2\omega_{17}\omega_{14}\omega_8\omega_5\omega_{15}\omega_9 +$
$36\omega_{12}\omega_6^2\omega_{13}\omega_7v_1^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9 + 12\omega_{12}\omega_6^3\omega_{13}\omega_7^2v_1^2\omega_{17}\omega_{14}\omega_5^2\omega_{15}\omega_9 - 12\omega_{12}\omega_6^3\omega_{13}\omega_7^2v_2^2\omega_{17}\omega_{14}\omega_5^3\omega_{15}\omega_9 +$
$30\omega_{12}\omega_6^3\omega_{13}\omega_7^2v_1^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9 + 12\omega_{12}\omega_6^3\omega_{13}\omega_7^2v_1^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_9 + 12\omega_{12}\omega_6^2\omega_{13}\omega_7^2v_1^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_9 + 12\omega_{12}\omega_6^3c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9 +$
$12\omega_{12}\omega_6^2\omega_{13}\omega_7^2v_1^2\omega_{17}\omega_{14}\omega_5^3\omega_{15}\omega_9 - 18\omega_{12}\omega_6^3\omega_{13}\omega_7v_1^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9 + 6\omega_{12}\omega_6^2\omega_{13}\omega_7^2v_2^2\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9 - 12\omega_{12}\omega_6^3c_s^2\omega_{13}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_9 +$
$12\omega_{12}\omega_6^3c_s^2\omega_{13}\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 24\omega_{12}\omega_6^3\omega_{13}\omega_7^2v_2^2\omega_{17}\omega_{14}\omega_8\omega_5\omega_{15}\omega_9 - 6\omega_{12}\omega_6^2\omega_{13}\omega_7^2v_2^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_9 - 12\omega_{12}\omega_6^3c_s^2\omega_{13}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_9 -$
$12\omega_{12}\omega_6^3c_s^2\omega_{13}\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_9 - 24\omega_{12}\omega_6^2\omega_{13}\omega_7^2v_1^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9 + 12\omega_{12}\omega_6^2\omega_{13}\omega_7^2v_2^2\omega_{14}\omega_8^2\omega_5^2\omega_{15}\omega_9 - 12\omega_{12}\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_9 +$
$12\omega_{12}\omega_6^3\omega_{13}\omega_7^2v_1^2\omega_{17}\omega_{14}\omega_8\omega_5^2\omega_{15}\omega_9 - 12\omega_6^3\omega_{13}\omega_7^2v_1^2\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 12\omega_{12}\omega_6^3c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_{15}\omega_9 - 24\omega_{12}\omega_6\omega_{13}\omega_7v_1^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9 +$
$6\omega_{12}\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9 + 24\omega_{12}\omega_6\omega_{13}\omega_7^2v_1^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9 + 12\omega_{12}\omega_6^3\omega_{13}\omega_7^2v_1^2\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_9 + 12\omega_{12}\omega_6^3\omega_{13}v_1^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9 -$
$6\omega_{12}\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_9 + 12\omega_{12}\omega_6^3\omega_{13}\omega_7^2v_2^2\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9 + 24\omega_{12}\omega_6^2\omega_{13}\omega_7^2v_2^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_{15}\omega_9 -$
$2\omega_{12}\omega_6^3c_s^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_{15}\omega_9 + 12\omega_6^3c_s^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_{15}\omega_9 + 12\omega_{12}\omega_6^3c_s^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5\omega_{15}\omega_9 -$
$12\omega_{12}\omega_6^3c_s^2\omega_{13}\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_9 - 18\omega_{12}\omega_6^2c_s^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9 + 12\omega_{12}\omega_6^2c_s^2\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9$

$C_{39} = -3\omega_6\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 6\omega_6c_s^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 4\omega_{16}\omega_{10}^2\omega_7v_2^2\omega_5^2\omega_{15}^2 + 12c_s^2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 +$
$12c_s^2\omega_{16}\omega_{10}\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 12\omega_6c_s^2\omega_{16}\omega_{10}\omega_{17}\omega_8\omega_5\omega_{15}^2 - 2\omega_6\omega_{16}\omega_{10}^2\omega_7v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15} - 4\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 + 12\omega_6c_s^2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_5\omega_{15}^2 +$
$4\omega_6\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_5\omega_{15}^2 - 4\omega_6\omega_{16}\omega_{10}\omega_{17}\omega_8\omega_5\omega_{15}^2 - 12c_s^2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 2\omega_6\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 12\omega_6c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_5\omega_{15}^2 - 6\omega_6c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15} +$
$4\omega_6\omega_{10}^2v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 6\omega_6c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5^2\omega_{15}^2 - 2\omega_6\omega_{16}\omega_7v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 4\omega_6\omega_{10}^2\omega_{17}\omega_8\omega_5\omega_{15}^2 - 12c_s^2\omega_{10}^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 +$
$2\omega_6\omega_{16}\omega_{10}^2\omega_7v_2^2\omega_8\omega_5^2\omega_{15}^2 + 9\omega_6c_s^2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 2\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5^2\omega_{15}^2 - 4\omega_{16}\omega_{10}^2\omega_7v_2^2\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_6\omega_{16}\omega_{10}^2\omega_7v_2^2\omega_8\omega_5^2\omega_{15} +$
$12\omega_6c_s^2\omega_{10}^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 3\omega_6\omega_{10}^2\omega_7v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 2\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5^2\omega_{15}^2 + 2\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5^2\omega_{15} + 2\omega_6\omega_{16}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 -$
$8\omega_6\omega_{16}\omega_{10}\omega_7v_2^2\omega_{17}\omega_8\omega_5\omega_{15}^2 - 4\omega_6\omega_{16}\omega_{10}\omega_7v_2^2\omega_{17}\omega_5\omega_{15}^2 - 4\omega_{10}^2v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 6\omega_6c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5^2\omega_{15} - 6\omega_6c_s^2\omega_{16}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 -$
$4\omega_{16}\omega_{10}\omega_7v_2^2\omega_{17}\omega_5^2\omega_{15}^2 - 4\omega_6\omega_{16}\omega_{10}v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 2\omega_{16}\omega_{10}\omega_7v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 4\omega_6\omega_{10}\omega_7v_2^2\omega_{17}\omega_8\omega_5\omega_{15}^2 - 9\omega_6c_s^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 -$
$4\omega_6\omega_{16}\omega_{10}^2\omega_7v_2^2\omega_5^2\omega_{15}^2 + 4\omega_{10}^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 4\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_5^2\omega_{15}^2 + 3\omega_6\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 12\omega_6c_s^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 -$
$4\omega_{16}\omega_{10}\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 2\omega_6\omega_{10}\omega_7v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 12\omega_6c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5 + 4\omega_{16}\omega_{10}\omega_7v_2^2\omega_{17}\omega_8\omega_5\omega_{15}^2 + 6c_s^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 +$
$12c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_5^2\omega_{15}^2 - 4\omega_6\omega_{16}\omega_{10}^2\omega_7v_2^2\omega_{17}\omega_8\omega_5 - 4\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_5\omega_{15}^2 + 4\omega_6\omega_{16}\omega_{10}^2\omega_7v_2^2\omega_5\omega_{15}^2 - 4\omega_6\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 +$
$4\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_5^2\omega_{15}^2 + 4\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5 + 12\omega_6c_s^2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_{15}^2 + 2\omega_{10}^2\omega_7v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 12\omega_6c_s^2\omega_{10}^2\omega_{17}\omega_8\omega_5\omega_{15}^2 +$
$4\omega_6\omega_{16}\omega_{10}^2\omega_7v_2^2\omega_8\omega_5\omega_{15} - 4\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5\omega_{15} - 4\omega_6\omega_{16}\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 + 4\omega_6\omega_{10}^2\omega_7v_2^2\omega_{17}\omega_8\omega_5\omega_{15}^2 + 12\omega_6c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5\omega_{15} +$
$12\omega_6c_s^2\omega_{16}\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 + 4\omega_6\omega_{16}\omega_{10}\omega_7v_2^2\omega_{17}\omega_5^2\omega_{15}^2 + 4\omega_{16}\omega_{10}v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 3\omega_6\omega_{16}\omega_{10}\omega_7v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 4\omega_6\omega_{16}\omega_{10}v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 -$
$4\omega_6\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_{15}^2 - 12\omega_6c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15} - 4\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_5\omega_{15}^2 + 4\omega_6\omega_{16}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 6c_s^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 +$
$4\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5\omega_{15}^2 - 2\omega_{16}\omega_{10}^2\omega_7v_2^2\omega_8\omega_5^2\omega_{15}^2 + 2\omega_{16}\omega_{10}^2\omega_7v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15} + 4\omega_6\omega_{16}\omega_{10}\omega_7v_2^2\omega_{17}\omega_8\omega_{15}^2 - 12\omega_6c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_{15} -$
$6c_s^2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 2\omega_6\omega_{16}\omega_{10}^2\omega_7v_2^2\omega_{17}\omega_8\omega_5^2 + 8\omega_6\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 - 12\omega_6c_s^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 + 2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 -$

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

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

$$C_{41} = -3\omega_6\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 2\omega_6 c_s^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 12\omega_{16}\omega_{10}^2\omega_7 v_2^2\omega_5^2\omega_{15}^2 + 4c_s^2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 +
4c_s^2\omega_{16}\omega_{10}\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 4\omega_6 c_s^2\omega_{16}\omega_{10}\omega_{17}\omega_8\omega_5\omega_{15}^2 - 6\omega_6\omega_{16}\omega_{10}^2\omega_7 v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15} - 4\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 +
4\omega_6\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_5\omega_{15}^2 - 4\omega_6\omega_{16}\omega_{10}\omega_{17}\omega_8\omega_5\omega_{15}^2 - 4c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15} - 4\omega_6 c_s^2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_5\omega_{15}^2 +
4\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15} - 4c_s^2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_5^2\omega_{15}^2 - 2\omega_6\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 4\omega_6 c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_5\omega_{15}^2 - 2\omega_6 c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15} +
12\omega_6\omega_{10}^2 v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 2\omega_6 c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5^2\omega_{15}^2 - 6\omega_6\omega_{16}\omega_7 v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 4\omega_6\omega_{10}^2\omega_{17}\omega_8\omega_5\omega_{15}^2 - 4c_s^2\omega_{10}^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 +
6\omega_6\omega_{16}\omega_{10}^2\omega_7 v_2^2\omega_8\omega_5^2\omega_{15}^2 + 3\omega_6 c_s^2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 2\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5^2\omega_{15}^2 - 12\omega_{16}\omega_{10}^2\omega_7 v_2^2\omega_{17}\omega_8\omega_5\omega_{15} - 6\omega_6\omega_{16}\omega_{10}^2\omega_7 v_2^2\omega_8\omega_5^2\omega_{15} +
4\omega_6 c_s^2\omega_{10}^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 9\omega_6\omega_{10}^2\omega_7 v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 2\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5^2\omega_{15}^2 + 2\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5^2\omega_{15} + 2\omega_6\omega_{16}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 -
24\omega_6\omega_{16}\omega_{10}\omega_7 v_2^2\omega_{17}\omega_8\omega_5\omega_{15}^2 - 12\omega_6\omega_{16}\omega_{10}\omega_7 v_2^2\omega_{17}\omega_5\omega_{15}^2 - 12\omega_{10}^2 v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 2\omega_6 c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5^2\omega_{15} - 2\omega_6 c_s^2\omega_{16}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 -
12\omega_{16}\omega_{10}\omega_7 v_2^2\omega_{17}\omega_5^2\omega_{15}^2 - 12\omega_6\omega_{16}\omega_{10} v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 6\omega_{16}\omega_{10}\omega_7 v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 12\omega_6\omega_{10}\omega_7 v_2^2\omega_{17}\omega_8\omega_5\omega_{15}^2 - 3\omega_6 c_s^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 -
12\omega_6\omega_{16}\omega_{10}^2\omega_7 v_2^2\omega_5^2\omega_{15}^2 + 4\omega_{10}^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 4\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_5^2\omega_{15}^2 + 3\omega_6\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 4\omega_6 c_s^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 -
4\omega_{16}\omega_{10}\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 6\omega_6\omega_{10}\omega_7 v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 4\omega_6 c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5 + 12\omega_{16}\omega_{10}\omega_7 v_2^2\omega_{17}\omega_8\omega_5\omega_{15}^2 + 2c_s^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 +
4c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_5^2\omega_{15}^2 - 12\omega_6\omega_{16}\omega_{10}^2\omega_7 v_2^2\omega_{17}\omega_8\omega_5 - 4\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_5\omega_{15}^2 + 12\omega_6\omega_{16}\omega_{10}^2\omega_7 v_2^2\omega_5\omega_{15}^2 - 4\omega_6\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 +
4\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_5^2\omega_{15}^2 + 4\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5 + 4\omega_6 c_s^2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_{15}^2 + 6\omega_{10}^2\omega_7 v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 4\omega_6 c_s^2\omega_{10}^2\omega_{17}\omega_8\omega_5\omega_{15}^2 +
12\omega_6\omega_{16}\omega_{10}^2\omega_7 v_2^2\omega_8\omega_5\omega_{15} - 4\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5\omega_{15} - 4\omega_6\omega_{16}\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 + 12\omega_6\omega_{10}^2\omega_7 v_2^2\omega_{17}\omega_8\omega_5\omega_{15}^2 + 4\omega_6 c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5\omega_{15} +
4\omega_6 c_s^2\omega_{16}\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 + 12\omega_6\omega_{16}\omega_{10}\omega_7 v_2^2\omega_{17}\omega_5^2\omega_{15}^2 + 12\omega_{16}\omega_{10} v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 9\omega_6\omega_{16}\omega_{10}\omega_7 v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 +
12\omega_6\omega_{16}\omega_{10} v_2^2\omega_{17}\omega_8\omega_5\omega_{15}^2 - 4\omega_6\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_{15}^2 - 4\omega_6 c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5\omega_{15}^2 + 8\omega_6 c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15} - 12\omega_6\omega_{10}^2 v_2^2\omega_{17}\omega_8\omega_5\omega_{15}^2 -
4\omega_6\omega_{10}^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 12\omega_6\omega_{16}\omega_7 v_2^2\omega_{17}\omega_8\omega_5\omega_{15}^2 - 4\omega_{16}\omega_{10}^2\omega_7\omega_5^2\omega_{15}^2 - 2c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5^2\omega_{15}^2 - 8\omega_6 c_s^2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 -
12\omega_6\omega_{16}\omega_{10}^2\omega_7 v_2^2\omega_8\omega_5\omega_{15}^2 + 4\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5\omega_{15}^2 - 6\omega_{16}\omega_{10}^2\omega_7 v_2^2\omega_8\omega_5^2\omega_{15}^2 + 6\omega_{16}\omega_{10}^2\omega_7 v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15} + 12\omega_6\omega_{16}\omega_{10}\omega_7 v_2^2\omega_{17}\omega_8\omega_{15}^2 -
4\omega_6 c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_{15} - 2c_s^2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 6\omega_6\omega_{16}\omega_{10}^2\omega_7 v_2^2\omega_{17}\omega_8\omega_5^2 + 8\omega_6\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 - 4\omega_6 c_s^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 +
2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 4\omega_6\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_5^2\omega_{15}^2 + 24\omega_6\omega_{16}\omega_{10}^2\omega_7 v_2^2\omega_{17}\omega_8\omega_5\omega_{15} - 4\omega_6 c_s^2\omega_{16}\omega_{10}\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 2\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2 -
8\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15} + 4\omega_6 c_s^2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_5^2\omega_{15}^2 + 2c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15} + 2\omega_6 c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2 + 4\omega_6\omega_{16}\omega_{10}\omega_{17}\omega_8\omega_5^2\omega_{15}^2 -
12\omega_6\omega_{16}\omega_{10}^2\omega_7 v_2^2\omega_{17}\omega_8\omega_{15} - 4\omega_6 c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_5^2\omega_{15}^2 + 4\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_{15} - 2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15} + 4\omega_6\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2$$

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

$9\omega_6^2c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 12\omega_6^2\omega_{16}\omega_7^2v_2^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 - 12\omega_6^2\omega_{10}^2\omega_7v_2^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 + \omega_6^2\omega_{16}\omega_{10}^2\omega_7^2v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2$

$C_{43} = -12\omega_6^2\omega_{22}c_s^2\omega_{13}^2v_1^2\omega_{18}\omega_9^3 + 36\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}^2\omega_{18} + 72\omega_6v_3^2\omega_{22}c_s^2\omega_{13}^2\omega_{18}\omega_9^2 - 12\omega_6^2v_3^2\omega_{13}\omega_{18}\omega_9^3 + 12\omega_6\omega_{22}c_s^2\omega_{13}^2\omega_{18}\omega_9^2 -$
$36\omega_6^2v_3^2\omega_{22}c_s^2\omega_{13}\omega_{18}\omega_9^2 + 12\omega_6^2c_s^2\omega_{13}^2v_1^2\omega_9^3 - 12\omega_6^2v_3^2\omega_{13}^2v_1^2\omega_{18}\omega_9^3 - 42\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_{18}\omega_9^3 + 24\omega_6^3v_3^2\omega_{22}\omega_{13}v_1^2\omega_{18}\omega_9^2 + 12\omega_6^3v_3^2\omega_{13}v_1^2\omega_{18}\omega_9^2 +$
$24\omega_6v_3^2\omega_{22}\omega_{13}\omega_{18}\omega_9^3 - 12\omega_6^2v_3^2\omega_{22}v_1^2\omega_{18}\omega_9^3 - 6\omega_6^3v_3^2\omega_{13}^2\omega_{18}\omega_9^3 - 96\omega_{22}c_s^4\omega_{13}^2\omega_{18}\omega_9^3 - 36\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}\omega_{18}\omega_9 - 18\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_{18}\omega_9^2 +$
$6\omega_6^3c_s^2\omega_{13}^2\omega_{18}\omega_9^2 + 12\omega_6^2v_3^2\omega_{13}^2v_1^2\omega_9^3 - 12\omega_6^2v_3^2\omega_{13}v_1^2\omega_{18}\omega_9^3 - 12\omega_6^3v_3^2\omega_{22}\omega_{13}v_1^2\omega_{18}\omega_9^3 - 12\omega_6^2c_s^2\omega_{13}\omega_{18}\omega_9^3 - 12\omega_6\omega_{22}c_s^2\omega_{13}^2\omega_{18}\omega_9^3 +$
$6\omega_6^3v_3^2\omega_{13}^2\omega_9^3 + 12\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_9^2 + 108\omega_6^2v_3^2\omega_{22}c_s^2\omega_{13}\omega_{18}\omega_9^3 + 18\omega_6^2\omega_{22}c_s^2\omega_{13}^2v_1^2\omega_{18}\omega_9^2 - 36\omega_6^3\omega_{22}c_s^4\omega_{13}^2\omega_{18}\omega_9 - 6\omega_6^3c_s^2\omega_{13}^2\omega_{18}\omega_9^3 -$
$12\omega_6^3\omega_{22}c_s^2\omega_{13}^2v_1^2\omega_{18}\omega_9 + 12\omega_6^2\omega_{22}c_s^2\omega_{18}\omega_9^3 + 6\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_{18}\omega_9^3 + 24\omega_6v_3^2\omega_{22}\omega_{13}^2v_1^2\omega_{18}\omega_9^2 + 6\omega_6^3\omega_{22}c_s^2\omega_{13}^2v_1^2\omega_9^2 - 36\omega_6^2v_3^2c_s^2\omega_{13}^2\omega_{18}\omega_9^3 +$
$6\omega_6^3v_3^2\omega_{13}^2\omega_{18}\omega_9^2 - 6\omega_6^3v_3^2\omega_{22}\omega_{13}^2\omega_{18}\omega_9^2 - 2\omega_6^3\omega_{22}c_s^2\omega_{13}^2v_1^2\omega_{18}\omega_9^2 + 12\omega_6^2v_3^2\omega_{22}\omega_{13}\omega_{18}\omega_9^2 - 12\omega_6^2v_3^2\omega_{13}^2\omega_9^3 - 36\omega_6^3v_3^2c_s^2\omega_{13}\omega_{18}\omega_9^3 +$
$12\omega_6^2v_3^2\omega_{22}\omega_{18}\omega_9^3 - 36\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}\omega_{18}\omega_9^3 + 36\omega_6^2v_3^2\omega_{22}\omega_{13}v_1^2\omega_{18}\omega_9^3 + 18\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}^2\omega_9^2 - 12\omega_6^2c_s^2\omega_{13}^2v_1^2\omega_{18}\omega_9^3 + 18\omega_6^3v_3^2\omega_{22}\omega_{13}^2\omega_{18}\omega_9 +$
$12\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_{18}\omega_9^3 + 12\omega_6^3\omega_{22}c_s^2v_1^2\omega_{18}\omega_9^3 + 12\omega_6^3c_s^2\omega_{13}v_1^2\omega_{18}\omega_9^2 - 12\omega_{6\omega_{22}}c_s^2\omega_{13}v_1^2\omega_{18}\omega_9^3 + 36\omega_6^3v_3^2\omega_{22}c_s^2\omega_{18}\omega_9^3 + 36\omega_6^3c_s^4\omega_{13}\omega_{18}\omega_9^2 -$
$6\omega_6^3\omega_{22}c_s^4\omega_{13}^2\omega_{18}\omega_9^2 + 12\omega_6^2v_3^2\omega_{22}\omega_{13}^2\omega_9^2 - 18\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_{18}\omega_9^2 - 36\omega_6^2c_s^4\omega_{13}^2\omega_{18}\omega_9^3 - 12\omega_6^3c_s^2\omega_{13}v_1^2\omega_{18}\omega_9^3 - 12\omega_6^3\omega_{22}c_s^2v_1^2\omega_{18}\omega_9^2 -$
$18\omega_6^3v_3^2c_s^2\omega_{13}^2\omega_9^3 - 12\omega_6^2v_3^2\omega_{22}\omega_{13}^2v_1^2\omega_9^2 - 12\omega_6^2v_3^2\omega_{22}\omega_{13}v_1^2\omega_{18}\omega_9^2 + 72\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}\omega_{18}\omega_9^2 + 12\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_{18}\omega_9 + 36\omega_6^3v_3^2c_s^2\omega_{13}\omega_{18}\omega_9^2 -$
$36\omega_6^2v_3^2\omega_{22}\omega_{13}\omega_{18}\omega_9^3 + \omega_6^3\omega_{22}c_s^2\omega_{13}^2v_1^2\omega_{18}\omega_9^3 - 36\omega_6^2\omega_{22}c_s^4\omega_{13}^2\omega_9^3 + 12\omega_6\omega_{22}c_s^4\omega_{13}\omega_{18}\omega_9^3 + 5\omega_6^3\omega_{22}c_s^4\omega_{13}^2\omega_{18}\omega_9^3 + 12\omega_6^3\omega_{22}c_s^2\omega_{13}^2v_1^2\omega_{18} +$
$12\omega_6^2\omega_{22}c_s^4\omega_{18}\omega_9^3 - 36\omega_6^3c_s^4\omega_{13}\omega_{18}\omega_9^3 - 12\omega_6^3v_3^2\omega_{22}\omega_{13}v_1^2\omega_{18}\omega_9 - 36\omega_6^3v_3^2\omega_{22}c_s^2\omega_{18}\omega_9^2 + 12\omega_6^3v_3^2\omega_{22}\omega_{13}\omega_{18}\omega_9 - 18\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{18}\omega_9^3 +$
$12\omega_6^3\omega_{22}c_s^4\omega_{18}\omega_9^2 - 24\omega_6v_3^2\omega_{22}\omega_{13}v_1^2\omega_{18}\omega_9^3 - 6\omega_6^3v_3^2\omega_{22}\omega_{13}^2\omega_9^2 + 24\omega_6^2v_3^2\omega_{22}\omega_{13}^2\omega_{18}\omega_9^2 + 18\omega_6^3v_3^2c_s^2\omega_{13}^2\omega_{18}\omega_9^3 - 12\omega_6^3v_3^2\omega_{22}v_1^2\omega_{18}\omega_9^2 -$
$12\omega_6^2\omega_{22}c_s^2\omega_{13}^2v_1^2\omega_9^2 - 84\omega_6\omega_{22}c_s^4\omega_{13}^2\omega_{18}\omega_9^2 + 12\omega_6^2v_3^2\omega_{22}\omega_{13}^2v_1^2\omega_{18}\omega_9 + 36\omega_6^2c_s^4\omega_{13}^2\omega_9^3 - 42\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_{18}\omega_9^2 + 12\omega_6^2v_3^2\omega_{13}v_1^2\omega_{18}\omega_9^3 +$
$6\omega_6^3v_3^2\omega_{22}\omega_{13}^2v_1^2\omega_{18}\omega_9^2 - 6\omega_6^3v_3^2\omega_{13}^2v_1^2\omega_{18}\omega_9^2 - 18\omega_6^3c_s^4\omega_{13}^2\omega_{18}\omega_9^2 - 48\omega_6^2\omega_{22}c_s^4\omega_{13}^2\omega_{18}\omega_9 + 18\omega_6^2\omega_{22}c_s^2\omega_{13}v_1^2\omega_{18}\omega_9^3 + 12\omega_6^3v_3^2\omega_{22}\omega_{13}^2v_1^2\omega_{18} -$
$12\omega_6^3v_3^2\omega_{22}\omega_{18}\omega_9^3 + 180\omega_6\omega_{22}c_s^4\omega_{13}^2\omega_{18}\omega_9^3 + 12\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_{18}\omega_9 - 18\omega_6^3v_3^2c_s^2\omega_{13}^2\omega_{18}\omega_9^2 + 18\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}^2\omega_{18}\omega_9^2 + 12\omega_6^3v_3^2\omega_{22}v_1^2\omega_{18}\omega_9^3 -$
$12\omega_6^3\omega_{22}c_s^2\omega_{13}v_1^2\omega_{18}\omega_9 + 36\omega_6^2c_s^4\omega_{13}\omega_{18}\omega_9^3 - 12\omega_6^3c_s^2\omega_{13}^2\omega_{18}\omega_9^3 + 12\omega_6^3v_3^2\omega_{22}\omega_{13}^2\omega_9^3 + 6\omega_6^3v_3^2\omega_{13}^2v_1^2\omega_{18}\omega_9^3 - 88\omega_6^2\omega_{22}c_s^4\omega_{13}^2\omega_{18}\omega_9^3 +$
$12\omega_6^3\omega_{22}c_s^2\omega_{18}\omega_9^2 + 12\omega_6^2v_3^2\omega_{13}^2\omega_{18}\omega_9^3 - 72\omega_6^2v_3^2\omega_{22}c_s^2\omega_{13}^2\omega_{18}\omega_9^2 + 12\omega_6\omega_{22}c_s^2\omega_{13}^2v_1^2\omega_{18}\omega_9^3 - 12\omega_6^3v_3^2\omega_{22}\omega_{13}^2\omega_{18} - 12\omega_6^3c_s^2\omega_{13}\omega_{18}\omega_9^2 +$
$6\omega_6^3v_3^2\omega_{22}\omega_{13}^2v_1^2\omega_9^2 - 12\omega_6^2c_s^2\omega_{13}^2\omega_9^3 + 12\omega_6^2c_s^2\omega_{13}v_1^2\omega_{18}\omega_9^3 - 6\omega_6^3c_s^2\omega_{13}^2v_1^2\omega_{18}\omega_9^2 + 2\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_{18}\omega_9^2 - 54\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}^2\omega_{18}\omega_9 +$
$18\omega_6^3\omega_{22}c_s^2\omega_{13}v_1^2\omega_{18}\omega_9^2 - 6\omega_6^3c_s^2\omega_{13}^2v_1^2\omega_9^3 + 12\omega_6^3v_3^2\omega_{13}\omega_{18}\omega_9^3 + 12\omega_6^3v_3^2\omega_{22}\omega_{13}\omega_{18}\omega_9^3 - 72\omega_6v_3^2\omega_{22}c_s^2\omega_{13}\omega_{18}\omega_9^3 - 18\omega_6^3v_3^2\omega_{22}\omega_{13}^2v_1^2\omega_{18}\omega_9 +$
$12\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_{18}\omega_9 - 36\omega_6^2v_3^2\omega_{22}c_s^2\omega_{18}\omega_9^3 + 12\omega_6\omega_{22}c_s^2\omega_{13}\omega_{18}\omega_9^3 - 12\omega_6\omega_{22}c_s^2\omega_{13}^2v_1^2\omega_{18}\omega_9^2 - 12\omega_6^3\omega_{22}c_s^2\omega_{18}\omega_9^3 + 150\omega_6^2\omega_{22}c_s^4\omega_{13}^2\omega_{18}\omega_9^2 +$
$12\omega_6^2c_s^2\omega_{13}^2\omega_{18}\omega_9^3 - 24\omega_6v_3^2\omega_{22}\omega_{13}^2\omega_{18}\omega_9^2 - 6\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_9^2 + 36\omega_6^2v_3^2c_s^2\omega_{13}\omega_{18}\omega_9^3 - 12\omega_6^3v_3^2\omega_{13}\omega_{18}\omega_9^2 - 24\omega_6^3v_3^2\omega_{22}\omega_{13}\omega_{18}\omega_9^2 -$
$6\omega_6^3\omega_{22}c_s^2\omega_{13}v_1^2\omega_{18}\omega_9^3 - 12\omega_6^2\omega_{22}c_s^2v_1^2\omega_{18}\omega_9^3 - \omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_{18}\omega_9^3 + 6\omega_6^3c_s^2\omega_{13}^2v_1^2\omega_{18}\omega_9^3 - 12\omega_6^2v_3^2\omega_{22}\omega_{13}^2\omega_{18}\omega_9 - 24\omega_6^2v_3^2\omega_{22}\omega_{13}^2v_1^2\omega_{18}\omega_9^2 +$
$12\omega_6^3c_s^2\omega_{13}\omega_{18}\omega_9^3 + 36\omega_6^3\omega_{22}c_s^4\omega_{13}^2\omega_{18} - 18\omega_6^3c_s^4\omega_{13}^2\omega_9^3 - 36\omega_6^2v_3^2\omega_{22}c_s^2\omega_{13}^2\omega_9^2 - 6\omega_6^3v_3^2\omega_{13}^2v_1^2\omega_9^3$

$C_{44} =$
$-42\omega_6^2\omega_{22}c_s^2\omega_{13}^2v_1^2\omega_{18}\omega_9^3 + 12\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}^2\omega_{18} + 24\omega_6v_3^2\omega_{22}c_s^2\omega_{13}^2\omega_{18}\omega_9^2 - 12\omega_6^2v_3^2\omega_{13}\omega_{18}\omega_9^3 + 12\omega_6\omega_{22}c_s^2\omega_{13}^2\omega_{18}\omega_9^2 - 12\omega_6^2v_3^2\omega_{22}c_s^2\omega_{13}\omega_{18}\omega_9^2 +$
$36\omega_6^2c_s^2\omega_{13}^2v_1^2\omega_9^3 - 36\omega_6^2v_3^2\omega_{13}^2v_1^2\omega_{18}\omega_9^3 - 24\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_{18}\omega_9^3 + 72\omega_6^3v_3^2\omega_{22}\omega_{13}v_1^2\omega_{18}\omega_9^2 + 36\omega_6^3v_3^2\omega_{13}v_1^2\omega_{18}\omega_9^2 + 24\omega_6v_3^2\omega_{22}\omega_{13}\omega_{18}\omega_9^3 -$
$36\omega_6^2v_3^2\omega_{22}v_1^2\omega_{18}\omega_9^3 - 6\omega_6^3v_3^2\omega_{13}\omega_{18}\omega_9^3 + 12\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{18}\omega_9^3 - 18\omega_6^3c_s^2\omega_{13}v_1^2\omega_{18}\omega_9^3 - 36\omega_6^3v_3^2\omega_{22}\omega_{13}v_1^2\omega_{18}\omega_9^3 - 12\omega_6^2c_s^2\omega_{13}\omega_{18}\omega_9^3 + 12\omega_6^2v_3^2\omega_{22}\omega_{18}\omega_9^3 - 12\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}\omega_{18}\omega_9^3 +$
$108\omega_6^2v_3^2\omega_{22}\omega_{13}v_1^2\omega_{18}\omega_9^3 + 6\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}^2\omega_9^2 - 36\omega_6^2c_s^2\omega_{13}^2v_1^2\omega_{18}\omega_9^3 + 18\omega_6^3v_3^2\omega_{22}\omega_{13}^2\omega_{18}\omega_9 - 24\omega_6^3\omega_{22}c_s^2v_1^2\omega_{18}\omega_9^3 + 36\omega_6^3c_s^2\omega_{13}v_1^2\omega_{18}\omega_9^2 +$
$60\omega_{6\omega_{22}}c_s^2\omega_{13}v_1^2\omega_{18}\omega_9^3 + 12\omega_6^2v_3^3\omega_{22}c_s^2\omega_{18}\omega_9^3 + 12\omega_6^2c_s^4\omega_{13}\omega_{18}\omega_9^2 - 6\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_{18}\omega_9^2 - 108\omega_6^2\omega_{22}c_s^2\omega_{13}^2v_1^2\omega_{18}\omega_9 + 12\omega_6^2v_3^2\omega_{22}\omega_{13}^2\omega_9^2 -$
$24\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_{18}\omega_9^2 - 12\omega_6^2c_s^4\omega_{13}^2\omega_{18}\omega_9^3 - 36\omega_6^3c_s^2\omega_{13}v_1^2\omega_{18}\omega_9^3 + 24\omega_6^3\omega_{22}c_s^2v_1^2\omega_{18}\omega_9^2 - 6\omega_6^3v_3^2c_s^2\omega_{13}^2\omega_9^3 - 36\omega_6^2v_3^2\omega_{22}\omega_{13}^2v_1^2\omega_9^2 -$
$36\omega_6^2v_3^2\omega_{22}\omega_{13}v_1^2\omega_{18}\omega_9^2 + 24\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}\omega_{18}\omega_9^2 + 12\omega_6^3v_3^2c_s^2\omega_{13}\omega_{18}\omega_9^2 - 36\omega_6^2v_3^2\omega_{22}\omega_{13}\omega_{18}\omega_9^3 - 12\omega_6^2\omega_{22}c_s^4\omega_{13}^2\omega_9^2 + 12\omega_6\omega_{22}c_s^4\omega_{13}\omega_{18}\omega_9^3 -$
$\omega_6^3\omega_{22}c_s^4\omega_{13}^2\omega_{18}\omega_9^3 - 12\omega_6^3c_s^4\omega_{13}\omega_{18}\omega_9^3 - 36\omega_6^3v_3^2\omega_{22}\omega_{13}v_1^2\omega_{18}\omega_9 - 12\omega_6^3v_3^2\omega_{22}c_s^2\omega_{18}\omega_9^2 + 12\omega_6^3v_3^2\omega_{22}\omega_{13}\omega_{18}\omega_9 + 24\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{18}\omega_9^3 -$
$72\omega_6v_3^2\omega_{22}\omega_{13}v_1^2\omega_{18}\omega_9^3 - 6\omega_6^3v_3^2\omega_{22}\omega_{13}^2\omega_9^2 + 24\omega_6^2v_3^2\omega_{22}\omega_{13}^2\omega_{18}\omega_9^2 + 6\omega_6^3v_3^2c_s^2\omega_{13}^2\omega_{18}\omega_9^3 - 36\omega_6^3v_3^2\omega_{22}v_1^2\omega_{18}\omega_9^2 - 36\omega_6^2\omega_{22}c_s^2\omega_{13}^2v_1^2\omega_9^2 -$
$12\omega_{6\omega_{22}}c_s^4\omega_{13}^2\omega_{18}\omega_9^2 + 36\omega_6^2v_3^2\omega_{22}\omega_{13}^2v_1^2\omega_{18}\omega_9 + 12\omega_6^2c_s^4\omega_{13}^2\omega_9^3 - 12\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_{18}\omega_9^2 + 36\omega_6^2v_3^2\omega_{13}v_1^2\omega_{18}\omega_9^3 + 18\omega_6^3v_3^2\omega_{22}\omega_{13}^2v_1^2\omega_{18}\omega_9^2 -$
$18\omega_6^3v_3^2\omega_{13}^2v_1^2\omega_{18}\omega_9^2 - 6\omega_6^3c_s^4\omega_{13}^2\omega_{18}\omega_9^2 - 12\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_{18}\omega_9 - 132\omega_6^2\omega_{22}c_s^2\omega_{13}v_1^2\omega_{18}\omega_9^3 + 36\omega_6^3v_3^2\omega_{22}\omega_{13}^2v_1^2\omega_{18} - 12\omega_6^3v_3^2\omega_{22}\omega_{18}\omega_9^3 +$
$18\omega_{6\omega_{22}}c_s^4\omega_{13}^2\omega_{18}\omega_9^3 - 6\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_{18}\omega_9 - 6\omega_6^3v_3^2c_s^2\omega_{13}^2\omega_{18}\omega_9^2 + 6\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}^2\omega_{18}\omega_9^2 + 36\omega_6^3v_3^2\omega_{22}v_1^2\omega_{18}\omega_9^3 + 72\omega_6^3\omega_{22}c_s^2\omega_{13}v_1^2\omega_{18}\omega_9 +$
$12\omega_6^2c_s^4\omega_{13}\omega_{18}\omega_9^3 - 12\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{18}\omega_9^2 + 12\omega_6^3v_3^2\omega_{22}\omega_{18}\omega_9^2 + 60\omega_6^2\omega_{22}c_s^2\omega_{13}v_1^2\omega_{18}\omega_9^2 + 6\omega_6^3\omega_{22}c_s^4\omega_{13}^2\omega_9^2 + 6\omega_6^3c_s^2\omega_{13}^2\omega_9^3 +$
$12\omega_6^2v_3^2\omega_{22}c_s^2\omega_{13}^2\omega_{18}\omega_9 + 6\omega_6^3c_s^4\omega_{13}^2\omega_{18}\omega_9^3 + 12\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_{18}\omega_9^3 - 48\omega_{22}c_s^2\omega_{13}^2v_1^2\omega_{18}\omega_9^3 + 12\omega_6^2v_3^2c_s^2\omega_{13}^2\omega_9^3 + 18\omega_6^3v_3^2\omega_{13}^2v_1^2\omega_{18}\omega_9^3 -$
$4\omega_6^2\omega_{22}c_s^4\omega_{13}^2\omega_{18}\omega_9^3 + 12\omega_6^2v_3^2\omega_{13}^2\omega_{18}\omega_9^3 - 24\omega_6^2v_3^2\omega_{22}c_s^2\omega_{13}^2\omega_{18}\omega_9^2 + 84\omega_{6\omega_{22}}c_s^2\omega_{13}^2v_1^2\omega_{18}\omega_9^3 - 12\omega_6^3v_3^2\omega_{22}\omega_{13}^2\omega_{18} - 12\omega_6^3c_s^2\omega_{13}\omega_{18}\omega_9^2 +$
$18\omega_6^3v_3^2\omega_{22}\omega_{13}^2v_1^2\omega_9^2 - 12\omega_6^2c_s^2\omega_{13}^2\omega_9^3 + 36\omega_6^2c_s^2\omega_{13}v_1^2\omega_{18}\omega_9^3 - 18\omega_6^3c_s^2\omega_{13}^2v_1^2\omega_{18}\omega_9^2 + 6\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_{18}\omega_9^2 - 18\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}^2\omega_{18}\omega_9 -$
$144\omega_6^3\omega_{22}c_s^2\omega_{13}v_1^2\omega_{18}\omega_9^2 - 18\omega_6^3c_s^2\omega_{13}^2v_1^2\omega_9^3 + 12\omega_6^3v_3^2\omega_{13}\omega_{18}\omega_9^3 + 12\omega_6^3v_3^2\omega_{22}\omega_{13}\omega_{18}\omega_9^3 - 24\omega_6v_3^2\omega_{22}c_s^2\omega_{13}\omega_{18}\omega_9^3 - 54\omega_6^3v_3^2\omega_{22}\omega_{13}^2v_1^2\omega_{18}\omega_9 -$
$12\omega_6^2v_3^2\omega_{22}c_s^2\omega_{18}\omega_9^3 - 12\omega_{6\omega_{22}}c_s^2\omega_{13}\omega_{18}\omega_9^3 - 84\omega_{6\omega_{22}}c_s^2\omega_{13}^2v_1^2\omega_{18}\omega_9^2 + 24\omega_6^2\omega_{22}c_s^4\omega_{13}^2\omega_{18}\omega_9^2 + 12\omega_6^2c_s^2\omega_{13}^2\omega_{18}\omega_9^3 - 24\omega_6v_3^2\omega_{22}\omega_{13}^2\omega_{18}\omega_9^2 -$
$6\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_9^2 + 12\omega_6^2v_3^2c_s^2\omega_{13}\omega_{18}\omega_9^3 - 12\omega_6^3v_3^2\omega_{13}\omega_{18}\omega_9^2 - 24\omega_6^3v_3^2\omega_{22}\omega_{13}\omega_{18}\omega_9^2 + 78\omega_6^3\omega_{22}c_s^2\omega_{13}v_1^2\omega_{18}\omega_9^3 + 24\omega_6^2\omega_{22}c_s^2v_1^2\omega_{18}\omega_9^3 +$
$18\omega_6^3c_s^2\omega_{13}^2v_1^2\omega_{18}\omega_9^3 - 12\omega_6^2v_3^2\omega_{22}\omega_{13}^2\omega_{18}\omega_9 - 72\omega_6^2v_3^2\omega_{22}\omega_{13}^2v_1^2\omega_{18}\omega_9^2 + 12\omega_6^3c_s^2\omega_{13}\omega_{18}\omega_9^3 - 6\omega_6^3c_s^4\omega_{13}^2\omega_9^3 - 12\omega_6^2v_3^2\omega_{22}c_s^2\omega_{13}^2\omega_9^2 - 18\omega_6^3v_3^2\omega_{13}^2v_1^2\omega_9^3$

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

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

$C_{46} = 2\omega_{12}\omega_6^2v_3^2\omega_{22}\omega_{13}v_1v_2^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 - 2\omega_{12}\omega_6^3v_3^2\omega_{22}c_s^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 2\omega_{12}\omega_6^2c_s^2\omega_{13}v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 +$
$2\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}v_1^2v_2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9 - 2\omega_{12}\omega_6^2v_3^2\omega_{22}c_s^2\omega_{13}v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 + \omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9 +$
$2\omega_{12}\omega_6^2v_3^2\omega_{22}c_s^2\omega_{13}v_2\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9 + 2\omega_{12}\omega_6^2v_3^2\omega_{22}\omega_{13}v_1^2v_2\omega_{14}\omega_8^2\omega_5^2\omega_9 + \omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9 +$
$2\omega_{12}\omega_6^2c_s^2v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 + \omega_{12}\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}v_1\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9 + 2\omega_{12}\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}v_2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9 -$
$2\omega_{12}\omega_6^3v_3^2\omega_{22}v_1v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} + 2\omega_{12}\omega_6^2v_3^2\omega_{22}\omega_{13}v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 + 2\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}v_1v_2^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9 -$
$\omega_{12}\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}v_1\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9 - \omega_6^3\omega_{22}c_s^2\omega_{13}v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9 + 2\omega_6^3v_3^2\omega_{22}\omega_{13}v_1v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9 +$
$\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 2\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}v_1v_2^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9 + 2\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}v_1v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9 +$
$\omega_{12}\omega_6^3v_3^2c_s^2\omega_{13}v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 + \omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + \omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$2\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}v_1v_2^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9 - 2\omega_{12}\omega_6^2v_3^2v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 - \omega_{12}\omega_6^3c_s^2\omega_{13}v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 2\omega_{12}\omega_6^3\omega_{22}c_s^2v_1^2v_2\omega_{20}\omega_8^2\omega_5^2\omega_{18} +$
$2\omega_{12}\omega_6^2v_3^2\omega_{13}v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9 + 2\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}v_1^2v_2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9 + 4\omega_{12}\omega_6^3\omega_{22}c_s^4\omega_{13}v_2\omega_{20}\omega_{14}\omega_5\omega_{18}\omega_9 -$
$2\omega_{12}\omega_6^3v_3^2c_s^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 2\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}v_1v_2^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 + 2\omega_{12}\omega_6^2v_3^2\omega_{22}c_s^2\omega_{13}v_2\omega_{14}\omega_8^2\omega_5^2\omega_9 + 2\omega_{12}\omega_6^2v_3^2\omega_{22}v_1^2v_2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9 +$
$\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}v_1v_2^2\omega_{14}\omega_8^2\omega_5^2\omega_9 - \omega_{12}\omega_6^3c_s^2\omega_{13}v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9 - 2\omega_{12}\omega_6^3\omega_{22}c_s^2v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 + 2\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}v_2\omega_{20}\omega_8^2\omega_5^2\omega_{18} +$
$\omega_6^3\omega_{22}c_s^2\omega_{13}v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 2\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}v_1^2v_2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9 + 2\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}v_1\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9 +$
$2\omega_{12}\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}v_1\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9 + 2\omega_{12}\omega_6^2v_3^2c_s^2\omega_{13}v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9 + 2\omega_{12}\omega_6^2v_3^2\omega_{22}c_s^2\omega_{13}v_1\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 -$
$2\omega_{12}\omega_6^3v_3^2\omega_{22}c_s^2v_1\omega_{20}\omega_8^2\omega_5^2\omega_{18} + 2\omega_{12}\omega_6^2v_3^2\omega_{22}c_s^2\omega_{13}v_2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9 - \omega_{12}\omega_6^3v_3^2\omega_{13}v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 +$
$\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9 + 2\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}v_1^2v_2\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9 + 2\omega_{12}\omega_6^3c_s^2v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 +$
$\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}v_1v_2^2\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9 + 2\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}v_1v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} + 2\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 -$
$2\omega_{12}\omega_6^2v_3^2\omega_{22}c_s^2v_2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9 - \omega_6^3v_3^2\omega_{22}\omega_{13}v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9 + \omega_{12}\omega_6^2v_3^2\omega_{22}c_s^2\omega_{13}v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 +$
$2\omega_{12}\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9 + 2\omega_{12}\omega_6^2v_3^2\omega_{22}\omega_{13}v_1^2v_2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 + 2\omega_{12}\omega_6^2c_s^2\omega_{13}v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9 +$
$\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}v_1^2v_2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 + \omega_6^3\omega_{22}c_s^2\omega_{13}v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9 - \omega_{12}\omega_6^3v_3^2\omega_{13}v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$2\omega_{12}\omega_6^2v_3^2\omega_{22}\omega_{13}v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 + 2\omega_{12}\omega_6^2v_3^2\omega_{22}c_s^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 + 2\omega_{12}\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}v_1\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 +$
$2\omega_{12}\omega_6^2v_3^2\omega_{22}c_s^2\omega_{13}v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9 + 2\omega_{12}\omega_6^2v_3^2\omega_{22}\omega_{13}v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 + 2\omega_{12}\omega_6^2c_s^2\omega_{13}v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9 -$
$\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}v_2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9 - 2\omega_{12}\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 + 2\omega_{12}\omega_6^2c_s^2\omega_{13}v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 +$
$2\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}v_1v_2^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_9 - \omega_{12}\omega_6^3v_3^2c_s^2\omega_{13}v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9 - \omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9 -$
$2\omega_{12}\omega_6^3v_3^2\omega_{22}v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 2\omega_{12}\omega_6^2c_s^2v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 - 2\omega_{12}\omega_6^3v_3^2v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$2\omega_{12}\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}v_2\omega_{20}\omega_8\omega_5\omega_{18}\omega_9 + 2\omega_{12}\omega_6^2v_3^2\omega_{22}c_s^2\omega_{13}v_1\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9 + 2\omega_{12}\omega_6^3v_3^2\omega_{22}v_1^2v_2\omega_{20}\omega_8^2\omega_5^2\omega_{18} +$
$2\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}v_2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_9 + 2\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}v_1^2v_2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9 + 2\omega_{12}\omega_6^3v_3^2\omega_{22}v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 -$
$\omega_{12}\omega_6^3v_3^2c_s^2\omega_{13}v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 2\omega_{12}\omega_6^3v_3^2v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 + \omega_{12}\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}v_2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9 -$
$\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9 + 2\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9 + 2\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}v_1v_2^2\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9 +$
$2\omega_{12}\omega_6^2v_3^2\omega_{22}c_s^2\omega_{13}v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 + 2\omega_{12}\omega_6^2v_3^2\omega_{22}\omega_{13}v_1^2v_2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9 - 8\omega_{12}\omega_6^2\omega_{22}c_s^4\omega_{13}v_2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9 -$
$\omega_{12}\omega_6^3v_3^2\omega_{13}v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9 + 2\omega_6^3v_3^2\omega_{22}\omega_{13}v_1^2v_2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_9 + \omega_6^3v_3^2\omega_{22}\omega_{13}v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 -$
$2\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 - 2\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}v_1v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9 + 2\omega_{12}\omega_6^3v_3^2\omega_{22}v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 -$
$\omega_{12}\omega_6^3v_3^2c_s^2\omega_{13}v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 2\omega_{12}\omega_6^3v_3^2v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 + \omega_{12}\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}v_2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9 -$
$\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9 + 2\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9 + 2\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}v_1v_2^2\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9 +$
$2\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 + 2\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}v_1v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9 - 8\omega_{12}\omega_6^2\omega_{22}c_s^4\omega_{13}v_2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9 -$
$\omega_{12}\omega_6^3v_3^2\omega_{13}v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9 + 2\omega_6^3v_3^2\omega_{22}\omega_{13}v_1^2v_2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_9 + \omega_6^3v_3^2\omega_{22}\omega_{13}v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 -$
$2\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 - 2\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}v_1v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9 + 2\omega_{12}\omega_6^3v_3^2\omega_{22}v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 +$
$2\omega_{12}\omega_6^2v_3^2\omega_{22}c_s^2\omega_{13}v_2\omega_{20}\omega_8\omega_5\omega_{18}\omega_9 + 2\omega_{12}\omega_6^2v_3^2\omega_{22}c_s^2\omega_{13}v_1^2v_2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9 + 2\omega_{12}\omega_6^3c_s^2v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 -$
$\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}v_1^2v_2\omega_{14}\omega_8^2\omega_5^2\omega_9 + 2\omega_{12}\omega_6^2v_3^2\omega_{22}\omega_{13}v_1v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9 + 4\omega_{12}\omega_6^3\omega_{22}c_s^4\omega_{13}v_2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9 -$
$2\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 + 2\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}v_1v_2^2\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9 + 2\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 +$
$2\omega_{12}\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}v_1\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9 - \omega_6^3v_3^2\omega_{22}\omega_{13}v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 2\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}v_1v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9 -$
$2\omega_{12}\omega_6^2v_3^2\omega_{22}\omega_{13}v_1^2v_2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9 + \omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 - 2\omega_{12}\omega_6^2v_3^2\omega_{13}v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 +$
$\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 - 2\omega_{12}\omega_6^2v_3^2c_s^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 - \omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}v_1^2v_2\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9 +$

$2\omega_{12}\omega_6^2v_3^2c_s^2\omega_{13}v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 - 2\omega_{12}\omega_6^2\omega_{22}c_s^2v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 - 2\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}v_1^2v_2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9 -$
$2\omega_{12}\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}v_1\omega_{14}\omega_8\omega_5\omega_{18}\omega_9 - 2\omega_{12}\omega_6^2v_3^2c_s^2\omega_{13}v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9 + 2\omega_{12}\omega_6^2v_3^2\omega_{22}c_s^2\omega_{13}v_1\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9 -$
$2\omega_{12}\omega_6^2v_3^2\omega_{22}c_s^2\omega_{13}v_2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 + 2\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}v_1v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} - \omega_6^3v_3^2\omega_{22}\omega_{13}v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 -$
$2\omega_6^3v_3^2\omega_{22}\omega_{13}v_1^2v_2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9 + 4\omega_{12}\omega_6^2\omega_{22}c_s^4\omega_{13}v_2\omega_{20}\omega_{14}\omega_5^2\omega_{18}\omega_9 - \omega_{12}\omega_6^2v_3^2\omega_{22}\omega_{13}v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$2\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}v_1^2v_2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9 - 2\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}v_1^2v_2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9 - \omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$2\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}v_1^2v_2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9 + \omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 - 2\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}v_1v_2^2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9 +$
$2\omega_{12}\omega_6^3v_3^2c_s^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 2\omega_{12}\omega_6^2v_3^2\omega_{22}\omega_{13}v_1^2v_2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 + \omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}v_1v_2^2\omega_{14}\omega_8^2\omega_5^2\omega_9 -$
$\omega_{12}\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 - \omega_{12}\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}v_2\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9 - 2\omega_{12}\omega_6^2v_3^2\omega_{22}v_1v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9 -$
$\omega_{12}\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9 - 2\omega_{12}\omega_6^2v_3^2\omega_{22}c_s^2\omega_{13}v_1\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9 - 2\omega_{12}\omega_6^3v_3^2\omega_{22}c_s^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 -$
$2\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}v_1^2v_2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 + 2\omega_{12}\omega_6^3v_3^2\omega_{22}c_s^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + \omega_{12}\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}v_1\omega_{14}\omega_8^2\omega_5^2\omega_9 -$
$2\omega_{12}\omega_6^2v_3^2\omega_{13}v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9 - 2\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}v_1v_2^2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9 + 2\omega_6^3\omega_{22}c_s^2\omega_{13}v_1^2v_2\omega_{20}\omega_8^2\omega_5^2\omega_{18} + \omega_{12}\omega_6^3c_s^2\omega_{13}v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$\omega_{12}\omega_6^3c_s^2\omega_{13}v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 - 2\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}v_1^2v_2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9 - 2\omega_{12}\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}v_1\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9 -$
$2\omega_6^3\omega_{22}c_s^2\omega_{13}v_1^2v_2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9 - \omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 2\omega_{12}\omega_6^2\omega_{22}c_s^2v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 +$
$2\omega_{12}\omega_6^3v_3^2\omega_{22}v_1v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9 - 2\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}v_1v_2^2\omega_{20}\omega_8\omega_5\omega_{18}\omega_9 + \omega_6^3\omega_{22}c_s^2\omega_{13}v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 +$
$\omega_{12}\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 - 2\omega_6^3v_3^2\omega_{22}\omega_{13}v_1v_2^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_9 + 2\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}v_1v_2^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9 -$
$2\omega_{12}\omega_6^2v_3^2\omega_{22}c_s^2\omega_{13}v_1\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9 - 2\omega_{12}\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}v_2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_9 + \omega_{12}\omega_6^3v_3^2\omega_{13}v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9 -$
$2\omega_{12}\omega_6^2v_3^2\omega_{22}c_s^2\omega_{13}v_1\omega_{14}\omega_8^2\omega_5^2\omega_9 - 2\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}v_1^2v_2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9 + 2\omega_{12}\omega_6^2v_3^2\omega_{22}\omega_{13}v_1v_2^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9 -$
$2\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}v_1^2v_2\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9 - 2\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9 + 2\omega_{12}\omega_6^2v_3^2\omega_{13}v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 -$
$4\omega_{12}\omega_6^2\omega_{22}c_s^4\omega_{13}v_2\omega_{20}\omega_{14}\omega_8^2\omega_{18}\omega_9 - \omega_{12}\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}v_1\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 - \omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 -$
$4\omega_{12}\omega_6^3\omega_{22}c_s^4\omega_{13}v_2\omega_{20}\omega_{14}\omega_5^2\omega_{18}\omega_9 + 2\omega_{12}\omega_6^3c_s^2v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 2\omega_{12}\omega_6^3\omega_{22}c_s^2v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$\omega_{12}\omega_6^3v_3^2c_s^2\omega_{13}v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 2\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}v_1^2v_2\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9 - 2\omega_{12}\omega_6^2v_3^2\omega_{22}\omega_{13}v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9 -$
$2\omega_{12}\omega_6^2v_3^2\omega_{22}\omega_{13}v_1^2v_2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9 + 4\omega_{12}\omega_6\omega_{22}c_s^4\omega_{13}v_2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9 + 2\omega_{12}\omega_6^3v_3^2\omega_{22}c_s^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 -$
$2\omega_6^3\omega_{22}c_s^2\omega_{13}v_1v_2^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_9 + 2\omega_{12}\omega_6^2v_3^2\omega_{22}v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 - 2\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}v_1v_2^2\omega_{20}\omega_8\omega_5\omega_{18}\omega_9 -$
$2\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}v_1v_2^2\omega_{14}\omega_8^2\omega_5^2\omega_9 - \omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}v_1v_2^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 - 2\omega_{12}\omega_6^3\omega_{22}c_s^2v_1^2v_2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9 - 2\omega_6^3\omega_{22}c_s^2\omega_{13}v_1v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} -$
$2\omega_{12}\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}v_2\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9 - 2\omega_{12}\omega_6^2v_3^2\omega_{22}c_s^2\omega_{13}v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9 + \omega_{12}\omega_6^3c_s^2\omega_{13}v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 -$
$2\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}v_1^2v_2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_9 - 2\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}v_1\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_9 - 2\omega_{12}\omega_6^2v_3^2\omega_{22}c_s^2\omega_{13}v_2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9 -$
$2\omega_{12}\omega_6^2v_3^2\omega_{22}c_s^2\omega_{13}v_1\omega_{20}\omega_8\omega_5\omega_{18}\omega_9 + 2\omega_{12}\omega_6^2v_3^2c_s^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 2\omega_{12}\omega_6^2v_3^2\omega_{22}c_s^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$\omega_{12}\omega_6^3v_3^2c_s^2\omega_{13}v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9 - 2\omega_{12}\omega_6^2v_3^2\omega_{22}\omega_{13}v_1v_2^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9 - 2\omega_{12}\omega_6^2v_3^2\omega_{22}c_s^2\omega_{13}v_2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9 -$
$2\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}v_1v_2^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9 + 2\omega_{12}\omega_6^2v_3^2c_s^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 + 2\omega_{12}\omega_6^3v_3^2\omega_{22}c_s^2v_2\omega_{20}\omega_8^2\omega_5^2\omega_{18} -$
$4\omega_{12}\omega_6^2\omega_{22}c_s^4\omega_{13}v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 - 2\omega_{12}\omega_6^2v_3^2c_s^2\omega_{13}v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 + 2\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}v_1v_2^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9 +$
$2\omega_{12}\omega_6^3v_3^2\omega_{22}v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 2\omega_{12}\omega_6^3v_3^2v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 2\omega_{12}\omega_6^2v_3^2\omega_{22}c_s^2v_1\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9 -$
$2\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}v_1^2v_2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_9 - 2\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}v_1^2v_2\omega_{20}\omega_8^2\omega_5^2\omega_{18} - \omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 -$
$\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 - 2\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}v_1\omega_{20}\omega_8^2\omega_5^2\omega_{18} - \omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}v_1^2v_2\omega_{14}\omega_8^2\omega_5^2\omega_9 -$
$2\omega_{12}\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}v_2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9 - 2\omega_{12}\omega_6^2c_s^2\omega_{13}v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9 + \omega_6^3v_3^2\omega_{22}\omega_{13}v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 +$
$\omega_{12}\omega_6^3v_3^2\omega_{13}v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - \omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}v_1v_2^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 + 2\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}v_1v_2^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9$

$C_{47} = -4\omega_6^3v_3^2\omega_{22}\omega_{13}^2\omega_7v_1v_2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 + \omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_7v_2^2\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9^2 + 2\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_7v_2^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9^2 +$
$4\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_7v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 - 4\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}^2\omega_7v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 + 2\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_7v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9^2 +$
$2\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 + \omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9^2 - 8\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_7v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9 -$
$2\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_7v_1v_2\omega_{20}\omega_{14}\omega_5^2\omega_{18}\omega_9^2 - 2\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_7v_2^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2 + 2\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_7v_2^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9^2 -$
$4\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}^2\omega_7v_1v_2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9^2 + 4\omega_{12}\omega_6^3v_3^2\omega_{13}\omega_7v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 + 4\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_7v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9^2 -$
$2\omega_{12}\omega_6^3c_s^2\omega_{13}\omega_7v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 - 2\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7v_1v_2\omega_{20}\omega_{14}\omega_5^2\omega_9^2 - \omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}^2\omega_7v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 -$
$2\omega_{12}\omega_6^2v_3^2\omega_{13}\omega_7v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 + 2\omega_{12}\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 + 4\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}^2\omega_7v_1v_2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9^2 +$
$\omega_{12}\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2 - 12\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 - 2\omega_{12}\omega_6^2v_3^2\omega_{22}c_s^2\omega_{13}^2\omega_7\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9^2 -$
$\omega_{12}\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 - 4\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}\omega_7v_1v_2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 + 4\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_7v_1v_2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9 +$
$4\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}\omega_7v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 + 2\omega_{12}\omega_6^3c_s^2\omega_{13}^2\omega_7v_1v_2\omega_{20}\omega_{14}\omega_5^2\omega_{18}\omega_9^2 + 4\omega_{12}\omega_6^2v_3^2\omega_{22}\omega_{13}^2\omega_7v_1v_2\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9^2 +$
$2\omega_{12}\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}^2\omega_7\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 + \omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}^2\omega_7v_2^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 + \omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_7v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 +$
$2\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_7v_2^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9^2 + 4\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_7v_1v_2\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9^2 - 2\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_7v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 +$
$2\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_7v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 + \omega_6^3v_3^2\omega_{22}\omega_{13}^2\omega_7v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 - 2\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_7v_1v_2\omega_{14}\omega_8^2\omega_5^2\omega_9^2 +$
$4\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_7v_1v_2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9^2 - \omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_7v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 + 2\omega_6^3v_3^2\omega_{22}\omega_{13}^2\omega_7v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 -$
$14\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_7v_1v_2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9^2 + 4\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_7v_1v_2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9^2 + 4\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_7v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 +$
$2\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 + 2\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_7v_2^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 + 2\omega_{12}\omega_6^2v_3^2\omega_{22}\omega_{13}^2\omega_7v_2^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 +$
$2\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}\omega_7v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 + 2\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}^2\omega_7v_2^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9^2 - 2\omega_{12}\omega_6^2v_3^2\omega_{22}c_s^2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 -$
$2\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_7v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9^2 + 4\omega_{12}\omega_6^3c_s^2\omega_{13}\omega_7v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 + 4\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}^2\omega_7v_1v_2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 +$
$2\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}^2\omega_7v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 + 2\omega_{12}\omega_6^2v_3^2\omega_{22}\omega_{13}^2\omega_7v_2^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9^2 - 2\omega_{12}\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}^2\omega_7\omega_{20}\omega_8\omega_5\omega_{18}\omega_9^2 +$
$2\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}^2\omega_7v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9^2 + \omega_{12}\omega_6^3c_s^2\omega_{13}^2\omega_7v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 + 2\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}\omega_7v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 -$
$2\omega_{12}\omega_6^2v_3^2c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 + 2\omega_{12}\omega_6^3v_3^2\omega_{13}^2\omega_7v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 + 2\omega_{12}\omega_6^2v_3^2\omega_{13}^2\omega_7v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 -$
$2\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}^2\omega_7v_1v_2\omega_{14}\omega_8^2\omega_5^2\omega_9^2 - 2\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}^2\omega_7\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_9^2 - 2\omega_{12}\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}^2\omega_7v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 +$
$2\omega_6^3v_3^2\omega_{22}\omega_{13}^2\omega_7v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 + \omega_{12}\omega_6^3v_3^2c_s^2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9^2 + 2\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}^2\omega_7v_2^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9^2 +$
$\omega_{12}\omega_6^3v_3^2c_s^2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 - \omega_{12}\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9^2 - 2\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}\omega_7v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9 +$
$2\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}^2\omega_7v_1v_2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 + 2\omega_{12}\omega_6^2v_3^2\omega_{22}\omega_{13}^2\omega_7v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 - 2\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}^2\omega_7v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 -$
$4\omega_{12}\omega_6^3c_s^2\omega_{13}\omega_7v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 - 2\omega_{12}\omega_6^2v_3^2\omega_{22}c_s^2\omega_{13}^2\omega_7\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 - 4\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}^2\omega_7v_1v_2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 -$
$2\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}^2\omega_7v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 - \omega_{12}\omega_6^3c_s^2\omega_{13}^2\omega_7v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 - 2\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}\omega_7v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 +$
$2\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}^2\omega_7v_2^2\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9^2 + 2\omega_{12}\omega_6^2v_3^2\omega_{22}\omega_{13}^2\omega_7v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9^2 - \omega_{12}\omega_6^3v_3^2c_s^2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 -$

$2\omega_{12}\omega_6^2v_3^2c_s^2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9^2 - 2\omega_{12}\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_{18}\omega_9^2 + 2\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_7v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 -$
$2\omega_6^3v_3^2\omega_{22}\omega_{13}^2\omega_7v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9 - \omega_6^3v_3^2\omega_{22}\omega_{13}^2\omega_7v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 + 2\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_7v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 -$
$2\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_7v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9 - 4\omega_{12}\omega_6^2v_3^2\omega_{22}\omega_{22}\omega_{13}^2\omega_7v_1v_2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9^2 + 2\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_7v_2^2\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9^2 +$
$2\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_7v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9^2 + 4\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_7v_1v_2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9 + 2\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_7v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 +$
$\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_7v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 - 2\omega_6^3v_3^2\omega_{22}\omega_{13}^2\omega_7v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 - 2\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9 +$
$2\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_7v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 + 4\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 2\omega_{12}\omega_6^2v_3^2\omega_{22}c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9^2 -$
$\omega_{12}\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9^2 - 4\omega_{12}\omega_6^3v_3^2\omega_{13}\omega_7v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 + 4\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}^2\omega_7v_1v_2\omega_{20}\omega_8\omega_5\omega_{18}\omega_9^2 +$
$8\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 - 2\omega_{12}\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 + 4\omega_{12}\omega_6^2v_3^2\omega_{13}^2\omega_7v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9^2 +$
$2\omega_{12}\omega_6^3c_s^2\omega_{13}\omega_7v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 - 2\omega_{12}\omega_6^2v_3^2\omega_{22}c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2 + \omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}^2\omega_7v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 +$
$4\omega_{12}\omega_6^2v_3^2\omega_{22}\omega_{13}^2\omega_7v_1v_2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9^2 - 12\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_7v_1v_2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9^2 + 4\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}\omega_7v_1v_2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9 -$
$2\omega_{12}\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9^2 + 2\omega_{12}\omega_6^2v_3^2\omega_{22}\omega_{13}^2\omega_7v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 + 2\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}^2v_1v_2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9^2 -$
$\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_7v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 - 2\omega_{12}\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}^2\omega_7\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 - 2\omega_{12}\omega_6^3c_s^2\omega_{13}^2\omega_7v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 -$
$4\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}\omega_7v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 + 4\omega_6^3v_3^2\omega_{22}\omega_{13}^2\omega_7v_1v_2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9 - 8\omega_{12}\omega_{22}c_s^2\omega_{13}^2\omega_7v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 +$
$2\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_7v_2^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_9^2 - 2\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 - 4\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_7v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 +$
$12\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}^2\omega_7v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 + \omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_7v_2^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2 + 2\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_7v_1v_2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 +$
$8\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_7v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9^2 - \omega_{12}\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 + 2\omega_{12}\omega_6^2v_3^2\omega_{22}c_s^2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9^2 +$
$2\omega_{12}\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 + 4\omega_{12}\omega_6^2c_s^2\omega_{13}\omega_7v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 - 2\omega_{12}\omega_6^2v_3^2\omega_{22}\omega_{13}^2\omega_7v_2^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2 -$
$4\omega_{12}\omega_6^2v_3^2\omega_{22}\omega_{13}^2\omega_7v_1v_2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 - 2\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}^2\omega_7\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9 - 2\omega_{12}\omega_6^2c_s^2\omega_{13}\omega_7v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 -$
$2\omega_{12}\omega_6^3v_3^2\omega_{13}^2\omega_7v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9^2 - 2\omega_{12}\omega_6^3v_3^2\omega_{13}\omega_7v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9^2 - 2\omega_{12}\omega_6^3v_3^2\omega_{13}\omega_7v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 -$
$2\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}^2\omega_7v_2^2\omega_{14}\omega_8\omega_5\omega_{18}\omega_9^2 + 2\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}^2\omega_7v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9^2 - 4\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_7v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$2\omega_{12}\omega_6^2v_3^2\omega_{22}\omega_{13}\omega_7v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 + 2\omega_{12}\omega_6^2v_3^2\omega_{22}c_s^2\omega_{13}^2\omega_7\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 - 2\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}^2\omega_7v_1v_2\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9^2 -$
$4\omega_{12}\omega_6^2v_3^2\omega_{22}\omega_{13}\omega_7v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 - \omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_7v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9^2 - 2\omega_{12}\omega_6^2c_s^2\omega_{13}\omega_7v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 -$
$2\omega_{12}\omega_6^2v_3^2\omega_{13}^2\omega_7v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9^2 - 2\omega_{12}\omega_6^2v_3^2\omega_{13}^2\omega_7v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9^2 - 2\omega_{12}\omega_6^3v_3^2\omega_{13}\omega_7v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 -$
$2\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}^2\omega_7v_2^2\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9^2 + 2\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}^2\omega_7v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9^2 - 4\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_7v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$2\omega_{12}\omega_6^2v_3^2\omega_{22}\omega_{13}\omega_7v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 + 2\omega_{12}\omega_6^2v_3^2\omega_{22}c_s^2\omega_{13}^2\omega_7\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 - 2\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}^2\omega_7v_1v_2\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9^2 -$
$4\omega_{12}\omega_6^2v_3^2\omega_{22}\omega_{13}\omega_7v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 - \omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_7v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9^2 - 2\omega_{12}\omega_6^2c_s^2\omega_{13}\omega_7v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 -$
$2\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}^2\omega_7v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 + \omega_6^3v_3^2\omega_{22}\omega_{13}^2\omega_7v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9^2 - 2\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_7v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 -$
$2\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_7v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9^2 + \omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_7v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9^2 - 4\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_7v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_{18}\omega_9^2 -$
$2\omega_{12}\omega_6^2v_3^2\omega_{22}\omega_{13}^2\omega_7v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 + 2\omega_{12}\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 - 2\omega_{12}\omega_6^2c_s^2\omega_{13}\omega_7v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 -$
$4\omega_{12}\omega_6^2v_3^2\omega_{22}\omega_{13}\omega_7v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 - 4\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}^2\omega_7v_1v_2\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9^2 + 2\omega_{12}\omega_6^3v_3^2c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 +$
$4\omega_{12}\omega_6^2c_s^2\omega_{13}\omega_7v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 - 4\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}^2\omega_7v_1v_2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 + 2\omega_{12}\omega_6^3v_3^2c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 +$
$4\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9 - 2\omega_{12}\omega_6^2v_3^2\omega_{22}\omega_{13}^2\omega_7v_2^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9^2 + 4\omega_{12}\omega_6^2v_3^2\omega_{22}\omega_{13}^2\omega_7v_1v_2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 +$
$4\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}^2\omega_7v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 - 4\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_7v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 - 2\omega_6^3v_3^2\omega_{22}\omega_{13}^2\omega_7v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9^2 +$
$2\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_7v_1v_2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9^2 - 4\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_7v_1v_2\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9^2 - 12\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_7v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 -$
$2\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_7v_2^2\omega_{20}\omega_8\omega_5\omega_{18}\omega_9^2 - 2\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_7v_2^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_9^2 + 6\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}^2\omega_7v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 -$
$2\omega_6^3v_3^2\omega_{22}\omega_{13}^2\omega_7v_2^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_9^2 + 2\omega_{12}\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}^2\omega_7v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9 + 2\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_7v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 +$
$4\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}^2\omega_7v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 - 2\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_7v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 - 2\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_7v_2^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9^2 -$
$2\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_7v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 - \omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 + 4\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_7v_1v_2\omega_{14}\omega_8^2\omega_5^2\omega_9^2 +$
$2\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_7v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9 + 4\omega_{12}\omega_6^2v_3^2\omega_{22}\omega_{13}^2\omega_7v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 + 2\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_7v_1v_2\omega_{20}\omega_{14}\omega_5^2\omega_{18}\omega_9^2 -$
$\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_7v_2^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 - 2\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_7v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 + 4\omega_6^3v_3^2\omega_{22}\omega_{13}^2\omega_7v_1v_2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_9^2 -$
$2\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9^2 - 2\omega_{12}\omega_6^2v_3^2\omega_{22}\omega_{13}\omega_7v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 - \omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}^2\omega_7v_2^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 +$
$\omega_{12}\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9^2 + 2\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}^2\omega_7v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9 - 2\omega_{12}\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}\omega_7\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9 -$
$4\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_7v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 + 4\omega_{12}\omega_6^2v_3^2\omega_{22}\omega_{13}^2\omega_7v_1v_2\omega_{14}\omega_8^2\omega_5^2\omega_9^2 - \omega_{12}\omega_6^3v_3^2\omega_{13}^2\omega_7v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 +$
$4\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 - 4\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}^2\omega_7v_1v_2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 + 2\omega_{12}\omega_6^3v_3^2c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 +$
$4\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9 - 2\omega_{12}\omega_6^2v_3^2\omega_{22}\omega_{13}^2\omega_7v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9^2 + 2\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}^2v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 +$
$4\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}^2\omega_7v_1v_2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9^2 + 2\omega_{12}\omega_6^2v_3^2\omega_{22}c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 - 4\omega_{12}\omega_6^2v_3^2\omega_{13}^2\omega_7v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 -$
$4\omega_{12}\omega_6^2v_3^2\omega_{22}\omega_{13}^2\omega_7v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9^2 - 2\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}^2\omega_7v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2$

$C_{48} = -12\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9 - 12\omega_{12}\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_5^3\omega_{18}\omega_9 - 12\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2v_1v_2\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9 -$
$24\omega_{12}\omega_6^2v_3^2\omega_{22}\omega_7^2v_1v_2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9 - 24\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9 - 12\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} +$
$12\omega_{12}\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9 - 12\omega_{12}\omega_6^2v_3^2\omega_{22}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_9 + 6\omega_{12}\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^3\omega_9 -$
$12\omega_{12}\omega_6^3\omega_{22}c_s^4\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9 + 12\omega_{12}\omega_6^2c_s^2\omega_{13}\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_9 - 6\omega_{12}\omega_6^3v_3^2\omega_{13}\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} -$
$12\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}\omega_7^2v_1^2\omega_{20}\omega_8\omega_5^3\omega_{18}\omega_9 + 12\omega_{12}\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9 + 18\omega_{12}\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9 -$
$12\omega_6^3v_3^2\omega_{22}\omega_{13}\omega_7^2v_1^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9 - 24\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}\omega_7^2v_1v_2\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9 + 12\omega_{12}\omega_6^3v_3^2\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_9 -$
$24\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9 + 12\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9 - 24\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_7^2v_1v_2\omega_{20}\omega_8^2\omega_5^3\omega_{18} -$
$60\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9 - 24\omega_{12}\omega_6^2v_3^2\omega_{22}\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_8\omega_5^3\omega_{18}\omega_9 + 12\omega_{12}\omega_6^3v_3^2\omega_{22}c_s^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9 +$
$6\omega_{12}\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 + 24\omega_{12}\omega_6^2v_3^2\omega_{22}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 + 36\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_7v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9 +$
$24\omega_{12}\omega_6^3v_3^2\omega_7^2v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9 - 12\omega_{12}\omega_6^2v_3^2\omega_{22}\omega_{13}\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9 + 10\omega_{12}\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9 +$

$$12\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} - 24\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_7^2v_1v_2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9 - 6\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5^3\omega_9 -$$
$$12\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9 + 12\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5^3\omega_{18} + 24\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_7^2v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} +$$
$$12\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_5^2\omega_{18}\omega_9 + 12\omega_{12}\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9 - 12\omega_{12}\omega_6^2v_3^2\omega_{22}\omega_{13}\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9 +$$
$$12\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9 - 24\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_8\omega_5^3\omega_{18}\omega_9 - 12\omega_{12}\omega_6^2v_3^2\omega_{13}\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9 -$$
$$24\omega_{12}\omega_6^3c_s^2\omega_7^2v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} + 12\omega_6^3v_3^2\omega_{22}\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 - 12\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}\omega_7^2v_1^2\omega_{20}\omega_8^2\omega_5^3\omega_{18} +$$
$$12\omega_{12}\omega_6^3v_3^2\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} - 24\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2v_1v_2\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9 + 12\omega_{12}\omega_6\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 -$$
$$12\omega_{12}\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_8\omega_5^3\omega_{18}\omega_9 + 12\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 - 48\omega_{12}\omega_6^2v_3^2\omega_{22}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9 -$$
$$6\omega_{12}\omega_6^3v_3^2\omega_{13}\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_9 + 12\omega_{12}\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9 + 12\omega_{12}\omega_6^2v_3^2c_s^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9 -$$
$$2\omega_{12}\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9 - 12\omega_{12}\omega_6^2v_3^2c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9 + 24\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_7^2v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} -$$
$$12\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 - 12\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}\omega_7^2v_1v_2\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9 - 12\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}\omega_7^2v_1^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9 -$$
$$12\omega_{12}\omega_6^2v_3^2\omega_{22}\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9 - 12\omega_{12}\omega_6^3v_3^2\omega_{22}c_s^2\omega_7^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9 + 12\omega_{12}\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_8\omega_5^3\omega_{18}\omega_9 +$$
$$12\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_7v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} + 6\omega_6^3v_3^2\omega_{22}\omega_{13}\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9 - 12\omega_{12}\omega_6^3\omega_{22}c_s^4\omega_7^2\omega_{20}\omega_8^2\omega_5^3\omega_{18} -$$
$$12\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 + 24\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9 - 36\omega_{12}\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9 -$$
$$12\omega_{12}\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9 - 6\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} - 12\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7v_1^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9 +$$
$$12\omega_{12}\omega_6^2v_3^2\omega_{13}\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_9 - 6\omega_{12}\omega_6^3c_s^2\omega_{13}\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} - 12\omega_{12}\omega_6^3v_3^2c_s^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9 -$$
$$24\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9 + 12\omega_{12}\omega_6^3v_3^2c_s^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} - 6\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9 -$$
$$24\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_8^2\omega_5^3\omega_{18} - 6\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 - 12\omega_{12}\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9 +$$
$$12\omega_{12}\omega_6\omega_{22}c_s^4\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9 + 24\omega_{12}\omega_6^2v_3^2\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9 + 12\omega_{12}\omega_6^2v_3^2\omega_{22}c_s^2\omega_7^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9 +$$
$$6\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} + 12\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}\omega_7^2v_1v_2\omega_{14}\omega_8^2\omega_5^3\omega_9 + 12\omega_{12}\omega_6^3\omega_{22}c_s^4\omega_7^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9 +$$
$$24\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_9 + 6\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} + 12\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5^3\omega_9 +$$
$$12\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2v_1v_2\omega_{14}\omega_8^2\omega_5^3\omega_9 - 12\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_7v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9 - 24\omega_6^3v_3^2\omega_{22}\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_8^2\omega_5^3\omega_{18} -$$
$$6\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 + 12\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 + 24\omega_{12}\omega_6v_3^2\omega_{22}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9 -$$
$$12\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9 + 24\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_7^2v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9 - 24\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9 +$$
$$6\omega_{12}\omega_6^3c_s^2\omega_{13}\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9 + 12\omega_{12}\omega_6^2v_3^2\omega_{22}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9 + 6\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9 +$$
$$12\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 - 24\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_7^2v_1v_2\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9 - 6\omega_{12}\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9 +$$
$$24\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{18} - 24\omega_{12}\omega_6^2v_3^2\omega_{22}\omega_{13}\omega_7^2v_1v_2\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9 + 6\omega_{12}\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 -$$
$$24\omega_{12}\omega_6^2c_s^2\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_9 + 12\omega_{12}\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9 - 24\omega_{12}\omega_6^3v_3^2\omega_7^2v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} -$$
$$60\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9 - 12\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}\omega_7^2v_1^2\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9 + 24\omega_{12}\omega_6^2v_3^2\omega_{22}\omega_7^2v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9 -$$
$$12\omega_{12}\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} + 12\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9 - 24\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9 -$$
$$24\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_7v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} + 6\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_9 + 24\omega_{12}\omega_6^2c_s^2\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9 -$$
$$6\omega_{12}\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9 - 12\omega_{12}\omega_6^2v_3^2\omega_{22}\omega_{13}\omega_7^2v_1^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9 + 36\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 -$$
$$24\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9 + 24\omega_{12}\omega_6^2v_3^2\omega_{22}\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_9 - 24\omega_{12}\omega_6^2c_s^2\omega_7^2v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9 +$$
$$12\omega_{12}\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9 + 12\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_5^3\omega_{18}\omega_9 + 6\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_9 -$$
$$24\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9 - 6\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9 + 24\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9 -$$
$$24\omega_{12}\omega_6v_3^2\omega_{22}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 - 24\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_7v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9 - 24\omega_{12}\omega_6^2v_3^2\omega_{22}\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9 -$$
$$12\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2v_1^2\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9 - 6\omega_{12}\omega_6^3c_s^2\omega_{13}\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_9 + 12\omega_{12}\omega_6^2v_3^2\omega_{22}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_8\omega_5^3\omega_{18}\omega_9 +$$
$$6\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9 + 12\omega_{12}\omega_6^2\omega_{22}c_s^4\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9 + 24\omega_6^3v_3^2\omega_{22}\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9 -$$
$$18\omega_{12}\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 - 6\omega_{12}\omega_6^3v_3^2c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} - 12\omega_{12}\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9 -$$
$$12\omega_{12}\omega_6^3v_3^2\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9 + 12\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_7v_1^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9 - 24\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{18} +$$
$$12\omega_{12}\omega_6^2v_3^2\omega_{22}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9 + 12\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} + 12\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_7^2v_1^2\omega_{20}\omega_8^2\omega_5^3\omega_{18} -$$
$$12\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9 - 12\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9 + 12\omega_{12}\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5^3\omega_{18} +$$
$$12\omega_{12}\omega_6^2v_3^2\omega_{22}\omega_{13}\omega_7^2v_1^2\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9 - 24\omega_{12}\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9 + 24\omega_{12}\omega_6\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9 +$$
$$12\omega_{12}\omega_6^3c_s^2\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_9 + 12\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}\omega_7^2v_1^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9 + 12\omega_{12}\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9 -$$
$$12\omega_{12}\omega_6^2v_3^2\omega_{22}\omega_{13}\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_9 + 12\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}\omega_7^2v_1v_2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 - 12\omega_{12}\omega_6^3v_3^2\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9 -$$
$$12\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} + 12\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9 + 12\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9 +$$
$$24\omega_{12}\omega_6^3c_s^2\omega_7^2v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9 + 24\omega_{12}\omega_6^2v_3^2\omega_{22}\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9 + 12\omega_{12}\omega_6^3c_s^2\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} -$$
$$12\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_5^3\omega_{18}\omega_9 - 12\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} - 12\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_9 -$$
$$12\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_9 - 12\omega_6^3v_3^2\omega_{22}\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9 + 12\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_7^2v_1^2\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9 +$$
$$24\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2v_1v_2\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9 + 12\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} + 24\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9 -$$
$$24\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_7^2v_1v_2\omega_{20}\omega_8^2\omega_5^3\omega_{18} - 12\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9 - 24\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_7^2v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9 -$$
$$12\omega_{12}\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_8\omega_5^3\omega_{18}\omega_9 - 12\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9 + 24\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9 -$$
$$24\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_7^2v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9 + 24\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}\omega_7^2v_1v_2\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9 + 12\omega_6^3v_3^2\omega_{22}\omega_{13}\omega_7^2v_1^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9 +$$
$$12\omega_6^3v_3^2\omega_{22}\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} - 24\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9 + 12\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}\omega_7^2v_1^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9 +$$
$$12\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} + 24\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9 + 12\omega_{12}\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9 -$$
$$18\omega_{12}\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 + 12\omega_{12}\omega_6^3v_3^2\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} - 12\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_9 -$$
$$12\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} - 24\omega_{12}\omega_6^2v_3^2\omega_{22}\omega_{13}\omega_7^2v_1v_2\omega_{14}\omega_8^2\omega_5^3\omega_9 + 12\omega_{12}\omega_6^2v_3^2\omega_{22}\omega_7^2v_1^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9 +$$
$$12\omega_{12}\omega_6^2v_3^2\omega_{22}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9 - 6\omega_{12}\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9 - 12\omega_{12}\omega_6^3c_s^2\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9 -$$
$$6\omega_{12}\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9 - 6\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5^3\omega_9 + 12\omega_{12}\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9 +$$
$$12\omega_{12}\omega_6^2v_3^2\omega_{22}\omega_{13}\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9 - 12\omega_{12}\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9 - 24\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_7^2v_1v_2\omega_{14}\omega_8^2\omega_5^3\omega_9 +$$
$$24\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9 + 12\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2v_1v_2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 + 12\omega_{12}\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_5^2\omega_{18}\omega_9 +$$
$$12\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_7v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9 - 12\omega_{12}\omega_6^2c_s^2\omega_{13}\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9 + 12\omega_{12}\omega_6^2c_s^2\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9 -$$
$$6\omega_{12}\omega_6^3v_3^2c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_9 + 12\omega_{12}\omega_6^3c_s^2\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} - 12\omega_{12}\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^3\omega_9 -$$
$$6\omega_{12}\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9 + 6\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 + 12\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9 +$$

$24\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9 + 24\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_7^2v_1v_2\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9 + 6\omega_{12}\omega_6^3v_3^2\omega_{13}\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9 -$
$24\omega_6^3v_3^2\omega_{22}\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9 + 12\omega_{12}\omega_6^2v_3^2c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_9 - 6\omega_6^3v_3^2\omega_{22}\omega_{13}\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} -$
$12\omega_{12}\omega_6^3c_s^2\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9 - 6\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 + 12\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2v_1^2\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9 +$
$24\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_8^2\omega_5^3\omega_{18} + 24\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_8^2\omega_5^3\omega_{18} + 24\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_8\omega_5^3\omega_{18}\omega_9 -$
$12\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 + 12\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}\omega_7^2v_1^2\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9 + 42\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9 -$
$6\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} + 6\omega_{12}\omega_6^3v_3^2c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9 - \omega_{12}\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9 -$
$12\omega_{12}\omega_6^2v_3^2\omega_{22}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9 + 24\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18} - 12\omega_{12}\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9 +$
$24\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9 + 12\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9 - 18\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9 -$
$12\omega_{12}\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_{18}\omega_9 + 12\omega_{12}\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9 - 12\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_7^2v_1^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9 +$
$12\omega_{12}\omega_6^2v_3^2\omega_{22}\omega_{13}\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5^3\omega_9 + 6\omega_{12}\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} - 24\omega_{12}\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}\omega_7v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$12\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9 - 12\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5^3\omega_{18} + 24\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_7^2v_1v_2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9 +$
$12\omega_6^3v_3^2\omega_{22}\omega_{13}\omega_7^2v_1^2\omega_{20}\omega_8^2\omega_5^3\omega_{18} + 24\omega_{12}\omega_6^2v_3^2\omega_{22}\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9 + 12\omega_{12}\omega_6^2v_3^2\omega_{22}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_5^3\omega_{18}\omega_9 +$
$6\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9 + 6\omega_{12}\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_9 - 12\omega_{12}\omega_6^2v_3^2\omega_{22}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9 -$
$12\omega_{12}\omega_6^3v_3^2\omega_{22}c_s^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} - 12\omega_{12}\omega_6^2\omega_{22}c_s^4\omega_7^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9 - 12\omega_{12}\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5^3\omega_{18} -$
$12\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 - 6\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 + 24\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_8\omega_5^3\omega_{18}\omega_9 +$
$12\omega_{12}\omega_6^3\omega_{22}c_s^4\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} + 12\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9 + 12\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7v_1^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9 +$
$12\omega_{12}\omega_6^2v_3^2\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9 + 24\omega_{12}\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9 + 12\omega_{12}\omega_6^2v_3^2\omega_{22}\omega_{13}\omega_7^2v_1^2\omega_{20}\omega_8\omega_5^3\omega_{18}\omega_9 -$
$24\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9 + 12\omega_{12}\omega_6^3v_3^2\omega_{22}c_s^2\omega_7^2\omega_{20}\omega_8^2\omega_5^3\omega_{18} + 12\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9 -$
$12\omega_{12}\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 - 6\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 + 24\omega_{12}\omega_6^2v_3^2\omega_{22}\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 +$
$24\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_7^2v_1v_2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9 - 18\omega_{12}\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9 + 6\omega_{12}\omega_6^3v_3^2\omega_{22}\omega_{13}\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9 +$
$6\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 - 24\omega_{12}\omega_6^2v_3^2\omega_7^2v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9$

$C_{49} =$
$2\omega_{12}\omega_6^2\omega_{22}v_1^2v_2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_9 + \omega_6^3\omega_{22}c_s^2\omega_{13}v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9 - \omega_{12}\omega_6^3\omega_{22}\omega_{13}v_1^2v_2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_9 - 2\omega_{12}\omega_6^2v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9 +$
$3\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}v_2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}^2\omega_9 + 2\omega_{12}\omega_6^2c_s^2\omega_{13}v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 - 3\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}v_2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_9 +$
$2\omega_{12}\omega_6^3\omega_{22}v_1v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_9 + \omega_{12}\omega_6^3\omega_{22}\omega_{13}v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 + \omega_{12}\omega_6^3\omega_{22}\omega_{13}v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 +$
$\omega_{12}\omega_6^3c_s^2\omega_{13}v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 + 2\omega_{12}\omega_6^2\omega_{22}\omega_{13}v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9 - \omega_{12}\omega_6^3\omega_{13}v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 -$
$2\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}v_1\omega_{14}\omega_8\omega_5\omega_{18}^2\omega_9 - 2\omega_6^3\omega_{22}c_s^2\omega_{13}v_1\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2 - \omega_{12}\omega_6^3\omega_{13}v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 + 2\omega_{12}\omega_6^2\omega_{22}\omega_{13}v_1v_2^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9 +$
$2\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9 + 2\omega_{12}\omega_6^3\omega_{22}c_s^2v_2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2 - 2\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}v_2\omega_{20}\omega_8\omega_5^2\omega_{18}^2\omega_9 - \omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 +$
$2\omega_{12}\omega_6^3v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 - 2\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 - 2\omega_{12}\omega_6^3\omega_{22}\omega_{13}v_1v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9 - 2\omega_{12}\omega_6^3\omega_{22}v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 -$
$2\omega_6^3\omega_{22}\omega_{13}v_1v_2^2\omega_{20}\omega_8^2\omega_5\omega_{18}^2\omega_9 + \omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 - \omega_{12}\omega_6^3\omega_{22}\omega_{13}v_1^2v_2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 + \omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 +$
$2\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}v_2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}^2\omega_9 - 2\omega_{12}\omega_6^2\omega_{22}c_s^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9 + 2\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 -$
$\omega_{12}\omega_6^3c_s^2\omega_{13}v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 - 2\omega_{12}\omega_6^3\omega_{22}\omega_{13}v_1^2v_2\omega_{20}\omega_8\omega_5^2\omega_{18}^2\omega_9 + 2\omega_{12}\omega_6^2\omega_{22}\omega_{13}v_1^2v_2\omega_{14}\omega_8\omega_5^2\omega_{18}^2\omega_9 -$
$\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}v_1\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_9 - \omega_6^3\omega_{22}\omega_{13}v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9 + 2\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}v_1\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9 -$
$2\omega_{12}\omega_6^3\omega_{22}\omega_{13}v_1v_2^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}^2\omega_9 - 2\omega_6^3\omega_{22}c_s^2\omega_{13}v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9 - 2\omega_{12}\omega_6^2\omega_{13}v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 -$
$2\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}v_1\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_9 - 2\omega_{12}\omega_6^3\omega_{22}c_s^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9 + \omega_{12}\omega_6^3\omega_{22}\omega_{13}v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_9 +$
$2\omega_{12}\omega_6^3c_s^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9 - 2\omega_{12}\omega_6^3\omega_{22}\omega_{13}v_1v_2^2\omega_{14}\omega_8\omega_5^2\omega_{18}^2\omega_9 - \omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}v_1\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9 - 2\omega_{12}\omega_6^3\omega_{22}c_s^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 +$
$2\omega_{12}\omega_6^3c_s^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 + 2\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}v_1\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_9 + \omega_{12}\omega_6^3\omega_{13}v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 + \omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}v_2\omega_{20}\omega_{14}\omega_5^2\omega_{18}^2\omega_9 +$
$2\omega_{12}\omega_6^2\omega_{22}c_s^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9 - 2\omega_{12}\omega_6^2\omega_{22}\omega_{13}v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9 - 2\omega_{12}\omega_6^3\omega_{22}\omega_{13}v_1v_2^2\omega_{20}\omega_8\omega_5\omega_{18}^2\omega_9 -$
$\omega_{12}\omega_6^3\omega_{22}\omega_{13}v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 - 2\omega_{12}\omega_6^2c_s^2\omega_{13}v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9 + 2\omega_{12}\omega_6^3\omega_{22}c_s^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9 + 2\omega_{12}\omega_6^3\omega_{22}c_s^2v_1\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_9 +$
$2\omega_{12}\omega_6^2v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9 + 3\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}v_2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}^2\omega_9 + 2\omega_{12}\omega_6^2\omega_{22}c_s^2v_2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_9 + 2\omega_{12}\omega_6^2\omega_{22}\omega_{13}v_1^2v_2\omega_{20}\omega_8\omega_5^2\omega_{18}^2\omega_9 +$
$\omega_6^3\omega_{22}c_s^2\omega_{13}v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 + 2\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}v_2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9 - 2\omega_{12}\omega_6^3\omega_{22}\omega_{13}v_1^2v_2\omega_{14}\omega_8\omega_5^2\omega_{18}^2\omega_9 +$
$\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}v_2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_9 - 2\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}v_1\omega_{20}\omega_8\omega_5\omega_{18}^2\omega_9 - 2\omega_{12}\omega_6^2c_s^2\omega_{13}v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 -$
$2\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}v_1\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}^2\omega_9 - \omega_{12}\omega_6^3\omega_{22}\omega_{13}v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9 - \omega_6^3\omega_{22}c_s^2\omega_{13}v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9 +$
$2\omega_{12}\omega_6^2\omega_{13}v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 + 2\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}v_2\omega_{20}\omega_8\omega_5^2\omega_{18}^2\omega_9 - \omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9 -$
$\omega_{12}\omega_6^3\omega_{22}\omega_{13}v_1v_2^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9 + \omega_6^3\omega_{22}\omega_{13}v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9 + 2\omega_{12}\omega_6^3\omega_{22}\omega_{13}v_1^2v_2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}^2\omega_9 +$
$2\omega_{12}\omega_6^2\omega_{22}\omega_{13}v_1v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_9 + \omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9 + 2\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}v_1\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2 + \omega_6^3\omega_{22}\omega_{13}v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 +$
$2\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}v_2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}^2\omega_9 - 2\omega_{12}\omega_6^3\omega_{22}\omega_{13}v_1^2v_2\omega_{20}\omega_8^2\omega_5\omega_{18}^2\omega_9 - 2\omega_6^3\omega_{22}\omega_{13}v_1^2v_2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_9 -$
$\omega_{12}\omega_6^3c_s^2\omega_{13}v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 + 2\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}v_2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_9 - 2\omega_{12}\omega_6^2\omega_{22}\omega_{13}v_1^2v_2\omega_{14}\omega_8\omega_5^2\omega_{18}^2\omega_9 - 2\omega_6^3\omega_{22}\omega_{13}v_1^2v_2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2 +$
$2\omega_6^3\omega_{22}c_s^2\omega_{13}v_2\omega_{20}\omega_8^2\omega_5\omega_{18}^2\omega_9 + 2\omega_{12}\omega_6^2c_s^2\omega_{13}v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9 - \omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}v_2\omega_{20}\omega_{14}\omega_5^2\omega_{18}^2\omega_9 - 2\omega_{12}\omega_6^2c_s^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9 +$
$2\omega_{12}\omega_6^3\omega_{22}\omega_{13}v_1v_2^2\omega_{20}\omega_8\omega_5^2\omega_{18}^2\omega_9 + 2\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}v_1\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}^2\omega_9 + \omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}v_1\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_9 -$
$2\omega_{12}\omega_6^2\omega_{22}\omega_{13}v_1^2v_2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}^2\omega_9 + \omega_{12}\omega_6^3\omega_{22}\omega_{13}v_1v_2^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 - 2\omega_{12}\omega_6^2\omega_{13}v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 +$
$\omega_{12}\omega_6^3c_s^2\omega_{13}v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 + 2\omega_{12}\omega_6^3\omega_{22}\omega_{13}v_1^2v_2\omega_{14}\omega_8\omega_5\omega_{18}^2\omega_9 - \omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9 -$
$\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9 - 6\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 - 2\omega_{12}\omega_6^2\omega_{22}v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9 +$
$\omega_{12}\omega_6^3c_s^2\omega_{13}v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9 - \omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}v_2\omega_{20}\omega_{14}\omega_8^2\omega_{18}^2\omega_9 - \omega_6^3\omega_{22}\omega_{13}v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_9 -$
$2\omega_{12}\omega_6^3\omega_{22}\omega_{13}v_1^2v_2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}^2\omega_9 - \omega_{12}\omega_6^3\omega_{13}v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9 + \omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}v_1\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_9 +$
$\omega_{12}\omega_6^3\omega_{22}\omega_{13}v_1v_2^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_9 + 2\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}v_1\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}^2\omega_9 - 2\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}v_1\omega_{14}\omega_8\omega_5^2\omega_{18}^2\omega_9 -$
$2\omega_{12}\omega_6^2\omega_{22}v_1v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_9 + \omega_6^3\omega_{22}c_s^2\omega_{13}v_1\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_9 + \omega_{12}\omega_6^3\omega_{22}\omega_{13}v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9 - 2\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}v_2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2 +$
$2\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}v_1\omega_{20}\omega_8\omega_5^2\omega_{18}^2\omega_9 + 2\omega_{12}\omega_6^2\omega_{22}\omega_{13}v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 + 2\omega_{12}\omega_6^3\omega_{22}\omega_{13}v_1^2v_2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_9 +$
$2\omega_{12}\omega_6^3\omega_{22}v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 + 2\omega_6^3\omega_{22}\omega_{13}v_1^2v_2\omega_{20}\omega_8^2\omega_5\omega_{18}^2\omega_9 + 2\omega_{12}\omega_6^3v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9 - 2\omega_{12}\omega_6^3\omega_{22}\omega_{13}v_1^2v_2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2 -$
$2\omega_{12}\omega_6^3v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 - 2\omega_{12}\omega_6^2\omega_{22}\omega_{13}v_1^2v_2\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9 + 2\omega_{12}\omega_6^3\omega_{22}v_1^2v_2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2 - 2\omega_{12}\omega_6^3\omega_{22}v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9 -$
$\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}v_2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9 + \omega_{12}\omega_6^3\omega_{13}v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 + 2\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}v_2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_9 -$

$2\omega_{12}\omega_6^3\omega_{22}v_1^2v_2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_9 - \omega_{12}\omega_6^3\omega_{22}\omega_{13}v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 - 2\omega_{12}\omega_6^2\omega_{22}\omega_{13}v_1^2v_2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_9 - 2\omega_{12}\omega_6^3\omega_{22}c_s^2v_1\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2 +$
$5\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9 - 4\omega_{12}\omega_{22}c_s^2\omega_{13}v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9 - \omega_6^3\omega_{22}c_s^2\omega_{13}v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9 +$
$\omega_{12}\omega_6^3\omega_{22}\omega_{13}v_1^2v_2\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9 - 4\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}v_2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}^2\omega_9 + 2\omega_{12}\omega_6^2\omega_{22}v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9 +$
$2\omega_6^3\omega_{22}c_s^2\omega_{13}v_2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2 + 2\omega_{12}\omega_6^2\omega_{22}\omega_{13}v_1v_2^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}^2\omega_9 + 2\omega_{12}\omega_6^3\omega_{22}\omega_{13}v_1v_2^2\omega_{20}\omega_8^2\omega_5\omega_{18}^2\omega_9 +$
$2\omega_{12}\omega_6^2\omega_{13}v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9 + 2\omega_6^3\omega_{22}\omega_{13}v_1v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_9 + 2\omega_6^3\omega_{22}\omega_{13}v_1^2v_2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2 + 2\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}v_2\omega_{20}\omega_8\omega_5\omega_{18}^2\omega_9 -$
$2\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}v_1\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 + 2\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}v_1\omega_{14}\omega_8\omega_5^2\omega_{18}^2\omega_9 - \omega_6^3\omega_{22}\omega_{13}v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 - 2\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}v_1\omega_{20}\omega_8\omega_5^2\omega_{18}^2\omega_9 -$
$2\omega_{12}\omega_6^3\omega_{22}c_s^2v_2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_9 - 2\omega_{12}\omega_6^3\omega_{22}v_1v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2 + 2\omega_{12}\omega_6^3\omega_{22}\omega_{13}v_1^2v_2\omega_{20}\omega_8\omega_5\omega_{18}^2\omega_9 + 2\omega_{12}\omega_6^3\omega_{22}\omega_{13}v_1v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2 -$
$6\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}v_2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}^2\omega_9 - 2\omega_{12}\omega_6^2c_s^2\omega_{13}v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9 + 2\omega_{12}\omega_6^3\omega_{22}v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9 +$
$2\omega_{12}\omega_6^2c_s^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9 - \omega_6^3\omega_{22}c_s^2\omega_{13}v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 - 2\omega_{12}\omega_6^3v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9 - 2\omega_{12}\omega_6^2\omega_{22}c_s^2v_1\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_9 -$
$2\omega_{12}\omega_6^2\omega_{22}\omega_{13}v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 + 2\omega_{12}\omega_6^3\omega_{22}\omega_{13}v_1v_2^2\omega_{14}\omega_8\omega_5^2\omega_{18}^2\omega_9 - 2\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}v_2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_9 -$
$2\omega_{12}\omega_6^3c_s^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 + \omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}v_2\omega_{20}\omega_{14}\omega_5^2\omega_{18}^2\omega_9 - \omega_{12}\omega_6^3c_s^2\omega_{13}v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9 + 2\omega_{12}\omega_6^3\omega_{22}c_s^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 -$
$2\omega_{12}\omega_6^2\omega_{22}\omega_{13}v_1v_2^2\omega_{20}\omega_8\omega_5^2\omega_{18}^2\omega_9 - \omega_{12}\omega_6^3\omega_{22}\omega_{13}v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9 + 2\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 +$
$2\omega_6^3\omega_{22}c_s^2\omega_{13}v_1\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_9 + 2\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}v_1\omega_{20}\omega_8^2\omega_5\omega_{18}^2\omega_9 - 2\omega_{12}\omega_6^2\omega_{22}\omega_{13}v_1v_2^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 + \omega_6^3\omega_{22}\omega_{13}v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_9 +$
$\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9 + 2\omega_{12}\omega_6^3\omega_{22}\omega_{13}v_1v_2^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}^2\omega_9 + \omega_{12}\omega_6^3\omega_{13}v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9$

$C_{50} = 6\omega_6v_3c_s^2\omega_7^2v_1^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{15} - 3\omega_6^2v_3c_s^2\omega_7^2v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 12\omega_6^2v_3^2\omega_7^2v_1v_2^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_{15} + 24\omega_6^2c_s^4\omega_7^2v_1\omega_{20}\omega_{17}\omega_8\omega_{18}\omega_{15} -$
$24\omega_6^2c_s^4\omega_7v_1\omega_{20}\omega_{17}\omega_8^2\omega_{18}\omega_{15} - 6\omega_6^2v_3^2c_s^2\omega_7^2v_1\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15} - 12\omega_6c_s^2\omega_7^2v_1v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 24\omega_6^2c_s^4v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} +$
$12\omega_6v_3^2c_s^2\omega_7^2v_1\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 12\omega_6v_3^2c_s^2\omega_7^2v_1\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} + 12\omega_6^2v_3^2c_s^2\omega_7^2v_1\omega_{20}\omega_8^2\omega_5\omega_{18} + 12\omega_6^2c_s^2\omega_7^2v_1v_2^2\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} -$
$12\omega_6^2v_3c_s^2\omega_7^2v_1^2\omega_{20}\omega_8\omega_5\omega_{18}\omega_{15} + 12\omega_6v_3^2c_s^2\omega_7^2v_1v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{15} - 6\omega_6v_3^2c_s^2\omega_7^2v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 6\omega_6^2v_3^2c_s^2\omega_7^2v_1\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{15} +$
$48\omega_6c_s^4\omega_7v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} - 3\omega_6^2v_3^2c_s^2\omega_7^2v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} - 12\omega_6c_s^2\omega_7^2v_1v_2^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} + 6\omega_6^2v_3^2\omega_7^2v_1v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} -$
$12\omega_6^2v_3c_s^2\omega_7^2v_1^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} + 6\omega_6v_3^2\omega_7^2v_1v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 12\omega_6^2v_3c_s^2\omega_7^2v_1^2\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} - 12\omega_6^2c_s^2\omega_7^2v_1v_2^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15} -$
$48\omega_6c_s^4\omega_7^2v_1\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} - 6\omega_6^2c_s^2\omega_7^2v_1v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18} + 12\omega_6^2v_3c_s^2\omega_7^2v_2^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_{15} - 6\omega_6^2v_3c_s^2\omega_7^2v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15} -$
$3\omega_6^2v_3c_s^2\omega_7^2v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} - 6\omega_6^2v_3^2c_s^2\omega_7^2v_1\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 24\omega_6c_s^4v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} - 6\omega_6^2v_3\omega_7^2v_1^2v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{15} +$
$6\omega_6v_3\omega_7^2v_1^2v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 12\omega_6v_3c_s^2\omega_7^2v_2^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15} - 6\omega_6v_3c_s^2\omega_7^2v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} - 12\omega_6v_3\omega_7^2v_1^2v_2^2\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} +$
$12\omega_6^2v_3^2\omega_7^2v_1v_2^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} + 12\omega_6^2v_3\omega_7^2v_1^2v_2^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} - 6\omega_6^2v_3c_s^2\omega_7^2v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} -$
$12\omega_6v_3c_s^2\omega_7^2v_1\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} - 3\omega_6^2c_s^2\omega_7^2v_1v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 6\omega_6^2v_3\omega_7^2v_1^2v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 12\omega_6^2c_s^2\omega_7^2v_1v_2^2\omega_{20}\omega_8^2\omega_5\omega_{18} + 12\omega_6c_s^2\omega_7^2v_1v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 12\omega_6c_s^2\omega_7^2v_1v_2^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15} +$
$12\omega_6^2v_3^2c_s^2\omega_7^2v_1\omega_{20}\omega_8\omega_5\omega_{18}\omega_{15} + 24\omega_6^2c_s^4\omega_7^2v_1\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} - 12\omega_6^2v_3^2c_s^2\omega_7^2v_1\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} - 12\omega_6^2c_s^2\omega_7^2v_1v_2^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_{15} +$
$3\omega_6^2v_3^2c_s^2\omega_7^2v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 6\omega_6v_3^2c_s^2\omega_7^2v_1\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{15} - 28\omega_6^2c_s^4\omega_7v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 6\omega_6^2v_3c_s^2\omega_7^2v_1^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} -$
$6\omega_6^2v_3^2\omega_7^2v_1v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 6\omega_6^2v_3c_s^2\omega_7^2v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15} + 12\omega_6v_3\omega_7^2v_1^2v_2^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} - 12\omega_6v_3^2\omega_7^2v_1v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} +$
$6\omega_6^2v_3c_s^2\omega_7^2v_1^2\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15} - 12\omega_6^2v_3^2c_s^2\omega_7^2v_1\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} - 12\omega_6^2v_3^2\omega_7^2v_1v_2^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15} - 3\omega_6^2v_3\omega_7^2v_1^2v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} -$
$6\omega_6^2v_3^2\omega_7^2v_1v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18} - 6\omega_6^2v_3c_s^2\omega_7^2v_1^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 6\omega_6v_3c_s^2\omega_7^2v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 6\omega_6^2v_3c_s^2\omega_7^2v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$6\omega_6^2c_s^2\omega_7^2v_1v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} - 6\omega_6v_3c_s^2\omega_7^2v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} - 12\omega_6^2v_3c_s^2\omega_7^2v_2^2\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} + 6\omega_6^2v_3^2\omega_7^2v_1v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15} +$
$12\omega_6^2v_3^2\omega_7^2v_1v_2^2\omega_{20}\omega_8^2\omega_5\omega_{18} + 3\omega_6^2v_3\omega_7^2v_1^2v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 12\omega_6v_3\omega_7^2v_1^2v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 12\omega_6^2v_3^2\omega_7^2v_1v_2^2\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} -$
$24\omega_6^2c_s^4\omega_7^2v_1\omega_{20}\omega_{17}\omega_5^2\omega_{18}\omega_{15} + 12\omega_6v_3c_s^2\omega_7^2v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 3\omega_6^2v_3^2c_s^2\omega_7^2v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^2c_s^2\omega_7^2v_1v_2^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} -$
$6\omega_6^2c_s^2\omega_7^2v_1v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 6\omega_6v_3\omega_7^2v_1^2v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} + 6\omega_6v_3\omega_7^2v_1^2v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{15} - 3\omega_6^2v_3\omega_7^2v_1^2v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$12\omega_6^2v_3c_s^2\omega_7^2v_2^2\omega_{20}\omega_8^2\omega_5\omega_{18} + 6\omega_6^2v_3c_s^2\omega_7^2v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18} - 12\omega_6^2v_3c_s^2\omega_7^2v_2^2\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} - 12\omega_6v_3c_s^2\omega_7^2v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$12\omega_6^2v_3c_s^2\omega_7^2v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{15} - 12\omega_6^2v_3\omega_7^2v_1^2v_2^2\omega_{20}\omega_8\omega_5\omega_{18}\omega_{15} - 12\omega_6v_3\omega_7^2v_1^2v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 6\omega_6^2v_3c_s^2\omega_7^2v_1^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$3\omega_6^2v_3c_s^2\omega_7^2v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} - 6\omega_6^2v_3c_s^2\omega_7^2v_1^2\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} - 12\omega_6^2v_3^2c_s^2\omega_7^2v_1\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_{15} + 6\omega_6^2v_3^2c_s^2\omega_7^2v_1\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15} +$
$6\omega_6^2c_s^2\omega_7^2v_1v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 3\omega_6^2c_s^2\omega_7^2v_1v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 12\omega_6^2v_3^2c_s^2\omega_7^2v_1\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_{15} - 6\omega_6^2v_3c_s^2\omega_7^2v_1^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} +$
$2\omega_6^2c_s^4\omega_7^2v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 12\omega_6^2v_3\omega_7^2v_1^2v_2^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_{15} - 12\omega_6v_3\omega_7^2v_1^2v_2^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15} - 6\omega_6^2v_3^2c_s^2\omega_7^2v_1\omega_{20}\omega_8^2\omega_5^2\omega_{18} +$
$3\omega_6^2v_3c_s^2\omega_7^2v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} - 6\omega_6^2v_3c_s^2\omega_7^2v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 6\omega_6v_3c_s^2\omega_7^2v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 6\omega_6^2v_3\omega_7^2v_1^2v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} -$
$12\omega_6v_3c_s^2\omega_7^2v_2^2\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} + 6\omega_6^2c_s^2\omega_7^2v_1v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15} + 3\omega_6^2c_s^2\omega_7^2v_1v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} + 6\omega_6^2v_3c_s^2\omega_7^2v_2^2\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15} -$
$12\omega_6^2v_3^2\omega_7^2v_1v_2^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} - 12\omega_6^2v_3\omega_7^2v_1^2v_2^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}$

$C_{51} = -4\omega_6^3c_s^4\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{18}\omega_{15} + 8\omega_6^2v_3^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 8\omega_6v_3^2c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{18}\omega_{15} + 2\omega_6^3v_3c_s^2v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_{15} -$
$\omega_6^3v_3^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_{15} + 4\omega_6^3c_s^2v_2^2\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} + 8\omega_6^2c_s^2v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 8\omega_6^2v_3c_s^2v_1\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_{15} +$
$4\omega_6c_s^2v_2^2\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{18}\omega_{15} - 4\omega_6^3c_s^4\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15} - 4\omega_6^3v_3^2v_2^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} + 4\omega_6^3v_3c_s^2v_1\omega_{17}\omega_8^2\omega_5^3\omega_{15} -$
$8\omega_6^2v_3v_1v_2^2\omega_{20}\omega_8\omega_5^3\omega_{18}\omega_{15} + 4\omega_6^3v_3^2c_s^2\omega_{20}\omega_{17}\omega_5^2\omega_{18}\omega_{15} - 4\omega_6^2c_s^4\omega_{17}\omega_8\omega_5^3\omega_{18}\omega_{15} - 8\omega_6^3v_3v_1v_2^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15} -$

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

$C_{52} = \omega_6^2 v_3\omega_{16}\omega_{10}\omega_7^2 v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 4\omega_6^2 v_3\omega_{16}\omega_{10}\omega_7^2 v_1^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15} + 4\omega_6 c_s^2\omega_{10}\omega_7 v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} +$
$2\omega_6^2 v_3\omega_{16}\omega_{10}\omega_7^2 v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18} - 2c_s^2\omega_{16}\omega_{10}\omega_7 v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 6\omega_6^2 c_s^2\omega_{16}\omega_{10}\omega_7 v_1\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15} -$
$10\omega_6^2 c_s^2\omega_{16}\omega_{10}\omega_7^2 v_1\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} - 4\omega_6^2 v_3 c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} - 4\omega_6^2 c_s^2\omega_{16}\omega_{10} v_1\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15} +$
$2c_s^2\omega_{16}\omega_{10}\omega_7^2 v_1\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} + 2\omega_6^2 c_s^2\omega_{16}\omega_7 v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} - 2\omega_6 v_3^2\omega_{16}\omega_{10}\omega_7^2 v_1\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{15} -$
$4\omega_6^2 v_3\omega_{16}\omega_{10}\omega_7^2 v_1^2\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} + 2\omega_6 v_3^2\omega_{16}\omega_{10}\omega_7^2 v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 4\omega_6^2 v_3 c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15} +$
$2\omega_6^2 v_3 c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18} - 2\omega_6^2 c_s^2\omega_{16}\omega_{10}\omega_7^2 v_1\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15} + 3\omega_6^2 c_s^2\omega_{10}\omega_7^2 v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} +$
$2\omega_6^2 v_3 c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} + 2\omega_6 v_3\omega_{16}\omega_{10}\omega_7^2 v_1^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 2\omega_6^2 v_3\omega_{16}\omega_{10}\omega_7^2 v_1^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} + 4\omega_6^2 v_3^2\omega_{16}\omega_{10}\omega_7^2 v_1\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} -$
$4\omega_6^2 v_3^2\omega_{16}\omega_{10}\omega_7^2 v_1\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} + 2\omega_6 c_s^2\omega_{16}\omega_{10}\omega_7 v_1\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} + 2\omega_6 v_3 c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{15} -$
$2\omega_6^2 v_3^2\omega_{16}\omega_{10}\omega_7^2 v_1\omega_{20}\omega_8^2\omega_5^2\omega_{18} + \omega_6^2 v_3 c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} - 4\omega_6^2 v_3^2\omega_{16}\omega_{10}\omega_7^2 v_1\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15} -$
$2\omega_6^2 v_3^2\omega_{16}\omega_{10}\omega_7^2 v_1\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18} + 2\omega_6 c_s^2\omega_{16}\omega_{10}\omega_7^2 v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} - 2\omega_6^2 v_3\omega_{16}\omega_{10}\omega_7^2 v_1^2\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} +$
$4\omega_6^2 v_3 c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_{15} + \omega_6^2 c_s^2\omega_{16}\omega_{10}\omega_7^2 v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} - 2\omega_6 v_3^2\omega_{16}\omega_{10}\omega_7^2 v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$2\omega_6^2 c_s^2\omega_{16}\omega_{10}\omega_7 v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 4\omega_6^2 v_3^2\omega_{16}\omega_{10}\omega_7^2 v_1^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_{15} + 4\omega_6^2 v_3\omega_{16}\omega_{10}\omega_7^2 v_1^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} +$
$4\omega_6 v_3^2\omega_{16}\omega_{10}\omega_7^2 v_1\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} - 2\omega_6 v_3 c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 4\omega_6^2 c_s^2\omega_{16}\omega_{10}\omega_7^2 v_1\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} -$
$\omega_6^2 c_s^2\omega_{16}\omega_{10}\omega_7^2 v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} - 2\omega_6^2 v_3 c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} - 2\omega_6 v_3\omega_{16}\omega_{10}\omega_7^2 v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} -$
$2\omega_6 c_s^2\omega_{16}\omega_{10}\omega_7 v_1\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15} + 4\omega_6^2 c_s^2\omega_{16}\omega_{10}\omega_7 v_1\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18} - 2\omega_6^2 c_s^2\omega_{16}\omega_{10}\omega_7^2 v_1\omega_{20}\omega_{17}\omega_5^2\omega_{18}\omega_{15} -$
$4\omega_6^2 v_3^2\omega_{16}\omega_{10}\omega_7^2 v_1\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_{15} + 2\omega_6 c_s^2\omega_{16}\omega_{10}\omega_7^2 v_1\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} - 4\omega_6 v_3\omega_{16}\omega_{10}\omega_7^2 v_1^2\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} +$
$4\omega_6^2 v_3 c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_6 v_3 c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + \omega_6^2 c_s^2\omega_{16}\omega_{10}\omega_7^2 v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$2\omega_6 v_3\omega_{16}\omega_{10}\omega_7^2 v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 4\omega_6^2 c_s^2\omega_{16}\omega_{10}\omega_7^2 v_1\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} - 4\omega_6 c_s^2\omega_{16}\omega_{10} v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} +$
$4\omega_6^2 c_s^2\omega_7^2 v_1\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15} - 4\omega_6 v_3 c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} - \omega_6^2 v_3^2\omega_{16}\omega_{10}\omega_7^2 v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} +$
$2\omega_6^2 v_3^2\omega_{16}\omega_{10}\omega_7^2 v_1\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 4\omega_6^2 c_s^2\omega_{10}\omega_7 v_1\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15} - 2\omega_6^2 c_s^2\omega_{16}\omega_{10}\omega_7 v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} -$
$4\omega_6 v_3^2\omega_{16}\omega_{10}\omega_7^2 v_1\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} - 2\omega_6^2 v_3 c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 4\omega_6 v_3^2\omega_{16}\omega_{10}\omega_7^2 v_1\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15} +$
$2\omega_6^2 v_3\omega_{16}\omega_{10}\omega_7^2 v_1^2\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15} + 2\omega_6^2 c_s^2\omega_{16}\omega_{10}\omega_7^2 v_1\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15} + 2\omega_6^2 v_3 c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15} -$
$2\omega_6 c_s^2\omega_{10}\omega_7^2 v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} - 2\omega_6^2 v_3\omega_{16}\omega_{10}\omega_7^2 v_1^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{15} - 4\omega_6^2 v_3\omega_{16}\omega_{10}\omega_7^2 v_1^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} +$
$2\omega_6^2 c_s^2\omega_{16}\omega_{10}\omega_7 v_1\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} - 4\omega_6^2 v_3 c_s^2\omega_{16}\omega_{10}\omega_7^2 v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 2\omega_6^2 v_3^2\omega_{16}\omega_{10}\omega_7^2 v_1\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{15} -$
$8\omega_6 c_s^2\omega_{16}\omega_{10}\omega_7^2 v_1\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} + 4\omega_6 v_3^2\omega_{16}\omega_{10}\omega_7^2 v_1\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 4\omega_6 c_s^2\omega_{16}\omega_{10}\omega_7 v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} +$
$2\omega_6^2 c_s^2\omega_{16}\omega_{10}\omega_7^2 v_1\omega_{20}\omega_{17}\omega_5\omega_{18}\omega_{15} - 4\omega_6 v_3 c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15} - 2\omega_6^2 c_s^2\omega_{16}\omega_{10} v_1\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18} -$
$4\omega_6 v_3\omega_{16}\omega_{10}\omega_7^2 v_1^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15} - 2\omega_6^2 v_3^2\omega_{16}\omega_{10}\omega_7^2 v_1\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15} - 4\omega_6^2 c_s^2\omega_{10}\omega_7 v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} -$
$2\omega_6^2 c_s^2\omega_{16}\omega_{10}\omega_7^2 v_1\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_6^2 v_3^2\omega_{16}\omega_{10}\omega_7^2 v_1\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15} - 4\omega_6 c_s^2\omega_{16}\omega_{10}\omega_7^2 v_1\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} -$
$4\omega_6 v_3\omega_{16}\omega_{10}\omega_7^2 v_1^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_6^2 c_s^2\omega_2^2 v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 4\omega_6^2 c_s^2\omega_{16}\omega_{10}\omega_7^2 v_1\omega_{20}\omega_{17}\omega_8\omega_{18}\omega_{15} - \omega_6^2 v_3\omega_{16}\omega_{10}\omega_7^2 v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$4\omega_6^2 v_3 c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_8^2\omega_5\omega_{18} + 4\omega_6 v_3 c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} + 6\omega_6^2 c_s^2\omega_{16}\omega_{10}\omega_7^2 v_1\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} +$
$4\omega_6 c_s^2\omega_{16}\omega_{10}\omega_7^2 v_1\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} + 4\omega_6^2 c_s^2\omega_{16}\omega_{10} v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 4\omega_6^2 v_3 c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} -$

$4\omega_6^2c_s^2\omega_{16}\omega_{10}\omega_7v_1\omega_{20}\omega_{17}\omega_8^2\omega_{18}\omega_{15} - 3\omega_6^2c_s^2\omega_{16}\omega_{10}\omega_7v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} - 2\omega_6^2v_3\omega_{16}\omega_{10}\omega_7^2v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15} -$
$4\omega_6^2v_3\omega_{16}\omega_{10}\omega_7^2v_1^2\omega_{20}\omega_8\omega_5\omega_{18}\omega_{15} - 4\omega_6v_3^2\omega_{16}\omega_{10}\omega_7^2v_1\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} - 4\omega_6^2v_3\omega_{16}\omega_{10}\omega_7^2v_1^2\omega_{20}\omega_8^2\omega_5\omega_{18} + 4\omega_6^2v_3^2\omega_{16}\omega_{10}\omega_7^2v_1\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18} -$
$4\omega_6^2v_3c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_8\omega_5\omega_{18}\omega_{15} + 2\omega_6c_s^2\omega_{16}\omega_{10}\omega_7^2v_1\omega_{20}\omega_{17}\omega_5^2\omega_{18}\omega_{15} + \omega_6^2v_3^2\omega_{16}\omega_{10}\omega_7^2v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} +$
$4\omega_6^2v_3\omega_{16}\omega_{10}\omega_7^2v_1^2\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} - \omega_6^2v_3c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 4\omega_6^2c_s^2\omega_{16}\omega_7v_1\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15} -$
$2\omega_6c_s^2\omega_{16}\omega_{10}\omega_7^2v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_6^2v_3\omega_{16}\omega_{10}\omega_7^2v_1^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 4\omega_6^2v_3^2\omega_{16}\omega_{10}\omega_7^2v_1\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} -$
$\omega_6^2v_3\omega_{16}\omega_{10}\omega_7^2v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} - 4\omega_6^2v_3^2\omega_{16}\omega_{10}\omega_7^2v_1\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} - 4\omega_6^2c_s^2\omega_{10}\omega_7^2v_1\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15} +$
$2\omega_6^2c_s^2\omega_{16}\omega_{10}\omega_7^2v_1\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 4\omega_6v_3c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 4\omega_6c_s^2\omega_{16}\omega_{10}\omega_7^2v_1\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_6^2v_3c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$4\omega_6^2v_3^2\omega_{16}\omega_{10}\omega_7^2v_1\omega_{20}\omega_8\omega_5\omega_{18}\omega_{15} + 4\omega_6v_3\omega_{16}\omega_{10}\omega_7^2v_1^2\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} - 2\omega_6^2v_3c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15} -$
$\omega_6^2v_3c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} + 4\omega_6v_3\omega_{16}\omega_{10}\omega_7^2v_1^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} + \omega_6^2v_3^2\omega_{16}\omega_{10}\omega_7^2v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_6^2v_3^2\omega_{16}\omega_{10}\omega_7^2v_1\omega_{17}\omega_8^2\omega_5^2\omega_{15}$

$C_{53} = -\omega_6^2\omega_{19}\omega_7^2v_1^2v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{15} - 4\omega_6^2v_3c_s^2\omega_7^2v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_{15} - 4\omega_6^2\omega_{19}c_s^2\omega_7^2v_2^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18} +$
$4\omega_6\omega_{19}c_s^2\omega_7^2v_2^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 8\omega_6v_3\omega_{19}\omega_7^2v_1v_2^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15} - 4\omega_6^2\omega_{19}c_s^2\omega_7^2v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15} +$
$4\omega_6^2v_3\omega_{19}c_s^2\omega_7^2v_1\omega_{20}\omega_{17}\omega_{11}\omega_5\omega_{18}\omega_{15} - 4\omega_6^2v_3\omega_{19}c_s^2\omega_7^2v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} - 2\omega_6^2\omega_{19}c_s^2\omega_7^2v_2^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15} +$
$8\omega_6^2v_3\omega_{19}\omega_7^2v_1v_2^2\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{15} - 4\omega_6v_3\omega_{19}\omega_7^2v_1v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{15} - 4\omega_6\omega_{19}\omega_7^2v_1^2v_2^2\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15} +$
$4\omega_6^2\omega_{19}c_s^2\omega_7^2v_1^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{15} + 8v_3\omega_{19}c_s^2\omega_7^2v_1\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15} - 4\omega_6^2\omega_{19}\omega_7^2v_1^2v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15} +$
$2\omega_6^2\omega_{19}c_s^2\omega_7^2v_1^2\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_{15} - 4\omega_6^2v_3\omega_{19}\omega_7^2v_1v_2^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 8\omega_6^2v_3\omega_{19}c_s^2\omega_7^2v_1\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{15} +$
$2\omega_6^2\omega_{19}c_s^2\omega_7^2v_2^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{15} + 4\omega_6^2\omega_{19}\omega_7^2v_1^2v_2^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15} - 2\omega_6^2v_3\omega_{19}c_s^2\omega_7^2v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15} +$
$4\omega_6^2\omega_{19}c_s^2\omega_7^2v_2^2\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15} - \omega_6^2\omega_{19}\omega_7^2v_1^2v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 2\omega_6^2\omega_{19}c_s^2\omega_7^2v_1^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} -$
$4\omega_6\omega_{19}c_s^2\omega_7^2v_2^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15} + 2\omega_6^2\omega_{19}\omega_7^2v_1^2v_2^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 8\omega_6v_3\omega_{19}\omega_7^2v_1v_2^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15} +$
$8\omega_6^2v_3\omega_{19}c_s^2\omega_7^2v_1\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18} - 4\omega_6v_3\omega_{19}c_s^2\omega_7^2v_1\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15} - 2\omega_6\omega_{19}c_s^2\omega_7^2v_1^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15} +$
$8\omega_6^2v_3c_s^2\omega_7v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_{15} - 2\omega_6^2\omega_{19}\omega_7^2v_1^2v_2^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15} - 6\omega_6^2v_3\omega_{19}c_s^2\omega_7v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15} -$
$4\omega_6^2\omega_{19}c_s^2\omega_7^2v_1^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{15} + 2\omega_6\omega_{19}\omega_7^2v_1^2v_2^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15} - 8\omega_6v_3\omega_{19}\omega_7^2v_1v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15} +$
$2\omega_6\omega_{19}c_s^2\omega_7^2v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{15} - 4\omega_6^2v_3\omega_{19}c_s^2\omega_7v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_{15} + 8\omega_6v_3\omega_{19}c_s^2\omega_7v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{15} -$
$4\omega_6v_3\omega_{19}c_s^2\omega_7v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_{15} - 8\omega_6^2v_3\omega_{19}\omega_7^2v_1v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{15} - 8\omega_6^2v_3\omega_{19}\omega_7^2v_1v_2^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_{15} -$
$20\omega_6v_3\omega_{19}c_s^2\omega_7^2v_1\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15} + 4\omega_6^2v_3\omega_{19}\omega_7^2v_1v_2^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15} - 4\omega_6\omega_{19}c_s^2\omega_7^2v_2^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{15} -$
$4\omega_6\omega_{19}c_s^2\omega_7^2v_1^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15} + 4\omega_6^2v_3\omega_{19}c_s^2\omega_7^2v_1\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15} - 4\omega_6^2v_3c_s^2\omega_7^2v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} -$
$16\omega_6^2v_3\omega_{19}c_s^2\omega_7^2v_1\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{15} + 2\omega_6^2\omega_{19}c_s^2\omega_7^2v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} + 4\omega_6^2\omega_{19}\omega_7^2v_1^2v_2^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_{15} +$
$\omega_6^2\omega_{19}c_s^2\omega_7^2v_1^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 4\omega_6^2\omega_{19}c_s^2\omega_7^2v_1^2\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15} - 2\omega_6^2\omega_{19}\omega_7^2v_1^2v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_{15} +$
$2\omega_6^2v_3\omega_{19}\omega_7^2v_1v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 8\omega_6v_3\omega_{19}\omega_7^2v_1v_2^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{15} + 2\omega_6^2\omega_{19}c_s^2\omega_7^2v_1^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$2\omega_6\omega_{19}c_s^2\omega_7^2v_1^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{15} + 4\omega_6^2v_3\omega_{19}c_s^2\omega_7v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_{15} - 4\omega_6^2v_3c_s^2\omega_7^2v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} -$
$4\omega_6v_3\omega_{19}c_s^2\omega_7v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_{15} - 8\omega_6^2v_3\omega_{19}\omega_7^2v_1v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{15} - 8\omega_6^2v_3\omega_{19}\omega_7^2v_1v_2^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_{15} -$
$4\omega_6^2v_3\omega_{19}c_s^2\omega_7v_1v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 4\omega_6v_3\omega_{19}c_s^2\omega_7v_1\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15} + 2\omega_6^2v_3\omega_{19}\omega_7^2v_1v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{15} +$
$2\omega_6^2\omega_{19}c_s^2\omega_7^2v_2^2\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_{15} + 4\omega_6\omega_{19}\omega_7^2v_1^2v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15} - 2\omega_6^2\omega_{19}c_s^2\omega_7^2v_1^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_{15} -$
$4\omega_6\omega_{19}\omega_7^2v_1^2v_2^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{15} + 8\omega_6v_3c_s^2\omega_7v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 4\omega_6\omega_{19}\omega_7^2v_1^2v_2^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15} +$
$\omega_6^2\omega_{19}\omega_7^2v_1^2v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15} - 4\omega_6^2\omega_{19}c_s^2\omega_7^2v_1^2\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{15} - 8\omega_6^2v_3\omega_{19}c_s^2\omega_7^2v_1\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_{15} +$
$12\omega_6^2v_3\omega_{19}c_s^2\omega_7^2v_1\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15} - 2\omega_6^2\omega_{19}\omega_7^2v_1^2v_2^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15} - 4\omega_6^2v_3\omega_{19}\omega_7^2v_1v_2^2\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_{15} -$
$\omega_6^2\omega_{19}c_s^2\omega_7^2v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{15} + 4\omega_6v_3\omega_{19}c_s^2\omega_7^2v_1\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{15} + \omega_6^2\omega_{19}c_s^2\omega_7^2v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15} -$
$4\omega_6\omega_{19}c_s^2\omega_7^2v_2^2\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15} - 4\omega_6v_3\omega_{19}\omega_7^2v_1v_2^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 4\omega_6^2\omega_{19}c_s^2\omega_7^2v_2^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15} +$
$4\omega_6v_3\omega_{19}c_s^2\omega_7^2v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 8\omega_6^2v_3\omega_{19}\omega_7^2v_1v_2^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{15} + 4\omega_6^2v_3\omega_{19}\omega_7^2v_1v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_{15} +$
$8\omega_6^2v_3\omega_{19}c_s^2v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 4\omega_6^2\omega_{19}\omega_7^2v_1^2v_2^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{15} - 4\omega_6^2v_3\omega_{19}c_s^2\omega_7^2v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15} +$
$2\omega_6^2\omega_{19}c_s^2\omega_7^2v_2^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{15} + 4\omega_6^2\omega_{19}c_s^2\omega_7^2v_1^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_{15} - 4\omega_6v_3\omega_{19}c_s^2\omega_7^2v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{15} -$
$8\omega_6v_3c_s^2\omega_7^2v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15} - \omega_6^2\omega_{19}c_s^2\omega_7^2v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 4\omega_6\omega_{19}\omega_7^2v_1^2v_2^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15} +$
$4\omega_6v_3\omega_{19}\omega_7^2v_1v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15} - 8v_3\omega_{19}c_s^2\omega_7v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 2\omega_6\omega_{19}\omega_7^2v_1^2v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{15} +$
$8\omega_6v_3\omega_{19}c_s^2\omega_7^2v_1\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15} - 4\omega_6^2\omega_{19}c_s^2\omega_7^2v_1^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18} + 4\omega_6^2v_3\omega_{19}c_s^2\omega_7v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} -$
$4\omega_6^2v_3\omega_{19}\omega_7^2v_1v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} + 4\omega_6^2\omega_{19}c_s^2\omega_7^2v_2^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_{15} + 2\omega_6^2\omega_{19}\omega_7^2v_1^2v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} -$
$\omega_6^2\omega_{19}c_s^2\omega_7^2v_1^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 4\omega_6^2\omega_{19}c_s^2\omega_7^2v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{15} - 4\omega_6^2v_3\omega_{19}c_s^2\omega_7^2v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15} -$
$8\omega_6v_3\omega_{19}c_s^2v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 6\omega_6^2v_3c_s^2\omega_7^2v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 2\omega_6^2v_3\omega_{19}c_s^2\omega_7^2v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{15} -$
$8\omega_6^2v_3\omega_{19}c_s^2\omega_7^2v_1\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15} + 2\omega_6\omega_{19}c_s^2\omega_7^2v_1^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15} - 4\omega_6^2\omega_{19}\omega_7^2v_1^2v_2^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{15} +$
$4\omega_6^2v_3\omega_{19}c_s^2\omega_7^2v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_{15} - 4\omega_6^2\omega_{19}c_s^2\omega_7^2v_1^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15} - 8\omega_6v_3\omega_{19}c_s^2\omega_7v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} -$
$2\omega_6^2\omega_{19}c_s^2\omega_7^2v_1^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 4\omega_6^2\omega_{19}\omega_7^2v_1^2v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{15} + 2\omega_6^2\omega_{19}\omega_7^2v_1^2v_2^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{15} +$
$4\omega_6v_3\omega_{19}c_s^2\omega_7^2v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15} - 8\omega_6^2v_3\omega_{19}\omega_7^2v_1v_2^2\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15} - 2\omega_6\omega_{19}\omega_7^2v_1^2v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15} +$
$2\omega_6^2\omega_{19}c_s^2\omega_7^2v_2^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 4\omega_6^2v_3\omega_{19}\omega_7^2v_1v_2^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{15} - 8\omega_6^2v_3c_s^2\omega_7v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15} -$
$\omega_6^2\omega_{19}c_s^2\omega_7^2v_1^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{15} + 2\omega_6^2v_3\omega_{19}c_s^2\omega_7^2v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 4\omega_6^2\omega_{19}c_s^2\omega_7^2v_2^2\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{15} -$
$2\omega_6\omega_{19}c_s^2\omega_7^2v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 8\omega_6^2v_3\omega_{19}\omega_7^2v_1v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15} + 4\omega_6^2v_3\omega_{19}\omega_7^2v_1v_2^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15} -$
$4\omega_6\omega_{19}c_s^2\omega_7^2v_1^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{15} + 12\omega_6v_3\omega_{19}c_s^2\omega_7v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 4\omega_6^2\omega_{19}c_s^2\omega_7^2v_1^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15} +$
$8\omega_6^2v_3\omega_{19}\omega_7^2v_1v_2^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18} + 8\omega_6v_3c_s^2\omega_7^2v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 2\omega_6^2\omega_{19}\omega_7^2v_1^2v_2^2\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_{15} -$
$4\omega_6\omega_{19}c_s^2\omega_7^2v_1^2\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15} + 8\omega_6^2v_3\omega_{19}c_s^2\omega_7v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}$

$C_{54} = 24\omega_6\omega_{22}\omega_{13}v_1^2\omega_{11}^2\omega_{18}\omega_9 - 6\omega_6^3\omega_{22}\omega_{13}v_1^2\omega_{11}^2\omega_9 - 12\omega_6^2v_3^2\omega_{22}v_1^2\omega_{11}\omega_{18}^2\omega_9 + 18\omega_6^3c_s^4\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9 + 12\omega_6^2\omega_{22}\omega_{13}v_1^2\omega_{11}\omega_{18}\omega_9 -$
$24\omega_6v_3^2\omega_{22}\omega_{13}v_1^2\omega_{11}^2\omega_{18}\omega_9 - 18\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{11}^2\omega_{18}\omega_9 - 12\omega_6^2v_3^2c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9 - 18\omega_6^3\omega_{22}c_s^2\omega_{13}v_1^2\omega_{11}\omega_{18}^2 - 6\omega_6^3c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9 +$

$12\omega_6^3\omega_{22}c_s^2\omega_{11}\omega_{18}^2 + 6\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}\omega_{11}^2\omega_9 + 12\omega_6^2v_3^2v_1^2\omega_{11}^2\omega_{18}^2\omega_9 - 108\omega_6^2\omega_{22}c_s^2\omega_{13}v_1^2\omega_{11}\omega_{18}^2\omega_9 - 24\omega_6^2\omega_{22}\omega_{13}v_1^2\omega_{11}\omega_{18}^2 -$
$12\omega_6^3\omega_{22}v_1^2\omega_{11}\omega_{18}^2\omega_9 - 42\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_{11}^2\omega_{18}\omega_9 + 12\omega_6^3v_1^2\omega_{11}^2\omega_{18}^2\omega_9 - 12\omega_6^2v_3^2\omega_{22}\omega_{13}v_1^2\omega_{11}^2\omega_9 - 12\omega_6\omega_{22}c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9 +$
$36\omega_6^2\omega_{22}c_s^2\omega_{13}v_1^2\omega_{18}^2\omega_9 + 24\omega_6v_3^2\omega_{22}\omega_{13}v_1^2\omega_{11}\omega_{18}^2\omega_9 - 24\omega_6^2v_3^2\omega_{22}\omega_{13}v_1^2\omega_{11}^2\omega_{18} - 18\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18}^2\omega_9 + 12\omega_6v_3^2\omega_{22}c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9 -$
$24\omega_6\omega_{22}\omega_{13}v_1^2\omega_{11}\omega_{18}^2\omega_9 + 18\omega_6^3c_s^2\omega_{13}v_1^2\omega_{11}^2\omega_{18}^2\omega_9 + 12\omega_6^2v_3^2\omega_{13}v_1^2\omega_{11}^2\omega_{18}\omega_9 - 12\omega_6^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9 + 18\omega_6^3\omega_{22}c_s^2\omega_{13}v_1^2\omega_{11}\omega_{18}\omega_9 +$
$6\omega_6^3\omega_{13}v_1^2\omega_{11}^2\omega_{18}\omega_9 + 54\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_{11}\omega_{18}^2\omega_9 + 156\omega_6\omega_{22}c_s^4\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9 - 6\omega_6^3v_3^2\omega_{13}v_1^2\omega_{11}^2\omega_{18}^2 - 12\omega_6^3\omega_{22}\omega_{13}v_1^2\omega_{11}^2\omega_{18} +$
$144\omega_6^2\omega_{22}c_s^2\omega_{13}v_1^2\omega_{11}^2\omega_{18}\omega_9 - 12\omega_6^2c_s^2\omega_{13}\omega_{11}^2\omega_{18}\omega_9 - 15\omega_6^3v_3^2\omega_{22}\omega_{13}v_1^2\omega_{11}^2\omega_{18}\omega_9 - 36\omega_6^2c_s^2\omega_{13}v_1^2\omega_{11}^2\omega_{18}^2\omega_9 - 6\omega_6^3v_3^2\omega_{13}v_1^2\omega_{11}^2\omega_{18}\omega_9 -$
$96\omega_{22}c_s^4\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9 + 18\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_{11}\omega_{18}^2 + 12\omega_6^2\omega_{22}c_s^2\omega_{11}\omega_{18}^2\omega_9 + 5\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18}^2\omega_9 + 12\omega_6^3v_3^2\omega_{22}\omega_{13}v_1^2\omega_{11}^2\omega_{18} + 12\omega_6^3v_3^2c_s^2\omega_{11}^2\omega_{18}^2 -$
$12\omega_6^3v_3^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9 - 18\omega_6^3\omega_{22}c_s^2\omega_{13}v_1^2\omega_{18}^2\omega_9 - 12\omega_6^2v_3^2\omega_{22}\omega_{13}v_1^2\omega_{11}\omega_{18}\omega_9 + 36\omega_6^2c_s^2v_1^2\omega_{11}^2\omega_{18}^2\omega_9 - 36\omega_6^3\omega_{22}c_s^4\omega_{11}\omega_{18}^2 + 36\omega_6^2c_s^4\omega_{13}\omega_{11}^2\omega_{18}\omega_9 +$
$18\omega_6^2v_3^2\omega_{22}c_s^2\omega_{13}\omega_{11}^2\omega_{18}\omega_9 - 12\omega_6^2\omega_{22}\omega_{13}v_1^2\omega_{18}^2\omega_9 - 6\omega_6^3v_3^2c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2 + 12\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_{11}^2\omega_9 - 12\omega_6^3v_3^2\omega_{22}v_1^2\omega_{11}\omega_{18}^2 -$
$15\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_{11}\omega_{18}^2\omega_9 - 6\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_{11}^2\omega_9 + 72\omega_6^2\omega_{22}c_s^2\omega_{13}v_1^2\omega_{11}\omega_{18}^2 + 12\omega_6^2\omega_{13}v_1^2\omega_{11}^2\omega_{18}^2\omega_9 + \omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9 +$
$6\omega_6^3v_3^2c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9 + 3\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_{11}^2\omega_{18}\omega_9 - 12\omega_6^3v_1^2\omega_{11}^2\omega_{18}^2 + 12\omega_6^3v_3^2\omega_{22}v_1^2\omega_{11}\omega_{18}^2\omega_9 + 9\omega_6^3v_3^2\omega_{22}\omega_{13}v_1^2\omega_{11}\omega_{18}^2\omega_9 -$
$6\omega_6^3\omega_{22}\omega_{13}v_1^2\omega_{11}\omega_{18}\omega_9 - 18\omega_6^3c_s^4\omega_{13}\omega_{11}^2\omega_{18}^2 + 6\omega_6^3v_3^2\omega_{22}\omega_{13}v_1^2\omega_{11}^2\omega_9 + 18\omega_6^2v_3^2\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18}^2\omega_9 + 15\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_{11}^2\omega_{18}\omega_9 +$
$36\omega_6^3\omega_{22}c_s^4\omega_{11}\omega_{18}^2\omega_9 - 18\omega_6^3c_s^2\omega_{13}v_1^2\omega_{11}^2\omega_{18}^2 - 12\omega_6^2v_3^2\omega_{22}c_s^2\omega_{13}\omega_{11}^2\omega_9 - 36\omega_6^3c_s^4\omega_{11}^2\omega_{18}^2\omega_9 + 72\omega_6\omega_{22}c_s^2\omega_{13}v_1^2\omega_{11}\omega_{18}^2\omega_9 + 6\omega_6^3\omega_{13}v_1^2\omega_{11}^2\omega_{18}^2 +$
$12\omega_6^3v_3^2\omega_{22}c_s^2\omega_{11}\omega_{18}^2\omega_9 - 3\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}\omega_{11}^2\omega_{18}\omega_9 - \omega_6^3\omega_{22}c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9 - 6\omega_6^3v_3^2c_s^2\omega_{13}\omega_{11}^2\omega_{18}\omega_9 - 12\omega_6^2\omega_{13}v_1^2\omega_{11}^2\omega_{18}\omega_9 +$
$6\omega_6^3v_3^2\omega_{22}\omega_{13}v_1^2\omega_{11}\omega_{18}\omega_9 + 24\omega_6^2\omega_{22}\omega_{13}v_1^2\omega_{11}^2\omega_{18} - 9\omega_6^3\omega_{22}\omega_{13}v_1^2\omega_{11}\omega_{18}^2\omega_9 - 12\omega_6^2c_s^2\omega_{11}^2\omega_{18}^2 + 3\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9 +$
$36\omega_6^3\omega_{22}c_s^2\omega_{13}v_1^2\omega_{11}^2\omega_{18} + 36\omega_6^3c_s^2v_1^2\omega_{11}^2\omega_{18}^2 - 6\omega_6^3v_3^2\omega_{22}\omega_{13}v_1^2\omega_{18}^2\omega_9 + 48\omega_6^2v_3^2\omega_{22}\omega_{13}v_1^2\omega_{11}^2\omega_{18}\omega_9 + 18\omega_6^3\omega_{22}c_s^2\omega_{13}v_1^2\omega_{11}^2\omega_9 +$
$36\omega_6^2c_s^2\omega_{13}v_1^2\omega_{11}^2\omega_{18}\omega_9 - 12\omega_6^3v_3^2v_1^2\omega_{11}^2\omega_{18}^2\omega_9 + 6\omega_6^3v_3^2\omega_{13}v_1^2\omega_{11}^2\omega_{18}^2\omega_9 + 15\omega_6^3\omega_{22}\omega_{13}v_1^2\omega_{11}^2\omega_{18}\omega_9 + 36\omega_6^2c_s^4\omega_{11}^2\omega_{18}^2\omega_9 + 12\omega_6^2c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9 -$
$12\omega_6^3v_3^2\omega_{22}c_s^2\omega_{11}\omega_{18}^2 - 72\omega_6\omega_{22}c_s^2\omega_{13}v_1^2\omega_{11}^2\omega_{18}\omega_9 + 12\omega_6^2\omega_{22}v_1^2\omega_{11}\omega_{18}^2\omega_9 + 6\omega_6^3\omega_{22}\omega_{13}v_1^2\omega_{11}\omega_{18}^2 - 5\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18}^2\omega_9 +$
$24\omega_6^2v_3^2\omega_{22}\omega_{13}v_1^2\omega_{11}\omega_{18}^2 - 36\omega_6^2c_s^4\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9 + 12\omega_6^2\omega_{22}\omega_{13}v_1^2\omega_{11}^2\omega_9 - 36\omega_6^2v_3^2\omega_{22}\omega_{13}v_1^2\omega_{11}\omega_{18}^2\omega_9 - 36\omega_6^3\omega_{22}c_s^2v_1^2\omega_{11}\omega_{18}^2 +$
$12\omega_6^3v_3^2v_1^2\omega_{11}^2\omega_{18}^2 + 36\omega_6^3\omega_{22}c_s^2v_1^2\omega_{11}\omega_{18}^2\omega_9 + 6\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18}^2 - 12\omega_6^2v_3^2\omega_{22}c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9 + 12\omega_6\omega_{22}c_s^2\omega_{13}\omega_{11}^2\omega_{18}\omega_9 -$
$12\omega_6^2v_1^2\omega_{11}^2\omega_{18}^2\omega_9 - 18\omega_6^3c_s^2\omega_{13}v_1^2\omega_{11}^2\omega_{18}\omega_9 + 27\omega_6^3\omega_{22}c_s^2\omega_{13}v_1^2\omega_{11}\omega_{18}^2\omega_9 - 48\omega_6^2\omega_{22}\omega_{13}v_1^2\omega_{11}^2\omega_{18}\omega_9 - 12\omega_6^2v_3^2\omega_{13}v_1^2\omega_{11}^2\omega_{18}^2\omega_9 -$
$36\omega_6^2\omega_{22}c_s^4\omega_{11}\omega_{18}^2\omega_9 - 12\omega_6v_3^2\omega_{22}c_s^2\omega_{13}\omega_{11}^2\omega_{18}\omega_9 - 6\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18}^2 - 36\omega_6^2\omega_{22}c_s^2\omega_{13}v_1^2\omega_{11}^2\omega_9 + 12\omega_6\omega_{22}c_s^4\omega_{13}\omega_{11}^2\omega_{18}\omega_9 +$
$36\omega_6^3c_s^4\omega_{11}^2\omega_{18}^2 - 6\omega_6^3\omega_{13}v_1^2\omega_{11}^2\omega_{18}^2\omega_9 + 12\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{11}^2\omega_9 - 36\omega_6^2\omega_{22}c_s^2v_1^2\omega_{11}\omega_{18}^2\omega_9 - 6\omega_6^3v_3^2\omega_{22}\omega_{13}v_1^2\omega_{11}\omega_{18}^2 - 36\omega_6^3c_s^2v_1^2\omega_{11}^2\omega_{18}^2\omega_9 -$
$18\omega_6^3c_s^4\omega_{13}\omega_{11}^2\omega_{18}\omega_9 + 36\omega_6^2\omega_{22}\omega_{13}v_1^2\omega_{11}\omega_{18}^2\omega_9 - 45\omega_6^3\omega_{22}c_s^2\omega_{13}v_1^2\omega_{11}^2\omega_{18}\omega_9 + 6\omega_6^3c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2 - 12\omega_6v_3^2\omega_{22}c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9 +$
$12\omega_6^3\omega_{22}v_1^2\omega_{11}\omega_{18}^2 - 6\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_{11}^2\omega_9 + 12\omega_6^2v_3^2c_s^2\omega_{13}\omega_{11}^2\omega_{18}\omega_9 + 12\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9 + 12\omega_6\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18}^2\omega_9 -$
$12\omega_6^2v_3^2\omega_{22}c_s^2\omega_{11}\omega_{18}^2\omega_9 + 6\omega_6^3\omega_{22}\omega_{13}v_1^2\omega_{18}^2\omega_9 + 12\omega_6^2v_3^2\omega_{22}\omega_{13}v_1^2\omega_{18}^2\omega_9 - 12\omega_6^3\omega_{22}c_s^2\omega_{11}\omega_{18}^2\omega_9 - 36\omega_6^2\omega_{22}c_s^2\omega_{13}v_1^2\omega_{11}\omega_{18}\omega_9 -$
$72\omega_6^2\omega_{22}c_s^2\omega_{13}v_1^2\omega_{11}^2\omega_{18} + 12\omega_6^3c_s^2\omega_{11}^2\omega_{18}^2\omega_9 + 6\omega_6^3c_s^2\omega_{13}\omega_{11}^2\omega_{18}\omega_9 + 12\omega_6^2\omega_{22}\omega_{13}v_1^2\omega_{11}^2\omega_{18}^2\omega_9 + 24\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9 - 36\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_{11}\omega_{18}^2\omega_9 - 60\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9$

$C_{55} = -66\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2 - 4\omega_6^3\omega_{22}\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^2 + 12\omega_6\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^2 - 12\omega_6^3\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2 - 24\omega_6^2v_3^2\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2 -$
$12\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9 + 24\omega_6^3c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9 + 12\omega_6v_3^2\omega_{22}\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2 - 18\omega_6^2v_3^2\omega_{22}\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2 - 12\omega_6^3c_s^2\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2 -$
$12\omega_6\omega_{22}\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2 + 12\omega_6^3\omega_{22}\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9 - 24\omega_6^3v_3^2\omega_{22}\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2 + 12\omega_6^3v_3^2\omega_{22}\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2 + 24\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2 +$
$12\omega_6^2\omega_{22}\omega_{13}\omega_{11}\omega_{18}^2\omega_9^2 + 72\omega_6\omega_{22}c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9^2 - 24\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_{11}^2\omega_{18}^2 + 24\omega_6^3v_3^2\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9 - 12\omega_6^3\omega_{22}\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9^2 -$
$12\omega_6^3v_3^2\omega_{22}\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9 + 24\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}^2\omega_9^2 - 12\omega_6^3\omega_{22}\omega_{13}^2\omega_{11}\omega_{18}\omega_9 - 12\omega_6^3v_3^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2 - 18\omega_6^3v_3^2\omega_{22}\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2 +$
$6\omega_6^3\omega_{22}\omega_{13}^2\omega_{18}^2\omega_9^2 - 24\omega_6^3c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9^2 - 48\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_{11}^2\omega_9^2 + 12\omega_6^2v_3^2\omega_{22}\omega_{13}^2\omega_{18}^2\omega_9^2 + 3\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2 +$
$84\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9 + 4\omega_6^3v_3^2\omega_{22}\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^2 + 12\omega_6^3\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9 + 12\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2 - 24\omega_6^2v_3^2\omega_{22}\omega_{13}^2\omega_{11}^2\omega_9^2 -$
$84\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9 + 36\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_{18}^2\omega_9^2 - 24\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2 - 12\omega_6^3c_s^2\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9 - 12\omega_6^3\omega_{22}\omega_{13}^2\omega_{11}^2\omega_9^2 +$
$24\omega_6^2v_3^2\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9^2 + 6\omega_6^3v_3^2\omega_{22}\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2 - 24\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9 - 132\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9^2 - 66\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9^2 +$
$24\omega_6^3\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9^2 + 12\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^2 + 12\omega_6^2v_3^2\omega_{22}\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9 + 24\omega_6^2c_s^2\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9^2 + 18\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^2 -$
$72\omega_6\omega_{22}c_s^2\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9 - 12\omega_6^2\omega_{22}\omega_{13}^2\omega_{18}^2\omega_9^2 + 12\omega_6^3v_3^2\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2 + \omega_6^3v_3^2\omega_{22}\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2 - 96\omega_{22}c_s^2\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2 +$
$156\omega_6\omega_{22}c_s^2\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2 - 12\omega_6^3v_3^2\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9 - \omega_6^3\omega_{22}\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2 - 42\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^2 - 12\omega_6^2v_3^2\omega_{22}\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2 -$
$12\omega_6\omega_{22}\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^2 + 24\omega_6^2c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9^2 + 12\omega_6v_3^2\omega_{22}\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^2 - 6\omega_6^3v_3^2\omega_{22}\omega_{13}^2\omega_{18}^2\omega_9^2 + 24\omega_6^2\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2 + 24\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_{11}^2\omega_9^2 +$
$12\omega_6^3\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9^2 + 12\omega_6^2\omega_{22}\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9^2 + 90\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9^2 - 6\omega_6^3\omega_{22}\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2 + 48\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9 -$
$24\omega_6^3\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9 + 24\omega_6^2v_3^2\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9^2 + 24\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9 + 60\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9^2 + 24\omega_6^2\omega_{22}c_s^2\omega_{11}^2\omega_{18}^2\omega_9^2 +$
$36\omega_6\omega_{22}\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9^2 - 12\omega_6^2v_3^2\omega_{22}\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2 + 12\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9 + 12\omega_6^3c_s^2\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2 - 36\omega_6v_3^2\omega_{22}\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9^2$

$C_{56} = 24\omega_6\omega_{22}\omega_{13}v_1^2\omega_{11}^2\omega_{18}\omega_9 - 6\omega_6^3\omega_{22}\omega_{13}v_1^2\omega_{11}^2\omega_9 - 36\omega_6^2v_3^2\omega_{22}v_1^2\omega_{11}\omega_{18}^2\omega_9 + 6\omega_6^3c_s^4\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9 + 12\omega_6^2\omega_{22}\omega_{13}v_1^2\omega_{11}\omega_{18}\omega_9 -$
$72\omega_6v_3^2\omega_{22}\omega_{13}v_1^2\omega_{11}^2\omega_{18}\omega_9 + 18\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{11}^2\omega_{18}\omega_9 - 36\omega_6^2v_3^2c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9 - 6\omega_6^3\omega_{22}c_s^2\omega_{13}v_1^2\omega_{11}\omega_{18}^2 - 6\omega_6^3c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9 +$
$12\omega_6^3\omega_{22}c_s^2\omega_{11}\omega_{18}^2 - 12\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}\omega_{11}^2\omega_9 + 36\omega_6^2v_3^2v_1^2\omega_{11}^2\omega_{18}^2\omega_9 - 36\omega_6^2\omega_{22}c_s^2\omega_{13}v_1^2\omega_{11}\omega_{18}^2\omega_9 - 24\omega_6^2\omega_{22}\omega_{13}v_1^2\omega_{11}\omega_{18}^2 -$
$12\omega_6^3\omega_{22}v_1^2\omega_{11}\omega_{18}^2\omega_9 - 18\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_{11}^2\omega_{18}\omega_9 + 12\omega_6^3v_1^2\omega_{11}^2\omega_{18}^2\omega_9 - 36\omega_6^2\omega_{22}v_3^2\omega_{22}\omega_{13}v_1^2\omega_{11}^2\omega_9 + 12\omega_6^2\omega_{22}c_s^2\omega_{13}v_1^2\omega_{18}^2\omega_9 +$
$72\omega_6v_3^2\omega_{22}\omega_{13}v_1^2\omega_{11}\omega_{18}^2\omega_9 - 72\omega_6^2v_3^2\omega_{22}\omega_{13}v_1^2\omega_{11}^2\omega_{18} - 18\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18}^2\omega_9 + 60\omega_6v_3^2\omega_{22}c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9 - 24\omega_6\omega_{22}\omega_{13}v_1^2\omega_{11}\omega_{18}^2\omega_9 +$
$6\omega_6^3c_s^2\omega_{13}v_1^2\omega_{11}^2\omega_{18}^2\omega_9 + 36\omega_6^2v_3^2\omega_{13}v_1^2\omega_{11}^2\omega_{18}\omega_9 - 12\omega_6^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9 + 6\omega_6^3\omega_{22}c_s^2\omega_{13}v_1^2\omega_{11}\omega_{18}\omega_9 + 6\omega_6^3\omega_{13}v_1^2\omega_{11}^2\omega_{18}\omega_9 +$
$18\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_{11}\omega_{18}^2\omega_9 + 18\omega_6\omega_{22}c_s^4\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9 - 18\omega_6^3v_3^2\omega_{13}v_1^2\omega_{11}^2\omega_{18}^2 - 12\omega_6^3\omega_{22}\omega_{13}v_1^2\omega_{11}^2\omega_{18} + 48\omega_6^2\omega_{22}c_s^2\omega_{13}v_1^2\omega_{11}^2\omega_{18}\omega_9 -$
$12\omega_6^2c_s^2\omega_{13}\omega_{11}^2\omega_{18}\omega_9 - 45\omega_6^3v_3^2\omega_{22}\omega_{13}v_1^2\omega_{11}^2\omega_{18}\omega_9 - 12\omega_6^2c_s^2\omega_{13}v_1^2\omega_{11}^2\omega_{18}^2\omega_9 - 18\omega_6^3v_3^2\omega_{13}v_1^2\omega_{11}^2\omega_{18}\omega_9 - 12\omega_{22}c_s^4\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9 +$
$6\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_{11}\omega_{18}^2 + 12\omega_6^2\omega_{22}c_s^2\omega_{11}\omega_{18}^2\omega_9 + 5\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18}^2\omega_9 + 36\omega_6^3v_3^2\omega_{22}\omega_{13}v_1^2\omega_{11}^2\omega_{18} + 36\omega_6^3v_3^2c_s^2\omega_{11}^2\omega_{18}^2 - 36\omega_6^3v_3^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9 -$
$6\omega_6^3\omega_{22}c_s^2\omega_{13}v_1^2\omega_{18}^2\omega_9 - 36\omega_6^2v_3^2\omega_{22}\omega_{13}v_1^2\omega_{11}\omega_{18}\omega_9 + 12\omega_6^2c_s^2v_1^2\omega_{11}^2\omega_{18}^2\omega_9 - 12\omega_6^3\omega_{22}c_s^4\omega_{11}\omega_{18}^2 + 12\omega_6^2c_s^4\omega_{13}\omega_{11}^2\omega_{18}\omega_9 -$
$102\omega_6^2v_3^2\omega_{22}c_s^2\omega_{13}\omega_{11}^2\omega_{18}\omega_9 - 12\omega_6^2\omega_{22}\omega_{13}v_1^2\omega_{18}^2\omega_9 - 18\omega_6^3v_3^2c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2 - 36\omega_6^3v_3^2\omega_{22}v_1^2\omega_{11}\omega_{18}^2 - 5\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_{11}\omega_{18}^2\omega_9 +$
$24\omega_6^2\omega_{22}c_s^2\omega_{13}v_1^2\omega_{11}\omega_{18}^2 + 12\omega_6^2\omega_{13}v_1^2\omega_{11}^2\omega_{18}^2\omega_9 + 18\omega_6^3v_3^2c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9 - 6\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_{11}^2\omega_{18}\omega_9 - 12\omega_6^3v_1^2\omega_{11}^2\omega_{18}^2 +$
$36\omega_6^3v_3^2\omega_{22}v_1^2\omega_{11}\omega_{18}^2\omega_9 + 27\omega_6^3v_3^2\omega_{22}\omega_{13}v_1^2\omega_{11}\omega_{18}^2\omega_9 - 6\omega_6^3\omega_{22}\omega_{13}v_1^2\omega_{11}\omega_{18}\omega_9 - 6\omega_6^3c_s^4\omega_{13}\omega_{11}^2\omega_{18}^2 + 18\omega_6^3v_3^2\omega_{22}\omega_{13}v_1^2\omega_{11}^2\omega_9 +$
$54\omega_6^2v_3^2\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18}^2\omega_9 + 6\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_{11}^2\omega_{18}\omega_9 + 12\omega_6^3\omega_{22}c_s^4\omega_{11}\omega_{18}^2\omega_9 - 6\omega_6^3c_s^2\omega_{13}v_1^2\omega_{11}^2\omega_{18}^2 + 24\omega_6^2v_3^2\omega_{22}c_s^2\omega_{13}\omega_{11}^2\omega_9 -$
$12\omega_6^3c_s^4\omega_{11}^2\omega_{18}^2\omega_9 + 24\omega_6\omega_{22}c_s^2\omega_{13}v_1^2\omega_{11}\omega_{18}^2\omega_9 + 6\omega_6^3\omega_{13}v_1^2\omega_{11}^2\omega_{18}^2 + 36\omega_6^3v_3^2\omega_{22}c_s^2\omega_{11}\omega_{18}^2\omega_9 + 30\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}\omega_{11}^2\omega_{18}\omega_9 -$
$18\omega_6^3v_3^2c_s^2\omega_{13}\omega_{11}^2\omega_{18}\omega_9 - 12\omega_6^2\omega_{13}v_1^2\omega_{11}^2\omega_{18}\omega_9 + 18\omega_6^3v_3^2\omega_{22}\omega_{13}v_1^2\omega_{11}\omega_{18}\omega_9 + 24\omega_6^2\omega_{22}\omega_{13}v_1^2\omega_{11}^2\omega_{18} - 9\omega_6^3\omega_{22}\omega_{13}v_1^2\omega_{11}\omega_{18}^2\omega_9 -$

$12\omega_6^3c_s^2\omega_{11}^2\omega_{18}^2-\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9+12\omega_6^3\omega_{22}c_s^2\omega_{13}v_1^2\omega_{11}^2\omega_{18}+12\omega_6^3c_s^2v_1^2\omega_{11}^2\omega_{18}^2-18\omega_6^3v_3^2\omega_{22}\omega_{13}v_1^2\omega_{18}^2\omega_9+144\omega_6^2v_3^2\omega_{22}\omega_{13}v_1^2\omega_{11}^2\omega_{18}\omega_9+$
$6\omega_6^3\omega_{22}c_s^2\omega_{13}v_1^2\omega_{11}^2\omega_9+12\omega_6^2c_s^2\omega_{13}v_1^2\omega_{11}^2\omega_{18}\omega_9-36\omega_6^3v_3^2v_1^2\omega_{11}^2\omega_{18}^2\omega_9+18\omega_6^3v_3^2\omega_{13}v_1^2\omega_{11}^2\omega_{18}^2\omega_9+15\omega_6^3\omega_{22}\omega_{13}v_1^2\omega_{11}^2\omega_{18}\omega_9+$
$12\omega_6^2c_s^4\omega_{11}^2\omega_{18}^2\omega_9+12\omega_6^2c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9-36\omega_6^3v_3^2\omega_{22}c_s^2\omega_{11}\omega_{18}^2-24\omega_6\omega_{22}c_s^2\omega_{13}v_1^2\omega_{11}^2\omega_{18}\omega_9+12\omega_6^2\omega_{22}v_1^2\omega_{11}\omega_{18}^2\omega_9+6\omega_6^3\omega_{22}\omega_{13}v_1^2\omega_{11}\omega_{18}^2-$
$15\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18}^2\omega_9+72\omega_6^2v_3^2\omega_{22}\omega_{13}v_1^2\omega_{11}\omega_{18}^2-12\omega_6^2c_s^4\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9+12\omega_6^2\omega_{22}\omega_{13}v_1^2\omega_{11}^2\omega_9-108\omega_6^2v_3^2\omega_{22}\omega_{13}v_1^2\omega_{11}\omega_{18}^2\omega_9-$
$12\omega_6^3\omega_{22}c_s^2v_1^2\omega_{11}\omega_{18}^2+36\omega_6^3v_3^2v_1^2\omega_{11}^2\omega_{18}^2+12\omega_6^3\omega_{22}c_s^2v_1^2\omega_{11}\omega_{18}^2\omega_9+18\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18}^2-15\omega_6^2v_3^2\omega_{22}c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9-$
$48v_3^2\omega_{22}c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9-12\omega_6\omega_{22}c_s^2\omega_{13}\omega_{11}^2\omega_{18}\omega_9-12\omega_6^2v_1^2\omega_{11}^2\omega_{18}^2\omega_9-6\omega_6^3c_s^2\omega_{13}v_1^2\omega_{11}^2\omega_{18}\omega_9+9\omega_6^3\omega_{22}c_s^2\omega_{13}v_1^2\omega_{11}\omega_{18}^2\omega_9-$
$48\omega_6^2\omega_{22}\omega_{13}v_1^2\omega_{11}^2\omega_{18}\omega_9-36\omega_6^2v_3^2\omega_{13}v_1^2\omega_{11}^2\omega_{18}^2\omega_9-12\omega_6^2\omega_{22}c_s^4\omega_{11}\omega_{18}^2\omega_9+60\omega_6v_3^2\omega_{22}c_s^2\omega_{13}\omega_{11}^2\omega_{18}\omega_9-6\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18}^2-$
$12\omega_6^2\omega_{22}c_s^2\omega_{13}v_1^2\omega_{11}^2\omega_9+12\omega_6\omega_{22}c_s^4\omega_{13}\omega_{11}^2\omega_{18}\omega_9+12\omega_6^3c_s^4\omega_{11}^2\omega_{18}^2-6\omega_6^3\omega_{13}v_1^2\omega_{11}^2\omega_{18}^2\omega_9-12\omega_6^2\omega_{22}c_s^2v_1^2\omega_{11}\omega_{18}^2\omega_9-18\omega_6^3v_3^2\omega_{22}\omega_{13}v_1^2\omega_{11}\omega_{18}^2-$
$12\omega_6^3c_s^2v_1^2\omega_{11}^2\omega_{18}^2\omega_9-6\omega_6^3c_s^4\omega_{13}\omega_{11}^2\omega_{18}\omega_9+36\omega_6^2\omega_{22}\omega_{13}v_1^2\omega_{11}\omega_{18}^2\omega_9-15\omega_6^3\omega_{22}c_s^2\omega_{13}v_1^2\omega_{11}^2\omega_{18}\omega_9+6\omega_6^3c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2-$
$36\omega_6v_3^2\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18}^2\omega_9+12\omega_6^3\omega_{22}v_1^2\omega_{11}\omega_{18}^2+36\omega_6^2v_3^2c_s^2\omega_{13}\omega_{11}^2\omega_{18}\omega_9+\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9+12\omega_6\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18}^2\omega_9-$
$36\omega_6^2v_3^2\omega_{22}c_s^2\omega_{11}\omega_{18}^2\omega_9+6\omega_6^3\omega_{22}\omega_{13}v_1^2\omega_{18}^2\omega_9+36\omega_6^2v_3^2\omega_{22}\omega_{13}v_1^2\omega_{18}^2\omega_9-12\omega_6^3\omega_{22}c_s^2\omega_{11}\omega_{18}^2\omega_9-12\omega_6^2\omega_{22}c_s^2\omega_{13}v_1^2\omega_{11}\omega_{18}\omega_9-$
$24\omega_6^2\omega_{22}c_s^2\omega_{13}v_1^2\omega_{11}^2\omega_{18}+12\omega_6^3c_s^2\omega_{11}^2\omega_{18}^2\omega_9+6\omega_6^3c_s^2\omega_{13}\omega_{11}^2\omega_{18}\omega_9+36\omega_6^2v_3^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9-12\omega_6\omega_{22}c_s^4\omega_{13}\omega_{11}\omega_{18}^2\omega_9-5\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9$

$C_{57}=-6\omega_6^2\omega_{19}c_s^2\omega_7\omega_{20}\omega_8\omega_5\omega_{18}^2-6\omega_6^2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}-6\omega_6^2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18}^2-12\omega_6c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2+4\omega_6^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2-$
$4\omega_6^2v_3^2\omega_{19}\omega_7\omega_{11}^2\omega_5\omega_{18}^2+2\omega_6^2\omega_{19}\omega_7\omega_{11}^2\omega_8\omega_{18}^2+4\omega_6\omega_{19}\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18}^2+2\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18}^2+2\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_8\omega_5\omega_{18}^2-$
$4\omega_6v_3^2\omega_{19}\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18}^2+12\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2+24\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}+4\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5-9\omega_6^2c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2+$
$12\omega_6\omega_{19}c_s^2\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18}-12\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}-12\omega_6^2\omega_{19}c_s^2\omega_7\omega_{11}^2\omega_5\omega_{18}^2-4\omega_6v_3^2\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5-4\omega_6^2\omega_{19}\omega_7\omega_{11}^2\omega_{18}^2+$
$4\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_{18}^2-12\omega_6c_s^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2-12\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}\omega_5\omega_{18}^2-3\omega_6^2v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2+4\omega_6\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2+$
$2\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}-4\omega_6v_3^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2-4\omega_6^2v_3^2\omega_{19}\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2-2\omega_6^2v_3^2\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18}^2+4\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}+$
$8\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2+12\omega_6^2\omega_{19}c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2-2\omega_6^2v_3^2\omega_{19}\omega_7\omega_{20}\omega_8\omega_5\omega_{18}^2+4\omega_6^2v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2-12\omega_6\omega_{19}c_s^2\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18}^2-$
$8\omega_6v_3^2\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2+4\omega_6^2v_3^2\omega_{19}\omega_{20}\omega_{11}\omega_8\omega_{18}^2-4\omega_6v_3^2\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_5\omega_{18}^2+4\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}-4\omega_6\omega_{19}\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18}+$
$2\omega_6^2v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2+3\omega_6^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2-12\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5-4v_3^3\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}+4\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_5\omega_{18}^2+$
$4\omega_6^2\omega_{19}\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2+12\omega_6^2\omega_{19}c_s^2\omega_7\omega_{11}^2\omega_{18}^2-4\omega_6v_3^2\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}+4\omega_6v_3^2\omega_{19}\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18}-12\omega_6^2\omega_{19}c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2+$
$3\omega_6^2v_3^2\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2+4\omega_6\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2+4v_3^2\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2-4\omega_6^2v_3^2\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_{18}^2-4\omega_6v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2+$
$2\omega_6^2v_3^2\omega_{19}\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18}^2-2\omega_6^2v_3^2\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}+12\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_8\omega_5\omega_{18}^2+12\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18}^2-12\omega_6^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2-$
$6\omega_6^2\omega_{19}c_s^2\omega_7\omega_{11}^2\omega_8\omega_{18}^2-4\omega_6\omega_{19}\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2-4\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_5\omega_{18}^2-12\omega_6^2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}\omega_{18}^2+4\omega_6^2\omega_{19}\omega_7\omega_{11}^2\omega_5\omega_{18}^2+$
$4\omega_6v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2-2\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}+4\omega_6v_3^2\omega_{19}\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2+2\omega_6^2v_3^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2-4\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2-$
$8\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}-4\omega_6\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2+2\omega_6^2\omega_{19}\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18}+6\omega_6^2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}-6\omega_6^2\omega_{19}c_s^2\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18}+$
$12\omega_6c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2+6\omega_6^2c_s^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2+12\omega_6^2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}\omega_5\omega_{18}^2-2\omega_6^2v_3^2\omega_{19}\omega_7\omega_{11}^2\omega_8\omega_{18}^2+8\omega_6v_3^2\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}+$
$2\omega_6^2v_3^2\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5-4\omega_6\omega_{19}\omega_7\omega_{11}^2\omega_5\omega_{18}^2+4\omega_6v_3^2\omega_{19}\omega_7\omega_{11}^2\omega_5\omega_{18}^2+6\omega_6^2\omega_{19}c_s^2\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18}^2+12\omega_6^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2-$
$24\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2-4\omega_6^2\omega_{19}\omega_{20}\omega_{11}\omega_8\omega_{18}^2-2\omega_6^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2-3\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2+4\omega_6v_3^2\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18}^2-$
$4\omega_6\omega_{19}\omega_7\omega_{20}\omega_8\omega_5\omega_{18}^2-4\omega_6^2v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2-4\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18}^2-2\omega_6^2\omega_{19}\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18}^2+4\omega_6v_3^2\omega_{19}\omega_7\omega_{20}\omega_8\omega_5\omega_{18}^2+$
$12\omega_6\omega_{19}c_s^2\omega_7\omega_{11}^2\omega_5\omega_{18}^2-4\omega_6^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2+9\omega_6^2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2+12\omega_6\omega_{19}c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2-2\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5+$
$6\omega_6^2c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2+6\omega_6^2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5-12\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}+4\omega_6^2v_3^2\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_5\omega_{18}^2+4\omega_6^2v_3^2\omega_{19}\omega_7\omega_{11}^2\omega_{18}^2-$
$2\omega_6^2v_3^2\omega_{19}\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18}+2\omega_6^2v_3^2\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}-2\omega_6^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2$

$C_{58}=2\omega_6^2c_s^2\omega_{20}\omega_5^2\omega_{18}^2+4\omega_6^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}-\omega_6^2\omega_{20}\omega_8^2\omega_5\omega_{18}^2+\omega_6^3\omega_8^2\omega_5^2\omega_{18}+5\omega_6^3c_s^2\omega_{20}\omega_8\omega_5^2\omega_{18}^2+2\omega_6^2v_3^2\omega_8^2\omega_5^2\omega_{18}+\omega_6^3v_3^2\omega_{20}\omega_8^2\omega_5^2+$
$\omega_6^3\omega_{20}\omega_8\omega_5\omega_{18}^2+13\omega_6c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2+2\omega_6^2\omega_8^2\omega_5^2\omega_{18}^2+\omega_6^3v_3^2\omega_{20}\omega_8^2\omega_5\omega_{18}-2\omega_6v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}+\omega_6^2\omega_{20}\omega_8\omega_5^2\omega_{18}^2+2\omega_6^2c_s^2\omega_8^2\omega_5^2\omega_{18}+$
$\omega_6^3c_s^2\omega_{20}\omega_8^2\omega_5^2-\omega_6^2v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2+2\omega_6^3c_s^2\omega_{20}\omega_5\omega_{18}^2-\omega_6^3v_3^2\omega_8^2\omega_5\omega_{18}^2+4\omega_6^2v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}+\omega_6^3\omega_{20}\omega_8^2\omega_5^2\omega_{18}-2\omega_6^3c_s^2\omega_8\omega_5^2\omega_{18}^2+$
$\omega_6^3v_3^2\omega_{20}\omega_8\omega_5^2\omega_{18}^2+\omega_6v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2-2\omega_6^3\omega_8\omega_5\omega_{18}^2+\omega_6^3c_s^2\omega_{20}\omega_8^2\omega_5\omega_{18}+4\omega_6^2c_s^2\omega_{20}\omega_8\omega_5\omega_{18}^2-2\omega_6^2c_s^2\omega_8^2\omega_5^2\omega_{18}^2-\omega_6^3c_s^2\omega_8^2\omega_5\omega_{18}^2-$
$2\omega_6^2\omega_8^2\omega_5^2\omega_{18}-2\omega_6c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}-2\omega_6^3v_3^2\omega_8\omega_5^2\omega_{18}^2-5\omega_6^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2+2\omega_6^2\omega_{20}\omega_8^2\omega_5\omega_{18}-\omega_6^3\omega_8^2\omega_5^2\omega_{18}^2-2\omega_6^2v_3^2\omega_8^2\omega_5^2\omega_{18}^2+\omega_6^3c_s^2\omega_8^2\omega_5^2\omega_{18}^2+$
$2\omega_6^3c_s^2\omega_{20}\omega_8\omega_{18}^2+2\omega_6^3v_3^2\omega_8\omega_5\omega_{18}^2+2\omega_6^2c_s^2\omega_8\omega_5^2\omega_{18}^2-4\omega_6^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}+7\omega_6^2c_s^2\omega_{20}\omega_8^2\omega_5\omega_{18}^2+\omega_6^3\omega_8^2\omega_5\omega_{18}^2-2\omega_6^2v_3^2\omega_{20}\omega_8^2\omega_5\omega_{18}+$
$2\omega_6\omega_{20}\omega_8^2\omega_5^2\omega_{18}+\omega_6^3v_3^2\omega_8^2\omega_5^2\omega_{18}^2-\omega_6^3v_3^2\omega_{20}\omega_8\omega_5\omega_{18}^2-\omega_6^3\omega_{20}\omega_8^2\omega_5\omega_{18}-8c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2+2\omega_6^3c_s^2\omega_8\omega_5\omega_{18}^2+2\omega_6^2v_3^2\omega_8\omega_5^2\omega_{18}^2-$
$2\omega_6^2c_s^2\omega_{20}\omega_8^2\omega_{18}^2-\omega_6^3c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}+2\omega_6^3\omega_8\omega_5^2\omega_{18}^2-11\omega_6^2c_s^2\omega_{20}\omega_8\omega_5^2\omega_{18}^2+2\omega_6^2\omega_{20}\omega_8^2\omega_5^2-\omega_6\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2-\omega_6^3\omega_{20}\omega_8^2\omega_5^2+\omega_6^2v_3^2\omega_{20}\omega_8^2\omega_5\omega_{18}^2-$
$2\omega_6^2v_3^2\omega_{20}\omega_8^2\omega_5^2-\omega_6^3v_3^2\omega_8^2\omega_5^2\omega_{18}+6\omega_6c_s^2\omega_{20}\omega_8\omega_5^2\omega_{18}^2-2\omega_6^3c_s^2\omega_{20}\omega_5^2\omega_{18}^2-2\omega_6^2\omega_8\omega_5^2\omega_{18}^2+\omega_6^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2-2\omega_6^2c_s^2\omega_{20}\omega_8^2\omega_5\omega_{18}-$
$7\omega_6^3c_s^2\omega_{20}\omega_8\omega_5\omega_{18}^2-\omega_6^3v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}-6\omega_6c_s^2\omega_{20}\omega_8^2\omega_5\omega_{18}^2-2\omega_6^2c_s^2\omega_{20}\omega_8^2\omega_5^2-\omega_6^3c_s^2\omega_8^2\omega_5^2\omega_{18}-\omega_6^3\omega_{20}\omega_8\omega_5^2\omega_{18}^2-\omega_6^2v_3^2\omega_{20}\omega_8\omega_5^2\omega_{18}^2$

$C_{59}=6\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2+24\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2-12\omega_6v_3^2\omega_{19}\omega_7^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2-\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2+$
$12\omega_6^2\omega_{19}\omega_7^2\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2+12\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}+18\omega_6\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2+24\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}+$
$12\omega_6^2c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2+12\omega_6\omega_{19}\omega_7^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2-12\omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2+6\omega_6^2v_3^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2+12\omega_6^2v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2-$
$18\omega_6v_3^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2-42\omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2-18\omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2+6\omega_6^2\omega_{19}\omega_7^2\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2-$
$24\omega_6^2\omega_{19}c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2-12\omega_6^2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_{18}^2-12v_3^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}-12\omega_6^2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}+$
$9\omega_6^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2+6\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2+6\omega_6^2v_3^2\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2+3\omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2+$
$4\omega_6^2v_3^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2+12\omega_6\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2+12\omega_6\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_5^2\omega_{18}^2-6\omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2+$
$12\omega_6\omega_{19}c_s^2\omega_7^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}-9\omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}+12\omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_5^2\omega_{18}^2-12\omega_6\omega_{19}c_s^2\omega_7^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2-12\omega_6^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2-$
$6\omega_6v_3^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2-6\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2+36\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2-6\omega_6^2v_3^2\omega_{19}\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2-24\omega_6\omega_{19}c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2-$
$36\omega_6^2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2+18\omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2-12\omega_6^2v_3^2\omega_{19}\omega_7^2\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2+6\omega_6\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2+$
$6\omega_6^2v_3^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2-12\omega_6c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2+6\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2-9\omega_6^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2+$
$54\omega_6\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}-12\omega_6v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2+12\omega_6v_3^2\omega_{19}\omega_7^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}+3\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}-$
$6\omega_6^2v_3^2\omega_{19}\omega_7^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2+54\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2+12\omega_6\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2-9\omega_6^2v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2-12\omega_6\omega_{19}\omega_7^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}+$
$12\omega_6^2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2+12\omega_6\omega_{19}c_s^2\omega_7^2\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2-54\omega_6\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2-6\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2-$
$6\omega_6^2v_3^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2+12\omega_6\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2+12\omega_6\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2+6\omega_6^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2+36\omega_6\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2-$
$12\omega_6\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2-12\omega_6v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2+6\omega_6^2v_3^2\omega_{19}\omega_7^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2-12\omega_6^2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2+$
$6\omega_6^2v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2-12\omega_6c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2-4\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2-12\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2-$

$12\omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_5^2\omega_{18}^2 + 12\omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2 + 12\omega_6^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 24\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2 +$
$\omega_6^2v_3^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2 - 6\omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} - 6\omega_6^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2 + 42\omega_6^2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 +$
$12\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2 + 6\omega_6^2\omega_{19}\omega_7^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2v_3^2\omega_{19}\omega_7^2\omega_{11}^2\omega_8\omega_5\omega_{18}^2 - 36\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} - 36\omega_6\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2 -$
$12\omega_6\omega_{19}\omega_7^2\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2 + 24\omega_6^2\omega_{19}c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2 - 6\omega_6^2\omega_{19}\omega_7^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2 + 12\omega_6v_3^2\omega_{19}\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2 - 6\omega_6^2v_3^2\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2 +$
$12\omega_6v_3^2\omega_{19}\omega_7^2\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2 - 6\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2 + 12v_3^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2 + 12\omega_6^2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2 -$
$6\omega_6^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 12\omega_6\omega_{19}\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2 - 54\omega_6\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2 + 6\omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2 - 3\omega_6^2v_3^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} -$
$24\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2 - 12\omega_6\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2 - 12\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2 - 6\omega_6^2v_3^2\omega_{19}\omega_7^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} - 18\omega_6\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} +$
$6\omega_6v_3^2\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2 + 6\omega_6^2v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2 + 12\omega_6v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2 - 12\omega_6^2c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 12\omega_6^2\omega_{19}\omega_7^2\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2 +$
$12\omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 + 18\omega_6v_3^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{11}^2\omega_8\omega_5\omega_{18}^2 - 6\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2 +$
$6\omega_6^2c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2 + 12\omega_6c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2 + 30\omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2 - 12\omega_6^2v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2$

$C_{60} = -2\omega_6^2\omega_{19}c_s^2\omega_7\omega_{20}\omega_8\omega_5\omega_{18}^2 - 2\omega_6^2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} - 2\omega_6^2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18}^2 - 4\omega_6c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 + 4\omega_6^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 -$
$12\omega_6^2v_3^2\omega_{19}\omega_7\omega_{11}^2\omega_5\omega_{18}^2 + 2\omega_6^2\omega_{19}\omega_7\omega_{11}^2\omega_8\omega_{18}^2 + 4\omega_6\omega_{19}\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18}^2 + 2\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18}^2 + 2\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_8\omega_5\omega_{18}^2 -$
$12\omega_6v_3^2\omega_{19}\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18}^2 + 4\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 + 8\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 4\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5 - 3\omega_6^2c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 +$
$4\omega_6\omega_{19}c_s^2\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18} - 4\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18} - 4\omega_6^2\omega_{19}c_s^2\omega_7\omega_{11}^2\omega_5\omega_{18}^2 - 12\omega_6v_3^2\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5 - 4\omega_6^2\omega_{19}\omega_7\omega_{11}^2\omega_{18}^2 +$
$4\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_{18}^2 - 4\omega_6c_s^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 - 4\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}\omega_5\omega_{18}^2 - 9\omega_6^2v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 + 4\omega_6\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 +$
$2\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} - 12\omega_6v_3^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 - 12\omega_6^2v_3^2\omega_{19}\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 - 6\omega_6^2v_3^2\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18}^2 +$
$4\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 8\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 + 4\omega_6^2\omega_{19}c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2 - 6\omega_6^2v_3^2\omega_{19}\omega_7\omega_{20}\omega_8\omega_5\omega_{18}^2 + 12\omega_6^2v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 -$
$4\omega_6\omega_{19}c_s^2\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18}^2 - 24\omega_6v_3^2\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 + 12\omega_6^2v_3^2\omega_{19}\omega_{20}\omega_{11}\omega_8\omega_{18}^2 - 12\omega_6v_3^2\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_5\omega_{18}^2 +$
$4\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18} - 4\omega_6\omega_{19}\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18} + 6\omega_6^2v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 + 3\omega_6^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 - 4\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5 -$
$12v_3^2\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 4\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_5\omega_{18}^2 + 4\omega_6^2\omega_{19}\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 + 4\omega_6^2\omega_{19}c_s^2\omega_7\omega_{11}^2\omega_{18}^2 - 12\omega_6v_3^2\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18} +$
$12\omega_6v_3^2\omega_{19}\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18} - 4\omega_6^2\omega_{19}c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 + 9\omega_6^2v_3^2\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 + 4\omega_6\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 + 12v_3^2\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 -$
$12\omega_6^2v_3^2\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_{18}^2 - 12\omega_6v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 + 6\omega_6^2v_3^2\omega_{19}\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18}^2 - 6\omega_6^2v_3^2\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 4\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_8\omega_5\omega_{18}^2 +$
$4\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18}^2 - 4\omega_6^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - 2\omega_6^2\omega_{19}c_s^2\omega_7\omega_{11}^2\omega_8\omega_{18}^2 - 4\omega_6\omega_{19}\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 - 4\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_5\omega_{18}^2 -$
$4\omega_6^2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}\omega_{18}^2 + 4\omega_6^2\omega_{19}\omega_7\omega_{11}^2\omega_5\omega_{18}^2 + 12\omega_6v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 - 2\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18} + 12\omega_6v_3^2\omega_{19}\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 +$
$6\omega_6^2v_3^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 - 4\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 - 8\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} - 4\omega_6\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 + 2\omega_6^2\omega_{19}\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18} +$
$2\omega_6^2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18} - 2\omega_6^2\omega_{19}c_s^2\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18} + 4\omega_6c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 + 2\omega_6^2c_s^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 + 4\omega_6^2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}\omega_5\omega_{18}^2 -$
$6\omega_6^2v_3^2\omega_{19}\omega_7\omega_{11}^2\omega_8\omega_{18}^2 + 24\omega_6v_3^2\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 6\omega_6^2v_3^2\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5 - 4\omega_6\omega_{19}\omega_7\omega_{11}^2\omega_5\omega_{18}^2 + 12\omega_6v_3^2\omega_{19}\omega_7\omega_{11}^2\omega_5\omega_{18}^2 +$
$2\omega_6^2\omega_{19}c_s^2\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18}^2 + 4\omega_6^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 - 8\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 - 4\omega_6^2\omega_{19}\omega_{20}\omega_{11}\omega_8\omega_{18}^2 - 2\omega_6^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 -$
$3\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 + 12\omega_6v_3^2\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18}^2 - 4\omega_6\omega_{19}\omega_7\omega_{20}\omega_8\omega_5\omega_{18}^2 - 12\omega_6^2v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - 4\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18}^2 -$
$2\omega_6^2\omega_{19}\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18}^2 + 12\omega_6v_3^2\omega_{19}\omega_7\omega_{20}\omega_8\omega_5\omega_{18}^2 + 4\omega_6\omega_{19}c_s^2\omega_7\omega_{11}^2\omega_5\omega_{18}^2 - 4\omega_6^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 + 3\omega_6^2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 +$
$4\omega_6\omega_{19}c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 - 2\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5 + 2\omega_6^2c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 + 2\omega_6^2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5 - 4\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} +$
$12\omega_6^2v_3^2\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_5\omega_{18}^2 + 12\omega_6^2v_3^2\omega_{19}\omega_7\omega_{11}^2\omega_{18}^2 - 6\omega_6^2v_3^2\omega_{19}\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18} + 6\omega_6^2v_3^2\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18} - 2\omega_6^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2$

$C_{61} = 72\omega_6^2v_3^2c_s^2\omega_{11}\omega_{18} + 72\omega_6^2v_3^2c_s^2\omega_{11}^2 + 96\omega_6v_3^2\omega_{11}\omega_{18}^2 + 12\omega_6^2c_s^4\omega_{11}^2 - 48\omega_6c_s^2\omega_{11}^2\omega_{18} - 24\omega_6v_3^4\omega_{11}^2 - 14\omega_6^2c_s^2\omega_{11}\omega_{18}^2 + 30\omega_6^2v_3^2\omega_{11}^2\omega_{18} +$
$216v_3^2c_s^2\omega_{11}\omega_{18}^2 - 48\omega_6v_3^4\omega_{11}\omega_{18} - 3\omega_6^2v_3^4\omega_{11}^2\omega_{18}^2 + 24\omega_6c_s^4\omega_{18}^2 - 36\omega_6^2v_3^4\omega_{18}^2 - 144\omega_6v_3^2c_s^2\omega_{11}\omega_{18} + 24c_s^2\omega_{11}^2\omega_{18} - 48v_3^2\omega_{11}\omega_{18}^2 - 432\omega_6v_3^2c_s^2\omega_{11}\omega_{18}^2 -$
$72\omega_6v_3^2\omega_{18}^2 + 12\omega_6^2c_s^2\omega_{18}^2 + 48\omega_6c_s^4\omega_{11}^2\omega_{18} - 96\omega_6v_3^4\omega_{11}\omega_{18}^2 - 30\omega_6^2v_3^4\omega_{11}^2\omega_{18} + 14\omega_6^2c_s^4\omega_{11}\omega_{18}^2 + 48\omega_6v_3^2\omega_{11}\omega_{18} + 288\omega_6v_3^2c_s^2\omega_{18}^2 + 3\omega_6^2v_3^2\omega_{11}^2\omega_{18}^2 +$
$150\omega_6^2v_3^2c_s^2\omega_{11}\omega_{18}^2 - 12\omega_6^2v_3^2\omega_{11}^2 + 48v_3^4\omega_{11}\omega_{18}^2 + 24\omega_6c_s^2\omega_{11}^2 - 24c_s^4\omega_{11}^2\omega_{18} + 48\omega_6c_s^2\omega_{11}\omega_{18}^2 - 96\omega_6v_3^2\omega_{11}^2\omega_{18} - 216v_3^2c_s^2\omega_{11}^2\omega_{18} - 24\omega_6c_s^2\omega_{18}^2 -$
$36\omega_6^2v_3^2\omega_{11}\omega_{18}^2 + 12\omega_6^2c_s^2\omega_{11}^2\omega_{18} + 36\omega_6^2v_3^2\omega_{18}^2 - 12\omega_6^2v_3^2c_s^2\omega_{11}^2\omega_{18}^2 - 144\omega_6v_3^2c_s^2\omega_{11}^2 + 48v_3^2\omega_{11}^2\omega_{18} - 24c_s^2\omega_{11}\omega_{18}^2 - 12\omega_6^2c_s^2\omega_{11}^2 + 24\omega_6v_3^2\omega_{11}^2 -$
$\omega_6^2c_s^4\omega_{11}^2\omega_{18}^2 + 24\omega_6^2v_3^4\omega_{11}\omega_{18} + 96\omega_6v_3^4\omega_{11}^2\omega_{18} - 48\omega_6c_s^4\omega_{11}\omega_{18}^2 - 12\omega_6^2c_s^4\omega_{11}^2\omega_{18} + 36\omega_6^2v_3^4\omega_{11}\omega_{18}^2 + 432\omega_6v_3^2c_s^2\omega_{11}^2\omega_{18} + 12\omega_6^2v_3^4\omega_{11}^2 -$
$24\omega_6c_s^4\omega_{11}^2 + 72\omega_6v_3^4\omega_{18}^2 - 12\omega_6^2c_s^4\omega_{18}^2 - 126\omega_6^2v_3^2c_s^2\omega_{11}^2\omega_{18} + 24c_s^4\omega_{11}\omega_{18}^2 - 48v_3^4\omega_{11}^2\omega_{18} - 144\omega_6^2v_3^2c_s^2\omega_{18}^2 - 24\omega_6^2v_3^2\omega_{11}\omega_{18} + \omega_6^2c_s^2\omega_{11}^2\omega_{18}^2$

$C_{62} = 24\omega_6^2v_3^2 - 24\omega_6v_3^2c_s^2\omega_{18} + 6\omega_6^3c_s^4\omega_{18} - 48\omega_6c_s^4\omega_{18}^2 - 24\omega_6^2v_3^4\omega_{18}^2 + 48\omega_6v_3^2\omega_{18} + 24\omega_6^2c_s^2\omega_{18} - 24\omega_6^2v_3^2c_s^2 - 3\omega_6^3v_3^2\omega_{18}^2 - 24\omega_6v_3^2\omega_{18}^2 -$
$96v_3^2c_s^2\omega_{18}^2 - 8\omega_6^2c_s^2\omega_{18}^2 + 18\omega_6^3v_3^2\omega_{18} - 12\omega_6^3v_3^2 - 3\omega_6^3c_s^4\omega_{18}^2 + 24\omega_6c_s^4\omega_{18} + 72\omega_6^2v_3^4\omega_{18} + 156\omega_6v_3^2c_s^2\omega_{18}^2 + 12\omega_6^3v_3^2c_s^2 + 48\omega_6^2v_3^2c_s^2\omega_{18} -$
$6\omega_6^3c_s^2\omega_{18} + 12\omega_6^3v_3^4 + 12\omega_6c_s^2\omega_{18}^2 + 24\omega_6^2v_3^2\omega_{18}^2 - 48\omega_6v_3^4\omega_{18} - 24\omega_6^2c_s^4\omega_{18} + 3\omega_6^3v_3^4\omega_{18}^2 + 6\omega_6^3v_3^2c_s^2\omega_{18}^2 + 24c_s^4\omega_{18}^2 - 24\omega_6^2v_3^4 + 24\omega_6v_3^4\omega_{18}^2 +$
$24\omega_6^2c_s^4\omega_{18}^2 - 18\omega_6^3v_3^4\omega_{18} - 12\omega_6^3v_3^2c_s^2\omega_{18} + \omega_6^3c_s^2\omega_{18}^2 - 72\omega_6^2v_3^2c_s^2\omega_{18}^2 - 24\omega_6c_s^2\omega_{18} - 72\omega_6^2v_3^2\omega_{18}$

$C_{63} = -168\omega_6v_3^2\omega_{11}\omega_{18}^2 + 120\omega_6c_s^2\omega_{11}^2\omega_{18} + 39\omega_6^2c_s^2\omega_{11}\omega_{18}^2 - 51\omega_6^2v_3^2\omega_{11}^2\omega_{18} - 12\omega_6^2\omega_{11}^2 - 48\omega_6\omega_{18}^2 - 60c_s^2\omega_{11}^2\omega_{18} + 84v_3^2\omega_{11}\omega_{18}^2 -$
$25\omega_6^2\omega_{11}\omega_{18}^2 + 120\omega_6v_3^2\omega_{18}^2 - 36\omega_6^2c_s^2\omega_{18}^2 - 12\omega_6^2\omega_{11}\omega_{18} - 72\omega_6v_3^2\omega_{11}\omega_{18} - 36\omega_{11}\omega_{18}^2 - 72\omega_6\omega_{11}^2\omega_{18} + 12\omega_6^2c_s^2\omega_{11}\omega_{18} - 5\omega_6^2v_3^2\omega_{11}^2\omega_{18}^2 +$
$24\omega_6^2v_3^2\omega_{11}^2 - 48\omega_6c_s^2\omega_{11}^2 + 24\omega_6\omega_{11}\omega_{18} - 120\omega_6c_s^2\omega_{11}\omega_{18}^2 + 168\omega_6v_3^2\omega_{11}^2\omega_{18} + 72\omega_6c_s^2\omega_{18}^2 + 61\omega_6^2v_3^2\omega_{11}\omega_{18}^2 - 33\omega_6^2c_s^2\omega_{11}^2\omega_{18} - 60\omega_6^2v_3^2\omega_{18}^2 -$
$84v_3^2\omega_{11}^2\omega_{18} + 21\omega_6^2\omega_{11}^2\omega_{18} + 60c_s^2\omega_{11}\omega_{18}^2 + 24\omega_6^2c_s^2\omega_{11}^2 - 48\omega_6v_3^2\omega_{11}^2 + 24\omega_6\omega_{11}^2 + 24\omega_6^2\omega_{18}^2 + 2\omega_6^2\omega_{11}^2\omega_{18}^2 - 24\omega_6c_s^2\omega_{11}\omega_{18} + 36\omega_{11}^2\omega_{18} +$
$72\omega_6\omega_{11}\omega_{18}^2 + 36\omega_6^2v_3^2\omega_{11}\omega_{18} - 3\omega_6^2c_s^2\omega_{11}^2\omega_{18}^2$

2.3.4 Conservation of momentum: ρv_2

attached text file: `output_d3q27_nse_mrt2_symbolic_pde_02.txt`

$$v_2\frac{\partial\rho}{\partial t} + \rho\frac{\partial v_2}{\partial t} + \frac{v_1v_2\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_1} + \frac{\rho v_2\delta_l}{\delta_t}\frac{\partial v_1}{\partial x_1} + \frac{\rho v_1\delta_l}{\delta_t}\frac{\partial v_2}{\partial x_1} + (c_s^2+v_2^2)\frac{\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_2} + \frac{2\rho v_2\delta_l}{\delta_t}\frac{\partial v_2}{\partial x_2} + \frac{v_3v_2\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_3} + \frac{v_3\rho\delta_l}{\delta_t}\frac{\partial v_2}{\partial x_3} +$$
$$\frac{\rho v_2\delta_l}{\delta_t}\frac{\partial v_3}{\partial x_3} + (-2+\omega_5)\frac{c_s^2\delta_l^2}{2\delta_t\omega_5}\frac{\partial\rho}{\partial x_1}\frac{\partial v_2}{\partial x_1} + (-2+\omega_5)\frac{c_s^2\delta_l^2}{2\delta_t\omega_5}\frac{\partial\rho}{\partial x_1}\frac{\partial v_1}{\partial x_2} +$$
$$(-2-3\omega_{10}v_2^2-2c_s^2\omega_{10}+4c_s^2+\omega_{10}+6v_2^2)\frac{\delta_l^2}{\delta_t\omega_{10}}\frac{\partial\rho}{\partial x_2}\frac{\partial v_2}{\partial x_2} + (2-\omega_{10})\frac{3\rho v_2\delta_l^2}{\delta_t\omega_{10}}\left(\frac{\partial v_2}{\partial x_2}\right)^2 + (-2+\omega_7)\frac{c_s^2\delta_l^2}{2\delta_t\omega_7}\frac{\partial\rho}{\partial x_3}\frac{\partial v_3}{\partial x_2} +$$

$$(-2+\omega_7)\frac{c_s^2\delta_l^2}{2\delta_t\omega_7}\frac{\partial\rho}{\partial x_3}\frac{\partial v_2}{\partial x_3} + (-2+\omega_5)\frac{c_s^2\rho\delta_l^2}{2\delta_t\omega_5}\frac{\partial^2 v_2}{\partial x_1^2} + (-2+\omega_5)\frac{c_s^2\rho\delta_l^2}{2\delta_t\omega_5}\frac{\partial^2 v_1}{\partial x_1\partial x_2} +$$

$$(-2-\omega_{10}v_2^2-3c_s^2\omega_{10}+6c_s^2+\omega_{10}+2v_2^2)\frac{v_2\delta_l^2}{2\delta_t\omega_{10}}\frac{\partial^2\rho}{\partial x_2^2} + (-2-3\omega_{10}v_2^2-c_s^2\omega_{10}+2c_s^2+\omega_{10}+6v_2^2)\frac{\rho\delta_l^2}{2\delta_t\omega_{10}}\frac{\partial^2 v_2}{\partial x_2^2} +$$

$$(-2+\omega_7)\frac{c_s^2\rho\delta_l^2}{2\delta_t\omega_7}\frac{\partial^2 v_3}{\partial x_2\partial x_3} + (-2+\omega_7)\frac{c_s^2\rho\delta_l^2}{2\delta_t\omega_7}\frac{\partial^2 v_2}{\partial x_3^2} + C_1\frac{v_1v_2\delta_l^3}{12\omega_{12}\delta_t\omega_5\omega_9}\frac{\partial^3\rho}{\partial x_1^3} + C_2\frac{\rho v_2\delta_l^3}{12\omega_{12}\delta_t\omega_5\omega_9}\frac{\partial^3 v_1}{\partial x_1^3} + C_3\frac{\rho v_1\delta_l^3}{6\omega_{12}\delta_t\omega_5^2}\frac{\partial^3 v_2}{\partial x_1^3} +$$

$$(-12-\omega_5^2+12\omega_5)\frac{c_s^4\delta_l^3}{6\delta_t\omega_5^2}\frac{\partial^3\rho}{\partial x_1^2\partial x_2} + (-2\omega_{12}+\omega_{12}\omega_5-\omega_5^2+2\omega_5)\frac{c_s^2\rho v_1\delta_l^3}{\omega_{12}\delta_t\omega_5^2}\frac{\partial^3 v_1}{\partial x_1^2\partial x_2} +$$

$$(-\omega_{10}\omega_5^2\omega_{15}+12\omega_{10}\omega_5-12\omega_5\omega_{15}-12\omega_{10}\omega_5^2-12\omega_{10}\omega_{15}+12\omega_5^2+12\omega_{10}\omega_5\omega_{15})\frac{c_s^2\rho v_2\delta_l^3}{6\delta_t\omega_{10}\omega_5^2\omega_{15}}\frac{\partial^3 v_2}{\partial x_1^2\partial x_2} +$$

$$C_4\frac{v_1v_2\delta_l^3}{\delta_t\omega_{10}^2\omega_5\omega_{15}}\frac{\partial^3\rho}{\partial x_1\partial x_2^2} + C_5\frac{\rho v_2\delta_l^3}{12\delta_t\omega_{10}^2\omega_5^2\omega_{15}}\frac{\partial^3 v_1}{\partial x_1\partial x_2^2} + C_6\frac{\rho v_1\delta_l^3}{\delta_t\omega_{10}^2\omega_5\omega_{15}}\frac{\partial^3 v_2}{\partial x_1\partial x_2^2} + C_7\frac{\delta_l^3}{12\delta_t\omega_{10}^2}\frac{\partial^3\rho}{\partial x_2^3} +$$

$$(-24-60\omega_{10}v_2^2-36c_s^2\omega_{10}+5c_s^2\omega_{10}^2+36c_s^2+24\omega_{10}-4\omega_{10}^2+60v_2^2+11\omega_{10}^2v_2^2)\frac{\rho v_2\delta_l^3}{6\delta_t\omega_{10}^2}\frac{\partial^3 v_2}{\partial x_2^3} +$$

$$(-\omega_7\omega_5^2+\omega_7\omega_5-\omega_8\omega_5+\omega_7\omega_8\omega_5-\omega_7\omega_8+\omega_5^2)\frac{v_3c_s^2\rho\delta_l^3}{\delta_t\omega_7\omega_8\omega_5^2}\frac{\partial^3 v_2}{\partial x_1^2\partial x_3} +$$

$$(6\omega_6\omega_5+6\omega_6\omega_7-6\omega_8\omega_5+6\omega_7\omega_8\omega_5-6\omega_7\omega_8-\omega_6\omega_7\omega_8\omega_5-6\omega_6\omega_7\omega_5)\frac{c_s^2\rho v_2\delta_l^3}{6\omega_6\delta_t\omega_7\omega_8\omega_5}\frac{\partial^3 v_3}{\partial x_1^2\partial x_3} +$$

$$(-\omega_7\omega_5^2+\omega_7\omega_5-\omega_8\omega_5+\omega_7\omega_8\omega_5-\omega_7\omega_8+\omega_5^2)\frac{v_3c_s^2\rho\delta_l^3}{\delta_t\omega_7\omega_8\omega_5^2}\frac{\partial^3 v_1}{\partial x_1\partial x_2\partial x_3} +$$

$$(\omega_7\omega_5-\omega_8\omega_5+\omega_7^2+\omega_7\omega_8\omega_5-\omega_7\omega_8-\omega_7^2\omega_5)\frac{c_s^2\rho v_1\delta_l^3}{\delta_t\omega_7^2\omega_8\omega_5}\frac{\partial^3 v_3}{\partial x_1\partial x_2\partial x_3} + C_8\frac{v_3v_2\delta_l^3}{\delta_t\omega_{16}\omega_{10}^2\omega_7}\frac{\partial^3\rho}{\partial x_2^2\partial x_3} + C_9\frac{v_3\rho\delta_l^3}{\delta_t\omega_{16}\omega_{10}^2\omega_7}\frac{\partial^3 v_2}{\partial x_2^2\partial x_3}$$

$$+ C_{10}\frac{\rho v_2\delta_l^3}{12\delta_t\omega_{16}\omega_{10}^2\omega_7^2}\frac{\partial^3 v_3}{\partial x_2^2\partial x_3} +$$

$$(6\omega_6\omega_5+6\omega_6\omega_7-6\omega_8\omega_5+6\omega_7\omega_8\omega_5-6\omega_7\omega_8-\omega_6\omega_7\omega_8\omega_5-6\omega_6\omega_7\omega_5)\frac{c_s^2\rho v_2\delta_l^3}{6\omega_6\delta_t\omega_7\omega_8\omega_5}\frac{\partial^3 v_1}{\partial x_1\partial x_3^2} +$$

$$(\omega_7\omega_5-\omega_8\omega_5+\omega_7^2+\omega_7\omega_8\omega_5-\omega_7\omega_8-\omega_7^2\omega_5)\frac{c_s^2\rho v_1\delta_l^3}{\delta_t\omega_7^2\omega_8\omega_5}\frac{\partial^3 v_2}{\partial x_1\partial x_3^2} + (-12+12\omega_7-\omega_7^2)\frac{c_s^4\delta_l^3}{6\delta_t\omega_7^2}\frac{\partial^3\rho}{\partial x_2\partial x_3^2} +$$

$$(-12\omega_{16}\omega_7-12\omega_{16}\omega_{10}+12\omega_{10}\omega_7-12\omega_{10}\omega_7^2+12\omega_7^2-\omega_{16}\omega_{10}\omega_7^2+12\omega_{16}\omega_{10}\omega_7)\frac{c_s^2\rho v_2\delta_l^3}{6\delta_t\omega_{16}\omega_{10}\omega_7^2}\frac{\partial^3 v_2}{\partial x_2\partial x_3^2} +$$

$$(-2\omega_{19}+2\omega_7-\omega_7^2+\omega_{19}\omega_7)\frac{v_3c_s^2\rho\delta_l^3}{\omega_{19}\delta_t\omega_7^2}\frac{\partial^3 v_3}{\partial x_2\partial x_3^2} + C_{11}\frac{v_3v_2\delta_l^3}{12\omega_{19}\delta_t\omega_7\omega_{11}}\frac{\partial^3\rho}{\partial x_3^3} + C_{12}\frac{v_3\rho\delta_l^3}{6\omega_{19}\delta_t\omega_7^2}\frac{\partial^3 v_2}{\partial x_3^3} + C_{13}\frac{\rho v_2\delta_l^3}{12\omega_{19}\delta_t\omega_7\omega_{11}}\frac{\partial^3 v_3}{\partial x_3^3} +$$

$$C_{14}\frac{v_2\delta_l^4}{24\omega_{12}^2\delta_t\omega_5^2\omega_9^2}\frac{\partial^4\rho}{\partial x_1^4} + C_{15}\frac{\rho v_1v_2\delta_l^4}{12\omega_{12}^2\delta_t\omega_5^2\omega_9^2}\frac{\partial^4 v_1}{\partial x_1^4} + C_{16}\frac{\rho\delta_l^4}{24\omega_{12}^2\delta_t\omega_5^3}\frac{\partial^4 v_2}{\partial x_1^4} + C_{17}\frac{v_1\delta_l^4}{12\omega_{12}^2\delta_t\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9^2}\frac{\partial^4\rho}{\partial x_1^3\partial x_2} +$$

$$C_{18}\frac{\rho\delta_l^4}{12\omega_{12}^2\delta_t\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9^2}\frac{\partial^4 v_1}{\partial x_1^3\partial x_2} + C_{19}\frac{\rho v_1v_2\delta_l^4}{12\omega_{12}^2\delta_t\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2}\frac{\partial^4 v_2}{\partial x_1^3\partial x_2} + C_{20}\frac{v_2\delta_l^4}{12\omega_{12}\delta_t\omega_{10}^3\omega_5^3\omega_{21}\omega_{15}^2}\frac{\partial^4\rho}{\partial x_1^2\partial x_2^2} +$$

$$C_{21}\frac{\rho v_1v_2\delta_l^4}{2\omega_{12}^2\delta_t\omega_{10}^3\omega_5^3\omega_{21}\omega_{15}^2\omega_9}\frac{\partial^4 v_1}{\partial x_1^2\partial x_2^2} + C_{22}\frac{\rho\delta_l^4}{12\omega_{12}\delta_t\omega_{10}^3\omega_5^3\omega_{21}\omega_{15}^2}\frac{\partial^4 v_2}{\partial x_1^2\partial x_2^2} + C_{23}\frac{v_1\delta_l^4}{4\delta_t\omega_{10}^3\omega_5^2\omega_{15}^2}\frac{\partial^4\rho}{\partial x_1\partial x_2^3} +$$

$$C_{24}\frac{\rho\delta_l^4}{12\delta_t\omega_{10}^3\omega_5^3\omega_{15}^2}\frac{\partial^4 v_1}{\partial x_1\partial x_2^3} + C_{25}\frac{\rho v_1v_2\delta_l^4}{4\delta_t\omega_{10}^3\omega_5^2\omega_{15}^2}\frac{\partial^4 v_2}{\partial x_1\partial x_2^3} + C_{26}\frac{v_2\delta_l^4}{12\delta_t\omega_{10}^3}\frac{\partial^4\rho}{\partial x_2^4} + C_{27}\frac{\rho\delta_l^4}{12\delta_t\omega_{10}^3}\frac{\partial^4 v_2}{\partial x_2^4} +$$

$$C_{28}\frac{v_3v_1v_2\delta_l^4}{4\omega_{12}^2\omega_6\delta_t\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2}\frac{\partial^4\rho}{\partial x_1^3\partial x_3} + C_{29}\frac{v_3\rho v_2\delta_l^4}{4\omega_{12}^2\omega_6\delta_t\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2}\frac{\partial^4 v_1}{\partial x_1^3\partial x_3} + C_{30}\frac{v_3\rho v_1\delta_l^4}{2\omega_{12}^2\delta_t\omega_7^2\omega_{14}\omega_8^2\omega_5^3}\frac{\partial^4 v_2}{\partial x_1^3\partial x_3} +$$

$$C_{31}\frac{\rho v_1v_2\delta_l^4}{12\omega_{12}^2\omega_6^2\delta_t\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2}\frac{\partial^4 v_3}{\partial x_1^3\partial x_3} + C_{32}\frac{2v_3c_s^4\delta_l^4}{\delta_t\omega_7^2\omega_8^2\omega_5^3}\frac{\partial^4\rho}{\partial x_1^2\partial x_2\partial x_3} + C_{33}\frac{v_3c_s^2\rho v_1\delta_l^4}{\omega_{12}^2\delta_t\omega_7^2\omega_{14}\omega_8^2\omega_5^3}\frac{\partial^4 v_1}{\partial x_1^2\partial x_2\partial x_3} +$$

$$C_{34}\frac{v_3c_s^2\rho v_2\delta_l^4}{2\omega_6\delta_t\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2}\frac{\partial^4 v_2}{\partial x_1^2\partial x_2\partial x_3} + C_{35}\frac{c_s^2\rho\delta_l^4}{12\omega_{12}\omega_6^2\delta_t\omega_{16}\omega_{10}\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}}\frac{\partial^4 v_3}{\partial x_1^2\partial x_2\partial x_3} +$$

$$C_{36}\frac{v_3v_1v_2\delta_l^4}{\delta_t\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2}\frac{\partial^4\rho}{\partial x_1\partial x_2^2\partial x_3} + C_{37}\frac{v_3\rho v_2\delta_l^4}{2\omega_6\delta_t\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2}\frac{\partial^4 v_1}{\partial x_1\partial x_2^2\partial x_3} + C_{38}\frac{v_3\rho v_1\delta_l^4}{\delta_t\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2}\frac{\partial^4 v_2}{\partial x_1\partial x_2^2\partial x_3}$$

$$+ C_{39}\frac{\rho v_1v_2\delta_l^4}{2\omega_6\delta_t\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2}\frac{\partial^4 v_3}{\partial x_1\partial x_2^2\partial x_3} + C_{40}\frac{v_3\delta_l^4}{4\delta_t\omega_{16}^2\omega_{10}^3\omega_7^2}\frac{\partial^4\rho}{\partial x_2^3\partial x_3} + C_{41}\frac{v_3\rho v_2\delta_l^4}{4\delta_t\omega_{16}^2\omega_{10}^3\omega_7^2}\frac{\partial^4 v_2}{\partial x_2^3\partial x_3} +$$

$$C_{42}\frac{\rho\delta_l^4}{12\delta_t\omega_{16}^2\omega_{10}^3\omega_7^3}\frac{\partial^4 v_3}{\partial x_2^3\partial x_3} + C_{43}\frac{\delta_l^4}{12\omega_{12}\omega_6^2\omega_{19}\delta_t\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2}\frac{\partial^4\rho}{\partial x_1^2\partial x_3^2} + C_{44}\frac{\rho\delta_l^4}{4\omega_{12}\omega_6^2\omega_{19}\delta_t\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9}\frac{\partial^4 v_1}{\partial x_1^2\partial x_3^2} +$$

$$C_{45}\frac{\rho\delta_l^4}{4\omega_{12}\omega_{19}\delta_t\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^3}\frac{\partial^4 v_2}{\partial x_1^2\partial x_3^2} + C_{46}\frac{v_3\rho\delta_l^4}{2\omega_{12}\omega_6^2\omega_{19}\delta_t\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}}\frac{\partial^4 v_3}{\partial x_1^2\partial x_3^2} +$$

$$C_{47}\frac{\delta_l^4}{2\omega_{19}\delta_t\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}}\frac{\partial^4\rho}{\partial x_1\partial x_2\partial x_3^2} + C_{48}\frac{\rho\delta_l^4}{12\omega_6^2\omega_{19}\delta_t\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}}\frac{\partial^4 v_1}{\partial x_1\partial x_2\partial x_3^2} +$$

$$C_{49}\frac{\rho v_2\delta_l^4}{2\omega_6\omega_{19}\delta_t\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}}\frac{\partial^4 v_2}{\partial x_1\partial x_2\partial x_3^2} + C_{50}\frac{\rho\delta_l^4}{2\omega_{19}^2\delta_t\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}}\frac{\partial^4 v_3}{\partial x_1\partial x_2\partial x_3^2} +$$

$$C_{51}\frac{v_2\delta_l^4}{12\omega_{19}\delta_t\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{23}}\frac{\partial^4\rho}{\partial x_2^2\partial x_3^2} + C_{52}\frac{\rho\delta_l^4}{12\omega_{19}\delta_t\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{23}}\frac{\partial^4 v_2}{\partial x_2^2\partial x_3^2} + C_{53}\frac{v_3\rho v_2\delta_l^4}{2\omega_{19}^2\delta_t\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{23}\omega_{11}}\frac{\partial^4 v_3}{\partial x_2^2\partial x_3^2} +$$

$$C_{54}\frac{v_3v_1v_2\delta_l^4}{4\omega_6\omega_{19}^2\delta_t\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}}\frac{\partial^4\rho}{\partial x_1\partial x_3^3} + C_{55}\frac{v_3\rho v_2\delta_l^4}{12\omega_6^2\omega_{19}^2\delta_t\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}}\frac{\partial^4 v_1}{\partial x_1\partial x_3^3} + C_{56}\frac{v_3\rho v_1\delta_l^4}{2\omega_{19}^2\delta_t\omega_7^3\omega_{20}\omega_8^2\omega_5^2}\frac{\partial^4 v_2}{\partial x_1\partial x_3^3} +$$

$$C_{57}\frac{\rho v_1v_2\delta_l^4}{4\omega_6\omega_{19}^2\delta_t\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}}\frac{\partial^4 v_3}{\partial x_1\partial x_3^3} + C_{58}\frac{v_3\delta_l^4}{12\omega_{19}^2\delta_t\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2}\frac{\partial^4\rho}{\partial x_2\partial x_3^3} + C_{59}\frac{v_3\rho v_2\delta_l^4}{12\omega_{19}^2\delta_t\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}^2}\frac{\partial^4 v_2}{\partial x_2\partial x_3^3} +$$

$$C_{60}\frac{\rho\delta_l^4}{12\omega_{19}^2\delta_t\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2}\frac{\partial^4 v_3}{\partial x_2\partial x_3^3} + C_{61}\frac{v_2\delta_l^4}{24\omega_{19}^2\delta_t\omega_7^2\omega_{11}^2}\frac{\partial^4\rho}{\partial x_3^4} + C_{62}\frac{\rho\delta_l^4}{24\omega_{19}^2\delta_t\omega_7^3}\frac{\partial^4 v_2}{\partial x_3^4} + C_{63}\frac{v_3\rho v_2\delta_l^4}{12\omega_{19}^2\delta_t\omega_7^2\omega_{11}^2}\frac{\partial^4 v_3}{\partial x_3^4} = 0,$$

where:

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

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

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

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

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

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

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

$$C_8 = 3c_s^2\omega_{10}^2\omega_7 - \omega_{16}\omega_7 - \omega_{16}\omega_{10}\omega_7v_2^2 - \omega_{16}\omega_{10} + \omega_{10}\omega_7 + \omega_{10}^2\omega_7v_2^2 - 3c_s^2\omega_{16}\omega_{10}\omega_7 - 3c_s^2\omega_{10}^2 + \omega_{10}^2 + \omega_{16}\omega_7v_2^2 + 3c_s^2\omega_{16}\omega_7 - \omega_{10}^2\omega_7 + \omega_{16}\omega_{10}\omega_7 + \omega_{16}\omega_{10}v_2^2 - 3c_s^2\omega_{10}\omega_7 + 3c_s^2\omega_{16}\omega_{10} - \omega_{10}\omega_7v_2^2 - \omega_{10}^2v_2^2$$

$$C_9 = c_s^2\omega_{10}^2\omega_7 - \omega_{16}\omega_7 - 3\omega_{16}\omega_{10}\omega_7v_2^2 - \omega_{16}\omega_{10} + \omega_{10}\omega_7 + 3\omega_{10}^2\omega_7v_2^2 - c_s^2\omega_{16}\omega_{10}\omega_7 - c_s^2\omega_{10}^2 + \omega_{10}^2 + 3\omega_{16}\omega_7v_2^2 + c_s^2\omega_{16}\omega_7 - \omega_{10}^2\omega_7 + \omega_{16}\omega_{10}\omega_7 + 3\omega_{16}\omega_{10}v_2^2 - c_s^2\omega_{10}\omega_7 + c_s^2\omega_{16}\omega_{10} - 3\omega_{10}\omega_7v_2^2 - 3\omega_{10}^2v_2^2$$

$$C_{10} = -12c_s^2\omega_{10}^2\omega_7 - 12\omega_{10}\omega_7^2v_2^2 - 3\omega_{16}\omega_{10}^2\omega_7^2v_2^2 - 12\omega_{10}^2\omega_7v_2^2 - 6\omega_{16}\omega_{10}^2\omega_7 - 18c_s^2\omega_{16}\omega_{10}\omega_7^2 + 3\omega_{16}\omega_{10}^2\omega_7^2 - 24c_s^2\omega_{16}\omega_{10}\omega_7 + 12\omega_{16}\omega_7^2v_2^2 + 12\omega_{10}\omega_7^2 + 12c_s^2\omega_{10}^2\omega_7^2 - 12\omega_{16}\omega_7^2 - 12c_s^2\omega_{10}\omega_7^2 - 24c_s^2\omega_{16}\omega_{10}^2 + 42c_s^2\omega_{16}\omega_{10}^2\omega_7 + 6\omega_{16}\omega_{10}\omega_7^2 + 36c_s^2\omega_{16}\omega_7^2 - 12\omega_{10}^2\omega_7^2 + 6\omega_{16}\omega_{10}^2\omega_7v_2^2 + 12\omega_{10}^2\omega_7 - 11c_s^2\omega_{16}\omega_{10}^2\omega_7^2 + 12\omega_{10}^2\omega_7^2v_2^2 - 6\omega_{16}\omega_{10}\omega_7^2v_2^2$$

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

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

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

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

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

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

$$C_{17} = -6\omega_{12}^2\omega_{10}v_1^2v_2^2\omega_5^3\omega_{21}\omega_{15} + 12\omega_{12}^2\omega_{10}v_2^2\omega_5^2\omega_{15}\omega_9^2 - 12\omega_{12}^2v_1^2v_2^2\omega_5^3\omega_{21}\omega_9 - 36\omega_{12}^2c_s^4\omega_{10}\omega_5^2\omega_{15}\omega_9^2 + 3\omega_{12}c_s^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9^2 + 36\omega_{12}c_s^2\omega_{10}v_2^2\omega_5^2\omega_{15}\omega_9^2 + 27\omega_{12}^2c_s^2\omega_{10}v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_9 + 156\omega_{12}^2c_s^4\omega_{10}\omega_5\omega_{21}\omega_{15}\omega_9^2 + 12\omega_{12}^2\omega_{10}v_1^2v_2^2\omega_5^3\omega_{21}\omega_9 - 72\omega_{12}c_s^2\omega_{10}v_2^2\omega_5\omega_{21}\omega_{15}\omega_9^2 - 36c_s^2\omega_{10}v_2^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2 + 12\omega_{12}^2c_s^2\omega_{10}v_1^2\omega_5^3\omega_{21}\omega_9 + 12\omega_{12}^2c_s^2\omega_{10}\omega_5^2\omega_{15}\omega_9^2 - 12\omega_{12}^2c_s^2\omega_{10}v_1^2\omega_5\omega_{21}\omega_{15}\omega_9 + 36\omega_{12}^2c_s^4\omega_5^3\omega_9^2 - 12\omega_{12}\omega_{10}v_1^2v_2^2\omega_5^2\omega_{21}\omega_{15}\omega_9 + 15\omega_{12}c_s^4\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9^2 + 12\omega_{12}\omega_{10}v_2^2\omega_5^2\omega_{21}\omega_{15}\omega_9 + 12\omega_{12}^2c_s^2\omega_{10}v_1^2\omega_5^2\omega_9^2 - 12\omega_{12}^2\omega_{10}v_1^2v_2^2\omega_5^2\omega_{15}\omega_9^2 + 6\omega_{12}^2\omega_{10}v_2^2\omega_5^3\omega_{21}\omega_{15} + 12\omega_{12}^2\omega_{10}v_1^2v_2^2\omega_5^2\omega_9^2 + 24\omega_{12}^2\omega_{10}v_1^2v_2^2\omega_5\omega_{21}\omega_{15}\omega_9 - 12\omega_{12}^2c_s^2\omega_{10}v_1^2\omega_5^2\omega_{15}\omega_9^2 - 12\omega_{12}^2c_s^2\omega_{10}\omega_5^3\omega_{21}\omega_9 -$$

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

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

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

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

$C_{20} = 12\omega_{12}v_1^2v_2^2\omega_5^3\omega_{21}\omega_{15}^2 + 12\omega_{12}c_s^2\omega_{10}^2\omega_5^3\omega_{21} - 42\omega_{12}c_s^4\omega_{10}^3\omega_5^2\omega_{21}\omega_{15} + 12\omega_{12}c_s^2\omega_{10}^3v_2^2\omega_5^3\omega_{21} - 6\omega_{10}^2v_1^2\omega_5^3\omega_{21}\omega_{15}^2 - 6\omega_{10}^3v_1^2v_2^2\omega_5^3\omega_{15}^2 +$
$6\omega_{12}c_s^2\omega_{10}^3v_2^2\omega_5^3\omega_{15}^2 + 6\omega_{12}c_s^2\omega_{10}^2\omega_5^3\omega_{15}^2 - 18\omega_{12}c_s^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2 + 12\omega_{12}\omega_{10}v_1^2v_2^2\omega_5^2\omega_{21}\omega_{15}^2 - 12\omega_{12}c_s^2\omega_{10}^3v_2^2\omega_5^2\omega_{21}\omega_{15}^2 +$
$36\omega_{12}c_s^2\omega_{10}v_1^2\omega_5^2\omega_{21}\omega_{15}^2 + 12\omega_{12}\omega_{10}^3v_1^2\omega_5^2\omega_{15}^2 - 18\omega_{12}c_s^2\omega_{10}^3\omega_5^2\omega_{21}\omega_{15} + 6\omega_{10}^2v_1^2v_2^2\omega_5^3\omega_{21}\omega_{15}^2 + 12\omega_{12}c_s^2\omega_{10}^2v_2^2\omega_5^3\omega_{15} +$
$18\omega_{12}c_s^2\omega_{10}^2v_2^2\omega_5^3\omega_{21}\omega_{15} - 18c_s^2\omega_{10}^3v_1^2\omega_5^3\omega_{15}^2 + 12\omega_{12}\omega_{10}^3v_1^2\omega_5^2\omega_{21} - 12c_s^2\omega_{10}^2v_2^2\omega_5^2\omega_{21}\omega_{15}^2 + 150\omega_{12}c_s^4\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2 - 12\omega_{12}\omega_{10}^3v_1^2v_2^2\omega_5^3\omega_{21}\omega_{15} -$
$12\omega_{12}c_s^2\omega_{10}^2v_2^2\omega_5\omega_{21}\omega_{15}^2 - 12\omega_{12}\omega_{10}^2v_1^2v_2^2\omega_5^2\omega_{21}\omega_{15} + 36c_s^4\omega_{10}^3\omega_5^2\omega_{15}^2 + 36\omega_{12}c_s^4\omega_{10}^2\omega_5^2\omega_{15} + 12\omega_{12}c_s^2\omega_{10}^3v_2^2\omega_5^2\omega_{15} - 36\omega_{12}c_s^2\omega_{10}^3v_1^2\omega_5^3\omega_{21}\omega_{15} +$
$6\omega_{12}\omega_{10}^2v_1^2\omega_5^3\omega_{15}^2 + 12\omega_{12}c_s^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2 + 12\omega_{12}\omega_{10}^2v_1^2\omega_5^2\omega_{21}\omega_{15} - 12\omega_{12}c_s^2\omega_{10}v_2^2\omega_5^3\omega_{21}\omega_{15} + 12\omega_{12}\omega_{10}^2v_1^2\omega_5^3\omega_{21} - 12\omega_{12}\omega_{10}^2v_1^2v_2^2\omega_5^3\omega_{21} +$
$24\omega_{12}\omega_{10}^3v_1^2\omega_5\omega_{21}\omega_{15} - 36\omega_{12}c_s^4\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2 + 18\omega_{12}c_s^4\omega_{10}^3\omega_5^3\omega_{15}^2 - 6\omega_{12}\omega_{10}^2v_1^2v_2^2\omega_5^3\omega_{15}^2 + 36\omega_{12}c_s^2v_1^2\omega_5^3\omega_{21}\omega_{15}^2 + 12\omega_{12}\omega_{10}^3v_1^2\omega_5^3\omega_{15} +$
$6\omega_{10}^3v_1^2\omega_5^2\omega_{15}^2 - 72\omega_{12}c_s^2\omega_{10}^2v_1^2\omega_5^2\omega_{21}\omega_{15}^2 - 12\omega_{12}c_s^4\omega_{10}^3\omega_5^3\omega_{21} + 12\omega_{12}c_s^4\omega_{10}\omega_5^3\omega_{21}\omega_{15} - 12\omega_{12}\omega_{10}^3v_1^2\omega_5^3\omega_{21} + 36c_s^2\omega_{10}^3v_1^2\omega_5^2\omega_{15}^2 -$
$36\omega_{12}c_s^4\omega_{10}^3\omega_5^3\omega_{15} - 18c_s^4\omega_{10}^3\omega_5^3\omega_{15}^2 + 18c_s^2\omega_{10}^2v_1^2\omega_5^3\omega_{21}\omega_{15}^2 - 6\omega_{12}\omega_{10}^3v_1^2\omega_5^3\omega_{15}^2 + 12\omega_{12}\omega_{10}^2v_1^2v_2^2\omega_5^3\omega_{15} + 12\omega_{12}\omega_{10}^3v_1^2\omega_5^3\omega_{21}\omega_{15} +$
$18c_s^4\omega_{10}^2\omega_{10}^3\omega_5^3\omega_{21}\omega_{15}^2 - 36\omega_{12}c_s^2\omega_{10}^2v_1^2\omega_5^2\omega_{21}\omega_{15} - 12\omega_{12}c_s^2\omega_{10}^3v_2^2\omega_5^2\omega_{15}^2 - 12\omega_{12}c_s^2\omega_{10}v_2^2\omega_5^3\omega_{21}\omega_{15}^2 + 24\omega_{12}\omega_{10}^2v_1^2\omega_5^2\omega_{21}\omega_{15}^2 +$
$12\omega_{12}c_s^2\omega_{10}\omega_5^3\omega_{21}\omega_{15} - 12\omega_{12}\omega_{10}^2v_1^2\omega_5^3\omega_{15} - 72\omega_{12}c_s^2\omega_{10}^3v_1^2\omega_5\omega_{21}\omega_{15} - 12\omega_{12}c_s^2\omega_{10}^3v_2^2\omega_5^2\omega_{21} - 6c_s^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2 + 12\omega_{10}^3v_1^2v_2^2\omega_5^2\omega_{15}^2 -$
$12\omega_{10}^3v_1^2\omega_5^2\omega_{15}^2 - 12\omega_{12}\omega_{10}^3v_1^2\omega_5^2\omega_{15} - 12\omega_{12}c_s^2\omega_5^3\omega_{21}\omega_{15}^2 + 12\omega_{12}c_s^4\omega_{10}^3\omega_5^2\omega_{21} - 2\omega_{12}c_s^2\omega_{10}^2v_2^2\omega_5^3\omega_{21}\omega_{15}^2 - 24\omega_{12}\omega_{10}^3v_1^2v_2^2\omega_5\omega_{21}\omega_{15} +$
$12\omega_{12}c_s^2\omega_{10}^3\omega_5^2\omega_{21}\omega_{15}^2 - 12\omega_{12}\omega_{10}v_1^2\omega_5^2\omega_{21}\omega_{15}^2 - 6\omega_{12}c_s^2\omega_{10}^2v_2^2\omega_5^3\omega_{15}^2 - 36\omega_{12}c_s^4\omega_{10}^3\omega_5^2\omega_{15}^2 - 24\omega_{12}\omega_{10}^2v_1^2v_2^2\omega_5^2\omega_{21}\omega_{15}^2 - 12\omega_{12}c_s^2\omega_{10}^2v_2^2\omega_5^3\omega_{21} -$
$88\omega_{12}c_s^4\omega_{10}^3\omega_5^2\omega_{21}\omega_{15}^2 + 18\omega_{12}c_s^2\omega_{10}^3v_2^2\omega_5^2\omega_{21}\omega_{15} - 12\omega_{12}c_s^2\omega_{10}^3v_2^2\omega_5^3\omega_{15} - 12\omega_{12}c_s^2\omega_{10}^2\omega_5^3\omega_{15} - 18\omega_{12}c_s^4\omega_{10}^2\omega_5^3\omega_{15}^2 - 48\omega_{12}c_s^4\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2 +$
$12\omega_{12}c_s^4\omega_{10}^2\omega_5^3\omega_{21} + 18\omega_{12}c_s^2\omega_{10}^2v_1^2\omega_5^3\omega_{21}\omega_{15}^2 - 36\omega_{12}c_s^2\omega_{10}^3v_1^2\omega_5^3\omega_{15} - 12\omega_{12}v_1^2\omega_5^3\omega_{21}\omega_{15}^2 - 24\omega_{12}\omega_{10}^2v_1^2\omega_5^3\omega_{21}\omega_{15} - 12\omega_{12}\omega_{10}^3v_1^2v_2^2\omega_5^3\omega_{15} -$
$18\omega_{12}c_s^2\omega_{10}^2v_1^2\omega_5^3\omega_{15}^2 - 12c_s^2\omega_{10}^3\omega_5^2\omega_{15}^2 - 12\omega_{12}c_s^2\omega_{10}^3\omega_5^2\omega_{15} + 108\omega_{12}c_s^2\omega_{10}^3v_1^2\omega_5^2\omega_{21}\omega_{15} - 24\omega_{12}\omega_{10}^2v_1^2\omega_5\omega_{21}\omega_{15}^2 - 36\omega_{12}c_s^2\omega_{10}^2v_1^2\omega_5^3\omega_{21} -$
$12\omega_{10}^2v_1^2v_2^2\omega_5^2\omega_{21}\omega_{15}^2 + 24\omega_{12}\omega_{10}^2v_1^2v_2^2\omega_5\omega_{21}\omega_{15}^2 + 12\omega_{12}\omega_{10}v_1^2\omega_5^3\omega_{21}\omega_{15} + 6\omega_{12}c_s^2\omega_{10}^3\omega_5^3\omega_{21}\omega_{15} - 36\omega_{12}c_s^2\omega_{10}^3v_1^2\omega_5^2\omega_{15}^2 +$
$6c_s^2\omega_{10}^2v_2^2\omega_5^3\omega_{21}\omega_{15}^2 - 6\omega_{12}c_s^4\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2 + 36\omega_{12}\omega_{10}^3v_1^2v_2^2\omega_5^2\omega_{21}\omega_{15} - 12\omega_{12}c_s^2\omega_{10}^3\omega_5\omega_{21}\omega_{15}^2 + 24\omega_{12}\omega_{10}^2v_1^2v_2^2\omega_5^3\omega_{21}\omega_{15} -$
$36\omega_{12}c_s^2\omega_{10}^3v_1^2\omega_5^2\omega_{21} - 12\omega_{12}\omega_{10}^3v_1^2v_2^2\omega_5^2\omega_{21} - 96\omega_{12}c_s^4\omega_{10}^3\omega_{21}\omega_{15}^2 + 12\omega_{10}^2v_1^2\omega_5^2\omega_{21}\omega_{15}^2 - 12\omega_{12}c_s^2\omega_{10}^3v_2^2\omega_5\omega_{21}\omega_{15} + 30\omega_{12}c_s^4\omega_{10}^3\omega_5^3\omega_{21}\omega_{15} -$
$12\omega_{12}c_s^2\omega_{10}^3\omega_5^3\omega_{21} + 12c_s^2\omega_{10}^3v_2^2\omega_5^2\omega_{15}^2 - 12\omega_{12}\omega_{10}^3v_1^2v_2^2\omega_5^2\omega_{15}^2 - 54\omega_{12}c_s^2\omega_{10}v_1^2\omega_5^3\omega_{21}\omega_{15}^2 + 2\omega_{12}c_s^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2 - 6\omega_{12}c_s^2\omega_{10}^3\omega_5^3\omega_{15}^2 -$
$18\omega_{12}\omega_{10}v_1^2v_2^2\omega_5^3\omega_{21}\omega_{15}^2 + \omega_{12}c_s^2\omega_{10}^3v_2^2\omega_5^3\omega_{21}\omega_{15}^2 + 180\omega_{12}c_s^4\omega_{10}^3\omega_5\omega_{21}\omega_{15}^2 + 12\omega_{12}c_s^2\omega_{10}^2\omega_5\omega_{21}\omega_{15}^2 + 12\omega_{12}c_s^2\omega_{10}^3v_2^2\omega_5\omega_{21}\omega_{15}^2 +$
$5\omega_{12}c_s^4\omega_{10}^3\omega_5^3\omega_{21}\omega_{15}^2 - 36\omega_{12}c_s^2\omega_{10}v_1^2\omega_5^3\omega_{21}\omega_{15} + 12\omega_{12}\omega_{10}^3v_1^2v_2^2\omega_5^2\omega_{15} - 12\omega_{12}\omega_{10}v_1^2v_2^2\omega_5^3\omega_{21}\omega_{15} - 6\omega_{12}c_s^2\omega_{10}^3v_2^2\omega_5^3\omega_{21}\omega_{15} +$
$12\omega_{12}c_s^4\omega_{10}^3\omega_5\omega_{21}\omega_{15} + 12\omega_{12}c_s^2\omega_{10}^3\omega_5^3\omega_{15} + 6c_s^2\omega_{10}^3\omega_5^3\omega_{15}^2 - 18\omega_{12}c_s^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15} - 84\omega_{12}c_s^4\omega_{10}^2\omega_5\omega_{21}\omega_{15}^2 + 18\omega_{12}c_s^2\omega_{10}^2v_2^2\omega_5^2\omega_{21}\omega_{15}^2 -$
$\omega_{12}c_s^2\omega_{10}^3\omega_5^3\omega_{21}\omega_{15}^2 + 18\omega_{12}\omega_{10}v_1^2\omega_5^3\omega_{21}\omega_{15}^2 + 36\omega_{12}c_s^2\omega_{10}^3v_1^2\omega_5^2\omega_{15} + 12\omega_{12}c_s^2v_2^2\omega_5^3\omega_{21}\omega_{15}^2 + 6\omega_{12}\omega_{10}^2v_1^2v_2^2\omega_5^2\omega_{21}\omega_{15}^2 + 12\omega_{12}c_s^2\omega_{10}^3\omega_5\omega_{21}\omega_{15} -$
$42\omega_{12}c_s^4\omega_{10}^2\omega_5^3\omega_{21}\omega_{15} + 36\omega_{12}c_s^2\omega_{10}^2v_1^2\omega_5^3\omega_{15} + 6\omega_{12}\omega_{10}^3v_1^2v_2^2\omega_5^3\omega_{15}^2 - 6\omega_{12}\omega_{10}^2v_1^2\omega_5^3\omega_{21}\omega_{15}^2 + 12\omega_{12}c_s^2\omega_{10}^3\omega_5^2\omega_{15}^2 + 12\omega_{12}\omega_{10}^3v_1^2v_2^2\omega_5^3\omega_{21} -$
$6c_s^2\omega_{10}^3v_2^2\omega_5^3\omega_{15}^2 + 12c_s^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2 + 36\omega_{12}c_s^4\omega_5^3\omega_{21}\omega_{15}^2 + 12\omega_{12}c_s^2\omega_{10}^3\omega_5^2\omega_{21} + 72\omega_{12}c_s^2\omega_{10}^2v_1^2\omega_5\omega_{21}\omega_{15}^2 - 36c_s^2\omega_{10}^2v_1^2\omega_5^2\omega_{21}\omega_{15}^2 +$
$36\omega_{12}c_s^4\omega_{10}^2\omega_5^3\omega_{15} + 36\omega_{12}c_s^2\omega_{10}^3v_1^2\omega_5^3\omega_{21} + 72\omega_{12}c_s^2\omega_{10}^2v_1^2\omega_5^3\omega_{21}\omega_{15} - 36c_s^4\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2 + 18\omega_{12}c_s^2\omega_{10}^3v_1^2\omega_5^3\omega_{15}^2 - 36\omega_{12}\omega_{10}^3v_1^2\omega_5^2\omega_{21}\omega_{15}$

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

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

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

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

$C_{24} = -12c_s^2\omega_{10}^3\omega_5\omega_{15} + 24\omega_{10}^3v_2^2\omega_5\omega_{15} - 12c_s^2\omega_{10}^3v_2^2\omega_5^2 + 6c_s^2\omega_{10}^2\omega_5^3\omega_{15} + 12\omega_{10}^2v_2^2\omega_5^3 - 36\omega_{10}v_2^4\omega_5^3\omega_{15} + 12\omega_{10}^3v_2^4\omega_5^3 - 306c_s^2\omega_{10}v_2^2\omega_5^3\omega_{15}^2 +$
$72v_2^4\omega_5^3\omega_{15}^2 + 12c_s^4\omega_5^3\omega_{15}^2 + 13c_s^4\omega_{10}^3\omega_5^2\omega_{15}^2 - 12c_s^2\omega_{10}^3v_2^2\omega_5\omega_{15} - 6c_s^2\omega_{10}^2\omega_5^2\omega_{15}^2 + 12c_s^2\omega_{10}^3v_2^2\omega_5^3 + 12c_s^4\omega_{10}^3\omega_{15}^2 + 12\omega_{10}^3v_2^4\omega_5\omega_{15}^2 - 12\omega_{10}^3v_2^4\omega_5^2 +$
$6c_s^4\omega_{10}^3\omega_5^3\omega_{15} + 90\omega_{10}v_2^2\omega_5^3\omega_{15}^2 - 48c_s^2\omega_{10}^2v_2^2\omega_5\omega_{15}^2 - 12c_s^4\omega_{10}\omega_5^3\omega_{15}^2 - 108c_s^2\omega_{10}v_2^2\omega_5^2\omega_{15}^2 - c_s^4\omega_{10}^3\omega_5^3\omega_{15}^2 - 24\omega_{10}^3v_2^4\omega_5\omega_{15} + 36\omega_{10}v_2^2\omega_5^3\omega_{15} +$
$102c_s^2\omega_{10}^3v_2^2\omega_5\omega_{15}^2 - 12c_s^2\omega_{10}^2\omega_5^2\omega_{15} - 72v_2^2\omega_5^3\omega_{15}^2 - 12c_s^2\omega_5^3\omega_{15}^2 - 48c_s^2\omega_{10}^3v_2^2\omega_{15}^2 - 12c_s^4\omega_{10}\omega_5^2\omega_{15}^2 - 36c_s^2\omega_{10}v_2^2\omega_5^3\omega_{15} - 18c_s^4\omega_{10}^3\omega_5^2\omega_{15} -$
$12\omega_{10}^3v_2^2\omega_5\omega_{15}^2 + 6c_s^2\omega_{10}^3\omega_5\omega_{15}^2 - c_s^2\omega_{10}^2\omega_5^3\omega_{15}^2 - 90\omega_{10}v_2^4\omega_5^3\omega_{15}^2 + 60c_s^2\omega_{10}^2v_2^2\omega_5^3\omega_{15}^2 - 6c_s^4\omega_{10}^2\omega_5^3\omega_{15} + 24\omega_{10}^2v_2^2\omega_5^2\omega_{15} + 4\omega_{10}^3v_2^4\omega_5^3\omega_{15}^2 +$
$12c_s^4\omega_{10}^3\omega_5\omega_{15} - 5c_s^2\omega_{10}^3\omega_5^2\omega_{15}^2 + 60\omega_{10}^2v_2^4\omega_5^3\omega_{15} + 18\omega_{10}^3v_2^2\omega_5^2\omega_{15}^2 + 12\omega_{10}^3v_2^2\omega_5^2 - 12c_s^2\omega_{10}^2v_2^2\omega_5^3 - 21c_s^2\omega_{10}^3v_2^2\omega_5^3\omega_{15} + 48\omega_{10}^3v_2^4\omega_5^2\omega_{15} -$
$19\omega_{10}^2v_2^2\omega_5^3\omega_{15}^2 + 6c_s^4\omega_{10}^2\omega_5^2\omega_{15}^2 - 12c_s^2\omega_{10}^2v_2^2\omega_5^2\omega_{15} - 12\omega_{10}^2v_2^4\omega_5^3 + 12c_s^2\omega_{10}\omega_5^3\omega_{15}^2 - 81c_s^2\omega_{10}^3v_2^2\omega_5^2\omega_{15}^2 - 12\omega_{10}^3v_2^2\omega_5^3 - 6c_s^2\omega_{10}^3\omega_5^3\omega_{15} +$
$27\omega_{10}^3v_2^2\omega_5^3\omega_{15} + 12\omega_{10}^2v_2^4\omega_5^2\omega_{15}^2 + 30c_s^2\omega_{10}^3v_2^2\omega_5^2\omega_{15} + 252c_s^2v_2^2\omega_5^3\omega_{15}^2 - 24\omega_{10}^2v_2^4\omega_5^2\omega_{15} - 4\omega_{10}^3v_2^2\omega_5^3\omega_{15}^2 - 60\omega_{10}^2v_2^2\omega_5^3\omega_{15} - 18\omega_{10}^3v_2^4\omega_5^2\omega_{15}^2 +$
$12c_s^4\omega_{10}^2\omega_5^2\omega_{15} + 162c_s^2\omega_{10}^2v_2^2\omega_5^2\omega_{15}^2 - 48\omega_{10}^3v_2^2\omega_5^2\omega_{15} + 19\omega_{10}^2v_2^4\omega_5^3\omega_{15}^2 + 18c_s^2\omega_{10}^3\omega_5^2\omega_{15} + 12c_s^2\omega_{10}^3v_2^2\omega_5^3\omega_{15}^2 + 12c_s^2\omega_{10}\omega_5^2\omega_{15}^2 +$
$54c_s^2\omega_{10}^2v_2^2\omega_5^3\omega_{15} + c_s^4\omega_{10}^2\omega_5^3\omega_{15}^2 - 24c_s^4\omega_{10}^3\omega_5\omega_{15}^2 - 27\omega_{10}^3v_2^4\omega_5^3\omega_{15} - 12\omega_{10}^2v_2^2\omega_5^2\omega_{15}^2$

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

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

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

$C_{28} = 2\omega_{12}^2\omega_6\omega_{13}\omega_8\omega_5^2\omega_9^2 + 2\omega_{12}^2\omega_6\omega_{13}\omega_7v_1^2\omega_8\omega_5^2\omega_9^2 + 2\omega_{12}\omega_6\omega_{13}\omega_7\omega_8\omega_5^2\omega_9^2 - 4\omega_{12}^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9 + 3\omega_{12}^2\omega_6\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2 +$
$3\omega_{12}^2\omega_6\omega_{13}\omega_7v_1^2\omega_{14}\omega_8\omega_5^2\omega_9 + 4\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2 - 12\omega_{12}^2c_s^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2 - 4\omega_{12}\omega_6\omega_{13}v_1^2\omega_{14}\omega_8\omega_5\omega_9 - 2\omega_{12}^2\omega_6\omega_{13}v_1^2\omega_{14}\omega_8\omega_5^2\omega_9 +$
$4\omega_{12}\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_9^2 + 4\omega_{12}^2\omega_{13}\omega_7v_1^2\omega_{14}\omega_8\omega_5\omega_9 - 12\omega_6c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2 + 2\omega_{12}^2\omega_6\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9 - 2\omega_{12}^2\omega_6\omega_{14}\omega_8\omega_5^2\omega_9^2 +$
$4\omega_{12}^2\omega_6\omega_{13}\omega_7v_1^2\omega_{14}\omega_8\omega_5 - 12\omega_{12}^2\omega_6c_s^2\omega_7\omega_{14}\omega_8\omega_5\omega_9 + 4\omega_{12}^2\omega_6\omega_{13}\omega_7\omega_{14}\omega_5\omega_9 + 4\omega_{12}^2\omega_6\omega_{13}\omega_7\omega_8\omega_5\omega_9^2 - 4\omega_{12}^2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9 -$
$6\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2 + 24\omega_{12}\omega_6c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2 + 12\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_9 - 4\omega_{12}^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2 + 12\omega_{12}\omega_6c_s^2\omega_{13}\omega_7\omega_8\omega_5\omega_9^2 +$
$4\omega_{12}^2\omega_6\omega_{13}\omega_7v_1^2\omega_{14}\omega_5^2\omega_9 - 4\omega_{12}^2\omega_7v_1^2\omega_{14}\omega_8\omega_5\omega_9^2 - 4\omega_{12}^2\omega_6\omega_7v_1^2\omega_{14}\omega_8\omega_5\omega_9 + 4\omega_{12}^2\omega_6\omega_{13}\omega_{14}\omega_5^2\omega_9 + 12\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_7\omega_5\omega_9^2 +$
$6\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_7\omega_8\omega_5^2\omega_9^2 - 6\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_8\omega_5^2\omega_9^2 + 4\omega_{12}\omega_6\omega_{13}\omega_{14}\omega_8\omega_5\omega_9^2 + 4\omega_{12}^2\omega_6\omega_7v_1^2\omega_{14}\omega_8\omega_5\omega_9^2 - 2\omega_{12}\omega_6\omega_{13}\omega_7v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^2 +$
$12\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5 + 6\omega_{12}^2\omega_6c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2 - 12\omega_{12}^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2 + 2\omega_6\omega_{13}\omega_7v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^2 - 12\omega_{12}^2c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9 +$
$4\omega_{12}^2\omega_6\omega_{13}\omega_7v_1^2\omega_{14}\omega_8\omega_9 - 2\omega_{12}^2\omega_6\omega_{13}\omega_7v_1^2\omega_{14}\omega_8\omega_5^2 + 12\omega_{12}^2\omega_6c_s^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2 + 4\omega_{12}^2\omega_{13}v_1^2\omega_{14}\omega_8\omega_5^2\omega_9 + 2\omega_{12}\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2 +$
$8\omega_{12}^2\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9 + 4\omega_{12}\omega_6\omega_{13}\omega_7v_1^2\omega_8\omega_5\omega_9^2 + 12\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_{14}\omega_8\omega_5\omega_9 - 24\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9 + 6\omega_{12}\omega_6c_s^2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^2 -$
$12\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_{14}\omega_5^2\omega_9 + 12\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_7\omega_{14}\omega_5^2\omega_9 - 4\omega_{12}^2\omega_6\omega_{13}\omega_7v_1^2\omega_5^2\omega_9^2 - 4\omega_{12}^2\omega_6\omega_{13}\omega_7v_1^2\omega_5^2\omega_9^2 - 2\omega_{12}^2\omega_6\omega_7\omega_{14}\omega_8\omega_5^2\omega_9 -$
$4\omega_{12}\omega_6\omega_{13}\omega_7v_1^2\omega_{14}\omega_8\omega_9^2 + 4\omega_{12}^2\omega_{14}\omega_8\omega_5^2\omega_9^2 + 12\omega_{12}^2c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9 - 4\omega_6\omega_{13}\omega_7v_1^2\omega_{14}\omega_8\omega_5\omega_9^2 - 2\omega_{12}^2\omega_6\omega_{13}v_1^2\omega_8\omega_5^2\omega_9^2 +$
$2\omega_{12}^2\omega_6v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^2 - 9\omega_{12}^2\omega_6c_s^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2 - 3\omega_{12}^2\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9 - 8\omega_{12}\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2 - 12\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_7\omega_{14}\omega_5\omega_9 +$

$4\omega_{12}^2\omega_6\omega_{13}\omega_7\omega_5^2\omega_9^2 + 4\omega_{12}^2\omega_6\omega_{13}\omega_7v_1^2\omega_5\omega_9^2 + 4\omega_{12}^2\omega_6\omega_7\omega_{14}\omega_8\omega_5\omega_9 - 12\omega_{12}\omega_6c_s^2\omega_{13}\omega_{14}\omega_8\omega_5\omega_9^2 - 2\omega_{12}\omega_6\omega_{13}\omega_7v_1^2\omega_8\omega_5^2\omega_9^2 -$
$6\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9 + 9\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9 + 2\omega_{12}^2\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2 - 2\omega_{12}\omega_6\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^2 - 12\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_7\omega_8\omega_5\omega_9^2 -$
$4\omega_{12}^2\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_9 - 3\omega_{12}^2\omega_6\omega_7v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^2 + 8\omega_{12}\omega_6\omega_{13}\omega_7v_1^2\omega_{14}\omega_8\omega_5\omega_9^2 - 4\omega_{12}^2v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^2 - 4\omega_{12}^2\omega_6\omega_{13}v_1^2\omega_{14}\omega_5^2\omega_9 +$
$4\omega_{12}^2\omega_6\omega_{13}v_1^2\omega_5^2\omega_9^2 - 6\omega_{12}\omega_6c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2 - 2\omega_{12}^2\omega_6\omega_{13}\omega_7\omega_8\omega_5^2\omega_9^2 - 12\omega_{12}\omega_6c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_9^2 + 4\omega_{12}^2\omega_7v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^2 -$
$4\omega_{12}^2\omega_6\omega_{13}\omega_7v_1^2\omega_{14}\omega_5\omega_9 - 4\omega_{12}^2\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5 + 4\omega_{12}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2 - 6\omega_{12}\omega_6c_s^2\omega_{13}\omega_7\omega_8\omega_5^2\omega_9^2 - 12\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_7\omega_5^2\omega_9^2 +$
$12\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_5^2\omega_9^2 + 2\omega_{12}^2\omega_6\omega_7v_1^2\omega_{14}\omega_8\omega_5^2\omega_9 + 12\omega_{12}^2c_s^2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9 + 4\omega_{12}^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9 - 4\omega_{12}\omega_6\omega_{13}\omega_7\omega_8\omega_5\omega_9^2 -$
$4\omega_{12}^2\omega_6\omega_7\omega_{14}\omega_8\omega_5\omega_9^2 - 2\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2 - 8\omega_{12}^2\omega_6\omega_{13}\omega_7v_1^2\omega_{14}\omega_8\omega_5\omega_9 - 4\omega_{12}^2\omega_6\omega_{13}\omega_7v_1^2\omega_8\omega_5\omega_9^2 + 6\omega_6c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2 +$
$4\omega_{12}^2\omega_6\omega_{13}v_1^2\omega_{14}\omega_8\omega_5\omega_9 - 4\omega_{12}^2\omega_{13}\omega_7v_1^2\omega_{14}\omega_8\omega_5^2\omega_9 + 12\omega_{12}^2c_s^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2 + 2\omega_{12}\omega_6\omega_{13}v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^2 - 4\omega_{12}^2\omega_6\omega_{13}\omega_5^2\omega_9^2 +$
$6\omega_{12}^2\omega_6c_s^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_9 - 4\omega_{12}^2\omega_6\omega_{13}\omega_7\omega_{14}\omega_5^2\omega_9 - 4\omega_{12}^2\omega_6\omega_{13}\omega_{14}\omega_8\omega_5\omega_9$

$C_{29} = 2\omega_{12}^2\omega_6\omega_{13}\omega_8\omega_5^2\omega_9^2 + 6\omega_{12}^2\omega_6\omega_{13}\omega_7v_1^2\omega_8\omega_5^2\omega_9^2 + 2\omega_{12}\omega_6\omega_{13}\omega_7\omega_8\omega_5^2\omega_9^2 - 4\omega_{12}^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9 + 3\omega_{12}^2\omega_6\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2 +$
$9\omega_{12}^2\omega_6\omega_{13}\omega_7v_1^2\omega_{14}\omega_8\omega_5^2\omega_9 + 4\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2 - 4\omega_{12}^2c_s^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2 - 12\omega_{12}\omega_6\omega_{13}v_1^2\omega_{14}\omega_8\omega_5\omega_9^2 - 6\omega_{12}^2\omega_6\omega_{13}v_1^2\omega_{14}\omega_8\omega_5^2\omega_9 +$
$4\omega_{12}\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_9^2 + 12\omega_{12}^2\omega_{13}\omega_7v_1^2\omega_{14}\omega_8\omega_5\omega_9 - 4\omega_6c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2 + 2\omega_{12}^2\omega_6\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9 - 2\omega_{12}^2\omega_6\omega_{14}\omega_8\omega_5^2\omega_9^2 +$
$12\omega_{12}^2\omega_6\omega_{13}\omega_7v_1^2\omega_{14}\omega_8\omega_5 - 4\omega_{12}^2\omega_6c_s^2\omega_7\omega_{14}\omega_8\omega_5\omega_9 + 4\omega_{12}^2\omega_6\omega_{13}\omega_7\omega_{14}\omega_5\omega_9 + 4\omega_{12}^2\omega_6\omega_{13}\omega_7\omega_8\omega_5\omega_9^2 - 4\omega_{12}^2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9 -$
$2\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2 + 8\omega_{12}\omega_6c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2 + 4\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_9 - 4\omega_{12}^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2 + 4\omega_{12}\omega_6c_s^2\omega_{13}\omega_7\omega_8\omega_5\omega_9^2 +$
$12\omega_{12}^2\omega_6\omega_{13}\omega_7v_1^2\omega_{14}\omega_5^2\omega_9 - 12\omega_{12}^2\omega_7v_1^2\omega_{14}\omega_8\omega_5\omega_9^2 - 12\omega_{12}^2\omega_6\omega_7v_1^2\omega_{14}\omega_8\omega_5\omega_9 + 4\omega_{12}^2\omega_6\omega_{13}\omega_{14}\omega_5^2\omega_9 + 4\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_7\omega_5\omega_9^2 +$
$2\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_7\omega_8\omega_5^2\omega_9^2 - 2\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_8\omega_5^2\omega_9^2 + 4\omega_{12}\omega_6\omega_{13}\omega_{14}\omega_8\omega_5\omega_9^2 + 12\omega_{12}^2\omega_6\omega_7v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^2 - 6\omega_{12}\omega_6\omega_{13}\omega_7v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^2 +$
$4\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5 + 2\omega_{12}^2\omega_6c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2 - 4\omega_{12}^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2 + 6\omega_6\omega_{13}\omega_7v_1^2\omega_{14}\omega_8\omega_5^2\omega_9 - 4\omega_{12}^2c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9 +$
$12\omega_{12}^2\omega_6\omega_{13}\omega_7v_1^2\omega_{14}\omega_8\omega_9 - 6\omega_{12}^2\omega_6\omega_{13}\omega_7v_1^2\omega_{14}\omega_8\omega_5^2 + 4\omega_{12}^2\omega_6c_s^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2 + 12\omega_{12}^2\omega_{13}v_1^2\omega_{14}\omega_8\omega_5^2\omega_9 + 2\omega_{12}\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2 +$
$8\omega_{12}^2\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9 + 12\omega_{12}\omega_6\omega_{13}\omega_7v_1^2\omega_8\omega_5\omega_9^2 + 4\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_{14}\omega_8\omega_5\omega_9 - 8\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9 + 2\omega_{12}\omega_6c_s^2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^2 -$
$4\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_{14}\omega_5^2\omega_9 + 4\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_7\omega_{14}\omega_5^2\omega_9 - 4\omega_{12}^2\omega_6\omega_{13}\omega_7\omega_5\omega_9^2 - 12\omega_{12}^2\omega_6\omega_{13}\omega_7v_1^2\omega_5^2\omega_9^2 - 2\omega_{12}^2\omega_6\omega_7\omega_{14}\omega_8\omega_5^2\omega_9 -$
$12\omega_{12}\omega_6\omega_{13}\omega_7v_1^2\omega_{14}\omega_8\omega_9^2 + 4\omega_{12}^2\omega_{14}\omega_8\omega_5^2\omega_9^2 + 4\omega_{12}^2c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9 - 12\omega_6\omega_{13}\omega_7v_1^2\omega_{14}\omega_8\omega_5\omega_9^2 - 6\omega_{12}^2\omega_6\omega_{13}v_1^2\omega_8\omega_5^2\omega_9^2 +$
$6\omega_{12}^2\omega_6v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^2 - 3\omega_{12}^2\omega_6c_s^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2 - 3\omega_{12}^2\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9 - 8\omega_{12}\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2 - 4\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_7\omega_{14}\omega_5\omega_9 +$
$4\omega_{12}^2\omega_6\omega_{13}\omega_7\omega_5^2\omega_9^2 + 12\omega_{12}^2\omega_6\omega_{13}\omega_7v_1^2\omega_5\omega_9^2 + 4\omega_{12}^2\omega_6\omega_7\omega_{14}\omega_8\omega_5\omega_9 - 4\omega_{12}\omega_6c_s^2\omega_{13}\omega_{14}\omega_8\omega_5\omega_9^2 - 6\omega_{12}\omega_6\omega_{13}\omega_7v_1^2\omega_8\omega_5^2\omega_9^2 -$
$2\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9 + 3\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9 + 2\omega_{12}^2\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2 - 2\omega_{12}\omega_6\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^2 - 4\omega_{12}^2\omega_6c_s^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2 -$
$4\omega_{12}^2\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_9 - 9\omega_{12}^2\omega_6\omega_7v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^2 + 24\omega_{12}\omega_6\omega_{13}\omega_7v_1^2\omega_{14}\omega_8\omega_5\omega_9^2 - 12\omega_{12}^2v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^2 - 12\omega_{12}^2\omega_6\omega_{13}v_1^2\omega_{14}\omega_5^2\omega_9 +$
$12\omega_{12}^2\omega_6\omega_{13}v_1^2\omega_5^2\omega_9^2 - 2\omega_{12}\omega_6c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2 - 2\omega_{12}^2\omega_6\omega_{13}\omega_7\omega_8\omega_5^2\omega_9^2 - 4\omega_{12}\omega_6c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_9^2 + 12\omega_{12}^2\omega_7v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^2 -$
$12\omega_{12}^2\omega_6\omega_{13}\omega_7v_1^2\omega_{14}\omega_5\omega_9 - 4\omega_{12}^2\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5 + 4\omega_{12}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2 - 2\omega_{12}\omega_6c_s^2\omega_{13}\omega_7\omega_8\omega_5^2\omega_9^2 - 4\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_7\omega_5^2\omega_9^2 +$
$4\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_5^2\omega_9^2 + 6\omega_{12}^2\omega_6\omega_7v_1^2\omega_{14}\omega_8\omega_5^2\omega_9 + 4\omega_{12}^2c_s^2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9 + 4\omega_{12}^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9 - 4\omega_{12}\omega_6\omega_{13}\omega_7\omega_8\omega_5\omega_9^2 -$
$4\omega_{12}^2\omega_6\omega_7\omega_{14}\omega_8\omega_5\omega_9^2 - 2\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2 - 24\omega_{12}^2\omega_6\omega_{13}\omega_7v_1^2\omega_{14}\omega_8\omega_5\omega_9 - 12\omega_{12}^2\omega_6\omega_{13}\omega_7v_1^2\omega_8\omega_5\omega_9^2 + 2\omega_6c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2 +$
$12\omega_{12}^2\omega_6\omega_{13}v_1^2\omega_{14}\omega_8\omega_5\omega_9 - 12\omega_{12}^2\omega_{13}\omega_7v_1^2\omega_{14}\omega_8\omega_5^2\omega_9 + 4\omega_{12}^2c_s^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2 + 6\omega_{12}\omega_6\omega_{13}v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^2 - 4\omega_{12}^2\omega_6\omega_{13}\omega_5^2\omega_9^2 +$
$2\omega_{12}^2\omega_6c_s^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_9 - 4\omega_{12}^2\omega_6\omega_{13}\omega_7\omega_{14}\omega_5^2\omega_9 - 4\omega_{12}^2\omega_6\omega_{13}\omega_{14}\omega_8\omega_5\omega_9$

$C_{30} = -\omega_{12}c_s^2\omega_7^2\omega_8^2\omega_5^3 - 8\omega_{12}^2c_s^2\omega_7^2\omega_{14}\omega_8^2 - 2\omega_{12}^2c_s^2\omega_{14}\omega_8^2\omega_5^2 + \omega_{12}c_s^2\omega_7\omega_{14}\omega_8^2\omega_5^3 - 4\omega_{12}\omega_7^2\omega_{14}\omega_8^2\omega_5^2 - 2\omega_{12}^2\omega_7^2\omega_8\omega_5^2 - 2\omega_{12}^2\omega_7^2v_1^2\omega_8\omega_5^3 +$
$4\omega_{12}\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5^2 + \omega_{12}^2\omega_7\omega_8^2\omega_5^3 + \omega_{12}\omega_7v_1^2\omega_{14}\omega_8^2\omega_5^3 + 2\omega_{12}^2c_s^2\omega_7\omega_8\omega_5^3 + 5\omega_{12}^2c_s^2\omega_7^2\omega_{14}\omega_8\omega_5^3 + \omega_{12}^2\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5 - 2\omega_{12}^2c_s^2\omega_7^2\omega_8^2\omega_5^2 +$
$2\omega_{12}^2\omega_7^2\omega_8\omega_5^3 + 2\omega_{12}^2\omega_7^2v_1^2\omega_8\omega_5^2 - \omega_{12}\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5^3 + \omega_{12}\omega_7^2\omega_{14}\omega_8^2\omega_5^3 - 2\omega_{12}c_s^2\omega_7\omega_{14}\omega_8^2\omega_5^2 + 2\omega_{12}c_s^2\omega_7^2\omega_8^2\omega_5^2 - 11\omega_{12}^2c_s^2\omega_7^2\omega_{14}\omega_8\omega_5^2 +$
$\omega_{12}^2c_s^2\omega_7^2\omega_8^2\omega_5^3 + \omega_{12}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2 - 2\omega_{12}\omega_7v_1^2\omega_{14}\omega_8^2\omega_5^2 - 6\omega_{12}^2c_s^2\omega_7\omega_{14}\omega_8^2\omega_5 + 2\omega_{12}^2c_s^2\omega_7\omega_{14}\omega_5^3 + 6\omega_{12}^2c_s^2\omega_7^2\omega_{14}\omega_8\omega_5 - \omega_{12}^2\omega_7^2\omega_{14}\omega_8^2\omega_5 +$
$7\omega_{12}^2c_s^2\omega_7\omega_{14}\omega_8^2\omega_5^2 - 2c_s^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2 - \omega_7^2\omega_{14}\omega_8^2\omega_5^3 + \omega_{12}\omega_7^2\omega_8^2\omega_5^3 + \omega_{12}^2\omega_7v_1^2\omega_{14}\omega_8^2\omega_5^2 + \omega_{12}^2\omega_7\omega_{14}\omega_8\omega_5^3 - \omega_{12}^2\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5^2 +$
$2\omega_{12}\omega_7^2\omega_{14}\omega_8^2\omega_5 + 2\omega_7^2\omega_{14}\omega_8^2\omega_5^2 - 2\omega_{12}\omega_7^2\omega_8^2\omega_5^2 - \omega_{12}^2\omega_7v_1^2\omega_8^2\omega_5^3 + c_s^2\omega_7^2\omega_{14}\omega_8^2\omega_5^3 - 2\omega_{12}\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5 - 7\omega_{12}^2c_s^2\omega_7\omega_{14}\omega_8\omega_5^3 -$
$\omega_{12}^2\omega_7^2v_1^2\omega_{14}\omega_8\omega_5^2 + 2\omega_{12}^2\omega_7v_1^2\omega_8\omega_5^3 - \omega_{12}^2\omega_7v_1^2\omega_{14}\omega_8\omega_5^3 - \omega_{12}c_s^2\omega_7^2\omega_{14}\omega_8^2\omega_5^3 + 2\omega_{12}\omega_7\omega_{14}\omega_8^2\omega_5^2 + \omega_{12}^2\omega_7^2v_1^2\omega_{14}\omega_8\omega_5^3 + 13\omega_{12}^2c_s^2\omega_7^2\omega_{14}\omega_8^2\omega_5 +$
$4\omega_{12}^2c_s^2\omega_7\omega_{14}\omega_8\omega_5^2 - \omega_{12}^2\omega_7\omega_{14}\omega_8^2\omega_5^2 - \omega_{12}\omega_7\omega_{14}\omega_8^2\omega_5^3 + 4\omega_{12}c_s^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2 + \omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5^3 - 2\omega_{12}c_s^2\omega_7^2\omega_{14}\omega_8^2\omega_5 - 2\omega_{12}^2\omega_7^2v_1^2\omega_8^2\omega_5^2 -$
$\omega_{12}^2\omega_7^2\omega_8^2\omega_5^3 + 2\omega_{12}^2c_s^2\omega_{14}\omega_8\omega_5^3 + \omega_{12}^2\omega_7^2\omega_{14}\omega_8\omega_5^2 - 2\omega_{12}^2c_s^2\omega_7^2\omega_8\omega_5^3 - 5\omega_{12}^2c_s^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2 - \omega_{12}\omega_7^2v_1^2\omega_8^2\omega_5^3 + 2\omega_{12}^2c_s^2\omega_7^2\omega_{14}\omega_5^2 - 2\omega_{12}^2\omega_7\omega_8\omega_5^3 -$
$2\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5^2 + \omega_{12}^2\omega_7^2v_1^2\omega_8^2\omega_5^3 + 2\omega_{12}^2\omega_7^2\omega_8^2\omega_5^2 + 2\omega_{12}\omega_7^2v_1^2\omega_8^2\omega_5^2 - 2\omega_{12}^2c_s^2\omega_7^2\omega_{14}\omega_5^3 + 2\omega_{12}^2c_s^2\omega_7^2\omega_8\omega_5^2 - \omega_{12}^2c_s^2\omega_7\omega_8^2\omega_5^3 - \omega_{12}^2\omega_7^2\omega_{14}\omega_8\omega_5^3$

$C_{31} = 12\omega_{12}^2\omega_6^2\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9 + 12\omega_{12}^2\omega_6^2\omega_{13}\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5 + 12\omega_{12}^2\omega_6\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2 + 12\omega_{12}\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_9^2 +$
$24\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_9^2 - 24\omega_{12}^2c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2 - 6\omega_{12}^2\omega_6^2\omega_{13}\omega_7v_1^2\omega_8^2\omega_5^2\omega_9^2 - 54\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9 - 12\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_8\omega_5^2\omega_9^2 -$
$36\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2 + 12\omega_{12}^2\omega_6^2\omega_{13}\omega_7^2\omega_8^2\omega_5\omega_9^2 + 12\omega_{12}^2\omega_6\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2 + 12\omega_{12}^2\omega_6^2\omega_{13}\omega_7^2v_1^2\omega_8\omega_5\omega_9^2 + 6\omega_{12}^2\omega_6\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2 -$
$6\omega_{12}^2\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_9^2 + 42\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2 - 12\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_{14}\omega_8^2\omega_5^2\omega_9^2 - 24\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_9^2 +$
$12\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^2 + 12\omega_{12}^2\omega_6^2\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5\omega_9^2 - 6\omega_{12}^2\omega_6\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2 - 12\omega_{12}^2\omega_6^2c_s^2\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9 + 6\omega_{12}^2\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2 +$
$4\omega_{12}^2\omega_6^2\omega_{13}\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9 + 6\omega_{12}^2\omega_6\omega_{13}\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5\omega_9^2 + 12\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5\omega_9^2 - 12\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_8^2\omega_5\omega_9^2 +$
$12\omega_{12}^2\omega_6^2\omega_{13}\omega_7^2\omega_8\omega_5^2\omega_9^2 + 12\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2 + 6\omega_{12}^2\omega_6^2\omega_{13}\omega_7^2v_1^2\omega_8^2\omega_5^2\omega_9^2 + 6\omega_{12}\omega_6^2\omega_{13}\omega_7^2\omega_8^2\omega_5^2\omega_9^2 - 12\omega_{12}\omega_6c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2 +$
$\omega_{12}^2\omega_6^2\omega_{13}\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2 + 3\omega_{12}\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2 + 18\omega_{12}^2\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_5^2\omega_9 - 12\omega_{12}^2\omega_6c_s^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2 - 6\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_8^2\omega_5^2\omega_9^2 +$
$30\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_9^2 - 6\omega_{12}\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_8^2\omega_5^2\omega_9^2 + 12\omega_{12}\omega_6^2\omega_{13}\omega_7^2v_1^2\omega_8^2\omega_5\omega_9^2 + 54\omega_{12}\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2 +$
$12\omega_{12}^2\omega_6^2c_s^2\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2 - 12\omega_{12}^2\omega_6^2\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5\omega_9 + 6\omega_6^2\omega_{13}\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2 - 12\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_5^2\omega_9^2 - 12\omega_{12}^2\omega_6\omega_7v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2 +$
$12\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9 - 6\omega_{12}^2\omega_6^2\omega_{13}\omega_7^2v_1^2\omega_{14}\omega_8\omega_5\omega_9^2 + 6\omega_{12}^2\omega_6^2\omega_{13}\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2 - 3\omega_{12}\omega_6^2\omega_{13}\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2 - 6\omega_{12}^2\omega_6^2\omega_{13}\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5^2 -$
$12\omega_{12}^2\omega_6^2\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2 + 12\omega_{12}^2\omega_6c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2 + 12\omega_{12}^2\omega_6^2\omega_{13}\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_9 - 42\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2 - 36\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2 -$
$36\omega_{12}\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_9^2 + 3\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2 - 24\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5\omega_9 + 18\omega_{12}\omega_6^2\omega_{13}\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5\omega_9^2 +$
$12\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_7\omega_8\omega_5^2\omega_9^2 + 6\omega_{12}^2\omega_6^2c_s^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2 + 6\omega_{12}^2\omega_6^2\omega_{13}\omega_7^2v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^2 - 18\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2 - 12\omega_{12}^2\omega_6c_s^2\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2 +$
$9\omega_{12}^2\omega_6^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2 + 36\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_9 + 18\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2 + 12\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2 - 12\omega_{12}\omega_6^2\omega_{13}\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_9^2 -$
$4\omega_{12}^2\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9 - 12\omega_{12}^2\omega_6^2\omega_{13}\omega_7\omega_8\omega_5^2\omega_9^2 - 18\omega_{12}\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2 - 6\omega_{12}^2\omega_6^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2 - 9\omega_{12}\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2 +$
$6\omega_{12}^2\omega_6^2\omega_7\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2 - 6\omega_{12}\omega_6^2\omega_{13}\omega_7^2v_1^2\omega_8^2\omega_5^2\omega_9^2 - 54\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5\omega_9^2 + 12\omega_{12}\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_8^2\omega_5\omega_9^2 +$
$6\omega_{12}^2\omega_6\omega_{13}\omega_7v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2 - 12\omega_{12}^2\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_9 + 6\omega_{12}^2\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2 - 12\omega_6^2\omega_{13}\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5\omega_9^2 + 12\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_5\omega_9^2 +$
$6\omega_{12}^2\omega_6^2\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9 - 9\omega_{12}^2\omega_6^2c_s^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2 + 12\omega_{12}^2\omega_6\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2 + 12\omega_{12}^2\omega_6^2\omega_{13}\omega_7v_1^2\omega_8\omega_5^2\omega_9^2 + 12\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_7\omega_{14}\omega_5^2\omega_9^2 -$
$12\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^2 - 12\omega_{12}^2\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5 + 6\omega_{12}^2\omega_6^2c_s^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9 - 9\omega_{12}^2\omega_6^2\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2 - \omega_{12}^2\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2 -$

$6\omega_{12}^2\omega_6\omega_{13}\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2 - 18\omega_{12}^2\omega_6^2\omega_{13}\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5\omega_9 - 12\omega_{12}\omega_6^2\omega_{13}\omega_7^2\omega_8^2\omega_5\omega_9^2 + 24\omega_{12}\omega_6c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2 -$
$24\omega_{12}^2c_s^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2 - 12\omega_{12}^2\omega_6^2\omega_{13}\omega_7^2v_1^2\omega_8^2\omega_5\omega_9^2 - 6\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2 - 12\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_9^2 + 6\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_8^2\omega_5^2\omega_9^2 -$
$12\omega_{12}^2\omega_6^2\omega_{13}\omega_7^2\omega_8\omega_5\omega_9^2 + 36\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5 - 12\omega_{12}^2\omega_6\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5\omega_9^2 - 6\omega_{12}^2\omega_6^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9 + 24\omega_{12}^2c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2 -$
$6\omega_{12}^2\omega_6^2\omega_{13}\omega_7v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^2 + 12\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2 - 12\omega_{12}^2\omega_6\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2 - 12\omega_{12}^2\omega_6^2\omega_{13}\omega_7^2v_1^2\omega_8\omega_5^2\omega_9^2 + 12\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_8\omega_5\omega_9^2 +$
$54\omega_{12}^2\omega_6c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2 - 6\omega_{12}^2\omega_6^2\omega_{13}\omega_7^2\omega_8^2\omega_5^2\omega_9^2 + 12\omega_{12}^2\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9 + 6\omega_{12}^2\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5\omega_9^2 - 6\omega_{12}^2\omega_6\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2$

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

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

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

$C_{35} =$
$12\omega_{12}\omega_6\omega_{10}\omega_7^2v_2^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15} - 12\omega_{12}\omega_6^2\omega_7^2v_2^2\omega_{14}\omega_8^2\omega_5^3\omega_{15} - 12\omega_{12}\omega_6^2\omega_{16}\omega_{10}\omega_7^3v_2^2\omega_{14}\omega_8\omega_5^2\omega_{15} + 12\omega_{12}\omega_6\omega_{16}\omega_{10}\omega_7^2v_2^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15} -$
$12\omega_{12}\omega_6c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_5^3 + 12\omega_{12}\omega_6c_s^2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15} - 24\omega_{12}\omega_6\omega_{16}\omega_{10}\omega_7v_2^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15} +$
$12\omega_{12}\omega_6^2\omega_{16}\omega_{10}\omega_7^3v_2^2\omega_{17}\omega_{14}\omega_5^2\omega_{15} - 12\omega_{12}\omega_6^2\omega_{16}\omega_{10}\omega_7^3v_2^2\omega_{14}\omega_8^2\omega_5^3 - 6\omega_{12}\omega_6^2\omega_{16}\omega_{10}\omega_7^3v_1^2\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 12\omega_{12}\omega_6^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{17}\omega_{14}\omega_8\omega_5^2\omega_{15} +$
$6\omega_6^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 24\omega_{12}\omega_6\omega_{16}\omega_{10}\omega_7^3v_2^2\omega_{17}\omega_{14}\omega_8^2\omega_5\omega_{15} - 12\omega_{12}\omega_6c_s^2\omega_{10}\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15} - 24\omega_{12}\omega_6^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_{15} +$
$12\omega_{12}\omega_6c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_5^2 - 12\omega_{12}\omega_6^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{14}\omega_8^2\omega_5^3\omega_{15} + 12\omega_{12}\omega_6^2\omega_{16}\omega_{10}\omega_7^2v_1^2\omega_{17}\omega_{14}\omega_5^3\omega_{15} - 12\omega_{12}\omega_6^2c_s^2\omega_{10}\omega_7^2\omega_{14}\omega_8^2\omega_5^3\omega_{15} +$
$12\omega_{12}\omega_6^2\omega_{16}\omega_{10}\omega_7^2v_2^2\omega_{14}\omega_8^2\omega_5^3\omega_{15} + 12\omega_{12}\omega_6^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 6\omega_{12}\omega_6^2\omega_{16}\omega_{10}\omega_7^2v_1^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15} +$
$12\omega_{12}\omega_6^2\omega_{16}\omega_{10}\omega_7v_1^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15} - 12\omega_6^2\omega_{16}\omega_{10}\omega_7^3v_1^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 12\omega_{12}\omega_6^2c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{14}\omega_8\omega_5^3\omega_{15} +$
$24\omega_{12}\omega_6^2\omega_{16}\omega_{10}\omega_7^3v_1^2\omega_{17}\omega_{14}\omega_8\omega_5\omega_{15} + 6\omega_{12}\omega_6^2c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15} + 12\omega_{12}\omega_6c_s^2\omega_{16}\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_5^3 +$
$12\omega_{12}\omega_6\omega_{16}\omega_{10}\omega_7^3v_2^2\omega_{17}\omega_{14}\omega_8\omega_5^2\omega_{15} + 24\omega_{12}\omega_6^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_5\omega_{15} + 30\omega_{12}\omega_6^2\omega_{16}\omega_{10}\omega_7^3v_2^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15} +$
$12\omega_{12}\omega_6\omega_{16}\omega_7^3v_2^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15} + 12\omega_{12}\omega_6^2\omega_{10}\omega_7^3v_2^2\omega_{14}\omega_8^2\omega_5^3\omega_{15} + 12\omega_{12}\omega_6^2\omega_{16}\omega_{10}\omega_7^3v_1^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 12\omega_{12}\omega_6^2\omega_{16}\omega_{10}\omega_7^3v_2^2\omega_{17}\omega_{14}\omega_5^3\omega_{15} -$
$12\omega_6^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 12\omega_{12}\omega_6^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15} - 48\omega_{12}\omega_6^2\omega_{16}\omega_{10}\omega_7^2v_2^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15} -$
$24\omega_{12}\omega_6\omega_{16}\omega_7^2v_2^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15} - 6\omega_{12}\omega_6^2c_s^2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15} + 12\omega_{12}\omega_6^2\omega_{16}\omega_{10}\omega_7^3v_2^2\omega_{14}\omega_8\omega_5^3\omega_{15} + 12\omega_{12}\omega_6\omega_7^3v_2^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15} -$
$24\omega_{12}\omega_6\omega_{16}\omega_7^3v_2^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_{15} - 48\omega_{12}\omega_6^2\omega_{16}\omega_{10}\omega_7^3v_2^2\omega_{17}\omega_{14}\omega_8\omega_5^2\omega_{15} + 12\omega_{12}\omega_6c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_5\omega_{15} -$
$12\omega_{12}\omega_6^2c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^3\omega_{15} - 12\omega_{12}\omega_6\omega_{16}\omega_{10}\omega_7^3v_2^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15} - 12\omega_{12}\omega_6^2\omega_{16}\omega_{10}\omega_7^2v_1^2\omega_{17}\omega_8\omega_5^3\omega_{15} -$
$18\omega_{12}\omega_6^2c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_{15} - 12\omega_{12}\omega_6\omega_{10}\omega_7^3v_2^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15} - 18\omega_{12}\omega_6c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15} +$
$24\omega_{12}\omega_6^2\omega_{16}\omega_{10}\omega_7^2v_1^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_{15} - 6\omega_{12}\omega_6^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 6\omega_6^2\omega_{16}\omega_{10}\omega_7^3v_1^2\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 12\omega_{12}\omega_6\omega_{16}\omega_7^3v_2^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3 +$
$12\omega_{12}\omega_6^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{14}\omega_8^2\omega_5^2\omega_{15} - \omega_{12}\omega_6^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15} - 18\omega_{12}\omega_6c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_{15} +$
$24\omega_{12}\omega_6^2\omega_{16}\omega_{10}\omega_7^3v_2^2\omega_{17}\omega_{14}\omega_8\omega_5\omega_{15} + 24\omega_{12}\omega_6^2\omega_{16}\omega_7^3v_2^2\omega_{17}\omega_{14}\omega_8\omega_5^2\omega_{15} - 12\omega_{12}\omega_6^2\omega_{16}\omega_{10}\omega_7^3v_1^2\omega_{17}\omega_8\omega_5^2\omega_{15} - 12\omega_{12}\omega_6^2\omega_{16}\omega_{10}\omega_7^3v_2^2\omega_{14}\omega_8^2\omega_5^2 +$
$12\omega_{12}\omega_6^2\omega_{16}\omega_{10}\omega_7^3v_2^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15} + 12\omega_{12}\omega_6^2c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5\omega_{15} - 12\omega_{12}\omega_6^2\omega_{16}\omega_{10}\omega_7^3v_1^2\omega_{17}\omega_{14}\omega_5^3\omega_{15} -$
$24\omega_{12}\omega_6^2\omega_{16}\omega_{10}\omega_7^2v_1^2\omega_{17}\omega_{14}\omega_8^2\omega_5\omega_{15} + 24\omega_{12}\omega_6^2\omega_{16}\omega_{10}\omega_7v_2^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15} + 12\omega_{12}\omega_6\omega_{16}\omega_{10}\omega_7^3v_2^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2 -$
$12\omega_{12}\omega_6^2\omega_{16}\omega_{10}\omega_7^3v_2^2\omega_{14}\omega_8^2\omega_5^3\omega_{15} + 12\omega_6^2c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_{15} + 6\omega_{12}\omega_6^2\omega_{16}\omega_{10}\omega_7^2v_1^2\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 12\omega_{12}\omega_6^2c_s^2\omega_{16}\omega_7^3\omega_{14}\omega_8^2\omega_5^3\omega_{15} +$
$6\omega_{12}\omega_6^2c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 12\omega_{12}\omega_{16}\omega_{10}\omega_7^3v_2^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15} - 18\omega_{12}\omega_6\omega_{16}\omega_{10}\omega_7^3v_2^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15} + 12\omega_{12}\omega_6^2\omega_{16}\omega_{10}\omega_7^3v_2^2\omega_{14}\omega_8^2\omega_5^3 +$
$12\omega_{12}\omega_6c_s^2\omega_{10}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15} - 12\omega_{12}\omega_6\omega_{16}\omega_{10}\omega_7^3v_2^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3 - 12\omega_{12}\omega_6c_s^2\omega_{16}\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15} - 12\omega_{12}\omega_6^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{14}\omega_8\omega_5^2\omega_{15} +$
$24\omega_{12}\omega_6^2\omega_{16}\omega_7^2v_2^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15} - 12\omega_{12}\omega_6^2c_s^2\omega_{16}\omega_7^3\omega_{14}\omega_8^2\omega_5^3 - 12\omega_{12}\omega_6^2\omega_{16}\omega_{10}\omega_7v_1^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_{15} + 12\omega_{12}\omega_6^2\omega_{16}\omega_{10}\omega_7^2v_1^2\omega_{17}\omega_{14}\omega_8\omega_5^2\omega_{15} +$
$12\omega_{12}\omega_6^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{17}\omega_8\omega_5^3\omega_{15} + 12\omega_6^2\omega_{16}\omega_{10}\omega_7^2v_1^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_{15} - 12\omega_{12}\omega_{16}\omega_{10}\omega_7^2v_2^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15} +$
$36\omega_{12}\omega_6\omega_{16}\omega_{10}\omega_7^2v_2^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15} + 12\omega_{12}\omega_6^2\omega_{16}\omega_{10}\omega_7^3v_2^2\omega_{14}\omega_8^2\omega_5^2\omega_{15} - 12\omega_{12}\omega_6^2c_s^2\omega_7^3\omega_{14}\omega_8^2\omega_5^3\omega_{15} + 12\omega_{12}\omega_6^2\omega_{16}\omega_{10}\omega_7^3v_1^2\omega_{17}\omega_{14}\omega_5^2\omega_{15} +$
$12\omega_{12}\omega_6c_s^2\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15} - 36\omega_{12}\omega_6^2\omega_{16}\omega_{10}\omega_7^3v_1^2\omega_{17}\omega_{14}\omega_8\omega_5^2\omega_{15} + 10\omega_{12}\omega_6c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15} -$
$12\omega_{12}\omega_6^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{14}\omega_8^2\omega_5^2 - 2\omega_{12}\omega_6^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_{15} - 24\omega_{12}\omega_6^2\omega_{16}\omega_7^3v_2^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15} + 12\omega_{12}\omega_6^2\omega_{16}\omega_{10}\omega_7^3v_1^2\omega_{17}\omega_8\omega_5^3\omega_{15} +$
$18\omega_{12}\omega_6^2\omega_{16}\omega_{10}\omega_7v_1^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15} - 12\omega_{12}\omega_6^2\omega_{16}\omega_{10}\omega_7^2v_2^2\omega_{14}\omega_8\omega_5^3\omega_{15} - 6\omega_6^2\omega_{16}\omega_{10}\omega_7^2v_1^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15} -$
$12\omega_{12}\omega_6^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{17}\omega_8\omega_5^2\omega_{15} - 24\omega_{12}\omega_6^2\omega_{16}\omega_{10}\omega_7^2v_1^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15} + 12\omega_{12}\omega_6^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{14}\omega_8\omega_5^3\omega_{15} -$
$12\omega_{12}\omega_6^2\omega_{16}\omega_{10}v_2^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15} + 12\omega_{12}\omega_6^2\omega_{16}\omega_7^3v_2^2\omega_{14}\omega_8^2\omega_5^3\omega_{15} - 12\omega_{12}\omega_6^2\omega_{10}\omega_7^2v_2^2\omega_{14}\omega_8^2\omega_5^3\omega_{15} + 36\omega_{12}\omega_6\omega_{16}\omega_{10}\omega_7^3v_2^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_{15} -$
$12\omega_{12}\omega_{16}\omega_{10}\omega_7^3v_2^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_{15} + 12\omega_{12}\omega_6^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{14}\omega_8^2\omega_5^3 - 6\omega_6^2c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15} +$
$12\omega_{12}\omega_6^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{17}\omega_8\omega_5^3\omega_{15} + 12\omega_{12}\omega_6^2c_s^2\omega_{10}\omega_7^3\omega_{14}\omega_8^2\omega_5^3\omega_{15} + 12\omega_{12}\omega_6^2\omega_{16}\omega_{10}\omega_7^2v_2^2\omega_{17}\omega_{14}\omega_5^3\omega_{15} + 12\omega_{12}\omega_6^2c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{14}\omega_8^2\omega_5^3\omega_{15}$

$C_{36} = -\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_{15}^2 + \omega_{16}^2\omega_{10}^3\omega_7^2v_2^2\omega_8\omega_5\omega_{15} - 3c_s^2\omega_{16}\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - \omega_{16}\omega_{10}\omega_7^2v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15} +$
$\omega_{16}\omega_{10}^3\omega_7^2\omega_8\omega_5^2\omega_{15}^2 + \omega_{16}\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 3c_s^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15} - 3c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8\omega_5\omega_{15}^2 +$
$3\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 3c_s^2\omega_{16}\omega_{10}^3\omega_7\omega_8\omega_5^2\omega_{15}^2 + \omega_{16}^2\omega_{10}^2v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 9c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 3c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_5^2\omega_{15}^2 +$
$\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8\omega_5^2\omega_{15} - \omega_{16}^2\omega_{10}^2\omega_7^2v_2^2\omega_8\omega_5^2\omega_{15}^2 + \omega_{16}^2\omega_{10}^3\omega_7v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15} - \omega_{16}^2\omega_{10}^2\omega_7^2v_2^2\omega_{17}\omega_5\omega_{15}^2 - \omega_{16}\omega_{10}^3\omega_7v_2^2\omega_{17}\omega_8\omega_5\omega_{15}^2 -$

$$
\omega_{16}^2\omega_{10}^3\omega_7^2v_2^2\omega_5^2\omega_{15}^2 - \omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 3c_s^2\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - \omega_{16}\omega_{10}^2\omega_7^2v_2^2\omega_{17}\omega_8\omega_5\omega_{15}^2 + 2\omega_{16}^2\omega_{10}^2\omega_7^2v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15} -
3c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_{15} - 3c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_5\omega_{15}^2 + 6c_s^2\omega_{16}\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 3c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15}^2 - \omega_{16}^2\omega_{10}^3\omega_7^2v_2^2\omega_{17}\omega_8\omega_5 +
\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15} + 3c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2 - 2\omega_{16}\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 3c_s^2\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + \omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 -
2\omega_{16}^2\omega_{10}^2\omega_7v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 3c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15} + 3c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15} - \omega_{16}^2\omega_{10}^3\omega_7^2v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15} + 2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 +
\omega_{16}\omega_{10}^3\omega_7^2v_2^2\omega_{17}\omega_8\omega_5\omega_{15}^2 + \omega_{16}^2\omega_{10}^3\omega_7^2v_2^2\omega_{17}\omega_8\omega_5^2 - 3c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5 - 6c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 3c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_5^2\omega_{15}^2 -
\omega_{16}^2\omega_{10}^2\omega_7v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15} + 3c_s^2\omega_{16}^2\omega_{10}^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 3c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}^2 - \omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_5^2\omega_{15}^2 + \omega_{16}^2\omega_{10}^2\omega_7^2v_2^2\omega_8\omega_5^2\omega_{15} -
\omega_{16}^2\omega_{10}^3\omega_7^2v_2^2\omega_{17}\omega_8\omega_{15} - 2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} + 3c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15}^2 + \omega_{16}^2\omega_{10}^2\omega_7^2v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + \omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}^2 -
\omega_{16}\omega_{10}^3\omega_7^2v_2^2\omega_8\omega_5^2\omega_{15}^2 + 6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} + \omega_{16}^2\omega_{10}^3\omega_7^2\omega_5^2\omega_{15}^2 + \omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15} + \omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5\omega_{15} +
\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2 - \omega_{16}\omega_{10}^3v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 3c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15} + \omega_{16}\omega_{10}^3\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - \omega_{16}^2\omega_{10}^3\omega_7^2\omega_8\omega_5^2\omega_{15}^2 + \omega_{16}\omega_{10}^3\omega_7v_2^2\omega_8\omega_5^2\omega_{15}^2 +
2\omega_{16}^2\omega_7^2v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 2\omega_{16}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 3c_s^2\omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5\omega_{15} - \omega_{16}^2\omega_{10}^3\omega_7^2v_2^2\omega_8\omega_5\omega_{15}^2 - 3c_s^2\omega_{16}^2\omega_{10}^3\omega_7\omega_8\omega_5^2\omega_{15}^2 +
\omega_{16}^2\omega_{10}\omega_7^2v_2^2\omega_{17}\omega_8\omega_5\omega_{15}^2 - \omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 3c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8\omega_5\omega_{15} + 3c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - \omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15} +
3c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_{15}^2 + 3c_s^2\omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15} + \omega_{16}^2\omega_{10}^3\omega_7^2\omega_8\omega_5\omega_{15}^2 - \omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 3c_s^2\omega_{16}\omega_{10}^3\omega_7^2\omega_8\omega_5^2\omega_{15}^2 - \omega_{16}\omega_{10}^3\omega_7\omega_8\omega_5^2\omega_{15}^2 -
3\omega_{16}^2\omega_{10}\omega_7^2v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}^2 - \omega_{16}^2\omega_{10}^3\omega_7\omega_5^2\omega_{15}^2 + \omega_{16}^2\omega_{10}^3\omega_7^2v_2^2\omega_8\omega_5^2\omega_{15}^2 + \omega_{16}^2\omega_{10}^2\omega_7^2v_2^2\omega_{17}\omega_8\omega_{15}^2 -
6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}^2 - 3c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8\omega_5^2\omega_{15} - 2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 - \omega_{16}\omega_{10}^3\omega_7^2v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 2\omega_{16}^2\omega_{10}^3\omega_7^2v_2^2\omega_{17}\omega_8\omega_5\omega_{15} -
\omega_{16}^2\omega_{10}^3\omega_7v_2^2\omega_8\omega_5^2\omega_{15}^2 + \omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_{15} + \omega_{10}^3\omega_7^2v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 6c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 + \omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15} +
6c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + \omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_5\omega_{15}^2 + \omega_{16}^2\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15}^2 - \omega_{16}^2\omega_{10}^3\omega_7^2\omega_5\omega_{15}^2 + \omega_{16}^2\omega_{10}^3\omega_7v_2^2\omega_5^2\omega_{15}^2 - 3c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15} -
\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2 + \omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 3c_s^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 2\omega_{16}^2\omega_{10}^2\omega_7^2v_2^2\omega_{17}\omega_8\omega_5\omega_{15}^2 - 2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 +
\omega_{16}^2\omega_{10}^2\omega_7^2v_2^2\omega_{17}\omega_5^2\omega_{15}^2 + 2\omega_{16}\omega_{10}^3\omega_7v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + \omega_{16}^2\omega_{10}^3\omega_7^2v_2^2\omega_5\omega_{15}^2 - \omega_{16}^2\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15} - \omega_{16}^2\omega_{10}^3\omega_7v_2^2\omega_{17}\omega_8\omega_5\omega_{15} -
\omega_{10}^2\omega_7^2v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + \omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_5^2\omega_{15}^2 - \omega_{10}^3\omega_7v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + \omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5 + 2\omega_{16}\omega_{10}^2\omega_7^2v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 3c_s^2\omega_{16}^2\omega_{10}^3\omega_7\omega_5^2\omega_{15}^2 -
3c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - \omega_{16}\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15}^2 - \omega_{16}^2\omega_{10}^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 3c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_5^2\omega_{15}^2 - 3c_s^2\omega_{16}\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 +
\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 2\omega_{16}^2\omega_{10}^2\omega_7v_2^2\omega_{17}\omega_8\omega_5\omega_{15}^2 + \omega_{16}\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 - \omega_{16}^2\omega_{10}\omega_7^2v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15} - 3c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2 -
\omega_{16}^2\omega_{10}^3\omega_7^2v_2^2\omega_8\omega_5^2\omega_{15} + 3c_s^2\omega_{16}\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}^2 + 3c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8\omega_5^2\omega_{15}^2 + 6c_s^2\omega_{16}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + \omega_{16}\omega_{10}^2\omega_7^2v_2^2\omega_8\omega_5^2\omega_{15}^2 -
\omega_{16}\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}^2 - 3c_s^2\omega_{16}\omega_{10}^3\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - \omega_{16}^2\omega_{10}^2\omega_7^2v_2^2\omega_{17}\omega_8\omega_5^2 + \omega_{16}^2\omega_{10}^3\omega_7\omega_8\omega_5^2\omega_{15}^2 - \omega_{16}^2\omega_{10}^2\omega_7v_2^2\omega_{17}\omega_5^2\omega_{15}^2 -
\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}^2 + \omega_{16}^2\omega_{10}\omega_7v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - \omega_{16}^2\omega_{10}^3\omega_7^2\omega_8\omega_5\omega_{15} + 3c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_5\omega_{15}^2 + 3c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}^2
$$

$$
C_{37} = 2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8\omega_5^2\omega_{15}^2 - 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^3 - 4\omega_6c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - \omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 +
2c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 4\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5\omega_{15}^2 - 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2v_2^2\omega_{17}\omega_8^2\omega_5^3\omega_{15} - \omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 -
2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7\omega_8^2\omega_5^3\omega_{15}^2 - 2\omega_6\omega_{16}^2\omega_{10}^2\omega_7v_2^2\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 9\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 + 4\omega_6\omega_{16}^2\omega_7^2v_2^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 + 2\omega_6\omega_{16}\omega_{10}^3\omega_7v_2^2\omega_8^2\omega_5^3\omega_{15}^2 +
2\omega_6\omega_{16}^2\omega_{10}^3\omega_7v_2^2\omega_8\omega_5^3\omega_{15}^2 + 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7\omega_8^2\omega_5^3\omega_{15}^2 - 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8\omega_5^2\omega_{15}^2 + 2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^3 - 4\omega_6c_s^2\omega_{16}\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 +
\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2v_2^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 - 2\omega_6\omega_{16}\omega_{10}^3v_2^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 - 13\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 2\omega_6\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15} -
2\omega_6\omega_{16}\omega_{10}^3\omega_7^2v_2^2\omega_8^2\omega_5^3\omega_{15}^2 + 2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_5^3\omega_{15}^2 - 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2v_2^2\omega_8\omega_5^3\omega_{15}^2 - 2\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8^2\omega_5^3\omega_{15} + 4\omega_6c_s^2\omega_{16}\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 +
\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 2\omega_6c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 2\omega_6c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_8^2\omega_5^3\omega_{15}^2 + 6\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 - \omega_6\omega_{16}^2\omega_{10}^3\omega_7^2v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 +
2\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2v_2^2\omega_8^2\omega_5^3\omega_{15} + 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2 + 2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 2\omega_6\omega_{16}\omega_{10}^2\omega_7^2\omega_8^2\omega_5^3\omega_{15}^2 - 2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2 -
2c_s^2\omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 15\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 - 2\omega_6\omega_{16}^2\omega_{10}^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 - 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} +
4\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_{17}\omega_8\omega_5^3\omega_{15}^2 + 3\omega_6\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 + 3\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 + 2\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8^2\omega_5^3\omega_{15} + \omega_6\omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5^3\omega_{15}^2 -
3\omega_6c_s^2\omega_{16}\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 + 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8\omega_5^3\omega_{15}^2 - 2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15} - 2\omega_6\omega_{16}\omega_{10}\omega_7^2v_2^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 +
8\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^3\omega_{15}^2 - 6\omega_6c_s^2\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 - 3\omega_6\omega_{16}\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 + 2\omega_6\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2v_2^2\omega_{17}\omega_8^2\omega_5^2 +
\omega_6\omega_{16}^2\omega_{10}^3\omega_7v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 4\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 2\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8^2\omega_5^3\omega_{15}^2 - 8\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_{15}^2 + 2\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8^2\omega_5^3\omega_{15}^2 -
8\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 15\omega_6c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 - 2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8\omega_5^3\omega_{15}^2 + 2\omega_6\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 - 2\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2v_2^2\omega_8^2\omega_5^3\omega_{15}^2 +
4\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_6\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 + 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7v_2^2\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 8\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 +
2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2v_2^2\omega_{17}\omega_8^2\omega_5^3 + 2\omega_6\omega_{16}^2\omega_{10}^2v_2^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 + 4\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2v_2^2\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 2\omega_6c_s^2\omega_{16}\omega_{10}^3\omega_7\omega_8^2\omega_5^3\omega_{15}^2 +
6\omega_6c_s^2\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 + 5\omega_6\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 - 2\omega_6\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 + 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15} - \omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^3\omega_{15}^2 -
2\omega_6\omega_{16}\omega_{10}^3\omega_7\omega_8^2\omega_5^3\omega_{15}^2 + 9\omega_6c_s^2\omega_{16}\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 + 6\omega_6c_s^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 - 11\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5^3\omega_{15}^2 + \omega_6\omega_{16}\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 -
4\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 2\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2v_2^2\omega_8\omega_5^2\omega_{15}^2 - 3\omega_6\omega_{16}^2\omega_{10}^2\omega_7v_2^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 -
4\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 + 3\omega_6\omega_{16}\omega_{10}^3\omega_7v_2^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 + 2\omega_6\omega_{16}\omega_{10}^3\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 + 3\omega_6\omega_{16}\omega_{10}^2\omega_7^2v_2^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 - 4\omega_6\omega_{16}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 -
2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8^2\omega_5^3\omega_{15}^2 - 2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^3\omega_{15}^2 - 6\omega_6c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 - 6\omega_6c_s^2\omega_{16}\omega_{10}^3\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 +
2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8^2\omega_5^3\omega_{15}^2 + 2\omega_6\omega_{16}\omega_{10}^2\omega_7^2v_2^2\omega_8^2\omega_5^3\omega_{15}^2 - 4\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 12\omega_6c_s^2\omega_{16}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 - 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2v_2^2\omega_8^2\omega_5^3\omega_{15} +
2c_s^2\omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5^3\omega_{15}^2 + 4\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_6\omega_{16}^2\omega_{10}\omega_7^2v_2^2\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15} +
2\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 - 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8^2\omega_5^2\omega_{15} + 4\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 4\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 4\omega_6c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 -
2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2v_2^2\omega_8^2\omega_5^2\omega_{15}^2 - 2\omega_6\omega_{10}^3\omega_7v_2^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 + 2\omega_6\omega_{16}^2\omega_{10}\omega_7v_2^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 + \omega_6\omega_{16}^2\omega_{10}^3\omega_7^2v_2^2\omega_{17}\omega_8\omega_5^3\omega_{15}^2 -
2\omega_6\omega_{10}^2\omega_7^2v_2^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 - 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2v_2^2\omega_{17}\omega_8^2\omega_5\omega_{15} - 2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_5^3\omega_{15}^2 + 2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8^2\omega_5^2\omega_{15} + 2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7\omega_8\omega_5^3\omega_{15}^2 +
2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2v_2^2\omega_8^2\omega_5^2\omega_{15} - 2\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3 - 3\omega_6\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 - 6\omega_6c_s^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 + 4\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^3\omega_{15}^2 +
\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2v_2^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 + 2c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15} -
2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8^2\omega_5^2\omega_{15}^2 - 5\omega_6\omega_{16}^2\omega_{10}\omega_7^2v_2^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 - 8\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 2\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2v_2^2\omega_{17}\omega_8^2\omega_5^3 + 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8^2\omega_5^2\omega_{15}^2 +
2\omega_6\omega_{10}^3\omega_7^2v_2^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 - \omega_6\omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7v_2^2\omega_8^2\omega_5^3\omega_{15}^2 + 2\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3 + 2\omega_6\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 -
2\omega_6\omega_{16}^2\omega_{10}^3\omega_7\omega_8\omega_5^3\omega_{15}^2 - \omega_6\omega_{16}^2\omega_{10}^3\omega_7v_2^2\omega_{17}\omega_8\omega_5^3\omega_{15}^2 - 2c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 - \omega_6\omega_{16}^2\omega_{10}^3\omega_7^2v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - \omega_6\omega_{16}\omega_{10}^3\omega_7^2v_2^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 +
11\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + \omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_5^2\omega_{15}^2 - 2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8^2\omega_5^3\omega_{15} + 2\omega_6\omega_{16}\omega_{10}^3\omega_7^2\omega_8^2\omega_5^3\omega_{15}^2 +
2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2v_2^2\omega_8^2\omega_5^3\omega_{15}^2 - 2\omega_6c_s^2\omega_{16}\omega_{10}^3\omega_7^2\omega_8^2\omega_5^3\omega_{15}^2 - 4\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^3\omega_{15}^2 + 9\omega_6c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 -
2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 6\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}^2 + 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8^2\omega_5^3\omega_{15} - 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^3\omega_{15}
$$

$$
C_{38} = -\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_{15}^2 + 3\omega_{16}^2\omega_{10}^3\omega_7^2v_2^2\omega_8\omega_5\omega_{15} - c_s^2\omega_{16}\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 3\omega_{16}\omega_{10}\omega_7^2v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15} +
\omega_{16}\omega_{10}^3\omega_7^2\omega_8\omega_5^2\omega_{15}^2 + \omega_{16}\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + c_s^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 2c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15} - c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8\omega_5\omega_{15}^2 +
3\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + c_s^2\omega_{16}\omega_{10}^3\omega_7\omega_8\omega_5^2\omega_{15}^2 + 3\omega_{16}^2\omega_{10}^2v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 3c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_5^2\omega_{15}^2 +
\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8\omega_5^2\omega_{15} - 3\omega_{16}^2\omega_{10}^2\omega_7^2v_2^2\omega_8\omega_5^2\omega_{15}^2 + 3\omega_{16}^2\omega_{10}^3\omega_7v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15} - 3\omega_{16}^2\omega_{10}^2\omega_7^2v_2^2\omega_{17}\omega_5\omega_{15}^2 - 3\omega_{16}\omega_{10}^3\omega_7v_2^2\omega_{17}\omega_8\omega_5\omega_{15}^2 -
$$

$3\omega_{16}^2\omega_{10}^3\omega_7^2v_2^2\omega_5^2\omega_{15}^2 - \omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + c_s^2\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 3\omega_{16}\omega_{10}^2\omega_7^2v_2^2\omega_{17}\omega_8\omega_5\omega_{15}^2 + 6\omega_{16}^2\omega_{10}^2\omega_7^2v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15} -$
$c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_{15} - c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_5\omega_{15}^2 + 2c_s^2\omega_{16}\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15}^2 - 3\omega_{16}^2\omega_{10}^3\omega_7^2v_2^2\omega_{17}\omega_8\omega_5 +$
$\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15} + c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2 - 2\omega_{16}\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - c_s^2\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + \omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 -$
$6\omega_{16}^2\omega_{10}^2\omega_7v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15} + c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15} - 3\omega_{16}^2\omega_{10}^3\omega_7^2v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15} + 2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 +$
$3\omega_{16}\omega_{10}^3\omega_7^2v_2^2\omega_{17}\omega_8\omega_5\omega_{15}^2 + 3\omega_{16}^2\omega_{10}^3\omega_7^2v_2^2\omega_{17}\omega_8\omega_5^2 - c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5 - 2c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_5^2\omega_{15}^2 -$
$3\omega_{16}^2\omega_{10}^2\omega_7v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15} + c_s^2\omega_{16}^2\omega_{10}^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}^2 - \omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_5^2\omega_{15}^2 + 3\omega_{16}^2\omega_{10}^2\omega_7^2v_2^2\omega_8\omega_5^2\omega_{15} -$
$3\omega_{16}^2\omega_{10}^3\omega_7^2v_2^2\omega_{17}\omega_8\omega_{15} - 2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} + c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15}^2 + 3\omega_{16}^2\omega_{10}^2\omega_7^2v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + \omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}^2 -$
$3\omega_{16}\omega_{10}^3\omega_7^2v_2^2\omega_8\omega_5^2\omega_{15}^2 + 2c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} + \omega_{16}^2\omega_{10}^3\omega_7^2\omega_5^2\omega_{15}^2 + \omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15} + \omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5\omega_{15} +$
$\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2 - 3\omega_{16}\omega_{10}^3v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15} + \omega_{16}\omega_{10}^3\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - \omega_{16}^2\omega_{10}^3\omega_7^2\omega_8\omega_5^2\omega_{15}^2 + 3\omega_{16}\omega_{10}^3\omega_7v_2^2\omega_8\omega_5^2\omega_{15}^2 +$
$6\omega_{16}^2\omega_7^2v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 2\omega_{16}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - c_s^2\omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5\omega_{15} - 3\omega_{16}^2\omega_{10}^3\omega_7^2v_2^2\omega_8\omega_5\omega_{15}^2 - c_s^2\omega_{16}^2\omega_{10}^3\omega_7\omega_8\omega_5^2\omega_{15}^2 +$
$3\omega_{16}^2\omega_{10}\omega_7^2v_2^2\omega_{17}\omega_8\omega_5\omega_{15}^2 - \omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8\omega_5^2\omega_{15} + c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - \omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15} +$
$c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_{15}^2 + c_s^2\omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15} + \omega_{16}^2\omega_{10}^3\omega_7^2\omega_8\omega_5\omega_{15}^2 - \omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - c_s^2\omega_{16}\omega_{10}^3\omega_7^2\omega_8\omega_5^2\omega_{15}^2 - \omega_{16}\omega_{10}^3\omega_7\omega_8\omega_5^2\omega_{15}^2 -$
$9\omega_{16}^2\omega_{10}\omega_7^2v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}^2 - \omega_{16}^2\omega_{10}^3\omega_7^2\omega_5^2\omega_{15}^2 + 3\omega_{16}^2\omega_{10}^3\omega_7^2v_2^2\omega_8\omega_5^2\omega_{15}^2 + 3\omega_{16}^2\omega_{10}^2\omega_7^2v_2^2\omega_{17}\omega_8\omega_{15}^2 -$
$2c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}^2 - c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8\omega_5^2\omega_{15} - 2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 - 3\omega_{16}\omega_{10}^3\omega_7^2v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 6\omega_{16}^2\omega_{10}^3\omega_7^2v_2^2\omega_{17}\omega_8\omega_5\omega_{15} -$
$3\omega_{16}^2\omega_{10}^3\omega_7v_2^2\omega_8\omega_5^2\omega_{15}^2 + \omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_{15} + 3\omega_{10}^3\omega_7^2v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 2c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 + \omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15} +$
$2c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + \omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_5\omega_{15}^2 + \omega_{16}\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15}^2 - \omega_{16}^2\omega_{10}^3\omega_7^2\omega_5\omega_{15}^2 + 3\omega_{16}^2\omega_{10}^3\omega_7^2v_2^2\omega_5^2\omega_{15}^2 - c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15} -$
$\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2 + \omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - c_s^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 6\omega_{16}^2\omega_{10}^2\omega_7^2v_2^2\omega_{17}\omega_8\omega_5\omega_{15}^2 - 2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 +$
$3\omega_{16}^2\omega_{10}^2\omega_7^2v_2^2\omega_{17}\omega_5^2\omega_{15}^2 + 6\omega_{16}\omega_{10}^3\omega_7v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 3\omega_{16}^2\omega_{10}^3\omega_7^2v_2^2\omega_5\omega_{15}^2 - \omega_{16}^2\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15} - 3\omega_{16}^2\omega_{10}^3\omega_7v_2^2\omega_{17}\omega_8\omega_5\omega_{15} -$
$3\omega_{10}^3\omega_7^2v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + \omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_5^2\omega_{15}^2 - 3\omega_{10}^3\omega_7v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + \omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5 + 6\omega_{16}\omega_{10}^2\omega_7^2v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + c_s^2\omega_{16}^2\omega_{10}^3\omega_7\omega_5^2\omega_{15}^2 -$
$c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - \omega_{16}\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15}^2 - \omega_{16}^2\omega_{10}^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_5^2\omega_{15}^2 - c_s^2\omega_{16}\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 +$
$\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 6\omega_{16}^2\omega_{10}^2\omega_7v_2^2\omega_{17}\omega_8\omega_5\omega_{15}^2 + \omega_{16}\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 - 3\omega_{16}^2\omega_{10}\omega_7^2v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15} - c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2 -$
$3\omega_{16}^2\omega_{10}^3\omega_7^2v_2^2\omega_8\omega_5^2\omega_{15} + c_s^2\omega_{16}^3\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8\omega_5^2\omega_{15}^2 + 2c_s^2\omega_{16}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 3\omega_{16}\omega_{10}^2\omega_7^2v_2^2\omega_8\omega_5^2\omega_{15}^2 -$
$\omega_{16}\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - c_s^2\omega_{16}\omega_{10}^3\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 3\omega_{16}^2\omega_{10}^2\omega_7^2v_2^2\omega_{17}\omega_8\omega_5^2 + \omega_{16}^2\omega_{10}^3\omega_7\omega_8\omega_5^2\omega_{15}^2 - 3\omega_{16}^2\omega_{10}^2\omega_7v_2^2\omega_{17}\omega_5^2\omega_{15}^2 -$
$\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 3\omega_{16}^2\omega_{10}\omega_7v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - \omega_{16}^2\omega_{10}^3\omega_7^2\omega_8\omega_5\omega_{15} + c_s^2\omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 2c_s^2\omega_{16}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 3\omega_{16}\omega_{10}^2\omega_7^2v_2^2\omega_8\omega_5^2\omega_{15}^2 -$
$\omega_{16}\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - c_s^2\omega_{16}\omega_{10}^3\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 3\omega_{16}^2\omega_{10}^2\omega_7^2v_2^2\omega_{17}\omega_8\omega_5^2 + \omega_{16}^2\omega_{10}^3\omega_7\omega_8\omega_5^2\omega_{15}^2 - 3\omega_{16}^2\omega_{10}^2\omega_7v_2^2\omega_{17}\omega_5^2\omega_{15}^2 -$
$\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 3\omega_{16}^2\omega_{10}\omega_7v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - \omega_{16}^2\omega_{10}^3\omega_7^2\omega_8\omega_5\omega_{15} + c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2$

$C_{39} = 2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8\omega_5^2\omega_{15}^2 - 4\omega_6c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - \omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 + 2c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 -$
$4\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5\omega_{15}^2 - 2\omega_6\omega_{16}\omega_{10}^2\omega_7^3\omega_8^2\omega_5^2\omega_{15}^2 - 2\omega_6\omega_{16}^2\omega_{10}\omega_7^3\omega_{17}\omega_8^2\omega_5\omega_{15}^2 + 2\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_8^2\omega_5^2\omega_{15} + 3\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3v_2^2\omega_{17}\omega_8^2\omega_5\omega_{15} -$
$4\omega_6\omega_{16}^2\omega_{17}^3\omega_8^2\omega_5^2\omega_{15}^2 - 2\omega_6\omega_{16}\omega_{10}^3\omega_7^3v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 3\omega_6\omega_{16}^2\omega_{10}^2\omega_7^3v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 2\omega_6\omega_{16}^2\omega_{10}^2\omega_7^3\omega_8^2\omega_5^2\omega_{15} - 2\omega_6c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 -$
$2\omega_6\omega_{16}\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 2c_s^2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + \omega_6\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 4\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_6\omega_{16}\omega_{10}^2\omega_7^3v_2^2\omega_8^2\omega_5^2\omega_{15}^2 +$
$12\omega_6c_s^2\omega_{16}^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8^2\omega_5^2\omega_{15}^2 - 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3v_2^2\omega_8^2\omega_5^2\omega_{15} + 4\omega_6c_s^2\omega_{16}\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 2\omega_6\omega_{16}\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 +$
$2\omega_6c_s^2\omega_{16}\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 13\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 11\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8\omega_5\omega_{15}^2 + 2\omega_6c_s^2\omega_{16}\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5\omega_{15}^2 -$
$2\omega_6\omega_{16}^2\omega_{10}^2\omega_7^3v_2^2\omega_{17}\omega_8^2\omega_5^2 + 2\omega_6\omega_{16}\omega_{10}\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 2\omega_6c_s^2\omega_{16}\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + \omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 6\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5 -$
$2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3\omega_8^2\omega_5\omega_{15} - \omega_6\omega_{16}^2\omega_{10}^3\omega_7^2v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 4\omega_6\omega_{16}\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 2\omega_6c_s^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 6\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 +$
$2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5 + 2\omega_6\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_8^2\omega_5\omega_{15} - 2c_s^2\omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 11\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 +$
$2\omega_6\omega_{10}^3\omega_7^3v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 5\omega_6\omega_{16}^2\omega_{10}\omega_7^3v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 6\omega_6c_s^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{17}\omega_8^2\omega_5\omega_{15}^2 + 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3v_2^2\omega_8\omega_5\omega_{15}^2 +$
$2\omega_6\omega_{16}^2\omega_{10}^2\omega_7^3v_2^2\omega_{17}\omega_8^2\omega_{15}^2 - 4\omega_6\omega_{16}\omega_{10}^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5^2 - 2\omega_6c_s^2\omega_{10}^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 4\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15} -$
$2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_8^2\omega_5\omega_{15}^2 + \omega_6\omega_{16}^2\omega_{10}^3\omega_7^2v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8^2\omega_5^2\omega_{15} - 2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8^2\omega_5^2\omega_{15} - 4\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 +$
$2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3\omega_8^2\omega_5^2\omega_{15}^2 + 4\omega_6c_s^2\omega_{16}\omega_{10}^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 2\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_8^2\omega_5^2\omega_{15}^2 - 3\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_6\omega_{16}\omega_{10}^3\omega_7^2v_2^2\omega_8^2\omega_5^2\omega_{15}^2 +$
$2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2v_2^2\omega_8\omega_5^2\omega_{15}^2 - 8\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 - 6\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2 + 3\omega_6\omega_{16}^2\omega_{10}^2\omega_7^3v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3v_2^2\omega_{17}\omega_8^2\omega_{15} - 2\omega_6\omega_{16}\omega_{10}^2\omega_7^3v_2^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 - \omega_6\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_8\omega_5\omega_{15}^2 -$
$2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3v_2^2\omega_8^2\omega_5^2\omega_{15} - 2\omega_6\omega_{10}^3\omega_7^2v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3v_2^2\omega_{17}\omega_8^2\omega_5^2 - 2\omega_6c_s^2\omega_{16}\omega_{10}^2\omega_7^3\omega_{17}\omega_8^2\omega_5\omega_{15}^2 -$
$2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3\omega_8\omega_5^2\omega_{15} + 4\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15} + 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2 + 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 9\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5\omega_{15} -$
$2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3v_2^2\omega_8^2\omega_5^2\omega_{15}^2 - 4\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_8^2\omega_5^2\omega_{15} + 2\omega_6\omega_{16}\omega_{10}^2\omega_7^3v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 2\omega_6\omega_{16}^2\omega_{10}^2\omega_7^3v_2^2\omega_8^2\omega_5^2\omega_{15}^2 -$
$2\omega_6\omega_{16}\omega_{10}^3\omega_7^3v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 4\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_8^2\omega_5^2\omega_{15}^2 + 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 +$
$2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 8\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 2\omega_6c_s^2\omega_{16}\omega_{10}^3\omega_7^3\omega_8^2\omega_5^2\omega_{15}^2 + \omega_6\omega_{16}^2\omega_{10}^3\omega_7^2v_2^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 +$
$2c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 2\omega_6\omega_{16}\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 + 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3\omega_8^2\omega_5^2\omega_{15} - 2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8^2\omega_5^2\omega_{15}^2 + 9\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_8^2\omega_5\omega_{15} - 8\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8^2\omega_5^2\omega_{15}^2 - \omega_6\omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 15\omega_6c_s^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 +$
$4\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_{15}^2 + 2\omega_6\omega_{16}^2\omega_{10}\omega_7^3v_2^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 + 2\omega_6\omega_{16}\omega_{10}^3\omega_7^3\omega_8^2\omega_5^2\omega_{15}^2 - 2\omega_6\omega_{16}^2\omega_{10}^2\omega_7^3v_2^2\omega_8^2\omega_5^2\omega_{15}^2 -$
$2\omega_6\omega_{16}\omega_{10}^3\omega_7^3v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 2c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 - \omega_6\omega_{16}^2\omega_{10}^3\omega_7^2v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 15\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 -$
$2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3v_2^2\omega_{17}\omega_8^2\omega_5 + 6\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{17}\omega_8^2\omega_{15}^2 + \omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_5^2\omega_{15}^2 + 2\omega_6\omega_{16}\omega_{10}^3\omega_7^3v_2^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 -$
$\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 5\omega_6\omega_{16}^2\omega_{10}\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 2\omega_6\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - \omega_6\omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 2\omega_6c_s^2\omega_{16}^3\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 +$
$2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 2c_s^2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8\omega_5\omega_{15}^2 + \omega_6\omega_{16}^2\omega_{10}^2\omega_7^3v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 3\omega_6\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}^2 - 2\omega_6c_s^2\omega_{16}\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 + 4\omega_6\omega_{16}^2\omega_7^3v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3v_2^2\omega_8^2\omega_5\omega_{15} - 2\omega_6\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2$

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

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

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

$C_{43} = -6\omega_6^2v_3^2\omega_{19}\omega_7^2v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5 - 6\omega_{12}\omega_6^2v_3^2c_s^2\omega_7^2v_2\omega_{14}\omega_8^2\omega_5^2 - 12\omega_{12}\omega_6^2v_3^2\omega_{19}\omega_7v_1v_2^2\omega_{20}\omega_8\omega_5^2 + 12\omega_{12}\omega_6^2c_s^2\omega_7v_1^2v_2\omega_{14}\omega_8^2\omega_5^2 -$
$24\omega_{12}\omega_6\omega_{19}c_s^4\omega_7^2v_2\omega_{20}\omega_{14}\omega_8^2 + 12\omega_{12}\omega_6^2v_3^2\omega_{19}c_s^2\omega_7v_1\omega_{20}\omega_{14}\omega_8\omega_5^2 - 12\omega_6^2\omega_{19}c_s^2\omega_7^2v_1v_2^2\omega_{20}\omega_8^2\omega_5 + 6\omega_{12}\omega_6^2c_s^2\omega_7v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 -$
$12\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_7v_1^2v_2\omega_{14}\omega_8^2\omega_5^2 - 12\omega_{12}\omega_6^2v_3^2\omega_{19}\omega_7v_1v_2^2\omega_{20}\omega_{14}\omega_8\omega_5^2 - 12\omega_{12}\omega_6^2v_3^2\omega_{19}\omega_7^2v_1^2v_2\omega_{14}\omega_8\omega_5^2 + 12\omega_{12}\omega_6^2v_3^2\omega_{19}c_s^2\omega_7^2v_1\omega_{20}\omega_{14}\omega_8\omega_5 +$
$12\omega_{12}\omega_6^2v_3^2\omega_{19}c_s^2\omega_7^2v_2\omega_{14}\omega_8\omega_5 - 12\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_7^2v_1^2v_2\omega_{20}\omega_{14}\omega_8\omega_5 - 12\omega_{12}\omega_6^2v_3^2\omega_{19}\omega_7^2v_1v_2^2\omega_{20}\omega_8\omega_5 + 12\omega_{12}\omega_6^2v_3^2\omega_7v_1^2v_2\omega_{14}\omega_8^2\omega_5^2 +$
$6\omega_{12}\omega_6^2v_3^2\omega_{19}c_s^2\omega_7^2v_1\omega_{14}\omega_8^2\omega_5 - 6\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_7^2v_1^2v_2\omega_{14}\omega_8^2\omega_5 - 6\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_7v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 24\omega_{12}\omega_6^2\omega_{19}c_s^4\omega_7^2v_2\omega_{20}\omega_{14}\omega_8\omega_5^2 -$
$6\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_7^2v_1v_2^2\omega_{20}\omega_8^2\omega_5^2 - 3\omega_6^2\omega_{19}c_s^2\omega_7^2v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 - 12\omega_{12}\omega_6^2v_3^2\omega_{19}c_s^2\omega_7^2v_1\omega_{20}\omega_8\omega_5 + 12\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_7^2v_1^2v_2\omega_{20}\omega_8\omega_5 -$
$6\omega_{12}\omega_6^2v_3^2\omega_{19}\omega_7v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 - 3\omega_6^2v_3^2\omega_{19}\omega_7^2v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 - 24\omega_{12}\omega_{19}c_s^4\omega_7^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5 + 12\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_7^2v_1v_2^2\omega_{14}\omega_8\omega_5^2 -$
$12\omega_{12}\omega_6^2v_3^2\omega_{19}c_s^2\omega_7^2v_2\omega_{20}\omega_8^2\omega_5 + 6\omega_{12}\omega_6^2v_3^2\omega_7v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 6\omega_{12}\omega_6^2v_3^2\omega_{19}\omega_7^2v_1^2v_2\omega_{20}\omega_8^2\omega_5^2 - 12\omega_{12}\omega_6^2v_3^2\omega_{19}\omega_7^2v_1^2v_2\omega_{20}\omega_{14}\omega_8\omega_5 +$
$6\omega_{12}\omega_6^2v_3^2\omega_{19}\omega_7^2v_1v_2^2\omega_{14}\omega_8^2\omega_5 + 6\omega_{12}\omega_6^2v_3^2\omega_{19}c_s^2\omega_7^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5 + 12\omega_{12}\omega_6^2v_3^2c_s^2\omega_7v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 - 6\omega_{12}\omega_6^2v_3^2c_s^2\omega_7v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 -$
$24\omega_{12}\omega_{19}c_s^4\omega_7v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 12\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_7v_1^2v_2\omega_{20}\omega_8\omega_5^2 - 12\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_7^2v_1v_2^2\omega_{20}\omega_{14}\omega_8\omega_5^2 + 12\omega_{12}\omega_6^2v_3^2\omega_{19}c_s^2\omega_7v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 -$
$6\omega_6^2\omega_{19}c_s^2\omega_7^2v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5 + 6\omega_{12}\omega_6^2v_3^2\omega_{19}c_s^2\omega_7v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 6\omega_6^2v_3^2\omega_{19}c_s^2\omega_7^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5 + 24\omega_{12}\omega_6^2\omega_{19}c_s^4\omega_7^2v_2\omega_{20}\omega_{14}\omega_5 -$
$6\omega_6^2v_3^2\omega_{19}c_s^2\omega_7^2v_2\omega_{20}\omega_8^2\omega_5^2 + 12\omega_6^2v_3^2\omega_{19}\omega_7^2v_1^2v_2\omega_{20}\omega_8^2\omega_5 - 12\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_7v_1v_2^2\omega_{14}\omega_8\omega_5^2 + 12\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_7^2v_1v_2^2\omega_{20}\omega_{14}\omega_8\omega_5 -$
$24\omega_{12}\omega_6^2\omega_{19}c_s^4\omega_7^2v_2\omega_{20}\omega_{14}\omega_5^2 + 3\omega_6^2\omega_{19}c_s^2\omega_7^2v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 - 3\omega_6^2v_3^2\omega_{19}c_s^2\omega_7^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 6\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_7v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 -$
$6\omega_6^2v_3^2\omega_{19}\omega_7^2v_1^2v_2\omega_{20}\omega_8^2\omega_5^2 - 6\omega_{12}\omega_6^2v_3^2\omega_{19}\omega_7v_1^2v_2\omega_{20}\omega_8^2\omega_5^2 + 12\omega_6^2v_3^2\omega_{19}c_s^2\omega_7^2v_2\omega_{20}\omega_8^2\omega_5 + 12\omega_{12}\omega_6^2v_3^2\omega_{19}c_s^2\omega_7^2v_1\omega_{20}\omega_8\omega_5^2 -$
$12\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_7^2v_1^2v_2\omega_{20}\omega_8\omega_5^2 + 12\omega_{12}\omega_6^2v_3^2\omega_{19}c_s^2\omega_7v_2\omega_{14}\omega_8\omega_5^2 - 12\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_7^2v_1v_2^2\omega_{14}\omega_8\omega_5 + 24\omega_{12}\omega_{19}c_s^4\omega_7^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 +$
$6\omega_6^2v_3^2\omega_{19}\omega_7^2v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5 + 3\omega_{12}\omega_6^2v_3^2c_s^2\omega_7^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 - 12\omega_{12}\omega_6^2v_3^2\omega_{19}\omega_7^2v_1^2v_2\omega_{20}\omega_8^2\omega_5 + 12\omega_{12}\omega_6^2v_3^2\omega_{19}\omega_7^2v_1^2v_2\omega_{20}\omega_{14}\omega_8\omega_5^2 +$
$12\omega_{12}\omega_6^2v_3^2\omega_{19}c_s^2\omega_7v_1\omega_{14}\omega_8^2\omega_5^2 - 6\omega_{12}\omega_6^2c_s^2\omega_7v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 6\omega_{12}\omega_6^2v_3^2\omega_{19}c_s^2\omega_7^2v_2\omega_{20}\omega_8^2\omega_5^2 - 3\omega_{12}\omega_6^2v_3^2\omega_{19}c_s^2\omega_7^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 -$
$6\omega_{12}\omega_6^2v_3^2\omega_{19}\omega_7^2v_1v_2^2\omega_{14}\omega_8^2\omega_5^2 - 6\omega_{12}\omega_6^2c_s^2\omega_7^2v_1^2v_2\omega_{14}\omega_8^2\omega_5^2 - 12\omega_{12}\omega_6^2v_3^2\omega_{19}c_s^2\omega_7^2v_1\omega_{20}\omega_{14}\omega_8\omega_5^2 - 12\omega_{12}\omega_6^2v_3^2\omega_{19}c_s^2\omega_7^2v_2\omega_{14}\omega_8\omega_5^2 +$
$12\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_7^2v_1^2v_2\omega_{20}\omega_{14}\omega_8\omega_5^2 + 12\omega_{12}\omega_6^2v_3^2\omega_{19}\omega_7^2v_1^2v_2\omega_{14}\omega_8\omega_5 - 12\omega_{12}\omega_6^2v_3^2\omega_{19}c_s^2\omega_7v_1\omega_{20}\omega_8\omega_5^2 + 12\omega_{12}\omega_6^2v_3^2\omega_{19}\omega_7^2v_1v_2^2\omega_{20}\omega_8\omega_5^2 -$
$6\omega_{12}\omega_6^2v_3^2\omega_{19}c_s^2\omega_7v_2\omega_{20}\omega_8^2\omega_5^2 - 6\omega_{12}\omega_6^2v_3^2\omega_{19}c_s^2\omega_7^2v_1\omega_{14}\omega_8^2\omega_5^2 + 6\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_7^2v_1^2v_2\omega_{14}\omega_8^2\omega_5^2 + 6\omega_6^2\omega_{19}c_s^2\omega_7^2v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5 -$
$48\omega_{12}\omega_6^2\omega_{19}c_s^4\omega_7^2v_2\omega_{20}\omega_{14}\omega_8\omega_5 + 12\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_7^2v_1v_2^2\omega_{20}\omega_8^2\omega_5 + 3\omega_6^2v_3^2\omega_{19}\omega_7^2v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 - 6\omega_{12}\omega_6^2v_3^2\omega_7^2v_1^2v_2\omega_{14}\omega_8^2\omega_5^2 +$
$12\omega_{12}\omega_6^2v_3^2\omega_{19}\omega_7v_1^2v_2\omega_{14}\omega_8\omega_5^2 + 6\omega_{12}\omega_6^2v_3^2\omega_{19}\omega_7v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 6\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_7v_1v_2^2\omega_{20}\omega_8^2\omega_5^2 - 48\omega_{12}\omega_6^2\omega_{19}c_s^4\omega_7v_2\omega_{20}\omega_{14}\omega_8\omega_5^2 +$
$6\omega_6^2\omega_{19}c_s^2\omega_7^2v_1v_2^2\omega_{20}\omega_8^2\omega_5^2 + 24\omega_{12}\omega_6^2\omega_{19}c_s^4\omega_7v_2\omega_{20}\omega_{14}\omega_5^2 + 12\omega_{12}\omega_6^2v_3^2\omega_{19}\omega_7^2v_1^2v_2\omega_{20}\omega_{14}\omega_8\omega_5 - 6\omega_{12}\omega_6^2v_3^2\omega_7v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 -$
$6\omega_{12}\omega_6^2v_3^2\omega_{19}\omega_7^2v_1v_2^2\omega_{20}\omega_8^2\omega_5^2 + 6\omega_{12}\omega_6^2v_3^2\omega_{19}c_s^2\omega_7v_1\omega_{20}\omega_8^2\omega_5^2 - 6\omega_{12}\omega_6^2v_3^2\omega_{19}c_s^2\omega_7^2v_1^2v_2\omega_{14}\omega_8^2\omega_5 + 3\omega_{12}\omega_6^2v_3^2\omega_{19}c_s^2\omega_7^2v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 -$
$3\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_7^2v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 6\omega_{12}\omega_6^2v_3^2\omega_{19}c_s^2\omega_7^2v_2\omega_{14}\omega_8^2\omega_5^2 - 12\omega_{12}\omega_6^2v_3^2\omega_{19}c_s^2\omega_7^2v_1v_2^2\omega_{20}\omega_8\omega_5 - 12\omega_{12}\omega_6^2v_3^2\omega_{19}c_s^2\omega_7^2v_1^2v_2\omega_{20}\omega_{14}\omega_8\omega_5^2 -$
$3\omega_{12}\omega_6^2v_3^2c_s^2\omega_7^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 12\omega_{12}\omega_6^2v_3^2\omega_{19}c_s^2\omega_7^2v_1\omega_{14}\omega_8\omega_5^2 + 12\omega_{12}\omega_6^2v_3^2\omega_{19}c_s^2\omega_7v_2\omega_{20}\omega_8\omega_5^2 + 3\omega_{12}\omega_6^2c_s^2\omega_7^2v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 +$
$3\omega_6^2v_3^2\omega_{19}c_s^2\omega_7^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 - 12\omega_{12}\omega_6^2v_3^2\omega_{19}\omega_7^2v_1^2v_2\omega_{14}\omega_8^2\omega_5^2 - 12\omega_{12}\omega_6^2v_3^2\omega_{19}\omega_7^2v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 - 12\omega_6^2v_3^2\omega_{19}\omega_7^2v_1^2v_2\omega_{20}\omega_8^2\omega_5 -$
$6\omega_{12}\omega_6^2v_3^2\omega_{19}\omega_7^2v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 - 12\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_7v_1^2v_2\omega_{20}\omega_8^2\omega_5 + 6\omega_{12}\omega_6^2v_3^2\omega_{19}c_s^2\omega_7^2v_1^2v_2\omega_{14}\omega_8^2\omega_5^2 + 6\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_7^2v_1^2v_2\omega_{20}\omega_8^2\omega_5^2 -$
$6\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_7^2v_1^2v_2\omega_{14}\omega_8^2\omega_5^2 + 12\omega_{12}\omega_6^2v_3^2\omega_{19}c_s^2\omega_7v_1\omega_{14}\omega_8^2\omega_5^2 + 48\omega_{12}\omega_6\omega_{19}c_s^4\omega_7^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5 + 12\omega_{12}\omega_6^2v_3^2\omega_{19}\omega_7v_1^2v_2\omega_{20}\omega_8^2\omega_5^2 -$
$12\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_7v_1^2v_2\omega_{20}\omega_{14}\omega_8\omega_5^2 - 12\omega_{12}\omega_6^2c_s^2\omega_7v_1v_2^2\omega_{14}\omega_8^2\omega_5^2 + 6\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_7^2v_1^2v_2\omega_{14}\omega_8^2\omega_5 + 48\omega_{12}\omega_6\omega_{19}c_s^4\omega_7v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 -$
$12\omega_{12}\omega_6^2v_3^2\omega_{19}c_s^2\omega_7v_2\omega_{14}\omega_8^2\omega_5^2 + 3\omega_{12}\omega_6^2v_3^2\omega_7^2v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 6\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_7^2v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 - 6\omega_{12}\omega_6^2v_3^2\omega_{19}c_s^2\omega_7^2v_1\omega_{20}\omega_8^2\omega_5^2 +$
$12\omega_{12}\omega_6^2v_3^2\omega_{19}c_s^2\omega_7^2v_2\omega_{20}\omega_{14}\omega_8\omega_5^2 + 12\omega_{12}\omega_6^2v_3^2\omega_{19}\omega_7^2v_1v_2^2\omega_{14}\omega_8\omega_5^2 - 12\omega_{12}\omega_6^2v_3^2\omega_{19}c_s^2\omega_7^2v_2\omega_{20}\omega_8\omega_5^2 - 12\omega_{12}\omega_6^2v_3^2\omega_7v_1v_2^2\omega_{14}\omega_8^2\omega_5^2 -$
$24\omega_{12}\omega_6\omega_{19}c_s^4\omega_7v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 - 12\omega_{12}\omega_6^2v_3^2\omega_{19}c_s^2\omega_7v_1\omega_{14}\omega_8\omega_5^2 - 3\omega_{12}\omega_6^2v_3^2\omega_{19}\omega_7^2v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 12\omega_{12}\omega_6^2v_3^2\omega_{19}\omega_7^2v_1^2v_2\omega_{20}\omega_8\omega_5 -$
$6\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_7^2v_1^2v_2\omega_{14}\omega_8^2\omega_5^2 - 12\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_7^2v_1^2v_2\omega_{20}\omega_8^2\omega_5 + 12\omega_{12}\omega_6^2v_3^2\omega_{19}c_s^2\omega_7^2v_1\omega_{20}\omega_8^2\omega_5 + 12\omega_{12}\omega_6^2v_3^2\omega_{19}\omega_7v_1v_2^2\omega_{20}\omega_{14}\omega_8\omega_5^2 -$
$3\omega_{12}\omega_6^2c_s^2\omega_7^2v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 - 12\omega_{12}\omega_6^2v_3^2\omega_{19}\omega_7^2v_1v_2^2\omega_{14}\omega_8\omega_5 - 12\omega_{12}\omega_6^2v_3^2\omega_{19}c_s^2\omega_7^2v_2\omega_{20}\omega_{14}\omega_8\omega_5 + 6\omega_{12}\omega_6^2c_s^2\omega_7^2v_1v_2^2\omega_{14}\omega_8^2\omega_5^2 +$
$6\omega_{12}\omega_6^2v_3^2\omega_{19}\omega_7^2v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5 - 12\omega_{12}\omega_6^2v_3^2\omega_{19}\omega_7^2v_1^2v_2\omega_{20}\omega_8^2\omega_5 + 24\omega_{12}\omega_6^2\omega_{19}c_s^4v_2\omega_{20}\omega_{14}\omega_8\omega_5^2 + 12\omega_{12}\omega_6^2v_3^2\omega_{19}c_s^2\omega_7^2v_2\omega_{20}\omega_8\omega_5 +$
$3\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_7^2v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 6\omega_6^2v_3^2\omega_{19}c_s^2\omega_7^2v_1\omega_{20}\omega_8^2\omega_5^2 - 6\omega_6^2\omega_{19}c_s^2\omega_7^2v_1^2v_2\omega_{20}\omega_8^2\omega_5^2 - 6\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_7v_1^2v_2\omega_{20}\omega_8^2\omega_5^2 -$
$28\omega_{12}\omega_6\omega_{19}c_s^4\omega_7^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 6\omega_{12}\omega_6^2v_3^2\omega_7^2v_1^2v_2\omega_{14}\omega_8^2\omega_5^2 - 12\omega_{12}\omega_6^2v_3^2c_s^2\omega_7v_1\omega_{14}\omega_8^2\omega_5^2 - 12\omega_{12}\omega_6^2v_3^2\omega_{19}\omega_7v_1v_2^2\omega_{14}\omega_8\omega_5^2 -$
$12\omega_{12}\omega_6^2v_3^2\omega_{19}c_s^2\omega_7v_2\omega_{20}\omega_{14}\omega_8\omega_5^2 + 24\omega_{12}\omega_6^2\omega_{19}c_s^4\omega_7^2v_2\omega_{20}\omega_{14}\omega_8 - 6\omega_6^2v_3^2\omega_{19}c_s^2\omega_7^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5 - 6\omega_{12}\omega_6^2v_3^2\omega_{19}c_s^2\omega_7v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2 -$
$3\omega_{12}\omega_6^2v_3^2\omega_7^2v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 6\omega_{12}\omega_6^2v_3^2\omega_{19}\omega_7v_1v_2^2\omega_{20}\omega_8^2\omega_5^2 + 6\omega_6^2v_3^2\omega_{19}\omega_7^2v_1v_2^2\omega_{20}\omega_8^2\omega_5^2 + 12\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_7v_1^2v_2\omega_{14}\omega_8\omega_5^2 +$
$6\omega_{12}\omega_6^2v_3^2c_s^2\omega_7v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 3\omega_{12}\omega_6^2v_3^2\omega_{19}\omega_7^2v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 6\omega_{12}\omega_6^2v_3^2c_s^2\omega_7^2v_1\omega_{14}\omega_8^2\omega_5^2 + 12\omega_{12}\omega_6^2v_3^2\omega_{19}\omega_7^2v_1v_2^2\omega_{20}\omega_8^2\omega_5 -$

$6\omega_{12}\omega_6^2v_3^2\omega_{19}c_s^2\omega_7^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5 + 6\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_7^2v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5 - 6\omega_{12}\omega_6^2v_3^2\omega_{19}c_s^2\omega_7^2v_2\omega_{14}\omega_8^2\omega_5 + 6\omega_{12}\omega_6^2v_3^2\omega_{19}\omega_7^2v_1^2v_2\omega_{14}\omega_8^2\omega_5^2 + 2\omega_{12}\omega_6^2\omega_{19}c_s^4\omega_7^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 12\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_7^2v_1v_2^2\omega_{20}\omega_8\omega_5^2 + 12\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_7v_1v_2^2\omega_{20}\omega_{14}\omega_8\omega_5^2 + 12\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_7^2v_1^2v_2\omega_{14}\omega_8\omega_5 - 12\omega_{12}\omega_6^2v_3^2\omega_{19}c_s^2\omega_7^2v_1\omega_{14}\omega_8\omega_5$

$C_{44} = -4\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_{13}\omega_7^2v_2^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_9 - 4\omega_{12}\omega_6\omega_{19}c_s^2\omega_{13}v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9 - 4\omega_{12}\omega_6^2v_3^2\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5\omega_9 + 8\omega_{12}\omega_6^2v_3^2\omega_{19}\omega_{13}\omega_7^2v_1v_2\omega_{14}\omega_8\omega_5\omega_9 + 8\omega_{12}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9 - 2\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_{13}\omega_7v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9 - 6\omega_{12}\omega_6\omega_{19}c_s^2\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9 - 2\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_{13}\omega_7^2v_2^2\omega_{14}\omega_8^2\omega_5^2\omega_9 - 4\omega_6^2v_3^2\omega_{19}\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_8^2\omega_5^2\omega_9 + 6\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_7^2v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9 + 4\omega_{12}\omega_6^2v_3^2\omega_{19}\omega_{13}\omega_7v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9 - 4\omega_{12}\omega_6^2v_3^2c_s^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9 - 4\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_{13}\omega_7v_2^2\omega_{20}\omega_8\omega_5^2\omega_9 - 4\omega_{12}\omega_6^2v_3^2\omega_{19}\omega_{13}\omega_7^2v_2^2\omega_{14}\omega_8\omega_5\omega_9 - 8\omega_{12}\omega_6\omega_{19}c_s^2\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5 - \omega_6^2v_3^2\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9 + 2\omega_{12}\omega_6^2c_s^2\omega_{13}\omega_7^2v_2^2\omega_{14}\omega_8^2\omega_5^2\omega_9 + 4\omega_{12}\omega_6^2v_3^2\omega_{19}c_s^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9 - 4\omega_{12}\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5\omega_9 - \omega_6^2v_3^2\omega_{19}c_s^2\omega_{13}\omega_7^2v_2^2\omega_{20}\omega_8\omega_5^2\omega_9 - 4\omega_{12}\omega_6^2v_3^2\omega_{19}\omega_{13}\omega_7^2v_2^2\omega_{20}\omega_8\omega_5^2\omega_9 + 2\omega_{12}\omega_6^2c_s^2\omega_{13}\omega_7v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9 - 2\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_{13}\omega_7^2v_2^2\omega_{20}\omega_{14}\omega_5\omega_9 + 8\omega_{12}\omega_6^2v_3^2\omega_{19}\omega_{13}\omega_7v_1v_2\omega_{14}\omega_8\omega_5^2\omega_9 + 4\omega_{12}\omega_6^2v_3^2\omega_{19}\omega_{13}\omega_7^2v_1v_2\omega_{14}\omega_8^2\omega_5^2\omega_9 + 4\omega_{12}\omega_6\omega_{19}c_s^2\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_{14}\omega_8\omega_5\omega_9 + 4\omega_{12}\omega_6^2v_3^2\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_9 - 2\omega_{12}\omega_6^2v_3^2\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9 - 4\omega_6\omega_{19}c_s^2\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9 - 2\omega_{12}\omega_6^2v_3^2\omega_{19}\omega_{13}\omega_7^2v_2^2\omega_{14}\omega_8^2\omega_5^2\omega_9 + 8\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_{14}\omega_8\omega_9 + 8\omega_{12}\omega_6\omega_{19}c_s^2\omega_7v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9 + 2\omega_{12}\omega_6^2v_3^2\omega_{13}\omega_7^2v_2^2\omega_{14}\omega_8^2\omega_5^2\omega_9 - 4\omega_{12}\omega_6^2v_3^2\omega_{13}\omega_7v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9 - 4\omega_{12}\omega_6^2v_3^2\omega_{13}\omega_7^2v_1v_2\omega_{14}\omega_8^2\omega_5^2\omega_9 - 16\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_{13}\omega_7v_1v_2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_9 + 2\omega_{12}\omega_6^2c_s^2\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9 + 2\omega_6^2v_3^2\omega_{19}\omega_{13}\omega_7^2v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_9 + 4\omega_{12}\omega_6^2v_3^2\omega_{19}\omega_{13}\omega_7^2v_2^2\omega_{20}\omega_8\omega_5^2\omega_9 + 8\omega_{12}\omega_6\omega_{19}c_s^2\omega_7^2v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_9 - 4\omega_{12}\omega_6^2v_3^2\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_9 + 8\omega_{12}\omega_6^2v_3^2\omega_{19}\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9 - 20\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_9 - 4\omega_6^2v_3^2\omega_{19}\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_9 + 2\omega_6^2\omega_{19}c_s^2\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9 + 4\omega_{12}\omega_6^2v_3^2\omega_{19}\omega_{13}\omega_7^2v_2^2\omega_{14}\omega_8^2\omega_5^2\omega_9 + 4\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_{13}\omega_7^2v_2^2\omega_{20}\omega_8^2\omega_5\omega_9 - \omega_6^2\omega_{19}c_s^2\omega_{13}\omega_7^2v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9 + 2\omega_6^2v_3^2\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_9 - 2\omega_{12}\omega_6^2v_3^2\omega_{19}\omega_{13}\omega_7^2v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_9 + 4\omega_{12}\omega_6^2v_3^2\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_9 + 8\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_{13}\omega_7^2v_1v_2\omega_{14}\omega_8\omega_5^2\omega_9 - 8\omega_{12}\omega_6^2v_3^2\omega_{19}\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_8\omega_5^2\omega_9 - 4\omega_{12}\omega_6^2v_3^2\omega_{19}\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_8^2\omega_5^2\omega_9 - 4\omega_{12}\omega_6^2v_3^2\omega_{13}\omega_7^2v_2^2\omega_{14}\omega_8^2\omega_5^2\omega_9 + 4\omega_{12}\omega_6\omega_{19}c_s^2\omega_{13}\omega_7v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9 + 4\omega_{12}\omega_6^2v_3^2\omega_{19}c_s^2\omega_{13}\omega_7^2v_1v_2\omega_{14}\omega_8^2\omega_5^2\omega_9 - 2\omega_{12}\omega_6^2v_3^2\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_9 + 2\omega_{12}\omega_6^2v_3^2\omega_{13}\omega_7^2v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9 - 8\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9 - 8\omega_{12}\omega_6^2v_3^2\omega_{19}\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_8^2\omega_5^2\omega_9 - 4\omega_{12}\omega_6^2v_3^2\omega_{19}\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_8^2\omega_5^2\omega_9 + 4\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_{13}\omega_7^2v_2^2\omega_{14}\omega_8^2\omega_5^2\omega_9 - 2\omega_{12}\omega_6^2v_3^2\omega_{19}\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9 + 4\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_{13}\omega_7^2v_2^2\omega_{20}\omega_8^2\omega_5\omega_9 - \omega_6^2\omega_{19}c_s^2\omega_{13}\omega_7^2v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_9 + 2\omega_6^2v_3^2\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_9 - 2\omega_{12}\omega_6^2v_3^2\omega_{19}\omega_{13}\omega_7^2v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_9 + 4\omega_{12}\omega_6^2v_3^2\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_9 - 8\omega_{12}\omega_6^2v_3^2\omega_{19}\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_8^2\omega_5^2\omega_9 + 8\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_{13}\omega_7^2v_1v_2\omega_{14}\omega_8^2\omega_5^2\omega_9 - 8\omega_{12}\omega_6^2v_3^2\omega_{19}\omega_{13}\omega_7^2v_1v_2\omega_{14}\omega_8^2\omega_5^2\omega_9 - 4\omega_{12}\omega_6^2v_3^2\omega_{19}\omega_{13}\omega_7^2v_1v_2\omega_{14}\omega_8^2\omega_5^2\omega_9 + 4\omega_{12}\omega_6^2v_3^2\omega_{19}\omega_{13}\omega_7^2v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_9 + 2\omega_6^2v_3^2\omega_{19}\omega_{13}\omega_7^2v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_9 + 4\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_{13}\omega_7^2v_2^2\omega_{14}\omega_8^2\omega_5^2\omega_9 + 2\omega_{12}\omega_6^2v_3^2\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9 - 4\omega_{12}\omega_6^2v_3^2\omega_{19}\omega_{13}\omega_7^2v_1v_2\omega_{14}\omega_8^2\omega_5\omega_9 + 4\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_{13}\omega_7^2v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9 - 4\omega_{12}\omega_6\omega_{19}c_s^2\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_9 + \omega_{12}\omega_6^2\omega_{19}c_s^2\omega_{13}\omega_7^2v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9 - 4\omega_{12}\omega_6^2v_3^2\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9 + 2\omega_{12}\omega_6^2v_3^2\omega_{19}c_s^2\omega_{13}\omega_7^2v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_9 + 2\omega_{12}\omega_6^2v_3^2\omega_{19}c_s^2\omega_{13}\omega_7^2v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9 - 8\omega_6\omega_{19}c_s^2\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_9 + 4\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_{13}\omega_7v_1v_2\omega_{20}\omega_{14}\omega_8\omega_5\omega_9 - 8\omega_{12}\omega_6^2v_3^2\omega_{19}\omega_{13}\omega_7v_1v_2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_9 - 8\omega_{12}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9 - 12\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9 + 2\omega_{12}\omega_6^2c_s^2\omega_{13}\omega_7^2v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9 - 4\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_7^2v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 - 2\omega_{12}\omega_6^2v_3^2\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9 + 4\omega_{12}\omega_6^2v_3^2\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_9 + 4\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_{13}\omega_7^2v_2^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_9 - 8\omega_{12}\omega_6^2v_3^2\omega_{19}\omega_{13}\omega_7v_1v_2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_9 + 8\omega_6^2v_3^2\omega_{19}\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_8^2\omega_5^2\omega_9 + 2\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_{13}\omega_7^2v_2^2\omega_{14}\omega_8^2\omega_5\omega_9 + 2\omega_{12}\omega_6^2v_3^2\omega_{19}\omega_{13}\omega_7v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_9 + 8\omega_{12}\omega_6^2v_3^2\omega_{13}\omega_7v_1v_2\omega_{14}\omega_8^2\omega_5^2\omega_9 + 4\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_{13}\omega_7v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9 - 2\omega_{12}\omega_6^2v_3^2c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9 + 2\omega_{12}\omega_6^2v_3^2c_s^2\omega_{13}\omega_7v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9 - 8\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_{13}\omega_7v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9 + 2\omega_6^2v_3^2\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_9 + 4\omega_{12}\omega_6^2v_3^2\omega_{19}\omega_{13}\omega_7v_2^2\omega_{14}\omega_8^2\omega_5\omega_9$

$C_{45} = 4\omega_{12}\omega_{19}c_s^2\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8\omega_5^2 - 2\omega_{12}\omega_{19}c_s^2\omega_7^3v_1^2\omega_{14}\omega_8^2\omega_5^2 + 8\omega_{12}v_3^2\omega_{19}\omega_7^3v_1v_2\omega_{20}\omega_8^2\omega_5^2 + \omega_{12}v_3^2c_s^2\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^3 + 4\omega_{12}\omega_{19}c_s^2\omega_7^2v_1v_2\omega_{20}\omega_8^2\omega_5^3 + 4v_3^2\omega_{19}c_s^2\omega_7^3\omega_{20}\omega_8^2\omega_5^2 + 4\omega_{12}v_3^2\omega_{19}\omega_7^3v_1^2\omega_{20}\omega_{14}\omega_8\omega_5^3 + 2\omega_{12}\omega_{19}c_s^4\omega_7^2\omega_{20}\omega_8^2\omega_5^3 - 2\omega_{12}\omega_{19}c_s^4\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5 + 8\omega_{12}v_3^2\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 4v_3^2\omega_{19}\omega_7^3v_1^2\omega_{20}\omega_8^2\omega_5^2 + 8\omega_{12}v_3^2\omega_{19}\omega_7^3v_1v_2\omega_{20}\omega_{14}\omega_8\omega_5^2 + 4\omega_{12}v_3^2\omega_7^3v_1v_2\omega_{14}\omega_8^2\omega_5^3 + \omega_{12}c_s^2\omega_7^3v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3 + 4\omega_{12}\omega_{19}c_s^2\omega_7^2v_1^2\omega_{14}\omega_8\omega_5^3 + 8\omega_{12}v_3^2\omega_{19}\omega_7^3v_1v_2\omega_{14}\omega_8\omega_5^3 - 4\omega_{12}\omega_{19}c_s^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3 - 2\omega_{19}c_s^4\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3 + 4\omega_{12}c_s^4\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 - 2\omega_{12}c_s^2\omega_7^3v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^3 + 8\omega_{12}v_3^2\omega_{19}c_s^2\omega_7^3\omega_{20}\omega_{14}\omega_8\omega_5^3 + 4v_3^2\omega_{19}\omega_7^3v_1v_2\omega_{20}\omega_8^2\omega_5^3 - 2\omega_{12}v_3^2\omega_7^3v_1^2\omega_{14}\omega_8^2\omega_5^3 + 4\omega_{12}v_3^2\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{14}\omega_5^3 + 4\omega_{12}\omega_{19}c_s^2\omega_7^3v_1^2\omega_{20}\omega_{14}\omega_5^2 - 8\omega_{12}\omega_{19}c_s^2\omega_7^3v_1v_2\omega_{20}\omega_{14}\omega_8\omega_5^3 + 4\omega_{12}c_s^2\omega_7^3v_1v_2\omega_{14}\omega_8^2\omega_5^3 + \omega_{12}v_3^2\omega_7^3v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3 - 2v_3^2\omega_{19}\omega_7^3v_1^2\omega_{20}\omega_8^2\omega_5^3 + 2\omega_{12}v_3^2\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3 - 8\omega_{12}v_3^2\omega_{19}\omega_7^3v_1v_2\omega_{20}\omega_{14}\omega_8\omega_5^3 - 2v_3^2\omega_{19}c_s^2\omega_7^3\omega_{20}\omega_8^2\omega_5^3 - 4\omega_{12}v_3^2\omega_{19}\omega_7^3v_1^2\omega_{20}\omega_{14}\omega_8\omega_5^2 + 2\omega_{12}\omega_{19}c_s^2\omega_7^3v_1^2\omega_{14}\omega_8^2\omega_5^3 - 12\omega_{12}\omega_{19}c_s^2\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8\omega_5^3 - 4\omega_{12}v_3^2\omega_{19}\omega_7^3v_1v_2\omega_{20}\omega_8^2\omega_5^3 - 2\omega_{12}v_3^2c_s^2\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^2 - 4\omega_{12}\omega_{19}c_s^2\omega_7^3v_1^2\omega_{20}\omega_{14}\omega_5^3 - 8v_3^2\omega_{19}\omega_7^3v_1v_2\omega_{20}\omega_8^2\omega_5^2 + 8\omega_{12}\omega_{19}c_s^2\omega_7^3v_1v_2\omega_{20}\omega_{14}\omega_8\omega_5^2 - 4\omega_{12}\omega_{19}c_s^4\omega_7^2\omega_{14}\omega_8\omega_5^3 - 12\omega_{12}v_3^2\omega_{19}c_s^2\omega_7^3\omega_{20}\omega_{14}\omega_8\omega_5^2 - 8\omega_{12}v_3^2\omega_{19}\omega_7^3v_1v_2\omega_{14}\omega_8\omega_5^2 - 8\omega_{12}v_3^2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 4\omega_{12}v_3^2\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_8\omega_5^3 + 4\omega_{19}c_s^4\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 - 8\omega_{12}\omega_{19}c_s^2\omega_7^2v_1v_2\omega_{14}\omega_8\omega_5^3 - 2\omega_{12}v_3^2\omega_7^3v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^3 + 4\omega_{12}\omega_{19}c_s^2\omega_7^3v_1v_2\omega_{14}\omega_8^2\omega_5^2 + 4\omega_{12}v_3^2\omega_{19}c_s^2\omega_7^3\omega_{20}\omega_{14}\omega_8\omega_5 + 8\omega_{12}v_3^2\omega_{19}\omega_7^2v_1v_2\omega_{14}\omega_8^2\omega_5^3 +$

$4\omega_{12}\omega_{19}c_s^2\omega_7v_1^2\omega_{20}\omega_{14}\omega_8\omega_5^3 + 8\omega_{12}v_3^2\omega_{19}\omega_7^2v_1v_2\omega_{20}\omega_{14}\omega_8\omega_5^3 + 4\omega_{12}\omega_{19}c_s^4\omega_7^3\omega_{20}\omega_8^2\omega_5^2 - 2\omega_{12}v_3^2\omega_{19}\omega_7^3v_1^2\omega_{14}\omega_8^2\omega_5^2 + 4\omega_{12}c_s^2\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5^3 +$
$\omega_{19}c_s^2\omega_7^3v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3 + 2\omega_{12}\omega_{19}c_s^2\omega_7^3v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 4\omega_{12}v_3^2\omega_7^2v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^3 + 8\omega_{12}\omega_{19}c_s^2\omega_7^3v_1v_2\omega_{20}\omega_8\omega_5^3 +$
$2\omega_{12}v_3^2\omega_{19}\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3 - 4\omega_{12}v_3^2\omega_{19}c_s^2\omega_7^3\omega_{20}\omega_8\omega_5^3 - 4\omega_{12}v_3^2\omega_{19}\omega_7^3v_1^2\omega_{20}\omega_8\omega_5^3 + 4\omega_{12}v_3^2\omega_{19}c_s^2\omega_7^3\omega_{20}\omega_{14}\omega_5^2 + 4\omega_{12}\omega_{19}c_s^4\omega_7^3\omega_{14}\omega_8\omega_5^3 +$
$4\omega_{12}v_3^2\omega_{19}\omega_7^2v_1^2\omega_{14}\omega_8\omega_5^3 - 2\omega_{19}c_s^2\omega_7^3v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 2\omega_{12}v_3^2\omega_{19}\omega_7^3v_1^2\omega_{14}\omega_8^2\omega_5^3 - 2\omega_{12}v_3^2\omega_{19}\omega_7^2v_1^2\omega_{20}\omega_8^2\omega_5^3 - 2\omega_{12}\omega_{19}c_s^4\omega_7^3\omega_{20}\omega_8^2\omega_5^3 +$
$4\omega_{12}\omega_{19}c_s^4\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^3 - 4\omega_{12}\omega_{19}c_s^2\omega_7^3v_1v_2\omega_{14}\omega_8^2\omega_5^3 - 4\omega_{12}v_3^2\omega_{19}c_s^2\omega_7^3\omega_{20}\omega_{14}\omega_5^3 + 8\omega_{12}\omega_{19}c_s^2\omega_7^2v_1v_2\omega_{20}\omega_{14}\omega_8\omega_5^3 -$
$4\omega_{12}\omega_{19}c_s^4\omega_7^3\omega_{14}\omega_8\omega_5^2 + 4\omega_{12}v_3^2\omega_{19}\omega_7^3v_1^2\omega_{20}\omega_8\omega_5^2 + 4\omega_{12}c_s^2\omega_7^2v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^3 - 4\omega_{12}v_3^2\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5 - 8\omega_{12}\omega_{19}c_s^2\omega_7^3v_1v_2\omega_{20}\omega_8\omega_5^2 +$
$2\omega_{12}\omega_{19}c_s^4\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 4\omega_{12}v_3^2\omega_{19}c_s^2\omega_7^3\omega_{20}\omega_8\omega_5^2 - \omega_{12}\omega_{19}c_s^2\omega_7^3v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3 - 8\omega_{12}v_3^2\omega_{19}\omega_7^2v_1v_2\omega_{20}\omega_8\omega_5^3 + 4\omega_{19}c_s^2\omega_7^3v_1v_2\omega_{20}\omega_8^2\omega_5^3 +$
$4\omega_{12}v_3^2\omega_{19}\omega_7^2v_1^2\omega_{20}\omega_8\omega_5^3 - 4\omega_{12}\omega_{19}c_s^2\omega_7v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 4\omega_{12}\omega_{19}c_s^4\omega_7^3\omega_{20}\omega_8\omega_5^3 - 4\omega_{19}c_s^4\omega_7^3\omega_{20}\omega_8^2\omega_5^2 - 4\omega_{12}v_3^2\omega_{19}\omega_7^3v_1^2\omega_{14}\omega_8\omega_5^3 -$
$4\omega_{12}v_3^2\omega_{19}c_s^2\omega_7^3\omega_{20}\omega_{14}\omega_8^2 + 8\omega_{12}\omega_{19}c_s^2\omega_7^3v_1v_2\omega_{14}\omega_8\omega_5^3 - 4\omega_{12}c_s^4\omega_7^2\omega_{14}\omega_8^2\omega_5^3 + 4v_3^2\omega_{19}\omega_7^3v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 2\omega_{12}\omega_{19}c_s^4\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3 +$
$4\omega_{12}\omega_{19}c_s^4\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2 - 4\omega_{12}v_3^2\omega_{19}\omega_7^3v_1^2\omega_{20}\omega_8^2\omega_5^2 - 2\omega_{12}c_s^2\omega_7^3v_1^2\omega_{14}\omega_8^2\omega_5^3 + 2\omega_{12}\omega_{19}c_s^4\omega_7^3\omega_{14}\omega_8^2\omega_5^2 - 8\omega_{12}\omega_{19}c_s^2\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5 -$
$4\omega_{12}\omega_{19}c_s^2\omega_7^2v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^3 + 4\omega_{12}v_3^2\omega_{19}\omega_7^2v_1v_2\omega_{20}\omega_8^2\omega_5^3 + 8\omega_{12}\omega_{19}c_s^2\omega_7^3v_1^2\omega_{20}\omega_{14}\omega_8\omega_5^3 - 4\omega_{12}v_3^2\omega_{19}c_s^2\omega_7^3\omega_{20}\omega_8^2\omega_5^2 +$
$8\omega_{12}\omega_{19}c_s^2\omega_7^3v_1v_2\omega_{20}\omega_8^2\omega_5^2 + 4\omega_{12}\omega_{19}c_s^4\omega_7^3\omega_{20}\omega_{14}\omega_8\omega_5^2 - 2\omega_{19}c_s^2\omega_7^3v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^3 - 12\omega_{12}\omega_{19}c_s^4\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 +$
$6\omega_{12}v_3^2\omega_{19}c_s^2\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5 - 8\omega_{12}v_3^2\omega_{19}\omega_7^2v_1v_2\omega_{14}\omega_8\omega_5^3 - 8\omega_{12}\omega_{19}c_s^2\omega_7^3v_1v_2\omega_{14}\omega_8\omega_5^2 - 2v_3^2\omega_{19}\omega_7^3v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^3 - 8\omega_{12}c_s^2\omega_7^2v_1v_2\omega_{14}\omega_8^2\omega_5^3 -$
$2\omega_{12}v_3^2\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3 + 4\omega_{12}v_3^2\omega_{19}\omega_7^3v_1^2\omega_{14}\omega_8\omega_5^2 + 2\omega_{19}c_s^4\omega_7^3\omega_{20}\omega_8^2\omega_5^3 - 8\omega_{19}c_s^2\omega_7^3v_1v_2\omega_{20}\omega_8^2\omega_5^2 - 4\omega_{12}\omega_{19}c_s^4\omega_7^3\omega_{20}\omega_8\omega_5^2 +$
$6\omega_{12}\omega_{19}c_s^2\omega_7v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3 - 4\omega_{12}v_3^2\omega_{19}\omega_7^2v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^3 - 4\omega_{12}v_3^2\omega_{19}\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8\omega_5^3 + 2\omega_{12}v_3^2\omega_{19}c_s^2\omega_7^3\omega_{20}\omega_8^2\omega_5^3 +$
$4\omega_{19}c_s^2\omega_7^3v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 - 4\omega_{12}\omega_{19}c_s^4\omega_7^3\omega_{20}\omega_{14}\omega_8\omega_5^3 - 4\omega_{12}\omega_{19}c_s^2\omega_7^3v_1v_2\omega_{20}\omega_8^2\omega_5^3 - 16\omega_{12}\omega_{19}c_s^2\omega_7^3v_1^2\omega_{20}\omega_{14}\omega_8\omega_5^2 -$
$2\omega_{12}\omega_{19}c_s^4\omega_7^3\omega_{14}\omega_8^2\omega_5^3 - 4\omega_{12}v_3^2\omega_{19}\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5^3 - 8\omega_{12}v_3^2\omega_7^2v_1v_2\omega_{14}\omega_8^2\omega_5^3 - 2\omega_{12}c_s^2\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3 - 2\omega_{12}\omega_{19}c_s^4\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^3 +$
$2\omega_{12}v_3^2\omega_{19}\omega_7^3v_1^2\omega_{20}\omega_8^2\omega_5^3 + 2\omega_{12}v_3^2\omega_{19}\omega_7^3v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^3 - 16\omega_{12}v_3^2\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^3 - 2\omega_{12}c_s^4\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^2 +$
$8\omega_{12}\omega_{19}c_s^2\omega_7^3v_1^2\omega_{20}\omega_{14}\omega_8\omega_5 + 4\omega_{12}v_3^2\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5^3 + 8\omega_{12}v_3^2\omega_{19}\omega_7^3v_1v_2\omega_{20}\omega_8\omega_5^3 - 4\omega_{12}\omega_{19}c_s^2\omega_7^3v_1^2\omega_{14}\omega_8\omega_5^3 + 2\omega_{12}v_3^2\omega_{19}\omega_7^3v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 +$
$v_3^2\omega_{19}c_s^2\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^3 + 4\omega_{12}\omega_{19}c_s^4\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5 + v_3^2\omega_{19}\omega_7^3v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3 - 4\omega_{12}\omega_{19}c_s^2\omega_7^3v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 4\omega_{19}c_s^2\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 +$
$4\omega_{12}\omega_{19}c_s^4\omega_7^2\omega_{14}\omega_8^2\omega_5^3 + 8\omega_{12}\omega_{19}c_s^2\omega_7^2v_1v_2\omega_{14}\omega_8^2\omega_5^3 - 2\omega_{12}v_3^2c_s^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3 - 2\omega_{12}v_3^2\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_8^2\omega_5^3 + 4\omega_{12}v_3^2\omega_{19}\omega_7^3v_1v_2\omega_{14}\omega_8^2\omega_5^2 -$
$\omega_{12}v_3^2\omega_{19}\omega_7^3v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3 - 8\omega_{12}\omega_{19}c_s^2\omega_7^2v_1v_2\omega_{20}\omega_8\omega_5^3 - 2v_3^2\omega_{19}c_s^2\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^2 - 8\omega_{12}v_3^2\omega_{19}\omega_7^3v_1v_2\omega_{20}\omega_8\omega_5^2 + 2\omega_{12}c_s^4\omega_7^3\omega_{14}\omega_8^2\omega_5^3 +$
$8\omega_{12}\omega_{19}c_s^2\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 4\omega_{12}\omega_{19}c_s^2\omega_7^3v_1^2\omega_{14}\omega_8\omega_5^2 + 4\omega_{12}\omega_{19}c_s^2\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_5^3 - 4\omega_{12}v_3^2\omega_{19}\omega_7^3v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 +$
$4\omega_{12}v_3^2\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^2 - 4\omega_{12}\omega_{19}c_s^4\omega_7^2\omega_{20}\omega_8\omega_5^3 + 8\omega_{12}v_3^2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^3 - 4\omega_{12}v_3^2\omega_{19}\omega_7^3v_1v_2\omega_{14}\omega_8^2\omega_5^3 + 4\omega_{12}v_3^2c_s^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 -$
$4\omega_{12}\omega_{19}c_s^2\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5^3 - 2\omega_{19}c_s^2\omega_7^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3 + 2\omega_{12}\omega_{19}c_s^2\omega_7^3v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^3 - \omega_{12}v_3^2\omega_{19}c_s^2\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^3 - 2v_3^2\omega_{19}\omega_7^3v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2$

$C_{46} = -2\omega_{12}\omega_6c_s^2\omega_7^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 2\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_7v_2\omega_{20}\omega_{11}\omega_{14}\omega_5^2\omega_{18} - 2\omega_{12}\omega_6\omega_{19}c_s^2\omega_7^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} -$
$2\omega_6^2\omega_{19}c_s^2\omega_7^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} - 4\omega_{12}\omega_6^2\omega_{19}\omega_7^2v_1v_2^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} - 4\omega_6^2\omega_{19}\omega_7^2v_1v_2^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18} -$
$4\omega_{12}\omega_6^2\omega_{19}\omega_7^2v_1^2v_2\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} - 4\omega_{12}\omega_6\omega_{19}c_s^2\omega_7^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2 - 2\omega_{12}\omega_6^2\omega_{19}\omega_7v_1^2v_2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_7^2v_1\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 2\omega_{12}\omega_6^2\omega_{19}\omega_7^2v_1^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} + 4\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_7^2v_1\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18} -$
$4\omega_{12}\omega_6^2\omega_{19}\omega_7v_1^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} - 2\omega_{12}\omega_6^2\omega_{19}\omega_7^2v_1v_2^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 4\omega_{12}\omega_{19}c_s^2\omega_7^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} +$
$4\omega_{12}\omega_6\omega_{19}c_s^2\omega_7^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} - 2\omega_{12}\omega_6\omega_{19}c_s^2\omega_7^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 4\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_7^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} -$
$4\omega_{12}\omega_6^2\omega_{19}\omega_7^2v_1^2v_2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 10\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_7v_2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} + 2\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_7^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_5\omega_{18} +$
$2\omega_6^2\omega_{19}c_s^2\omega_7^2v_1\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 4\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_7^2v_1\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} + 4\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_7^2v_1\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} +$
$4\omega_{12}\omega_6^2\omega_{19}\omega_7^2v_1^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} + 2\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_7v_1\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - \omega_{12}\omega_6^2c_s^2\omega_7^2v_1\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$2\omega_{12}\omega_6^2\omega_{19}\omega_7^2v_1^2v_2\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} - \omega_6^2\omega_{19}\omega_7^2v_1v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 4\omega_{12}\omega_6\omega_{19}c_s^2\omega_7v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$2\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_7^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5 + 4\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_7v_1\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} + 4\omega_{12}\omega_6^2\omega_{19}\omega_7v_1v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} -$
$4\omega_{12}\omega_6^2\omega_{19}\omega_7^2v_1^2v_2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} - 2\omega_6^2\omega_{19}\omega_7^2v_1^2v_2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 2\omega_{12}\omega_6^2\omega_{19}\omega_7^2v_1v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} +$
$2\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_7^2v_1\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} - 4\omega_{12}\omega_6^2\omega_{19}\omega_7v_1^2v_2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 2\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_7^2v_2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$4\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_7v_2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} + 3\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_7^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2 - 4\omega_{12}\omega_{19}c_s^2\omega_7v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$6\omega_{12}\omega_6\omega_{19}c_s^2\omega_7v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 4\omega_{12}\omega_6^2\omega_{19}\omega_7^2v_1v_2^2\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} + \omega_{12}\omega_6^2c_s^2\omega_7^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$4\omega_{12}\omega_6^2\omega_7v_1^2v_2\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} - 8\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_7^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} + 4\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_7^2v_2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} + 4\omega_6^2\omega_{19}c_s^2\omega_7^2v_2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18} +$
$4\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_7^2v_1\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} + 4\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_7v_1\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 2\omega_{12}\omega_6^2\omega_7^2v_1v_2^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + \omega_6^2\omega_{19}\omega_7^2v_1^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$4\omega_{12}\omega_6\omega_{19}c_s^2\omega_7^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5 + 2\omega_6^2\omega_{19}c_s^2\omega_7^2v_1\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} - 4\omega_{12}\omega_6^2\omega_{19}\omega_7^2v_1^2v_2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18} -$
$4\omega_{12}\omega_6^2\omega_{19}\omega_7^2v_1^2v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} - 2\omega_{12}\omega_6^2\omega_{19}\omega_7^2v_1v_2^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 4\omega_{12}\omega_6^2c_s^2\omega_7v_1\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_7^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 4\omega_{12}\omega_6^2\omega_{19}\omega_7v_1v_2^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} - 2\omega_6^2\omega_{19}c_s^2\omega_7^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} -$
$2\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_7v_2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - \omega_6^2\omega_{19}c_s^2\omega_7^2v_1\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 4\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_7^2v_1\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} -$
$4\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_7^2v_2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} + 4\omega_{12}\omega_6^2\omega_{19}\omega_7v_1^2v_2\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} - 4\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_7v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2 - 2\omega_6^2\omega_{19}c_s^2\omega_7^2v_2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$4\omega_{12}\omega_6^2\omega_{19}\omega_7^2v_1v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} - 2\omega_{12}\omega_6^2\omega_{19}\omega_7v_1v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 2\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_7v_1\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$\omega_{12}\omega_6^2\omega_7^2v_1v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 2\omega_{12}\omega_6^2\omega_{19}\omega_7^2v_1^2v_2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 2\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_7^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} +$
$2\omega_{12}\omega_6^2\omega_{19}\omega_7^2v_1v_2^2\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} + 4\omega_{12}\omega_6c_s^2\omega_7v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 2\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_7^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} +$
$2\omega_{12}\omega_6\omega_{19}c_s^2\omega_7v_2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} + \omega_{12}\omega_6^2\omega_{19}\omega_7^2v_1v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 2\omega_{12}\omega_6^2\omega_7v_1v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$2\omega_{12}\omega_6^2c_s^2\omega_7v_1\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 2\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_7^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 4\omega_{12}\omega_6^2\omega_{19}\omega_7^2v_1^2v_2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} + 4\omega_6^2\omega_{19}\omega_7^2v_1^2v_2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18} -$
$4\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_7v_1\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} - 4\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_7^2v_2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18} - 2\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_7^2v_1\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$4\omega_{12}\omega_6\omega_{19}c_s^2\omega_7v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 2\omega_{12}\omega_6\omega_{19}c_s^2\omega_7v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} + 2\omega_{12}\omega_6^2\omega_{19}\omega_7v_1v_2^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$6\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_7^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} + 2\omega_{12}\omega_6^2c_s^2\omega_7^2v_1\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 4\omega_{12}\omega_6^2\omega_{19}\omega_7^2v_1v_2^2\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} +$
$4\omega_{12}\omega_{19}c_s^2\omega_7^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 3\omega_{12}\omega_6\omega_{19}c_s^2\omega_7^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 4\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_7v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 +$
$4\omega_{12}\omega_6^2\omega_{19}\omega_7^2v_1v_2^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18} + 2\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_7v_2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} - 2\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_7^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_5^2\omega_{18} -$
$2\omega_{12}\omega_6^2\omega_7^2v_1^2v_2\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} - 2\omega_{12}\omega_6^2c_s^2\omega_7v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + \omega_{12}\omega_6^2\omega_7^2v_1^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$2\omega_{12}\omega_6^2\omega_{19}\omega_7v_1^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 4\omega_{12}\omega_6^2\omega_{19}\omega_7v_1^2v_2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} - 4\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_7^2v_1\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} -$
$4\omega_6^2\omega_{19}c_s^2\omega_7^2v_1\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18} - 4\omega_{12}\omega_6^2\omega_{19}\omega_7^2v_1^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} - 4\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_7^2v_1\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} +$
$2\omega_{12}\omega_6^2\omega_{19}\omega_7^2v_1^2v_2\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} + 2\omega_6^2\omega_{19}\omega_7^2v_1v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} + 4\omega_{12}\omega_6\omega_{19}c_s^2\omega_7v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2 +$
$2\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_7v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 4\omega_{12}\omega_6^2\omega_{19}\omega_7v_1v_2^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 4\omega_{12}\omega_6^2\omega_{19}\omega_7^2v_1v_2^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} +$
$2\omega_6^2\omega_{19}\omega_7^2v_1v_2^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 2\omega_{12}\omega_6\omega_{19}c_s^2\omega_7^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} + \omega_6^2\omega_{19}c_s^2\omega_7^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$

$2\omega_{12}\omega_6\omega_{19}c_s^2\omega_7^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 4\omega_{12}\omega_6^2\omega_7v_1v_2^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 4\omega_{12}\omega_6^2\omega_{19}\omega_7^2v_1^2v_2\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} -$
$4\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_7v_1\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} - 2\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_7^2v_1\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} - 2\omega_{12}\omega_6^2\omega_7v_1^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$2\omega_{12}\omega_6^2\omega_{19}c_s^2\omega_7^2v_1\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - \omega_{12}\omega_6^2\omega_{19}\omega_7^2v_1^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}$

$C_{47} = -2v_3^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_8^2\omega_5^2 - 2\omega_{19}c_s^2\omega_{10}\omega_7^2v_1\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{15} -$
$2v_3^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_8\omega_5^2\omega_{15} - \omega_{19}c_s^2\omega_{16}\omega_7^3v_1v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - v_3\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$2v_3\omega_{19}c_s^2\omega_{16}\omega_7^3v_1^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2 - 2v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^2v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2v_3^2\omega_{19}\omega_{10}\omega_7^2v_1\omega_{23}v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{15} -$
$\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}v_2^2\omega_{17}\omega_8^2\omega_5\omega_{15} - 2v_3\omega_{19}c_s^2\omega_7^3v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_{19}c_s^2\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{15} -$
$v_3c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2v_3\omega_{19}\omega_{16}\omega_7^3v_1^2\omega_{23}v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{15} + 2v_3\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_8^2\omega_5\omega_{15} -$
$v_3^2\omega_{16}\omega_{10}\omega_7^3v_1v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + v_3\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2v_3^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_1^2\omega_{23}v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{15} +$
$2v_3\omega_{19}c_s^2\omega_{10}\omega_7^3v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + v_3\omega_{16}\omega_{10}\omega_7^3v_1^2\omega_{23}v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2v_3^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}v_2^2\omega_{17}\omega_8\omega_5\omega_{15} -$
$2v_3^2\omega_{19}c_s^2\omega_{16}\omega_7^3v_1\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} + 2v_3\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_8^2\omega_5^2 + 2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} +$
$4\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_{15} + v_3\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5 + 2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2v_1\omega_{23}v_2^2\omega_{20}\omega_8\omega_5^2\omega_{15} +$
$2v_3\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2v_3^2\omega_{19}\omega_{16}\omega_{10}\omega_7^2v_1\omega_{23}v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{15} + 2v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2v_1\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15} +$
$v_3\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_1^2\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - \omega_{19}c_s^2\omega_{16}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 2v_3^2\omega_{19}c_s^2\omega_7^3v_1\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} -$
$2c_s^2\omega_{16}\omega_{10}\omega_7^2v_1\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 8\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^2v_1\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} + 2v_3\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} -$
$v_3\omega_{16}\omega_{10}\omega_7^3v_1^2\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2v_3\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2v_2^2\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15} - 2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15} -$
$8\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 2v_3\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} + v_3^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$2v_3\omega_{19}c_s^2\omega_7^3v_1^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} - v_3\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2v_3\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_8\omega_5^2\omega_{15} -$
$2v_3c_s^2\omega_{16}\omega_{10}\omega_7^2v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_8\omega_5\omega_{15} - 2v_3^2\omega_{19}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$c_s^2\omega_{16}\omega_{10}\omega_7^3v_1v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2v_3\omega_{19}\omega_{16}\omega_{10}\omega_7^2v_1^2v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_{19}c_s^2\omega_{16}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_8^2\omega_5^2 -$
$2v_3\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2\omega_{17}\omega_8\omega_5\omega_{15} + 4\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^2v_1\omega_{23}\omega_{20}\omega_{17}\omega_5^2\omega_{15} + 2v_3\omega_{19}c_s^2\omega_{10}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{15} -$
$2v_3^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_8^2\omega_5\omega_{15} + 2v_3\omega_{19}c_s^2\omega_{10}\omega_7^2v_1^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2v_3^2\omega_{19}c_s^2\omega_{10}\omega_7^2v_1\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} +$
$2v_3\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_1^2\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{10}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{15} - v_3^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5 -$
$2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2v_1\omega_{23}v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 8\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^2v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15} + v_3^2\omega_{19}\omega_{16}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$2v_3^2\omega_{19}\omega_{16}\omega_{10}\omega_7^2v_1\omega_{23}v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15} - 2v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2v_1\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} + 2v_3\omega_{19}\omega_{10}\omega_7^3v_1^2v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15} + 2v_3\omega_{19}\omega_{10}\omega_7^2v_1^2\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2v_3^2\omega_{19}\omega_{16}\omega_{10}\omega_7^2v_1\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} +$
$2v_3\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2v_1^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} - 2v_3\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_1^2\omega_{23}\omega_{20}\omega_8^2\omega_5 + v_3c_s^2\omega_{16}\omega_{10}\omega_7^3v_1^2\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$2v_3\omega_{19}c_s^2\omega_{10}\omega_7^2\omega_{23}v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{15} + 2v_3\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_1^2\omega_{23}v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15} - 2v_3^2\omega_{19}c_s^2\omega_{10}\omega_7^3v_1\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} +$
$v_3^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 4\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_5^2\omega_{15} - 2v_3^2\omega_{19}\omega_{10}\omega_7^3v_1v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$12\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - v_3^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + v_3c_s^2\omega_{16}\omega_{10}\omega_7^3v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$2v_3\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}v_2^2\omega_{20}\omega_8\omega_5^2\omega_{15} - 2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2v_1v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2v_3\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_1^2\omega_{23}v_2^2\omega_{20}\omega_8\omega_5\omega_{15} +$
$v_3\omega_{19}c_s^2\omega_{16}\omega_7^3v_1^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 2v_3\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_1^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2 + 2v_3\omega_{19}\omega_{16}\omega_{10}\omega_7^2v_1^2\omega_{23}v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$v_3\omega_{19}c_s^2\omega_{16}\omega_7^3v_1^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2v_3\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_1^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} - 2v_3c_s^2\omega_{16}\omega_{10}\omega_7^2v_1^2\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$2v_3\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_1^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - c_s^2\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2v_3^2\omega_{16}\omega_{10}\omega_7^2v_1\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$2v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} + 2v_3\omega_{19}c_s^2\omega_{10}\omega_7^2\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 8\omega_{19}c_s^4\omega_{16}\omega_{10}v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$2v_3\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_8^2\omega_5^2 + v_3\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_1^2\omega_{23}\omega_{17}\omega_8^2\omega_5\omega_{15} + 2v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 2v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}\omega_{20}\omega_8\omega_5^2 + 2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2v_1\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$2v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_8^2\omega_5 - 2v_3\omega_{19}\omega_{16}\omega_7^3v_1^2\omega_{23}v_2^2\omega_{20}\omega_8^2\omega_5^2 + 2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2v_1\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$2v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2v_1\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} + 2v_3\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_1^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2 + 2v_3\omega_{19}c_s^2\omega_{10}\omega_7^3v_1^2\omega_{23}v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{15} -$
$2v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2v_1\omega_{23}v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{15} + 2v_3\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_1^2\omega_{23}\omega_{20}\omega_8^2\omega_5 + v_3\omega_{16}\omega_{10}\omega_7^3v_1^2v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$v_3^2\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15} - 2v_3^2\omega_{19}\omega_{16}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{15} -$
$v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2v_3^2\omega_{19}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{15} + 2v_3^2\omega_{19}\omega_{10}\omega_7^3v_1^2v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$v_3\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_1^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} - v_3c_s^2\omega_{16}\omega_{10}\omega_7^3v_1^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$2v_3\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{15} + 2v_3^2\omega_{19}c_s^2\omega_7^3v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2v_3^2\omega_{19}\omega_{16}\omega_{10}\omega_7^2v_1v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$2v_3\omega_{19}c_s^2\omega_{10}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} - 2v_3\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_1^2\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$v_3\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_1^2\omega_{23}v_2^2\omega_{17}\omega_8^2\omega_5\omega_{15} + 2v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}\omega_{20}\omega_8^2\omega_5^2 + 2v_3\omega_{19}\omega_{16}\omega_{10}\omega_7^2v_1^2\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$2v_3^2\omega_{19}\omega_{10}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2v_3\omega_{19}\omega_{16}\omega_{10}\omega_7^2v_1^2\omega_{23}v_2^2\omega_{20}\omega_8\omega_5^2\omega_{15} + 2v_3\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_1^2\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15} -$
$2v_3\omega_{19}\omega_{10}\omega_7^3v_1^2\omega_{23}v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{15} + 2v_3^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_8^2\omega_5 + v_3\omega_{16}\omega_{10}\omega_7^3v_1^2v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$v_3^2\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2v_3^2\omega_{19}\omega_{16}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{15} -$
$v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2v_3^2\omega_{19}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{15} + 2v_3^2\omega_{19}\omega_{10}\omega_7^3v_1^2v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$v_3c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^2v_1\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + v_3\omega_{19}\omega_{16}\omega_7^3v_1^2\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2 +$
$2v_3\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{15} - 2v_3^2\omega_{19}c_s^2\omega_{10}\omega_7^2v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2v_3^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_8^2\omega_5\omega_{15} +$
$4\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7v_1\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} - v_3^2\omega_{19}c_s^2\omega_{16}\omega_7^3v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + \omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2 -$
$v_3\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_1^2\omega_{23}v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2c_s^2\omega_{16}\omega_{10}\omega_7^2v_1\omega_{23}v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2v_3c_s^2\omega_{16}\omega_{10}\omega_7^2v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$2v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} + v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{16}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{15} +$
$2v_3\omega_{19}c_s^2\omega_7^3v_1^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + \omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_1v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2v_3\omega_{19}c_s^2\omega_{10}\omega_7^3v_1^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} +$
$2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_8^2\omega_5 - 2v_3\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_1^2\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} - 4\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^2v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_{15} -$
$v_3^2\omega_{19}c_s^2\omega_{16}\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + v_3\omega_{19}\omega_{16}\omega_7^3v_1^2v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + v_3\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_1^2\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5 -$
$2v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} + 2v_3\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_1^2\omega_{23}\omega_{20}\omega_8^2\omega_5\omega_{15} - 2v_3\omega_{19}\omega_{16}\omega_{10}\omega_7^2v_1^2\omega_{23}v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$2v_3\omega_{19}c_s^2\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{15} + 2\omega_{19}c_s^2\omega_7^3v_1v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^3v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$v_3\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_1^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15} + 2v_3^2\omega_{19}\omega_{10}\omega_7^2v_1v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2v_3c_s^2\omega_{16}\omega_{10}\omega_7^2v_1^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$2v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 4\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^2v_1\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} - 2v_3\omega_{19}\omega_{16}\omega_{10}\omega_7^2v_1^2\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$c_s^2\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2v_3\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2v_1^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2v_3\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15} +$

$4\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_5\omega_{15} + 2v_3\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2v_3\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_1^2\omega_{23}v_2^2\omega_{20}\omega_8^2\omega_5 -$
$2v_3\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_1^2\omega_{23}v_2^2\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{10}\omega_7^3v_1v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2v_3\omega_{16}\omega_{10}\omega_7^2v_1^2\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2v_1\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} - 2v_3\omega_{16}\omega_{10}\omega_7^2v_1^2v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2v_3^2\omega_{16}\omega_{10}\omega_7^2v_1\omega_{23}v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$v_3\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_1^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5 + 2v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2v_3\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_1^2\omega_{23}v_2^2\omega_{20}\omega_8\omega_5^2\omega_{15} -$
$v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5 + v_3^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15} + 2v_3\omega_{19}\omega_{10}\omega_7^3v_1^2\omega_{23}v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{15} -$
$2v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}\omega_{20}\omega_8^2\omega_5\omega_{15} + 2v_3^2\omega_{19}c_s^2\omega_{10}\omega_7^2v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2v_3\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_1^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} +$
$2v_3\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_1^2\omega_{23}\omega_{20}\omega_8^2\omega_5\omega_{15} + 2v_3\omega_{19}c_s^2\omega_{10}\omega_7^3v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$2\omega_{19}c_s^2\omega_{10}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} - v_3\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_1^2\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$2v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}\omega_{20}\omega_8^2\omega_5 - 2v_3\omega_{19}c_s^2\omega_7^3v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2v_3\omega_{19}\omega_{16}\omega_{10}\omega_7^2v_1^2\omega_{23}v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{15} -$
$v_3\omega_{19}\omega_{16}\omega_7^3v_1^2\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2v_3\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_8\omega_5\omega_{15} + 4\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} -$
$2v_3\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} - v_3^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}v_2^2\omega_{17}\omega_8^2\omega_5\omega_{15} + 2v_3\omega_{19}c_s^2\omega_{16}\omega_7^3v_1^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} +$
$2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}v_2^2\omega_{17}\omega_8\omega_5\omega_{15} - 2v_3^2\omega_{19}\omega_{10}\omega_7^2v_1\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2v_3^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{15} +$
$2v_3\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15} - v_3\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$2\omega_{19}c_s^2\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}\omega_{20}\omega_8^2\omega_5^2 - 2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_8\omega_5^2\omega_{15} -$
$2v_3\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2v_3^2\omega_{16}\omega_{10}\omega_7^2v_1v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2v_3\omega_{16}\omega_{10}\omega_7^2v_1^2\omega_{23}v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$4\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^2v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2v_3\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2v_1^2\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2v_1\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$2v_3^2\omega_{19}\omega_{10}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{15} + v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2v_3\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_1^2\omega_{23}v_2^2\omega_{20}\omega_8^2\omega_5^2 -$
$2v_3\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_1^2\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} + 2v_3c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2v_3\omega_{19}c_s^2\omega_{10}\omega_7^2v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$2v_3^2\omega_{19}\omega_{16}\omega_{10}\omega_7^2v_1\omega_{23}v_2^2\omega_{20}\omega_8\omega_5^2\omega_{15} - v_3\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_1^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 2v_3^2\omega_{19}c_s^2\omega_{10}\omega_7^3v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2v_1\omega_{23}v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{15} +$
$v_3\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2\omega_{17}\omega_8^2\omega_5\omega_{15} - v_3^2\omega_{19}\omega_{16}\omega_7^3v_1v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2v_3^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_8\omega_5\omega_{15} +$
$2v_3\omega_{19}c_s^2\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_8^2\omega_5^2 - 2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_8^2\omega_5\omega_{15} -$
$2v_3\omega_{19}\omega_{10}\omega_7^2v_1^2v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - v_3\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15} - v_3\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_1^2\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2 +$
$v_3\omega_{19}c_s^2\omega_{16}\omega_7^3v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2v_3^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15} - 2v_3c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + v_3^2\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2v_3\omega_{19}\omega_7^3v_1^2\omega_{23}v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{15} -$
$2v_3\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{15} + 2\omega_{19}c_s^2\omega_{10}\omega_7^2v_1\omega_{23}v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{15} + 2v_3^2\omega_{19}\omega_7^3v_1v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$2v_3^2\omega_{19}c_s^2\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + \omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2v_3^2\omega_{19}\omega_{16}\omega_{10}\omega_7^2v_1\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$2v_3\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2v_1^2\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} - 2v_3\omega_{19}c_s^2\omega_{10}\omega_7^3v_1^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^2v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$2c_s^2\omega_{16}\omega_{10}\omega_7^2v_1v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2v_1\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} - v_3\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_1^2v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$v_3\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - \omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5 -$
$2v_3^2\omega_{19}\omega_{16}\omega_{10}\omega_7^2v_1\omega_{23}v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} + v_3^2\omega_{19}c_s^2\omega_{16}\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2v_3\omega_{19}c_s^2\omega_{10}\omega_7^2v_1^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} -$
$v_3\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_1^2\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15} + v_3c_s^2\omega_{16}\omega_{10}\omega_7^3v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + \omega_{19}c_s^2\omega_{16}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$v_3^2\omega_{19}\omega_{16}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2v_1\omega_{23}v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15}$

$C_{48} = 12\omega_6^2v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_5^2\omega_{15} - 12\omega_6^2v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15} - 6\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15} +$
$6\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 24\omega_6^2v_3\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 6\omega_6^2v_3^2\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 +$
$6\omega_6^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 12\omega_6^2v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8\omega_5^3\omega_{15} - 12\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 -$
$24\omega_6^2v_3\omega_{19}c_s^2\omega_{10}\omega_7^2v_1\omega_{23}\omega_{20}\omega_8^2\omega_5^3\omega_{15} - 24\omega_6^2v_3\omega_{19}\omega_7^3v_1v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 12\omega_6^2v_3^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_8^2\omega_5^3\omega_{15} -$
$12\omega_6^2v_3\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 + 24\omega_6^2v_3\omega_{19}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 24\omega_6^2v_3\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} +$
$12\omega_6^2v_3^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}v_2^2\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 12\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 6\omega_6^2c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$12\omega_6\omega_{19}c_s^4\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 6\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3 - 24\omega_6^2v_3\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15} -$
$6\omega_6^2v_3^2\omega_{16}\omega_{10}\omega_7^3v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 24\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 24\omega_6^2v_3\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{15} +$
$24\omega_6^2v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{15} + 12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 24\omega_6\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} + 12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 12\omega_6^2v_3\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}\omega_{17}\omega_8^2\omega_5^3\omega_{15} -$
$12\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 12\omega_6^2v_3\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 24\omega_6^2v_3\omega_{19}c_s^2\omega_{10}\omega_7^2v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} -$
$24\omega_6^2v_3\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{15} - 18\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 6\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} +$
$12\omega_6\omega_{19}c_s^2\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 24\omega_6^2v_3\omega_{19}\omega_{16}\omega_{10}\omega_7^2v_1v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 12\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 +$
$12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} + 12\omega_6^2v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} - 12\omega_6^2v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} +$
$12\omega_6^2v_3\omega_{16}\omega_{10}\omega_7^3v_1v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 42\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{15} - 12\omega_6^2v_3^2\omega_{19}\omega_{10}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_8^2\omega_5^3\omega_{15} -$
$24\omega_6^2v_3\omega_{19}\omega_{10}\omega_7^2v_1\omega_{23}v_2^2\omega_{20}\omega_8^2\omega_5^3\omega_{15} - 6\omega_6^2v_3^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 12\omega_6^2v_3^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2\omega_{17}\omega_8\omega_5^3\omega_{15} +$
$6\omega_6^2v_3^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 24\omega_6^2v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 12\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{15} +$
$24\omega_6^2v_3\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^3\omega_{15} + 24\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{15} + 24\omega_6^2v_3\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{15} +$
$12\omega_6\omega_{19}c_s^2\omega_{10}\omega_7^2\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 6\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 12\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} -$
$12\omega_6^2v_3^2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{15} + 24\omega_6^2v_3\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}\omega_{20}\omega_8\omega_5^3\omega_{15} - 12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8^2\omega_5^3\omega_{15} -$
$12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15} + 12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 12\omega_6\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} +$
$12\omega_6^2v_3^2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}v_2^2\omega_{17}\omega_8\omega_5^3\omega_{15} + 12\omega_6^2v_3\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 12\omega_6\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 -$
$12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^3\omega_{15} + 12\omega_6^2v_3^2\omega_{19}\omega_{10}\omega_7^2\omega_{23}v_2^2\omega_{20}\omega_8^2\omega_5^3\omega_{15} + 12\omega_6\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} -$
$36\omega_6^2v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} + 24\omega_6^2v_3\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 12\omega_6\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3 +$
$12\omega_6^2\omega_{19}c_s^2\omega_7^3v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^3 + 12\omega_6^2\omega_{19}c_s^4\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^3\omega_{15} +$
$24\omega_6^2v_3\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}v_2^2\omega_{17}\omega_8\omega_5^3\omega_{15} + 12\omega_6^2v_3^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_8^2\omega_5^2 - 12\omega_6^2v_3\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} -$
$24\omega_6^2v_3\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2v_1\omega_{23}\omega_{20}\omega_8\omega_5^3\omega_{15} - 12\omega_6^2v_3^2\omega_{19}c_s^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^3\omega_{15} + 12\omega_6^2v_3\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}v_2^2\omega_{17}\omega_8^2\omega_5^3\omega_{15} +$
$24\omega_6^2v_3\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_8^2\omega_5^3\omega_{15} + 24\omega_6^2v_3\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_8^2\omega_5^3\omega_{15} - 24\omega_6^2v_3\omega_{19}\omega_{16}\omega_{10}\omega_7^2v_1\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} -$
$12\omega_6^2v_3^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{15} + 12\omega_6^2v_3^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_8^2\omega_5^3 + 12\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2 -$
$12\omega_6^2\omega_{19}c_s^2\omega_{10}\omega_7^2\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 12\omega_6^2v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_5^3\omega_{15} + 24\omega_6^2v_3\omega_{19}\omega_{16}\omega_{10}\omega_7^2v_1\omega_{23}v_2^2\omega_{17}\omega_8^2\omega_5^3\omega_{15} -$

$12\omega_6^2v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^3 - 12\omega_6^2v_3\omega_{19}c_s^2\omega_{16}\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 12\omega_6^2v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} -$
$6\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 12\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15} - 6\omega_6^2v_3^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2\omega_{17}\omega_8^2\omega_5^3\omega_{15} +$
$24\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{15} - 12\omega_6^2v_3^2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}v_2^2\omega_{20}\omega_8^2\omega_5^3\omega_{15} + 12\omega_6^2v_3^2\omega_{19}\omega_{10}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} -$
$6\omega_6^2v_3^2\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 12\omega_6^2v_3^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_8^2\omega_5^3 - 24\omega_6^2v_3\omega_{19}c_s^2\omega_7^3v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} +$
$12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5^3\omega_{15} - 12\omega_6^2c_s^4\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 12\omega_6^2\omega_{19}c_s^4\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^3\omega_{15} -$
$24\omega_6^2v_3\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} + 24\omega_6^2v_3\omega_{19}c_s^2\omega_{10}\omega_7^3v_1\omega_{23}\omega_{20}\omega_8^2\omega_5^3\omega_{15} + 24\omega_6^2v_3\omega_{19}\omega_{10}\omega_7^3v_1v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} -$
$6\omega_6^2v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 12\omega_6^2v_3^2\omega_{19}c_s^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^3\omega_{15} - 12\omega_6^2v_3\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} -$
$24\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 12\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}v_2^2\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 +$
$18\omega_6^2v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15} - 24\omega_6^2v_3\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_8^2\omega_5^3\omega_{15} + 24\omega_6^2v_3\omega_{19}\omega_{10}\omega_7^2v_1\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} -$
$60\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} + 24\omega_6^2v_3\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2v_1\omega_{23}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 12\omega_6^2v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 -$
$12\omega_6^2v_3c_s^2\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 12\omega_6^2v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^3\omega_{15} - 12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{15} -$
$48\omega_6^2v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{15} + 12\omega_6^2v_3^2\omega_{16}\omega_{10}\omega_7^2v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 12\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3 +$
$12\omega_6^2v_3^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15} + 6\omega_6^2v_3^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 12\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} +$
$36\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 24\omega_6^2v_3\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} - 12\omega_6^2v_3^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_8^2\omega_5^3\omega_{15} +$
$12\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 12\omega_6^2v_3^2\omega_{19}c_s^2\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 12\omega_6^2c_s^4\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$24\omega_6^2v_3\omega_{19}\omega_{16}\omega_{10}\omega_7^2v_1\omega_{23}v_2^2\omega_{20}\omega_8\omega_5^3\omega_{15} + 12\omega_6\omega_{19}c_s^4\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 12\omega_6^2v_3^2\omega_{19}\omega_7^3v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} -$
$24\omega_6^2v_3\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_8^2\omega_5^2 + 6\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 12\omega_6^2v_3\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}v_2^2\omega_{17}\omega_8^2\omega_5^3\omega_{15} -$
$6\omega_6^2v_3^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3 - 18\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 12\omega_6^2\omega_{19}c_s^2\omega_{10}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} -$
$24\omega_6^2v_3\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15} - 6\omega_6^2v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^3\omega_{15} -$
$6\omega_6^2c_s^2\omega_{16}\omega_{10}\omega_7^3v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 18\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 12\omega_6^2v_3\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$24\omega_6^2v_3\omega_{16}\omega_{10}\omega_7^2v_1\omega_{23}v_2^2\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 6\omega_6^2v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 - 12\omega_6^2v_3^2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}v_2^2\omega_{17}\omega_8^2\omega_5^3\omega_{15} -$
$24\omega_6^2v_3\omega_{19}\omega_{16}\omega_{10}\omega_7^2v_1\omega_{23}v_2^2\omega_{17}\omega_8\omega_5^3\omega_{15} - 24\omega_6^2v_3\omega_{19}c_s^2\omega_{10}\omega_7^2v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 12\omega_6^2v_3\omega_{19}\omega_{16}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} -$
$12\omega_6^2v_3\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3 + 12\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_8^2\omega_5^3\omega_{15} + 24\omega_6^2v_3\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2v_1\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} +$
$12\omega_6^2v_3^2\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^3 + 12\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_5^2\omega_{15} + 24\omega_6^2v_3\omega_{19}\omega_{16}\omega_{10}\omega_7^2v_1\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{15} -$
$24\omega_6\omega_{19}c_s^2\omega_{16}\omega_7^2\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 12\omega_6^2v_3^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_8\omega_5^2\omega_{15} + 6\omega_6^2v_3^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} +$
$24\omega_6^2v_3\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}\omega_{20}\omega_8^2\omega_5^3 - 24\omega_6^2v_3\omega_{19}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_8^2\omega_5^3\omega_{15} + 24\omega_6^2v_3\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2v_1\omega_{23}\omega_{20}\omega_8^2\omega_5^3\omega_{15} +$
$12\omega_6^2c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}v_2^2\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 24\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15} - 6\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_7^3v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} +$
$12\omega_6^2\omega_{19}c_s^2\omega_{10}\omega_7^2v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 6\omega_6^2v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 12\omega_6^2v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} -$
$24\omega_6^2v_3c_s^2\omega_{16}\omega_{10}\omega_7^2v_1\omega_{23}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 24\omega_6^2v_3\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_8\omega_5^3\omega_{15} + 12\omega_6\omega_{19}c_s^4\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} +$
$12\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{15} - 12\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 6\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^3\omega_{15} +$
$24\omega_6^2v_3\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} + 24\omega_6^2v_3c_s^2\omega_{16}\omega_{10}\omega_7^2v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 12\omega_6^2v_3\omega_{19}\omega_{16}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3 +$
$12\omega_6^2v_3^2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}v_2^2\omega_{20}\omega_8\omega_5^3\omega_{15} + 12\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_5^3\omega_{15} + 12\omega_6^2v_3\omega_{19}c_s^2\omega_{16}\omega_7^3v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} -$
$24\omega_6^2v_3\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}\omega_{20}\omega_8^2\omega_5^2 + 24\omega_6^2v_3\omega_{19}\omega_{16}\omega_{10}\omega_7^2v_1\omega_{23}v_2^2\omega_{20}\omega_8^2\omega_5^3\omega_{15} - 18\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} +$
$24\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 12\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} - 12\omega_6^2v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} -$
$12\omega_6^2v_3\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 24\omega_6^2v_3\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} + 12\omega_6^2v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} -$
$6\omega_6^2v_3^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 12\omega_6^2v_3^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 24\omega_6^2v_3\omega_{19}\omega_{10}\omega_7^2v_1v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} -$
$12\omega_6^2v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 12\omega_6^2v_3^2\omega_{19}\omega_{10}\omega_7^3v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 6\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$24\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 24\omega_6^2v_3\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2v_1\omega_{23}\omega_{17}\omega_8\omega_5^3\omega_{15} - 12\omega_6^2v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^3\omega_{15} -$
$12\omega_6^2v_3^2\omega_{19}\omega_{10}\omega_7^2\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} - \omega_6^2\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 12\omega_6^2v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} +$
$12\omega_6^2v_3\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 12\omega_6^2v_3^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_8\omega_5^3\omega_{15} - 12\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_5^3\omega_{15} +$
$6\omega_6^2v_3^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 24\omega_6^2v_3\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2v_1\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{15} + 6\omega_6^2v_3^2\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} +$
$12\omega_6^2v_3\omega_{19}\omega_{16}\omega_7^3v_1v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 12\omega_6^2v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8^2\omega_5^3\omega_{15} - 12\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2\omega_{17}\omega_8\omega_5^3\omega_{15} +$
$24\omega_6^2v_3\omega_{19}c_s^2\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 12\omega_6^2v_3\omega_{19}c_s^2\omega_{16}\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 - 12\omega_6^2v_3^2\omega_{19}c_s^2\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} -$
$24\omega_6^2v_3\omega_{19}\omega_{16}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_8^2\omega_5^3 - 12\omega_6^2\omega_{19}c_s^2\omega_{10}\omega_7^3v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 12\omega_6^2v_3c_s^2\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}\omega_{17}\omega_8^2\omega_5^3\omega_{15} +$
$12\omega_6^2v_3\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 6\omega_6^2v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 2\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} -$
$12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} + 6\omega_6^2v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 12\omega_6^2v_3^2\omega_{19}\omega_{10}\omega_7^2v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} +$
$24\omega_6^2v_3\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}\omega_{17}\omega_8\omega_5^3\omega_{15} + 6\omega_6^2c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8\omega_5^3\omega_{15} -$
$12\omega_6^2c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 24\omega_6^2v_3\omega_{19}\omega_{10}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 24\omega_6^2v_3c_s^2\omega_{16}\omega_{10}\omega_7^2v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} +$
$12\omega_6^2v_3\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3 + 12\omega_6^2v_3\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 12\omega_6^2v_3\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} -$
$12\omega_6^2v_3c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 12\omega_6^2v_3^2\omega_{19}\omega_{10}\omega_7^3v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 6\omega_6^2v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$12\omega_6^2v_3^2\omega_{19}c_s^2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8^2\omega_5^3\omega_{15} + 12\omega_6^2c_s^2\omega_{16}\omega_{10}\omega_7^2v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 24\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} +$
$12\omega_6^2v_3^2\omega_{19}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_8^2\omega_5^3\omega_{15} + 6\omega_6^2v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 12\omega_6^2v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_5^3\omega_{15} -$
$6\omega_6^2v_3^2\omega_{19}\omega_{16}\omega_7^3v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 12\omega_6^2v_3\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 12\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{15} +$
$24\omega_6^2v_3\omega_{19}\omega_{10}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_8^2\omega_5^3\omega_{15} + 12\omega_6^2v_3^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 12\omega_6^2v_3^2\omega_{19}c_s^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} -$
$12\omega_6^2v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_1v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 24\omega_6^2v_3\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_8\omega_5^2\omega_{15} - 12\omega_6^2v_3^2\omega_{19}c_s^2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} -$

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

$C_{49} = -2\omega_6v_3\omega_{19}c_s^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 4\omega_6v_3^2\omega_{16}^2\omega_{10}^2\omega_7^2v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 4\omega_6\omega_{19}c_s^2\omega_{10}\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$4\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}^2\omega_7^3v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 4\omega_6v_3\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2v_1^2\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 4\omega_6v_3^2\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3v_1\omega_{23}\omega_{20}\omega_8^2\omega_5^2 -$
$2\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_6v_3\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3v_1^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 4\omega_6v_3\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2v_1^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$4\omega_6v_3^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 4\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}^2\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15} + 4\omega_6v_3\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} +$
$4\omega_6v_3^2\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2v_1\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} + 4\omega_6v_3\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3v_1^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} + 4\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2v_1\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$4\omega_6\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15} - 4\omega_6v_3\omega_{19}c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 4\omega_6v_3\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3v_1^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} +$
$4\omega_6v_3^2\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2v_1\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15} - 2\omega_6v_3\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 4\omega_6\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5 +$
$4\omega_6v_3^2\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 4\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15} - 4\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$2\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} - 4\omega_6v_3\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2v_1^2\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} + 4\omega_6v_3\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$4\omega_6\omega_{19}c_s^2\omega_{10}^2\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_6v_3\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 2\omega_6\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$4\omega_6v_3c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 4\omega_6v_3\omega_{19}c_s^2\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} - 4\omega_6v_3\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15} +$
$4\omega_6v_3\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 4\omega_6v_3\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} - 2\omega_6v_3\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3v_1^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15} -$
$12\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}^2\omega_7^2v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 4\omega_6v_3\omega_{19}c_s^2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 +$
$6\omega_6\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7v_1\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} - 4\omega_6\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2v_1\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_6v_3\omega_{19}c_s^2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$2\omega_6\omega_{19}c_s^2\omega_{16}^2\omega_{10}^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 4\omega_6v_3^2\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2v_1\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} - 4\omega_6v_3\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_1^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} -$
$4\omega_6\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 8\omega_6\omega_{19}c_s^2\omega_{16}^2\omega_{10}\omega_7^2v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 4\omega_6v_3\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5\omega_{15} -$
$4\omega_6v_3\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3v_1^2\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} - 4\omega_6v_3\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5 - 4\omega_6v_3c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$2\omega_6\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2v_1\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 4\omega_6\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_{15} + 4\omega_6v_3\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3v_1^2\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} -$
$2\omega_6v_3\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_6\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5 - 2\omega_6v_3^2\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 -$
$4\omega_6\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 4\omega_6\omega_{19}c_s^2\omega_{16}^2\omega_{10}\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} + 4\omega_6v_3^2\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3v_1\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} -$
$4\omega_6v_3^2\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 4\omega_6\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 4\omega_6v_3\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 +$
$4\omega_6v_3\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2v_1^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_6v_3^2\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_6\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15} +$
$2\omega_6\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 4\omega_6v_3^2\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3v_1\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} - 4\omega_6v_3\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_1^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} -$
$4\omega_6\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 4\omega_6\omega_{19}c_s^2\omega_{16}^2\omega_{10}\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 4\omega_6v_3^2\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3v_1\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} -$
$2\omega_6v_3^2\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 4\omega_6v_3\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2v_1^2\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 4\omega_6v_3\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$4\omega_6v_3^2\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 4\omega_6\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_6\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$2\omega_6v_3^2\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 4\omega_6v_3\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_6v_3\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$4\omega_6v_3\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3v_1\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} - 2\omega_6v_3^2\omega_{16}^2\omega_{10}^2\omega_7^3v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_6v_3\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3v_1^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 -$
$12\omega_6\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_6\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_5^2\omega_{15} + 2\omega_6v_3^2\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15} -$
$4\omega_6v_3^2\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3v_1\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} + 2\omega_6\omega_{19}c_s^2\omega_{16}^2\omega_{10}\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 4\omega_6\omega_{19}c_s^2\omega_{16}\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$14\omega_6\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2v_1\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} + 4\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}^2\omega_7v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$4\omega_6v_3^2\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 4\omega_6v_3\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3v_1^2\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15} - 2\omega_6v_3\omega_{16}^2\omega_{10}^2\omega_7^3v_1^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$4\omega_6v_3\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_6v_3\omega_{16}^2\omega_{10}^2\omega_7^3v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 4\omega_6v_3\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_1^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$4\omega_6v_3\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3v_1^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2 - 4\omega_6v_3\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} - 8\omega_6\omega_{19}c_s^2\omega_{16}^2\omega_{10}\omega_7^2v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15} +$
$4\omega_6v_3^2\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 4\omega_6v_3\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3v_1^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} + 4\omega_6v_3\omega_{19}c_s^2\omega_{16}\omega_{10}^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$2\omega_6\omega_{19}c_s^2\omega_{16}^2\omega_{10}\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 2\omega_6v_3^2\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5 + 2\omega_6v_3\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5\omega_{15} -$
$4\omega_6v_3\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3v_1^2\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} - 2\omega_6\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 4\omega_6\omega_{19}c_s^2\omega_{16}^2\omega_{10}\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} +$
$4\omega_6v_3^2\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} - 4\omega_6v_3^2\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3v_1\omega_{23}\omega_{20}\omega_8^2\omega_5\omega_{15} - 2\omega_6\omega_{19}c_s^2\omega_{16}^2\omega_{10}\omega_7^3v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$4\omega_6v_3\omega_{19}c_s^2\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_6v_3^2\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3v_1\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 4\omega_6v_3\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} -$
$4\omega_6v_3\omega_{16}^2\omega_{10}^2\omega_7^2v_1^2\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 4\omega_6v_3^2\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3v_1\omega_{23}\omega_{20}\omega_8^2\omega_5 - 2\omega_6\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3v_1\omega_{23}\omega_{17}\omega_8^2\omega_5\omega_{15} +$
$4\omega_6v_3\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2v_1^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} + 2\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2v_1\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 12\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$4\omega_6\omega_{19}c_s^2\omega_{16}^2\omega_{10}\omega_7^2v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 4\omega_6v_3^2\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3v_1\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} - 4\omega_6v_3\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2v_1^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} +$
$2\omega_6v_3^2\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 4\omega_6v_3\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2v_1^2\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15} - 4\omega_6v_3\omega_{16}^2\omega_{10}^2\omega_7^2v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$4\omega_6v_3^2\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3v_1\omega_{23}\omega_{20}\omega_8^2\omega_5^2 + 4\omega_6\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} - 4\omega_6v_3\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3v_1\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} +$
$2\omega_6v_3^2\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3v_1^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_6\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3v_1^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 4\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}^2\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$2\omega_6v_3^2\omega_{16}^2\omega_{10}^2\omega_7^3v_1^2\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 4\omega_6v_3\omega_{19}c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 4\omega_6v_3\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3v_1^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2 -$
$4\omega_6\omega_{19}c_s^2\omega_{16}^2\omega_{10}\omega_7v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_6v_3^2\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 4\omega_6v_3\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} +$
$2\omega_6v_3^2\omega_{16}^2\omega_{10}^2\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_6v_3c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_6v_3\omega_{19}c_s^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 -$
$4\omega_6v_3^2\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 8\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}^2\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 4\omega_6v_3^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} +$
$4\omega_6v_3\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2v_1^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} - 2\omega_6v_3^2\omega_{16}^2\omega_{10}^2\omega_7^3v_1\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_6v_3c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$

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

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

$2\omega_{19}^2c_s^2\omega_7^3v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 4v_3\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + \omega_{19}^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2\omega_{17}\omega_8^2\omega_5\omega_{15} +$
$4v_3\omega_{19}^2c_s^2\omega_{10}\omega_7^2v_1\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_7^2v_1^2\omega_{23}v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 4v_3\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2v_1\omega_{23}v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{15} +$
$\omega_{19}^2c_s^2\omega_{16}\omega_7^3v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_{19}^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{15} - 2\omega_{19}^2c_s^2\omega_{16}\omega_7^3v_1^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2 - \omega_{19}^2\omega_{16}\omega_{10}\omega_7^3v_1^2\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2 -$
$\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3v_1^2v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2v_3\omega_{19}^2c_s^2\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - \omega_{19}^2c_s^2\omega_{16}\omega_{10}\omega_7^3v_1^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15} -$
$2\omega_{19}^2c_s^2\omega_{10}\omega_7^2\omega_{23}v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{15} - 2\omega_{19}^2c_s^2\omega_{16}\omega_{10}\omega_7^2v_1^2\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} - 2\omega_{19}^2c_s^2\omega_{10}\omega_7^3v_1^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$4v_3\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_8\omega_5^2\omega_{15} + 4v_3\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}v_2^2\omega_{17}\omega_8\omega_5\omega_{15} + \omega_{19}^2c_s^2\omega_{16}\omega_7^3v_1^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 +$
$2\omega_{19}^2c_s^2\omega_{16}\omega_{10}\omega_7^3v_1^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2 + 4v_3\omega_{19}^2\omega_{10}\omega_7^2v_1\omega_{23}v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{15} - 2v_3\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5 -$
$2\omega_{19}^2\omega_{10}\omega_7^2v_1^2\omega_{23}v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{15} + 4v_3\omega_{19}\omega_{16}\omega_{10}\omega_7^2v_1v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2v_3\omega_{19}^2\omega_{16}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$4v_3\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2v_1\omega_{23}v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15} - \omega_{19}^2\omega_{16}\omega_7^3v_1^2\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_{19}^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_8\omega_5\omega_{15} -$
$4v_3\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_8^2\omega_5^2 - 2\omega_{19}^2c_s^2\omega_{16}\omega_{10}\omega_7^2v_1^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 4v_3\omega_{19}^2c_s^2\omega_{16}\omega_{10}\omega_7^2v_1\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} +$
$\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 4v_3\omega_{19}^2c_s^2\omega_{16}\omega_{10}\omega_7^2v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15} + 2\omega_{19}^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15} +$
$2\omega_{19}^2c_s^2\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{15} - \omega_{19}^2c_s^2\omega_{16}\omega_{10}\omega_7^3v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2v_3\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2v_1^2\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_{19}^2c_s^2\omega_7^3v_1^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} - 2\omega_{19}^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_8^2\omega_5 - 2\omega_{19}^2c_s^2\omega_{10}\omega_7^2v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$4v_3\omega_{19}^2c_s^2\omega_7^3v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_{19}^2c_s^2\omega_{16}\omega_{10}\omega_7^2v_1^2\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2v_3\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$2\omega_{19}^2c_s^2\omega_{16}\omega_{10}\omega_7^3v_1^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 4v_3\omega_{19}^2c_s^2\omega_{16}\omega_7^3v_1\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} + 4v_3\omega_{19}c_s^2\omega_{16}\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$8v_3\omega_{19}^2c_s^2\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 4v_3\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_8^2\omega_5\omega_{15} -$
$2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2v_3\omega_{19}^2c_s^2\omega_{16}\omega_{10}\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_{15} - \omega_{19}^2c_s^2\omega_{16}\omega_{10}\omega_7^3v_1^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2$

$C_{51} = -18\omega_{19}c_s^4\omega_{16}^2\omega_{10}^2\omega_7^3 + 108v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}^3\omega_7^2\omega_{23} + 12v_3^2\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}v_2^2 + 12v_3^2\omega_{19}\omega_{10}^3\omega_7^3\omega_{23}v_2^2 - 36v_3^2c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23} +$
$6\omega_{19}c_s^2\omega_{16}^2\omega_{10}^3\omega_7^3v_2^2 + 12v_3^2\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2\omega_{23} + 6v_3^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}v_2^2 - 24v_3^2\omega_{19}\omega_{16}\omega_{10}^3\omega_7\omega_{23}v_2^2 + 18v_3^2\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{23} + 12v_3^2\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3v_2^2 +$
$12\omega_{19}c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{23} + \omega_{19}c_s^2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{23}v_2^2 - 18v_3^2c_s^2\omega_{16}^2\omega_{10}^3\omega_7^3 + 6v_3^2\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3 - 88\omega_{19}c_s^4\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{23} - 12\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}v_2^2 +$
$12\omega_{19}c_s^2\omega_{10}^3\omega_7^2\omega_{23} + 18v_3^2\omega_{19}c_s^2\omega_{16}^2\omega_{10}^3\omega_7^3 + 12\omega_{19}c_s^2\omega_{16}\omega_{10}^3\omega_7^3 + 24v_3^2\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}v_2^2 - 36v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23} + 6v_3^2\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^3v_2^2 +$
$36v_3^2c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2 + 12\omega_{19}c_s^2\omega_{10}^3\omega_7^3\omega_{23}v_2^2 + 12c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2v_2^2 + 12\omega_{19}c_s^2\omega_{16}\omega_{10}^2\omega_7^3v_2^2 + 6v_3^2\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{23}v_2^2 + 12\omega_{19}c_s^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23} -$
$12v_3^2\omega_{19}\omega_{16}^2\omega_7^3\omega_{23} - 72v_3^2\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23} - 12\omega_{19}c_s^2\omega_{16}\omega_{10}^3\omega_7^2 - 36v_3^2\omega_{19}c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2 + 36\omega_{19}c_s^4\omega_{16}^2\omega_7^3\omega_{23} - 6v_3^2\omega_{16}^2\omega_{10}^3\omega_7^3v_2^2 -$
$12c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}v_2^2 - 36\omega_{19}c_s^4\omega_{16}^2\omega_{10}\omega_7^3\omega_{23} - 6\omega_{19}c_s^2\omega_{16}\omega_{10}^3\omega_7^3\omega_{23}v_2^2 - 36v_3^2\omega_{19}c_s^2\omega_{10}^2\omega_7^3\omega_{23} - 12\omega_{19}c_s^2\omega_{10}^3\omega_7^3\omega_{23} - 18v_3^2\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3 +$
$5\omega_{19}c_s^4\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{23} - 6v_3^2\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^3 - 12\omega_{19}c_s^2\omega_{16}\omega_{10}^3\omega_7\omega_{23}v_2^2 - 12c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2 - 12\omega_{19}c_s^2\omega_{16}\omega_{10}^2\omega_7^3 - 12\omega_{19}c_s^2\omega_{10}^2\omega_7^2\omega_{23}v_2^2 -$
$84\omega_{19}c_s^4\omega_{16}^2\omega_{10}^2\omega_7\omega_{23} + 6v_3^2\omega_{16}^2\omega_{10}^3\omega_7^3 + 18\omega_{19}c_s^2\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}v_2^2 - 12v_3^2\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{23} - \omega_{19}c_s^2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{23} + 24v_3^2\omega_{19}\omega_{16}\omega_{10}^3\omega_7\omega_{23} +$
$24v_3^2\omega_{19}\omega_{16}^2\omega_{10}\omega_7\omega_{23}v_2^2 - 36v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}^3\omega_7^3\omega_{23} + 18\omega_{19}c_s^4\omega_{16}^2\omega_{10}^3\omega_7^3 - 24v_3^2\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3\omega_{23} + 12\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{23} +$
$18v_3^2c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23} - 12\omega_{19}c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2v_2^2 - 96\omega_{19}c_s^4\omega_{16}^2\omega_{10}^3\omega_{23} - 48\omega_{19}c_s^4\omega_{16}^2\omega_{10}\omega_7^2\omega_{23} - 2\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}v_2^2 - 12v_3^2\omega_{16}^2\omega_{10}^3\omega_7^2 +$
$12v_3^2\omega_{19}\omega_{10}^3\omega_7^3\omega_{23} + 12\omega_{19}c_s^4\omega_{16}\omega_{10}^3\omega_7\omega_{23} + 6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^3 - 42\omega_{19}c_s^4\omega_{16}\omega_{10}^2\omega_7^3\omega_{23} + 12v_3^2\omega_{16}^2\omega_{10}^3\omega_7^2v_2^2 + 12v_3^2\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^2 -$
$12v_3^2\omega_{19}\omega_{10}^2\omega_7^3\omega_{23}v_2^2 + 12\omega_{19}c_s^2\omega_{16}\omega_{10}^3\omega_7\omega_{23} - 12v_3^2\omega_{19}\omega_{16}\omega_{10}^3\omega_7^3\omega_{23}v_2^2 - 6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^3v_2^2 + 18v_3^2\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23} +$
$12\omega_{19}c_s^2\omega_{16}^2\omega_{10}^3\omega_7\omega_{23}v_2^2 - 36\omega_{19}c_s^4\omega_{16}^2\omega_{10}^3\omega_7^2 + 36v_3^2\omega_{19}c_s^2\omega_{16}^2\omega_7^3\omega_{23} - 24v_3^2\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7\omega_{23} - 12v_3^2\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^2v_2^2 - 18\omega_{19}c_s^2\omega_{16}\omega_{10}^2\omega_7^3\omega_{23} +$
$12\omega_{19}c_s^4\omega_{10}^2\omega_7^3\omega_{23} - 42\omega_{19}c_s^4\omega_{16}\omega_{10}^3\omega_7^2\omega_{23} + 18c_s^4\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23} - 12v_3^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2 + 12v_3^2\omega_{19}\omega_{10}^3\omega_7^2\omega_{23} + 12v_3^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23} +$
$18\omega_{19}c_s^2\omega_{16}\omega_{10}^3\omega_7^2\omega_{23}v_2^2 + 6\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3 + 36v_3^2\omega_{19}c_s^2\omega_{10}^3\omega_7^3\omega_{23} + 36v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}^2\omega_7^3 + 6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{23}v_2^2 + 12v_3^2\omega_{19}\omega_{16}\omega_{10}^3\omega_7^3 +$
$12\omega_{19}c_s^4\omega_{10}^3\omega_7^2\omega_{23} + 12v_3^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23} - 12\omega_{19}c_s^2\omega_{10}^3\omega_7^2\omega_{23}v_2^2 - 6v_3^2\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2v_2^2 - 6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23} - 36\omega_{19}c_s^4\omega_{16}\omega_{10}^3\omega_7^3 -$
$18\omega_{19}c_s^2\omega_{16}\omega_{10}^3\omega_7^2\omega_{23} - 24v_3^2\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}v_2^2 - 12\omega_{19}c_s^2\omega_{16}\omega_{10}^3\omega_7^3v_2^2 + 24v_3^2\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23} + 12\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23} -$
$12v_3^2\omega_{19}\omega_{16}\omega_{10}^3\omega_7^2 - 12v_3^2\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}v_2^2 + 150\omega_{19}c_s^4\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23} - 36v_3^2\omega_{19}\omega_{16}\omega_{10}^3\omega_7^2\omega_{23} - 12v_3^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}v_2^2 - 6\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3v_2^2 -$
$12v_3^2\omega_{19}\omega_{10}^3\omega_7^2\omega_{23}v_2^2 - 18v_3^2\omega_{19}c_s^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}v_2^2 - 36v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{23} + 12\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23} - 54v_3^2\omega_{19}c_s^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23} -$
$12\omega_{19}c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{23}v_2^2 - 18\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23} + 36\omega_{19}c_s^4\omega_{16}\omega_{10}^3\omega_7^2 - 12v_3^2\omega_{19}\omega_{16}\omega_{10}^3\omega_7^3v_2^2 - 12\omega_{19}c_s^2\omega_{16}^2\omega_7^3\omega_{23} - 6v_3^2\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23} +$
$36v_3^2\omega_{19}\omega_{16}\omega_{10}^3\omega_7^2\omega_{23}v_2^2 + 12\omega_{19}c_s^2\omega_{16}\omega_{10}^3\omega_7^2v_2^2 - 12\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2 + 72v_3^2\omega_{19}c_s^2\omega_{16}^2\omega_{10}\omega_7\omega_{23} - 12\omega_{19}c_s^4\omega_{10}^3\omega_7^3\omega_{23} +$
$36\omega_{19}c_s^4\omega_{16}\omega_{10}^2\omega_7^3 + 6\omega_{19}c_s^2\omega_{16}\omega_{10}^3\omega_7^3\omega_{23} + 36c_s^4\omega_{16}^2\omega_{10}^3\omega_7^2 + 12c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23} - 6\omega_{19}c_s^2\omega_{16}^2\omega_{10}^3\omega_7^3 - 36v_3^2\omega_{19}c_s^2\omega_{10}^3\omega_7^2\omega_{23} -$
$6v_3^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23} - 12v_3^2\omega_{19}\omega_{10}^3\omega_7^3\omega_{23} - 12v_3^2\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3 + 18\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}v_2^2 - 36v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}^3\omega_7^3 - 36c_s^4\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23} +$
$30\omega_{19}c_s^4\omega_{16}\omega_{10}^3\omega_7^3\omega_{23} + 12\omega_{19}c_s^2\omega_{16}^2\omega_7^3\omega_{23}v_2^2 - 18c_s^4\omega_{16}^2\omega_{10}^3\omega_7^3 + 12v_3^2\omega_{19}\omega_{16}\omega_{10}^3\omega_7^2v_2^2 + 2\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23} + 36v_3^2\omega_{19}c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{23} -$
$72v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}^3\omega_7\omega_{23} - 12\omega_{19}c_s^2\omega_{16}^2\omega_{10}^3\omega_7\omega_{23} + 12v_3^2\omega_{19}\omega_{16}\omega_{10}^3\omega_7^3\omega_{23} + 72v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}^2\omega_7^3\omega_{23} - 6\omega_{19}c_s^4\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23} +$
$12\omega_{19}c_s^2\omega_{10}^2\omega_7^3\omega_{23} + 12v_3^2\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}v_2^2 - 12\omega_{19}c_s^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}v_2^2 + 36v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}^3\omega_7^2 + 12\omega_{19}c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2 + 180\omega_{19}c_s^4\omega_{16}^2\omega_{10}^3\omega_7\omega_{23}$

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

$36v_3^2\omega_{19}\omega_{10}^3\omega_7^2\omega_{23}v_2^2 - 54v_3^2\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}v_2^2 - 12v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{23} - 18v_3^2\omega_{19}c_s^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23} - 42\omega_{19}c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{23}v_2^2 -$
$24\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23} + 12\omega_{19}c_s^4\omega_{16}\omega_{10}^3\omega_7^2 - 36v_3^2\omega_{19}\omega_{16}\omega_{10}^3\omega_7^3v_2^2 - 6v_3^2\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23} + 108v_3^2\omega_{19}\omega_{16}\omega_{10}^3\omega_7^2\omega_{23}v_2^2 + 36\omega_{19}c_s^2\omega_{16}\omega_{10}^3\omega_7^2v_2^2 +$
$72\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2 + 24v_3^2\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{23} + 12\omega_{19}c_s^4\omega_{16}\omega_{10}^2\omega_7^3 - 12\omega_{19}c_s^2\omega_{16}\omega_{10}^3\omega_7^3\omega_{23} + 12c_s^4\omega_{16}^2\omega_{10}^3\omega_7^2 + 12c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23} -$
$6\omega_{19}c_s^2\omega_{16}^2\omega_{10}^3\omega_7^3 - 12v_3^2\omega_{19}c_s^2\omega_{10}^3\omega_7^2\omega_{23} - 6v_3^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23} - 12v_3^2\omega_{19}\omega_{10}^3\omega_7^3\omega_{23} - 12v_3^2\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3 + 180\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}v_2^2 -$
$12v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}^3\omega_7^3 - 12c_s^4\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23} + 12\omega_{19}c_s^4\omega_{16}\omega_{10}^3\omega_7^3\omega_{23} - 6c_s^4\omega_{16}^2\omega_{10}^3\omega_7^3 + 36v_3^2\omega_{19}\omega_{16}\omega_{10}^3\omega_7^2v_2^2 + 6\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23} +$
$12v_3^2\omega_{19}c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{23} - 24v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}^3\omega_7\omega_{23} + 60\omega_{19}c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}v_2^2 + 12v_3^2\omega_{19}\omega_{16}\omega_{10}^3\omega_7^3\omega_{23} + 24v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}^2\omega_7^3\omega_{23} -$
$6\omega_{19}c_s^4\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23} + 36v_3^2\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}v_2^2 + 18\omega_{19}c_s^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}v_2^2 + 12v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}^3\omega_7^2 + 12\omega_{19}c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2 + 18\omega_{19}c_s^4\omega_{16}^2\omega_{10}^3\omega_7\omega_{23}$

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

$C_{54} = 4\omega_6\omega_{19}^2\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18} - 4\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5 - 4\omega_6v_3^2\omega_{19}^2\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18} - 12\omega_6\omega_{19}c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} - 6\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18} -$
$6\omega_6\omega_{19}c_s^2\omega_7^2\omega_{11}^2\omega_8\omega_5\omega_{18} - 4\omega_{19}^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} + 6\omega_6\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18} + 4\omega_6\omega_{19}^2\omega_7^2\omega_{11}^2\omega_5\omega_{18} + 4v_3^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18} -$
$6\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_8\omega_5\omega_{18} - 4\omega_6v_3^2\omega_{19}^2\omega_7^2\omega_{11}^2\omega_5\omega_{18} + 24\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 12\omega_6\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18} +$
$12\omega_6\omega_{19}c_s^2\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18} - 12\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18} + 12\omega_6\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_8\omega_5\omega_{18} - 24\omega_6\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} + 4\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5 -$
$2\omega_6\omega_{19}^2\omega_7^2\omega_{11}^2\omega_8\omega_5\omega_{18} - 4\omega_6\omega_{19}^2\omega_7^2\omega_{11}^2\omega_{18} + 2\omega_6v_3^2\omega_{19}^2\omega_7^2\omega_{11}^2\omega_8\omega_5\omega_{18} + 4v_3^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} - 4\omega_6v_3^2\omega_{19}\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} -$
$4\omega_6\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5 + 4\omega_6v_3^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_5\omega_{18} - 6\omega_6\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} - 12\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5 + 9\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} +$
$4\omega_6\omega_{19}\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 4\omega_6v_3^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5 - 4\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_5\omega_{18} - 2\omega_6\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18} + 6\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5 +$
$2\omega_6\omega_{19}\omega_7^2\omega_{11}^2\omega_8\omega_5\omega_{18} + 4\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8 + 2\omega_6v_3^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18} - 4v_3^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} - 2\omega_6v_3^2\omega_{19}\omega_7^2\omega_{11}^2\omega_8\omega_5\omega_{18} +$
$12\omega_6\omega_{19}^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} - 12\omega_6\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5 + 4\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18} - 4\omega_6\omega_{19}\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18} - 4\omega_6v_3^2\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18} +$
$4\omega_6v_3^2\omega_{19}\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18} - 12\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{11}^2\omega_5\omega_{18} + 4\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} + 12\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5 + 3\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5 -$
$4\omega_6v_3^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}\omega_5\omega_{18} - 3\omega_6v_3^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5 + 4\omega_6\omega_{19}^2\omega_7\omega_{20}\omega_{11}\omega_5\omega_{18} - 4\omega_6v_3^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5 - 4\omega_6\omega_{19}^2\omega_7\omega_{11}^2\omega_5\omega_{18} +$
$12\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{11}^2\omega_{18} + 4\omega_6v_3^2\omega_{19}^2\omega_7\omega_{11}^2\omega_5\omega_{18} + 4\omega_6\omega_{19}^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5 + 3\omega_6v_3^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} - 4\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18} +$
$4\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_{18} + 4v_3^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5 - 12\omega_6\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}\omega_5\omega_{18} - 4\omega_6v_3^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_{18} + 6\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8 -$
$3\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} - 4v_3^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8 - 9\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5 - 12\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} + 6\omega_6c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} +$
$12\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_5\omega_{18} - 4v_3^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5 + 2\omega_6v_3^2\omega_{19}^2\omega_7^2\omega_{11}^2\omega_8\omega_{18} + 12\omega_6\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5 + 2\omega_6\omega_{19}^2\omega_7^2\omega_{11}^2\omega_8\omega_{18} -$
$8\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 2\omega_6v_3^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5 + 2\omega_6v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} - 4\omega_6\omega_{19}^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} - 2\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5 -$
$2\omega_6\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 4\omega_6v_3^2\omega_{19}^2\omega_7^2\omega_{11}^2\omega_{18} + 8\omega_6v_3^2\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 4\omega_6v_3^2\omega_{19}^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} - 4\omega_6\omega_{19}^2\omega_7\omega_{20}\omega_8\omega_5\omega_{18} +$
$4\omega_6v_3^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18} - 12\omega_6c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 2\omega_6\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 4\omega_6v_3^2\omega_{19}^2\omega_7\omega_{20}\omega_8\omega_5\omega_{18} - 4\omega_6\omega_{19}^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18} -$
$4\omega_6v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} - 6\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{11}^2\omega_8\omega_{18} - 2\omega_6v_3^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 6\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{11}^2\omega_8\omega_5\omega_{18} + 4\omega_6\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} -$
$12\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_{18} - 12\omega_6\omega_{19}^2c_s^2\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18} + 2\omega_6v_3^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8 - 12\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8 - 2\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8 -$
$8\omega_6v_3^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} - 2\omega_6v_3^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18} + 2\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_8\omega_5\omega_{18} + 12\omega_6\omega_{19}^2c_s^2\omega_7\omega_{11}^2\omega_5\omega_{18} + 2\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18} +$
$12\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18} + 12\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} - 2\omega_6v_3^2\omega_{19}^2\omega_7^2\omega_{20}\omega_8\omega_5\omega_{18} + 8\omega_6\omega_{19}^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}$

$C_{55} = 12\omega_6^2v_3^2\omega_{19}^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 24\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} + 12\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2 +$
$6\omega_6^2v_3^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5 + 6\omega_6^2v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} - 18\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} + 6\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} + \omega_6^2v_3^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} +$
$6\omega_6^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18} - 12\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_5^2\omega_{18} + 30\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18} - 12\omega_6^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2 +$
$18\omega_6^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} + 42\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 12\omega_6^2\omega_{19}^2\omega_7^2\omega_{11}^2\omega_8\omega_5^2\omega_{18} - 12\omega_6^2\omega_{19}^2\omega_7\omega_{20}\omega_8^2\omega_5^2\omega_{18} +$
$54\omega_6^2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} - 4\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 9\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2 + 6\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} -$
$54\omega_6^2\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_5^2\omega_{18} + 24\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^2\omega_{19}^2\omega_7\omega_{11}^2\omega_8\omega_5^2\omega_{18} + 6\omega_6^2\omega_{19}^2\omega_7^2\omega_{11}^2\omega_8^2\omega_5\omega_{18} -$
$12\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18} - 6\omega_6v_3^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} - 12\omega_6\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2 - 12\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_{18} -$
$6\omega_6^2v_3^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18} + 12\omega_6^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} + 18\omega_6^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 9\omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} -$
$6\omega_6^2v_3^2\omega_{19}^2\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} - 24\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^2v_3^2\omega_{19}^2\omega_7^2\omega_{11}^2\omega_8\omega_5^2\omega_{18} + 12\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18} +$
$12\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{11}^2\omega_8\omega_5\omega_{18} + 12\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 6\omega_6\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2v_3^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2 +$
$12\omega_6\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18} + 6\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2 - 12\omega_6^2\omega_{19}^2c_s^2\omega_7\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^2\omega_{19}^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 6\omega_6^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} -$
$6\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5 + 6\omega_6v_3^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} + 12\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 6\omega_6^2v_3^2\omega_{19}^2\omega_7^2\omega_{11}^2\omega_8^2\omega_5\omega_{18} -$
$12\omega_6^2\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}\omega_8^2\omega_5^2 + 6\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^2v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} - 12\omega_6\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} -$
$6\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18} + 12\omega_6^2v_3^2\omega_{19}^2\omega_7\omega_{20}\omega_8^2\omega_5^2\omega_{18} + 3\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2v_3^2\omega_{19}^2\omega_7\omega_{11}^2\omega_8\omega_5^2\omega_{18} - 36\omega_6^2c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} -$
$12\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5 - 12\omega_6\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - 54\omega_6^2\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18} - 9\omega_6^2v_3^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2 -$

$6\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{11}^2\omega_8^2\omega_5\omega_{18} - 12\omega_6^2v_3^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}\omega_8^2\omega_5^2 - 12\omega_6^2\omega_{19}\omega_7\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} + 6\omega_6^2v_3^2\omega_{19}^2\omega_7^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} + 4\omega_6^2v_3^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5 + 6\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 36\omega_6^2\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6v_3^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5 + 12\omega_6^2\omega_{19}^2c_s^2\omega_7\omega_{11}^2\omega_8\omega_5^2\omega_{18} +$
$12\omega_6^2\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 54\omega_6\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} - 9\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2 + 12\omega_6^2\omega_{19}c_s^2\omega_7\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} -$
$18\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{11}^2\omega_8\omega_5^2\omega_{18} + 12\omega_6^2\omega_{19}\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2v_3^2\omega_{19}\omega_7^2\omega_{11}^2\omega_8\omega_5\omega_{18} - 6\omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^2\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2 - 36\omega_6^2\omega_{19}c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} + 6\omega_6^2v_3^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2 - 12\omega_6^2v_3^2\omega_{19}^2\omega_7\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} + 6\omega_6^2\omega_{19}\omega_7^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} +$
$24\omega_6^2\omega_{19}^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18} + 18\omega_6^2v_3^2\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} - 6\omega_6^2v_3^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18} - \omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} -$
$24\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - 6\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 12\omega_6^2v_3^2\omega_{19}\omega_7\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} + 12\omega_6\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2 - 6\omega_6^2\omega_{19}^2\omega_7^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 3\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}\omega_8^2\omega_5^2 + 6\omega_6^2v_3^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18} -$
$12\omega_6v_3^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2 + 6\omega_6v_3^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - 3\omega_6^2v_3^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2\omega_{19}^2\omega_7\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} +$
$36\omega_6^2\omega_{19}^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2 - 6\omega_6^2v_3^2\omega_{19}\omega_7^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} - 6\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2 - 18\omega_6^2v_3^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6v_3^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2 - 24\omega_6\omega_{19}^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} + 6\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5 - 36\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} -$
$12\omega_6^2\omega_{19}^2\omega_7^2\omega_{11}^2\omega_8\omega_5\omega_{18} + 12\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_5\omega_{18} - 12\omega_6^2v_3^2\omega_{19}\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} - 42\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}$

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

$C_{57} = 4\omega_6\omega_{19}^2\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18} - 4\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5 - 12\omega_6v_3^2\omega_{19}^2\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18} - 4\omega_6\omega_{19}c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} - 2\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18} -$
$2\omega_6\omega_{19}c_s^2\omega_7^2\omega_{11}^2\omega_8\omega_5\omega_{18} - 4\omega_{19}^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} + 2\omega_6\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18} + 4\omega_6\omega_{19}^2\omega_7^2\omega_{11}^2\omega_5\omega_{18} + 12v_3^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18} -$
$2\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_8\omega_5\omega_{18} - 12\omega_6v_3^2\omega_{19}^2\omega_7^2\omega_{11}^2\omega_5\omega_{18} + 8\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 4\omega_6\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18} + 4\omega_6\omega_{19}c_s^2\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18} -$
$4\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18} + 4\omega_6\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_8\omega_5\omega_{18} - 8\omega_6\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} + 4\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5 - 2\omega_6\omega_{19}^2\omega_7^2\omega_{11}^2\omega_8\omega_5\omega_{18} -$
$4\omega_6\omega_{19}^2\omega_7^2\omega_{11}^2\omega_{18} + 6\omega_6v_3^2\omega_{19}^2\omega_7^2\omega_{11}^2\omega_8\omega_5\omega_{18} + 12v_3^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} - 12\omega_6v_3^2\omega_{19}\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} - 4\omega_6\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5 +$
$12\omega_6v_3^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_5\omega_{18} - 2\omega_6\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} - 4\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5 + 3\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} +$
$4\omega_6\omega_{19}\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 12\omega_6v_3^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5 - 4\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_5\omega_{18} - 2\omega_6\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18} + 2\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5 +$
$2\omega_6\omega_{19}\omega_7^2\omega_{11}^2\omega_8\omega_5\omega_{18} + 4\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8 + 6\omega_6v_3^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18} - 12v_3^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} - 6\omega_6v_3^2\omega_{19}\omega_7^2\omega_{11}^2\omega_8\omega_5\omega_{18} +$
$4\omega_6\omega_{19}^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} - 4\omega_6\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5 + 4\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18} - 4\omega_6\omega_{19}\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18} - 12\omega_6v_3^2\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18} +$
$12\omega_6v_3^2\omega_{19}\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18} - 4\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{11}^2\omega_5\omega_{18} + 4\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} + 4\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5 + 3\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5 -$
$12\omega_6v_3^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}\omega_5\omega_{18} - 9\omega_6v_3^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5 + 4\omega_6\omega_{19}^2\omega_7\omega_{20}\omega_{11}\omega_5\omega_{18} - 12\omega_6v_3^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5 - 4\omega_6\omega_{19}^2\omega_7\omega_{11}^2\omega_5\omega_{18} +$
$4\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{11}^2\omega_{18} + 12\omega_6v_3^2\omega_{19}^2\omega_7\omega_{11}^2\omega_5\omega_{18} + 4\omega_6\omega_{19}^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5 + 9\omega_6v_3^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} - 4\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18} +$
$4\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_{18} + 12v_3^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5 - 4\omega_6\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}\omega_5\omega_{18} - 12\omega_6v_3^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_{18} + 2\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8 -$
$3\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} - 12v_3^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8 - 3\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5 - 4\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} + 2\omega_6c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} +$
$4\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_5\omega_{18} - 12v_3^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5 - 6\omega_6v_3^2\omega_{19}^2\omega_7^2\omega_{11}^2\omega_8\omega_{18} + 4\omega_6\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5 + 2\omega_6\omega_{19}^2\omega_7^2\omega_{11}^2\omega_8\omega_{18} -$
$8\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 6\omega_6v_3^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5 + 6\omega_6v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} - 4\omega_6\omega_{19}^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} - 2\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5 -$
$2\omega_6\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 12\omega_6v_3^2\omega_{19}^2\omega_7^2\omega_{11}^2\omega_{18} + 24\omega_6v_3^2\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 12\omega_6v_3^2\omega_{19}^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} - 4\omega_6\omega_{19}^2\omega_7\omega_{20}\omega_8\omega_5\omega_{18} +$
$12\omega_6v_3^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18} - 4\omega_6c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 2\omega_6\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 12\omega_6v_3^2\omega_{19}^2\omega_7\omega_{20}\omega_8\omega_5\omega_{18} - 4\omega_6\omega_{19}^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18} -$
$12\omega_6v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} - 2\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{11}^2\omega_8\omega_{18} - 6\omega_6v_3^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 2\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{11}^2\omega_8\omega_5\omega_{18} + 4\omega_6\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} -$
$4\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_{18} - 4\omega_6\omega_{19}^2c_s^2\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18} + 6\omega_6v_3^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8 - 4\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8 - 2\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8 -$
$24\omega_6v_3^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} - 6\omega_6v_3^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18} + 2\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_8\omega_5\omega_{18} + 4\omega_6\omega_{19}^2c_s^2\omega_7\omega_{11}^2\omega_5\omega_{18} + 2\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18} +$
$4\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18} + 4\omega_{19}^2c_s\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} - 6\omega_6v_3^2\omega_{19}^2\omega_7^2\omega_{20}\omega_8\omega_5\omega_{18} + 8\omega_6\omega_{19}^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}$

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

$5v_3^2\omega_{19}^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11} - 15\omega_{19}^2c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11} - 24v_3^2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}v_2^2\omega_{11}^2 + 36\omega_{19}^2c_s^2\omega_7^3v_2^2\omega_{11}^2 + 144\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}v_2^2\omega_{11}^2 +$
$12\omega_{19}^2c_s^2\omega_{10}\omega_7^3\omega_{11}^2 + 12v_3^2\omega_{19}^2c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{11}^2 + 156\omega_{19}^2c_s^4\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2 - 42\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2 - 12v_3^2\omega_{19}^2\omega_{23}v_2^2\omega_{11} +$
$36\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}v_2^2\omega_{11} - 6\omega_{19}^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{11} + 18v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2 + 12v_3^2\omega_{19}^2c_s^2\omega_{10}\omega_7^3\omega_{23}\omega_{11} - 6\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2\omega_{11}^2 -$
$18\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3v_2^2\omega_{11}^2 - 36\omega_{19}^2c_s^4\omega_{10}\omega_7^2\omega_{23}\omega_{11} - 12v_3^2\omega_{19}^2\omega_{10}\omega_7^3v_2^2\omega_{11}^2 + 12v_3^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{11}^2 + 12\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2v_2^2\omega_{11}^2 +$
$12v_3^2\omega_{19}^2\omega_7^3v_2^2\omega_{11}^2 - 12\omega_{19}^2c_s^2\omega_7^3\omega_{11}^2 - 18\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2 - 36v_3^2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}v_2^2\omega_{11} + 36\omega_{19}^2c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}v_2^2 -$
$12\omega_{19}^2c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{11}^2 - 6v_3^2\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{11} + 24\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}v_2^2\omega_{11}^2 + 12\omega_{19}^2c_s^2\omega_{10}\omega_7^2\omega_{23}\omega_{11} - 6v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{11}^2 +$
$5\omega_{19}^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11} - 24v_3^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}v_2^2\omega_{11}^2 - 12\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}v_2^2 + 12\omega_{19}^2c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{11} - 6c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2 -$
$12\omega_{19}^2\omega_7^3v_2^2\omega_{11}^2 + 12\omega_{16}\omega_{10}\omega_7^2\omega_{23}v_2^2\omega_{11}^2 - 12\omega_{19}\omega_{16}\omega_{10}\omega_7^2v_2^2\omega_{11}^2 - 12v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2 - \omega_{19}^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2 - 12\omega_{19}^2c_s^2\omega_{10}\omega_7^2\omega_{11}^2 -$
$36\omega_{19}^2c_s^4\omega_7^3\omega_{23}\omega_{11} + 12v_3^2\omega_{19}^2c_s^2\omega_7^3\omega_{11}^2 - 12\omega_{19}^2\omega_{10}\omega_7^2v_2^2\omega_{11}^2 + 24v_3^2\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}v_2^2\omega_{11} - 36\omega_{19}^2c_s^2\omega_{16}\omega_{10}\omega_7^2v_2^2\omega_{11}^2 - 36\omega_{19}^2c_s^2\omega_{10}\omega_7^3v_2^2\omega_{11}^2 +$
$6v_3^2\omega_{19}^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{11}^2 + 6\omega_{19}^2c_s^2\omega_{16}\omega_7^3\omega_{11}^2 + 9v_3^2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2\omega_{11} + 3\omega_{19}^2c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2 + 36\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{11}^2 -$
$6v_3^2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2 + v_3^2\omega_{19}^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2 - 36\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}v_2^2\omega_{11} + 12v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{11}^2 - 6v_3^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_2^2\omega_{11}^2 -$
$36\omega_{19}^2c_s^4\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{11} - 6c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2 + 72\omega_{19}^2c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}v_2^2\omega_{11} - 12v_3^2\omega_{19}^2c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{11} - 36\omega_{19}^2c_s^2\omega_7^3\omega_{23}v_2^2\omega_{11} -$
$9\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2\omega_{11} + 36\omega_{19}^2c_s^4\omega_7^3\omega_{11}^2 + 6\omega_{19}^2\omega_{16}\omega_7^3v_2^2\omega_{11}^2 - 45\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2\omega_{11}^2 - 12v_3^2\omega_{19}^2\omega_{10}\omega_7^2\omega_{23}v_2^2\omega_{11}$

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

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

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

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

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

2.3.5 Conservation of momentum: ρv_3

attached text file: `output_d3q27_nse_mrt2_symbolic_pde_03.txt`

$$
\begin{aligned}
& v_3\frac{\partial\rho}{\partial t} + \rho\frac{\partial v_3}{\partial t} + \frac{v_3v_1\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_1} + \frac{v_3\rho\delta_l}{\delta_t}\frac{\partial v_1}{\partial x_1} + \frac{\rho v_1\delta_l}{\delta_t}\frac{\partial v_3}{\partial x_1} + \frac{v_3v_2\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_2} + \frac{v_3\rho\delta_l}{\delta_t}\frac{\partial v_2}{\partial x_2} + \frac{\rho v_2\delta_l}{\delta_t}\frac{\partial v_3}{\partial x_2} + (v_3^2+c_s^2)\frac{\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_3} + \\
& \frac{2v_3\rho\delta_l}{\delta_t}\frac{\partial v_3}{\partial x_3} + (-2+\omega_6)\frac{c_s^2\delta_l^2}{2\omega_6\delta_t}\frac{\partial\rho}{\partial x_1}\frac{\partial v_3}{\partial x_1} + (-2+\omega_6)\frac{c_s^2\delta_l^2}{2\omega_6\delta_t}\frac{\partial\rho}{\partial x_1}\frac{\partial v_1}{\partial x_3} + (-2+\omega_7)\frac{c_s^2\delta_l^2}{2\delta_t\omega_7}\frac{\partial\rho}{\partial x_2}\frac{\partial v_3}{\partial x_2} + (-2+\omega_7)\frac{c_s^2\delta_l^2}{2\delta_t\omega_7}\frac{\partial\rho}{\partial x_2}\frac{\partial v_2}{\partial x_3} \\
& + (-2+6v_3^2+4c_s^2-3v_3^2\omega_{11}-2c_s^2\omega_{11}+\omega_{11})\frac{\delta_l^2}{\delta_t\omega_{11}}\frac{\partial\rho}{\partial x_3}\frac{\partial v_3}{\partial x_3} + (2-\omega_{11})\frac{3v_3\rho\delta_l^2}{\delta_t\omega_{11}}\left(\frac{\partial v_3}{\partial x_3}\right)^2 + (-2+\omega_6)\frac{c_s^2\rho\delta_l^2}{2\omega_6\delta_t}\frac{\partial^2 v_3}{\partial x_1^2} + \\
& (-2+\omega_7)\frac{c_s^2\rho\delta_l^2}{2\delta_t\omega_7}\frac{\partial^2 v_3}{\partial x_2^2} + (-2+\omega_6)\frac{c_s^2\rho\delta_l^2}{2\omega_6\delta_t}\frac{\partial^2 v_1}{\partial x_1\partial x_3} + (-2+\omega_7)\frac{c_s^2\rho\delta_l^2}{2\delta_t\omega_7}\frac{\partial^2 v_2}{\partial x_2\partial x_3} + \\
& (-2+2v_3^2+6c_s^2-v_3^2\omega_{11}-3c_s^2\omega_{11}+\omega_{11})\frac{v_3\delta_l^2}{2\delta_t\omega_{11}}\frac{\partial^2\rho}{\partial x_3^2} + (-2+6v_3^2+2c_s^2-3v_3^2\omega_{11}-c_s^2\omega_{11}+\omega_{11})\frac{\rho\delta_l^2}{2\delta_t\omega_{11}}\frac{\partial^2 v_3}{\partial x_3^2} + \\
& C_1\frac{v_3v_1\delta_l^3}{12\omega_6\delta_t\omega_{13}\omega_9}\frac{\partial^3\rho}{\partial x_1^3} + C_2\frac{v_3\rho\delta_l^3}{12\omega_6\delta_t\omega_{13}\omega_9}\frac{\partial^3 v_1}{\partial x_1^3} + C_3\frac{\rho v_1\delta_l^3}{6\omega_6^2\delta_t\omega_{13}}\frac{\partial^3 v_3}{\partial x_1^3} + \\
& (6\omega_6\omega_5+6\omega_6\omega_7\omega_8+6\omega_7\omega_5-6\omega_7\omega_8-\omega_6\omega_7\omega_8\omega_5-6\omega_6\omega_7\omega_5-6\omega_6\omega_8)\frac{v_3c_s^2\rho\delta_l^3}{6\omega_6\delta_t\omega_7\omega_8\omega_5}\frac{\partial^3 v_2}{\partial x_1^2\partial x_2} + \\
& (\omega_6\omega_7\omega_8+\omega_6^2+\omega_6\omega_7-\omega_7\omega_8-\omega_6\omega_8-\omega_6^2\omega_7)\frac{c_s^2\rho v_2\delta_l^3}{\omega_6^2\delta_t\omega_7\omega_8}\frac{\partial^3 v_3}{\partial x_1^2\partial x_2} + \\
& (6\omega_6\omega_5+6\omega_6\omega_7\omega_8+6\omega_7\omega_5-6\omega_7\omega_8-\omega_6\omega_7\omega_8\omega_5-6\omega_6\omega_7\omega_5-6\omega_6\omega_8)\frac{v_3c_s^2\rho\delta_l^3}{6\omega_6\delta_t\omega_7\omega_8\omega_5}\frac{\partial^3 v_1}{\partial x_1\partial x_2^2} + \\
& (\omega_6\omega_7\omega_8+\omega_6\omega_7-\omega_6\omega_7^2+\omega_7^2-\omega_7\omega_8-\omega_6\omega_8)\frac{c_s^2\rho v_1\delta_l^3}{\omega_6\delta_t\omega_7^2\omega_8}\frac{\partial^3 v_3}{\partial x_1\partial x_2^2} + C_4\frac{v_3v_2\delta_l^3}{12\delta_t\omega_{16}\omega_{10}\omega_7}\frac{\partial^3\rho}{\partial x_2^3} + C_5\frac{v_3\rho\delta_l^3}{12\delta_t\omega_{16}\omega_{10}\omega_7}\frac{\partial^3 v_2}{\partial x_2^3} + \\
& C_6\frac{\rho v_2\delta_l^3}{6\delta_t\omega_{16}\omega_7^2}\frac{\partial^3 v_3}{\partial x_2^3} + (-12+12\omega_6-\omega_6^2)\frac{c_s^4\delta_l^3}{6\omega_6^2\delta_t}\frac{\partial^3\rho}{\partial x_1^2\partial x_3} + (2\omega_6+\omega_6\omega_{13}-\omega_6^2-2\omega_{13})\frac{c_s^2\rho v_1\delta_l^3}{\omega_6^2\delta_t\omega_{13}}\frac{\partial^3 v_1}{\partial x_1^2\partial x_3} + \\
& (-12\omega_{11}\omega_{18}+12\omega_6^2-12\omega_6\omega_{18}-\omega_6^2\omega_{11}\omega_{18}-12\omega_6^2\omega_{11}+12\omega_6\omega_{11}\omega_{18}+12\omega_6\omega_{11})\frac{v_3c_s^2\rho\delta_l^3}{6\omega_6^2\delta_t\omega_{11}\omega_{18}}\frac{\partial^3 v_3}{\partial x_1^2\partial x_3} + \\
& (\omega_6\omega_7\omega_8+\omega_6^2+\omega_6\omega_7-\omega_7\omega_8-\omega_6\omega_8-\omega_6^2\omega_7)\frac{c_s^2\rho v_2\delta_l^3}{\omega_6^2\delta_t\omega_7\omega_8}\frac{\partial^3 v_1}{\partial x_1\partial x_2\partial x_3} + \\
& (\omega_6\omega_7\omega_8+\omega_6\omega_7-\omega_6\omega_7^2+\omega_7^2-\omega_7\omega_8-\omega_6\omega_8)\frac{c_s^2\rho v_1\delta_l^3}{\omega_6\delta_t\omega_7^2\omega_8}\frac{\partial^3 v_2}{\partial x_1\partial x_2\partial x_3} + (-12+12\omega_7-\omega_7^2)\frac{c_s^4\delta_l^3}{6\delta_t\omega_7^2}\frac{\partial^3\rho}{\partial x_2^2\partial x_3} + \\
& (\omega_{16}\omega_7-2\omega_{16}+2\omega_7-\omega_7^2)\frac{c_s^2\rho v_2\delta_l^3}{\delta_t\omega_{16}\omega_7^2}\frac{\partial^3 v_2}{\partial x_2^2\partial x_3} + \\
& (-12\omega_7^2\omega_{11}-12\omega_{19}\omega_{11}-\omega_{19}\omega_7^2\omega_{11}+12\omega_7^2+12\omega_{19}\omega_7\omega_{11}-12\omega_{19}\omega_7+12\omega_7\omega_{11})\frac{v_3c_s^2\rho\delta_l^3}{6\omega_{19}\delta_t\omega_7^2\omega_{11}}\frac{\partial^3 v_3}{\partial x_2^2\partial x_3} + \\
& C_7\frac{v_3v_1\delta_l^3}{\omega_6\delta_t\omega_{11}^2\omega_{18}}\frac{\partial^3\rho}{\partial x_1\partial x_3^2} + C_8\frac{v_3\rho\delta_l^3}{12\omega_6^2\delta_t\omega_{11}^2\omega_{18}}\frac{\partial^3 v_1}{\partial x_1\partial x_3^2} + C_9\frac{\rho v_1\delta_l^3}{\omega_6\delta_t\omega_{11}^2\omega_{18}}\frac{\partial^3 v_3}{\partial x_1\partial x_3^2} + C_{10}\frac{v_3v_2\delta_l^3}{\omega_{19}\delta_t\omega_7\omega_{11}^2}\frac{\partial^3\rho}{\partial x_2\partial x_3^2} + \\
& C_{11}\frac{v_3\rho\delta_l^3}{12\omega_{19}\delta_t\omega_7^2\omega_{11}^2}\frac{\partial^3 v_2}{\partial x_2\partial x_3^2} + C_{12}\frac{\rho v_2\delta_l^3}{\omega_{19}\delta_t\omega_7\omega_{11}^2}\frac{\partial^3 v_3}{\partial x_2\partial x_3^2} + C_{13}\frac{\delta_l^3}{12\delta_t\omega_{11}^2}\frac{\partial^3\rho}{\partial x_3^3} + \\
& (-24-4\omega_{11}^2+11v_3^2\omega_{11}^2+60v_3^2+36c_s^2-60v_3^2\omega_{11}-36c_s^2\omega_{11}+24\omega_{11}+5c_s^2\omega_{11}^2)\frac{v_3\rho\delta_l^3}{6\delta_t\omega_{11}^2}\frac{\partial^3 v_3}{\partial x_3^3} + C_{14}\frac{v_3\delta_l^4}{24\omega_6^2\delta_t\omega_{13}^2\omega_9^2}\frac{\partial^4\rho}{\partial x_1^4} + \\
& C_{15}\frac{v_3\rho v_1\delta_l^4}{12\omega_6^2\delta_t\omega_{13}^2\omega_9^2}\frac{\partial^4 v_1}{\partial x_1^4} + C_{16}\frac{\rho\delta_l^4}{24\omega_6^3\delta_t\omega_{13}^2}\frac{\partial^4 v_3}{\partial x_1^4} + C_{17}\frac{v_3v_1v_2\delta_l^4}{4\omega_{12}\omega_6^2\delta_t\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2}\frac{\partial^4\rho}{\partial x_1^3\partial x_2} +
\end{aligned}
$$

$$C_{18}\frac{v_3\rho v_2\delta_l^4}{4\omega_{12}\omega_6^2\delta_t\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2}\frac{\partial^4 v_1}{\partial x_1^3\partial x_2} + C_{19}\frac{v_3\rho v_1\delta_l^4}{12\omega_{12}\omega_6^2\delta_t\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2}\frac{\partial^4 v_2}{\partial x_1^3\partial x_2} + C_{20}\frac{\rho v_1 v_2\delta_l^4}{2\omega_6^3\delta_t\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2}\frac{\partial^4 v_3}{\partial x_1^3\partial x_2} +$$
$$C_{21}\frac{v_3c_s^4\delta_l^4}{6\omega_6^2\delta_t\omega_7^2\omega_8^2\omega_5^2}\frac{\partial^4\rho}{\partial x_1^2\partial x_2^2} + C_{22}\frac{v_3c_s^2\rho v_1\delta_l^4}{2\omega_{12}\omega_6^2\delta_t\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9}\frac{\partial^4 v_1}{\partial x_1^2\partial x_2^2} + C_{23}\frac{v_3c_s^2\rho v_2\delta_l^4}{2\omega_6^2\delta_t\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}}\frac{\partial^4 v_2}{\partial x_1^2\partial x_2^2} +$$
$$C_{24}\frac{c_s^2\rho\delta_l^4}{2\omega_6^3\delta_t\omega_{16}\omega_{13}\omega_7^3\omega_{17}\omega_{14}\omega_8^2}\frac{\partial^4 v_3}{\partial x_1^2\partial x_2^2} + C_{25}\frac{v_3v_1v_2\delta_l^4}{4\omega_6\delta_t\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}}\frac{\partial^4\rho}{\partial x_1\partial x_2^3} + C_{26}\frac{v_3\rho v_2\delta_l^4}{12\omega_6^2\delta_t\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}}\frac{\partial^4 v_1}{\partial x_1\partial x_2^3} +$$
$$C_{27}\frac{v_3\rho v_1\delta_l^4}{4\omega_6\delta_t\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}}\frac{\partial^4 v_2}{\partial x_1\partial x_2^3} + C_{28}\frac{\rho v_1v_2\delta_l^4}{2\omega_6^2\delta_t\omega_{16}^2\omega_7^3\omega_{17}\omega_8^2}\frac{\partial^4 v_3}{\partial x_1\partial x_2^3} + C_{29}\frac{v_3\delta_l^4}{24\delta_t\omega_{16}^2\omega_{10}^2\omega_7^2}\frac{\partial^4\rho}{\partial x_2^4} + C_{30}\frac{v_3\rho v_2\delta_l^4}{12\delta_t\omega_{16}^2\omega_{10}^2\omega_7^2}\frac{\partial^4 v_2}{\partial x_2^4} +$$
$$C_{31}\frac{\rho\delta_l^4}{24\delta_t\omega_{16}^2\omega_7^3}\frac{\partial^4 v_3}{\partial x_2^4} + C_{32}\frac{v_1\delta_l^4}{12\omega_6^3\omega_{22}\delta_t\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2}\frac{\partial^4\rho}{\partial x_1^3\partial x_3} + C_{33}\frac{\rho\delta_l^4}{12\omega_6^3\omega_{22}\delta_t\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2}\frac{\partial^4 v_1}{\partial x_1^3\partial x_3} +$$
$$C_{34}\frac{v_3\rho v_1\delta_l^4}{12\omega_6^3\omega_{22}\delta_t\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2}\frac{\partial^4 v_3}{\partial x_1^3\partial x_3} + C_{35}\frac{\delta_l^4}{2\omega_6^3\omega_{22}\omega_{19}\delta_t\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}}\frac{\partial^4\rho}{\partial x_1^2\partial x_2\partial x_3} +$$
$$C_{36}\frac{\rho\delta_l^4}{2\omega_6^3\omega_{22}\omega_{19}\delta_t\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}}\frac{\partial^4 v_1}{\partial x_1^2\partial x_2\partial x_3} + C_{37}\frac{\rho\delta_l^4}{12\omega_6^3\omega_{22}\omega_{19}\delta_t\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}}\frac{\partial^4 v_2}{\partial x_1^2\partial x_2\partial x_3} +$$
$$C_{38}\frac{v_3\rho\delta_l^4}{2\omega_6^3\omega_{22}\omega_{19}\delta_t\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2}\frac{\partial^4 v_3}{\partial x_1^2\partial x_2\partial x_3} + C_{39}\frac{\delta_l^4}{2\omega_6^2\omega_{19}\delta_t\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}}\frac{\partial^4\rho}{\partial x_1\partial x_2^2\partial x_3} +$$
$$C_{40}\frac{\rho\delta_l^4}{12\omega_6^3\omega_{19}\delta_t\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}}\frac{\partial^4 v_1}{\partial x_1\partial x_2^2\partial x_3} + C_{41}\frac{\rho v_2\delta_l^4}{\omega_6^2\omega_{19}\delta_t\omega_{16}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}}\frac{\partial^4 v_2}{\partial x_1\partial x_2^2\partial x_3} +$$
$$C_{42}\frac{\rho\delta_l^4}{2\omega_6^2\omega_{19}^2\delta_t\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}}\frac{\partial^4 v_3}{\partial x_1\partial x_2^2\partial x_3} + C_{43}\frac{v_2\delta_l^4}{12\omega_{19}\delta_t\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}}\frac{\partial^4\rho}{\partial x_2^3\partial x_3} +$$
$$C_{44}\frac{\rho\delta_l^4}{12\omega_{19}\delta_t\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}}\frac{\partial^4 v_2}{\partial x_2^3\partial x_3} + C_{45}\frac{v_3\rho v_2\delta_l^4}{12\omega_{19}^2\delta_t\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}^2}\frac{\partial^4 v_3}{\partial x_2^3\partial x_3} + C_{46}\frac{v_3\delta_l^4}{12\omega_6^3\omega_{22}\delta_t\omega_{13}\omega_{11}^3\omega_{18}^2}\frac{\partial^4\rho}{\partial x_1^2\partial x_3^2} +$$
$$C_{47}\frac{v_3\rho v_1\delta_l^4}{2\omega_6^3\omega_{22}\delta_t\omega_{13}^2\omega_{11}^3\omega_{18}^2\omega_9}\frac{\partial^4 v_1}{\partial x_1^2\partial x_3^2} + C_{48}\frac{\rho\delta_l^4}{12\omega_6^3\omega_{22}\delta_t\omega_{13}\omega_{11}^3\omega_{18}^2}\frac{\partial^4 v_3}{\partial x_1^2\partial x_3^2} + C_{49}\frac{v_3v_1v_2\delta_l^4}{\omega_6^2\omega_{19}^2\delta_t\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2}\frac{\partial^4\rho}{\partial x_1\partial x_2\partial x_3^2} +$$
$$C_{50}\frac{v_3\rho v_2\delta_l^4}{2\omega_6^3\omega_{19}^2\delta_t\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2}\frac{\partial^4 v_1}{\partial x_1\partial x_2\partial x_3^2} + C_{51}\frac{v_3\rho v_1\delta_l^4}{2\omega_6^2\omega_{19}^2\delta_t\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2}\frac{\partial^4 v_2}{\partial x_1\partial x_2\partial x_3^2} +$$
$$C_{52}\frac{\rho v_1v_2\delta_l^4}{\omega_6^2\omega_{19}^2\delta_t\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2}\frac{\partial^4 v_3}{\partial x_1\partial x_2\partial x_3^2} + C_{53}\frac{v_3\delta_l^4}{12\omega_{19}^2\delta_t\omega_{16}\omega_7^3\omega_{23}\omega_{11}^3}\frac{\partial^4\rho}{\partial x_2^2\partial x_3^2} + C_{54}\frac{v_3\rho v_2\delta_l^4}{2\omega_{19}^2\delta_t\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}^3}\frac{\partial^4 v_2}{\partial x_2^2\partial x_3^2} +$$
$$C_{55}\frac{\rho\delta_l^4}{12\omega_{19}^2\delta_t\omega_{16}\omega_7^3\omega_{23}\omega_{11}^3}\frac{\partial^4 v_3}{\partial x_2^2\partial x_3^2} + C_{56}\frac{v_1\delta_l^4}{4\omega_6^2\delta_t\omega_{11}^3\omega_{18}^2}\frac{\partial^4\rho}{\partial x_1\partial x_3^3} + C_{57}\frac{\rho\delta_l^4}{12\omega_6^3\delta_t\omega_{11}^3\omega_{18}^2}\frac{\partial^4 v_1}{\partial x_1\partial x_3^3} + C_{58}\frac{v_3\rho v_1\delta_l^4}{4\omega_6^2\delta_t\omega_{11}^3\omega_{18}^2}\frac{\partial^4 v_3}{\partial x_1\partial x_3^3} +$$
$$C_{59}\frac{v_2\delta_l^4}{4\omega_{19}^2\delta_t\omega_7^2\omega_{11}^3}\frac{\partial^4\rho}{\partial x_2\partial x_3^3} + C_{60}\frac{\rho\delta_l^4}{12\omega_{19}^2\delta_t\omega_7^3\omega_{11}^3}\frac{\partial^4 v_2}{\partial x_2\partial x_3^3} + C_{61}\frac{v_3\rho v_2\delta_l^4}{4\omega_{19}^2\delta_t\omega_7^2\omega_{11}^3}\frac{\partial^4 v_3}{\partial x_2\partial x_3^3} + C_{62}\frac{v_3\delta_l^4}{12\delta_t\omega_{11}^3}\frac{\partial^4\rho}{\partial x_3^4} + C_{63}\frac{\rho\delta_l^4}{12\delta_t\omega_{11}^3}\frac{\partial^4 v_3}{\partial x_3^4}$$
$$= 0,$$

where:

$$C_1 = 36c_s^2\omega_{13} + 6\omega_6\omega_{13} - 12v_1^2\omega_9 + \omega_6\omega_{13}v_1^2\omega_9 - 36c_s^2\omega_9 - 12\omega_{13} + 12\omega_{13}v_1^2 - 6\omega_6\omega_9 - \omega_6\omega_{13}\omega_9 - 18\omega_6c_s^2\omega_{13} + 6\omega_6v_1^2\omega_9 + 18\omega_6c_s^2\omega_9 - 6\omega_6\omega_{13}v_1^2 + 3\omega_6c_s^2\omega_{13}\omega_9 + 12\omega_9$$

$$C_2 = 12c_s^2\omega_{13} + 6\omega_6\omega_{13} - 36v_1^2\omega_9 + 3\omega_6\omega_{13}v_1^2\omega_9 - 12c_s^2\omega_9 - 12\omega_{13} + 36\omega_{13}v_1^2 - 6\omega_6\omega_9 - \omega_6\omega_{13}\omega_9 - 6\omega_6c_s^2\omega_{13} + 18\omega_6v_1^2\omega_9 + 6\omega_6c_s^2\omega_9 - 18\omega_6\omega_{13}v_1^2 + \omega_6c_s^2\omega_{13}\omega_9 + 12\omega_9$$

$$C_3 = -\omega_6^2\omega_{13}v_1^2 - 12c_s^2\omega_{13} + 6\omega_6 - 3\omega_6\omega_{13} - 3\omega_6^2 - 6\omega_6v_1^2 - 3\omega_6^2c_s^2\omega_{13} + 3\omega_6^2c_s^2 - 6\omega_6c_s^2 + 15\omega_6c_s^2\omega_{13} + 3\omega_6\omega_{13}v_1^2 + \omega_6^2\omega_{13} + 3\omega_6^2v_1^2$$

$$C_4 = 6\omega_{16}\omega_7 + \omega_{16}\omega_{10}\omega_7v_2^2 - 12\omega_{10}v_2^2 + 36c_s^2\omega_{16} - 6\omega_{10}\omega_7 - 36c_s^2\omega_{10} + 12\omega_{16}v_2^2 - 12\omega_{16} + 3c_s^2\omega_{16}\omega_{10}\omega_7 + 12\omega_{10} - 6\omega_{16}\omega_7v_2^2 - 18c_s^2\omega_{16}\omega_7 - \omega_{16}\omega_{10}\omega_7 + 18c_s^2\omega_{10}\omega_7 + 6\omega_{10}\omega_7v_2^2$$

$$C_5 = 6\omega_{16}\omega_7 + 3\omega_{16}\omega_{10}\omega_7v_2^2 - 36\omega_{10}v_2^2 + 12c_s^2\omega_{16} - 6\omega_{10}\omega_7 - 12c_s^2\omega_{10} + 36\omega_{16}v_2^2 - 12\omega_{16} + c_s^2\omega_{16}\omega_{10}\omega_7 + 12\omega_{10} - 18\omega_{16}\omega_7v_2^2 - 6c_s^2\omega_{16}\omega_7 - \omega_{16}\omega_{10}\omega_7 + 6c_s^2\omega_{10}\omega_7 + 18\omega_{10}\omega_7v_2^2$$

$$C_6 = -3\omega_{16}\omega_7 - 6c_s^2\omega_7 - 12c_s^2\omega_{16} - 6\omega_7v_2^2 - \omega_{16}\omega_7^2v_2^2 + 6\omega_7 + 3c_s^2\omega_7^2 + \omega_{16}\omega_7^2 - 3\omega_7^2 + 3\omega_7^2v_2^2 - 3c_s^2\omega_{16}\omega_7^2 + 3\omega_{16}\omega_7v_2^2 + 15c_s^2\omega_{16}\omega_7$$

$$C_7 = \omega_{11}^2 - 3\omega_6c_s^2\omega_{11} - \omega_{11}\omega_{18} - v_3^2\omega_{11}^2 + \omega_6v_3^2\omega_{18} - \omega_6\omega_{18} + v_3^2\omega_{11}\omega_{18} - \omega_6v_3^2\omega_{11}\omega_{18} + 3\omega_6c_s^2\omega_{11}^2 + \omega_6\omega_{11}\omega_{18} + \omega_6v_3^2\omega_{11}^2 + \omega_6\omega_{11} - \omega_6\omega_{11}^2 - \omega_6v_3^2\omega_{11} + 3c_s^2\omega_{11}\omega_{18} - 3c_s^2\omega_{11}^2 - 3\omega_6c_s^2\omega_{11}\omega_{18} + 3\omega_6c_s^2\omega_{18}$$

$$C_8 = -12\omega_6^2v_3^2\omega_{11} + 42\omega_6c_s^2\omega_{11}^2\omega_{18} - 3\omega_6^2v_3^2\omega_{11}^2\omega_{18} - 12\omega_6^2\omega_{11}^2 + 36\omega_6^2c_s^2\omega_{18} - 24c_s^2\omega_{11}^2\omega_{18} + 6\omega_6^2\omega_{11}\omega_{18} + 12\omega_6^2\omega_{11} - 6\omega_6\omega_{11}^2\omega_{18} - 18\omega_6^2c_s^2\omega_{11}\omega_{18} + 12\omega_6^2v_3^2\omega_{11}^2 - 12\omega_6c_s^2\omega_{11}^2 + 6\omega_6v_3^2\omega_{11}^2\omega_{18} - 11\omega_6^2c_s^2\omega_{11}^2\omega_{18} - 12\omega_6^2\omega_{18} + 3\omega_6^2\omega_{11}^2\omega_{18} + 12\omega_6^2c_s^2\omega_{11}^2 - 12\omega_6v_3^2\omega_{11}^2 - 12\omega_6^2c_s^2\omega_{11} + 12\omega_6\omega_{11}^2 - 24\omega_6c_s^2\omega_{11}\omega_{18} - 6\omega_6^2v_3^2\omega_{11}\omega_{18} + 12\omega_6^2v_3^2\omega_{18}$$

$$C_9 = \omega_{11}^2 - \omega_6c_s^2\omega_{11} - \omega_{11}\omega_{18} - 3v_3^2\omega_{11}^2 + 3\omega_6v_3^2\omega_{18} - \omega_6\omega_{18} + 3v_3^2\omega_{11}\omega_{18} - 3\omega_6v_3^2\omega_{11}\omega_{18} + \omega_6c_s^2\omega_{11}^2 + \omega_6\omega_{11}\omega_{18} + 3\omega_6v_3^2\omega_{11}^2 + \omega_6\omega_{11} - \omega_6\omega_{11}^2 - 3\omega_6v_3^2\omega_{11} + c_s^2\omega_{11}\omega_{18} - c_s^2\omega_{11}^2 - \omega_6c_s^2\omega_{11}\omega_{18} + \omega_6c_s^2\omega_{18}$$

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

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

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

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

$C_{14} = 48\omega_{13}^2v_1^4\omega_9 - 12\omega_6^2v_1^2\omega_9^2 - 30\omega_6^2\omega_{13}v_1^4\omega_9^2 - 36\omega_6^2\omega_{13}^2v_1^2\omega_9 + 48\omega_6c_s^2\omega_{13}^2\omega_9 - 24\omega_6c_s^4\omega_9^2 + 48\omega_{13}v_1^2\omega_9^2 + 12\omega_6^2c_s^2\omega_{13}\omega_9^2 + 72\omega_6^2c_s^2v_1^2\omega_9^2 - 12\omega_6^2c_s^2\omega_{13}^2v_1^2\omega_9^2 - 96\omega_6\omega_{13}^2v_1^4\omega_9 - 72\omega_6\omega_{13}^2v_1^2 + 12\omega_6^2c_s^2\omega_{13}^2 - 36\omega_6^2\omega_{13}^2v_1^4 - 96\omega_6\omega_{13}v_1^2\omega_9^2 + 216c_s^2\omega_{13}^2v_1^2\omega_9 - 24c_s^2\omega_{13}^2\omega_9 + 24\omega_6c_s^4\omega_{13}^2 + 48\omega_6\omega_{13}v_1^2\omega_9 - 48\omega_6c_s^4\omega_{13}^2\omega_9 + 150\omega_6^2c_s^2\omega_{13}^2v_1^2\omega_9 - 12\omega_6^2c_s^4\omega_{13}\omega_9^2 + 288\omega_6c_s^2\omega_{13}^2v_1^2 + 3\omega_6^2\omega_{13}^2v_1^2\omega_9^2 - 24\omega_6v_1^4\omega_9^2 - 432\omega_6c_s^2\omega_{13}^2v_1^2\omega_9 + 24c_s^4\omega_{13}^2\omega_9 - 12\omega_6^2c_s^2\omega_9^2 + 24\omega_6^2\omega_{13}v_1^4\omega_9 - 48\omega_6c_s^2\omega_{13}\omega_9^2 - 216c_s^2\omega_{13}v_1^2\omega_9^2 + 96\omega_6\omega_{13}^2v_1^2\omega_9 - 14\omega_6^2c_s^2\omega_{13}^2\omega_9 - 12\omega_6^2c_s^4\omega_{13}^2 + 72\omega_6^2c_s^2\omega_{13}v_1^2\omega_9 + 96\omega_6\omega_{13}v_1^4\omega_9^2 + 12\omega_6^2v_1^4\omega_9^2 - 144\omega_6c_s^2\omega_{13}v_1^2\omega_9 - 48\omega_{13}^2v_1^2\omega_9 + 24c_s^2\omega_{13}\omega_9^2 + 30\omega_6^2\omega_{13}v_1^2\omega_9^2 + 24\omega_6c_s^2\omega_9^2 + 36\omega_6^2\omega_{13}^2v_1^4\omega_9 - 48\omega_{13}v_1^4\omega_9^2 - 144\omega_6c_s^2v_1^2\omega_9^2 - \omega_6^2c_s^4\omega_{13}^2\omega_9^2 - 3\omega_6^2\omega_{13}^2v_1^4\omega_9^2 + 48\omega_6c_s^4\omega_{13}\omega_9^2 - 144\omega_6^2c_s^2\omega_{13}^2v_1^2 + 24\omega_6v_1^2\omega_9^2 + 14\omega_6^2c_s^4\omega_{13}^2\omega_9 + 432\omega_6c_s^2\omega_{13}v_1^2\omega_9^2 - 24\omega_6^2\omega_{13}v_1^2\omega_9 + 12\omega_6^2c_s^4\omega_9^2 + 36\omega_6^2\omega_{13}^2v_1^2 - 24\omega_6c_s^2\omega_{13}^2 - 126\omega_6^2c_s^2\omega_{13}v_1^2\omega_9^2 - 48\omega_6\omega_{13}v_1^4\omega_9 - 24c_s^4\omega_{13}\omega_9^2 + \omega_6^2c_s^2\omega_{13}^2\omega_9^2 + 72\omega_6\omega_{13}^2v_1^4$

$C_{15} = 24\omega_6^2v_1^2\omega_9^2 + 24\omega_6\omega_9^2 + 61\omega_6^2\omega_{13}^2v_1^2\omega_9 - 120\omega_6c_s^2\omega_{13}^2\omega_9 - 84\omega_{13}v_1^2\omega_9^2 - 33\omega_6^2c_s^2\omega_{13}\omega_9^2 + 120\omega_6\omega_{13}^2v_1^2 - 36\omega_6^2c_s^2\omega_{13}^2 + 168\omega_6\omega_{13}v_1^2\omega_9^2 + 21\omega_6^2\omega_{13}\omega_9^2 + 60c_s^2\omega_{13}^2\omega_9 - 72\omega_6\omega_{13}v_1^2\omega_9 - 12\omega_6^2\omega_{13}\omega_9 - 48\omega_6\omega_{13}^2 + 36\omega_{13}\omega_9^2 - 5\omega_6^2\omega_{13}^2v_1^2\omega_9^2 + 72\omega_6\omega_{13}^2\omega_9 + 12\omega_6^2c_s^2\omega_{13}\omega_9 + 24\omega_6^2c_s^2\omega_9^2 + 24\omega_6\omega_{13}\omega_9 + 120\omega_6c_s^2\omega_{13}\omega_9^2 - 168\omega_6\omega_{13}^2v_1^2\omega_9 + 39\omega_6^2c_s^2\omega_{13}^2\omega_9 + 84\omega_{13}^2v_1^2\omega_9 - 60c_s^2\omega_{13}\omega_9^2 - 25\omega_6^2\omega_{13}^2\omega_9 - 51\omega_6^2\omega_{13}v_1^2\omega_9^2 - 48\omega_6c_s^2\omega_9^2 + 24\omega_6^2\omega_{13}^2 - 48\omega_6v_1^2\omega_9^2 + 2\omega_6^2\omega_{13}^2\omega_9^2 + 36\omega_6^2\omega_{13}v_1^2\omega_9 - 60\omega_6^2\omega_{13}^2v_1^2 + 72\omega_6c_s^2\omega_{13}^2 - 12\omega_6^2\omega_9^2 - 24\omega_6c_s^2\omega_{13}\omega_9 - 36\omega_{13}^2\omega_9 - 72\omega_6\omega_{13}\omega_9^2 - 3\omega_6^2c_s^2\omega_{13}^2\omega_9^2$

$C_{16} = -24\omega_6^2v_1^4 - 72\omega_6^2\omega_{13}v_1^2 - 48\omega_6\omega_{13}v_1^4 + 48\omega_6^2c_s^2\omega_{13}v_1^2 - 24\omega_6\omega_{13}^2v_1^2 - 8\omega_6^2c_s^2\omega_{13}^2 + 24\omega_6c_s^4\omega_{13} - 24\omega_6^2\omega_{13}^2v_1^4 - 3\omega_6^3c_s^4\omega_{13}^2 - 48\omega_6c_s^4\omega_{13}^2 - 24\omega_6^2c_s^2v_1^2 + 6\omega_6^3c_s^4\omega_{13} - 12\omega_6^3c_s^2\omega_{13}v_1^2 - 3\omega_6^3\omega_{13}^2v_1^2 + 12\omega_6^3v_1^4 + 24\omega_6^2c_s^2\omega_{13} + 156\omega_6c_s^2\omega_{13}^2v_1^2 - 18\omega_6^3\omega_{13}v_1^4 - 96c_s^2\omega_{13}^2v_1^2 + 3\omega_6^3\omega_{13}^2v_1^4 - 12\omega_6^3v_1^2 + 24\omega_6^2c_s^4\omega_{13}^2 - 24\omega_6c_s^2\omega_{13} + \omega_6^3c_s^2\omega_{13}^2 + 6\omega_6^3c_s^2\omega_{13}^2v_1^2 + 18\omega_6^3\omega_{13}v_1^2 - 24\omega_6c_s^2\omega_{13}v_1^2 - 72\omega_6^2c_s^2\omega_{13}^2v_1^2 + 48\omega_6\omega_{13}v_1^2 + 24\omega_6^2v_1^2 + 72\omega_6^2\omega_{13}v_1^4 + 24c_s^4\omega_{13}^2 + 24\omega_6^2\omega_{13}^2v_1^2 + 12\omega_6c_s^2\omega_{13}^2 - 6\omega_6^3c_s^2\omega_{13} + 12\omega_6^3c_s^2v_1^2 - 24\omega_6^2c_s^4\omega_{13} + 24\omega_6\omega_{13}^2v_1^4$

$C_{17} = -12\omega_{12}\omega_6c_s^2\omega_{13}^2\omega_7\omega_8\omega_5\omega_9^2 - 12\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9 - 4\omega_{12}\omega_6\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9 - 4\omega_{12}\omega_6^2\omega_{13}^2\omega_7v_1^2\omega_5\omega_9^2 + 4\omega_{12}\omega_6\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_5\omega_9 - 12\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_5\omega_9^2 - 8\omega_{12}\omega_6\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8\omega_5\omega_9 - 4\omega_{12}\omega_6\omega_{13}v_1^2\omega_{14}\omega_8\omega_5\omega_9^2 + 4\omega_{12}\omega_6^2\omega_{13}^2\omega_{14}\omega_5\omega_9 + 2\omega_{12}\omega_6^2\omega_7v_1^2\omega_{14}\omega_8\omega_5\omega_9^2 - 6\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9 + 12\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_9 + 4\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9 - 4\omega_{12}\omega_6\omega_{13}^2\omega_7v_1^2\omega_8\omega_5\omega_9^2 - 2\omega_{12}\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^2 - 4\omega_{12}\omega_6^2\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8\omega_5\omega_9 - 4\omega_{12}\omega_6\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_5\omega_9^2 + 4\omega_{12}\omega_6\omega_7\omega_{14}\omega_8\omega_5\omega_9^2 + 2\omega_6^2\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_5\omega_9^2 + 24\omega_{12}\omega_6c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2 - 2\omega_{12}\omega_6^2\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8\omega_5 + 2\omega_{12}\omega_6^2\omega_{13}^2\omega_8\omega_5\omega_9^2 - 4\omega_{12}\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5 + 12\omega_{12}\omega_6c_s^2\omega_{13}\omega_7\omega_8\omega_5\omega_9^2 - 24\omega_{12}\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9 + 6\omega_{12}\omega_6^2c_s^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2 + 4\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_9^2 + 4\omega_{12}\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_9 - 6\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5 - 4\omega_6\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8\omega_5\omega_9 - 12\omega_{12}\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_5\omega_9 - 12\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_9 + 4\omega_{12}\omega_6\omega_{13}\omega_{14}\omega_8\omega_5\omega_9^2 - 2\omega_{12}\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^2 - 3\omega_{12}\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9 + 4\omega_{12}\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8\omega_5\omega_9 + 4\omega_6\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8\omega_5\omega_9^2 + 2\omega_{12}\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5 - 4\omega_{12}\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_9 + 6\omega_{12}\omega_6^2c_s^2\omega_{13}\omega_{14}\omega_8\omega_5\omega_9^2 + 2\omega_{12}\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2 - 4\omega_{12}\omega_6\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8\omega_9 - 12\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_9^2 + 2\omega_{12}\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9 + 4\omega_{12}\omega_6\omega_{13}^2\omega_7v_1^2\omega_5\omega_9^2 - 12\omega_{12}c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2 - 4\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2 + 12\omega_{12}\omega_6c_s^2\omega_{13}^2\omega_7\omega_5\omega_9^2 + 12\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2 + 12\omega_{12}c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9 + 4\omega_{12}\omega_6^2\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_9 + 4\omega_{12}\omega_6\omega_{13}\omega_7v_1^2\omega_8\omega_5\omega_9^2 - 4\omega_{12}\omega_6^2\omega_{13}^2\omega_5\omega_9^2 - 4\omega_6\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8\omega_9^2 + 8\omega_{12}\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9 - 4\omega_{12}\omega_6\omega_{13}^2\omega_7\omega_5\omega_9^2 - 4\omega_{12}\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_5\omega_9 - 4\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_9^2 + 12\omega_{12}\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_9 + 2\omega_{12}\omega_6^2\omega_{13}\omega_7\omega_8\omega_5\omega_9^2 - 6\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_8\omega_5\omega_9^2 + 4\omega_{12}\omega_6^2\omega_{13}^2v_1^2\omega_5\omega_9^2 + 4\omega_{12}\omega_6\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8\omega_9 + 6\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9 - 8\omega_{12}\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2 + 3\omega_{12}\omega_6^2\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8\omega_5\omega_9 - 12\omega_{12}\omega_6c_s^2\omega_{13}\omega_{14}\omega_8\omega_5\omega_9^2 - 4\omega_{12}\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9 + 3\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2 - 4\omega_{12}\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_9 + 12\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_5\omega_9^2 + 9\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9 - 12\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_9^2 + 12\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_9^2 + 2\omega_6^2\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8\omega_5\omega_9 - 12\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_5\omega_9 - 6\omega_{12}\omega_6^2c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2 - 2\omega_{12}\omega_6^2\omega_{13}\omega_7v_1^2\omega_8\omega_5\omega_9^2 + 4\omega_{12}\omega_6^2\omega_{13}^2\omega_7\omega_5\omega_9^2 + 4\omega_6^2\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8\omega_9^2 + 4\omega_{12}\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2 + 8\omega_{12}\omega_6\omega_{13}\omega_7v_1^2\omega_{14}\omega_8\omega_5\omega_9^2 - 2\omega_{12}\omega_6^2\omega_{13}^2\omega_7\omega_8\omega_5\omega_9^2 - 4\omega_{12}\omega_6^2\omega_{13}^2v_1^2\omega_{14}\omega_5\omega_9 + 6\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_8\omega_5\omega_9^2 - 4\omega_6^2\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_9^2 - 2\omega_{12}\omega_6^2\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_5\omega_9 - 2\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9 + 2\omega_{12}\omega_6^2\omega_{13}^2\omega_7v_1^2\omega_8\omega_5\omega_9^2 - 3\omega_6^2\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8\omega_5\omega_9^2 + 2\omega_{12}\omega_6^2\omega_{13}v_1^2\omega_{14}\omega_8\omega_5\omega_9^2 + 4\omega_{12}\omega_6\omega_{13}^2\omega_7\omega_8\omega_5\omega_9^2 + 12\omega_{12}\omega_6c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9 - 4\omega_{12}\omega_6\omega_7v_1^2\omega_{14}\omega_8\omega_5\omega_9^2 - 2\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^2 - 9\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2 + 4\omega_{12}\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_5\omega_9 - 4\omega_{12}\omega_6\omega_{13}\omega_7\omega_8\omega_5\omega_9^2 + 4\omega_{12}\omega_6^2\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_5\omega_9 + 4\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_9^2 + 4\omega_{12}\omega_6\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8\omega_5 + 12\omega_{12}\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5 + 12\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_5\omega_9 - 4\omega_{12}\omega_{13}\omega_7v_1^2\omega_{14}\omega_8\omega_5\omega_9^2 - 6\omega_{12}\omega_6^2c_s^2\omega_{13}\omega_7\omega_8\omega_5\omega_9^2 - 12\omega_{12}\omega_6c_s^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2 - 2\omega_{12}\omega_6^2\omega_{13}^2v_1^2\omega_8\omega_5\omega_9^2 + 6\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^2$

$C_{18} = -4\omega_{12}\omega_6c_s^2\omega_{13}^2\omega_7\omega_8\omega_5\omega_9^2 - 4\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9 - 4\omega_{12}\omega_6\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9 - 12\omega_{12}\omega_6^2\omega_{13}^2\omega_7v_1^2\omega_5\omega_9^2 + 12\omega_{12}\omega_6\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_5\omega_9 - 4\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_5\omega_9^2 - 24\omega_{12}\omega_6\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8\omega_5\omega_9 - 12\omega_{12}\omega_6\omega_{13}v_1^2\omega_{14}\omega_8\omega_5\omega_9^2 + 4\omega_{12}\omega_6^2\omega_{13}^2\omega_{14}\omega_5\omega_9 + 6\omega_{12}\omega_6^2\omega_7v_1^2\omega_{14}\omega_8\omega_5\omega_9^2 - 2\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9 + 4\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_9 + 4\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9 - 12\omega_{12}\omega_6\omega_{13}^2\omega_7v_1^2\omega_8\omega_5\omega_9^2 - 2\omega_{12}\omega_6^2\omega_{13}\omega_{14}\omega_8\omega_5\omega_9^2 - 6\omega_{12}\omega_6^2\omega_{13}\omega_7v_1^2\omega_{14}\omega_8\omega_5\omega_9^2 - 12\omega_{12}\omega_6\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_5\omega_9 + 4\omega_{12}\omega_6\omega_7\omega_{14}\omega_8\omega_5\omega_9^2 + 6\omega_6^2\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_5\omega_9^2 + 8\omega_{12}\omega_6c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2 - 6\omega_{12}\omega_6^2\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8\omega_5 + 2\omega_{12}\omega_6^2\omega_{13}^2\omega_8\omega_5\omega_9^2 - 4\omega_{12}\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5 + 4\omega_{12}\omega_6c_s^2\omega_{13}\omega_7\omega_8\omega_5\omega_9^2 - 8\omega_{12}\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9 + 2\omega_{12}\omega_6^2c_s^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2 + 4\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_9^2 + 4\omega_{12}\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_9 - 2\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5 - 12\omega_6\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8\omega_5\omega_9 - 4\omega_{12}\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_5\omega_9 - 4\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_9 + 4\omega_{12}\omega_6\omega_{13}\omega_{14}\omega_8\omega_5\omega_9^2 - 2\omega_{12}\omega_6^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2 - 3\omega_{12}\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9 + 12\omega_{12}\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8\omega_5\omega_9 + 12\omega_6\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8\omega_5\omega_9^2 + 2\omega_{12}\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5 - 4\omega_{12}\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_9 + 2\omega_{12}\omega_6^2c_s^2\omega_{13}\omega_{14}\omega_8\omega_5\omega_9^2 + 2\omega_{12}\omega_6^2\omega_{13}\omega_7v_1^2\omega_{14}\omega_8\omega_5\omega_9^2 - 12\omega_{12}\omega_6^2\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8\omega_9 - 4\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_9^2 + 2\omega_{12}\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9 + 12\omega_{12}\omega_6\omega_{13}^2\omega_7v_1^2\omega_5\omega_9^2 - 4\omega_{12}c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2 - 4\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2 + 4\omega_{12}\omega_6c_s^2\omega_{13}^2\omega_7\omega_5\omega_9^2 + 4\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2 + 4\omega_{12}c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9 + 12\omega_{12}\omega_6^2\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_9 + 12\omega_{12}\omega_6\omega_{13}\omega_7v_1^2\omega_8\omega_5\omega_9^2 - 4\omega_{12}\omega_6^2\omega_{13}^2\omega_5\omega_9^2 - 12\omega_6\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8\omega_9^2 + 8\omega_{12}\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9 - 4\omega_{12}\omega_6\omega_{13}^2\omega_7\omega_5\omega_9^2 - 4\omega_{12}\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_5\omega_9 - 4\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_9^2 + 4\omega_{12}\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_9 + 2\omega_{12}\omega_6^2\omega_{13}\omega_7\omega_8\omega_5\omega_9^2 - 2\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_8\omega_5\omega_9^2 + 12\omega_{12}\omega_6^2\omega_{13}^2v_1^2\omega_5\omega_9^2 + 12\omega_{12}\omega_6\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8\omega_9 + 2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9 - 8\omega_{12}\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2 + 9\omega_{12}\omega_6^2\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8\omega_5\omega_9 - 4\omega_{12}\omega_6c_s^2\omega_{13}\omega_{14}\omega_8\omega_5\omega_9^2 - 4\omega_{12}\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9 + 3\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2 - 4\omega_{12}\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_9 +$

$4\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_5\omega_9^2 + 3\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9 - 4\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_9^2 + 4\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_9^2 + 6\omega_6^2\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8\omega_5\omega_9 -$
$4\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_5\omega_9 - 2\omega_{12}\omega_6^2c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2 - 6\omega_{12}\omega_6^2\omega_{13}\omega_7v_1^2\omega_8\omega_5\omega_9^2 + 4\omega_{12}\omega_6^2\omega_{13}^2\omega_7\omega_5\omega_9^2 + 12\omega_6^2\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8\omega_9^2 +$
$4\omega_{12}\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2 + 24\omega_{12}\omega_6\omega_{13}\omega_7v_1^2\omega_{14}\omega_8\omega_5\omega_9^2 - 2\omega_{12}\omega_6^2\omega_{13}^2\omega_7\omega_8\omega_5\omega_9^2 - 12\omega_{12}\omega_6^2\omega_{13}^2v_1^2\omega_{14}\omega_5\omega_9 + 2\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_8\omega_5\omega_9^2 -$
$12\omega_6^2\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_9^2 - 6\omega_{12}\omega_6^2\omega_{13}^2v_1^2\omega_{14}\omega_8\omega_5\omega_9 - 2\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9 + 6\omega_{12}\omega_6^2\omega_{13}^2\omega_7v_1^2\omega_8\omega_5\omega_9^2 - 9\omega_6^2\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8\omega_5\omega_9^2 +$
$6\omega_{12}\omega_6^2\omega_{13}v_1^2\omega_{14}\omega_8\omega_5\omega_9^2 + 4\omega_{12}\omega_6\omega_{13}^2\omega_7\omega_8\omega_5\omega_9^2 + 4\omega_{12}\omega_6c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9 - 12\omega_{12}\omega_6\omega_7v_1^2\omega_{14}\omega_8\omega_5\omega_9^2 - 2\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^2 -$
$3\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2 + 4\omega_{12}\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_5\omega_9 - 4\omega_{12}\omega_6\omega_{13}\omega_7\omega_8\omega_5\omega_9^2 + 12\omega_{12}\omega_6^2\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_5\omega_9 + 4\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_9^2 +$
$12\omega_{12}\omega_6\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8\omega_5 + 4\omega_{12}\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5 + 4\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_5\omega_9 - 12\omega_{12}\omega_{13}\omega_7v_1^2\omega_{14}\omega_8\omega_5\omega_9^2 - 2\omega_{12}\omega_6^2c_s^2\omega_{13}\omega_7\omega_8\omega_5\omega_9^2 -$
$4\omega_{12}\omega_6c_s^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2 - 6\omega_{12}\omega_6^2\omega_{13}^2v_1^2\omega_8\omega_5\omega_9^2 + 2\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^2$

$C_{19} = 12\omega_6\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9 + 12\omega_6\omega_{13}^2\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2 + 12\omega_{12}\omega_{13}^2\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9 + 30\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_9^2 -$
$12\omega_{12}\omega_6^2\omega_{13}^2\omega_7^2v_1^2\omega_8\omega_5^2\omega_9^2 - 12\omega_{12}\omega_6\omega_{13}^2\omega_7^2v_1^2\omega_8^2\omega_5^2\omega_9^2 - 6\omega_{12}\omega_6^2\omega_{13}^2\omega_7^2\omega_8^2\omega_5^2\omega_9^2 - 6\omega_{12}\omega_6\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2 - 6\omega_{12}\omega_6^2\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^2 -$
$12\omega_6^2\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8^2\omega_5\omega_9^2 + 12\omega_6^2c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2 + 42\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^2 - 12\omega_6c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9 - \omega_{12}\omega_6^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2 -$
$12\omega_{12}\omega_6\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2 + 6\omega_{12}\omega_6^2\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8^2\omega_5\omega_9^2 + 6\omega_{12}\omega_6\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2 - 54\omega_{12}\omega_6c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9 +$
$18\omega_{12}\omega_6^2c_s^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2 - 12\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^2 - 36\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2 + 12\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_8\omega_5^2\omega_9^2 + 12\omega_{12}\omega_6^2\omega_{13}^2\omega_7v_1^2\omega_8\omega_5^2\omega_9^2 +$
$12\omega_{12}\omega_6c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_5^2\omega_9^2 - 42\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2 - 18\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2 + 12\omega_{12}\omega_6\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2 + 6\omega_{12}\omega_6^2\omega_{13}\omega_7^2\omega_8^2\omega_5^2\omega_9^2 +$
$54\omega_{12}\omega_6c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2 - 18\omega_{12}\omega_6\omega_{13}^2\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9 - 6\omega_{12}\omega_6^2\omega_{13}^2\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5\omega_9^2 + 6\omega_{12}\omega_6^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2 +$
$3\omega_{12}\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2 - 6\omega_{12}\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_8^2\omega_5^2\omega_9^2 + 12\omega_{12}\omega_6\omega_{13}^2\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5^2 + 24\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_9^2 - 12\omega_{12}\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2 -$
$4\omega_{12}\omega_6^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9 + 12\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9 - 12\omega_{12}\omega_6^2\omega_{13}^2\omega_7^2\omega_8^2\omega_5^2\omega_9^2 - 12\omega_{12}\omega_6^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9 - 12\omega_{12}\omega_6\omega_{13}\omega_7^2\omega_8^2\omega_5^2\omega_9^2 -$
$6\omega_{12}\omega_6^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2 - 12\omega_6^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2 + 12\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_5^2\omega_9^2 + 12\omega_{12}\omega_6\omega_{13}\omega_7^2v_1^2\omega_8^2\omega_5^2\omega_9^2 + 12\omega_6c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2 +$
$6\omega_{12}\omega_6^2\omega_{13}^2\omega_7^2v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^2 + 36\omega_{12}c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9 + 12\omega_{12}\omega_6\omega_{13}^2\omega_7^2\omega_8^2\omega_5^2\omega_9^2 + 12\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^2 - 3\omega_{12}\omega_6^2\omega_{13}\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2 +$
$12\omega_{12}\omega_6c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8\omega_5\omega_9^2 + 12\omega_6^2\omega_{13}^2\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5\omega_9^2 - 12\omega_6\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2 - 12\omega_6\omega_{13}^2\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9 + 6\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7^2\omega_8^2\omega_5^2\omega_9^2 +$
$12\omega_{12}\omega_6c_s^2\omega_{13}^2\omega_7^2\omega_8\omega_5^2\omega_9^2 - 36\omega_{12}c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2 - 6\omega_{12}\omega_6^2\omega_{13}^2\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5^2 + 12\omega_{12}\omega_6^2c_s^2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^2 + 12\omega_{12}\omega_6c_s^2\omega_{13}\omega_7^2\omega_8^2\omega_5^2\omega_9^2 -$
$24\omega_{12}\omega_6c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_9^2 - 6\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2 + 6\omega_6^2c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9 - 18\omega_{12}\omega_6\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2 - 12\omega_6c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2 -$
$12\omega_{12}\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^2 - 12\omega_{12}\omega_6\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2 + 12\omega_6\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2 + 6\omega_{12}\omega_6^2\omega_{13}^2\omega_7\omega_8^2\omega_5^2\omega_9^2 - 9\omega_6^2\omega_{13}^2\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2 -$
$54\omega_{12}\omega_6c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_9^2 + 18\omega_{12}\omega_6\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9 + \omega_{12}\omega_6^2\omega_{13}^2\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2 + 12\omega_{12}\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2 -$
$12\omega_{12}\omega_6\omega_{13}^2\omega_7^2\omega_8\omega_5^2\omega_9^2 - 12\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8^2\omega_5\omega_9^2 - 9\omega_{12}\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2 - 6\omega_{12}\omega_6^2\omega_{13}\omega_7^2v_1^2\omega_8^2\omega_5^2\omega_9^2 + 12\omega_{12}\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2 -$
$12\omega_{12}\omega_6c_s^2\omega_{13}^2\omega_7^2\omega_8^2\omega_5^2\omega_9^2 - 12\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7^2\omega_8\omega_5^2\omega_9^2 - 12\omega_{12}\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9 + 9\omega_6^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2 - 12\omega_{12}\omega_{13}\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2 +$
$54\omega_{12}\omega_6c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2 + 12\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9 + 12\omega_{12}\omega_6^2\omega_{13}^2\omega_7^2\omega_8\omega_5^2\omega_9^2 + 6\omega_{12}\omega_6^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2 +$
$12\omega_{12}\omega_6\omega_{13}^2\omega_7^2v_1^2\omega_8\omega_5^2\omega_9^2 - 6\omega_6^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9 + 6\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2 + 3\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2 - 24\omega_{12}\omega_6c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9 +$
$6\omega_{12}\omega_6^2\omega_{13}^2\omega_7^2v_1^2\omega_8^2\omega_5^2\omega_9^2 + 6\omega_{12}\omega_6\omega_{13}^2\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5\omega_9^2 + 12\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2 - 24\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_9^2 +$
$24\omega_{12}c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_9^2 + 4\omega_{12}\omega_6^2\omega_{13}^2\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9 + 24\omega_{12}\omega_6c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2 + 6\omega_{12}\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2 -$
$6\omega_{12}\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_8^2\omega_5^2\omega_9^2 - 36\omega_{12}\omega_6c_s^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2 + 6\omega_6^2\omega_{13}^2\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9 - 12\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8\omega_5\omega_9^2 - 12\omega_6\omega_{13}^2\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5\omega_9^2 -$
$6\omega_{12}\omega_6^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_9^2 + 6\omega_6^2\omega_{13}^2\omega_7\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2 - 6\omega_{12}\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^2 - 12\omega_{12}\omega_6^2c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_5^2\omega_9^2 + 18\omega_{12}\omega_6\omega_{13}\omega_7^2v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2 -$
$6\omega_{12}\omega_6^2\omega_{13}^2\omega_7^2v_1^2\omega_8^2\omega_5^2\omega_9^2 - 24\omega_{12}c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2 - 9\omega_6^2c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2 - 6\omega_{12}\omega_6\omega_{13}^2\omega_7^2v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^2 + 36\omega_{12}\omega_6c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2$

$C_{20} = -\omega_6^3\omega_{13}^2\omega_7^2\omega_{14}\omega_8 + 2\omega_6\omega_{13}\omega_7^2\omega_{14}\omega_8^2 + \omega_6\omega_{13}^2\omega_7^2v_1^2\omega_{14}\omega_8^2 + 2\omega_6^2c_s^2\omega_{13}^2\omega_7^2\omega_8 - \omega_6^3\omega_7^2\omega_{14}\omega_8^2 - \omega_6^2\omega_{13}^2\omega_7^2v_1^2\omega_{14}\omega_8 - \omega_6^3\omega_{13}\omega_7^2v_1^2\omega_8^2 -$
$\omega_6^3c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2 + 2\omega_6^2c_s^2\omega_{13}^2\omega_7^2\omega_{14} + 2\omega_6^2\omega_{13}^2\omega_7^2v_1^2\omega_8 + 2\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_{14} - \omega_6^3\omega_{13}\omega_7\omega_{14}\omega_8^2 + 2\omega_6^3\omega_{13}^2\omega_7^2\omega_8 - 2\omega_6^2c_s^2\omega_7^2\omega_{14}\omega_8^2 + \omega_6^3\omega_7^2v_1^2\omega_{14}\omega_8^2 +$
$6\omega_6c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8 + 2\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_8 - 7\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8 - 4\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2 - 2\omega_6\omega_{13}\omega_7^2v_1^2\omega_{14}\omega_8^2 + 2\omega_6^2\omega_{13}^2\omega_7^2\omega_8^2 + 2\omega_6^3\omega_{13}^2\omega_7v_1^2\omega_8 -$
$5\omega_6^2c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2 - \omega_6^3\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8 - \omega_6^3c_s^2\omega_{13}^2\omega_7\omega_8^2 - \omega_6^3\omega_{13}^2\omega_7v_1^2\omega_8^2 - 2\omega_6^2\omega_{13}^2\omega_7^2\omega_8 - 11\omega_6^2c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8 + 4\omega_6^2\omega_{13}\omega_7^2v_1^2\omega_{14}\omega_8^2 -$
$2\omega_6^2\omega_{13}^2\omega_7^2v_1^2\omega_8^2 - \omega_6^3\omega_{13}^2\omega_7^2\omega_8^2 + 13\omega_6c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2 + 2\omega_6^2\omega_7^2\omega_{14}\omega_8^2 - \omega_6^2\omega_{13}^2\omega_7^2v_1^2\omega_{14}\omega_8^2 - \omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2 - \omega_6^3c_s^2\omega_{13}\omega_7^2\omega_8^2 -$
$2\omega_6^2c_s^2\omega_{13}\omega_7\omega_{14}\omega_8^2 - 2\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8^2 - 2\omega_6^2c_s^2\omega_{13}^2\omega_7^2\omega_8^2 + \omega_6^3\omega_{13}\omega_7v_1^2\omega_{14}\omega_8^2 + 4\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8 + \omega_6^3\omega_{13}^2\omega_7^2v_1^2\omega_8^2 - 6\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2 +$
$\omega_6^3\omega_{13}\omega_7^2\omega_8^2 - \omega_6\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2 + 4\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2 + \omega_6^3c_s^2\omega_{13}^2\omega_7^2\omega_8^2 + \omega_6^3\omega_{13}^2\omega_7^2v_1^2\omega_{14}\omega_8 + \omega_6^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2 + 2\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_8^2 + \omega_6^3\omega_{13}^2\omega_7\omega_8^2 -$
$2\omega_6c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2 - 2\omega_6^3c_s^2\omega_{13}^2\omega_7^2\omega_{14} - 2\omega_6^2\omega_{13}\omega_7v_1^2\omega_{14}\omega_8^2 + 2\omega_6^2\omega_{13}\omega_7^2v_1^2\omega_8^2 + \omega_6^3\omega_{13}\omega_7\omega_{14}\omega_8 - 2\omega_6^3\omega_{13}^2\omega_7\omega_8 - 2\omega_6^3c_s^2\omega_{13}^2\omega_7^2\omega_8 +$
$\omega_6^3c_s^2\omega_{13}\omega_7\omega_{14}\omega_8^2 + 2\omega_6^3c_s^2\omega_{13}^2\omega_{14}\omega_8 + \omega_6^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8 - \omega_6^3\omega_{13}\omega_7^2v_1^2\omega_{14}\omega_8^2 - 8c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2 + \omega_6^3\omega_{13}\omega_7^2\omega_{14}\omega_8^2 + \omega_6^3c_s^2\omega_7^2\omega_{14}\omega_8^2 +$
$7\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2 - 2\omega_6^2\omega_7^2v_1^2\omega_{14}\omega_8^2 + \omega_6^2\omega_{13}^2\omega_7v_1^2\omega_{14}\omega_8^2 - 2\omega_6^2\omega_{13}\omega_7^2\omega_8^2 - 2\omega_6^3\omega_{13}^2\omega_7^2v_1^2\omega_8 + 2\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8^2 + 5\omega_6^3c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8$

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

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

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

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

$C_{24} = -\omega_6^3\omega_{16}\omega_{13}\omega_7^3v_2^2\omega_{14}\omega_8^2 + \omega_6^3c_s^2\omega_{16}\omega_7^3\omega_{17}\omega_8^2 - 2\omega_6^3\omega_{13}\omega_7^2v_2^2\omega_{14}\omega_8^2 - \omega_6c_s^2\omega_{16}\omega_{13}\omega_7^3\omega_{17}\omega_{14}\omega_8^2 + 2\omega_6^3\omega_{16}\omega_{13}\omega_7^3v_2^2\omega_{17}\omega_{14}\omega_8 +$
$2\omega_6^2\omega_{16}\omega_{13}\omega_7^2v_2^2\omega_{17}\omega_{14}\omega_8 + 2\omega_6^3\omega_{16}\omega_{13}\omega_7v_1^2\omega_{17}\omega_{14}\omega_8 - 2\omega_6^3c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2 - 2\omega_6^3\omega_{16}\omega_{13}\omega_7^2v_2^2\omega_{14}\omega_8 - 2\omega_6^3\omega_{16}\omega_{13}v_1^2\omega_{17}\omega_{14}\omega_8^2 -$
$2\omega_6^2\omega_{16}\omega_{13}\omega_7^3v_2^2\omega_{14}\omega_8 - 4\omega_6\omega_{16}\omega_{13}\omega_7^2v_1^2\omega_{17}\omega_{14}\omega_8^2 - 2\omega_6^2\omega_{16}\omega_7^3v_1^2\omega_{17}\omega_8^2 + 2\omega_6^2c_s^2\omega_{16}\omega_{13}\omega_7^3\omega_{17}\omega_8^2 + 2\omega_6^2\omega_{13}\omega_7^2v_2^2\omega_{17}\omega_{14}\omega_8^2 +$
$2\omega_6^2\omega_{16}\omega_7^2v_1^2\omega_{17}\omega_{14}\omega_8^2 - 6\omega_6^2\omega_{16}\omega_{13}\omega_7^3v_1^2\omega_{17}\omega_{14}\omega_8 - 4\omega_6^3\omega_{16}\omega_{13}\omega_7^2v_1^2\omega_{17}\omega_{14}\omega_8 - \omega_6^3\omega_{16}\omega_{13}\omega_7^3v_1^2\omega_{17}\omega_8^2 + 2\omega_6^3\omega_{16}\omega_{13}\omega_7^2v_1^2\omega_{17}\omega_{14} +$
$2\omega_6^2\omega_{16}\omega_{13}\omega_7^3v_1^2\omega_{17}\omega_{14} + 3\omega_6\omega_{16}\omega_{13}\omega_7^3v_2^2\omega_{17}\omega_{14}\omega_8^2 - 2\omega_6^3c_s^2\omega_{16}\omega_{13}\omega_7^3\omega_{17}\omega_{14}\omega_8 + 2\omega_6^3c_s^2\omega_{16}\omega_{13}\omega_7^2\omega_{14}\omega_8^2 + 2\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2 +$
$\omega_6^3c_s^2\omega_{16}\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2 - 2\omega_6^2\omega_{16}\omega_{13}\omega_7^3v_1^2\omega_{17}\omega_8 - 2\omega_6^3\omega_{16}\omega_{13}\omega_7^2v_1^2\omega_{17}\omega_8 + 2\omega_6^3c_s^2\omega_{16}\omega_{13}\omega_7^3\omega_{17}\omega_8 - \omega_6^2c_s^2\omega_{13}\omega_7^3\omega_{17}\omega_{14}\omega_8^2 -$
$2\omega_6^3\omega_{16}\omega_{13}\omega_7^3v_1^2\omega_{17}\omega_{14} + 2\omega_6^3c_s^2\omega_{16}\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8 + \omega_6^3\omega_{16}\omega_{13}\omega_7^2v_1^2\omega_{17}\omega_8^2 + 2\omega_6^2\omega_{16}\omega_{13}\omega_7^3v_1^2\omega_{17}\omega_8^2 - \omega_6^3c_s^2\omega_{16}\omega_{13}\omega_7^3\omega_{17}\omega_8^2 -$
$\omega_6^3\omega_{16}\omega_7^2v_1^2\omega_{17}\omega_{14}\omega_8^2 - 2\omega_6^2c_s^2\omega_{16}\omega_{13}\omega_7^3\omega_{17}\omega_8 - 4\omega_6^2\omega_{16}\omega_{13}\omega_7v_2^2\omega_{17}\omega_{14}\omega_8^2 - \omega_6^3\omega_{16}\omega_{13}\omega_7^2v_1^2\omega_{17}\omega_{14}\omega_8^2 + 2\omega_6^3\omega_{16}\omega_{13}\omega_7^2v_1^2\omega_{17}\omega_8 +$
$2\omega_6\omega_{16}\omega_{13}\omega_7^3v_2^2\omega_{17}\omega_{14}\omega_8 - 2\omega_6^3c_s^2\omega_{16}\omega_{13}\omega_7^2\omega_{14}\omega_8 + 3\omega_6^3\omega_{16}\omega_{13}\omega_7v_1^2\omega_{17}\omega_{14}\omega_8^2 + 4\omega_6^2\omega_{16}\omega_{13}\omega_7^2v_2^2\omega_{17}\omega_{14}\omega_8^2 + \omega_6^2\omega_{16}\omega_{13}\omega_7^3v_2^2\omega_{14}\omega_8^2 +$
$2\omega_6^3\omega_{16}\omega_{13}\omega_7^2v_2^2\omega_{14}\omega_8^2 + 2\omega_6^2c_s^2\omega_{16}\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2 + 2\omega_6^3\omega_{16}\omega_{13}\omega_7^3v_2^2\omega_{14}\omega_8 + \omega_6^3\omega_{13}\omega_7^3v_2^2\omega_{14}\omega_8^2 + 2\omega_6c_s^2\omega_{16}\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2 +$
$\omega_6^2c_s^2\omega_{16}\omega_{13}\omega_7^3\omega_{17}\omega_{14}\omega_8^2 - 2\omega_6^2c_s^2\omega_{16}\omega_{13}\omega_7^3\omega_{14}\omega_8 + 4\omega_6^2\omega_{16}\omega_{13}\omega_7^2v_1^2\omega_{17}\omega_{14}\omega_8^2 - 2\omega_6^3c_s^2\omega_{16}\omega_{13}\omega_7^2\omega_{17}\omega_8 - \omega_6^3c_s^2\omega_{16}\omega_{13}\omega_7^3\omega_{14}\omega_8^2 +$
$\omega_6^3c_s^2\omega_{13}\omega_7^3\omega_{14}\omega_8^2 + \omega_6^3\omega_{16}\omega_7^3v_1^2\omega_{17}\omega_8^2 - \omega_6^3c_s^2\omega_{16}\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2 - 2\omega_6^3\omega_{16}\omega_{13}\omega_7^3v_2^2\omega_{17}\omega_{14} + 4\omega_6\omega_{16}\omega_{13}\omega_7^3v_1^2\omega_{17}\omega_{14}\omega_8 -$
$\omega_6^3c_s^2\omega_{16}\omega_7^2\omega_{17}\omega_{14}\omega_8^2 - 2\omega_6^2c_s^2\omega_{16}\omega_7^3\omega_{17}\omega_8^2 - 2\omega_6^2\omega_{16}\omega_{13}\omega_7v_1^2\omega_{17}\omega_{14}\omega_8^2 - \omega_6^2\omega_{16}\omega_{13}\omega_7^3v_2^2\omega_{17}\omega_{14}\omega_8^2 - 2\omega_{16}\omega_{13}\omega_7^3v_2^2\omega_{17}\omega_{14}\omega_8^2 -$
$6\omega_6^3\omega_{16}\omega_{13}\omega_7^2v_2^2\omega_{17}\omega_{14}\omega_8 - 4\omega_6^2\omega_{16}\omega_{13}\omega_7^3v_2^2\omega_{17}\omega_{14}\omega_8 + 2\omega_6^2c_s^2\omega_{16}\omega_7^2\omega_{17}\omega_{14}\omega_8^2 + 2\omega_6^2\omega_{16}\omega_{13}\omega_7^3v_2^2\omega_{17}\omega_{14} + 2\omega_6^3\omega_{16}\omega_{13}\omega_7^2v_2^2\omega_{17}\omega_{14} +$
$2\omega_6^3c_s^2\omega_{16}\omega_{13}\omega_7^3\omega_{14}\omega_8 - 6\omega_6^2c_s^2\omega_{16}\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2 - 2\omega_6\omega_{16}\omega_{13}\omega_7^2v_2^2\omega_{17}\omega_{14}\omega_8^2 + \omega_6^2c_s^2\omega_{16}\omega_{13}\omega_7^3\omega_{14}\omega_8^2 + 2\omega_6^2c_s^2\omega_{16}\omega_{13}\omega_7^3\omega_{17}\omega_{14}\omega_8 +$
$2\omega_6^2\omega_{16}\omega_{13}\omega_7^2v_1^2\omega_{17}\omega_{14}\omega_8 + \omega_6^3c_s^2\omega_{16}\omega_{13}\omega_7^2\omega_{17}\omega_8^2 + 4\omega_6^3\omega_{16}\omega_{13}\omega_7v_2^2\omega_{17}\omega_{14}\omega_8 - \omega_6^2\omega_{13}\omega_7^3v_2^2\omega_{17}\omega_{14}\omega_8^2 + 2\omega_6^3\omega_{16}\omega_{13}\omega_7^3v_1^2\omega_{17}\omega_{14}\omega_8$

$C_{25} = 4\omega_6\omega_{16}^2\omega_{10}v_2^2\omega_{17}\omega_8\omega_5\omega_{15} - 12\omega_6c_s^2\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_5\omega_{15} - 2\omega_{16}^2\omega_{10}\omega_7^2v_2^2\omega_{17}\omega_8\omega_5\omega_{15} - 4\omega_6\omega_{16}^2\omega_{10}\omega_{17}\omega_8\omega_5\omega_{15} +$
$2\omega_6\omega_{16}^2\omega_{10}\omega_7^2v_2^2\omega_{17}\omega_8\omega_5 - 2\omega_6\omega_{16}^2\omega_7^2v_2^2\omega_{17}\omega_8\omega_5\omega_{15} - 12c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5 + 4\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15} -$
$4\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2v_2^2\omega_5\omega_{15} + 4\omega_6\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_5\omega_{15} + 4\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_5\omega_{15} + 12\omega_6c_s^2\omega_{16}^2\omega_{10}\omega_{17}\omega_8\omega_5\omega_{15} - 12c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8 +$
$6c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8\omega_5\omega_{15} - 6\omega_6c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_8\omega_5\omega_{15} + 4\omega_6\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8 - 2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} -$
$12\omega_6c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8 + 2\omega_6\omega_{16}\omega_{10}^2\omega_7^2\omega_8\omega_5\omega_{15} - 6\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5 - 4\omega_{16}^2\omega_{10}\omega_7^2v_2^2\omega_{17}\omega_5\omega_{15} + 4\omega_6\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8 - 4\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5 -$
$4\omega_{16}\omega_{10}^2\omega_7v_2^2\omega_{17}\omega_8\omega_5\omega_{15} - 4\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5 + 6\omega_6c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5 - 12\omega_6c_s^2\omega_{16}\omega_{10}^2\omega_{17}\omega_8\omega_5\omega_{15} + 6\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8\omega_5\omega_{15} +$
$4\omega_6\omega_{16}\omega_{10}^2\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_6\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5 - 2\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8\omega_5\omega_{15} + 4\omega_6\omega_{16}^2\omega_{10}\omega_7v_2^2\omega_{17}\omega_8\omega_{15} + 9\omega_6c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} +$
$2\omega_{16}\omega_{10}^2\omega_7^2v_2^2\omega_{17}\omega_8\omega_5\omega_{15} + 4\omega_6\omega_{16}^2\omega_{10}^2\omega_7v_2^2\omega_{17}\omega_8\omega_5 + 8\omega_6\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15} + 4\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8 + 12\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_5\omega_{15} +$
$2\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2v_2^2\omega_8\omega_5\omega_{15} + 3\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5 + 4\omega_{16}^2\omega_{10}\omega_7v_2^2\omega_{17}\omega_8\omega_5\omega_{15} - 24\omega_6c_s^2\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15} - 3\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2v_2^2\omega_{17}\omega_8\omega_5 +$
$12\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8 - 4\omega_6\omega_{16}^2\omega_{10}\omega_7^2v_2^2\omega_{17}\omega_8\omega_{15} - 4\omega_6\omega_{16}^2\omega_{10}^2\omega_7v_2^2\omega_8\omega_5\omega_{15} + 4\omega_{16}^2\omega_{10}^2\omega_7^2v_2^2\omega_5\omega_{15} - 3\omega_6\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} -$
$12c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_5\omega_{15} + 4\omega_6\omega_{16}^2\omega_7v_2^2\omega_{17}\omega_8\omega_5\omega_{15} - 9\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5 - 4\omega_6\omega_{16}^2\omega_{10}^2\omega_7v_2^2\omega_{17}\omega_8 - 4\omega_6\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_5\omega_{15} +$
$4\omega_{16}^2\omega_{10}\omega_7^2v_2^2\omega_{17}\omega_8\omega_{15} + 4\omega_6\omega_{16}^2\omega_{10}^2\omega_7v_2^2\omega_5\omega_{15} + 2\omega_{16}^2\omega_{10}^2\omega_7^2v_2^2\omega_{17}\omega_8\omega_5 + 2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} - 6c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} -$
$2\omega_6\omega_{16}\omega_{10}^2\omega_7^2v_2^2\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_6\omega_{16}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} + 6c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5 - 12\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_5\omega_{15} - 2\omega_6\omega_{16}\omega_{10}^2\omega_7^2v_2^2\omega_8\omega_5\omega_{15} -$
$6\omega_6c_s^2\omega_{16}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} - 4\omega_{16}^2\omega_{10}^2\omega_7^2v_2^2\omega_{17}\omega_8 + 12\omega_6c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_5\omega_{15} - 6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8\omega_5\omega_{15} + 4\omega_6\omega_{16}\omega_{10}^2\omega_7v_2^2\omega_8\omega_5\omega_{15} -$
$4\omega_{16}^2\omega_{10}^2\omega_7^2\omega_5\omega_{15} + 12\omega_6c_s^2\omega_{16}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15} - 12\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8 - 4\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5\omega_{15} - 4\omega_6\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_{15} -$
$4\omega_6\omega_{16}\omega_{10}^2v_2^2\omega_{17}\omega_8\omega_5\omega_{15} + 12\omega_6c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5\omega_{15} - 2\omega_{16}^2\omega_{10}^2\omega_7^2v_2^2\omega_8\omega_5\omega_{15} + 12\omega_6c_s^2\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_{15} - 4\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15} -$
$8\omega_6\omega_{16}^2\omega_{10}\omega_7v_2^2\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_6\omega_{10}^2\omega_7^2v_2^2\omega_{17}\omega_8\omega_5\omega_{15} - 4\omega_6\omega_{16}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15} + 12c_s^2\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15} +$
$2\omega_6\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} + 6\omega_6c_s^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} + 12c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_{15} + 24\omega_6c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15} + 4\omega_6\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5 +$
$4\omega_6\omega_{16}^2\omega_{10}^2\omega_7\omega_8\omega_5\omega_{15} - 4\omega_6\omega_{16}^2\omega_{10}^2\omega_7\omega_5\omega_{15} - 12\omega_6c_s^2\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5 + 3\omega_6\omega_{16}^2\omega_{10}\omega_7^2v_2^2\omega_{17}\omega_8\omega_5\omega_{15} - 12\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_8\omega_5\omega_{15} -$
$2\omega_6\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} - 4\omega_6\omega_{10}^2\omega_7v_2^2\omega_{17}\omega_8\omega_5\omega_{15} + 4\omega_6\omega_{16}^2\omega_{10}\omega_7^2v_2^2\omega_{17}\omega_5\omega_{15} + 4\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2v_2^2\omega_{17}\omega_8 + 12\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5 +$
$12c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_5\omega_{15} - 4\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8 + 4\omega_6\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15} + 8\omega_6\omega_{16}\omega_{10}^2\omega_7v_2^2\omega_{17}\omega_8\omega_5\omega_{15} - 4\omega_6\omega_{16}^2\omega_{10}\omega_7v_2^2\omega_{17}\omega_5\omega_{15} -$
$8\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15} - 12\omega_6c_s^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15} - 6\omega_6c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} + 4\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_5\omega_{15} - 4\omega_6\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5$

$C_{26} = 6\omega_6^2\omega_{10}^2\omega_7^2v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 12\omega_6^2\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 12\omega_6^2c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5 + 12c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15} -$
$6\omega_6^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2 + 12\omega_6^2c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_8^2\omega_5^2\omega_{15} + 6\omega_6^2\omega_{16}^2\omega_{10}\omega_7^2v_2^2\omega_{17}\omega_8^2\omega_5^2 - 12\omega_6^2\omega_{16}\omega_{10}^2v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 12\omega_6^2c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} -$
$12\omega_6^2c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15} + 12\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2 + 36\omega_6^2c_s^2\omega_{16}^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$12\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7^2v_2^2\omega_8^2\omega_5^2\omega_{15} + \omega_6^2\omega_{16}^2\omega_{10}^2\omega_7^2v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 12\omega_6^2c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 24\omega_6^2c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5\omega_{15} -$
$12c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15} - 6\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2v_2^2\omega_8^2\omega_5^2\omega_{15} - 18\omega_6^2c_s^2\omega_{16}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 12\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7^2v_2^2\omega_{17}\omega_8^2\omega_5 + 12\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8^2\omega_5^2\omega_{15} -$
$12\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7^2v_2^2\omega_8^2\omega_5^2\omega_{15} + 3\omega_6^2c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 6\omega_6^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 12\omega_6^2c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15} - 12\omega_6^2\omega_{16}^2\omega_{10}\omega_7v_2^2\omega_{17}\omega_8^2\omega_5^2 +$
$9\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2 + 12\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} + 12\omega_6^2c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_5^2\omega_{15} + 6\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15} - 12\omega_6^2\omega_{16}\omega_{10}^2\omega_7\omega_8^2\omega_5^2\omega_{15} +$
$6\omega_6^2c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2 - 12\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5 - 18\omega_6^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 12\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_5^2\omega_{15} - 36\omega_6^2c_s^2\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$6\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15} + 12\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7v_2^2\omega_{17}\omega_8^2\omega_5^2 + 12\omega_6^2c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 12\omega_6^2\omega_{16}^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$24\omega_6^2c_s^2\omega_{16}^2\omega_{10}^2\omega_{17}\omega_8\omega_5^2\omega_{15} - 12\omega_6^2\omega_{10}^2\omega_7v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 6\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5\omega_{15} - 6\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8^2\omega_5^2\omega_{15} - 12\omega_6^2c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_8^2\omega_5\omega_{15} -$
$9\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7^2v_2^2\omega_{17}\omega_8^2\omega_5^2 + 24\omega_6^2c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_{15} + 6\omega_6^2\omega_{16}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 54\omega_6^2c_s^2\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$6\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2v_2^2\omega_8^2\omega_5^2\omega_{15} - 24\omega_6^2c_s^2\omega_{16}^2\omega_{10}^2\omega_{17}\omega_8^2\omega_5\omega_{15} - 9\omega_6^2c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2 - 6\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 12\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8^2\omega_5^2\omega_{15} +$
$6\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8^2\omega_5^2\omega_{15} + 3\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 18\omega_6^2c_s^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 12\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5 - 24\omega_6^2c_s^2\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8^2\omega_5\omega_{15} -$
$3\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 12\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2v_2^2\omega_{17}\omega_8^2\omega_5 - 12\omega_6^2c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5 - 6\omega_6^2c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_8^2\omega_5^2\omega_{15} + 12\omega_6^2\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8^2\omega_5^2 -$
$12\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5 + 6\omega_6^2\omega_{16}^2\omega_7^2v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 36\omega_6^2c_s^2\omega_{16}^2\omega_{10}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 12\omega_6^2c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_8\omega_5^2\omega_{15} - 12\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2 +$
$12\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15} - 6\omega_6^2\omega_{16}^2\omega_7^2v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 12\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15} + 12\omega_6^2\omega_{16}^2\omega_{10}^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 18\omega_6^2\omega_{16}^2\omega_{10}\omega_7v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$6\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15} - 6\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8^2\omega_5^2\omega_{15} - \omega_6^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 12\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2v_2^2\omega_8\omega_5^2\omega_{15} + 12\omega_6^2c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15} +$
$12\omega_6^2\omega_{16}^2\omega_{10}\omega_7v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 54\omega_6^2c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 12\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5\omega_{15} - 54\omega_6^2c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15} -$
$6\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15} + 12\omega_6^2\omega_{16}^2\omega_7v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 12\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7\omega_8^2\omega_5^2\omega_{15} - 4\omega_6^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$12\omega_6^2c_s^2\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8^2\omega_5^2 + 6\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2\omega_8^2\omega_5^2\omega_{15} + 6\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7^2v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15} + 4\omega_6^2\omega_{16}^2\omega_{10}\omega_7^2v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 12\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5 +$

$6\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2v_2^2\omega_{17}\omega_8^2\omega_5\omega_{15} - 12\omega_6^2c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_5^2\omega_{15} - 42\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15} - 36\omega_6^2c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15} +$
$12\omega_6^2c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2 + 18\omega_6^2\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 12\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7\omega_8\omega_5^2\omega_{15} + 6\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7^2v_2^2\omega_8^2\omega_5^2\omega_{15} - 12\omega_6^2\omega_{16}^2\omega_{10}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$12\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 18\omega_6^2\omega_{16}\omega_{10}^2\omega_7v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 6\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15} + 54\omega_6^2c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5\omega_{15} +$
$6\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2 + 6\omega_6^2c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8^2\omega_5^2\omega_{15} - 9\omega_6^2c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 42\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15} -$
$24\omega_6^2c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_{15} - 6\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2 + 30\omega_6^2c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15} - 36\omega_6^2c_s^2\omega_{16}\omega_{10}^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$6\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7^2v_2^2\omega_{17}\omega_8^2\omega_5\omega_{15} - 24\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_{15} + 6\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2v_2^2\omega_{17}\omega_8^2\omega_5^2 - 6\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15}$

$C_{27} = 12\omega_6\omega_{16}^2\omega_{10}v_2^2\omega_{17}\omega_8\omega_5\omega_{15} - 4\omega_6c_s^2\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_5\omega_{15} - 6\omega_{16}^2\omega_{10}\omega_7^2v_2^2\omega_{17}\omega_8\omega_5\omega_{15} - 4\omega_6\omega_{16}^2\omega_{10}\omega_{17}\omega_8\omega_5\omega_{15} +$
$6\omega_6\omega_{16}^2\omega_{10}\omega_7^2v_2^2\omega_{17}\omega_8\omega_5 - 6\omega_6\omega_{16}^2\omega_7^2v_2^2\omega_{17}\omega_8\omega_5\omega_{15} - 4c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5 + 4\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15} -$
$12\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2v_2^2\omega_5\omega_{15} + 4\omega_6\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_5\omega_{15} + 4\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_5\omega_{15} + 4\omega_6c_s^2\omega_{16}^2\omega_{10}\omega_{17}\omega_8\omega_5\omega_{15} - 4c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8 +$
$2c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8\omega_5\omega_{15} - 2\omega_6c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_8\omega_5\omega_{15} + 4\omega_6\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8 - 2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} -$
$4\omega_6c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_{15} + 2\omega_6\omega_{16}\omega_{10}^2\omega_7^2\omega_8\omega_5\omega_{15} - 12\omega_{16}^2\omega_{10}\omega_7^2v_2^2\omega_{17}\omega_5\omega_{15} + 4\omega_6\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_{15} - 12\omega_6\omega_{16}^2\omega_{10}\omega_7v_2^2\omega_{17}\omega_8\omega_5 -$
$12\omega_{16}\omega_{10}^2\omega_7v_2^2\omega_{17}\omega_8\omega_5\omega_{15} - 4\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_{15} + 2\omega_6c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5 - 4\omega_6c_s^2\omega_{16}\omega_{10}^2\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8\omega_5\omega_{15} +$
$4\omega_6\omega_{16}\omega_{10}^2\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_6\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5 - 2\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8\omega_5\omega_{15} + 12\omega_6\omega_{16}^2\omega_{10}\omega_7v_2^2\omega_{17}\omega_8\omega_{15} + 3\omega_6c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} +$
$6\omega_{16}\omega_{10}^2\omega_7^2v_2^2\omega_{17}\omega_8\omega_5\omega_{15} + 12\omega_6\omega_{16}^2\omega_{10}^2\omega_7v_2^2\omega_{17}\omega_8\omega_5 + 8\omega_6\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15} + 4\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8 + 4\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_5\omega_{15} +$
$6\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2v_2^2\omega_8\omega_5\omega_{15} + 3\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5 + 12\omega_{16}^2\omega_{10}\omega_7v_2^2\omega_{17}\omega_8\omega_5\omega_{15} - 8\omega_6c_s^2\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15} - 9\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2v_2^2\omega_{17}\omega_8\omega_5 +$
$4\omega_6c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8 - 12\omega_6\omega_{16}^2\omega_{10}\omega_7^2v_2^2\omega_{17}\omega_8\omega_{15} - 12\omega_6\omega_{16}^2\omega_{10}^2\omega_7v_2^2\omega_8\omega_5\omega_{15} + 12\omega_{16}^2\omega_{10}^2\omega_7^2v_2^2\omega_5\omega_{15} - 3\omega_6\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15} -$
$4c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_5\omega_{15} + 12\omega_6\omega_{16}^2\omega_7v_2^2\omega_{17}\omega_8\omega_5\omega_{15} - 3\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5 - 12\omega_6\omega_{16}^2\omega_{10}^2\omega_7v_2^2\omega_{17}\omega_8 - 4\omega_6\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_5\omega_{15} +$
$12\omega_{16}^2\omega_{10}\omega_7^2v_2^2\omega_{17}\omega_8\omega_{15} + 12\omega_6\omega_{16}^2\omega_{10}^2\omega_7v_2^2\omega_5\omega_{15} + 6\omega_{16}^2\omega_{10}^2\omega_7^2v_2^2\omega_{17}\omega_8\omega_5 + 2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} - 2c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} -$
$6\omega_6\omega_{16}\omega_{10}^2\omega_7^2v_2^2\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_6\omega_{16}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} + 2c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5 - 4\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_5\omega_{15} - 6\omega_6\omega_{16}\omega_{10}^2\omega_7^2v_2^2\omega_8\omega_5\omega_{15} -$
$2\omega_6c_s^2\omega_{16}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} - 12\omega_{16}^2\omega_{10}^2\omega_7^2v_2^2\omega_{17}\omega_8 + 4\omega_6c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_5\omega_{15} - 2c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8\omega_5\omega_{15} + 12\omega_6\omega_{16}\omega_{10}^2\omega_7v_2^2\omega_8\omega_5\omega_{15} -$
$4\omega_{16}^2\omega_{10}^2\omega_7^2\omega_5\omega_{15} + 4\omega_6c_s^2\omega_{16}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15} - 4\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8 - 4\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5\omega_{15} - 4\omega_6\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_{15} -$
$12\omega_6\omega_{16}\omega_{10}^2v_2^2\omega_{17}\omega_8\omega_5\omega_{15} + 4\omega_6c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5\omega_{15} - 6\omega_{16}^2\omega_{10}^2\omega_7^2v_2^2\omega_8\omega_5\omega_{15} + 4\omega_6c_s^2\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_{15} - 4\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15} -$
$24\omega_6\omega_{16}^2\omega_{10}\omega_7v_2^2\omega_{17}\omega_8\omega_5\omega_{15} + 6\omega_6\omega_{10}^2\omega_7^2v_2^2\omega_{17}\omega_8\omega_5\omega_{15} - 4\omega_6\omega_{16}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15} + 4c_s^2\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15} +$
$2\omega_6\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_6c_s^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} + 4c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_{15} + 8\omega_6c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15} + 4\omega_6\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5 +$
$4\omega_6\omega_{16}^2\omega_{10}^2\omega_7\omega_8\omega_5\omega_{15} - 4\omega_6\omega_{16}^2\omega_{10}\omega_7\omega_5\omega_{15} - 4\omega_6c_s^2\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5 + 9\omega_6\omega_{16}^2\omega_{10}\omega_7^2v_2^2\omega_{17}\omega_8\omega_5\omega_{15} - 4\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_8\omega_5\omega_{15} -$
$2\omega_6\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} - 12\omega_6\omega_{10}^2\omega_7v_2^2\omega_{17}\omega_8\omega_5\omega_{15} + 12\omega_6\omega_{16}^2\omega_{10}\omega_7^2v_2^2\omega_{17}\omega_5\omega_{15} + 12\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2v_2^2\omega_{17}\omega_8 + 4\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5 +$
$4c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_5\omega_{15} - 4\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8 + 4\omega_6\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15} + 24\omega_6\omega_{16}\omega_{10}^2\omega_7v_2^2\omega_{17}\omega_8\omega_5\omega_{15} - 12\omega_6\omega_{16}^2\omega_{10}\omega_7v_2^2\omega_{17}\omega_5\omega_{15} -$
$8\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15} - 4\omega_6c_s^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_6c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} + 4\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_5\omega_{15} - 4\omega_6\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5$

$C_{28} = -\omega_6^2\omega_7^3\omega_{17}\omega_8^2 + \omega_6^2\omega_{16}^2\omega_7^2\omega_{17}\omega_8^2 + 4\omega_6^2c_s^2\omega_{16}\omega_7^2\omega_{17}\omega_8^2 + 2\omega_6^2c_s^2\omega_{16}\omega_7^2\omega_8^2 - \omega_6\omega_{16}\omega_7^3\omega_{17}\omega_8^2 - 8\omega_6^2c_s^2\omega_{16}^2\omega_{17}\omega_8^2 + \omega_6^2\omega_{16}\omega_7^3\omega_8^2 -$
$2\omega_6^2\omega_{16}\omega_7v_2^2\omega_{17}\omega_8^2 + 2\omega_6^2\omega_{16}^2\omega_7^2v_2^2\omega_8 + 6\omega_6^2c_s^2\omega_{16}^2\omega_7\omega_{17}\omega_8 + \omega_6^2\omega_{16}\omega_7^3\omega_{17}\omega_8^2 + \omega_6^2\omega_{16}^2\omega_7v_2^2\omega_{17}\omega_8^2 - \omega_6\omega_{16}^2\omega_7^2\omega_{17}\omega_8^2 - 7\omega_6c_s^2\omega_{16}^2\omega_7^3\omega_{17}\omega_8 -$
$2\omega_6\omega_{16}^2\omega_7^3\omega_8 - 6\omega_6c_s^2\omega_{16}^2\omega_7\omega_{17}\omega_8^2 - 2\omega_6^2\omega_{16}\omega_7^2\omega_8^2 - 2c_s^2\omega_{16}^2\omega_7^2\omega_{17}\omega_8^2 + \omega_6^2c_s^2\omega_7^3\omega_{17}\omega_8^2 + \omega_6\omega_{16}^2\omega_7^3\omega_8^2 + 5\omega_6^2c_s^2\omega_{16}^2\omega_7^3\omega_{17}\omega_8 + 2\omega_6^2\omega_{16}\omega_7\omega_{17}\omega_8^2 -$
$2\omega_6^2\omega_{16}^2\omega_7^2v_2^2\omega_8^2 - \omega_6^2c_s^2\omega_{16}\omega_7^3\omega_8^2 + 13\omega_6^2c_s^2\omega_{16}^2\omega_7\omega_{17}\omega_8^2 - 2\omega_6c_s^2\omega_{16}\omega_7^2\omega_{17}\omega_8^2 + \omega_6^2\omega_{16}^2\omega_7^2\omega_{17}\omega_8 - \omega_6^2\omega_{16}\omega_7^3v_2^2\omega_8^2 + 4\omega_6c_s^2\omega_{16}^2\omega_7^2\omega_{17}\omega_8 +$
$4\omega_6^2\omega_{16}\omega_7^2v_2^2\omega_{17}\omega_8^2 + 2\omega_6^2\omega_{16}^2\omega_7^2\omega_8^2 + \omega_6\omega_{16}\omega_7^3v_2^2\omega_{17}\omega_8^2 + 2c_s^2\omega_{16}^2\omega_7^3\omega_{17}\omega_8 - 2\omega_6^2c_s^2\omega_{16}^2\omega_7^3\omega_{17} - 2\omega_6^2\omega_{16}^2\omega_7^3v_2^2\omega_8 - 5\omega_6^2c_s^2\omega_{16}^2\omega_7^2\omega_{17}\omega_8^2 +$
$\omega_6^2c_s^2\omega_{16}^2\omega_7^3\omega_8^2 - 4\omega_6^2\omega_{16}\omega_7^2\omega_{17}\omega_8^2 + 2\omega_6c_s^2\omega_{16}^2\omega_7^3\omega_{17} + 2\omega_6^2\omega_{16}^2\omega_7^3\omega_8 + 2\omega_6\omega_{16}^2\omega_7^3v_2^2\omega_8 + \omega_6^2\omega_{16}^2\omega_7^3v_2^2\omega_{17}\omega_8 - \omega_6c_s^2\omega_{16}^2\omega_7^3\omega_8^2 + 2\omega_6\omega_{16}\omega_7^2\omega_{17}\omega_8^2 +$
$2\omega_6^2c_s^2\omega_{16}^2\omega_7^2\omega_8 - \omega_6^2\omega_{16}^2\omega_7^2v_2^2\omega_{17}\omega_8^2 + 2\omega_6^2\omega_7^2\omega_{17}\omega_8^2 - \omega_6^2c_s^2\omega_{16}\omega_7^3\omega_{17}\omega_8^2 + \omega_6^2\omega_7^3v_2^2\omega_{17}\omega_8^2 - 2\omega_6^2c_s^2\omega_{16}\omega_7\omega_{17}\omega_8^2 - \omega_6^2\omega_{16}^2\omega_7^3\omega_{17}\omega_8 -$
$2\omega_6^2c_s^2\omega_{16}^2\omega_7^2\omega_8^2 - \omega_6^2\omega_{16}^2\omega_7^2v_2^2\omega_{17}\omega_8 + 2\omega_6^2c_s^2\omega_{16}^2\omega_7^2\omega_{17} - \omega_6^2\omega_{16}^2\omega_7\omega_{17}\omega_8^2 + 2\omega_6^2\omega_{16}\omega_7^2v_2^2\omega_8^2 - \omega_6\omega_{16}^2\omega_7^3v_2^2\omega_{17}\omega_8 - \omega_6^2\omega_{16}^2\omega_7^3\omega_8^2 +$
$\omega_6^2\omega_{16}^2\omega_7^2v_2^2\omega_{17}\omega_8^2 - 2\omega_6^2\omega_7^2v_2^2\omega_{17}\omega_8^2 - \omega_6\omega_{16}^2\omega_7^3v_2^2\omega_8^2 + 2\omega_6c_s^2\omega_{16}^2\omega_7^3\omega_8 + \omega_6c_s^2\omega_{16}\omega_7^3\omega_{17}\omega_8^2 - 2\omega_6\omega_{16}\omega_7^2v_2^2\omega_{17}\omega_8^2 - 11\omega_6^2c_s^2\omega_{16}^2\omega_7\omega_{17}\omega_8 +$
$\omega_6^2\omega_{16}^2\omega_7^3v_2^2\omega_8^2 - \omega_6^2\omega_{16}\omega_7^3v_2^2\omega_{17}\omega_8^2 - 2\omega_6^2c_s^2\omega_{16}^2\omega_7^3\omega_8 + \omega_6\omega_{16}^2\omega_7^3\omega_{17}\omega_8 + 7\omega_6c_s^2\omega_{16}^2\omega_7^2\omega_{17}\omega_8^2 - 2\omega_6^2\omega_{16}^2\omega_7^2\omega_8 - 2\omega_6^2c_s^2\omega_7^2\omega_{17}\omega_8^2$

$C_{29} = 24c_s^2\omega_{10}^2\omega_7 - 48c_s^4\omega_{16}^2\omega_{10}\omega_7 + 12\omega_{10}^2\omega_7^2v_2^4 + 48\omega_{16}\omega_{10}^2v_2^2 - 126c_s^2\omega_{16}\omega_{10}^2\omega_7^2v_2^2 - 24c_s^2\omega_{16}^2\omega_{10} + 48\omega_{16}\omega_{10}\omega_7v_2^2 - 144c_s^2\omega_{16}^2\omega_7^2v_2^2 -$
$12c_s^4\omega_{16}^2\omega_7^2 + 96\omega_{16}\omega_{10}^2\omega_7v_2^4 + c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2 + 30\omega_{16}\omega_{10}^2\omega_7^2v_2^2 - 24c_s^2\omega_{16}^2\omega_7 + 48c_s^4\omega_{16}\omega_{10}^2\omega_7 - 144c_s^2\omega_{16}\omega_{10}\omega_7v_2^2 - 48\omega_{16}^2\omega_{10}v_2^2 + 24\omega_{10}^2\omega_7v_2^2 +$
$12c_s^4\omega_{10}^2\omega_7^2 + 24\omega_{16}\omega_{10}\omega_7^2v_2^4 - 96\omega_{16}^2\omega_{10}\omega_7v_2^4 + 72c_s^2\omega_{10}^2\omega_7^2v_2^2 - 24c_s^4\omega_{10}^2\omega_7 + 24c_s^4\omega_{16}^2\omega_{10} - 36\omega_{16}^2\omega_7^2v_2^4 + 150c_s^2\omega_{16}^2\omega_{10}\omega_7^2v_2^2 + 12c_s^2\omega_{16}^2\omega_7^2 -$
$12c_s^4\omega_{16}\omega_{10}^2\omega_7^2 + 24c_s^4\omega_{16}^2\omega_7 - 3\omega_{16}^2\omega_{10}^2\omega_7^2v_2^4 + 14c_s^4\omega_{16}^2\omega_{10}\omega_7^2 - 12c_s^2\omega_{10}^2\omega_7^2 - 36\omega_{16}^2\omega_{10}\omega_7^2v_2^2 - 72\omega_{16}^2\omega_7v_2^2 + 48c_s^2\omega_{16}^2\omega_{10}\omega_7 + 96\omega_{16}^2\omega_{10}\omega_7v_2^2 -$
$c_s^4\omega_{16}^2\omega_{10}^2\omega_7^2 - 216c_s^2\omega_{16}\omega_{10}^2v_2^2 + 24c_s^2\omega_{16}\omega_{10}^2 + 36\omega_{16}^2\omega_7^2v_2^2 - 12c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2v_2^2 - 144c_s^2\omega_{10}^2\omega_7v_2^2 - 48c_s^2\omega_{16}\omega_{10}^2\omega_7 + 36\omega_{16}^2\omega_{10}\omega_7^2v_2^4 + 72\omega_{16}^2\omega_7v_2^4 -$
$432c_s^2\omega_{16}^2\omega_{10}\omega_7v_2^2 + 216c_s^2\omega_{16}^2\omega_{10}v_2^2 + 3\omega_{16}^2\omega_{10}^2\omega_7^2v_2^2 - 96\omega_{16}\omega_{10}^2\omega_7v_2^2 + 72c_s^2\omega_{16}\omega_{10}\omega_7^2v_2^2 + 12c_s^2\omega_{16}\omega_{10}^2\omega_7^2 - 12\omega_{10}^2\omega_7^2v_2^2 - 48\omega_{16}\omega_{10}^2v_2^4 -$
$24c_s^4\omega_{16}\omega_{10}^2 - 48\omega_{16}\omega_{10}\omega_7v_2^4 - 24\omega_{10}^2\omega_7v_2^4 + 432c_s^2\omega_{16}\omega_{10}^2\omega_7v_2^2 + 288c_s^2\omega_{16}^2\omega_7v_2^2 - 24\omega_{16}\omega_{10}\omega_7^2v_2^2 - 30\omega_{16}\omega_{10}^2\omega_7^2v_2^4 - 14c_s^2\omega_{16}^2\omega_{10}\omega_7^2 + 48\omega_{16}^2\omega_{10}v_2^2$

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

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

$C_{32} = -18\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_{18} - 12\omega_6^3v_3^2\omega_{13}^2\omega_9^2 - 72\omega_6^2v_3^2\omega_{22}c_s^2\omega_{13}\omega_{18}\omega_9^2 - 12\omega_6^2v_3^2\omega_{13}^2\omega_{11}\omega_9^2 + 12\omega_6^3v_3^2\omega_{22}\omega_{13}v_1^2\omega_{18}\omega_9^2 +$
$15\omega_6^3v_3^2\omega_{22}\omega_{13}\omega_{11}\omega_{18}\omega_9^2 + 6\omega_6^3v_3^2\omega_{13}\omega_{11}\omega_{18}\omega_9^2 - 108\omega_6^2v_3^2\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9 + 12\omega_6^3v_3^2\omega_{22}\omega_{13}^2v_1^2\omega_{11}\omega_9 + 12\omega_6^2v_3^2\omega_{22}\omega_{13}\omega_{11}\omega_{18}\omega_9 -$
$12\omega_6\omega_{22}c_s^2\omega_{13}v_1^2\omega_{11}\omega_{18}\omega_9^2 + 12\omega_6^2v_3^2\omega_{22}\omega_{13}^2\omega_{11}\omega_9 + 18\omega_6^3v_3^2\omega_{22}c_s^2\omega_{11}\omega_{18}\omega_9^2 + 12\omega_6^2c_s^2\omega_{13}v_1^2\omega_{11}\omega_{18}\omega_9^2 + 6\omega_6^3c_s^2\omega_{13}^2\omega_{18}\omega_9^2 -$
$5\omega_6^3\omega_{22}c_s^2\omega_{13}^2v_1^2\omega_{11}\omega_{18}\omega_9 - 15\omega_6^3\omega_{22}c_s^4\omega_{13}^2\omega_{11}\omega_{18}\omega_9 + 48\omega_6^2v_3^2\omega_{22}\omega_{13}v_1^2\omega_{11}\omega_{18}\omega_9^2 + 12\omega_6^2v_3^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2 + 12\omega_6\omega_{22}c_s^2\omega_{13}^2v_1^2\omega_{11}\omega_{18}\omega_9^2 -$
$12\omega_6^2c_s^2\omega_{13}^2\omega_{11}\omega_9^2 - 12\omega_6^2c_s^2\omega_{13}^2v_1^2\omega_{11}\omega_{18}\omega_9^2 + 12\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2 + 6\omega_6^3\omega_{22}c_s^2v_1^2\omega_{11}\omega_{18}\omega_9^2 - 12\omega_6^2v_3^2\omega_{22}\omega_{13}^2\omega_{11}\omega_{18} + 18\omega_6^3\omega_{22}c_s^4\omega_{13}^2\omega_{18}\omega_9 +$

$6\omega_6^3\omega_{22}c_s^2\omega_{13}^2v_1^2\omega_{18}\omega_9 - 6\omega_6^3v_3^2\omega_{22}\omega_{13}^2v_1^2\omega_{11}\omega_{18} + 5\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9 - 12\omega_6^3c_s^2\omega_{13}^2v_1^2\omega_{11}\omega_9^2 + 36\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_9 -$
$36\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}^2\omega_9 + 12\omega_6^2v_3^2\omega_{22}\omega_{11}\omega_{18}\omega_9^2 - 18\omega_6^3v_3^2c_s^2\omega_{13}\omega_{11}\omega_{18}\omega_9^2 - 45\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18}\omega_9^2 - 60\omega_6^2\omega_{22}c_s^4\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2 +$
$6\omega_6^3v_3^2\omega_{13}^2\omega_{18}\omega_9^2 - 24\omega_6v_3^2\omega_{22}\omega_{13}^2\omega_{11}\omega_{18}\omega_9 - 12\omega_6^2\omega_{22}c_s^2v_1^2\omega_{11}\omega_{18}\omega_9^2 + 24\omega_6^2v_3^2\omega_{22}\omega_{13}\omega_{18}\omega_9^2 - \omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2 + 6\omega_6^3c_s^2\omega_{13}^2v_1^2\omega_{11}\omega_{18}\omega_9^2 +$
$18\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18}\omega_9 + 36\omega_6^3v_3^2c_s^2\omega_{13}^2\omega_9^2 + 6\omega_6^3c_s^2\omega_{13}\omega_{11}\omega_{18}\omega_9^2 - 12\omega_6^3\omega_{22}c_s^2\omega_{13}^2v_1^2\omega_9 - 12\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_9 - 36\omega_6^3v_3^2c_s^2\omega_{13}^2\omega_{11}\omega_9^2 +$
$6\omega_6^3v_3^2\omega_{22}\omega_{13}^2\omega_{18}\omega_9 + 54\omega_6^2\omega_{22}c_s^4\omega_{13}^2\omega_{11}\omega_{18}\omega_9 - 12\omega_6^2v_3^2\omega_{22}\omega_{13}v_1^2\omega_{11}\omega_{18}\omega_9 + 3\omega_6^3\omega_{22}c_s^4\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2 + 36\omega_6^2v_3^2c_s^2\omega_{13}\omega_{11}\omega_{18}\omega_9^2 -$
$12\omega_6\omega_{22}c_s^2\omega_{13}^2v_1^2\omega_{11}\omega_{18}\omega_9 - 36\omega_6^2v_3^2\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_9 - 18\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9 + 12\omega_6^2\omega_{22}c_s^4\omega_{11}\omega_{18}\omega_9^2 + 12\omega_6^2v_3^2\omega_{22}\omega_{13}^2v_1^2\omega_{11}\omega_{18} -$
$3\omega_6^3\omega_{22}c_s^2\omega_{13}v_1^2\omega_{11}\omega_{18}\omega_9^2 - 18\omega_6^3c_s^4\omega_{13}\omega_{11}\omega_{18}\omega_9^2 - 36\omega_6^2v_3^2\omega_{22}\omega_{13}^2v_1^2\omega_{11}\omega_{18}\omega_9 - 12\omega_6^2v_3^2\omega_{22}\omega_{13}^2v_1^2\omega_{11}\omega_9 - 48\omega_6^2v_3^2\omega_{22}\omega_{13}\omega_{11}\omega_{18}\omega_9^2 -$
$24\omega_6^2v_3^2\omega_{22}\omega_{13}v_1^2\omega_{18}\omega_9^2 - 6\omega_6^3\omega_{22}c_s^2\omega_{11}\omega_{18}\omega_9^2 + 12\omega_6^2c_s^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2 + 36\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}\omega_{18}\omega_9^2 + 36\omega_6^2v_3^2\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_{18} +$
$\omega_6^3\omega_{22}c_s^2\omega_{13}^2v_1^2\omega_{11}\omega_{18}\omega_9^2 + 12\omega_6\omega_{22}c_s^4\omega_{13}\omega_{11}\omega_{18}\omega_9^2 - 36\omega_6^2c_s^4\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2 - 72\omega_6v_3^2\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18}\omega_9^2 - 6\omega_6^3c_s^2\omega_{13}v_1^2\omega_{11}\omega_{18}\omega_9^2 -$
$36\omega_6^2\omega_{22}c_s^4\omega_{13}^2\omega_{11}\omega_9 - 36\omega_6^2v_3^2\omega_{22}c_s^2\omega_{11}\omega_{18}\omega_9^2 - 36\omega_6^3c_s^4\omega_{13}^2\omega_{11}\omega_9^2 + 12\omega_6\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18}\omega_9^2 - 12\omega_6^3v_3^2\omega_{13}^2v_1^2\omega_{11}\omega_9^2 - 6\omega_6^3v_3^2\omega_{22}\omega_{13}\omega_{11}\omega_{18}\omega_9 +$
$18\omega_6^2\omega_{22}c_s^2\omega_{13}v_1^2\omega_{11}\omega_{18}\omega_9^2 + 12\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_9 - 96\omega_{22}c_s^4\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2 - 36\omega_6\omega_{22}c_s^4\omega_{13}^2\omega_{11}\omega_{18}\omega_9 + 36\omega_6^2v_3^2\omega_{22}\omega_{13}^2\omega_{11}\omega_{18}\omega_9 -$
$6\omega_6^3v_3^2\omega_{22}\omega_{11}\omega_{18}\omega_9^2 + 6\omega_6^3v_3^2\omega_{22}\omega_{13}v_1^2\omega_{11}\omega_{18}\omega_9 + 24\omega_6^2v_3^2\omega_{22}\omega_{13}^2v_1^2\omega_{18}\omega_9 + 12\omega_6^2c_s^2\omega_{13}^2v_1^2\omega_{11}\omega_9^2 + 12\omega_6^2v_3^2\omega_{13}v_1^2\omega_{11}\omega_{18}\omega_9^2 -$
$6\omega_6^3v_3^2\omega_{13}^2v_1^2\omega_{18}\omega_9^2 + 12\omega_6\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9 - 12\omega_6^2v_3^2\omega_{22}v_1^2\omega_{11}\omega_{18}\omega_9^2 - 36\omega_6^2v_3^2\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18}\omega_9 - 6\omega_6^3v_3^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2 -$
$12\omega_6^3c_s^2\omega_{13}^2\omega_9^2 - 18\omega_6^3c_s^4\omega_{13}^2\omega_{18}\omega_9^2 + 6\omega_6^3v_3^2\omega_{22}\omega_{13}^2\omega_{11}\omega_{18} + 72\omega_6v_3^2\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9 - 12\omega_6^2v_3^2\omega_{13}^2v_1^2\omega_{11}\omega_{18}\omega_9^2 - 12\omega_6^3v_3^2\omega_{22}\omega_{13}^2v_1^2\omega_9 -$
$12\omega_6^3v_3^2\omega_{22}\omega_{13}^2\omega_{11}\omega_9 + 36\omega_6^2c_s^4\omega_{13}^2\omega_{11}\omega_9^2 + 18\omega_6^3v_3^2c_s^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2 - 6\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_{18}\omega_9 - 18\omega_6^3v_3^2c_s^2\omega_{13}^2\omega_{18}\omega_9^2 - 42\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_{11}\omega_{18}\omega_9^2 +$
$24\omega_6v_3^2\omega_{22}\omega_{13}\omega_{11}\omega_{18}\omega_9^2 - 12\omega_6^2\omega_{22}c_s^2\omega_{13}^2v_1^2\omega_{11}\omega_9 - 12\omega_6^2\omega_{22}c_s^2\omega_{13}^2v_1^2\omega_{11}\omega_{18}\omega_9^2 - 18\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18}\omega_9^2 - 24\omega_6v_3^2\omega_{22}\omega_{13}v_1^2\omega_{11}\omega_{18}\omega_9^2 +$
$72\omega_6^2v_3^2\omega_{22}c_s^2\omega_{13}^2\omega_{18}\omega_9 - 12\omega_6^2v_3^2\omega_{13}\omega_{11}\omega_{18}\omega_9^2 + 9\omega_6^3v_3^2\omega_{22}\omega_{13}^2v_1^2\omega_{11}\omega_{18}\omega_9 + 36\omega_6^3\omega_{22}c_s^4\omega_{13}^2\omega_{11}\omega_9 + 18\omega_6^2\omega_{22}c_s^2\omega_{13}^2v_1^2\omega_{11}\omega_{18}\omega_9 -$
$36\omega_6^3\omega_{22}c_s^4\omega_{13}^2\omega_9 + 18\omega_6^3c_s^4\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2 + 15\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_{11}\omega_{18}\omega_9^2 + 12\omega_6^2v_3^2\omega_{13}^2v_1^2\omega_{11}\omega_9^2 - 36\omega_6^2v_3^2c_s^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2 + 6\omega_6^3v_3^2\omega_{13}^2v_1^2\omega_{11}\omega_{18}\omega_9^2 -$
$6\omega_6^3c_s^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2 + 36\omega_6^3c_s^4\omega_{13}^2\omega_9^2 + 12\omega_6^3v_3^2\omega_{13}^2\omega_{11}\omega_9^2 + 27\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9 + 12\omega_6^3v_3^2\omega_{13}^2v_1^2\omega_9^2 + 12\omega_6^2\omega_{22}c_s^2\omega_{11}\omega_{18}\omega_9^2 -$
$6\omega_6^3c_s^2\omega_{13}^2v_1^2\omega_{18}\omega_9^2 - 18\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}^2\omega_{18}\omega_9 + 3\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18}\omega_9^2 + 12\omega_6^3\omega_{22}c_s^2\omega_{13}^2v_1^2\omega_{11}\omega_9 - 12\omega_6\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2 -$
$6\omega_6^3v_3^2\omega_{22}\omega_{13}^2v_1^2\omega_{18}\omega_9 - 9\omega_6^3v_3^2\omega_{22}\omega_{13}^2\omega_{11}\omega_{18}\omega_9 + 144\omega_6^2v_3^2\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18}\omega_9^2 + 36\omega_6^2c_s^4\omega_{13}\omega_{11}\omega_{18}\omega_9^2 - 6\omega_6^3\omega_{22}c_s^4\omega_{11}\omega_{18}\omega_9^2 + 12\omega_6^3c_s^2\omega_{13}^2v_1^2\omega_9^2 +$
$12\omega_6^3c_s^2\omega_{13}^2\omega_{11}\omega_9^2 - 12\omega_6^3v_3^2\omega_{22}\omega_{13}\omega_{18}\omega_9^2 + 24\omega_6v_3^2\omega_{22}\omega_{13}^2v_1^2\omega_{11}\omega_{18}\omega_9 + 156\omega_6\omega_{22}c_s^4\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2 + 12\omega_6^3v_3^2\omega_{22}\omega_{13}^2\omega_9 - 24\omega_6^2v_3^2\omega_{22}\omega_{13}^2\omega_{18}\omega_9 -$
$6\omega_6^3v_3^2\omega_{13}v_1^2\omega_{11}\omega_{18}\omega_9^2 - 15\omega_6^3v_3^2\omega_{22}\omega_{13}v_1^2\omega_{11}\omega_{18}\omega_9^2 + 36\omega_6^2v_3^2c_s^2\omega_{13}^2\omega_{11}\omega_9^2 + 12\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_9 + 6\omega_6^3v_3^2\omega_{22}v_1^2\omega_{11}\omega_{18}\omega_9^2 - 12\omega_6^2c_s^2\omega_{13}\omega_{11}\omega_{18}\omega_9^2$

$C_{33} = -6\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_{18} - 12\omega_6^3v_3^2\omega_{13}^2\omega_9^2 - 24\omega_6^2v_3^2\omega_{22}c_s^2\omega_{13}\omega_{18}\omega_9^2 - 12\omega_6^2v_3^2\omega_{13}^2\omega_{11}\omega_9^2 + 36\omega_6^3v_3^2\omega_{22}\omega_{13}v_1^2\omega_{18}\omega_9^2 +$
$15\omega_6^3v_3^2\omega_{22}\omega_{13}\omega_{11}\omega_{18}\omega_9^2 + 6\omega_6^3v_3^2\omega_{13}\omega_{11}\omega_{18}\omega_9^2 - 36\omega_6^2v_3^2\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9 + 36\omega_6^3v_3^2\omega_{22}\omega_{13}^2v_1^2\omega_{11}\omega_9 + 12\omega_6^2v_3^2\omega_{22}\omega_{13}\omega_{11}\omega_{18}\omega_9 +$
$60\omega_6\omega_{22}c_s^2\omega_{13}v_1^2\omega_{11}\omega_{18}\omega_9^2 + 12\omega_6^2v_3^2\omega_{22}\omega_{13}^2\omega_{11}\omega_9 + 6\omega_6^3v_3^2\omega_{22}c_s^2\omega_{11}\omega_{18}\omega_9^2 + 36\omega_6^2c_s^2\omega_{13}v_1^2\omega_{11}\omega_{18}\omega_9^2 + 6\omega_6^3c_s^2\omega_{13}^2\omega_{18}\omega_9^2 -$
$15\omega_6^3\omega_{22}c_s^2\omega_{13}^2v_1^2\omega_{11}\omega_{18}\omega_9 - 5\omega_6^3\omega_{22}c_s^4\omega_{13}^2\omega_{11}\omega_{18}\omega_9 + 144\omega_6^2v_3^2\omega_{22}\omega_{13}v_1^2\omega_{11}\omega_{18}\omega_9^2 + 12\omega_6^2v_3^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2 + 60\omega_6\omega_{22}c_s^2\omega_{13}^2v_1^2\omega_{11}\omega_{18}\omega_9^2 -$
$12\omega_6^2c_s^2\omega_{13}^2\omega_{11}\omega_9^2 - 36\omega_6^2c_s^2\omega_{13}^2v_1^2\omega_{11}\omega_{18}\omega_9^2 + \omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2 - 12\omega_6^3\omega_{22}c_s^2v_1^2\omega_{11}\omega_{18}\omega_9^2 - 12\omega_6^2v_3^2\omega_{22}\omega_{13}^2\omega_{11}\omega_{18} + 6\omega_6^3\omega_{22}c_s^4\omega_{13}^2\omega_{18}\omega_9 +$
$18\omega_6^3\omega_{22}c_s^2\omega_{13}^2v_1^2\omega_{18}\omega_9 - 18\omega_6^3v_3^2\omega_{22}\omega_{13}^2v_1^2\omega_{11}\omega_{18} + 5\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9 - 36\omega_6^3c_s^2\omega_{13}^2v_1^2\omega_{11}\omega_9^2 + 12\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_9 -$
$12\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}^2\omega_9 + 12\omega_6^2v_3^2\omega_{22}\omega_{11}\omega_{18}\omega_9^2 - 6\omega_6^3v_3^2c_s^2\omega_{13}\omega_{11}\omega_{18}\omega_9^2 - 15\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18}\omega_9^2 - 5\omega_6^2\omega_{22}c_s^4\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2 + 6\omega_6^3v_3^2\omega_{13}^2\omega_{18}\omega_9^2 -$
$24\omega_6v_3^2\omega_{22}\omega_{13}^2\omega_{11}\omega_{18}\omega_9 + 24\omega_6^2\omega_{22}c_s^2v_1^2\omega_{11}\omega_{18}\omega_9^2 + 24\omega_6^2v_3^2\omega_{22}\omega_{13}\omega_{18}\omega_9^2 + 18\omega_6^3c_s^2\omega_{13}^2v_1^2\omega_{11}\omega_{18}\omega_9^2 + 6\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18}\omega_9 +$
$12\omega_6^3v_3^2c_s^2\omega_{13}^2\omega_9^2 + 6\omega_6^3c_s^2\omega_{13}\omega_{11}\omega_{18}\omega_9^2 - 36\omega_6^3\omega_{22}c_s^2\omega_{13}^2v_1^2\omega_9 - 12\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_9 - 12\omega_6^3v_3^2c_s^2\omega_{13}^2\omega_{11}\omega_9^2 + 6\omega_6^3v_3^2\omega_{22}\omega_{13}^2\omega_{18}\omega_9 +$
$18\omega_6^2\omega_{22}c_s^4\omega_{13}^2\omega_{11}\omega_{18}\omega_9 - 36\omega_6^2v_3^2\omega_{22}\omega_{13}v_1^2\omega_{11}\omega_{18}\omega_9 - \omega_6^3\omega_{22}c_s^4\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2 + 12\omega_6^2v_3^2c_s^2\omega_{13}\omega_{11}\omega_{18}\omega_9^2 - 36\omega_6\omega_{22}c_s^2\omega_{13}^2v_1^2\omega_{11}\omega_{18}\omega_9 -$
$12\omega_6^2v_3^2\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_9 - 18\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9 + 36\omega_6^2v_3^2\omega_{22}\omega_{13}^2v_1^2\omega_{11}\omega_{18} + 30\omega_6^3\omega_{22}c_s^2\omega_{13}v_1^2\omega_{11}\omega_{18}\omega_9^2 - 6\omega_6^3c_s^4\omega_{13}\omega_{11}\omega_{18}\omega_9^2 -$
$108\omega_6^2v_3^2\omega_{22}\omega_{13}^2v_1^2\omega_{11}\omega_{18}\omega_9 - 36\omega_6^2v_3^2\omega_{22}\omega_{13}^2v_1^2\omega_{11}\omega_9 - 48\omega_6^2v_3^2\omega_{22}\omega_{13}\omega_{11}\omega_{18}\omega_9^2 - 72\omega_6^2v_3^2\omega_{22}\omega_{13}v_1^2\omega_{18}\omega_9^2 + 12\omega_6^2c_s^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2 +$
$12\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}\omega_{18}\omega_9^2 + 12\omega_6^2v_3^2\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_{18} + 12\omega_6\omega_{22}c_s^4\omega_{13}\omega_{11}\omega_{18}\omega_9^2 - 12\omega_6^2c_s^4\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2 - 24\omega_6v_3^2\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18}\omega_9^2 -$
$18\omega_6^3c_s^2\omega_{13}v_1^2\omega_{11}\omega_{18}\omega_9^2 - 12\omega_6^2\omega_{22}c_s^4\omega_{13}^2\omega_{11}\omega_9 - 12\omega_6^2v_3^2\omega_{22}c_s^2\omega_{11}\omega_{18}\omega_9^2 - 12\omega_6^3c_s^4\omega_{13}^2\omega_{11}\omega_9^2 - 12\omega_6\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18}\omega_9^2 - 36\omega_6^3v_3^2\omega_{13}^2v_1^2\omega_{11}\omega_9^2 -$
$6\omega_6^3v_3^2\omega_{22}\omega_{13}\omega_{11}\omega_{18}\omega_9 - 102\omega_6^2\omega_{22}c_s^2\omega_{13}v_1^2\omega_{11}\omega_{18}\omega_9^2 + 12\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_9 - 12\omega_{22}c_s^4\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2 - 12\omega_6\omega_{22}c_s^4\omega_{13}^2\omega_{11}\omega_{18}\omega_9 +$
$36\omega_6^2v_3^2\omega_{22}\omega_{13}^2\omega_{11}\omega_{18}\omega_9 - 6\omega_6^3v_3^2\omega_{22}\omega_{11}\omega_{18}\omega_9^2 + 18\omega_6^3v_3^2\omega_{22}\omega_{13}v_1^2\omega_{11}\omega_{18}\omega_9 + 72\omega_6^2v_3^2\omega_{22}\omega_{13}^2v_1^2\omega_{18}\omega_9 + 36\omega_6^2c_s^2\omega_{13}^2v_1^2\omega_{11}\omega_9^2 +$
$36\omega_6^2v_3^2\omega_{13}v_1^2\omega_{11}\omega_{18}\omega_9^2 - 18\omega_6^3v_3^2\omega_{13}^2v_1^2\omega_{18}\omega_9^2 + 12\omega_6\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9 - 36\omega_6^2v_3^2\omega_{22}v_1^2\omega_{11}\omega_{18}\omega_9^2 - 12\omega_6^2v_3^2\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18}\omega_9 -$
$6\omega_6^3v_3^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2 - 12\omega_6^3c_s^2\omega_{13}^2\omega_9^2 - 6\omega_6^3c_s^4\omega_{13}^2\omega_{18}\omega_9^2 + 6\omega_6^3v_3^2\omega_{22}\omega_{13}^2\omega_{11}\omega_{18} + 24\omega_6v_3^2\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9 - 36\omega_6^2v_3^2\omega_{13}^2v_1^2\omega_{11}\omega_{18}\omega_9^2 -$
$36\omega_6^3v_3^2\omega_{22}\omega_{13}^2v_1^2\omega_9 - 12\omega_6^3v_3^2\omega_{22}\omega_{13}^2\omega_{11}\omega_9 + 12\omega_6^2c_s^4\omega_{13}^2\omega_{11}\omega_9^2 + 6\omega_6^3v_3^2c_s^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2 - 6\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_{18}\omega_9 - 6\omega_6^3v_3^2c_s^2\omega_{13}^2\omega_{18}\omega_9^2 -$
$18\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_{11}\omega_{18}\omega_9^2 + 24\omega_6v_3^2\omega_{22}\omega_{13}\omega_{11}\omega_{18}\omega_9^2 - 36\omega_6^2\omega_{22}c_s^2\omega_{13}^2v_1^2\omega_{11}\omega_9 - 15\omega_6^2\omega_{22}c_s^2\omega_{13}^2v_1^2\omega_{11}\omega_{18}\omega_9^2 + 18\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18}\omega_9^2 -$
$72\omega_6v_3^2\omega_{22}\omega_{13}v_1^2\omega_{11}\omega_{18}\omega_9^2 + 24\omega_6^2v_3^2\omega_{22}c_s^2\omega_{13}^2\omega_{18}\omega_9 - 12\omega_6^2v_3^2\omega_{13}\omega_{11}\omega_{18}\omega_9^2 + 27\omega_6^3v_3^2\omega_{22}\omega_{13}^2v_1^2\omega_{11}\omega_{18}\omega_9 + 12\omega_6^3\omega_{22}c_s^4\omega_{13}^2\omega_{11}\omega_9 +$
$54\omega_6^2\omega_{22}c_s^2\omega_{13}^2v_1^2\omega_{11}\omega_{18}\omega_9 - 12\omega_6^3\omega_{22}c_s^4\omega_{13}^2\omega_9 + 6\omega_6^3c_s^4\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2 + 6\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_{11}\omega_{18}\omega_9^2 + 36\omega_6^2v_3^2\omega_{13}^2v_1^2\omega_{11}\omega_9^2 - 48\omega_{22}c_s^2\omega_{13}^2v_1^2\omega_{11}\omega_{18}\omega_9^2 -$
$12\omega_6^2v_3^2c_s^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2 + 18\omega_6^3v_3^2\omega_{13}^2v_1^2\omega_{11}\omega_{18}\omega_9^2 - 6\omega_6^3c_s^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2 + 12\omega_6^3c_s^4\omega_{13}^2\omega_9^2 + 12\omega_6^3v_3^2\omega_{13}^2\omega_{11}\omega_9^2 + 9\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9 +$
$36\omega_6^3v_3^2\omega_{13}^2v_1^2\omega_9^2 - 18\omega_6^3c_s^2\omega_{13}^2v_1^2\omega_{18}\omega_9^2 - 6\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}^2\omega_{18}\omega_9 - 6\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18}\omega_9^2 + 36\omega_6^3\omega_{22}c_s^2\omega_{13}^2v_1^2\omega_{11}\omega_9 - 18\omega_6^3v_3^2\omega_{22}\omega_{13}^2v_1^2\omega_{18}\omega_9 -$
$9\omega_6^3v_3^2\omega_{22}\omega_{13}^2\omega_{11}\omega_{18}\omega_9 + 48\omega_6^2v_3^2\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18}\omega_9^2 + 12\omega_6^2c_s^4\omega_{13}\omega_{11}\omega_{18}\omega_9^2 + 36\omega_6^3c_s^2\omega_{13}^2v_1^2\omega_9^2 + 12\omega_6^3c_s^2\omega_{13}^2\omega_{11}\omega_9^2 - 12\omega_6^3v_3^2\omega_{22}\omega_{13}\omega_{18}\omega_9^2 +$
$72\omega_6v_3^2\omega_{22}\omega_{13}^2v_1^2\omega_{11}\omega_{18}\omega_9 + 18\omega_6\omega_{22}c_s^4\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2 + 12\omega_6^3v_3^2\omega_{22}\omega_{13}^2\omega_9 - 24\omega_6^2v_3^2\omega_{22}\omega_{13}^2\omega_{18}\omega_9 - 18\omega_6^3v_3^2\omega_{13}v_1^2\omega_{11}\omega_{18}\omega_9^2 -$
$45\omega_6^3v_3^2\omega_{22}\omega_{13}v_1^2\omega_{11}\omega_{18}\omega_9^2 + 12\omega_6^2v_3^2c_s^2\omega_{13}^2\omega_{11}\omega_9^2 + 12\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_9 + 18\omega_6^3v_3^2\omega_{22}v_1^2\omega_{11}\omega_{18}\omega_9^2 - 12\omega_6^2c_s^2\omega_{13}\omega_{11}\omega_{18}\omega_9^2$

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

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

$C_{35} = -2\omega_6^2\omega_{19}c_s^2\omega_7^2v_1v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7v_1^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 4\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} +$
$2\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 - 2\omega_6^3v_3^2\omega_{22}\omega_{13}\omega_7^2v_1v_2^2\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^3v_3^2\omega_{22}\omega_{13}\omega_7^2v_1^2v_2\omega_{11}\omega_{14}\omega_8^2\omega_{18} -$
$2\omega_6^2v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} - 2\omega_6^2v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 - 2\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7v_1^2v_2\omega_{11}\omega_{14}\omega_8^2\omega_{18} +$
$2\omega_6^3v_3^2\omega_{19}c_s^2\omega_{13}\omega_7^2v_1\omega_{20}\omega_{11}\omega_{14}\omega_8^2 - \omega_6^3v_3^2\omega_{19}c_s^2\omega_{13}\omega_7^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_{18} + \omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}\omega_7^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_{18} +$
$2\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1v_2^2\omega_{20}\omega_{11}\omega_8\omega_{18} + \omega_6^3v_3^2\omega_{22}\omega_{13}\omega_7^2v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^3v_3^2\omega_{19}\omega_{13}\omega_7^2v_1v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 -$
$2\omega_6^2v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1^2v_2\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 4\omega_6^2\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_{18} - 2\omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_2\omega_{14}\omega_8^2\omega_{18} -$
$2\omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_2\omega_{20}\omega_{11}\omega_8\omega_{18} + 2\omega_6^3v_3^2\omega_{19}c_s^2\omega_{13}\omega_7^2v_1^2v_2\omega_{20}\omega_{14}\omega_8^2 + 2\omega_6^2v_3^2\omega_{22}c_s^2\omega_{13}\omega_7^2v_1v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 +$
$2\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1v_2^2\omega_{14}\omega_8^2\omega_{18} - \omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7v_1\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1^2v_2\omega_{11}\omega_{14}\omega_8^2 -$
$2\omega_6^2v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1\omega_{20}\omega_{11}\omega_8\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1^2v_2\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^2v_3^2\omega_{22}\omega_{19}c_s^2\omega_7^2v_1\omega_{20}\omega_{11}\omega_8^2\omega_{18} -$
$2\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_7^2v_1v_2^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1v_2^2\omega_{20}\omega_{11}\omega_8\omega_{18} + \omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_{18} +$
$2\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7v_1v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1\omega_{20}\omega_{14}\omega_8^2 + 2\omega_6^2v_3^2\omega_{19}c_s^2\omega_7^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} -$
$2\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 - 2\omega_6^2v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + \omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_{18} -$
$2\omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7v_1\omega_{11}\omega_{14}\omega_8\omega_{18} - 2\omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1\omega_{20}\omega_{11}\omega_{14}\omega_8^2 - 2\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2v_1^2v_2\omega_{11}\omega_{14}\omega_8^2\omega_{18} -$
$\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_{18} - \omega_6^3\omega_{19}c_s^2\omega_{13}\omega_7^2v_1v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^3v_3^2\omega_{19}c_s^2\omega_{13}\omega_7^2v_1\omega_{20}\omega_{14}\omega_8^2 -$
$2\omega_6^2v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7v_1v_2^2\omega_{20}\omega_{11}\omega_8\omega_{18} - 4\omega_6^2\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2v_1^2v_2\omega_{14}\omega_8^2\omega_{18} +$
$\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7v_1v_2^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7v_2\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^2v_3^2\omega_{22}\omega_{19}\omega_7^2v_1^2v_2\omega_{20}\omega_{11}\omega_8^2\omega_{18} +$
$2\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1v_2^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} - \omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_7^2v_2\omega_{20}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1^2v_2\omega_{11}\omega_{14}\omega_8\omega_{18} -$
$2\omega_6^2v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_2\omega_{20}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - \omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} -$
$2\omega_6^2v_3^2\omega_{22}\omega_{19}c_s^2\omega_7^2v_1v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 - 2\omega_6^3v_3^2\omega_{19}c_s^2\omega_{13}\omega_7^2v_1v_2^2\omega_{20}\omega_{14}\omega_8^2 + 2\omega_6^3v_3^2\omega_{19}c_s^2\omega_{13}\omega_7^2v_1\omega_{20}\omega_{14}\omega_8^2 -$
$2\omega_6^2v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1^2v_2\omega_{11}\omega_{14}\omega_8^2 - 2\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_7^2v_1^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1v_2^2\omega_{11}\omega_{14}\omega_8^2 -$
$2\omega_6^2v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_6^2v_3^2\omega_{19}c_s^2\omega_{13}\omega_7^2v_1v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1^2v_2\omega_{20}\omega_{14}\omega_8^2 -$
$2\omega_6^2v_3^2\omega_{22}\omega_{19}\omega_7^2v_1v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 12\omega_6\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - \omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_{18} +$
$2\omega_6^2v_3^2\omega_{22}\omega_{19}\omega_7^2v_1v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^2v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1^2v_2\omega_{20}\omega_{11}\omega_8\omega_{18} + 2\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} -$
$2\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1v_2^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_7^2v_1^2v_2\omega_{20}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1v_2^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} -$
$\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - \omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2v_1^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - \omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}\omega_7^2v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_{18} +$
$\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + \omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1v_2^2\omega_{11}\omega_{14}\omega_8^2 + \omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} +$
$2\omega_6^2v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1v_2^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} - \omega_6^3v_3^2\omega_{22}\omega_{13}\omega_7^2v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^3v_3^2\omega_{19}\omega_{13}\omega_7^2v_1^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 -$
$\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_7^2v_1v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - \omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_7^2v_1\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^2v_3^2\omega_{22}c_s^2\omega_7^2v_1v_2^2\omega_{11}\omega_{14}\omega_8^2 -$
$2\omega_6^2v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_6^2v_3^2\omega_{19}c_s^2\omega_{13}\omega_7^2v_1\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^2v_3^2\omega_{22}c_s^2\omega_{13}\omega_7^2v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_{18} +$
$\omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^2v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 +$
$2\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1^2v_2\omega_{11}\omega_{14}\omega_8^2\omega_{18} - \omega_6^3v_3^2\omega_{22}\omega_{13}\omega_7^2v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^3v_3^2\omega_{19}\omega_{13}\omega_7^2v_1^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 -$
$\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_7^2v_1v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}\omega_7^2v_1\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^2v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1v_2^2\omega_{11}\omega_{14}\omega_8\omega_{18} +$
$2\omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_2\omega_{20}\omega_{11}\omega_8\omega_{18} + 2\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}\omega_7^2v_2\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7v_1v_2^2\omega_{11}\omega_{14}\omega_8\omega_{18} -$
$\omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - \omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2v_1v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - \omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} +$
$2\omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_2\omega_{14}\omega_8^2 - 2\omega_6^2v_3^2\omega_{19}\omega_7^2v_1v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - \omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7v_1^2v_2\omega_{20}\omega_{11}\omega_8^2\omega_{18} -$
$\omega_6^3v_3^2\omega_{22}\omega_{13}\omega_7v_1^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{19}c_s^2\omega_{13}\omega_7^2v_1^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^3\omega_{19}c_s^2\omega_{13}\omega_7^2v_1^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 +$
$2\omega_6^2v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1v_2^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^2v_3^2\omega_{22}\omega_{19}\omega_7^2v_1v_2^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1\omega_{11}\omega_{14}\omega_8\omega_{18} +$
$2\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1^2v_2\omega_{20}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1v_2^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} +$
$\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}\omega_7v_1\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} - 2\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1^2v_2\omega_{20}\omega_{11}\omega_8^2\omega_{18} -$
$\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_7^2v_1v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}\omega_7^2v_1\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^2v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_2\omega_{11}\omega_{14}\omega_8^2\omega_{18} -$
$\omega_6^3v_3^2\omega_{19}\omega_{13}\omega_7^2v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7v_1v_2^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1\omega_{14}\omega_8^2 -$
$2\omega_6^2v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 - 4\omega_6\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2v_1v_2^2\omega_{14}\omega_8^2\omega_{18} +$
$2\omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 4\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7v_2\omega_{20}\omega_{11}\omega_{14}\omega_{18} - 2\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}\omega_7^2v_2\omega_{11}\omega_{14}\omega_8^2\omega_{18} +$
$2\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7v_1v_2^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^2v_3^2\omega_{19}c_s^2\omega_{13}\omega_7^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - \omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7v_2\omega_{20}\omega_{11}\omega_8^2\omega_{18} +$
$\omega_6^3v_3^2\omega_{19}\omega_7^2v_1v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1^2v_2\omega_{14}\omega_8^2 + 2\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 -$
$2\omega_6^2v_3^2\omega_{19}\omega_{13}\omega_7^2v_1^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + \omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7v_1^2v_2\omega_{20}\omega_{11}\omega_8\omega_{18} +$
$2\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1\omega_{20}\omega_{14}\omega_8^2 + 4\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}v_2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} -$
$2\omega_6^3v_3^2\omega_{22}\omega_{13}\omega_7v_1v_2^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1^2v_2\omega_{20}\omega_{11}\omega_8\omega_{18} + 2\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_7^2v_1v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} +$
$2\omega_6^2v_3^2\omega_{22}\omega_{19}c_s^2\omega_7^2v_1\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1v_2^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} -$

$2\omega_6^2\omega_{19}c_s^2\omega_{13}\omega_7^2v_1v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 + 2\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1^2v_2\omega_{11}\omega_{14}\omega_8^2 + \omega_6^3v_3^2\omega_{22}\omega_{19}\omega_7^2v_1v_2^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} -$
$4\omega_6^2\omega_{22}\omega_{19}c_s^4\omega_{13}v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^3v_3^2\omega_{19}\omega_{13}\omega_7^2v_1v_2^2\omega_{20}\omega_{14}\omega_8^2 + 2\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1v_2^2\omega_{11}\omega_{14}\omega_8\omega_{18} -$
$2\omega_6^2v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1^2v_2\omega_{20}\omega_{11}\omega_8^2\omega_{18} + \omega_6^3\omega_{19}c_s^2\omega_{13}\omega_7^2v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} -$
$2\omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_2\omega_{11}\omega_{14}\omega_8\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1^2v_2\omega_{14}\omega_8^2\omega_{18} + 4\omega_6\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} -$
$\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_7^2v_1^2v_2\omega_{20}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1^2v_2\omega_{14}\omega_8^2 - 2\omega_6^3\omega_{19}c_s^2\omega_{13}\omega_7^2v_1v_2^2\omega_{20}\omega_{14}\omega_8^2 +$
$\omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - \omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7v_1^2v_2\omega_{20}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7v_1v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} +$
$2\omega_6^2\omega_{19}c_s^2\omega_7^2v_1^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^3v_3^2\omega_{22}\omega_{13}\omega_7^2v_1^2v_2\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^2v_3^2\omega_{19}c_s^2\omega_7^2v_1\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} +$
$\omega_6^3\omega_{19}c_s^2\omega_{13}\omega_7^2v_1^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^2v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} - 2\omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7v_1\omega_{20}\omega_{11}\omega_8\omega_{18} -$
$2\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7v_1v_2^2\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_6^2v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} - 2\omega_6^2v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1\omega_{11}\omega_{14}\omega_8\omega_{18} +$
$\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1^2v_2\omega_{20}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1v_2^2\omega_{11}\omega_{14}\omega_8^2 - 2\omega_6^2v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1v_2^2\omega_{11}\omega_{14}\omega_8\omega_{18} -$
$2\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7v_1^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_6^2v_3^2\omega_{19}\omega_{13}\omega_7^2v_1^2v_2\omega_{14}\omega_8^2 + 2\omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 -$
$\omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7v_2\omega_{11}\omega_{14}\omega_8\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7v_1v_2^2\omega_{20}\omega_{11}\omega_8\omega_{18} -$
$\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 - 8\omega_6^2\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} -$
$2\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1v_2^2\omega_{14}\omega_8^2 + 2\omega_6^2v_3^2\omega_{22}\omega_{19}c_s^2\omega_7^2v_2\omega_{20}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1^2v_2\omega_{14}\omega_8^2\omega_{18} -$
$8\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7v_2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} - \omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^2v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_2\omega_{20}\omega_{11}\omega_8\omega_{18} -$
$\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_7^2v_1^2v_2\omega_{20}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1^2v_2\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{19}c_s^2\omega_{13}\omega_7^2v_1^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 +$
$2\omega_6^3v_3^2\omega_{22}\omega_{13}\omega_7v_1^2v_2\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1v_2^2\omega_{20}\omega_{11}\omega_8\omega_{18} + 2\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7v_1^2v_2\omega_{11}\omega_{14}\omega_8^2\omega_{18} +$
$\omega_6^3v_3^2\omega_{19}\omega_{13}\omega_7^2v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_{18} + \omega_6^3v_3^2\omega_{19}c_s^2\omega_{13}\omega_7^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_{18} - \omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}\omega_7^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_{18} -$
$2\omega_6^3v_3^2\omega_{19}c_s^2\omega_{13}\omega_7^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 + 2\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1v_2^2\omega_{20}\omega_{11}\omega_8\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1v_2^2\omega_{11}\omega_{14}\omega_8^2 -$
$2\omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_2\omega_{11}\omega_{14}\omega_8^2 - 2\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1^2v_2\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1\omega_{20}\omega_{11}\omega_8\omega_{18} -$
$2\omega_6^2v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1\omega_{11}\omega_{14}\omega_8^2 + 2\omega_6^2\omega_{19}c_s^2\omega_{13}\omega_7^2v_1v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + \omega_6^3v_3^2\omega_{22}\omega_{13}\omega_7v_1v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} -$
$2\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1^2v_2\omega_{11}\omega_{14}\omega_8^2\omega_{18} + \omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^2v_3^2\omega_{19}\omega_7^2v_1^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} +$
$2\omega_6^2v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1\omega_{20}\omega_{11}\omega_{14}\omega_8^2 + \omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + \omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2v_1^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} +$
$2\omega_6^2v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 + 2\omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7v_1^2v_2\omega_{11}\omega_{14}\omega_8\omega_{18} +$
$\omega_6^3v_3^2\omega_{22}\omega_{13}\omega_7^2v_1^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + \omega_6^3\omega_{19}c_s^2\omega_7^2v_1v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^2v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} +$
$\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7v_1v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + \omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7v_1^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + \omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_7^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} -$
$2\omega_6^2v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 - 2\omega_6^2v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + \omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_2\omega_{20}\omega_{11}\omega_8^2\omega_{18} +$
$8\omega_6^2\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^2v_3^2\omega_{19}c_s^2\omega_{13}\omega_7^2v_1\omega_{20}\omega_{11}\omega_{14}\omega_8^2 - 2\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} +$
$2\omega_6^2v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1^2v_2\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}\omega_7v_2\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 8\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} -$
$4\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_{18} - \omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1v_2^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1v_2^2\omega_{14}\omega_8^2 +$
$\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_7^2v_1^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - \omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7v_1v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + \omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_7^2v_1\omega_{20}\omega_{11}\omega_8^2\omega_{18} +$
$\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_7^2v_1v_2^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1^2v_2\omega_{11}\omega_{14}\omega_8^2 + 2\omega_6^3v_3^2\omega_{19}c_s^2\omega_{13}\omega_7^2v_2\omega_{20}\omega_{14}\omega_8^2 - \omega_6^3v_3^2\omega_{19}c_s^2\omega_7^2v_1^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_{18} +$
$2\omega_6^2v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1v_2^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_6^2v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1\omega_{20}\omega_{11}\omega_8^2\omega_{18} -$
$2\omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1^2v_2\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1^2v_2\omega_{14}\omega_8^2 + \omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_7^2v_1v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_{18} - \omega_6^3v_3^2\omega_{19}\omega_{13}\omega_7^2v_1v_2^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} -$
$2\omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_2\omega_{20}\omega_{14}\omega_8^2 - \omega_6^3v_3^2\omega_{19}\omega_{13}\omega_7^2v_1v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - \omega_6^3v_3^2\omega_{19}c_s^2\omega_7^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} +$
$2\omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7v_1\omega_{11}\omega_{14}\omega_8^2\omega_{18} + \omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}\omega_7^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - \omega_6^3v_3^2\omega_{19}c_s^2\omega_{13}\omega_7^2v_1\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} +$
$2\omega_6^2v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}$

$C_{36} = -\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_{11}\omega_8^2\omega_{18} + \omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7v_2^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} +$
$4\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - \omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} -$
$4\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7^2v_1v_2\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_6^3v_3^2\omega_{22}\omega_{13}^2\omega_7^2v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^3\omega_{19}c_s^2\omega_{13}^2\omega_7^2v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_{18} -$
$2\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_7^2v_2^2\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2v_2^2\omega_{14}\omega_8^2 + 2\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2v_2^2\omega_{20}\omega_{14}\omega_8^2 + 4\omega_6^2v_3^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2v_1v_2\omega_{11}\omega_{14}\omega_8^2 -$
$\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2v_2^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2v_3^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2v_2^2\omega_{20}\omega_{11}\omega_8\omega_{18} - 2\omega_6^2v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7^2v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} -$
$2\omega_6^2v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7\omega_{11}\omega_{14}\omega_8^2 - 2\omega_6^3v_3^2\omega_{19}\omega_{13}^2\omega_7^2v_2^2\omega_{20}\omega_{14}\omega_8^2 - 2\omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} + \omega_6^3v_3^2\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} +$
$\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_7^2v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7^2v_2^2\omega_{11}\omega_{14}\omega_8^2 - 2\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7^2v_2^2\omega_{11}\omega_{14}\omega_8\omega_{18} +$
$4\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7v_1v_2\omega_{11}\omega_{14}\omega_8\omega_{18} - 2\omega_6^2v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7^2\omega_{11}\omega_{14}\omega_8\omega_{18} - 2\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_{18} +$
$4\omega_6^2v_3^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 4\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 4\omega_6^2v_3^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2v_1v_2\omega_{11}\omega_{14}\omega_8\omega_{18} -$
$2\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7v_2^2\omega_{11}\omega_{14}\omega_8\omega_{18} - 2\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 + 2\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} +$
$2\omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^2v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_2^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} + 4\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_7v_1v_2\omega_{11}\omega_{14}\omega_8^2\omega_{18} -$
$4\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7^2v_1v_2\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2v_2^2\omega_{11}\omega_{14}\omega_8^2 + 2\omega_6^3v_3^2\omega_{19}\omega_{13}^2\omega_7^2v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 +$
$\omega_6^3v_3^2\omega_{19}\omega_{13}\omega_7^2v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 4\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7v_1v_2\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7^2v_2^2\omega_{11}\omega_{14}\omega_8\omega_{18} +$
$\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_7v_2^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7^2v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} +$
$2\omega_6^2\omega_{19}c_s^2\omega_{13}^2\omega_7^2v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7^2v_2^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} -$
$4\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2v_1v_2\omega_{14}\omega_8^2\omega_{18} - 4\omega_6^2v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 4\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} +$
$2\omega_6^2v_3^2\omega_{19}c_s^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}^2\omega_7^2v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - \omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} -$
$2\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7^2v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7v_1\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_6^2v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7v_1\omega_{20}\omega_{11}\omega_8^2\omega_{18} -$
$4\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2v_1v_2\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 4\omega_6^2v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_6^2v_3^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2v_2^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} +$
$\omega_6^3v_3^2\omega_{19}c_s^2\omega_{13}^2\omega_7^2v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 + 4\omega_6^3v_3^2\omega_{22}\omega_{13}^2\omega_7v_1v_2\omega_{11}\omega_{14}\omega_8^2\omega_{18} -$
$8\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7^2v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 4\omega_6^2\omega_{19}c_s^2\omega_{13}^2\omega_7^2v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 - 2\omega_6^2v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} +$
$4\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2v_1v_2\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_{18} + 2\omega_6^2v_3^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2v_2^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} +$
$\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_{18} - 12\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7^2v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2v_2^2\omega_{11}\omega_{14}\omega_8\omega_{18} -$
$2\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}^2\omega_7\omega_{11}\omega_{14}\omega_8^2\omega_{18} - \omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_7^2v_2^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} +$
$4\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7^2v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} - 2\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} +$
$4\omega_6^2v_3^2\omega_{19}\omega_{13}^2\omega_7^2v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 - 2\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7^2v_2^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7^2v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_{18} -$
$2\omega_6^3v_3^2\omega_{22}\omega_{13}^2\omega_7^2v_2^2\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7^2v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 - 2\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7^2v_2^2\omega_{11}\omega_{14}\omega_8\omega_{18} -$
$4\omega_6^2v_3^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2v_1v_2\omega_{20}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7^2v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2 +$

$4\omega_6^3v_3^2\omega_{22}\omega_{13}^2\omega_7^2v_1v_2\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^2v_3^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2v_2^2\omega_{11}\omega_{14}\omega_8^2 - 2\omega_6^3v_3^2\omega_{19}c_s^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2 + 2\omega_6^3\omega_{19}c_s^2\omega_{13}^2\omega_7^2v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} -$
$2\omega_6^2v_3^2\omega_{19}\omega_{13}^2\omega_7^2v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 + 4\omega_6^2v_3^2\omega_{19}\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 4\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7^2v_1v_2\omega_{14}\omega_8^2 +$
$2\omega_6^2v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} + \omega_6^3\omega_{19}c_s^2\omega_{13}\omega_7^2v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^2v_3^2\omega_{19}\omega_{13}^2\omega_7^2v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} +$
$2\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} - 4\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7^2v_1v_2\omega_{14}\omega_8^2\omega_{18} - 8\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} -$
$2\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7v_1v_2\omega_{20}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18} - 2\omega_6^2\omega_{19}c_s^2\omega_{13}^2\omega_7^2v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 -$
$2\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7^2v_2^2\omega_{20}\omega_{11}\omega_8\omega_{18} - 2\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7^2v_2^2\omega_{11}\omega_{14}\omega_8^2 + 4\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7^2v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 -$
$\omega_6^3v_3^2\omega_{22}\omega_{13}^2\omega_7^2v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - \omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7^2v_2^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} + 4\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7^2v_1v_2\omega_{11}\omega_{14}\omega_8^2 +$
$\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}^2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - \omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7v_1v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 10\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7^2v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} +$
$2\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^2v_3^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18} +$
$\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7v_2^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} + 4\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2v_1v_2\omega_{14}\omega_8^2 + \omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7^2v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} +$
$2\omega_6^2v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 - 4\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2v_1v_2\omega_{20}\omega_{11}\omega_8\omega_{18} + 4\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} +$
$2\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}^2\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 4\omega_6^2v_3^2\omega_{19}\omega_{13}^2\omega_7^2v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^3v_3^2\omega_{19}\omega_{13}^2\omega_7^2v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_{18} -$
$\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_7^2v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 4\omega_6^2v_3^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 - 2\omega_6^3v_3^2\omega_{19}c_s^2\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} +$
$2\omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7^2\omega_{11}\omega_{14}\omega_8^2 + 6\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7^2v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} +$
$2\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7^2v_2^2\omega_{20}\omega_{11}\omega_8\omega_{18} - 4\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7^2v_1v_2\omega_{11}\omega_{14}\omega_8^2 + 2\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7^2v_2^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} -$
$2\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7v_2^2\omega_{20}\omega_{11}\omega_8\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7^2v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_{18} + \omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7\omega_{20}\omega_{11}\omega_8^2\omega_{18} +$
$2\omega_6^2v_3^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} - 12\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 4\omega_6^2\omega_{19}c_s^2\omega_{13}^2\omega_7^2v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} -$
$2\omega_6^3\omega_{19}c_s^2\omega_{13}^2\omega_7^2v_2^2\omega_{20}\omega_{14}\omega_8^2 - 2\omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 - 2\omega_6^3v_3^2\omega_{22}\omega_{13}^2\omega_7v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} -$
$\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7^2v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7^2v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2v_1v_2\omega_{20}\omega_{11}\omega_8^2\omega_{18} -$
$2\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^3v_3^2\omega_{19}c_s^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 +$
$\omega_6^3v_3^2\omega_{22}\omega_{13}^2\omega_7^2v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^3v_3^2\omega_{19}\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7^2v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} -$
$2\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2v_2^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^3v_3^2\omega_{22}\omega_{13}^2\omega_7v_2^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2 -$
$4\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7^2v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 - 2\omega_6^2v_3^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2v_2^2\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7v_2^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} -$
$4\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7^2v_1v_2\omega_{20}\omega_{14}\omega_8^2 - \omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7^2v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 +$
$\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + \omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_2^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} - 4\omega_6^3v_3^2\omega_{19}\omega_{13}^2\omega_7^2v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 -$
$2\omega_6^3v_3^2\omega_{22}\omega_{13}^2\omega_7^2v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_{18} + \omega_6^3v_3^2\omega_{22}\omega_{13}^2\omega_7v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_7v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} -$
$2\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_7^2v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_{18} + \omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_7v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^3v_3^2\omega_{19}\omega_{13}^2\omega_7^2v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} +$
$4\omega_6^2v_3^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2v_1v_2\omega_{20}\omega_{11}\omega_8\omega_{18} - 2\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7^2v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{19}c_s^2\omega_{13}\omega_7^2v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} -$
$\omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7^2v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_{18} - \omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} +$
$2\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_{18} - \omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} +$
$4\omega_6^2\omega_{19}c_s^2\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^2v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18} + 4\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7v_1v_2\omega_{20}\omega_{11}\omega_8\omega_{18} +$
$4\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7^2v_1v_2\omega_{11}\omega_{14}\omega_8\omega_{18} - 2\omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7^2v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 4\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2v_1v_2\omega_{11}\omega_{14}\omega_8^2 +$
$\omega_6^3v_3^2\omega_{19}\omega_{13}^2\omega_7^2v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + \omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_2^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2v_3^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 +$
$4\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7^2v_1v_2\omega_{11}\omega_{14}\omega_8\omega_{18} - 2\omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7\omega_{11}\omega_{14}\omega_8\omega_{18} - 4\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2v_1v_2\omega_{20}\omega_{14}\omega_8^2 +$
$2\omega_6^2v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^3v_3^2\omega_{22}\omega_{13}^2\omega_7^2v_2^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7v_2^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} +$
$4\omega_6^2v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7^2v_2^2\omega_{11}\omega_{14}\omega_8\omega_{18} +$
$2\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7^2v_2^2\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^2v_3^2\omega_{19}\omega_{13}\omega_7^2v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + \omega_6^2\omega_{19}c_s^2\omega_{13}^2\omega_7^2v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_{18} +$
$6\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7^2v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7^2v_2^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} - \omega_6^3\omega_{19}c_s^2\omega_{13}^2\omega_7^2v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} +$
$4\omega_6^3v_3^2\omega_{19}\omega_{13}^2\omega_7^2v_1v_2\omega_{20}\omega_{14}\omega_8^2 - 2\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}^2v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 4\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7v_1v_2\omega_{11}\omega_{14}\omega_8\omega_{18} +$
$4\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 4\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_7^2v_1v_2\omega_{14}\omega_8^2\omega_{18} - 4\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2v_1v_2\omega_{11}\omega_{14}\omega_8\omega_{18} -$
$\omega_6^3v_3^2\omega_{19}c_s^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + \omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} - 4\omega_6^3\omega_{19}c_s^2\omega_{13}^2\omega_7^2v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 +$
$4\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7^2v_1v_2\omega_{11}\omega_{14}\omega_8^2\omega_{18} - \omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7v_2^2\omega_{20}\omega_{11}\omega_8\omega_{18} -$
$4\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_6^2v_3^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2v_2^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} -$
$4\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_7^2v_1v_2\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 4\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2v_1v_2\omega_{11}\omega_{14}\omega_8^2 - 2\omega_6^2v_3^2\omega_{19}c_s^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 +$
$2\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2v_2^2\omega_{20}\omega_{11}\omega_8\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}^2v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} - 6\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} -$
$2\omega_6^2v_3^2\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^2v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} + \omega_6^3v_3^2\omega_{19}\omega_{13}^2\omega_7^2v_2^2\omega_{20}\omega_{14}\omega_8^2\omega_{18} -$
$4\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2v_1v_2\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 4\omega_6^3v_3^2\omega_{22}\omega_{13}^2\omega_7^2v_1v_2\omega_{11}\omega_{14}\omega_8^2 - 2\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} +$
$4\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}^2\omega_7^2v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^2v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2v_2^2\omega_{14}\omega_8^2\omega_{18} -$
$4\omega_6^2v_3^2\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}$

$C_{37} = -18\omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} - 12\omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_5^2\omega_{18} - 12\omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} -$
$12\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 6\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3v_1v_2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$12\omega_6^2v_3^2\omega_{19}c_s^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 6\omega_6^3v_3^2\omega_{22}\omega_{13}\omega_7^2v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 6\omega_6^3v_3^2\omega_{19}\omega_7^3v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$12\omega_6^3v_3^2\omega_{19}\omega_{13}\omega_7^3v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^2v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^2v_3^2\omega_{22}\omega_{19}\omega_7^3v_1v_2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2 - 12\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_7^3v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$24\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3v_1v_2\omega_{14}\omega_8^2\omega_5^2 - 24\omega_6^2v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3v_1v_2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} - 24\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1v_2\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} -$
$12\omega_6^2v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3v_1^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 24\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3v_1v_2\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 6\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_7^2v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$12\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^3\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^2v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2 + 6\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$24\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_7^3v_1v_2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^3\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3v_1^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} -$
$6\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 24\omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18} - 24\omega_6^2v_3^2\omega_{19}\omega_7^3v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^3v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^3v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3v_3^2\omega_{22}\omega_{13}\omega_7^2v_1^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^3v_3^2\omega_{22}\omega_{13}\omega_7^3v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2v_3^2\omega_{19}\omega_{13}\omega_7^3v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2 + 6\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_7^3\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} -$
$6\omega_6^3v_3^2\omega_{19}\omega_{13}\omega_7^3v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1^2\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} - 12\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$24\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3v_1v_2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} - 24\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 42\omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} +$

$24\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3v_1v_2\omega_{11}\omega_{14}\omega_8^2\omega_5^2 + 12\omega_6^2\omega_{22}\omega_{19}c_s^4\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} +$
$12\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} - 24\omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18} + 12\omega_6^2v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5 -$
$24\omega_6^2v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3v_1v_2\omega_{11}\omega_{14}\omega_8^2\omega_5^2 - 12\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5 - 12\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3v_1^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2 -$
$6\omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 6\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$24\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3v_1v_2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 24\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} -$
$12\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{19}c_s^2\omega_7^3v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$6\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^3v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^2\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^3\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} -$
$12\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} + 24\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} + 12\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2v_1^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$24\omega_6^2v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3v_1v_2\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} - 24\omega_6^2v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18} - 6\omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_7^3\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} -$
$24\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} - 12\omega_6^2v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3v_1^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18} -$
$12\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_7^3v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 24\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} -$
$12\omega_6^2v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2 + 12\omega_6^2v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} - 60\omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} -$
$12\omega_6^2v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 6\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 6\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$12\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3v_1^2\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} - 24\omega_6v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} - 18\omega_6^2\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} +$
$24\omega_6^2\omega_{19}c_s^2\omega_{13}\omega_7^3v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_5^2\omega_{18} - 24\omega_6^3v_3^2\omega_{22}\omega_{13}\omega_7^2v_1v_2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18} - 12\omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} - 12\omega_6^3v_3^2\omega_{22}\omega_{13}\omega_7^3v_1^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$12\omega_6^2\omega_{19}c_s^2\omega_{13}\omega_7^3v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3v_1^2\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} + 12\omega_6^2\omega_{19}c_s^2\omega_{13}\omega_7^3v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2 -$
$24\omega_6^2\omega_{19}c_s^2\omega_{13}\omega_7^3v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2 - 12\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^3v_1^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3v_1v_2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} -$
$12\omega_6^2\omega_{22}\omega_{19}c_s^4\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 6\omega_6^3\omega_{19}c_s^2\omega_{13}\omega_7^3v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2 -$
$12\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3v_1^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2 + 12\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3v_1^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^3\omega_{19}c_s^2\omega_{13}\omega_7^3v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 - 24\omega_6^2v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 6\omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$24\omega_6v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} + 24\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2 + 6\omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$24\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 24\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3v_1v_2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3v_3^2\omega_{19}\omega_{13}\omega_7^3v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 +$
$24\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1v_2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$12\omega_6^3v_3^2\omega_{22}\omega_{13}\omega_7^3v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^2\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} +$
$24\omega_6^2v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - \omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 36\omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} -$
$12\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} - 6\omega_6^3v_3^2\omega_{19}c_s^2\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2v_1v_2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$12\omega_6^2v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 24\omega_6^3v_3^2\omega_{19}\omega_{13}\omega_7^3v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2 + 24\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 -$
$6\omega_6^3v_3^2\omega_{19}c_s^2\omega_{13}\omega_7^3v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{19}c_s^2\omega_{13}\omega_7^3v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 6\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} + 12\omega_6^2v_3^2\omega_{19}c_s^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2 + 24\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3v_1v_2\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} +$
$24\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} - 6\omega_6^3\omega_{19}c_s^2\omega_7^3v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} +$
$24\omega_6^2v_3^2\omega_{22}\omega_{19}\omega_7^3v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 6\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_7^3v_1^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^3\omega_{14}\omega_8^2\omega_5^2 +$
$12\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3v_1v_2\omega_{14}\omega_8^2\omega_5^2 - 12\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} +$
$6\omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2 + 12\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} +$
$12\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3v_1^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 24\omega_6^2v_3^2\omega_{19}\omega_{13}\omega_7^3v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18} +$
$6\omega_6^3v_3^2\omega_{19}c_s^2\omega_{13}\omega_7^3v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} + 6\omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_5^2\omega_{18} + 10\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} +$
$24\omega_6^2v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3v_1v_2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^2\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^3\omega_{11}\omega_{14}\omega_8^2\omega_5^2 + 12\omega_6^2v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3v_1^2\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} +$
$12\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 36\omega_6^2v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} +$
$24\omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} - 24\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} + 24\omega_6^2v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} +$
$24\omega_6^3v_3^2\omega_{22}\omega_{13}\omega_7^3v_1v_2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7^3\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2v_3^2\omega_{19}c_s^2\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$12\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} + 6\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2\omega_{19}c_s^2\omega_7^3v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$24\omega_6^3\omega_{19}c_s^2\omega_{13}\omega_7^3v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2 - 12\omega_6^3v_3^2\omega_{19}c_s^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2 + 12\omega_6^3v_3^2\omega_{19}\omega_{13}\omega_7^3v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$12\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3v_1^2\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} + 12\omega_6^2v_3^2\omega_{22}\omega_{19}\omega_7^3v_1^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3v_1^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$24\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3v_1v_2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} + 12\omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3v_1^2\omega_{14}\omega_8^2\omega_5^2 - 12\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} +$
$24\omega_6^2v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5 + 12\omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 12\omega_6^3v_3^2\omega_{22}\omega_{13}\omega_7^3v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^2v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_5^2\omega_{18} + 18\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3v_1^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2 -$
$24\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3v_1v_2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 6\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6^3v_3^2\omega_{19}\omega_{13}\omega_7^3v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 -$
$12\omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3v_3^2\omega_{19}\omega_{13}\omega_7^3v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2 - 12\omega_6^3\omega_{19}c_s^2\omega_{13}\omega_7^3v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$6\omega_6^3v_3^2\omega_{19}c_s^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 18\omega_6^2\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^3v_1v_2\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^2v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_5^2\omega_{18} + 12\omega_6^2v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18} -$
$12\omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^2 - 6\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 6\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_7^3v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$24\omega_6\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 6\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2 -$
$24\omega_6^2v_3^2\omega_{22}\omega_{19}\omega_7^3v_1v_2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} + 24\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_7^3v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$

$$24\omega_6^3\omega_{19}c_s^2\omega_{13}\omega_7^3v_1v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 24\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3v_1v_2\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3v_3^2\omega_{19}c_s^2\omega_{13}\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^2 +$$
$$12\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} + 24\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3v_1v_2\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} + 12\omega_6^2\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5 -$$
$$12\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3v_1^2\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_7^3v_1v_2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^2v_3^2\omega_{22}\omega_{19}\omega_7^3v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$$
$$12\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2 + 12\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_7^3v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 6\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3v_1^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$$
$$12\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5 + 12\omega_6^2v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3v_1^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2 + 12\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^3\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} +$$
$$24\omega_6^2v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2 + 6\omega_6^3v_3^2\omega_{22}\omega_{13}\omega_7^3v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7^3\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$$
$$24\omega_6^2v_3^2\omega_{22}\omega_{13}\omega_7^3v_1v_2\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3v_3^2\omega_{19}\omega_7^3v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 24\omega_6^2v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3v_1v_2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$$
$$12\omega_6^3v_3^2\omega_{22}\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3v_1^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} + 24\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1v_2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$$
$$6\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^3v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 36\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} + 12\omega_6^2v_3^2\omega_{19}\omega_7^3v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$$
$$12\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_5^2\omega_{18} + 24\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} - 18\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} +$$
$$6\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^3v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 6\omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$$
$$12\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3v_1v_2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 6\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3v_1v_2\omega_{11}\omega_{14}\omega_8^2\omega_5^2 -$$
$$24\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2 + 12\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} + 6\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} -$$
$$6\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3v_1^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 24\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^3v_1v_2\omega_{11}\omega_{14}\omega_8^2\omega_5^2 - 12\omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5 +$$
$$12\omega_6^2\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^3\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3v_3^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} - 12\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_7^3v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$$
$$12\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1^2\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} - 24\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3v_1v_2\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} - 24\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^3v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} -$$
$$12\omega_6^3v_3^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1v_2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} + 12\omega_6^3v_3^2\omega_{22}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} +$$
$$12\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^3\omega_{11}\omega_{14}\omega_8^2\omega_5^2 - 24\omega_6^2\omega_{19}c_s^2\omega_7^3v_1v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 6\omega_6^3v_3^2\omega_{22}\omega_{13}\omega_7^3v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}$$

$$C_{38} = -4\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1v_2^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{19}\omega_{13}\omega_7^2v_1v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{22}\omega_{13}\omega_7^2v_1^2v_2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 +$$
$$4\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1\omega_{20}\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2 + 4\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} - 4\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}^2 -$$
$$4\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 + 4\omega_6^2\omega_{22}\omega_{19}\omega_7^2v_1v_2^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7v_1^2v_2\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2 -$$
$$8\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} - 4\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7v_1\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 +$$
$$2\omega_6^3\omega_{19}c_s^2\omega_{13}\omega_7^2v_1\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1v_2^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2 -$$
$$2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1v_2^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_7^2v_1\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 +$$
$$4\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1^2v_2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_7^2v_2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 +$$
$$4\omega_6^3\omega_{19}c_s^2\omega_{13}\omega_7^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7v_1\omega_{20}\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2 - 4\omega_6^3\omega_{19}\omega_{13}\omega_7^2v_1^2v_2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18} +$$
$$4\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1^2v_2\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{19}\omega_7^2v_1^2v_2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 -$$
$$4\omega_6^3\omega_{19}c_s^2\omega_{13}\omega_7^2v_2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18} - 4\omega_6^2\omega_{19}c_s^2\omega_7^2v_1\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1^2v_2\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 -$$
$$2\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{22}\omega_{13}\omega_7v_1^2v_2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6^2\omega_{22}\omega_{19}\omega_7^2v_1v_2^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 +$$
$$4\omega_6^3\omega_{19}\omega_{13}\omega_7^2v_1^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} - 4\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1^2v_2\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18} + 4\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 -$$
$$4\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18} - 2\omega_6^3\omega_{19}\omega_{13}\omega_7^2v_1v_2^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7v_1^2v_2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 -$$
$$2\omega_6^3\omega_{22}\omega_{13}\omega_7^2v_1^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 8\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7v_2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1v_2^2\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 -$$
$$4\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7v_1\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2v_2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{19}c_s^2\omega_{13}\omega_7^2v_1\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 +$$
$$2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1^2v_2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1v_2^2\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 -$$
$$4\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7v_1\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2v_2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{19}c_s^2\omega_{13}\omega_7^2v_1\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 +$$
$$2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1^2v_2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1v_2^2\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 -$$
$$2\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2v_1\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{19}c_s^2\omega_{13}\omega_7^2v_2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1^2v_2\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 -$$
$$4\omega_6^2\omega_{22}\omega_{19}\omega_7^2v_1^2v_2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5 - 2\omega_6^3\omega_{22}\omega_{13}\omega_7^2v_1v_2^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 +$$
$$4\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1^2v_2\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} - 2\omega_6^3\omega_{19}\omega_{13}\omega_7^2v_1^2v_2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 +$$
$$8\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}\omega_7^2v_1^2v_2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1^2v_2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 +$$
$$4\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7v_1v_2^2\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{19}c_s^2\omega_{13}\omega_7^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7v_1v_2^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 +$$
$$4\omega_6^3\omega_{22}\omega_{13}\omega_7^2v_1^2v_2\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2v_1\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7v_2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_{18}^2 +$$
$$4\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1^2v_2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18} + 12\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1^2v_2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 +$$
$$4\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_7v_2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 12\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} - 4\omega_6^3\omega_{22}\omega_{13}\omega_7v_1v_2^2\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 -$$
$$4\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1^2v_2\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{22}\omega_{13}\omega_7^2v_1v_2^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{19}\omega_{13}\omega_7^2v_1^2v_2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 -$$
$$14\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_2\omega_{20}\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{22}\omega_{13}\omega_7v_1v_2^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 -$$
$$2\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7v_2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6^3\omega_{19}\omega_{13}\omega_7^2v_1v_2^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} - 4\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}v_2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 -$$
$$4\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 - 12\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7v_2\omega_{20}\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_7^2v_1\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 -$$
$$4\omega_6^3\omega_{19}c_s^2\omega_{13}\omega_7^2v_1\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1v_2^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 +$$
$$4\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7v_2\omega_{20}\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{19}\omega_7^2v_1v_2^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1v_2^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18} +$$
$$4\omega_6^2\omega_{22}\omega_{19}\omega_7^2v_1^2v_2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18} - 4\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1v_2^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2 -$$
$$4\omega_6^2\omega_{19}\omega_{13}\omega_7^2v_1v_2^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18} - 4\omega_6^2\omega_{19}c_s^2\omega_{13}\omega_7^2v_1\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18} - 4\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1\omega_{20}\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2 +$$
$$2\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_{18}^2 - 4\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1^2v_2\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2 - 4\omega_6^2\omega_{19}c_s^2\omega_{13}\omega_7^2v_2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 +$$
$$8\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1^2v_2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1^2v_2\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 -$$
$$4\omega_6^2\omega_{19}\omega_7^2v_1v_2^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7v_1v_2^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5 +$$
$$2\omega_6^3\omega_{22}\omega_{19}\omega_7^2v_1^2v_2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - \omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_7^2v_2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 +$$
$$2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1^2v_2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7v_1v_2^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2 - 4\omega_6^2\omega_{19}\omega_{13}\omega_7^2v_1^2v_2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 -$$
$$4\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7v_1v_2^2\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{19}c_s^2\omega_7^2v_2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 6\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_2\omega_{20}\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2 +$$

$2\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_{18}^2 - 2\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7v_2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1^2v_2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 +$
$4\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18} + 4\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 - 4\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1v_2^2\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} +$
$4\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1v_2^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18} - 4\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 +$
$2\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7v_2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18} + 4\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7v_2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 +$
$4\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_7^2v_1\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7v_1\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^3\omega_{22}\omega_{13}\omega_7v_1^2v_2\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 +$
$4\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1v_2^2\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^2\omega_{19}\omega_7^2v_1^2v_2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5 -$
$2\omega_6^3\omega_{22}\omega_{19}\omega_7^2v_1v_2^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7v_1\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 +$
$2\omega_6^3\omega_{19}c_s^2\omega_7^2v_1\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1v_2^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 -$
$4\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1v_2^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1\omega_{20}\omega_{11}^2\omega_5\omega_{18}^2 - 4\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7v_2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18} -$
$4\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1^2v_2\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6^3\omega_{22}\omega_{13}\omega_7^2v_1v_2^2\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_{18}^2 +$
$4\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1v_2^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_7^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2 +$
$2\omega_6^3\omega_{22}\omega_{19}\omega_7^2v_1v_2^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2v_1\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 12\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18} -$
$4\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_7^2v_2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7v_1\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 +$
$4\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1^2v_2\omega_{20}\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2 + 4\omega_6^2\omega_{19}\omega_{13}\omega_7^2v_1^2v_2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18} + 9\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_2\omega_{20}\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2 +$
$4\omega_6^2\omega_{19}c_s^2\omega_{13}\omega_7^2v_2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18} + 4\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1^2v_2\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18} - 4\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1^2v_2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18} -$
$4\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_7^2v_1\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7v_1\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2 - 4\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7v_2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 +$
$2\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7v_2\omega_{20}\omega_{11}^2\omega_{14}\omega_5\omega_{18}^2 - 4\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1v_2^2\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7v_1^2v_2\omega_{20}\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2 +$
$4\omega_6^2\omega_{19}\omega_{13}\omega_7^2v_1v_2^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^3\omega_{22}\omega_{13}\omega_7^2v_1v_2^2\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 -$
$4\omega_6^2\omega_{22}\omega_{19}\omega_{13}\omega_7^2v_1v_2^2\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2 + 2\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7v_2\omega_{20}\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2 + 4\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} -$
$4\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_1\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2 + 4\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2v_1\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2v_2\omega_{20}\omega_{11}^2\omega_{14}\omega_5\omega_{18}^2 +$
$4\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7v_1^2v_2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 + 4\omega_6^2\omega_{19}c_s^2\omega_{13}\omega_7^2v_1\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_7^2v_2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2$

$C_{39} = \omega_6^2v_3^2\omega_{19}\omega_{16}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_{18} + \omega_6v_3\omega_{19}c_s^2\omega_{16}\omega_7^3v_1^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2 + 2\omega_6^2c_s^2\omega_{16}\omega_7^2v_1v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} -$
$2\omega_6^2v_3\omega_{16}\omega_7^2v_1^2v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2v_3^2\omega_{16}\omega_7^3v_1v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_{18} - 2\omega_6^2v_3c_s^2\omega_{16}\omega_7^2v_1^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - \omega_6^2\omega_{19}c_s^2\omega_{16}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2 -$
$2\omega_6^2v_3\omega_{19}c_s^2\omega_{16}\omega_7^3v_1^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + \omega_6^2v_3^2\omega_{19}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 4\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7^2v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{18} -$
$2\omega_6^2v_3\omega_{19}\omega_{16}\omega_7^2v_1^2\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2v_3^2\omega_{19}\omega_{16}\omega_7^3v_1\omega_{23}v_2^2\omega_{17}\omega_8^2 - \omega_6^2v_3\omega_{19}c_s^2\omega_{16}\omega_7^2\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_{18} +$
$2\omega_6v_3\omega_{19}c_s^2\omega_{16}\omega_7^3v_1^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_6^2v_3\omega_{19}c_s^2\omega_{16}\omega_7^3v_1^2\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} + 4\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} -$
$\omega_6^2\omega_{19}c_s^2\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} + \omega_6^2v_3\omega_{19}c_s^2\omega_7^3v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2v_3\omega_{19}\omega_{16}\omega_7^2v_1^2\omega_{23}v_2^2\omega_{17}\omega_{11}\omega_8^2\omega_{18} +$
$2\omega_6^2v_3\omega_{19}\omega_{16}\omega_7^3v_1^2\omega_{23}v_2^2\omega_{17}\omega_{11}\omega_8^2 + 2\omega_6^2v_3^2\omega_{19}c_s^2\omega_{16}\omega_7^3v_1\omega_{23}\omega_{17}\omega_8^2 - 2\omega_6^2v_3^2\omega_{19}\omega_{16}\omega_7^2v_1v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} -$
$2\omega_6^2c_s^2\omega_{16}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_{18} + 2\omega_6^2v_3\omega_{16}\omega_7^3v_1^2\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_{18} + 2\omega_6^2v_3\omega_{19}c_s^2\omega_7^2\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} +$
$2\omega_6^2v_3\omega_{19}c_s^2\omega_{16}\omega_7^2v_1^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_6^2v_3^2\omega_{19}\omega_{16}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_6^2v_3v_{19}\omega_{16}\omega_7^3v_1^2\omega_{23}v_2^2\omega_{17}\omega_8^2 -$
$2\omega_6^2v_3\omega_{19}\omega_{16}\omega_7^2v_1^2\omega_{23}v_2^2\omega_{20}\omega_{11}\omega_8\omega_{18} + 2\omega_6^2v_3c_s^2\omega_{16}\omega_7^3v_1^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2v_3\omega_{19}c_s^2\omega_{16}\omega_7^2v_1^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} -$
$\omega_6^2v_3^2\omega_{19}c_s^2\omega_7^3v_1\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2v_3^2\omega_{19}c_s^2\omega_{16}\omega_7^3v_1\omega_{23}\omega_{17}\omega_{11}\omega_8^2 - 2\omega_6^2v_3^2\omega_{19}c_s^2\omega_7^2v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} -$
$\omega_6^2v_3\omega_{19}\omega_{16}\omega_7^3v_1^2\omega_{23}v_2^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2v_3c_s^2\omega_{16}\omega_7^2v_1^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - \omega_6^2v_3\omega_{19}\omega_7^3v_1^2\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} +$
$\omega_6^2v_3\omega_{19}c_s^2\omega_7^3v_1^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2v_3^2c_s^2\omega_{16}\omega_7^3v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2v_3\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{17}\omega_{11}\omega_8^2 +$
$\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_7^3v_1v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2v_3\omega_{19}\omega_{16}\omega_7^3v_1^2\omega_{23}v_2^2\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_6^2v_3^2\omega_{19}\omega_{16}\omega_7^3v_1\omega_{23}v_2^2\omega_{17}\omega_{11}\omega_8^2 +$
$\omega_6^2v_3\omega_{19}c_s^2\omega_{16}\omega_7^3v_1^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + \omega_6^2v_3\omega_{19}c_s^2\omega_{16}\omega_7^3v_1^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2 - 2\omega_6\omega_{19}c_s^2\omega_{16}\omega_7^3v_1\omega_{23}v_2^2\omega_{17}\omega_{11}\omega_8^2\omega_{18} +$
$\omega_6v_3\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_7^3v_1\omega_{23}v_2^2\omega_{17}\omega_8^2 - \omega_6^2\omega_{19}c_s^2\omega_{16}\omega_7^3v_1v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_{18} -$
$2\omega_6^2v_3\omega_{19}\omega_7^2v_1^2\omega_{23}v_2^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6v_3^2\omega_{19}\omega_{16}\omega_7^3v_1\omega_{23}v_2^2\omega_{17}\omega_{11}\omega_8\omega_{18} - 4\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7^2v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} +$
$2\omega_6^2v_3^2\omega_{19}\omega_7^2v_1v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2v_3\omega_{19}c_s^2\omega_{16}\omega_7^2\omega_{23}v_2^2\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_6^2v_3^2\omega_{16}\omega_7^3v_1\omega_{23}v_2^2\omega_{17}\omega_{11}\omega_8^2\omega_{18} -$
$2\omega_6^2v_3^2\omega_{19}c_s^2\omega_{16}\omega_7^3v_1\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} + \omega_6^2\omega_{19}c_s^2\omega_{16}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2 - \omega_6v_3^2\omega_{19}\omega_{16}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} -$
$8\omega_6^2\omega_{19}c_s^4\omega_{16}v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_7^2v_1\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6v_3\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{17}\omega_{11}\omega_8\omega_{18} +$
$2\omega_6\omega_{19}c_s^2\omega_{16}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_{11}\omega_8\omega_{18} + \omega_6^2v_3^2\omega_{19}c_s^2\omega_{16}\omega_7^3v_1\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2v_3\omega_{19}c_s^2\omega_{16}\omega_7^2\omega_{23}v_2^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} +$
$2\omega_6^2v_3^2c_s^2\omega_{16}\omega_7^2v_1\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + \omega_6v_3\omega_{19}\omega_{16}\omega_7^3v_1^2\omega_{23}v_2^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} - \omega_6^2v_3^2\omega_{19}\omega_{16}\omega_7^3v_1v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_{18} +$
$\omega_6v_3^2\omega_{19}c_s^2\omega_{16}\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{19}c_s^2\omega_7^2v_1v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - \omega_6^2v_3^2\omega_{19}c_s^2\omega_{16}\omega_7^3v_1\omega_{23}\omega_{17}\omega_8^2 + 8\omega_6\omega_{19}c_s^4\omega_{16}\omega_7^2v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} -$
$2\omega_6^2\omega_{19}c_s^2\omega_7^2v_1\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2v_3^2c_s^2\omega_{16}\omega_7^2v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + \omega_6^2v_3\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} +$
$2\omega_6^2v_3\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_6^2v_3^2\omega_{19}c_s^2\omega_{16}\omega_7^2v_1\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_6^2v_3\omega_{19}\omega_{16}\omega_7^3v_1^2\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} -$
$2\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_{11}\omega_8\omega_{18} + \omega_6^2v_3^2\omega_{19}\omega_{16}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2v_3\omega_{19}c_s^2\omega_{16}\omega_7^2\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} +$
$2\omega_6^2v_3\omega_{19}c_s^2\omega_{16}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_6^2v_3\omega_{19}c_s^2\omega_7^2v_1^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2v_3\omega_{19}c_s^2\omega_{16}\omega_7^2\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} -$
$2\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_6v_3\omega_{19}c_s^2\omega_{16}\omega_7^3v_1^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 4\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{18} +$
$2\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_7^2v_1\omega_{23}v_2^2\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_6v_3^2\omega_{19}\omega_{16}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_6^2v_3^2\omega_{19}c_s^2\omega_{16}\omega_7^3v_1\omega_{23}v_2^2\omega_{17}\omega_{11}\omega_8^2\omega_{18} +$
$2\omega_6^2v_3\omega_{19}\omega_{16}\omega_7^2v_1^2v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2v_3\omega_{19}c_s^2\omega_{16}\omega_7^2v_1^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6v_3\omega_{19}c_s^2\omega_{16}\omega_7^3v_1^2\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} -$
$8\omega_6\omega_{19}c_s^4\omega_{16}\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_6^2v_3c_s^2\omega_{16}\omega_7^3v_1^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2v_3\omega_{16}\omega_7^3v_1^2\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} +$
$2\omega_6^2c_s^2\omega_{16}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2v_3^2\omega_{19}c_s^2\omega_7^2v_1\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} - \omega_6^2v_3\omega_{19}c_s^2\omega_{16}\omega_7^3v_1^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} +$

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

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

$24\omega_6^3 v_3\omega_{19}c_s^2\omega_{16}\omega_7^2 v_1\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 18\omega_6^3 v_3^2\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} + 12\omega_6^2 v_3^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2 -$
$12\omega_6^3 c_s^2\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3 v_3\omega_{19}c_s^2\omega_{16}\omega_7^3 v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 24\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_7\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^3 v_3^2\omega_{19}c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3 c_s^2\omega_{16}\omega_7^2\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_5^2\omega_{18} -$
$12\omega_6^3\omega_{19}c_s^4\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3 v_3^2\omega_{19}c_s^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6^3\omega_{19}c_s^4\omega_{16}\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} -$
$12\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6^3 v_3c_s^2\omega_{16}\omega_7^3 v_1\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3 v_3^2c_s^2\omega_{16}\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} +$
$24\omega_6^3 v_3\omega_{19}c_s^2\omega_{16}\omega_7^2 v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} - 24\omega_6^3 v_3\omega_{19}c_s^2\omega_7^2 v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3 v_3\omega_{19}c_s^2\omega_{16}\omega_7^3 v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} -$
$12\omega_6^3\omega_{19}c_s^2\omega_{16}\omega_7^2\omega_{23}v_2^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3 v_3\omega_{19}\omega_7^3 v_1 v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} -$
$24\omega_6^3 v_3\omega_{16}\omega_7^2 v_1\omega_{23}v_2^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6^3 v_3\omega_{16}\omega_7^3 v_1 v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5 +$
$12\omega_6^3\omega_{19}c_s^2\omega_{16}\omega_7^2\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_5^2\omega_{18} - 12\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 24\omega_6^3 v_3c_s^2\omega_{16}\omega_7^3 v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} +$
$42\omega_6^3 v_3^2\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} + 12\omega_6^3 v_3^2c_s^2\omega_{16}\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3 c_s^4\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} -$
$24\omega_6^2 v_3\omega_{19}\omega_{16}\omega_7^3 v_1\omega_{23}v_2^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2 + 6\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 6\omega_6^3\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2 -$
$6\omega_6^3\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 10\omega_6^3\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} + 12\omega_6^3 v_3^2\omega_{19}\omega_7^2 v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^3 v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18} + 12\omega_6^2 v_3^2\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5 + 12\omega_6^3 v_3^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} -$
$12\omega_6^3\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} - 12\omega_6^3 v_3^2\omega_{19}\omega_{16}\omega_7^2 v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 24\omega_6^3 v_3\omega_{19}\omega_{16}\omega_7^2 v_1 v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} -$
$12\omega_6^2 v_3^2\omega_{16}\omega_7^3 v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^2 v_3\omega_{19}c_s^2\omega_{16}\omega_7^3 v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6^3 v_3\omega_{19}c_s^2\omega_{16}\omega_7^3 v_1\omega_{23}\omega_{17}\omega_8^2\omega_5^2 +$
$6\omega_6^3\omega_{19}c_s^4\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3 v_3\omega_{19}\omega_{16}\omega_7^3 v_1\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 6\omega_6^2 v_3^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2 -$
$24\omega_6^3 v_3\omega_{16}\omega_7^3 v_1\omega_{23}v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{17}\omega_8^2\omega_5^2 - 6\omega_6^3 v_3^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2 +$
$12\omega_6^3 v_3^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 6\omega_6^2 v_3^2\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2 - 24\omega_6^2 v_3\omega_{19}\omega_{16}\omega_7^3 v_1\omega_{23}v_2^2\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} +$
$24\omega_6^2 v_3\omega_{19}c_s^2\omega_{16}\omega_7^3 v_1\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3 v_3^2\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 48\omega_6^3\omega_{19}c_s^2\omega_{16}\omega_7^2\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} -$
$12\omega_6^3 c_s^2\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{19}c_s^2\omega_7^2 v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6^2 v_3\omega_{19}c_s^2\omega_{16}\omega_7^3 v_1\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2 +$
$12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6 v_3^2\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} - 12\omega_6^3 v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} -$
$24\omega_6^3 v_3^2\omega_{19}c_s^2\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} + 12\omega_6^3 v_3\omega_{19}c_s^2\omega_{16}\omega_7^3 v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6^3 v_3c_s^2\omega_{16}\omega_7^3 v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^2 v_3\omega_{19}\omega_{16}\omega_7^3 v_1\omega_{23}v_2^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 24\omega_6^3 v_3c_s^2\omega_{16}\omega_7^3 v_1\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3 v_3\omega_{19}c_s^2\omega_{16}\omega_7^3 v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2 -$
$24\omega_6^2 v_3\omega_{19}c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} - 12\omega_6^3 v_3^2c_s^2\omega_{16}\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2 v_3^2\omega_{19}c_s^2\omega_7^2 v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$24\omega_6^2 v_3^2\omega_{19}c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18} + 24\omega_6^3 v_3\omega_{19}c_s^2\omega_{16}\omega_7^3 v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 24\omega_6^3 v_3\omega_{19}c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^3 v_3^2\omega_{19}c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_5^2\omega_{18} - 12\omega_6^3 v_3\omega_{19}\omega_{16}\omega_7^3 v_1\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3 c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18} +$
$24\omega_6^3\omega_{19}c_s^2\omega_{16}\omega_7\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} + 24\omega_6^3 v_3\omega_{16}\omega_7^3 v_1 v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6^3 v_3c_s^2\omega_{16}\omega_7^3 v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} -$
$12\omega_6^3 v_3\omega_{19}\omega_7^3 v_1\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3 v_3^2\omega_{19}c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} - 24\omega_6^3 v_3c_s^2\omega_{16}\omega_7^2 v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$6\omega_6^3\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2 + 24\omega_6^3 v_3\omega_{19}\omega_{16}\omega_7^2 v_1\omega_{23}v_2^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2 +$
$12\omega_6^3\omega_{19}c_s^4\omega_{16}\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3 v_3^2c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^3 v_3^2\omega_{16}\omega_7^2\omega_{23}v_2^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 6\omega_6^3 v_3^2\omega_{19}\omega_{16}\omega_7^3 v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} + 18\omega_6\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^3 v_3^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{17}\omega_8^2\omega_5^2 + 12\omega_6^3\omega_{19}c_s^4\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} - 24\omega_6^3 v_3\omega_{19}\omega_{16}\omega_7^3 v_1\omega_{23}v_2^2\omega_{17}\omega_8^2\omega_5^2 -$
$12\omega_6^3 c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{18} + 24\omega_6^2 v_3^2\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18} + 6\omega_6^2 v_3^2\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} -$
$12\omega_6^3\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^2 - 12\omega_6^3\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{18} + 6\omega_6^3 v_3^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} -$
$12\omega_6^3\omega_{19}c_s^4\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} - 6\omega_6\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 36\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} -$
$24\omega_6^3 v_3\omega_{19}\omega_{16}\omega_7^2 v_1\omega_{23}v_2^2\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} + 6\omega_6^2 v_3^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 24\omega_6^3 v_3\omega_{19}\omega_{16}\omega_7^2 v_1\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} +$
$12\omega_6^3 v_3\omega_{19}\omega_{16}\omega_7^3 v_1 v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^2 v_3^2\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 6\omega_6^3 v_3^2\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} +$
$24\omega_6\omega_3^2\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} + 24\omega_6^3 v_3^2\omega_{19}c_s^2\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} - 24\omega_6^2 v_3\omega_{19}c_s^2\omega_{16}\omega_7^3 v_1\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} +$
$24\omega_6^3 v_3\omega_{16}\omega_7^2 v_1\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 24\omega_6^2 v_3\omega_{19}\omega_{16}\omega_7^3 v_1\omega_{23}v_2^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} -$
$12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2 - 24\omega_6^3 v_3c_s^2\omega_{16}\omega_7^2 v_1\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3 c_s^4\omega_{16}\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} -$
$12\omega_6^3 v_3^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} - 12\omega_6^3\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18} + 12\omega_6^3 v_3^2c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} +$
$24\omega_6^2 v_3\omega_{19}c_s^2\omega_{16}\omega_7^3 v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 6\omega_6^3 v_3^2\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2 - 12\omega_6^3 v_3^2\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2 +$
$6\omega_6^3 v_3^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2 + 36\omega_6^2 v_3^2\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} - 12\omega_6^3 v_3^2\omega_{19}c_s^2\omega_{16}\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^3 c_s^2\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{18} - 6\omega_6^3\omega_{19}c_s^2\omega_7^3 v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6^3 v_3\omega_{19}c_s^2\omega_{16}\omega_7^3 v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} +$
$24\omega_6^3\omega_{19}c_s^4\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3 v_3^2\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 24\omega_6^3 v_3\omega_{19}c_s^2\omega_{16}\omega_7^3 v_1\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2 +$
$24\omega_6^3 v_3\omega_{16}\omega_7^3 v_1\omega_{23}v_2^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2 v_3\omega_{19}c_s^2\omega_{16}\omega_7^3 v_1\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6^3 v_3\omega_{19}\omega_7^2 v_1 v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} -$
$12\omega_6^3 v_3\omega_{19}\omega_{16}\omega_7^3 v_1\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2 - 24\omega_6^2 v_3\omega_{19}\omega_{16}\omega_7^3 v_1\omega_{23}v_2^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} + 12\omega_6^3 v_3^2\omega_{16}\omega_7^2 v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^3 v_3^2\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18} + 12\omega_6\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} + 6\omega_6^3\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^3 c_s^2\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6^3 v_3\omega_{19}\omega_{16}\omega_7^2 v_1\omega_{23}v_2^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} + 12\omega_6^3 v_3^2\omega_{19}c_s^2\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^3 v_3^2\omega_{16}\omega_7^3 v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3\omega_{19}c_s^4\omega_{16}\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} - 12\omega_6^3 v_3^2\omega_{19}c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} -$
$12\omega_6^3\omega_{19}c_s^2\omega_7^2\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 6\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2 - 12\omega_6^3 v_3\omega_{19}c_s^2\omega_{16}\omega_7^3 v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} -$
$24\omega_6^3 v_3\omega_{19}\omega_{16}\omega_7^2 v_1\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^2 v_3^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} - 24\omega_6^3 v_3^2\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^3 v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3 v_3^2\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{19}c_s^4\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$24\omega_6^3 v_3c_s^2\omega_{16}\omega_7^3 v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 24\omega_6^3 v_3\omega_{19}\omega_{16}\omega_7^2 v_1\omega_{23}v_2^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3 v_3^2\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} -$
$24\omega_6^3 v_3\omega_{19}\omega_7^2 v_1\omega_{23}v_2^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3 v_3^2\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5 + 12\omega_6^3 v_3^2\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} -$
$60\omega_6^2 v_3^2\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} + 12\omega_6\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} + 12\omega_6^3 v_3\omega_{19}\omega_{16}\omega_7^3 v_1\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_7^2\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} - 24\omega_6^3 v_3\omega_{19}c_s^2\omega_{16}\omega_7^3 v_1\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 24\omega_6^3 v_3\omega_{19}\omega_{16}\omega_7^3 v_1\omega_{23}v_2^2\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} +$
$36\omega_6^3 v_3^2\omega_{19}c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} + 12\omega_6^2 v_3^2\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} - 18\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$24\omega_6^3 v_3\omega_{19}c_s^2\omega_{16}\omega_7^2 v_1\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2 v_3^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} + 12\omega_6^3 v_3\omega_{19}c_s^2\omega_7^3 v_1\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$6\omega_6^3 v_3^2\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2 v_3^2\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_5^2\omega_{18} - 6\omega_6^3 v_3^2\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 -$
$12\omega_6^3 v_3^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}v_2^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6\omega_{19}c_s^2\omega_{16}\omega_7^2\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} +$
$6\omega_6^3 v_3^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 6\omega_6^3 v_3^2\omega_{19}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 6\omega_6^3 v_3^2\omega_{19}c_s^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^3\omega_{19}c_s^4\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} + 24\omega_6^3 v_3c_s^2\omega_{16}\omega_7^2 v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^2 v_3^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} -$

$12\omega_6^3v_3^2\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} - 24\omega_6^3v_3\omega_{19}c_s^2\omega_{16}\omega_7^2v_1\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} + 12\omega_6^2v_3\omega_{19}c_s^2\omega_{16}\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2 +$
$24\omega_6^3v_3\omega_{19}c_s^2\omega_{16}\omega_7^3v_1\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} - 12\omega_6^3v_3\omega_{19}\omega_{16}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} -$
$12\omega_6^3v_3^2\omega_{19}c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3c_s^2\omega_{16}\omega_7^3v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 6\omega_6^2\omega_{19}c_s^2\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^3v_3^2\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2\omega_{19}c_s^4\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} -$
$24\omega_6^3v_3\omega_{16}\omega_7^2v_1v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3v_3^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} - 12\omega_6^3\omega_{19}c_s^2\omega_{16}\omega_7^2v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} -$
$6\omega_6^3\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3v_3^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}v_2^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} - 12\omega_6^3v_3^2\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} -$
$12\omega_6^2v_3\omega_{19}\omega_{16}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - \omega_6^3\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 24\omega_6^3v_3^2\omega_{19}c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18} -$
$6\omega_6^3v_3^2\omega_{19}\omega_7^3v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6^3v_3\omega_{19}c_s^2\omega_{16}\omega_7^2v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 6\omega_6^3v_3^2\omega_{19}\omega_{16}\omega_7^3v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{19}c_s^2\omega_{16}\omega_7^2\omega_{23}v_2^2\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} - 18\omega_6^3\omega_{19}c_s^4\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} -$
$12\omega_6^3v_3\omega_{19}c_s^2\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 60\omega_6^3v_3^2\omega_{19}c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} + 12\omega_6^3c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} -$
$12\omega_6^2c_s^4\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} + 12\omega_6^3c_s^2\omega_{16}\omega_7^3v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5 -$
$12\omega_6^3\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_5^2\omega_{18} + 24\omega_6^3v_3\omega_{19}\omega_{16}\omega_7^3v_1\omega_{23}v_2^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2 + 12\omega_6^3v_3\omega_{19}c_s^2\omega_7^3v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} -$
$24\omega_6^3v_3\omega_{16}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 24\omega_6^3v_3\omega_{19}c_s^2\omega_{16}\omega_7^2v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} -$
$6\omega_6^3v_3^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} + 6\omega_6^3v_3^2\omega_{19}c_s^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$24\omega_6^3\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} - 24\omega_6^3v_3^2\omega_{19}c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18} + 6\omega_6^3v_3^2\omega_{19}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^3\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2 - 6\omega_6^3v_3^2\omega_{19}c_s^2\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} -$
$12\omega_6^3v_3^2\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5 + 24\omega_6^3v_3\omega_{16}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} - 6\omega_6^3v_3^2\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} -$
$12\omega_6^3v_3\omega_{19}\omega_{16}\omega_7^3v_1v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3c_s^2\omega_{16}\omega_7^2\omega_{23}v_2^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3v_3^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2 -$
$18\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} + 6\omega_6^3v_3^2\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 6\omega_6^2v_3^2\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}$

$C_{41} = \omega_6^2v_3\omega_{19}\omega_{16}^2\omega_7^3v_1^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2 - 2\omega_6^2v_3\omega_{16}^2\omega_7^2v_1^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2c_s^2\omega_{16}^2\omega_7^2v_1\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} -$
$2\omega_6v_3\omega_{19}\omega_{16}^2\omega_7^3v_1^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2 + 2\omega_6^2v_3^2\omega_{19}\omega_{16}^2\omega_7^2v_1\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} + \omega_6^2v_3^2\omega_{19}\omega_{16}^2\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2 +$
$\omega_6v_3\omega_{19}\omega_{16}^2\omega_7^3v_1^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2v_3^2\omega_{19}\omega_{16}^2\omega_7^2v_1\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2v_3c_s^2\omega_{16}^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} -$
$2\omega_6^2\omega_{19}c_s^2\omega_{16}^2\omega_7^2v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6v_3\omega_{19}\omega_{16}^2\omega_7^3v_1^2\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} - \omega_6^2\omega_{19}c_s^2\omega_{16}^2\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} +$
$2\omega_6^2v_3^2\omega_{16}^2\omega_7^3v_1\omega_{20}\omega_{17}\omega_8^2\omega_{18} + 2\omega_6^2v_3^2\omega_{19}\omega_{16}^2\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + \omega_6^2v_3^2\omega_{19}\omega_{16}^2\omega_7^3v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2c_s^2\omega_{16}^2\omega_7^3v_1\omega_{23}\omega_{17}\omega_8^2\omega_{18} +$
$2\omega_6^2\omega_{19}c_s^2\omega_{16}^2\omega_7^3v_1\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6v_3\omega_{19}\omega_{16}^2\omega_7^3v_1^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + \omega_6^2v_3\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} +$
$2\omega_6^2v_3\omega_{16}^2\omega_7^3v_1^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2v_3^2\omega_{19}\omega_{16}\omega_7^2v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2c_s^2\omega_{16}^2\omega_7^3v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} +$
$2\omega_6v_3^2\omega_{19}\omega_{16}^2\omega_7^3v_1\omega_{23}\omega_{17}\omega_{11}\omega_8^2 - \omega_6^2v_3^2\omega_{19}\omega_{16}\omega_7^3v_1\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} - \omega_{19}c_s^2\omega_{16}^2\omega_7^2v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} -$
$\omega_6^2v_3^2\omega_{19}\omega_{16}^2\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2 + 2\omega_6^2\omega_{19}c_s^2\omega_{16}^2\omega_7^3v_1\omega_{23}\omega_{17}\omega_8^2 + \omega_6^2v_3\omega_{19}\omega_{16}\omega_7^3v_1^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} +$
$2\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + \omega_{19}c_s^2\omega_{16}^2\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - 3\omega_6\omega_{19}c_s^2\omega_{16}^2\omega_7v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} +$
$2\omega_6\omega_{19}c_s^2\omega_{16}^2\omega_7^3v_1\omega_{23}\omega_{17}\omega_{11}\omega_8^2 - \omega_6^2\omega_{19}c_s^2\omega_{16}^2\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2 - 2\omega_6^2v_3^2\omega_{16}^2\omega_7^3v_1\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2c_s^2\omega_{16}^2\omega_7^2v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} +$
$2\omega_6^2v_3\omega_{16}^2\omega_7^2v_1^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2c_s^2\omega_{16}^2\omega_7^3v_1\omega_{20}\omega_{17}\omega_8^2\omega_{18} + \omega_6\omega_{19}c_s^2\omega_{16}^2\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{18} - \omega_6^2v_3\omega_{19}\omega_{16}^2\omega_7^3v_1^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} -$
$2\omega_6v_3\omega_{19}c_s^2\omega_{16}^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2 + 2\omega_6^2v_3^2\omega_{19}\omega_{16}^2\omega_7^3v_1\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2v_3c_s^2\omega_{16}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + \omega_6^2v_3\omega_{19}c_s^2\omega_{16}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_{18} +$
$2\omega_6^2v_3\omega_{19}c_s^2\omega_{16}^2\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2v_3\omega_{19}\omega_{16}^2\omega_7^3v_1^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2v_3c_s^2\omega_{16}^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} +$
$\omega_6^2v_3\omega_{19}c_s^2\omega_{16}^2\omega_7^3v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + \omega_6v_3\omega_{19}c_s^2\omega_{16}^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2v_3\omega_{19}\omega_{16}\omega_7^2v_1^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} +$
$2\omega_6^2v_3\omega_{16}^2\omega_7^2v_1^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2v_3^2\omega_{19}\omega_{16}^2\omega_7^3v_1\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2v_3^2\omega_{16}^2\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} +$
$2\omega_6^2v_3\omega_{19}c_s^2\omega_{16}^2\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2v_3\omega_{19}c_s^2\omega_{16}^2\omega_7^2v_1\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2v_3c_s^2\omega_{16}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} +$
$2\omega_6^2v_3\omega_{19}c_s^2\omega_{16}^2\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2v_3\omega_{19}c_s^2\omega_{16}^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2v_3\omega_{19}c_s^2\omega_{16}^2\omega_7^2v_1^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} -$
$2\omega_6^2v_3\omega_{19}c_s^2\omega_{16}^2\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2v_3\omega_{19}c_s^2\omega_{16}^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 6\omega_6^2\omega_{19}c_s^2\omega_{16}^2\omega_7^2v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} +$
$2\omega_6^2v_3^2\omega_{16}^2\omega_7^3v_1\omega_{23}\omega_{17}\omega_8^2\omega_{18} - \omega_6v_3\omega_{19}c_s^2\omega_{16}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - \omega_6v_3^2\omega_{19}\omega_{16}^2\omega_7^3v_1\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2v_3^2\omega_{16}^2\omega_7^2v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} -$
$2\omega_6^2v_3\omega_{19}\omega_{16}^2\omega_7^2v_1^2\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} - \omega_6^2v_3\omega_{19}\omega_{16}^2\omega_7^3v_1^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2 - \omega_6^2v_3\omega_{19}c_s^2\omega_{16}^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} +$
$\omega_6\omega_{19}c_s^2\omega_{16}^2\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_7v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2v_3^2\omega_{19}\omega_{16}^2\omega_7^3v_1^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} -$
$\omega_6^2v_3\omega_{19}c_s^2\omega_{16}^2\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{19}c_s^2\omega_7^2v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2v_3\omega_{19}\omega_{16}\omega_7^2v_1^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} -$
$2\omega_6^2v_3\omega_{19}\omega_{16}^2\omega_7^3v_1^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2v_3^2\omega_{16}^2\omega_7^3v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2v_3\omega_{19}\omega_{16}^2\omega_7^3v_1^2\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} +$
$2\omega_6\omega_{19}c_s^2\omega_{16}^2\omega_7^2v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - \omega_6^2v_3\omega_{19}c_s^2\omega_{16}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2 + \omega_6^2v_3\omega_{19}c_s^2\omega_{16}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} +$
$2\omega_6^2v_3\omega_{19}c_s^2\omega_{16}^2\omega_7^3v_1^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2 - 2\omega_6^2v_3\omega_{19}\omega_{16}^2\omega_7^3v_1^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2v_3c_s^2\omega_{16}^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} +$
$\omega_6^2\omega_{19}c_s^2\omega_{16}^2\omega_7^3v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + \omega_6v_3\omega_{19}c_s^2\omega_{16}^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2v_3\omega_{19}\omega_{16}\omega_7^2v_1^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} +$
$2\omega_6^2v_3\omega_{19}c_s^2\omega_{16}^2\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2v_3^2\omega_{19}\omega_{16}^2\omega_7^3v_1\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2v_3^2\omega_{16}^2\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} -$
$2\omega_6v_3\omega_{19}c_s^2\omega_{16}^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_6^2v_3\omega_{19}c_s^2\omega_{16}^2\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} + 2\omega_6\omega_{19}c_s^2\omega_{16}^2\omega_7v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} -$
$2\omega_6^2v_3^2\omega_{19}\omega_{16}^2\omega_7^3v_1\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} - 2\omega_6v_3^2\omega_{19}\omega_{16}^2\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + \omega_6\omega_{19}c_s^2\omega_{16}^2\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} +$
$2\omega_6^2v_3^2\omega_{19}\omega_{16}^2\omega_7^3v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2v_3\omega_{19}c_s^2\omega_{16}^2\omega_7^2v_1\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2v_3c_s^2\omega_{16}^2\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{19}c_s^2\omega_{16}^2\omega_7^3v_1\omega_{23}\omega_{17}\omega_{11}\omega_8^2 -$
$2\omega_6^2v_3^2\omega_{19}\omega_{16}^2\omega_7^2v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2v_3^2\omega_{19}\omega_{16}^2\omega_7^3v_1\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} + \omega_6^2v_3\omega_{19}c_s^2\omega_{16}^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_{18} +$
$\omega_6^2v_3\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2v_3\omega_{19}c_s^2\omega_{16}^2\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} - 2\omega_6v_3\omega_{19}c_s^2\omega_{16}^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} -$
$\omega_6^2v_3^2\omega_{19}\omega_{16}\omega_7^3v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2v_3\omega_{19}\omega_{16}^2\omega_7^3v_1^2\omega_{23}\omega_{17}\omega_8^2\omega_{18} - \omega_6^2v_3\omega_{19}c_s^2\omega_{16}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_{18} -$
$4\omega_6\omega_{19}c_s^2\omega_{16}^2\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_6^2\omega_{19}c_s^2\omega_{16}^2\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + \omega_6v_3^2\omega_{19}\omega_{16}^2\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} +$
$\omega_6^2v_3^2\omega_{19}\omega_{16}^2\omega_7^3v_1\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6v_3\omega_{19}c_s^2\omega_{16}^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + \omega_6v_3\omega_{19}\omega_{16}^2\omega_7^3v_1^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2 -$
$\omega_6^2\omega_{19}c_s^2\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2v_3^2\omega_{16}^2\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_{18} - 2\omega_6^2v_3\omega_{16}^2\omega_7^3v_1^2\omega_{23}\omega_{17}\omega_8^2\omega_{18} + \omega_6^2v_3\omega_{19}\omega_{16}^2\omega_7^3v_1^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} -$
$\omega_6^2\omega_{19}c_s^2\omega_{16}^2\omega_7^3v_1\omega_{20}\omega_{17}\omega_8^2\omega_{18} - 2\omega_6^2v_3^2\omega_{19}\omega_{16}^2\omega_7^3v_1\omega_{23}\omega_{17}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_7^2v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - \omega_6^2\omega_{19}c_s^2\omega_{16}^2\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{18} -$
$2\omega_6^2v_3c_s^2\omega_{16}^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{19}c_s^2\omega_{16}^2\omega_7^2v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6\omega_{19}c_s^2\omega_{16}\omega_7^2v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2v_3c_s^2\omega_{16}^2\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_{18} +$
$3\omega_6^2\omega_{19}c_s^2\omega_{16}^2\omega_7v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_6^2v_3\omega_{19}c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + \omega_6^2\omega_{19}c_s^2\omega_{16}^2\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_{18} -$
$2\omega_6\omega_{19}c_s^2\omega_{16}^2\omega_7^3v_1\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2v_3\omega_{16}^2\omega_7^3v_1^2\omega_{20}\omega_{17}\omega_8^2\omega_{18} + 2\omega_6^2v_3\omega_{19}\omega_{16}^2\omega_7^3v_1^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_6^2v_3\omega_{19}c_s^2\omega_{16}^2\omega_7^3\omega_{23}\omega_{17}\omega_8^2 -$
$\omega_6^2v_3^2\omega_{19}\omega_{16}^2\omega_7^3v_1\omega_{20}\omega_{17}\omega_8^2\omega_{18} - 2\omega_6^2v_3^2\omega_{19}\omega_{16}^2\omega_7^3v_1\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2v_3\omega_{19}c_s^2\omega_{16}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_{18} +$
$\omega_6^2v_3\omega_{19}\omega_{16}\omega_7^3v_1^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2v_3\omega_{19}c_s^2\omega_{16}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_6^2v_3^2\omega_{19}\omega_{16}^2\omega_7^3v_1\omega_{23}\omega_{17}\omega_8^2 + 2\omega_6^2v_3c_s^2\omega_{16}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_{18} -$

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

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

$\omega_6\omega_{19}^2\omega_{16}\omega_7^3v_1^2\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - 12\omega_6^2v_3\omega_{19}c_s^2\omega_{16}\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} + 4\omega_6^2v_3\omega_{19}\omega_{16}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} +$
$2\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - \omega_6^2\omega_{19}^2c_s^2\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5 + 2\omega_6^2v_3\omega_{19}^2c_s^2\omega_{16}\omega_7^2v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8\omega_{18} +$
$2\omega_6\omega_{19}^2c_s^2\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18} - 2\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_7^3v_1^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} - 2\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{23}v_2^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18} +$
$\omega_6\omega_{19}^2\omega_{16}\omega_7^3v_1^2\omega_{23}v_2^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 2\omega_6^2\omega_{19}^2\omega_{16}\omega_7^2v_1^2\omega_{23}v_2^2\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 2\omega_6v_3\omega_{19}^2c_s^2\omega_{16}\omega_7^2v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18} +$
$2\omega_6^2v_3\omega_{19}^2c_s^2\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - 2\omega_6^2\omega_{19}^2\omega_{16}\omega_7^3v_1^2\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18} - 4\omega_6^2v_3\omega_{19}^2c_s^2\omega_{16}\omega_7^2v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18} +$
$\omega_6^2\omega_{19}^2c_s^2\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 2\omega_6^2\omega_{19}\omega_{16}\omega_7^3v_1^2\omega_{23}v_2^2\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 4\omega_6^2v_3\omega_{19}c_s^2\omega_{16}\omega_7v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} +$
$4v_3\omega_{19}^2c_s^2\omega_{16}\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18} - 4\omega_6v_3\omega_{19}c_s^2\omega_{16}\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 4\omega_6v_3\omega_{19}^2\omega_{16}\omega_7^3v_1\omega_{23}v_2^2\omega_{17}\omega_{11}^2\omega_8^2\omega_5 -$
$2\omega_6^2\omega_{19}^2\omega_{16}\omega_7^2v_1^2\omega_{23}v_2^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 4\omega_6^2v_3\omega_{19}\omega_{16}\omega_7^2v_1v_2^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 4\omega_6^2v_3\omega_{19}^2\omega_{16}\omega_7^2v_1\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} -$
$4\omega_6^2v_3\omega_{19}^2c_s^2\omega_{16}\omega_7^2v_1\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 2\omega_6^2\omega_{19}^2\omega_7^2v_1^2\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - 2\omega_6\omega_{19}^2\omega_{16}\omega_7^3v_1^2\omega_{23}v_2^2\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18} +$
$\omega_6\omega_{19}^2c_s^2\omega_{16}\omega_7^3v_1^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5 + 4\omega_6^2v_3\omega_{19}^2c_s^2\omega_{16}\omega_7^2v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} + 2\omega_6v_3\omega_{19}^2c_s^2\omega_{16}\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8\omega_{18} +$
$2\omega_6^2v_3\omega_{19}^2\omega_{16}\omega_7^3v_1v_2^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + \omega_6^2\omega_{19}^2\omega_7^3v_1^2v_2^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 2\omega_6^2\omega_{19}^2c_s^2\omega_{16}\omega_7^2v_1^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} +$
$2\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_7^3v_1^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} + 2\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_7^3v_2^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + \omega_6\omega_{19}^2c_s^2\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5 -$
$2\omega_6^2\omega_{19}\omega_{16}\omega_7^3v_1^2v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} - \omega_6^2\omega_{19}^2\omega_7^3v_1^2\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 2\omega_6^2v_3\omega_{19}^2c_s^2\omega_{16}\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} +$
$4\omega_6v_3\omega_{19}^2c_s^2\omega_{16}\omega_7^2v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5 - 2\omega_6^2v_3\omega_{19}^2\omega_{16}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 4\omega_6^2v_3\omega_{19}c_s^2\omega_{16}\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18} -$
$\omega_6^2\omega_{19}^2\omega_{16}\omega_7^3v_1^2\omega_{23}v_2^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - 2\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 4\omega_6^2v_3\omega_{19}^2c_s^2\omega_{16}\omega_7^2v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5 -$
$2\omega_6^2v_3\omega_{19}^2c_s^2\omega_{16}\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_5\omega_{18} + 4\omega_6^2v_3\omega_{19}^2c_s^2\omega_7^2v_1\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - 2\omega_6^2v_3\omega_{19}^2\omega_7^3v_1v_2^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} +$
$12\omega_6^2v_3\omega_{19}^2c_s^2\omega_{16}\omega_7v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 2\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_7^3v_1^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - 4\omega_6^2v_3\omega_{19}^2\omega_{16}\omega_7^3v_1\omega_{23}v_2^2\omega_{17}\omega_{11}^2\omega_8^2\omega_5 -$
$4\omega_6^2v_3\omega_{19}\omega_{16}\omega_7^2v_1\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 2\omega_6^2\omega_{19}^2\omega_{16}\omega_7^3v_1^2\omega_{23}v_2^2\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18} - 2\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} -$
$2\omega_6^2v_3\omega_{19}^2c_s^2\omega_{16}\omega_7v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_{18} - 2\omega_6^2\omega_{19}^2c_s^2\omega_7^2v_1^2\omega_{23}\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - 2\omega_6v_3\omega_{19}^2\omega_{16}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5 +$
$2\omega_6v_3\omega_{19}^2c_s^2\omega_{16}\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 2\omega_6^2\omega_{19}^2c_s^2\omega_{16}\omega_7^2v_2^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - \omega_6^2\omega_{19}^2c_s^2\omega_{16}\omega_7^3v_1^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5 -$
$4\omega_6^2v_3\omega_{19}^2\omega_{16}\omega_7^3v_1\omega_{23}v_2^2\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} + 2\omega_6^2\omega_{19}^2\omega_{16}\omega_7^2v_1^2\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18} - 2\omega_6^2v_3\omega_{19}^2\omega_{16}\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5 +$
$2\omega_6^2v_3\omega_{19}^2c_s^2\omega_{16}\omega_7^3v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5 - 4v_3\omega_{19}^2c_s^2\omega_{16}\omega_7^2v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - 4\omega_6^2v_3\omega_{19}c_s^2\omega_{16}\omega_7^3v_1\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} +$
$2\omega_6^2\omega_{19}^2c_s^2\omega_{16}\omega_7^2\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18} - \omega_6^2\omega_{19}^2c_s^2\omega_{16}\omega_7^3v_1^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} - 2\omega_6^2v_3\omega_{19}^2\omega_7^3v_1\omega_{23}v_2^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18} +$
$4\omega_6^2v_3\omega_{19}^2\omega_{16}\omega_7^2v_1\omega_{23}v_2^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} - 2\omega_6^2\omega_{19}\omega_{16}\omega_7^2v_1^2v_2^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - 2\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_7^2v_1^2\omega_{23}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} -$
$\omega_6^2v_3\omega_{19}^2c_s^2\omega_{16}\omega_7^2v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - 2\omega_6^2\omega_{19}^2c_s^2\omega_7^2v_1^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - \omega_6^2\omega_{19}^2\omega_{16}\omega_7^3v_1^2v_2^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} -$
$2\omega_6^2\omega_{19}^2c_s^2\omega_{16}\omega_7^2\omega_{23}v_2^2\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18} + 2\omega_6^2\omega_{19}^2c_s^2\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 2\omega_6\omega_{19}^2c_s^2\omega_{16}\omega_7^3v_1^2\omega_{23}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} -$
$8\omega_6v_3\omega_{19}^2c_s^2\omega_{16}\omega_7^2v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} - \omega_6^2\omega_{19}^2c_s^2\omega_7^3v_1^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - 4\omega_6^2v_3\omega_{19}^2\omega_{16}\omega_7^2v_1\omega_{23}v_2^2\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} -$
$2\omega_6^2v_3\omega_{19}^2c_s^2\omega_{16}\omega_7^3v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} + \omega_6^2\omega_{19}^2c_s^2\omega_{16}\omega_7^3v_1^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} - 2\omega_6\omega_{19}^2c_s^2\omega_{16}\omega_7^3v_1^2\omega_{23}\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} +$
$2\omega_6^2\omega_{19}^2\omega_{16}\omega_7^3v_1^2\omega_{23}v_2^2\omega_{17}\omega_{11}^2\omega_8^2\omega_5 - 2\omega_6^2\omega_{19}^2c_s^2\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 4\omega_6^2v_3\omega_{19}^2c_s^2\omega_7^2v_1\omega_{23}\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18} +$
$2\omega_6^2\omega_{19}^2c_s^2\omega_{16}\omega_7^2\omega_{23}v_2^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - \omega_6^2\omega_{19}^2\omega_{16}\omega_7^3v_1^2\omega_{23}v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} - 2\omega_6^2\omega_{19}^2c_s^2\omega_{16}\omega_7^3v_1^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5 -$
$2\omega_6^2\omega_{19}^2c_s^2\omega_{16}\omega_7^2v_1^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - 4\omega_6^2v_3\omega_{19}\omega_{16}\omega_7^3v_1\omega_{23}v_2^2\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}$

$C_{43} = -18\omega_{19}c_s^4\omega_{16}^2\omega_{10}^2\omega_7^3 - 18v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}^2\omega_7^3\omega_{11} + 24v_3^2\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}v_2^2 - 6v_3^2\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3v_2^2\omega_{11} + 24v_3^2\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2\omega_{23} -$
$9v_3^2\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11} + 6v_3^2\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{23} - 6\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{11} - 36\omega_{19}c_s^4\omega_{16}^2\omega_{10}\omega_7\omega_{23}\omega_{11} - 12v_3^2\omega_{16}^2\omega_{10}^2\omega_7^3 +$
$72v_3^2\omega_{19}c_s^2\omega_{16}^2\omega_{10}\omega_7\omega_{23}\omega_{11} + 6v_3^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}v_2^2\omega_{11} - 48v_3^2\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}\omega_{11} - 12c_s^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}v_2^2 + 6v_3^2\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3 +$
$18\omega_{19}c_s^4\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{11} - 12\omega_{19}c_s^2\omega_{16}^2\omega_{10}\omega_7\omega_{23}v_2^2\omega_{11} - 12v_3^2\omega_{16}^2\omega_{10}^2\omega_7^3v_2^2\omega_{11} - 36v_3^2\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}v_2^2\omega_{11} + 12c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11} +$
$12v_3^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23} + 12v_3^2\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}v_2^2 - 12v_3^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11} - 12c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{11} + 12c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2v_2^2\omega_{11} +$
$12v_3^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}v_2^2\omega_{11} - 15v_3^2\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}v_2^2\omega_{11} - 6v_3^2\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{11} + 12\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}v_2^2\omega_{11} - 6\omega_{19}c_s^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23} -$
$12c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3 + 6v_3^2\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3v_2^2\omega_{11} - 36c_s^4\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11} + 36c_s^4\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{11} + 12c_s^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}v_2^2\omega_{11} + 18\omega_{19}c_s^4\omega_{16}^2\omega_{10}\omega_7^3\omega_{23} -$
$6v_3^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11} + 12\omega_{19}c_s^2\omega_{16}^2\omega_{10}\omega_7\omega_{23}\omega_{11} + 36v_3^2c_s^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11} + 12v_3^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{11} + 36v_3^2\omega_{19}c_s^2\omega_{16}^2\omega_7^2\omega_{23}\omega_{11} -$
$18v_3^2\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3 - 36\omega_{19}c_s^4\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{11} + 12\omega_{19}c_s^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11} - 60\omega_{19}c_s^4\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11} + 6v_3^2\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}\omega_{11} +$
$5\omega_{19}c_s^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11} - 12v_3^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}v_2^2\omega_{11} + 48v_3^2\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}v_2^2\omega_{11} - 6\omega_{19}c_s^2\omega_{16}\omega_{10}^2\omega_7^3v_2^2\omega_{11} - 12\omega_{19}c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{23}v_2^2\omega_{11} -$
$36c_s^4\omega_{16}^2\omega_{10}\omega_7^3\omega_{23} - 24v_3^2\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{23} + 12\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{11} + 12\omega_{19}c_s^4\omega_{10}^2\omega_7^2\omega_{23}\omega_{11} + 36v_3^2c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3 + 12c_s^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23} +$
$36v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{11} - 12c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}v_2^2\omega_{11} - 18\omega_{19}c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}\omega_{11} + 18v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11} - 12v_3^2\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3\omega_{23} +$
$18v_3^2\omega_{19}c_s^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11} + 12v_3^2\omega_{19}\omega_{10}^2\omega_7^2\omega_{23}\omega_{11} - 12v_3^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{11} + 27v_3^2\omega_{19}c_s^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11} + 12\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11} -$
$15\omega_{19}c_s^4\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11} - 96\omega_{19}c_s^4\omega_{16}^2\omega_{10}^2\omega_{23}\omega_{11} - 36c_s^4\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{11} + 9v_3^2\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}v_2^2\omega_{11} - 24v_3^2\omega_{19}\omega_{16}^2\omega_{10}\omega_7\omega_{23}\omega_{11} +$
$12v_3^2\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{11} + 144v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}\omega_{11} - 42\omega_{19}c_s^4\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}\omega_{11} + 12c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{11} - 12v_3^2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}v_2^2\omega_{11} +$
$6\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3v_2^2\omega_{11} - 18\omega_{19}c_s^4\omega_{16}\omega_{10}^2\omega_7^3\omega_{11} + 12v_3^2\omega_{19}\omega_{16}^2\omega_7^2\omega_{23}v_2^2\omega_{11} + 18\omega_{19}c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}v_2^2\omega_{11} + 12v_3^2\omega_{16}^2\omega_{10}^2\omega_7^3v_2^2 +$
$24v_3^2\omega_{19}\omega_{16}^2\omega_{10}\omega_7\omega_{23}v_2^2\omega_{11} + 36c_s^4\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11} - 12v_3^2\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2v_2^2\omega_{11} + 6\omega_{19}c_s^2\omega_{10}^2\omega_7^3\omega_{23}v_2^2\omega_{11} + 156\omega_{19}c_s^4\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}\omega_{11} -$
$36v_3^2c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11} + 6\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3 + 12v_3^2\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11} - 12c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3v_2^2\omega_{11} - 36v_3^2c_s^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23} +$
$12v_3^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11} - 6v_3^2\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3v_2^2 + 6\omega_{19}c_s^2\omega_{16}\omega_{10}^2\omega_7^3\omega_{11} + 12\omega_{19}c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{23}\omega_{11} + 18v_3^2\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{11} -$
$12v_3^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}v_2^2 + 15v_3^2\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}\omega_{11} - 12\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}\omega_{11} - 24v_3^2\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}v_2^2 - 12v_3^2\omega_{19}\omega_{10}^2\omega_7^2\omega_{23}v_2^2\omega_{11} -$
$12c_s^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11} + 12v_3^2\omega_{16}^2\omega_{10}^2\omega_7^2v_2^2\omega_{11} + 6v_3^2\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3\omega_{11} - 12\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}v_2^2\omega_{11} - 36v_3^2c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{11} -$
$6\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3v_2^2 - 6v_3^2\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}v_2^2 + 12v_3^2\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2v_2^2\omega_{11} - 72v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{23} - 18v_3^2\omega_{19}c_s^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23} -$
$72v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{23}\omega_{11} - 3\omega_{19}c_s^2\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}v_2^2\omega_{11} + 36c_s^4\omega_{16}^2\omega_{10}^2\omega_7^3 + 12\omega_{19}c_s^4\omega_{16}\omega_{10}^2\omega_7\omega_{23}\omega_{11} + 36v_3^2\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11} +$
$15\omega_{19}c_s^4\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}\omega_{11} - 45v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}\omega_{11} - 36v_3^2\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{11} + 12c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3v_2^2 + 6v_3^2\omega_{19}\omega_{10}^2\omega_7^3\omega_{23}v_2^2\omega_{11} -$
$12\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2v_2^2\omega_{11} - 12\omega_{19}c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{11} - 24v_3^2\omega_{19}\omega_{16}\omega_{10}^2\omega_7\omega_{23}v_2^2\omega_{11} - 6v_3^2\omega_{19}\omega_{10}^2\omega_7^3\omega_{23}\omega_{11} - 36v_3^2\omega_{19}c_s^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11} +$
$18\omega_{19}c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}v_2^2\omega_{11} + 24v_3^2\omega_{19}\omega_{16}\omega_{10}^2\omega_7\omega_{23}\omega_{11} + 36\omega_{19}c_s^4\omega_{16}\omega_{10}^2\omega_7^2\omega_{11} + 54\omega_{19}c_s^4\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11} - \omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11} -$
$108v_3^2\omega_{19}c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11} + \omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}v_2^2\omega_{11} - 6\omega_{19}c_s^4\omega_{10}^2\omega_7^3\omega_{23}\omega_{11} + 72v_3^2\omega_{19}c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{23} - 12\omega_{19}c_s^2\omega_{10}^2\omega_7^2\omega_{23}v_2^2\omega_{11} +$
$36v_3^2c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{11} - 12v_3^2\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2\omega_{11} - 5\omega_{19}c_s^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}v_2^2\omega_{11} - 36v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11} - 6v_3^2\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}v_2^2\omega_{11} +$
$3\omega_{19}c_s^2\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}\omega_{11} + 36v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}^2\omega_7^3\omega_{23} - 18\omega_{19}c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11} - 12v_3^2\omega_{19}\omega_{16}^2\omega_7^2\omega_{23}\omega_{11} + 3\omega_{19}c_s^4\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11} -$
$6\omega_{19}c_s^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11} - 18v_3^2\omega_{19}c_s^2\omega_{16}^2\omega_7^3\omega_{23}\omega_{11} + 6\omega_{19}c_s^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}v_2^2 + 12\omega_{19}c_s^2\omega_{16}\omega_{10}^2\omega_7^2v_2^2\omega_{11}$

$C_{44} = -6\omega_{19}c_s^4\omega_{16}^2\omega_{10}^2\omega_7^3 - 6v_3^2\omega_{19}c_s^2\omega_{16}\omega_{10}^2\omega_7^3\omega_{11} + 72v_3^2\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}v_2^2 - 18v_3^2\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3v_2^2\omega_{11} + 24v_3^2\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2\omega_{23} -$

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

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

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

$$\begin{gathered}
12\omega_6^3 c_s^2 \omega_{13}\omega_{11}^2\omega_{18} + 12\omega_6^3 v_3^2\omega_{22}c_s^2\omega_{13}\omega_{18}^2 - 24\omega_6\omega_{22}\omega_{13}v_1^2\omega_{11}^2\omega_{18}^2 + 36\omega_6^2 c_s^4\omega_{13}\omega_{11}^3\omega_{18} + 72\omega_6^3\omega_{22}c_s^2\omega_{13}v_1^2\omega_{11}^2\omega_{18} - 12\omega_6^3\omega_{22}\omega_{13}v_1^2\omega_{18}^2 + \\
12\omega_6^2\omega_{22}\omega_{13}v_1^2\omega_{11}^3 + 24\omega_6 v_3^2\omega_{22}\omega_{13}v_1^2\omega_{11}^2\omega_{18}^2 + 12\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_{11}^2 - 18\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2 - 36\omega_6^2\omega_{22}c_s^2\omega_{13}v_1^2\omega_{11}^3 - 12\omega_6\omega_{22}c_s^2\omega_{13}\omega_{11}^3\omega_{18}^2 - \\
6\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_{11}^2\omega_{18}^2 + 12\omega_6 v_3^2\omega_{22}c_s^2\omega_{13}\omega_{11}^3\omega_{18}^2 - 12\omega_6^2 c_s^2\omega_{11}^3\omega_{18}^2 + 12\omega_6^2 v_3^2\omega_{13}v_1^2\omega_{11}^3\omega_{18} + 12\omega_6^3\omega_{13}v_1^2\omega_{11}^3\omega_{18} + 18\omega_6^3\omega_{22}\omega_{13}v_1^2\omega_{11}\omega_{18}^2 - \\
12\omega_6^3 v_3^2\omega_{22}\omega_{13}v_1^2\omega_{11}\omega_{18} + 108\omega_6^2\omega_{22}c_s^2\omega_{13}v_1^2\omega_{11}^3\omega_{18} + 12\omega_6^2 v_3^2\omega_{22}\omega_{13}v_1^2\omega_{11}\omega_{18}^2 + 18\omega_6^3\omega_{22}c_s^4\omega_{11}^2\omega_{18}^2 + 24\omega_6\omega_{22}\omega_{13}v_1^2\omega_{11}^3\omega_{18} - \\
12\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_{11}^3 - 24\omega_6 v_3^2\omega_{22}\omega_{13}v_1^2\omega_{11}^3\omega_{18} - 18\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{11}^3\omega_{18} - 12\omega_6^2 v_3^2 c_s^2\omega_{13}\omega_{11}^3\omega_{18}^2 + 6\omega_6^3 v_3^2\omega_{22}v_1^2\omega_{11}^2\omega_{18}^2 - 6\omega_6^3 c_s^2\omega_{13}\omega_{11}^3\omega_{18}^2 + \\
12\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18} - 12\omega_6^3 v_3^2\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18}^2 - 36\omega_6^3\omega_{22}c_s^2\omega_{13}v_1^2\omega_{11}^3\omega_{18} - 18\omega_6^3 c_s^2 v_1^2\omega_{11}^3\omega_{18}^2 + 12\omega_6^2 v_3^2 c_s^2\omega_{13}\omega_{11}^3\omega_{18} + 12\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{11}^3\omega_{18}^2 + \\
12\omega_6^3 c_s^2\omega_{13}\omega_{11}^3\omega_{18} + 6\omega_6^3 c_s^2\omega_{11}^3\omega_{18}^2 + 36\omega_6^3\omega_{22}c_s^2\omega_{13}v_1^2\omega_{18}^2 + 12\omega_6^2 v_3^2 c_s^2\omega_{11}^3\omega_{18}^2 + 12\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18}^2 - 12\omega_6^3 v_3^2\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18} - \\
42\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_{11}^2\omega_{18} - 12\omega_6^3 v_3^2\omega_{22}\omega_{13}v_1^2\omega_{11}^2 + 12\omega_6\omega_{22}c_s^2\omega_{13}\omega_{11}^3\omega_{18} - 36\omega_6^2\omega_{22}\omega_{13}v_1^2\omega_{11}^3\omega_{18} - 12\omega_6^2 v_3^2\omega_{13}v_1^2\omega_{11}^3\omega_{18}^2 - 12\omega_6 v_3^2\omega_{22}c_s^2\omega_{13}\omega_{11}^3\omega_{18} + \\
12\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_{11}^2 - 6\omega_6^3\omega_{13}v_1^2\omega_{11}^3\omega_{18}^2 + 12\omega_6^2\omega_{22}v_1^2\omega_{11}^2\omega_{18}^2 + 12\omega_6^3\omega_{22}\omega_{13}v_1^2\omega_{11}\omega_{18} - 18\omega_6^3 v_3^2\omega_{22}\omega_{13}v_1^2\omega_{11}\omega_{18}^2 + 6\omega_6^3 c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2 + \\
36\omega_6^2 c_s^4\omega_{11}^3\omega_{18}^2 - 6\omega_6^3 v_3^2 v_1^2\omega_{11}^3\omega_{18}^2 + 36\omega_6^2 c_s^2\omega_{13}v_1^2\omega_{11}^3\omega_{18} - 36\omega_6^2\omega_{22}c_s^2 v_1^2\omega_{11}^2\omega_{18}^2 - 36\omega_6^2 c_s^4\omega_{13}\omega_{11}^3\omega_{18}^2 + 18\omega_6^3\omega_{22}c_s^2\omega_{13}v_1^2\omega_{11}^2\omega_{18}^2 - \\
48\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_{11}\omega_{18}^2 - 12\omega_6^3\omega_{13}v_1^2\omega_{11}^2\omega_{18} - 36\omega_6^2\omega_{22}c_s^2\omega_{13}v_1^2\omega_{11}^2\omega_{18} - 6\omega_6^3\omega_{22}c_s^2\omega_{11}^2\omega_{18}^2 - 12\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_{11}^3 + 5\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_{11}^3\omega_{18}^2 - \\
12\omega_6^2 v_3^2\omega_{22}c_s^2\omega_{13}\omega_{11}^3 - 12\omega_6^2 v_3^2\omega_{22}c_s^2\omega_{11}^2\omega_{18}^2 + 12\omega_6\omega_{22}c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2 + 24\omega_6^2\omega_{22}\omega_{13}v_1^2\omega_{11}^2\omega_{18}^2 - 12\omega_6 v_3^2\omega_{22}c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2 + 12\omega_6^3 v_3^2\omega_{22}\omega_{13}v_1^2\omega_{11}^3
\end{gathered}$$

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

$$\begin{gathered}
C_{48} = 18\omega_6^3 v_3^2 c_s^2\omega_{13}\omega_{11}^3\omega_{18}^2 - 12\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_{11}^3\omega_{18} + 12\omega_6^2\omega_{13}v_1^2\omega_{11}^3\omega_{18}^2 - 6\omega_6^3\omega_{22}v_1^2\omega_{11}^2\omega_{18}^2 - 18\omega_6^3\omega_{22}c_s^2\omega_{13}v_1^2\omega_{11}\omega_{18}^2 + 12\omega_6^3 c_s^2\omega_{13}v_1^2\omega_{11}^2\omega_{18} - \\
36\omega_6^2 v_3^2\omega_{22}v_1^2\omega_{11}^2\omega_{18}^2 - 36\omega_6^3 v_3^2\omega_{13}v_1^2\omega_{11}^3\omega_{18} - 36\omega_6^3 v_3^2\omega_{22}\omega_{13}v_1^2\omega_{11}^3\omega_{18} - 12\omega_6^2 c_s^2\omega_{13}\omega_{11}^3\omega_{18} + 24\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_{11}^2\omega_{18}^2 - 18\omega_6^3 v_3^2 c_s^2\omega_{11}^3\omega_{18}^2 + \\
12\omega_6^3\omega_{22}c_s^2\omega_{13}v_1^2\omega_{11}^3 - 12\omega_6^2\omega_{22}\omega_{13}v_1^2\omega_{11}\omega_{18}^2 + 12\omega_6^2 c_s^2 v_1^2\omega_{11}^3\omega_{18}^2 + 12\omega_6^3 c_s^4\omega_{13}\omega_{11}^2\omega_{18} - 132\omega_6^2 v_3^2\omega_{22}c_s^2\omega_{13}\omega_{11}^3\omega_{18} - 36\omega_6^2 v_3^2\omega_{22}\omega_{13}v_1^2\omega_{11}^2\omega_{18} + \\
36\omega_6^3 v_3^2\omega_{22}\omega_{13}v_1^2\omega_{18}^2 + 6\omega_6^3 c_s^2\omega_{13}v_1^2\omega_{11}^3\omega_{18}^2 + 6\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2 + 36\omega_6^3 v_3^2 c_s^2\omega_{13}\omega_{11}^2\omega_{18} - 144\omega_6^3 v_3^2\omega_{22}c_s^2\omega_{13}\omega_{11}^2\omega_{18} + 18\omega_6\omega_{22}c_s^4\omega_{13}\omega_{11}^3\omega_{18}^2 + \\
12\omega_6^2\omega_{22}c_s^2\omega_{11}^2\omega_{18}^2 + 6\omega_6^3 c_s^4\omega_{13}\omega_{11}^3\omega_{18}^2 + 180\omega_6^2 v_3^2\omega_{22}c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2 + 36\omega_6^2 v_3^2 v_1^2\omega_{11}^3\omega_{18}^2 - 18\omega_6^3 v_3^2\omega_{13}v_1^2\omega_{11}^2\omega_{18}^2 - 24\omega_6^3\omega_{22}\omega_{13}v_1^2\omega_{11}^2\omega_{18} + \\
18\omega_6^3 v_3^2\omega_{22}\omega_{13}v_1^2\omega_{11}^2\omega_{18}^2 - 12\omega_6^3\omega_{22}c_s^2\omega_{13}v_1^2\omega_{11}^2 - 24\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_{11}^3\omega_{18} + 6\omega_6^3 v_1^2\omega_{11}^3\omega_{18}^2 - 12\omega_6^3 c_s^4\omega_{13}\omega_{11}^3\omega_{18} + 6\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_{11}\omega_{18}^2 + \\
60\omega_6^2 v_3^2\omega_{22}c_s^2\omega_{13}\omega_{11}^2\omega_{18} - 12\omega_6^3\omega_{22}\omega_{13}v_1^2\omega_{11}^3 - 36\omega_6^2 v_3^2\omega_{22}\omega_{13}v_1^2\omega_{11}^3 - 6\omega_6^3\omega_{22}\omega_{13}v_1^2\omega_{11}^2\omega_{18}^2 + 36\omega_6^3 v_3^2\omega_{13}v_1^2\omega_{11}^2\omega_{18} + 72\omega_6^3 v_3^2\omega_{22}\omega_{13}v_1^2\omega_{11}^2\omega_{18} + \\
24\omega_6\omega_{22}c_s^2\omega_{13}v_1^2\omega_{11}^2\omega_{18}^2 + 18\omega_6^3 v_3^2\omega_{22}c_s^2\omega_{11}^2\omega_{18}^2 - 24\omega_6^3 v_3^2\omega_{22}c_s^2\omega_{13}\omega_{11}^3 - 4\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_{11}^3\omega_{18}^2 + 6\omega_6^3\omega_{22}c_s^2 v_1^2\omega_{11}^2\omega_{18}^2 - 12\omega_6^2 v_1^2\omega_{11}^3\omega_{18}^2 - \\
12\omega_6^3 c_s^2\omega_{13}v_1^2\omega_{11}^3\omega_{18} - 72\omega_6^2 v_3^2\omega_{22}\omega_{13}v_1^2\omega_{11}^2\omega_{18}^2 + 12\omega_6\omega_{22}c_s^4\omega_{13}\omega_{11}^3\omega_{18} - 18\omega_6^3 v_3^2 c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2 + 12\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_{11}^2\omega_{18} - \\
18\omega_6^3 v_3^2\omega_{22}c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2 + 12\omega_6^2\omega_{22}c_s^2\omega_{13}v_1^2\omega_{11}\omega_{18}^2 + 12\omega_6^2 c_s^2\omega_{13}\omega_{11}^3\omega_{18}^2 + 18\omega_6^3 v_3^2\omega_{13}v_1^2\omega_{11}^3\omega_{18}^2 + 12\omega_6^3\omega_{22}\omega_{13}v_1^2\omega_{11}^3\omega_{18} + 24\omega_6^3 v_3^2\omega_{22}c_s^2\omega_{13}\omega_{11}^2 - \\
24\omega_6\omega_{22}c_s^2\omega_{13}v_1^2\omega_{11}^3\omega_{18} + 12\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_{11}^2\omega_{18} - 6\omega_6^3 c_s^4\omega_{13}\omega_{11}^2\omega_{18}^2 - 12\omega_6^2\omega_{22}c_s^4\omega_{11}^2\omega_{18}^2 + 12\omega_6^3\omega_{22}\omega_{13}v_1^2\omega_{11}^2 - 42\omega_6^2 v_3^2\omega_{22}c_s^2\omega_{13}\omega_{11}^3\omega_{18}^2 - \\
12\omega_6\omega_{22}c_s^4\omega_{13}\omega_{11}^2\omega_{18}^2 - 12\omega_6^2\omega_{13}v_1^2\omega_{11}^3\omega_{18} - 36\omega_6^3 v_3^2 c_s^2\omega_{13}\omega_{11}^3\omega_{18} + 78\omega_6^3 v_3^2\omega_{22}c_s^2\omega_{13}\omega_{11}^3\omega_{18} + 12\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18}^2 - \\
12\omega_6^3\omega_{22}c_s^2\omega_{13}v_1^2\omega_{11}\omega_{18} - 6\omega_6^3 c_s^2\omega_{13}v_1^2\omega_{11}^2\omega_{18}^2 + 108\omega_6^2 v_3^2\omega_{22}\omega_{13}v_1^2\omega_{11}^3\omega_{18} + 6\omega_6^3\omega_{13}v_1^2\omega_{11}^2\omega_{18}^2 - 24\omega_6^2\omega_{22}c_s^2\omega_{13}v_1^2\omega_{11}^2\omega_{18}^2 + \\
12\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_{11}^3\omega_{18} + 12\omega_6^2\omega_{22}\omega_{13}v_1^2\omega_{11}^2\omega_{18} - 6\omega_6^3 c_s^4\omega_{11}^3\omega_{18}^2 - 12\omega_{22}c_s^4\omega_{13}\omega_{11}^3\omega_{18}^2 - 12\omega_6^2 c_s^2\omega_{13}v_1^2\omega_{11}^3\omega_{18}^2 - 12\omega_6^3 c_s^2\omega_{13}\omega_{11}^2\omega_{18} - \\
24\omega_6\omega_{22}\omega_{13}v_1^2\omega_{11}^2\omega_{18}^2 + 12\omega_6^2 c_s^4\omega_{13}\omega_{11}^3\omega_{18} + 24\omega_6^3\omega_{22}c_s^2\omega_{13}v_1^2\omega_{11}^2\omega_{18} - 12\omega_6^3\omega_{22}\omega_{13}v_1^2\omega_{18}^2 + 12\omega_6^2\omega_{22}\omega_{13}v_1^2\omega_{11}^3 + 72\omega_6 v_3^2\omega_{22}\omega_{13}v_1^2\omega_{11}^2\omega_{18}^2 - \\
24\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2 - 12\omega_6^2\omega_{22}c_s^2\omega_{13}v_1^2\omega_{11}^3 - 6\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_{11}^2\omega_{18}^2 + 84\omega_6 v_3^2\omega_{22}c_s^2\omega_{13}\omega_{11}^3\omega_{18}^2 - 12\omega_6^2 c_s^2\omega_{11}^3\omega_{18}^2 + 36\omega_6^2 v_3^2\omega_{13}v_1^2\omega_{11}^3\omega_{18} + \\
12\omega_6^3\omega_{13}v_1^2\omega_{11}^3\omega_{18} + 18\omega_6^3\omega_{22}\omega_{13}v_1^2\omega_{11}\omega_{18}^2 - 36\omega_6^3 v_3^2\omega_{22}\omega_{13}v_1^2\omega_{11}\omega_{18} + 36\omega_6^2\omega_{22}c_s^2\omega_{13}v_1^2\omega_{11}^3\omega_{18} + 36\omega_6^2 v_3^2\omega_{22}\omega_{13}v_1^2\omega_{11}\omega_{18}^2 + 6\omega_6^3\omega_{22}c_s^4\omega_{11}^2\omega_{18}^2 + \\
24\omega_6\omega_{22}\omega_{13}v_1^2\omega_{11}^3\omega_{18} - 72\omega_6 v_3^2\omega_{22}\omega_{13}v_1^2\omega_{11}^3\omega_{18} + 24\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{11}^3\omega_{18} - 36\omega_6^2 v_3^2 c_s^2\omega_{13}\omega_{11}^3\omega_{18}^2 + 18\omega_6^3 v_3^2\omega_{22}v_1^2\omega_{11}^2\omega_{18}^2 - 6\omega_6^3 c_s^2\omega_{13}\omega_{11}^3\omega_{18}^2 + \\
18\omega_6^3 v_3^2\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18}^2 - 12\omega_6^3\omega_{22}c_s^2\omega_{13}v_1^2\omega_{11}^3\omega_{18} - 6\omega_6^3 c_s^2 v_1^2\omega_{11}^3\omega_{18}^2 + 36\omega_6^2 v_3^2 c_s^2\omega_{13}\omega_{11}^3\omega_{18} + 12\omega_6^3 c_s^2\omega_{13}\omega_{11}^3\omega_{18} + 6\omega_6^3 c_s^2\omega_{11}^3\omega_{18}^2 + \\
12\omega_6^3\omega_{22}c_s^2\omega_{13}v_1^2\omega_{18}^2 + 36\omega_6^2 v_3^2 c_s^2\omega_{11}^3\omega_{18}^2 - 6\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18}^2 + 72\omega_6^3 v_3^2\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18} - 12\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_{11}^2\omega_{18} - 48 v_3^2\omega_{22}c_s^2\omega_{13}\omega_{11}^3\omega_{18}^2 - \\
36\omega_6^3 v_3^2\omega_{22}\omega_{13}v_1^2\omega_{11}^2 - 12\omega_6\omega_{22}c_s^2\omega_{13}\omega_{11}^3\omega_{18} - 108\omega_6^2 v_3^2\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18}^2 - 36\omega_6^2\omega_{22}\omega_{13}v_1^2\omega_{11}^3\omega_{18} - 36\omega_6^2 v_3^2\omega_{13}v_1^2\omega_{11}^3\omega_{18}^2 + \\
60\omega_6 v_3^2\omega_{22}c_s^2\omega_{13}\omega_{11}^3\omega_{18} - 6\omega_6^3\omega_{13}v_1^2\omega_{11}^3\omega_{18}^2 + 12\omega_6^2\omega_{22}v_1^2\omega_{11}^2\omega_{18}^2 + 12\omega_6^3\omega_{22}\omega_{13}v_1^2\omega_{11}\omega_{18} - 54\omega_6^3 v_3^2\omega_{22}\omega_{13}v_1^2\omega_{11}\omega_{18}^2 + 6\omega_6^3 c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2 + \\
12\omega_6^2 c_s^4\omega_{11}^3\omega_{18}^2 - 18\omega_6^3 v_3^2 v_1^2\omega_{11}^3\omega_{18}^2 + 12\omega_6^2 c_s^2\omega_{13}v_1^2\omega_{11}^3\omega_{18} - 12\omega_6^2\omega_{22}c_s^2 v_1^2\omega_{11}^2\omega_{18}^2 - 12\omega_6^2 c_s^4\omega_{13}\omega_{11}^3\omega_{18}^2 + 6\omega_6^3\omega_{22}c_s^2\omega_{13}v_1^2\omega_{11}^2\omega_{18}^2 - \\
12\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{11}^2\omega_{18} - 12\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_{11}\omega_{18}^2 - 12\omega_6^3\omega_{13}v_1^2\omega_{11}^2\omega_{18} - 12\omega_6^2\omega_{22}c_s^2\omega_{13}v_1^2\omega_{11}^2\omega_{18} - 6\omega_6^3\omega_{22}c_s^2\omega_{11}^2\omega_{18}^2 - \omega_6^3\omega_{22}c_s^4\omega_{13}\omega_{11}^3\omega_{18}^2 + \\
24\omega_6^2 v_3^2\omega_{22}c_s^2\omega_{13}\omega_{11}^3 - 36\omega_6^2 v_3^2\omega_{22}c_s^2\omega_{11}^2\omega_{18}^2 + 12\omega_6\omega_{22}c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2 + 24\omega_6^2\omega_{22}\omega_{13}v_1^2\omega_{11}^2\omega_{18}^2 - 84\omega_6 v_3^2\omega_{22}c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2 + 36\omega_6^3 v_3^2\omega_{22}\omega_{13}v_1^2\omega_{11}^3
\end{gathered}$$

$C_{49} =$

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

$$3\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2 - 3\omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 + 3\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 + 2\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - \omega_6^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 +$$
$$\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18} + 6\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18} - 2\omega_6v_3^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - 3\omega_6^2\omega_{19}^2c_s^2\omega_7\omega_{11}^3\omega_8\omega_{18}^2 - \omega_6^2v_3^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_{18}^2 -$$
$$3\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8 - \omega_6^2v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - 3\omega_6\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18} - 3\omega_6^2c_s^2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 - 2\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_8\omega_{18}^2 +$$
$$\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 - v_3^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18} - 3\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{11}^2\omega_8\omega_{18}^2 + \omega_6^2v_3^2\omega_{19}^2\omega_7^2\omega_{11}^2\omega_8\omega_{18} + 3\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2 -$$
$$\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_{18}^2 - 3\omega_6\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - \omega_6^2v_3^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18} + \omega_6\omega_{19}^2\omega_7^2\omega_{11}^3\omega_8\omega_{18}^2 + 6\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18} +$$
$$3\omega_6^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 - \omega_6v_3^2\omega_{19}^2\omega_7^2\omega_{11}^3\omega_8\omega_{18}^2 - 2\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 + 3\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{11}^3\omega_8\omega_{18} - \omega_6^2v_3^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2 -$$
$$\omega_6^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18}^2 - 3\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_{18}^2 - 2\omega_6\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 + 6\omega_6^2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 - 3\omega_6^2\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18} +$$
$$\omega_6^2v_3^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8 + \omega_6^2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 - \omega_6^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18} + 2\omega_6v_3^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 + \omega_6^2\omega_{19}^2\omega_7^2\omega_{11}^3\omega_8\omega_{18} + 6\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_8\omega_{18}^2 -$$
$$3\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18} - 2\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18} + \omega_6v_3^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2 - 3\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18} - \omega_6^2\omega_{19}\omega_7^2\omega_{11}^2\omega_8\omega_{18}^2 +$$
$$\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8 + 2\omega_6v_3^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18} - \omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2 - \omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 + \omega_6v_3^2\omega_{19}^2\omega_7^2\omega_{11}^3\omega_{18}^2 - \omega_6^2v_3^2\omega_{19}\omega_7^2\omega_{11}^3\omega_8\omega_{18}^2 -$$
$$\omega_6\omega_{19}\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 + \omega_6^2\omega_{19}^2\omega_7\omega_{11}^3\omega_8\omega_{18}^2 - \omega_6^2v_3^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18} + \omega_6v_3^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 + 6\omega_6\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 +$$
$$\omega_6^2v_3^2\omega_{19}^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - 3\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{11}^3\omega_8\omega_{18} + v_3^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 + \omega_6^2v_3^2\omega_{19}^2\omega_7^2\omega_{11}^3\omega_8\omega_{18}^2 + \omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 - \omega_6^2\omega_{19}\omega_7\omega_{11}^3\omega_8\omega_{18}^2 +$$
$$2\omega_6^2v_3^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18} + 3\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{11}^3\omega_{18}^2 - \omega_6v_3^2\omega_{19}\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 - 6\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 + \omega_6\omega_{19}^2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18} +$$
$$\omega_6^2\omega_{19}\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 - \omega_6v_3^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8 - 3\omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{11}^3\omega_8\omega_{18}^2 + \omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8 - \omega_6v_3^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18} + 3\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_{18}^2 +$$
$$\omega_6^2\omega_{19}^2\omega_7^2\omega_{11}^2\omega_8\omega_{18}^2 + 2\omega_6^2v_3^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 + 2\omega_6^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - 3\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8 + 3\omega_6^2\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18}^2 -$$
$$\omega_6^2\omega_{19}^2\omega_7^2\omega_{11}^2\omega_8\omega_{18} + \omega_6^2v_3^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_{18}^2 + \omega_6^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18} - 3\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{11}^3\omega_{18}^2 + 3\omega_6^2\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18} - \omega_6^2v_3^2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 +$$
$$3\omega_6\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 - \omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8 - \omega_6^2v_3^2\omega_{19}^2\omega_7^2\omega_{11}^3\omega_8\omega_{18} + 3\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{11}^3\omega_8\omega_{18}^2 + \omega_6^2v_3^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 -$$
$$3\omega_6^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - 3\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 + \omega_6^2v_3^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 - 2\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - 2\omega_6^2v_3^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 +$$
$$3\omega_6^2\omega_{19}^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - \omega_6^2\omega_{19}^2\omega_7\omega_{11}^3\omega_{18}^2 + 2\omega_6^2v_3^2\omega_{19}^2\omega_7^2\omega_{20}\omega_8\omega_{18}^2 + 6\omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - 9\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2 -$$
$$\omega_6^2v_3^2\omega_{19}^2\omega_7^2\omega_{11}^3\omega_{18}^2 + \omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18} + \omega_6^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_{18}^2 - 3\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18} + \omega_6^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - 2\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}$$

$$C_{50} = 15\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 3\omega_6^3\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 6\omega_6^3\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{19}^2\omega_7\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2 +$$
$$2\omega_6^2v_3^2\omega_{19}^2\omega_7^2\omega_{11}^3\omega_8^2\omega_5\omega_{18} + 4\omega_6^3v_3^2\omega_{19}^2\omega_7^2\omega_{20}\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{19}\omega_7\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18} + 2\omega_6^3\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18} +$$
$$2\omega_6^3\omega_{19}\omega_7^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - \omega_6^2v_3^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2 - \omega_6^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 8\omega_6^2\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 -$$
$$2\omega_6^3v_3^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18} + 2\omega_6^3\omega_{19}^2\omega_7^2\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^3v_3^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^2\omega_{19}^2\omega_7^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 8\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 -$$
$$2\omega_6^3v_3^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - 2\omega_6^3\omega_{19}^2c_s^2\omega_7^2\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{19}^2c_s^2\omega_7^2\omega_{11}^3\omega_8^2\omega_5\omega_{18} - 2\omega_6^3\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5 + 6\omega_6^3\omega_{19}^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 +$$
$$\omega_6^3\omega_{19}^2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2 - 4\omega_6^3\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 - 3\omega_6^3\omega_{19}\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{19}^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18} +$$
$$2\omega_6^3\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5 + 2\omega_6^3\omega_{19}^2\omega_7^2\omega_{11}^3\omega_8^2\omega_5\omega_{18} + 6\omega_6^3c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + \omega_6^3v_3^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_5\omega_{18}^2 -$$
$$2\omega_6^2\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18} - 11\omega_6^3\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2 - 3\omega_6^3\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{19}\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 +$$
$$8\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{19}^2c_s^2\omega_7^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^3v_3^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18} - 2\omega_6^3\omega_{19}^2\omega_7^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + \omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 -$$
$$2\omega_6^3v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 + 11\omega_6^2\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^3v_3^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - 2\omega_6^3\omega_{19}\omega_7^2\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^3v_3^2\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 +$$
$$2\omega_6^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18} + \omega_6^3\omega_{19}\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^3\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 + 2\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{11}^3\omega_8\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 -$$
$$6\omega_6^3c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - \omega_6^3\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2 - 2\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5 - 2\omega_6^2\omega_{19}^2\omega_7^2\omega_{11}^3\omega_8^2\omega_5\omega_{18} + 8\omega_6^3\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2 -$$
$$2\omega_6^3\omega_{19}^2\omega_7^2\omega_{11}^2\omega_8^2\omega_5\omega_{18} - 2\omega_6^2\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_{18}^2 + 2\omega_6^3v_3^2\omega_{19}^2\omega_7\omega_{11}^3\omega_8\omega_5\omega_{18}^2 - 6\omega_6^3c_s^2\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 3\omega_6^3v_3^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 +$$
$$2\omega_6^3\omega_{19}^2c_s^2\omega_7^2\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 4\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18} + 2\omega_6^3\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 - 15\omega_6^3\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2 -$$
$$4\omega_6\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^3v_3^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5 + 9\omega_6^3\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_{18}^2 -$$
$$2\omega_6^3v_3^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^3v_3^2\omega_{19}^2\omega_7^2\omega_{11}^3\omega_8\omega_5\omega_{18}^2 + 9\omega_6^3\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 +$$
$$5\omega_6^3\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{19}^2c_s^2\omega_7\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18} + 2\omega_6^3\omega_{19}^2\omega_7\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^2v_3^2\omega_{19}^2\omega_7^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 -$$
$$4\omega_6^2\omega_{19}^2c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5 + 2\omega_6^3\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18} + 2\omega_6^3\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5 + 2\omega_6^2\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2 -$$
$$4\omega_6^3\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 2\omega_6^3\omega_{19}^2\omega_7^2\omega_{11}^3\omega_8\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{19}c_s^2\omega_7^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + \omega_6^2v_3^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + \omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2 +$$
$$4\omega_6^3\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - 2\omega_6^3\omega_{19}^2\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18} + 4\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{19}^2c_s^2\omega_7^2\omega_{11}^3\omega_8\omega_5\omega_{18}^2 +$$
$$2\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 - 2\omega_6^3v_3^2\omega_{19}^2\omega_7\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 3\omega_6^3\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^3\omega_{19}^2c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2 - 6\omega_6^3\omega_{19}c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 +$$
$$\omega_6^3v_3^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2 - 9\omega_6^3\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^2v_3^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18} -$$
$$\omega_6^3v_3^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 5\omega_6^3v_3^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^3\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^3v_3^2\omega_{19}^2\omega_7^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18} +$$
$$2\omega_6^3\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^3\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^3v_3^2\omega_{19}\omega_7^2\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^2v_3^2\omega_{19}^2\omega_7^2\omega_{11}^3\omega_8\omega_5\omega_{18}^2 - 2\omega_6v_3^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18} -$$
$$2\omega_6^2v_3^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5 - 4\omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{19}^2\omega_7\omega_{11}^3\omega_8\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{19}c_s^2\omega_7\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^3v_3^2\omega_{19}^2\omega_7^2\omega_{11}^2\omega_8^2\omega_5\omega_{18} +$$
$$2\omega_6^3\omega_{19}^2c_s^2\omega_7\omega_{11}^3\omega_8\omega_5\omega_{18}^2 + \omega_6v_3^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^3v_3^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^3v_3^2\omega_{19}\omega_7^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^3\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 +$$
$$6\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2 - 2\omega_6^3v_3^2\omega_{19}^2\omega_7^2\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - \omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^3v_3^2\omega_{19}^2\omega_7^2\omega_{11}^3\omega_8^2\omega_5\omega_{18} - 2\omega_6^3v_3^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5 -$$
$$2\omega_6^3v_3^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18} + 2\omega_6^3v_3^2\omega_{19}^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 8\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^3\omega_5\omega_{18}^2 +$$
$$4\omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^3v_3^2\omega_{19}\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 -$$
$$13\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 2\omega_6^3\omega_{19}c_s^2\omega_7^2\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18} -$$
$$2\omega_6^3\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_5\omega_{18}^2 - 2\omega_6^2\omega_{19}^2\omega_7^2\omega_{11}^3\omega_8\omega_5\omega_{18}^2 - 4\omega_6^3\omega_{19}^2\omega_7^2\omega_{20}\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18} - \omega_6^2v_3^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 +$$
$$2\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{11}^3\omega_8^2\omega_5\omega_{18} + 2\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5 - 2\omega_6^3\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 12\omega_6^3\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_8^2\omega_5\omega_{18}^2 + 3\omega_6^3v_3^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 +$$
$$2\omega_6^3v_3^2\omega_{19}\omega_7\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - \omega_6^3\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 6\omega_6^3\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2 + 3\omega_6^3\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 +$$
$$3\omega_6^3v_3^2\omega_{19}\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^2v_3^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18} - \omega_6^3v_3^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2 - 2\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_{18}^2$$

$$C_{51} = 11\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 3\omega_6v_3^2\omega_{19}^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18} + 5\omega_6^2\omega_{19}^2\omega_7^3\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^2v_3^2\omega_{19}^2\omega_7^3\omega_{20}\omega_8^2\omega_5\omega_{18}^2 +$$
$$3\omega_6\omega_{19}^2\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6v_3^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^2\omega_{19}c_s^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 6\omega_{19}^2c_s^2\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 -$$
$$6\omega_{19}^2c_s^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18} - 3\omega_6\omega_{19}^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18} - 2\omega_6^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 6\omega_6\omega_{19}^2c_s^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5 + 4\omega_6\omega_{19}^2c_s^2\omega_7^3\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 -$$
$$3\omega_6v_3^2\omega_{19}^2\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^2v_3^2\omega_{19}\omega_7^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6\omega_{19}\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 6\omega_6^2\omega_{19}^2c_s^2\omega_7^3\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18} +$$
$$2\omega_6\omega_{19}^2c_s^2\omega_7^3\omega_{11}^3\omega_8\omega_5\omega_{18}^2 - \omega_6^2v_3^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2 + 2\omega_6\omega_{19}c_s^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - \omega_6^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 -$$
$$4\omega_6^2\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^2v_3^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^2\omega_{19}^2c_s^2\omega_7^3\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - \omega_6^2v_3^2\omega_{19}^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18} +$$
$$2\omega_6^2\omega_{19}^2\omega_7^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 8\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^2v_3^2\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6v_3^2\omega_{19}^2\omega_7^3\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18} -$$
$$6\omega_6^2\omega_{19}^2c_s^2\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5 - 2\omega_6^2\omega_{19}^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5 + \omega_6^2v_3^2\omega_{19}^2\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^2\omega_{19}^2c_s^2\omega_7^3\omega_{11}^3\omega_8^2\omega_5\omega_{18} + 2\omega_6^2\omega_{19}\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 +$$

$2\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_5\omega_{18}^2 + 2\omega_6\omega_{19}^2\omega_7^3\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6^2\omega_{19}^2c_s^2\omega_7^3\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 + 2\omega_6^2\omega_{19}^2\omega_7^3\omega_{11}^3\omega_8\omega_5\omega_{18}^2 - \omega_6^2\omega_{19}^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2 -$
$2\omega_6^2c_s^2\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6v_3^2\omega_{19}^2\omega_7^3\omega_{11}^3\omega_8^2\omega_5\omega_{18} + 2\omega_6^2v_3^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 8\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 + 6\omega_6\omega_{19}^2c_s^2\omega_7^3\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2 -$
$2\omega_6^2v_3^2\omega_{19}\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^2\omega_{19}^2c_s^2\omega_7^3\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 3\omega_6^2v_3^2\omega_{19}^2\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + \omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 +$
$15\omega_6^2\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6\omega_{19}^2\omega_7^3\omega_{11}^3\omega_8^2\omega_5\omega_{18} - 2\omega_6\omega_{19}c_s^2\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^2\omega_{19}\omega_7^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^2c_s^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 +$
$2\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{11}^3\omega_8\omega_5\omega_{18}^2 - 2\omega_6^2\omega_{19}^2c_s^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 + 2\omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 8\omega_6^2\omega_{19}^2c_s^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2 - 4\omega_6^2\omega_{19}\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 +$
$2\omega_6^2\omega_{19}^2c_s^2\omega_7^3\omega_{11}^2\omega_8^2\omega_5\omega_{18} - 2\omega_6^2\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_{18}^2 - 4\omega_6^2\omega_{19}^2\omega_7^3\omega_{20}\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18} + 4\omega_6^2\omega_{19}c_s^2\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 +$
$2\omega_6^2v_3^2\omega_{19}^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5 - 4\omega_6\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^2v_3^2\omega_{19}\omega_7^3\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_{18}^2 -$
$2\omega_6^2v_3^2\omega_{19}^2\omega_7^3\omega_{11}^3\omega_8\omega_5\omega_{18}^2 - 8\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 15\omega_6^2\omega_{19}^2c_s^2\omega_7^3\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18} +$
$2\omega_6^2\omega_{19}^2\omega_7^3\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18} + 2\omega_6\omega_{19}^2c_s^2\omega_7^3\omega_{20}\omega_{11}^3\omega_5\omega_{18}^2 + 2\omega_6^2\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 11\omega_6\omega_{19}^2c_s^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2 - 2\omega_6^2v_3^2\omega_{19}^2\omega_7^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 +$
$2\omega_6^2\omega_{19}^2\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5 + \omega_6^2\omega_{19}^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18} - 8\omega_6^2\omega_{19}^2c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^2\omega_{19}^2\omega_7^3\omega_{11}^3\omega_8^2\omega_5\omega_{18} + 6\omega_6^2\omega_{19}^2c_s^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5 +$
$2\omega_6v_3^2\omega_{19}^2\omega_7^3\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2 + 9\omega_6^2\omega_{19}^2c_s^2\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 6\omega_6^2\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2 - 2\omega_6^2\omega_{19}^2c_s^2\omega_7^3\omega_{11}^3\omega_8\omega_5\omega_{18}^2 +$
$\omega_6^2v_3^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + \omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2 + 4\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 - 4\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^2\omega_{19}c_s^2\omega_7^3\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 +$
$2\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 - 2\omega_6^2v_3^2\omega_{19}\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6\omega_{19}^2\omega_7^3\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^2\omega_{19}\omega_7^3\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + \omega_6^2v_3^2\omega_{19}^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2 -$
$2\omega_6\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - \omega_6^2\omega_{19}^2\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^2\omega_{19}^2\omega_7^3\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6\omega_{19}^2c_s^2\omega_7^3\omega_{11}^3\omega_8^2\omega_5\omega_{18} +$
$2\omega_6^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^2v_3^2\omega_{19}^2\omega_7^3\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + \omega_6\omega_{19}^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2 - 2\omega_6\omega_{19}\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^2v_3^2\omega_{19}\omega_7^3\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 -$
$5\omega_6^2v_3^2\omega_{19}^2\omega_7^3\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2 + 4\omega_{19}^2c_s^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2 + 2\omega_6^2v_3^2\omega_{19}^2\omega_7^2\omega_{11}^3\omega_8\omega_5\omega_{18}^2 + 4\omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 -$
$\omega_6v_3^2\omega_{19}^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2 + 2\omega_6^2v_3^2\omega_{19}^2\omega_7^3\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 2\omega_6v_3^2\omega_{19}\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + \omega_6v_3^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 -$
$2\omega_6^2v_3^2\omega_{19}\omega_7^3\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6\omega_{19}\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6\omega_{19}^2c_s^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 + 9\omega_6\omega_{19}^2c_s^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18} - 2\omega_6^2v_3^2\omega_{19}^2\omega_7^3\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 +$
$2\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2 + 2\omega_6^2\omega_{19}\omega_7^3\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2 + 2v_3^2\omega_{19}^2\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - \omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 -$
$2\omega_6v_3^2\omega_{19}\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 2v_3^2\omega_{19}^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18} - 2\omega_6\omega_{19}^2c_s^2\omega_7^3\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 4\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^2v_3^2\omega_{19}^2\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5 -$
$2\omega_6^2v_3^2\omega_{19}^2\omega_7^3\omega_{11}^3\omega_8^2\omega_5\omega_{18} - 4\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2 - 9\omega_6\omega_{19}^2c_s^2\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^2v_3^2\omega_{19}^2\omega_7^3\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18} -$
$2\omega_6^2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 2\omega_{19}^2\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 13\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2 - 2\omega_6^2\omega_{19}^2c_s^2\omega_7^3\omega_{20}\omega_{11}^3\omega_5\omega_{18}^2 + 2\omega_6^2\omega_{19}c_s^2\omega_7^3\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 -$
$2\omega_6^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^2\omega_{19}^2\omega_7^2\omega_{11}^3\omega_8\omega_5\omega_{18}^2 + 2\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 12\omega_6^2\omega_{19}^2c_s^2\omega_7^3\omega_{20}\omega_8^2\omega_5\omega_{18}^2 - 3\omega_6^2\omega_{19}^2c_s^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18} -$
$\omega_6^2v_3^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^2\omega_{19}^2\omega_7^3\omega_{11}^2\omega_8^2\omega_5\omega_{18} - 3\omega_6^2\omega_{19}^2\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - 2\omega_6^2\omega_{19}^2\omega_7^3\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6v_3^2\omega_{19}^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5 -$
$2\omega_6^2v_3^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 3\omega_6^2\omega_{19}^2c_s^2\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6\omega_{19}^2\omega_7^3\omega_{11}^3\omega_8\omega_5\omega_{18}^2 - 2\omega_6^2\omega_{19}c_s^2\omega_7^3\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^2\omega_{19}\omega_7^3\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 +$
$2\omega_6\omega_{19}^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5 + 4\omega_6^2v_3^2\omega_{19}\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 + 2\omega_{19}^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18} - 2\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_{18}^2 + 2\omega_6v_3^2\omega_{19}^2\omega_7^3\omega_{11}^3\omega_8\omega_5\omega_{18}^2$

$C_{52} = \omega_6^2\omega_{19}^2c_s^2\omega_7\omega_{11}^3\omega_{18}^2 - 3\omega_6v_3^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_{18}^2 + \omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{11}^2\omega_8\omega_{18}^2 + \omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_{18}^2 + \omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8 -$
$3\omega_6^2v_3^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 - 2\omega_6^2\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - \omega_6^2\omega_{19}^2\omega_7^2\omega_{11}^3\omega_8\omega_{18}^2 + 3\omega_6^2v_3^2\omega_{19}\omega_7\omega_{11}^3\omega_8\omega_{18}^2 - 3\omega_6^2v_3^2\omega_{19}^2\omega_7^2\omega_{11}^2\omega_8\omega_{18}^2 -$
$\omega_6\omega_{19}^2\omega_7^2\omega_{11}^3\omega_{18}^2 + \omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{11}^2\omega_8\omega_{18} - 9\omega_6^2v_3^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2 - 3\omega_6^2v_3^2\omega_{19}\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 - \omega_6\omega_{19}^2\omega_7^2\omega_{11}^3\omega_8\omega_{18} -$
$3\omega_6^2v_3^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18} - \omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{11}^3\omega_8\omega_{18}^2 + 3\omega_6v_3^2\omega_{19}^2\omega_7^2\omega_{11}^3\omega_8\omega_{18} - \omega_6^2\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_{18}^2 - 3\omega_6^2v_3^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8 +$
$\omega_6\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 + 3\omega_6^2v_3^2\omega_{19}\omega_7^2\omega_{11}^2\omega_8\omega_{18}^2 + \omega_6^2\omega_{19}^2\omega_7^2\omega_{11}^3\omega_{18}^2 + \omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2 + 3\omega_6^2v_3^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18}^2 + \omega_6^2\omega_{19}c_s^2\omega_7\omega_{11}^3\omega_8\omega_{18}^2 -$
$3\omega_6v_3^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 + 3\omega_6^2v_3^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18} - \omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 + \omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18} - \omega_6^2\omega_{19}^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 +$
$6\omega_6^2v_3^2\omega_{19}\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 + \omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 + 3\omega_6^2v_3^2\omega_{19}^2\omega_7\omega_{11}^3\omega_{18}^2 - \omega_6^2\omega_{19}c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 - \omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2 +$
$\omega_6^2\omega_{19}\omega_7^2\omega_{11}^3\omega_8\omega_{18}^2 - 3\omega_6^2v_3^2\omega_{19}^2\omega_7\omega_{11}^3\omega_8\omega_{18}^2 + 3\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2 - \omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 + \omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 +$
$2\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - \omega_6^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 + \omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18} + 2\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18} - 6\omega_6v_3^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 -$
$\omega_6^2\omega_{19}^2c_s^2\omega_7\omega_{11}^3\omega_8\omega_{18}^2 - 3\omega_6^2v_3^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_{18}^2 - \omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8 - 3\omega_6^2v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - \omega_6\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18} -$
$\omega_6^2c_s^2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 - 2\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_8\omega_{18}^2 + \omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 - 3v_3^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18} - \omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{11}^2\omega_8\omega_{18}^2 +$
$3\omega_6^2v_3^2\omega_{19}^2\omega_7^2\omega_{11}^2\omega_8\omega_{18} + \omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2 - \omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_{18}^2 - \omega_6\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - 3\omega_6^2v_3^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18} +$
$\omega_6\omega_{19}^2\omega_7^2\omega_{11}^3\omega_8\omega_{18}^2 + 2\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18} + \omega_6^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 - 3\omega_6v_3^2\omega_{19}^2\omega_7^2\omega_{11}^3\omega_8\omega_{18}^2 - 2\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 +$
$\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{11}^3\omega_8\omega_{18} - 3\omega_6^2v_3^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2 - \omega_6^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18}^2 - \omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_{18}^2 - 2\omega_6\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 +$
$2\omega_6^2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 - \omega_6^2\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18} + 3\omega_6^2v_3^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8 + \omega_6^2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 - \omega_6^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18} +$
$6\omega_6v_3^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 + \omega_6^2\omega_{19}^2\omega_7^2\omega_{11}^3\omega_8\omega_{18} + 2\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_8\omega_{18}^2 - \omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18} - 2\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18} +$
$3\omega_6v_3^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2 - \omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18} - \omega_6^2\omega_{19}\omega_7^2\omega_{11}^2\omega_8\omega_{18}^2 + \omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8 + 6\omega_6v_3^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18} -$
$\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2 - \omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 + 3\omega_6v_3^2\omega_{19}^2\omega_7^2\omega_{11}^3\omega_{18}^2 - 3\omega_6^2v_3^2\omega_{19}\omega_7^2\omega_{11}^3\omega_8\omega_{18}^2 - \omega_6\omega_{19}\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 + \omega_6^2\omega_{19}^2\omega_7\omega_{11}^3\omega_8\omega_{18}^2 -$
$3\omega_6^2v_3^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18} + 3\omega_6v_3^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 + 2\omega_6\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 + 3\omega_6^2v_3^2\omega_{19}^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - \omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{11}^3\omega_8\omega_{18} +$
$3v_3^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 + 3\omega_6^2v_3^2\omega_{19}^2\omega_7^2\omega_{11}^3\omega_8\omega_{18}^2 + \omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 - \omega_6^2\omega_{19}\omega_7\omega_{11}^3\omega_8\omega_{18}^2 + 6\omega_6^2v_3^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18} +$
$\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{11}^3\omega_{18}^2 - 3\omega_6v_3^2\omega_{19}\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 - 2\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 + \omega_6\omega_{19}^2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18} + \omega_6^2\omega_{19}\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 -$
$3\omega_6v_3^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8 - \omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{11}^3\omega_8\omega_{18}^2 + \omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8 - 3\omega_6v_3^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18} + \omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_{18}^2 + \omega_6^2\omega_{19}^2\omega_7^2\omega_{11}^2\omega_8\omega_{18}^2 +$
$6\omega_6^2v_3^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 + 2\omega_6^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - \omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8 + \omega_6^2\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18}^2 - \omega_6^2\omega_{19}^2\omega_7^2\omega_{11}^2\omega_8\omega_{18} +$
$3\omega_6^2v_3^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_{18}^2 + \omega_6^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18} - \omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{11}^3\omega_{18}^2 + \omega_6^2\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18} - 3\omega_6^2v_3^2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 +$
$\omega_6\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 - \omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8 - 3\omega_6^2v_3^2\omega_{19}^2\omega_7^2\omega_{11}^3\omega_8\omega_{18} + \omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{11}^3\omega_8\omega_{18}^2 + 3\omega_6^2v_3^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 -$
$\omega_6^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - \omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 + 3\omega_6^2v_3^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 - 2\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - 6\omega_6^2v_3^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 +$
$\omega_6^2\omega_{19}^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - \omega_6^2\omega_{19}^2\omega_7\omega_{11}^3\omega_{18}^2 + 6\omega_6^2v_3^2\omega_{19}^2\omega_7^2\omega_{20}\omega_8\omega_{18}^2 + 2\omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - 3\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2 -$
$3\omega_6^2v_3^2\omega_{19}^2\omega_7^2\omega_{11}^3\omega_{18}^2 + \omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18} + \omega_6^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_{18}^2 - \omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18} + \omega_6^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - 2\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}$

$C_{53} = -12v_3^2\omega_{19}^2c_s^2\omega_{16}\omega_7\omega_{23}\omega_{11}^2 - 42\omega_{19}c_s^4\omega_{16}\omega_7^2\omega_{23}\omega_{11}^3 - 36\omega_{19}c_s^2\omega_{16}\omega_7^3v_2^2\omega_{11}^3 - 36\omega_{19}^2c_s^4\omega_7^2\omega_{23}\omega_{11}^2 - 12v_3^2\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{11}^3 -$
$12v_3^2\omega_{19}^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{11} + 12v_3^2\omega_{19}\omega_{16}\omega_7^3v_2^2\omega_{11}^2 + 12\omega_{16}\omega_7^2\omega_{23}v_2^2\omega_{11}^3 - 96\omega_{19}^2c_s^4\omega_{16}\omega_{23}\omega_{11}^3 + 36\omega_{19}^2c_s^2\omega_7^2v_2^2\omega_{11}^3 - 36c_s^2\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{11}^2 -$
$18\omega_{19}c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}^3 + 36\omega_{19}c_s^4\omega_{16}\omega_7^2\omega_{11}^3 + 6v_3^2\omega_{19}^2\omega_{16}\omega_7^3v_2^2\omega_{11}^3 + 12\omega_{19}\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{11}^3 - 6v_3^2\omega_{19}^2c_s^2\omega_{16}\omega_7^3\omega_{11}^2 + 12v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{11}^3 +$
$18v_3^2\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{11}^2 - 36\omega_{19}^2c_s^4\omega_{16}\omega_7^2\omega_{11}^3 - 12v_3^2\omega_{19}\omega_{16}\omega_7^3v_2^2\omega_{11}^3 + 36\omega_{19}^2c_s^2\omega_{16}\omega_7^3\omega_{23}v_2^2 + 36c_s^2\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{11}^3 + 12v_3^2\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{11}^2 -$
$6\omega_{19}^2\omega_7^3\omega_{23}v_2^2\omega_{11}^2 + 18\omega_{19}^2c_s^2\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{11}^2 + 36\omega_{19}c_s^2\omega_{16}\omega_7^3v_2^2\omega_{11}^2 + 18\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{11} + 12v_3^2\omega_{19}^2c_s^2\omega_{16}\omega_7\omega_{23}\omega_{11}^3 -$
$6v_3^2\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{11}^3 + 24\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}v_2^2\omega_{11}^2 - 6\omega_{19}^2c_s^2\omega_7^3\omega_{23}\omega_{11}^2 - 12v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{11}^2 + 12v_3^2\omega_{19}^2\omega_7^2v_2^2\omega_{11}^3 + 36\omega_{19}^2c_s^2\omega_{16}\omega_7^2\omega_{23}v_2^2\omega_{11} -$
$24\omega_{19}\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{11}^2 + 6v_3^2\omega_{19}^2c_s^2\omega_{16}\omega_7^3\omega_{11}^3 - 72\omega_{19}c_s^2\omega_{16}\omega_7\omega_{23}v_2^2\omega_{11}^3 - 48\omega_{19}^2c_s^4\omega_{16}\omega_7^2\omega_{23}\omega_{11} + 24v_3^2\omega_{19}^2\omega_{16}\omega_7\omega_{23}v_2^2\omega_{11}^2 -$
$6v_3^2\omega_{19}^2\omega_{16}\omega_7^3v_2^2\omega_{11}^2 - 12\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}v_2^2\omega_{11} - 12\omega_{19}^2c_s^2\omega_{16}\omega_7^3\omega_{23} - 72\omega_{19}^2c_s^2\omega_{16}\omega_7^2\omega_{23}v_2^2\omega_{11}^2 + 12\omega_{19}\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{11} - 12v_3^2\omega_{19}^2c_s^2\omega_7^2\omega_{23}\omega_{11}^2 +$

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

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

$C_{55} = -84v_3^2\omega_{19}^2c_s^2\omega_{16}\omega_7\omega_{23}\omega_{11}^2 - 24\omega_{19}c_s^4\omega_{16}\omega_7^2\omega_{23}\omega_{11}^3 - 12\omega_{19}c_s^2\omega_{16}\omega_7^3v_2^2\omega_{11}^3 - 12\omega_{19}^2c_s^4\omega_7^2\omega_{23}\omega_{11}^2 - 36v_3^2\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{11}^3 +$
$18v_3^2\omega_{19}^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{11} + 36v_3^2\omega_{19}\omega_{16}\omega_7^3v_2^2\omega_{11}^2 + 12\omega_{16}\omega_7^2\omega_{23}v_2^2\omega_{11}^3 - 12\omega_{19}^2c_s^4\omega_{16}\omega_{23}\omega_{11}^3 + 12\omega_{19}^2c_s^2\omega_7^2v_2^2\omega_{11}^3 - 12c_s^2\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{11}^2 +$
$24\omega_{19}c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}^3 + 12\omega_{19}c_s^4\omega_{16}\omega_7^2\omega_{11}^3 + 18v_3^2\omega_{19}^2\omega_{16}\omega_7^3v_2^2\omega_{11}^3 + 12\omega_{19}\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{11}^3 - 18v_3^2\omega_{19}^2c_s^2\omega_{16}\omega_7^3\omega_{11}^2 - 24v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{11}^3 -$
$144v_3^2\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{11}^2 - 12\omega_{19}^2c_s^4\omega_{16}\omega_7^2\omega_{11}^3 - 36v_3^2\omega_{19}\omega_{16}\omega_7^3v_2^2\omega_{11}^3 + 12\omega_{19}^2c_s^2\omega_{16}\omega_7^3\omega_{23}v_2^2 + 12c_s^2\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{11}^3 + 36v_3^2\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{11}^2 -$
$6\omega_{19}^2\omega_7^3\omega_{23}v_2^2\omega_{11}^2 + 6\omega_{19}^2c_s^2\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{11}^2 + 12\omega_{19}^2c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{11} + 12\omega_{19}c_s^2\omega_{16}\omega_7^3v_2^2\omega_{11}^2 + 12\omega_{19}c_s^4\omega_{16}\omega_7^2\omega_{23}\omega_{11}^2 + 18\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{11} +$
$84v_3^2\omega_{19}^2c_s^2\omega_{16}\omega_7\omega_{23}\omega_{11}^3 + 78v_3^2\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{11}^3 + 24\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}v_2^2\omega_{11}^2 - 6\omega_{19}^2c_s^2\omega_7^3\omega_{23}\omega_{11}^2 + 24v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{11}^2 + 36v_3^2\omega_{19}^2\omega_7^2v_2^2\omega_{11}^3 +$
$12\omega_{19}^2c_s^2\omega_{16}\omega_7^2\omega_{23}v_2^2\omega_{11} - 24\omega_{19}\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{11}^2 + 18v_3^2\omega_{19}^2c_s^2\omega_{16}\omega_7^3\omega_{11}^3 - 24\omega_{19}c_s^2\omega_{16}\omega_7\omega_{23}v_2^2\omega_{11}^3 - 12\omega_{19}^2c_s^4\omega_{16}\omega_7^2\omega_{23}\omega_{11} +$
$72v_3^2\omega_{19}^2\omega_{16}\omega_7\omega_{23}v_2^2\omega_{11}^2 - 12\omega_{19}c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}^2 - 18v_3^2\omega_{19}^2\omega_{16}\omega_7^3v_2^2\omega_{11}^2 - 12\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}v_2^2\omega_{11} - 24\omega_{19}^2c_s^2\omega_{16}\omega_7^2\omega_{23}v_2^2\omega_{11}^2 +$
$12\omega_{19}\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{11} - 36v_3^2\omega_{19}^2c_s^2\omega_7^2\omega_{23}\omega_{11}^2 + 12\omega_{19}^2\omega_7^2\omega_{23}v_2^2\omega_{11}^2 - 12\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{11}^3 + 60v_3^2\omega_{19}c_s^2\omega_{16}\omega_7\omega_{23}\omega_{11}^3 - 48v_3^2\omega_{19}^2c_s^2\omega_{16}\omega_{23}\omega_{11}^3 +$
$12\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{11}^2 - 6\omega_{19}^2c_s^2\omega_{16}\omega_7^3v_2^2\omega_{11}^2 + 24\omega_{19}^2c_s^4\omega_{16}\omega_7^2\omega_{23}\omega_{11}^2 - 12c_s^2\omega_{16}\omega_7^2\omega_{23}v_2^2\omega_{11}^3 + 36v_3^2\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}v_2^2 + 36v_3^2\omega_{19}c_s^2\omega_{16}\omega_7^2\omega_{11}^3 -$
$12\omega_{19}^2\omega_7^2v_2^2\omega_{11}^3 - 6\omega_{19}^2c_s^4\omega_{16}\omega_7^3\omega_{11}^2 + 12\omega_{19}\omega_{16}\omega_7^2\omega_{23}v_2^2\omega_{11}^2 - 24\omega_{19}^2c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}^2 - 18\omega_{19}^2c_s^2\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{11} - 12\omega_{19}\omega_{16}\omega_7^2v_2^2\omega_{11}^3 -$
$6\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{11}^2 - 36v_3^2\omega_{19}^2c_s^2\omega_{16}\omega_7^2\omega_{11}^3 - 12\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{11}^3 - 4\omega_{19}^2c_s^4\omega_{16}\omega_7^2\omega_{23}\omega_{11}^3 + 6\omega_{19}^2c_s^2\omega_{16}\omega_7^3v_2^2\omega_{11}^3 + 12\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{11}^2 +$
$12\omega_{19}^2\omega_{16}\omega_7^2v_2^2\omega_{11}^3 + 72v_3^2\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{11} - 72v_3^2\omega_{19}\omega_{16}\omega_7\omega_{23}v_2^2\omega_{11}^3 - 18v_3^2\omega_{19}^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{11}^2 - 36\omega_{19}\omega_{16}\omega_7^2\omega_{23}v_2^2\omega_{11}^3 +$
$6\omega_{19}^2c_s^4\omega_{16}\omega_7^3\omega_{11}^3 - 18v_3^2\omega_{19}^2\omega_7^3v_2^2\omega_{11}^3 - 36v_3^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{11}^3 - 12\omega_{19}^2c_s^4\omega_{16}\omega_7\omega_{23}\omega_{11}^2 - 36v_3^2\omega_{19}^2\omega_7^2\omega_{23}v_2^2\omega_{11}^2 + 12\omega_{19}^2c_s^4\omega_7^2\omega_{11}^3 +$
$12\omega_{19}^2c_s^2\omega_7^2\omega_{23}\omega_{11}^2 - 36v_3^2\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{11}^2 - 132v_3^2\omega_{19}c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}^3 + 12\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{11}^2 + 6\omega_{19}^2c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{11} -$
$12\omega_{19}c_s^2\omega_{16}\omega_7^2\omega_{23}v_2^2\omega_{11}^2 - 12\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{11} + 12\omega_{19}^2c_s^2\omega_{16}\omega_7\omega_{23}\omega_{11}^2 + 36v_3^2\omega_{19}\omega_{16}\omega_7^2v_2^2\omega_{11}^3 - 12\omega_{19}c_s^2\omega_{16}\omega_7^2\omega_{11}^3 - 12\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}v_2^2 -$
$12\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{11}^2 + 6\omega_{19}^2c_s^2\omega_7^3\omega_{11}^3 - 6\omega_{19}^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{11} + 6\omega_{19}^2c_s^2\omega_7^3\omega_{23}v_2^2\omega_{11}^2 + 36\omega_{19}c_s^2\omega_{16}\omega_7^2\omega_{23}v_2^2\omega_{11}^3 + 36v_3^2\omega_{19}^2c_s^2\omega_7^2\omega_{11}^3 -$
$72v_3^2\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}v_2^2\omega_{11}^2 - 36v_3^2\omega_{19}^2\omega_{16}\omega_7^2v_2^2\omega_{11}^3 - 12\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{11}^3 + 60v_3^2\omega_{19}c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}^2 - 24\omega_{19}^2\omega_{16}\omega_7\omega_{23}v_2^2\omega_{11}^2 +$
$36v_3^2\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{11}^3 + 12\omega_{19}^2c_s^2\omega_{16}\omega_7^2\omega_{11}^3 + 72v_3^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{11}^2 + 24v_3^2c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}^3 + 18\omega_{19}^2c_s^4\omega_{16}\omega_7\omega_{23}\omega_{11}^3 + 12\omega_{19}c_s^2\omega_{16}\omega_7^2v_2^2\omega_{11}^3 +$
$12\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{11}^3 - 6\omega_{19}^2c_s^2\omega_7^3v_2^2\omega_{11}^3 - 54v_3^2\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{11} - 108v_3^2\omega_{19}^2c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{11} + 6\omega_{19}^2c_s^4\omega_7^3\omega_{23}\omega_{11}^2 -$
$36v_3^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}v_2^2\omega_{11}^2 + 12\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{11}^3 - 12\omega_{19}^2c_s^2\omega_7^2\omega_{11}^3 - 36v_3^2\omega_{16}\omega_7^2\omega_{23}v_2^2\omega_{11}^3 - 12\omega_{19}\omega_{16}\omega_7^3v_2^2\omega_{11}^2 + 18v_3^2\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{11}^2 +$
$12\omega_{19}c_s^4\omega_{16}\omega_7\omega_{23}\omega_{11}^3 - 12\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{11}^3 + 180v_3^2\omega_{19}^2c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}^2 - 12\omega_{19}^2c_s^2\omega_{16}\omega_7^2v_2^2\omega_{11}^3 - \omega_{19}^2c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{11}^3 +$
$36v_3^2\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}v_2^2\omega_{11} - 6\omega_{19}^2\omega_{16}\omega_7^3v_2^2\omega_{11}^3 - 6\omega_{19}^2c_s^4\omega_7^3\omega_{11}^3 - 12\omega_{19}c_s^2\omega_{16}\omega_7\omega_{23}\omega_{11}^3 + 6\omega_{19}^2c_s^2\omega_{16}\omega_7^3\omega_{11}^2 + 24\omega_{19}^2c_s^2\omega_{16}\omega_7\omega_{23}v_2^2\omega_{11}^2 -$
$36v_3^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{11} + 24\omega_{19}\omega_{16}\omega_7\omega_{23}v_2^2\omega_{11}^3 - 42v_3^2\omega_{19}^2c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}^3 + 24\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}v_2^2\omega_{11}^2 + 6\omega_{19}^2\omega_7^3v_2^2\omega_{11}^3 + 12\omega_{19}\omega_{16}\omega_7^3v_2^2\omega_{11}^3 +$
$108v_3^2\omega_{19}\omega_{16}\omega_7^2\omega_{23}v_2^2\omega_{11}^3 + 18v_3^2\omega_{19}^2\omega_7^3\omega_{23}v_2^2\omega_{11}^2 + 6\omega_{19}^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{11}^2 - 12\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{11}^2 - 6\omega_{19}^2c_s^2\omega_{16}\omega_7^3\omega_{11}^3 - 12\omega_{19}^2c_s^2\omega_7^2\omega_{23}v_2^2\omega_{11}^2 +$
$6\omega_{19}^2\omega_{16}\omega_7^3v_2^2\omega_{11}^2 - 6\omega_{19}^2c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{11}^2 - 18v_3^2\omega_{19}^2c_s^2\omega_7^3\omega_{11}^3 + 18v_3^2\omega_{19}^2c_s^2\omega_7^3\omega_{23}\omega_{11}^2$

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

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

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

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

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

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

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

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

2.4 CLBM1

2.4.1 Definitions

Collision operator $\boldsymbol{C}$:

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

where

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

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

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

and is given by

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

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

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

i.e.,

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

2.4.2 Conservation of mass: ρ

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$$\frac{\partial \rho}{\partial t} + \frac{v_1\delta_l}{\delta_t}\frac{\partial \rho}{\partial x_1} + \frac{\rho\delta_l}{\delta_t}\frac{\partial v_1}{\partial x_1} + \frac{v_2\delta_l}{\delta_t}\frac{\partial \rho}{\partial x_2} + \frac{\rho\delta_l}{\delta_t}\frac{\partial v_2}{\partial x_2} + \frac{v_3\delta_l}{\delta_t}\frac{\partial \rho}{\partial x_3} + \frac{\rho\delta_l}{\delta_t}\frac{\partial v_3}{\partial x_3} + (-1 + 3c_s^2 + v_1^2)\frac{v_1\delta_l^3}{12\delta_t}\frac{\partial^3 \rho}{\partial x_1^3} +$$
$$(-1 + c_s^2 + 3v_1^2)\frac{\rho\delta_l^3}{12\delta_t}\frac{\partial^3 v_1}{\partial x_1^3} - \frac{c_s^2\rho\delta_l^3}{6\delta_t}\frac{\partial^3 v_2}{\partial x_1^2\partial x_2} - \frac{c_s^2\rho\delta_l^3}{6\delta_t}\frac{\partial^3 v_1}{\partial x_1\partial x_2^2} + (-1 + 3c_s^2 + v_2^2)\frac{v_2\delta_l^3}{12\delta_t}\frac{\partial^3 \rho}{\partial x_2^3} + (-1 + c_s^2 + 3v_2^2)\frac{\rho\delta_l^3}{12\delta_t}\frac{\partial^3 v_2}{\partial x_2^3} -$$
$$\frac{c_s^2\rho\delta_l^3}{6\delta_t}\frac{\partial^3 v_3}{\partial x_1^2\partial x_3} - \frac{c_s^2\rho\delta_l^3}{6\delta_t}\frac{\partial^3 v_3}{\partial x_2^2\partial x_3} - \frac{c_s^2\rho\delta_l^3}{6\delta_t}\frac{\partial^3 v_1}{\partial x_1\partial x_3^2} - \frac{c_s^2\rho\delta_l^3}{6\delta_t}\frac{\partial^3 v_2}{\partial x_2\partial x_3^2} + (-1 + 3c_s^2 + v_3^2)\frac{v_3\delta_l^3}{12\delta_t}\frac{\partial^3 \rho}{\partial x_3^3} + (-1 + c_s^2 + 3v_3^2)\frac{\rho\delta_l^3}{12\delta_t}\frac{\partial^3 v_3}{\partial x_3^3}$$

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

2.4.3 Conservation of momentum: ρv_1

attached text file: `output_d3q27_nse_clbm1_symbolic_pde_01.txt`

$$v_1\frac{\partial\rho}{\partial t} + \rho\frac{\partial v_1}{\partial t} + (c_s^2 + v_1^2)\frac{\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_1} + \frac{2\rho v_1\delta_l}{\delta_t}\frac{\partial v_1}{\partial x_1} + \frac{v_2 v_1\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_2} + \frac{\rho v_2\delta_l}{\delta_t}\frac{\partial v_1}{\partial x_2} + \frac{\rho v_1\delta_l}{\delta_t}\frac{\partial v_2}{\partial x_2} + \frac{v_3 v_1\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_3} + \frac{v_3\rho\delta_l}{\delta_t}\frac{\partial v_1}{\partial x_3} +$$
$$\frac{\rho v_1\delta_l}{\delta_t}\frac{\partial v_3}{\partial x_3} + (-2 + \omega_9 - 3\omega_9 v_1^2 + 4c_s^2 - 2\omega_9 c_s^2 + 6v_1^2)\frac{\delta_l^2}{\omega_9\delta_t}\frac{\partial\rho}{\partial x_1}\frac{\partial v_1}{\partial x_1} + (2 - \omega_9)\frac{3\rho v_1\delta_l^2}{\omega_9\delta_t}\left(\frac{\partial v_1}{\partial x_1}\right)^2 +$$
$$(-2 + \omega_5)\frac{c_s^2\delta_l^2}{2\delta_t\omega_5}\frac{\partial\rho}{\partial x_2}\frac{\partial v_2}{\partial x_1} + (-2 + \omega_5)\frac{c_s^2\delta_l^2}{2\delta_t\omega_5}\frac{\partial\rho}{\partial x_2}\frac{\partial v_1}{\partial x_2} + (-2 + \omega_6)\frac{c_s^2\delta_l^2}{2\omega_6\delta_t}\frac{\partial\rho}{\partial x_3}\frac{\partial v_3}{\partial x_1} + (-2 + \omega_6)\frac{c_s^2\delta_l^2}{2\omega_6\delta_t}\frac{\partial\rho}{\partial x_3}\frac{\partial v_1}{\partial x_3} +$$
$$(-2 + \omega_9 - \omega_9 v_1^2 + 6c_s^2 - 3\omega_9 c_s^2 + 2v_1^2)\frac{v_1\delta_l^2}{2\omega_9\delta_t}\frac{\partial^2\rho}{\partial x_1^2} + (-2 + \omega_9 - 3\omega_9 v_1^2 + 2c_s^2 - \omega_9 c_s^2 + 6v_1^2)\frac{\rho\delta_l^2}{2\omega_9\delta_t}\frac{\partial^2 v_1}{\partial x_1^2} +$$
$$(-2 + \omega_5)\frac{c_s^2\rho\delta_l^2}{2\delta_t\omega_5}\frac{\partial^2 v_2}{\partial x_1\partial x_2} + (-2 + \omega_5)\frac{c_s^2\rho\delta_l^2}{2\delta_t\omega_5}\frac{\partial^2 v_1}{\partial x_2^2} + (-2 + \omega_6)\frac{c_s^2\rho\delta_l^2}{2\omega_6\delta_t}\frac{\partial^2 v_3}{\partial x_1\partial x_3} + (-2 + \omega_6)\frac{c_s^2\rho\delta_l^2}{2\omega_6\delta_t}\frac{\partial^2 v_1}{\partial x_3^2} + C_1\frac{\delta_l^3}{12\omega_9^2\delta_t}\frac{\partial^3\rho}{\partial x_1^3} +$$
$$(-24 + 24\omega_9 - 60\omega_9 v_1^2 + 36c_s^2 + 5\omega_9^2 c_s^2 - 4\omega_9^2 + 11\omega_9^2 v_1^2 - 36\omega_9 c_s^2 + 60v_1^2)\frac{\rho v_1\delta_l^3}{6\omega_9^2\delta_t}\frac{\partial^3 v_1}{\partial x_1^3} + C_2\frac{\rho v_1\delta_l^3}{12\omega_9^2\omega_{12}\delta_t\omega_5}\frac{\partial^3 v_2}{\partial x_1^2\partial x_2} +$$
$$(-12 - \omega_5^2 + 12\omega_5)\frac{c_s^4\delta_l^3}{6\delta_t\omega_5^2}\frac{\partial^3\rho}{\partial x_1\partial x_2^2} - \frac{c_s^2\rho v_1\delta_l^3}{6\delta_t}\frac{\partial^3 v_1}{\partial x_1\partial x_2^2} + (-1 + 3c_s^2 + v_2^2)\frac{v_2 v_1\delta_l^3}{12\delta_t}\frac{\partial^3\rho}{\partial x_2^3} + C_3\frac{\rho v_2\delta_l^3}{6\delta_t\omega_5\omega_{15}}\frac{\partial^3 v_1}{\partial x_2^3} +$$
$$(-1 + c_s^2 + 3v_2^2)\frac{\rho v_1\delta_l^3}{12\delta_t}\frac{\partial^3 v_2}{\partial x_2^3} + C_4\frac{\rho v_1\delta_l^3}{12\omega_9^2\omega_6\delta_t\omega_{13}}\frac{\partial^3 v_3}{\partial x_1^2\partial x_3} - \frac{c_s^2\rho v_1\delta_l^3}{6\delta_t}\frac{\partial^3 v_3}{\partial x_2^2\partial x_3} + (-12 + 12\omega_6 - \omega_6^2)\frac{c_s^4\delta_l^3}{6\omega_6^2\delta_t}\frac{\partial^3\rho}{\partial x_1\partial x_2^2} -$$
$$\frac{c_s^2\rho v_1\delta_l^3}{6\delta_t}\frac{\partial^3 v_1}{\partial x_1\partial x_3^2} - \frac{c_s^2\rho v_1\delta_l^3}{6\delta_t}\frac{\partial^3 v_2}{\partial x_2\partial x_3^2} + (-1 + 3c_s^2 + v_3^2)\frac{v_3 v_1\delta_l^3}{12\delta_t}\frac{\partial^3\rho}{\partial x_3^3} + C_5\frac{v_3\rho\delta_l^3}{6\omega_6\delta_t\omega_{18}}\frac{\partial^3 v_1}{\partial x_3^3} + (-1 + c_s^2 + 3v_3^2)\frac{\rho v_1\delta_l^3}{12\delta_t}\frac{\partial^3 v_3}{\partial x_3^3} +$$
$$C_6\frac{v_1\delta_l^4}{12\omega_9^3\delta_t}\frac{\partial^4\rho}{\partial x_1^4} + C_7\frac{\rho\delta_l^4}{12\omega_9^3\delta_t}\frac{\partial^4 v_1}{\partial x_1^4} + C_8\frac{\rho\delta_l^4}{12\omega_9^3\omega_{12}^2\delta_t\omega_5^3}\frac{\partial^4 v_2}{\partial x_1^3\partial x_2} + C_9\frac{c_s^2 v_1\delta_l^4}{12\omega_9^3\omega_{12}^2\delta_t\omega_5^2\omega_{21}\omega_{15}}\frac{\partial^4\rho}{\partial x_1^2\partial x_2^2} +$$
$$C_{10}\frac{c_s^2\rho\delta_l^4}{12\omega_9^2\omega_{12}\delta_t\omega_5^3\omega_{21}\omega_{15}}\frac{\partial^4 v_1}{\partial x_1^2\partial x_2^2} + C_{11}\frac{c_s^2 v_2\delta_l^4}{12\omega_9\omega_{12}\delta_t\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2}\frac{\partial^4\rho}{\partial x_1\partial x_2^3} +$$
$$(3c_s^2\omega_{15} - 3\omega_{10}v_2^2 + 3c_s^2\omega_{10}\omega_{15} + 3\omega_{10} - 9c_s^2\omega_{10} + v_2^2\omega_{15} - \omega_{10}\omega_{15} + \omega_{10}v_2^2\omega_{15} - \omega_{15})\frac{\rho v_2 v_1\delta_l^4}{12\delta_t\omega_{10}\omega_{15}}\frac{\partial^4 v_1}{\partial x_1\partial x_2^3} +$$
$$C_{12}\frac{c_s^2\rho\delta_l^4}{12\omega_9\omega_{12}\delta_t\omega_{10}\omega_5^3\omega_{21}\omega_{15}}\frac{\partial^4 v_2}{\partial x_1\partial x_2^3} +$$
$$(6v_2^4 - 2c_s^2 + 3\omega_{10}v_2^2 + c_s^2\omega_{10} - 3\omega_{10}v_2^4 + 24c_s^2 v_2^2 - c_s^4\omega_{10} - 6v_2^2 + 2c_s^4 - 12c_s^2\omega_{10}v_2^2)\frac{v_1\delta_l^4}{24\delta_t\omega_{10}}\frac{\partial^4\rho}{\partial x_2^4} + C_{13}\frac{\rho\delta_l^4}{24\delta_t\omega_5^3\omega_{15}^2}\frac{\partial^4 v_1}{\partial x_2^4}$$
$$+ (-4 + 6c_s^2 - 5\omega_{10}v_2^2 + 2\omega_{10} - 3c_s^2\omega_{10} + 10v_2^2)\frac{\rho v_2 v_1\delta_l^4}{12\delta_t\omega_{10}}\frac{\partial^4 v_2}{\partial x_2^4} + C_{14}\frac{\rho\delta_l^4}{12\omega_9^3\omega_6^3\delta_t\omega_{13}^2}\frac{\partial^4 v_3}{\partial x_1^3\partial x_3} +$$

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

where:

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

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

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

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

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

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

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

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

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

$C_{10} = 36\omega_9 v_1^2\omega_5^3\omega_{15} - 36\omega_9^2\omega_{12}v_1^2\omega_5^2\omega_{15} + 6\omega_9^2\omega_{12}\omega_5^3 + 12\omega_9^2c_s^2\omega_5^2\omega_{15} - 12\omega_9^2\omega_5^3\omega_{21}\omega_{15} - 6\omega_9\omega_{12}c_s^2\omega_5^3\omega_{21}\omega_{15} + 18\omega_9^2\omega_{12}c_s^2\omega_5\omega_{21}\omega_{15} - 6\omega_9\omega_{12}\omega_5^3\omega_{21} + 18\omega_{12}v_1^2\omega_5^3\omega_{21}\omega_{15} + 36\omega_9^2v_1^2\omega_5\omega_{21}\omega_{15} + 18\omega_9\omega_{12}v_1^2\omega_5^3\omega_{21} - 12\omega_{12}c_s^2\omega_5^2\omega_{21}\omega_{15} - 12\omega_9^2\omega_{12}\omega_5^2 - 12\omega_9\omega_5^2\omega_{21}\omega_{15} + 72\omega_9\omega_{12}v_1^2\omega_5^2\omega_{21}\omega_{15} - 6\omega_{12}\omega_5^3\omega_{21}\omega_{15} + 12\omega_9\omega_{12}\omega_5^2\omega_{21} - 24\omega_9\omega_{12}\omega_5^2\omega_{21}\omega_{15} - 18\omega_9^2\omega_{12}v_1^2\omega_5^3 + 6\omega_9\omega_{12}\omega_5^3\omega_{15} - 36\omega_9v_1^2\omega_5^3\omega_{21}\omega_{15} - 24\omega_9^2c_s^2\omega_5^2\omega_{21}\omega_{15} + 18\omega_9^2\omega_{12}v_1^2\omega_5^3\omega_{15} - 12\omega_9^2c_s^2\omega_5^3\omega_{15} + 36\omega_9^2\omega_{12}v_1^2\omega_5^2 + 36\omega_9^2v_1^2\omega_5^3\omega_{21}\omega_{15} - 12\omega_9\omega_5^3\omega_{15} - 12\omega_9^2\omega_{12}c_s^2\omega_{21}\omega_{15} - 18\omega_9\omega_{12}v_1^2\omega_5^3\omega_{15} + 12\omega_9c_s^2\omega_5^2\omega_{21}\omega_{15} - \omega_9^2\omega_{12}c_s^2\omega_5^3\omega_{21}\omega_{15} - 12\omega_9\omega_{12}c_s^2\omega_5\omega_{21}\omega_{15} - 36\omega_9\omega_{12}v_1^2\omega_5^2\omega_{21} - 12\omega_9^2\omega_5^2\omega_{21}\omega_{15} - 18\omega_9\omega_{12}v_1^2\omega_5^3\omega_{21}\omega_{15} + 12\omega_9^2\omega_{12}c_s^2\omega_5^2 + 12\omega_{12}\omega_5^2\omega_{21}\omega_{15} + 12\omega_9\omega_{12}\omega_5\omega_{21}\omega_{15} + 12\omega_9^2\omega_{12}\omega_5^2\omega_{15} + 12\omega_9^2c_s^2\omega_5\omega_{21}\omega_{15} + 6\omega_{12}c_s^2\omega_5^3\omega_{21}\omega_{15} - 36\omega_9^2v_1^2\omega_5^3\omega_{15} + 6\omega_9^2\omega_{12}c_s^2\omega_5^3\omega_{15} + 12\omega_9\omega_5^3\omega_{21}\omega_{15} + 12\omega_9^2\omega_5^3\omega_{15} - 36\omega_{12}v_1^2\omega_5^2\omega_{21}\omega_{15} - 6\omega_9^2\omega_{12}c_s^2\omega_5^3 - 6\omega_9\omega_{12}c_s^2\omega_5^3\omega_{15} + 24\omega_9^2\omega_5^2\omega_{21}\omega_{15} + 24\omega_9\omega_{12}c_s^2\omega_5^2\omega_{21}\omega_{15} - 12\omega_9\omega_{12}c_s^2\omega_5^2\omega_{21} + 36\omega_9^2v_1^2\omega_5^2\omega_{15} + 12\omega_9c_s^2\omega_5^3\omega_{15} - 12\omega_9^2\omega_{12}c_s^2\omega_5^2\omega_{15} - 6\omega_9^2\omega_{12}\omega_5^3\omega_{15} - 72\omega_9^2v_1^2\omega_5^2\omega_{21}\omega_{15} - 4\omega_9^2\omega_{12}c_s^2\omega_5^2\omega_{21}\omega_{15} - 12\omega_9c_s^2\omega_5^3\omega_{21}\omega_{15} + 36\omega_9v_1^2\omega_5^2\omega_{21}\omega_{15} + 6\omega_9\omega_{12}c_s^2\omega_5^3\omega_{21} + 12\omega_9^2c_s^2\omega_5^3\omega_{21}\omega_{15} - 12\omega_9^2\omega_5^2\omega_{15} + 6\omega_9\omega_{12}\omega_5^3\omega_{21}\omega_{15} - 36\omega_9\omega_{12}v_1^2\omega_5\omega_{21}\omega_{15}$

$C_{11} = -6\omega_9\omega_{12}\omega_{10}\omega_5^2\omega_{21} + 54\omega_9\omega_{12}c_s^2\omega_5\omega_{21}\omega_{15}^2 - 18\omega_9\omega_{12}\omega_{10}\omega_5\omega_{21}\omega_{15} - 36\omega_9c_s^2\omega_{10}\omega_5^2\omega_{15}^2 - 36\omega_9\omega_{12}c_s^2\omega_{10}\omega_{21}\omega_{15} - 36\omega_9\omega_{12}c_s^2\omega_{10}\omega_5\omega_{21} + 36\omega_9c_s^2\omega_5^2\omega_{21}\omega_{15}^2 - 3\omega_9\omega_{12}\omega_{10}v_2^2\omega_5^2\omega_{21}\omega_{15} - 36\omega_9\omega_{12}c_s^2\omega_{10}\omega_5\omega_{15}^2 - 6\omega_9\omega_{12}\omega_{10}v_2^2\omega_5^2\omega_{15} - 36\omega_9\omega_{12}c_s^2\omega_{21}\omega_{15}^2 + 5\omega_9\omega_{12}\omega_5^2\omega_{21}\omega_{15}^2 - 12\omega_{10}\omega_5^2\omega_{15}^2 - 6\omega_9\omega_{12}\omega_{10}\omega_5^2\omega_{15}^2 + 12\omega_5^2\omega_{21}\omega_{15}^2 - 9\omega_9\omega_{12}c_s^2\omega_{10}\omega_5^2\omega_{21}\omega_{15} + 6\omega_9\omega_{12}\omega_{10}\omega_5^2\omega_{15} + 3\omega_9\omega_{12}c_s^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2 + 12\omega_{10}v_2^2\omega_5^2\omega_{15}^2 + 12\omega_9\omega_{10}\omega_5^2\omega_{15}^2 + 18\omega_{12}c_s^2\omega_5^2\omega_{21}\omega_{15}^2 + 36\omega_9\omega_{12}c_s^2\omega_{10}\omega_5\omega_{15} + 6\omega_9\omega_{12}\omega_{10}v_2^2\omega_5^2\omega_{15}^2 - 12\omega_9\omega_5^2\omega_{21}\omega_{15}^2 - 18\omega_{12}c_s^2\omega_{10}\omega_5^2\omega_{15}^2 + 12\omega_9\omega_{10}v_2^2\omega_5\omega_{15}^2 + 36\omega_9\omega_{12}c_s^2\omega_{10}\omega_{21}\omega_{15}^2 - 5\omega_9\omega_{12}v_2^2\omega_5^2\omega_{21}\omega_{15}^2 + \omega_9\omega_{12}\omega_{10}v_2^2\omega_5^2\omega_{21}\omega_{15}^2 + 6\omega_9\omega_{12}\omega_{10}v_2^2\omega_5^2\omega_{21} - 12v_2^2\omega_5^2\omega_{21}\omega_{15}^2 - 12\omega_9v_2^2\omega_5\omega_{21}\omega_{15}^2 - 12\omega_9\omega_{12}v_2^2\omega_{21}\omega_{15}^2 + 12\omega_9\omega_{12}\omega_{10}\omega_5\omega_{21}\omega_{15}^2 - 12\omega_9\omega_{10}v_2^2\omega_5^2\omega_{15}^2 - 36\omega_9\omega_{12}c_s^2\omega_{10}\omega_5\omega_{21}\omega_{15}^2 - 12\omega_9\omega_{12}\omega_{10}v_2^2\omega_{21}\omega_{15} - 12\omega_9\omega_{12}\omega_{10}v_2^2\omega_5\omega_{21} + 12\omega_9\omega_5\omega_{21}\omega_{15}^2 - 12\omega_9\omega_{12}\omega_{10}\omega_{21}\omega_{15}^2 - 12\omega_9\omega_{12}\omega_{10}v_2^2\omega_5\omega_{21}\omega_{15}^2 + 18\omega_9\omega_{12}v_2^2\omega_5\omega_{21}\omega_{15}^2 - 12\omega_9\omega_{12}\omega_{10}\omega_5\omega_{15} - 12\omega_9\omega_{12}\omega_{10}v_2^2\omega_5\omega_{15}^2 - \omega_9\omega_{12}\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2 - 12\omega_9\omega_{10}\omega_5\omega_{15}^2 - 18\omega_9\omega_{12}c_s^2\omega_{10}\omega_5^2\omega_{15} + 12\omega_9v_2^2\omega_5^2\omega_{21}\omega_{15}^2 + 3\omega_9\omega_{12}\omega_{10}\omega_5^2\omega_{21}\omega_{15} + 12\omega_9\omega_{12}\omega_{10}v_2^2\omega_5\omega_{15} + 18\omega_9\omega_{12}c_s^2\omega_{10}\omega_5^2\omega_{15}^2 - 6\omega_{12}\omega_{10}v_2^2\omega_5^2\omega_{15}^2 - 15\omega_9\omega_{12}c_s^2\omega_5^2\omega_{21}\omega_{15}^2 + 18\omega_9\omega_{12}\omega_{10}v_2^2\omega_5\omega_{21}\omega_{15} - 36\omega_9c_s^2\omega_5\omega_{21}\omega_{15}^2 - 36c_s^2\omega_5^2\omega_{21}\omega_{15}^2 + 12\omega_9\omega_{12}\omega_{21}\omega_{15}^2 + 36c_s^2\omega_{10}\omega_5^2\omega_{15}^2 + 12\omega_9\omega_{12}\omega_{10}\omega_5\omega_{15}^2 + 12\omega_9\omega_{12}\omega_{10}\omega_5\omega_{21} + 12\omega_9\omega_{12}\omega_{10}\omega_{21}\omega_{15} + 54\omega_9\omega_{12}c_s^2\omega_{10}\omega_5\omega_{21}\omega_{15} + 6\omega_{12}v_2^2\omega_5^2\omega_{21}\omega_{15}^2 + 36\omega_9c_s^2\omega_{10}\omega_5\omega_{15}^2 + 12\omega_9\omega_{12}\omega_{10}v_2^2\omega_{21}\omega_{15}^2 + 6\omega_{12}\omega_{10}\omega_5^2\omega_{15}^2 - 18\omega_9\omega_{12}\omega_5\omega_{21}\omega_{15}^2 - 6\omega_{12}\omega_5^2\omega_{21}\omega_{15}^2 + 18\omega_9\omega_{12}c_s^2\omega_{10}\omega_5^2\omega_{21}$

$C_{12} =$
$18\omega_9\omega_{12}\omega_{10}\omega_5^2\omega_{21} - 5\omega_9\omega_{12}c_s^2\omega_5^3\omega_{21}\omega_{15} - 6\omega_9\omega_{12}\omega_{10}\omega_5^3\omega_{15} - 12c_s^2\omega_5^3\omega_{21}\omega_{15} - 12\omega_9\omega_{12}c_s^2\omega_{10}\omega_{21}\omega_{15} - 6\omega_9\omega_{12}c_s^2\omega_{10}\omega_5^3 + 12\omega_9\omega_{12}c_s^2\omega_{10}\omega_5\omega_{21} + 54\omega_9\omega_{12}v_2^2\omega_5^2\omega_{21}\omega_{15} - 12\omega_{10}\omega_5^3\omega_{15} - 3\omega_9\omega_{12}\omega_{10}v_2^2\omega_5^2\omega_{21}\omega_{15} - 12\omega_9\omega_{10}\omega_5^2\omega_{15} - 36\omega_9\omega_{12}\omega_{10}v_2^2\omega_5^2\omega_{15} + 12\omega_9\omega_5^2\omega_{21}\omega_{15} + 18\omega_{12}v_2^2\omega_5^3\omega_{21}\omega_{15} + 18\omega_9\omega_{12}\omega_{10}v_2^2\omega_5^3\omega_{21} - 12\omega_9c_s^2\omega_{10}\omega_5^3\omega_{15} + 12\omega_9\omega_{12}c_s^2\omega_{10}\omega_5^2 - 6\omega_{12}\omega_5^3\omega_{21}\omega_{15} - 5\omega_9\omega_{12}c_s^2\omega_{10}\omega_5^2\omega_{21}\omega_{15} - 18\omega_9\omega_{12}\omega_5^2\omega_{21}\omega_{15} + 12\omega_9\omega_{12}\omega_{10}\omega_5^2\omega_{15} - 6\omega_9\omega_{12}\omega_{10}\omega_5^3\omega_{21} + 12\omega_9c_s^2\omega_{10}\omega_5^2\omega_{15} + 36\omega_{10}v_2^2\omega_5^3\omega_{15} - 12\omega_9c_s^2\omega_5^2\omega_{21}\omega_{15} - 54\omega_9\omega_{12}\omega_{10}v_2^2\omega_5^2\omega_{21} - 12\omega_9\omega_{12}c_s^2\omega_5\omega_{21}\omega_{15} - 6\omega_{12}c_s^2\omega_{10}\omega_5^3\omega_{15} + 36\omega_9v_2^2\omega_5^3\omega_{21}\omega_{15} + 12\omega_9\omega_{10}\omega_5^3\omega_{15} + 18\omega_9\omega_{12}\omega_{10}v_2^2\omega_5^3\omega_{15} + 36\omega_9\omega_{12}\omega_{10}v_2^2\omega_5\omega_{21} - \omega_9\omega_{12}c_s^2\omega_{10}\omega_5^3\omega_{21}\omega_{15} + 12\omega_9\omega_{12}\omega_5\omega_{21}\omega_{15} + 6\omega_{12}c_s^2\omega_5^3\omega_{21}\omega_{15} - 12\omega_9\omega_5^3\omega_{21}\omega_{15} + 6\omega_9\omega_{12}c_s^2\omega_{10}\omega_5^3\omega_{21} - 36\omega_9\omega_{10}v_2^2\omega_5^3\omega_{15} - 15\omega_9\omega_{12}v_2^2\omega_5^3\omega_{21}\omega_{15} - 36v_2^2\omega_5^3\omega_{21}\omega_{15} - 12\omega_9\omega_{12}c_s^2\omega_{10}\omega_5^2\omega_{15} + 18\omega_9\omega_{12}c_s^2\omega_5^2\omega_{21}\omega_{15} + \omega_9\omega_{12}\omega_{10}\omega_5^2\omega_{21}\omega_{15} - 12\omega_9\omega_{12}\omega_{10}\omega_5^2 - 36\omega_9v_2^2\omega_5^2\omega_{21}\omega_{15} - 36\omega_9\omega_{12}v_2^2\omega_5\omega_{21}\omega_{15} + 12\omega_9c_s^2\omega_5^3\omega_{21}\omega_{15} - 18\omega_9\omega_{12}\omega_{10}v_2^2\omega_5^3 + 6\omega_{12}\omega_{10}\omega_5^3\omega_{15} - 18\omega_{12}\omega_{10}v_2^2\omega_5^3\omega_{15} - 12\omega_9\omega_{12}\omega_{10}\omega_5\omega_{21} + 6\omega_9\omega_{12}\omega_{10}\omega_5^3 + 6\omega_9\omega_{12}c_s^2\omega_{10}\omega_5^3\omega_{15} + 18\omega_9\omega_{12}c_s^2\omega_{10}\omega_5\omega_{21}\omega_{15} + 36\omega_9\omega_{12}\omega_{10}v_2^2\omega_5^2 + 36\omega_9\omega_{10}v_2^2\omega_5^2\omega_{15} + 5\omega_9\omega_{12}\omega_5^3\omega_{21}\omega_{15} + 12c_s^2\omega_{10}\omega_5^3\omega_{15} + 12\omega_5^3\omega_{21}\omega_{15} - 18\omega_9\omega_{12}c_s^2\omega_{10}\omega_5^2\omega_{21}$

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

$C_{14} = -\omega_9^2\omega_6^3c_s^2\omega_{13}^2 + 36\omega_9^2\omega_6^3v_1^2 - 36\omega_9\omega_6^3\omega_{13}v_1^4 - 18\omega_9^3\omega_6c_s^2\omega_{13}^2v_1^2 - 18\omega_9^3\omega_6^2c_s^4\omega_{13} + 6\omega_9^2\omega_6^2c_s^4\omega_{13}^2 + 6\omega_9^3\omega_6c_s^2\omega_{13}^2 - 306\omega_9\omega_6^3c_s^2\omega_{13}^2v_1^2 + 4\omega_9^3\omega_6^3\omega_{13}^2v_1^4 - 99\omega_9^3\omega_6^3c_s^2\omega_{13}v_1^2 - 6\omega_9^3\omega_6^3c_s^2\omega_{13} - 108\omega_9^3\omega_6^2c_s^2v_1^2 + 60\omega_9^2\omega_6^3c_s^2\omega_{13}^2v_1^2 + 12\omega_9\omega_6^2c_s^2\omega_{13}^2 + 39\omega_9^3\omega_6^3\omega_{13}v_1^2 - 36\omega_9^3\omega_6^2v_1^4 + 90\omega_9\omega_6^3\omega_{13}^2v_1^2 - 12\omega_9\omega_6^3c_s^4\omega_{13}^2 - 72\omega_9^2\omega_6^3\omega_{13}v_1^2 + 36\omega_9^3\omega_6^2\omega_{13}v_1^4 + 18\omega_9^2\omega_6^2c_s^2\omega_{13}^2v_1^2 + 12\omega_6^3c_s^4\omega_{13}^2 - 72\omega_6^3\omega_{13}^2v_1^2 - 12\omega_9^3\omega_6c_s^2\omega_{13} + 36\omega_9^3\omega_6^3v_1^4 + 12\omega_9^2\omega_6^2c_s^4\omega_{13} + 54\omega_9^3\omega_6^2c_s^2\omega_{13}v_1^2 + 19\omega_9^2\omega_6^3\omega_{13}^2v_1^4 + 6\omega_9^2\omega_6^3c_s^2\omega_{13} - 36\omega_9\omega_6^2c_s^2\omega_{13}^2v_1^2 + 13\omega_9^3\omega_6^2c_s^4\omega_{13}^2 + 6\omega_9^3\omega_6^2\omega_{13}^2v_1^2 - 12\omega_9\omega_6^2c_s^4\omega_{13}^2 + 72\omega_6^3\omega_{13}^2v_1^4 - 3\omega_9^3\omega_6^2c_s^2\omega_{13}^2v_1^2 + 72\omega_9^2\omega_6^3\omega_{13}v_1^4 - 36\omega_9^3\omega_6^2\omega_{13}v_1^2 + 12\omega_9\omega_6^3c_s^2\omega_{13}^2 - 19\omega_9^2\omega_6^3\omega_{13}^2v_1^2 + \omega_9^2\omega_6^3c_s^4\omega_{13}^2 + 108\omega_9^3\omega_6^3c_s^2v_1^2 + 18\omega_9^3\omega_6^2c_s^2\omega_{13} - 6\omega_9^3\omega_6^2\omega_{13}^2v_1^4 + 36\omega_9^2\omega_6^2c_s^2\omega_{13}v_1^2 - 24\omega_9^3\omega_6c_s^4\omega_{13}^2 - 6\omega_9^2\omega_6^2c_s^2\omega_{13}^2 - 36\omega_9^3\omega_6^3v_1^2 + 6\omega_9^3\omega_6^3c_s^4\omega_{13} - 12\omega_9^2\omega_6^2c_s^2\omega_{13} + 198\omega_9^3\omega_6^3c_s^2\omega_{13}v_1^2 + 12\omega_9^3\omega_6c_s^4\omega_{13} + 12\omega_9^3c_s^4\omega_{13}^2 - 108\omega_9^3\omega_6^3c_s^2v_1^2 - 4\omega_9^3\omega_6^2\omega_{13}v_1^2 - \omega_9^3\omega_6^3c_s^4\omega_{13}^2 - 36\omega_9^3\omega_6^3v_1^4 - 6\omega_9^3\omega_6^3c_s^4\omega_{13} + 252\omega_6^3c_s^2\omega_{13}^2v_1^2 + 36\omega_9\omega_6^3\omega_{13}v_1^2 - 5\omega_9^3\omega_6^2c_s^2\omega_{13}^2 + 36\omega_9^3\omega_6^2v_1^2 - 90\omega_9\omega_6^3\omega_{13}^2v_1^4 + 36\omega_9^3\omega_6c_s^2\omega_{13}v_1^2 - 108\omega_9\omega_6^3c_s^2\omega_{13}v_1^2 - 12\omega_6^3c_s^2\omega_{13}^2 - 39\omega_9^3\omega_6^3\omega_{13}v_1^4 + 12\omega_9^3\omega_6^3c_s^2\omega_{13}^2v_1^2$

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

$C_{16} = -36\omega_9^3\omega_{22}c_s^2\omega_{13}\omega_{18} + 12\omega_9^2\omega_6^2\omega_{13}v_1^2\omega_{18} + 12\omega_9^3\omega_6\omega_{22}\omega_{13}^2\omega_{18} + 12\omega_9^3\omega_{22}\omega_{13}\omega_{18} + 12\omega_6^2\omega_{22}\omega_{13}^2v_1^2\omega_{18} + 36\omega_9^3\omega_6c_s^2\omega_{13}^2 + 12\omega_9^3\omega_6^2\omega_{22}v_1^2\omega_{18} + 12\omega_9^2\omega_6\omega_{22}\omega_{13}^2 + 6\omega_9^3\omega_6^2\omega_{13}^2v_1^2\omega_{18} + 5\omega_9^3\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_{18} - 12\omega_9^2\omega_6\omega_{22}\omega_{13}^2v_1^2 + 36\omega_9^3\omega_6c_s^2\omega_{13}\omega_{18} + 18\omega_9^2\omega_6^2\omega_{22}\omega_{13}v_1^2\omega_{18} + 18\omega_9^2\omega_6^2\omega_{22}c_s^2\omega_{13}^2 + 6\omega_9^3\omega_6^2\omega_{13}^2 - 36\omega_9\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{18} - 40\omega_9^3\omega_6\omega_{22}c_s^2\omega_{13}^2\omega_{18} - 36\omega_9^2\omega_6^2\omega_{22}c_s^2\omega_{18} - 36\omega_9^2\omega_{22}c_s^2\omega_{13}^2\omega_{18} - 12\omega_9^2\omega_6^2\omega_{13}\omega_{18} - 12\omega_9\omega_6^2\omega_{22}\omega_{13}v_1^2\omega_{18} + 12\omega_9^3\omega_6\omega_{13}v_1^2\omega_{18} + 54\omega_9^2\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{18} + 2\omega_9^2\omega_6^2\omega_{22}\omega_{13}^2\omega_{18} + 12\omega_9^3\omega_6^2\omega_{13}\omega_{18} + 36\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_{18} + 18\omega_9^3\omega_6^2c_s^2\omega_{13}^2\omega_{18} + \omega_9^3\omega_6^2\omega_{22}\omega_{13}^2v_1^2\omega_{18} + 36\omega_9^2\omega_6^2c_s^2\omega_{13}\omega_{18} - 12\omega_9^3\omega_{22}\omega_{13}v_1^2\omega_{18} - 12\omega_9^3\omega_6\omega_{22}\omega_{13}^2v_1^2\omega_{18} - 36\omega_9^3\omega_6\omega_{22}c_s^2\omega_{18} +$

$6\omega_9^3\omega_6^2\omega_{22}\omega_{13}\omega_{18} + 12\omega_9^3\omega_6\omega_{13}^2\omega_{18} + 12\omega_9^3\omega_6\omega_{22}\omega_{18} - 12\omega_9^2\omega_{22}\omega_{13}^2v_1^2\omega_{18} + 12\omega_9\omega_6^2\omega_{22}\omega_{13}^2\omega_{18} - 6\omega_9^3\omega_6^2\omega_{13}^2v_1^2 - 18\omega_9^2\omega_6^2c_s^2\omega_{13}^2\omega_{18} -$
$12\omega_9^3\omega_6\omega_{13}^2v_1^2\omega_{18} + 12\omega_9^2\omega_{22}\omega_{13}^2\omega_{18} + 6\omega_9^2\omega_6^2\omega_{22}\omega_{13}^2v_1^2 - 12\omega_9\omega_6^2\omega_{22}\omega_{13}^2v_1^2\omega_{18} - 12\omega_9^3\omega_6\omega_{22}v_1^2\omega_{18} - 6\omega_9^3\omega_6^2\omega_{22}\omega_{13}v_1^2\omega_{18} -$
$\omega_9^3\omega_6^2\omega_{22}\omega_{13}^2\omega_{18} + 54\omega_9^2\omega_6\omega_{22}c_s^2\omega_{13}^2\omega_{18} + 12\omega_9\omega_6^2\omega_{22}\omega_{13}\omega_{18} - 12\omega_9^3\omega_6\omega_{13}\omega_{18} + 18\omega_9^3\omega_6\omega_{22}\omega_{13}v_1^2\omega_{18} + 12\omega_9^3\omega_{22}\omega_{13}^2v_1^2\omega_{18} -$
$6\omega_9^2\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_{18} - 18\omega_9^2\omega_6^2\omega_{22}\omega_{13}\omega_{18} - 12\omega_9^3\omega_6^2\omega_{22}\omega_{18} - 12\omega_6^2\omega_{22}\omega_{13}^2\omega_{18} + 12\omega_9^3\omega_6\omega_{13}^2v_1^2 - 6\omega_9^3\omega_6^2\omega_{13}^2\omega_{18} - 36\omega_9^3\omega_6^2c_s^2\omega_{13}\omega_{18} -$
$36\omega_9^2\omega_6\omega_{22}c_s^2\omega_{13}^2 - 6\omega_9^2\omega_6^2\omega_{13}^2v_1^2\omega_{18} - 36\omega_9^3\omega_6c_s^2\omega_{13}^2\omega_{18} + 54\omega_9^3\omega_6\omega_{22}c_s^2\omega_{13}\omega_{18} - 36\omega_9\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_{18} - 12\omega_9^2\omega_6^2\omega_{22}v_1^2\omega_{18} - 12\omega_9^3\omega_6\omega_{13}^2 -$
$6\omega_9^2\omega_6^2\omega_{22}\omega_{13}^2 - 18\omega_9^2\omega_6\omega_{22}\omega_{13}^2\omega_{18} - 12\omega_9^3\omega_6^2\omega_{13}v_1^2\omega_{18} + 6\omega_9^2\omega_6^2\omega_{13}^2\omega_{18} + 18\omega_9^2\omega_6\omega_{22}\omega_{13}^2v_1^2\omega_{18} + 12\omega_9^2\omega_6^2\omega_{22}\omega_{18} - 18\omega_9^3\omega_6^2c_s^2\omega_{13}^2 +$
$36\omega_9^3\omega_{22}c_s^2\omega_{13}^2\omega_{18} - 12\omega_9^3\omega_{22}\omega_{13}^2\omega_{18} - 2\omega_9^2\omega_6^2\omega_{22}\omega_{13}^2v_1^2\omega_{18} - 18\omega_9^3\omega_6\omega_{22}\omega_{13}\omega_{18} + 36\omega_9^3\omega_6^2\omega_{22}c_s^2\omega_{18} - 18\omega_9^3\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{18}$

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

$C_{18} =$
$-2\omega_9\omega_{12}\omega_{22}c_s^2\omega_{20}v_2^2\omega_8v_1\omega_5\omega_{18} + 2\omega_9\omega_{12}\omega_{22}c_s^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_8v_1^2\omega_5\omega_{18} + 2\omega_9\omega_{12}c_s^2\omega_{20}\omega_{14}v_2\omega_8v_1^2\omega_5\omega_{18} - 2\omega_9\omega_{12}\omega_{22}v_3^2\omega_{13}\omega_{14}v_2\omega_8v_1^2\omega_5\omega_{18} +$
$2\omega_9\omega_{12}\omega_{22}c_s^2\omega_{13}\omega_{20}v_2^2\omega_8v_1\omega_5\omega_{18} - \omega_9\omega_{12}\omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_{20}\omega_{14}\omega_8v_1\omega_{18} + 2\omega_9\omega_{12}\omega_6c_s^2v_3^2\omega_{20}\omega_{14}\omega_8v_1\omega_5\omega_{18} -$
$2\omega_9\omega_{12}\omega_6\omega_{22}v_3^2\omega_{13}\omega_{14}v_2v_1^2\omega_5\omega_{18} - 2\omega_9\omega_{12}\omega_{22}c_s^2v_3^2\omega_{13}\omega_{14}v_1\omega_5\omega_{18} - 2\omega_{12}\omega_6\omega_{22}v_3^2\omega_{20}v_2^2\omega_8v_1\omega_5\omega_{18} - 2\omega_9\omega_{12}\omega_{22}c_s^2\omega_{20}\omega_{14}v_2\omega_8v_1^2\omega_5\omega_{18} -$
$2\omega_{12}\omega_6\omega_{22}v_3^2\omega_{20}\omega_{14}v_2\omega_8v_1^2\omega_5\omega_{18} - 2\omega_9\omega_{12}c_s^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_8v_1^2\omega_5\omega_{18} - 2\omega_9\omega_{12}\omega_{22}v_3^2\omega_{13}\omega_{14}v_2^2\omega_8v_1\omega_5 - 2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_{20}v_1\omega_5\omega_{18} +$
$\omega_9\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}\omega_{14}v_2^2\omega_8v_1\omega_{18} + \omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}\omega_{14}v_2^2\omega_8v_1\omega_5\omega_{18} + 2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_{20}v_1\omega_5\omega_{18} +$
$2\omega_{12}\omega_6\omega_{22}v_3^2\omega_{13}\omega_{20}v_2^2\omega_8v_1\omega_5\omega_{18} + \omega_9\omega_{12}\omega_6v_3^2\omega_{13}\omega_{20}\omega_{14}v_2^2\omega_8v_1\omega_5 - 2\omega_9\omega_{12}\omega_{22}v_3^2\omega_{20}v_2^2\omega_8v_1\omega_5\omega_{18} - 2\omega_{12}\omega_6\omega_{22}c_s^2\omega_{20}v_2^2\omega_8v_1\omega_5\omega_{18} -$
$2\omega_9\omega_{12}\omega_6\omega_{22}v_3^2\omega_{13}\omega_{14}v_2^2v_1\omega_{18} + \omega_9\omega_{12}\omega_6c_s^2v_3^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_8\omega_5\omega_{18} - 2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}\omega_{14}v_2^2v_1\omega_5\omega_{18} -$
$2\omega_9\omega_6\omega_{22}v_3^2\omega_{13}\omega_{20}v_2\omega_8v_1^2\omega_5\omega_{18} + 2\omega_{12}\omega_6c_s^2\omega_{20}\omega_{14}v_2\omega_8v_1^2\omega_5\omega_{18} + \omega_9\omega_{12}\omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_{14}\omega_8v_1\omega_{18} - 2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{14}v_2v_1^2\omega_5\omega_{18} +$
$2\omega_9\omega_{12}\omega_{22}c_s^2v_3^2\omega_{13}\omega_{14}v_2\omega_8\omega_5 + \omega_{12}\omega_6\omega_{22}v_3^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_8v_1^2\omega_5\omega_{18} - \omega_9\omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_{20}\omega_{14}\omega_8v_1\omega_5\omega_{18} -$
$2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}\omega_{14}v_2v_1^2\omega_{18} - 2\omega_9\omega_{12}\omega_{22}v_3^2\omega_{13}\omega_{20}\omega_{14}v_2v_1^2\omega_5\omega_{18} - 2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{14}v_2^2v_1\omega_{18} - 2\omega_9\omega_{12}\omega_{22}c_s^2\omega_{13}\omega_{14}v_2^2\omega_8v_1\omega_5 -$
$2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_{18} + 2\omega_9\omega_{12}\omega_{22}c_s^2v_3^2\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18} - 2\omega_9\omega_{12}\omega_{22}c_s^2v_3^2\omega_{13}\omega_{14}\omega_8v_1\omega_5\omega_{18} -$
$\omega_{12}\omega_6c_s^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_8v_1^2\omega_5\omega_{18} + 2\omega_9\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}v_2\omega_8v_1^2\omega_{18} + 2\omega_9\omega_{12}\omega_6\omega_{22}v_3^2\omega_{13}\omega_{20}\omega_{14}v_2^2v_1\omega_{18} + 2\omega_9\omega_{12}\omega_{22}c_s^2v_3^2\omega_{13}\omega_{20}v_2\omega_5\omega_{18} -$
$2\omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_{20}\omega_8v_1\omega_5\omega_{18} - 2\omega_9\omega_{12}\omega_{22}c_s^2\omega_{13}\omega_{14}v_2\omega_8v_1^2\omega_5\omega_{18} + 2\omega_9\omega_{12}v_3^2\omega_{20}\omega_{14}v_2\omega_8v_1^2\omega_5\omega_{18} + 2\omega_9\omega_{12}\omega_{22}v_3^2\omega_{13}\omega_{20}v_2^2\omega_8v_1\omega_5\omega_{18} +$
$\omega_9\omega_6\omega_{22}v_3^2\omega_{13}\omega_{20}\omega_{14}v_2^2\omega_8v_1\omega_{18} + 2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_{14}v_2\omega_{18} + 2\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}v_2^2\omega_8v_1\omega_5\omega_{18} - \omega_9\omega_6\omega_{22}v_3^2\omega_{13}\omega_{20}\omega_{14}v_2^2\omega_8v_1\omega_5\omega_{18} +$
$2\omega_{12}\omega_6\omega_{22}c_s^2v_3^2\omega_{20}v_2\omega_8\omega_5\omega_{18} + 2\omega_9\omega_{12}\omega_{22}c_s^2v_3^2\omega_{13}\omega_{14}\omega_8v_1\omega_5\omega_{18} + 2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}v_2^2v_1\omega_5\omega_{18} - 2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_{14}v_2\omega_5\omega_{18} -$
$2\omega_{12}\omega_6\omega_{22}c_s^2\omega_{20}\omega_{14}v_2\omega_8v_1^2\omega_5\omega_{18} - 2\omega_9\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}v_2\omega_8v_1^2\omega_5\omega_{18} - 2\omega_9\omega_{12}\omega_6\omega_{22}v_3^2\omega_{13}\omega_{20}\omega_{14}v_2^2v_1\omega_5\omega_{18} +$
$2\omega_9\omega_{12}\omega_{22}c_s^2v_3^2\omega_{13}\omega_{20}\omega_{14}\omega_8v_1\omega_5 + 2\omega_{12}\omega_6v_3^2\omega_{20}\omega_{14}v_2\omega_8v_1^2\omega_5\omega_{18} + \omega_9\omega_{12}\omega_6c_s^2\omega_{13}\omega_{20}\omega_{14}v_2^2\omega_8v_1\omega_5 + \omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}\omega_{14}v_2^2\omega_8v_1\omega_5\omega_{18} +$
$2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}\omega_{14}v_2^2v_1\omega_{18} + 2\omega_9\omega_6\omega_{22}v_3^2\omega_{13}\omega_{20}v_2\omega_8v_1^2\omega_{18} + \omega_{12}\omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_8\omega_5\omega_{18} - 2\omega_9\omega_{12}c_s^2v_3^2\omega_{13}\omega_{20}\omega_{14}\omega_8v_1\omega_5 +$
$2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{14}v_2v_1^2\omega_{18} - 2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_{20}\omega_8v_1\omega_5\omega_{18} + 2\omega_9\omega_{12}\omega_{22}c_s^2v_3^2\omega_{20}v_2\omega_8\omega_5\omega_{18} - 2\omega_9\omega_{12}\omega_{22}c_s^2\omega_{13}\omega_{20}\omega_{14}v_2v_1^2\omega_5\omega_{18} +$
$\omega_9\omega_{12}\omega_6v_3^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_8v_1^2\omega_5\omega_{18} - 2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_{20}v_1\omega_{18} + 2\omega_9\omega_{12}\omega_6\omega_{22}v_3^2\omega_{13}\omega_{20}v_2^2v_1\omega_5\omega_{18} +$
$2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_5\omega_{18} + 2\omega_9\omega_{12}\omega_6\omega_{22}v_3^2\omega_{13}\omega_{14}v_2v_1^2\omega_{18} + 2\omega_9\omega_{12}\omega_6c_s^2\omega_{20}\omega_{14}v_2^2\omega_8v_1\omega_5\omega_{18} +$
$2\omega_9\omega_{12}\omega_{22}c_s^2v_3^2\omega_{13}\omega_{20}\omega_8v_1\omega_5\omega_{18} + 2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}\omega_{14}v_2v_1^2\omega_5\omega_{18} - 2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{20}v_2\omega_8v_1^2\omega_5\omega_{18} -$
$\omega_9\omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_8\omega_{18} - 2\omega_9\omega_{12}v_3^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_8v_1^2\omega_5\omega_{18} - 2\omega_6\omega_{22}v_3^2\omega_{13}\omega_{20}v_2^2\omega_8v_1\omega_5\omega_{18} + 2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{14}v_2^2v_1\omega_5\omega_{18} -$
$\omega_{12}\omega_6c_s^2v_3^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_8\omega_5\omega_{18} - 2\omega_9\omega_{12}\omega_{22}c_s^2v_3^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_5\omega_{18} + \omega_9\omega_{12}\omega_6\omega_{22}v_3^2\omega_{13}\omega_{20}\omega_{14}v_2^2\omega_8v_1\omega_5\omega_{18} +$
$2\omega_9\omega_{12}\omega_{22}v_3^2\omega_{13}\omega_{20}\omega_{14}v_2^2v_1\omega_5\omega_{18} + 2\omega_9\omega_{12}\omega_{22}v_3^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_8v_1^2\omega_5\omega_{18} - 2\omega_9\omega_6\omega_{22}v_3^2\omega_{13}\omega_{20}v_2^2\omega_8v_1\omega_{18} -$
$\omega_9\omega_{12}\omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_{20}\omega_{14}\omega_8v_1\omega_5 - \omega_9\omega_{12}\omega_6c_s^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_8v_1^2\omega_5 + 2\omega_{12}\omega_6c_s^2v_3^2\omega_{20}\omega_{14}v_2\omega_8\omega_5\omega_{18} + \omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_{20}\omega_{14}\omega_8v_1\omega_5\omega_{18} -$
$2\omega_9\omega_{12}\omega_6\omega_{22}v_3^2\omega_{20}v_2\omega_8v_1^2\omega_5\omega_{18} + \omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_8v_1^2\omega_5\omega_{18} + 2\omega_9\omega_{12}\omega_6\omega_{22}v_3^2\omega_{13}\omega_{14}v_2^2v_1\omega_5\omega_{18} -$
$2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_{20}v_2\omega_8\omega_{18} - \omega_9\omega_{12}\omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_{14}\omega_8v_1\omega_5\omega_{18} - \omega_9\omega_6\omega_{22}v_3^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_8v_1^2\omega_{18} +$
$\omega_9\omega_{12}\omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_{14}\omega_8v_1\omega_5 - 2\omega_9\omega_{12}\omega_{22}c_s^2v_3^2\omega_{20}\omega_{14}v_2\omega_8\omega_5\omega_{18} + \omega_9\omega_{12}\omega_6\omega_{22}v_3^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_8v_1^2\omega_{18} +$
$2\omega_9\omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_{20}v_2^2\omega_8v_1\omega_{18} + \omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{14}v_2\omega_8v_1^2\omega_5\omega_{18} + 2\omega_9\omega_{12}c_s^2v_3^2\omega_{20}\omega_{14}v_2\omega_8\omega_5\omega_{18} - 2\omega_9\omega_{12}\omega_6\omega_{22}v_3^2\omega_{13}\omega_{20}v_2^2\omega_8v_1\omega_5\omega_{18} -$
$2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_{14}v_1\omega_{18} + 2\omega_9\omega_{12}\omega_{22}c_s^2\omega_{13}\omega_{14}v_2\omega_8v_1^2\omega_5 + 2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2v_3^2\omega_{20}\omega_8v_1\omega_5\omega_{18} + 2\omega_9\omega_{12}\omega_6v_3^2\omega_{20}\omega_{14}v_2^2\omega_8v_1\omega_5\omega_{18} -$
$\omega_9\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}\omega_{14}v_2^2\omega_8v_1\omega_5\omega_{18} + 2\omega_9\omega_{12}\omega_6\omega_{22}v_3^2\omega_{13}\omega_{20}\omega_{14}v_2v_1^2\omega_5\omega_{18} - 2\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}v_2^2\omega_8v_1\omega_5\omega_{18} +$
$2\omega_9\omega_{12}\omega_{22}c_s^2v_3^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_8\omega_5\omega_{18} + 2\omega_{12}\omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_{20}\omega_8v_1\omega_5\omega_{18} + 2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_{20}\omega_{14}v_1\omega_{18} -$
$2\omega_9\omega_{12}\omega_6\omega_{22}v_3^2\omega_{13}\omega_{20}v_2v_1^2\omega_5\omega_{18} - 2\omega_9\omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_{20}v_2\omega_8\omega_5\omega_{18} - \omega_{12}\omega_6v_3^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_8v_1^2\omega_5\omega_{18} +$
$2\omega_9\omega_{12}\omega_{22}c_s^2\omega_{13}\omega_{20}\omega_{14}v_2^2v_1\omega_5\omega_{18} - 2\omega_9\omega_{12}c_s^2v_3^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_8\omega_5\omega_{18} - \omega_9\omega_{12}\omega_6v_3^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_8v_1^2\omega_5 + 2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_{20}v_2\omega_{18} -$
$\omega_9\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_8v_1^2\omega_{18} + \omega_9\omega_{12}\omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_{20}\omega_{14}\omega_8v_1\omega_5\omega_{18} - 2\omega_{12}\omega_6\omega_{22}c_s^2v_3^2\omega_{20}\omega_{14}v_2\omega_8\omega_5\omega_{18} +$
$2\omega_9\omega_{12}\omega_{22}v_3^2\omega_{13}\omega_{14}v_2\omega_8v_1^2\omega_5 + \omega_9\omega_{12}\omega_6c_s^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_8v_1^2\omega_5\omega_{18} - \omega_9\omega_{12}\omega_6c_s^2v_3^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_8\omega_5 - 2\omega_9\omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_{20}\omega_8v_1\omega_{18} +$
$\omega_9\omega_{12}\omega_6\omega_{22}v_3^2\omega_{13}\omega_{14}v_2\omega_8v_1^2\omega_5\omega_{18} - 2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2v_3^2\omega_{20}v_2\omega_8v_1\omega_5\omega_{18} - 2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}v_2v_1^2\omega_5\omega_{18} +$
$\omega_6\omega_{22}v_3^2\omega_{13}\omega_{20}\omega_{14}v_2^2\omega_8v_1\omega_5\omega_{18} + 2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{20}\omega_{14}v_2\omega_8v_1^2\omega_5\omega_{18} - 2\omega_9\omega_{12}\omega_{22}c_s^2v_3^2\omega_{13}\omega_{20}\omega_{14}\omega_8v_1\omega_5\omega_{18} -$
$2\omega_9\omega_{12}\omega_{22}v_3^2\omega_{13}\omega_{20}v_2^2v_1\omega_5\omega_{18} - 2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{20}\omega_{14}v_2^2\omega_8v_1\omega_5\omega_{18} + 2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}v_2^2\omega_8v_1\omega_{18} +$
$2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}v_2v_1^2\omega_{18} - \omega_9\omega_{12}\omega_6\omega_{22}v_3^2\omega_{13}\omega_{14}v_2\omega_8v_1^2\omega_5\omega_{18} - \omega_6\omega_{22}v_3^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_8v_1^2\omega_5\omega_{18} - \omega_9\omega_{12}\omega_6\omega_{22}v_3^2\omega_{13}\omega_{14}v_2^2\omega_8v_1\omega_5\omega_{18} -$
$2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2v_3^2\omega_{20}v_2\omega_8\omega_5\omega_{18} + 2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}v_2\omega_8v_1^2\omega_5\omega_{18} + 2\omega_9\omega_{12}\omega_6\omega_{22}v_3^2\omega_{13}\omega_{20}v_2v_1^2\omega_{18} - 2\omega_9\omega_{12}c_s^2v_3^2\omega_{13}\omega_{20}\omega_{14}v_2^2\omega_8v_1\omega_5 +$
$2\omega_9\omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_{20}v_2\omega_8\omega_{18} + \omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_8v_1^2\omega_5 + \omega_9\omega_{12}\omega_6c_s^2v_3^2\omega_{13}\omega_{20}\omega_{14}\omega_8v_1\omega_5 + 2\omega_9\omega_{12}c_s^2v_3^2\omega_{13}\omega_{20}\omega_{14}\omega_8v_1\omega_5\omega_{18} +$
$2\omega_9\omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_{20}\omega_8v_1\omega_5\omega_{18} + 2\omega_9\omega_{12}\omega_{22}c_s^2\omega_{13}\omega_{20}\omega_{14}v_2^2\omega_8v_1\omega_5 - \omega_9\omega_{12}\omega_6c_s^2\omega_{13}\omega_{20}\omega_{14}v_2^2\omega_8v_1\omega_5\omega_{18} -$
$2\omega_{12}\omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_{20}v_2\omega_8\omega_5\omega_{18} - 2\omega_9\omega_{12}\omega_{22}c_s^2\omega_{13}\omega_{20}v_2^2v_1\omega_5\omega_{18} + 2\omega_9\omega_{12}\omega_6\omega_{22}v_3^2\omega_{13}\omega_{20}v_2^2\omega_8v_1\omega_{18} + 2\omega_9\omega_{12}\omega_{22}c_s^2v_3^2\omega_{13}\omega_{14}v_2\omega_5\omega_{18} -$

$\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{14}v_2\omega_8v_1^2\omega_{18} + \omega_{12}\omega_6v_3^2\omega_{13}\omega_{20}\omega_{14}v_2^2\omega_8v_1\omega_5\omega_{18} + 2\omega_{12}\omega_6\omega_{22}c_s^2v_3^2\omega_{20}\omega_{14}\omega_8v_1\omega_5\omega_{18} -$
$\omega_9\omega_{12}\omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_8\omega_5\omega_{18} + 2\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}v_2\omega_8v_1^2\omega_5\omega_{18} - 2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_{20}v_2\omega_5\omega_{18} -$
$2\omega_9\omega_{12}\omega_6v_3^2\omega_{20}\omega_{14}v_2\omega_8v_1^2\omega_5\omega_{18} + \omega_9\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_8v_1^2\omega_5\omega_{18} - \omega_9\omega_{12}\omega_6\omega_{22}v_3^2\omega_{13}\omega_{20}\omega_{14}v_2^2\omega_8v_1\omega_{18} +$
$2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_{20}\omega_8v_1\omega_{18} - \omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{14}v_2^2\omega_8v_1\omega_5\omega_{18} + 2\omega_9\omega_{12}\omega_6\omega_{22}v_3^2\omega_{13}\omega_{20}v_2\omega_8v_1^2\omega_5\omega_{18} -$
$2\omega_9\omega_{12}\omega_6\omega_{22}v_3^2\omega_{13}\omega_{20}v_2^2v_1\omega_{18} + \omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{14}v_2^2\omega_8v_1\omega_5 + \omega_{12}\omega_6c_s^2v_3^2\omega_{13}\omega_{20}\omega_{14}\omega_8v_1\omega_5\omega_{18} - 2\omega_9\omega_{12}\omega_6\omega_{22}v_3^2\omega_{20}\omega_{14}v_2^2\omega_8v_1\omega_5\omega_{18} -$
$2\omega_9\omega_{12}\omega_{22}c_s^2v_3^2\omega_{13}\omega_{20}v_2\omega_8\omega_5\omega_{18} + 2\omega_9\omega_{12}\omega_{22}v_3^2\omega_{13}\omega_{20}\omega_{14}v_2^2\omega_8v_1\omega_5 + 2\omega_9\omega_{12}\omega_{22}c_s^2\omega_{13}\omega_{14}v_2v_1^2\omega_5\omega_{18} - 2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}v_2^2v_1\omega_{18} -$
$\omega_9\omega_{12}\omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_{14}v_2\omega_8\omega_5 - 2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_{20}\omega_{14}v_1\omega_5\omega_{18} - \omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_8\omega_5\omega_{18} -$
$2\omega_9\omega_{12}v_3^2\omega_{13}\omega_{20}\omega_{14}v_2^2\omega_8v_1\omega_5 - 2\omega_{12}\omega_6c_s^2v_3^2\omega_{20}\omega_{14}\omega_8v_1\omega_5\omega_{18} + 2\omega_9\omega_{12}\omega_6\omega_{22}v_3^2\omega_{20}v_2^2\omega_8v_1\omega_5\omega_{18} + \omega_9\omega_{12}\omega_6\omega_{22}v_3^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_8v_1^2\omega_5 -$
$\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}\omega_{14}v_2^2\omega_8v_1\omega_5\omega_{18} + \omega_9\omega_{12}\omega_6\omega_{22}v_3^2\omega_{13}\omega_{14}v_2^2\omega_8v_1\omega_5 + \omega_9\omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_{20}\omega_{14}\omega_8v_1\omega_{18} +$
$\omega_9\omega_{12}\omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_{14}v_2\omega_8\omega_5\omega_{18} - 2\omega_9\omega_{12}\omega_{22}c_s^2v_3^2\omega_{13}\omega_{20}v_1\omega_5\omega_{18} - 2\omega_9\omega_{12}\omega_{22}v_3^2\omega_{13}\omega_{20}\omega_{14}v_2^2\omega_8v_1\omega_5\omega_{18} -$
$\omega_9\omega_{12}\omega_6\omega_{22}v_3^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_8v_1^2\omega_5\omega_{18} + 2\omega_9\omega_{12}\omega_{22}v_3^2\omega_{13}\omega_{14}v_2v_1^2\omega_5\omega_{18} - 2\omega_9\omega_{12}c_s^2v_3^2\omega_{20}\omega_{14}\omega_8v_1\omega_5\omega_{18} +$
$\omega_9\omega_{12}\omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_8\omega_5 + 2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_{14}v_1\omega_5\omega_{18} - \omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}\omega_{14}v_2^2\omega_8v_1\omega_{18} +$
$2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{20}v_2^2\omega_8v_1\omega_5\omega_{18} + 2\omega_6\omega_{22}v_3^2\omega_{13}\omega_{20}v_2\omega_8v_1^2\omega_5\omega_{18} + 2\omega_9\omega_{12}v_3^2\omega_{13}\omega_{20}\omega_{14}v_2^2\omega_8v_1\omega_5\omega_{18} +$
$2\omega_9\omega_{12}\omega_{22}c_s^2v_3^2\omega_{20}\omega_{14}\omega_8v_1\omega_5\omega_{18} - 2\omega_9\omega_{12}\omega_6c_s^2\omega_{20}\omega_{14}v_2\omega_8v_1^2\omega_5\omega_{18} - 2\omega_9\omega_{12}\omega_{22}c_s^2v_3^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_8\omega_5 + 2\omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_{20}v_2\omega_8\omega_5\omega_{18} -$
$\omega_9\omega_{12}\omega_6v_3^2\omega_{13}\omega_{20}\omega_{14}v_2^2\omega_8v_1\omega_5\omega_{18} + \omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_8v_1^2\omega_{18} + 2\omega_9\omega_{12}c_s^2v_3^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_8\omega_5 -$
$2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2v_3^2\omega_{20}\omega_{14}\omega_8v_1\omega_5\omega_{18} + 2\omega_9\omega_{12}\omega_{22}c_s^2\omega_{13}\omega_{20}v_2v_1^2\omega_5\omega_{18} - 2\omega_9\omega_{12}\omega_{22}c_s^2v_3^2\omega_{13}\omega_{14}v_2\omega_8\omega_5\omega_{18} - 2\omega_{12}\omega_6\omega_{22}c_s^2v_3^2\omega_{20}\omega_8v_1\omega_5\omega_{18} -$
$\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_8v_1^2\omega_5\omega_{18} - 2\omega_{12}\omega_6v_3^2\omega_{20}\omega_{14}v_2^2\omega_8v_1\omega_5\omega_{18} + 2\omega_9\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}v_2^2\omega_8v_1\omega_5\omega_{18} - \omega_9\omega_{12}\omega_6\omega_{22}v_3^2\omega_{13}\omega_{14}v_2\omega_8v_1^2\omega_5 -$
$\omega_{12}\omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_{20}\omega_{14}\omega_8v_1\omega_5\omega_{18} - \omega_9\omega_{12}\omega_6\omega_{22}v_3^2\omega_{13}\omega_{20}\omega_{14}v_2^2\omega_8v_1\omega_5 + 2\omega_{12}\omega_6\omega_{22}c_s^2\omega_{20}\omega_{14}v_2^2\omega_8v_1\omega_5\omega_{18} +$
$\omega_9\omega_6\omega_{22}v_3^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_8v_1^2\omega_5\omega_{18} + 2\omega_9\omega_{12}\omega_{22}c_s^2v_3^2\omega_{13}\omega_{20}\omega_{14}v_1\omega_5\omega_{18} + 2\omega_9\omega_{12}v_3^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_8v_1^2\omega_5 + 2\omega_9\omega_{12}\omega_{22}v_3^2\omega_{13}\omega_{20}v_2v_1^2\omega_5\omega_{18} -$
$2\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}v_2\omega_8v_1^2\omega_5\omega_{18} - 2\omega_9\omega_{12}\omega_{22}v_3^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_8v_1^2\omega_5 + 2\omega_9\omega_{12}\omega_{22}c_s^2\omega_{13}\omega_{14}v_2^2\omega_8v_1\omega_5\omega_{18} -$
$2\omega_9\omega_{12}v_3^2\omega_{20}\omega_{14}v_2^2\omega_8v_1\omega_5\omega_{18} - 2\omega_9\omega_{12}\omega_{22}v_3^2\omega_{13}\omega_{20}v_2\omega_8v_1^2\omega_5\omega_{18} + \omega_{12}\omega_6c_s^2\omega_{13}\omega_{20}\omega_{14}v_2^2\omega_8v_1\omega_5\omega_{18} + 2\omega_9\omega_{12}\omega_{22}v_3^2\omega_{20}\omega_{14}v_2^2\omega_8v_1\omega_5\omega_{18} -$
$\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{14}v_2\omega_8v_1^2\omega_5 - 2\omega_9\omega_{12}\omega_{22}c_s^2v_3^2\omega_{20}\omega_8v_1\omega_5\omega_{18} + 2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_{20}v_2\omega_8\omega_5\omega_{18} +$
$\omega_9\omega_{12}\omega_6\omega_{22}v_3^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_8v_1^2\omega_{18} - 2\omega_9\omega_{12}\omega_6c_s^2v_3^2\omega_{20}\omega_{14}v_2\omega_8\omega_5\omega_{18} - 2\omega_9\omega_{12}\omega_{22}c_s^2v_3^2\omega_{13}\omega_{14}\omega_8v_1\omega_5 - \omega_9\omega_{12}\omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_{14}v_2\omega_8\omega_{18} -$
$\omega_{12}\omega_6\omega_{22}v_3^2\omega_{13}\omega_{20}\omega_{14}v_2^2\omega_8v_1\omega_5\omega_{18} - 2\omega_{12}\omega_6c_s^2\omega_{20}\omega_{14}v_2^2\omega_8v_1\omega_5\omega_{18} + 2\omega_{12}\omega_6\omega_{22}c_s^2\omega_{20}v_2\omega_8v_1^2\omega_5\omega_{18} + 2\omega_9\omega_6\omega_{22}v_3^2\omega_{13}\omega_{20}v_2^2\omega_8v_1\omega_5\omega_{18} +$
$2\omega_9\omega_{12}\omega_{22}v_3^2\omega_{20}v_2\omega_8v_1^2\omega_5\omega_{18} - 2\omega_9\omega_{12}\omega_6\omega_{22}v_3^2\omega_{13}\omega_{20}v_2\omega_8v_1^2\omega_{18} + \omega_9\omega_{12}\omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_{14}v_2^2\omega_8v_1\omega_{18} - 2\omega_9\omega_{12}\omega_{22}v_3^2\omega_{13}\omega_{14}v_2^2v_1\omega_5\omega_{18} -$
$2\omega_{12}\omega_6\omega_{22}v_3^2\omega_{13}\omega_{20}v_2\omega_8v_1^2\omega_5\omega_{18} - \omega_9\omega_{12}\omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_8v_1^2\omega_5\omega_{18} - 2\omega_9\omega_{12}\omega_{22}c_s^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_8v_1^2\omega_5 -$
$\omega_9\omega_{12}\omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_8v_1^2\omega_5 + 2\omega_9\omega_{12}c_s^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_8v_1^2\omega_5 + \omega_9\omega_{12}\omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_8\omega_{18} +$
$2\omega_{12}\omega_6\omega_{22}v_3^2\omega_{20}v_2\omega_8v_1^2\omega_5\omega_{18} + 2\omega_9\omega_{12}\omega_{22}c_s^2\omega_{20}\omega_{14}v_2^2\omega_8v_1\omega_5\omega_{18} - 2\omega_9\omega_{12}c_s^2\omega_{20}\omega_{14}v_2^2\omega_8v_1\omega_5\omega_{18} + 2\omega_9\omega_{12}\omega_{22}v_3^2\omega_{13}\omega_{14}v_2^2\omega_8v_1\omega_5\omega_{18} +$
$\omega_9\omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_8\omega_5\omega_{18} - 2\omega_9\omega_{12}\omega_{22}c_s^2v_3^2\omega_{13}\omega_{20}v_2\omega_8v_1^2\omega_5\omega_{18} - 2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}v_2\omega_8v_1^2\omega_{18} +$
$2\omega_9\omega_{12}\omega_{22}c_s^2\omega_{20}v_2\omega_8v_1^2\omega_5\omega_{18} + \omega_9\omega_{12}\omega_6\omega_{22}v_3^2\omega_{13}\omega_{14}v_2^2\omega_8v_1\omega_{18} - 2\omega_9\omega_{12}\omega_{22}c_s^2\omega_{13}\omega_{20}\omega_{14}v_2^2\omega_8v_1\omega_5\omega_{18} - 2\omega_9\omega_{12}\omega_{22}c_s^2\omega_{13}\omega_{14}v_2^2v_1\omega_5\omega_{18}$

$C_{19} =$

$2\omega_9\omega_{12}\omega_6\omega_{22}v_3^2\omega_{20}v_2^2\omega_8\omega_5\omega_{18} - \omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}\omega_{14}v_2^2\omega_8\omega_5\omega_{18} - \omega_9\omega_{12}\omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5 - \omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{14}v_2^2\omega_8\omega_5\omega_{18} +$
$2\omega_9\omega_{12}\omega_6\omega_{22}v_3^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_8v_1\omega_{18} - 2\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5\omega_{18} - \omega_9\omega_{12}\omega_6\omega_{22}v_3^2\omega_{13}\omega_{20}\omega_{14}v_2^2\omega_8\omega_{18} - 2\omega_9\omega_{12}c_s^2v_3^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18} -$
$4\omega_9\omega_{12}\omega_6\omega_{22}v_3^2\omega_{13}\omega_{20}v_2\omega_8v_1\omega_{18} + 2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{20}v_2^2\omega_8\omega_5\omega_{18} + 2\omega_9\omega_{12}v_3^2\omega_{13}\omega_{20}\omega_{14}v_2^2\omega_8\omega_5\omega_{18} + 4\omega_9\omega_{12}\omega_{22}c_s^2\omega_{13}\omega_{20}v_2v_1\omega_5\omega_{18} +$
$2\omega_9\omega_{12}\omega_{22}c_s^2v_3^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18} + \omega_9\omega_{12}\omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_{14}\omega_8\omega_5 - 2\omega_9\omega_{12}\omega_{22}v_3^2\omega_{13}\omega_{20}\omega_{14}v_2^2\omega_8\omega_5\omega_{18} + 4\omega_9\omega_{12}c_s^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5 -$
$4\omega_9\omega_{12}\omega_{22}c_s^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5 - 2\omega_9\omega_{12}\omega_{22}v_3^2\omega_{13}\omega_{20}v_2^2\omega_5\omega_{18} - \omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}\omega_{14}v_2^2\omega_8\omega_{18} - 4\omega_9\omega_{12}\omega_{22}v_3^2\omega_{13}\omega_{20}v_2\omega_8v_1\omega_5\omega_{18} -$
$\omega_9\omega_{12}\omega_6\omega_{22}v_3^2\omega_{13}\omega_{14}v_2^2\omega_8\omega_5\omega_{18} - 4\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}v_2\omega_8v_1\omega_{18} + 2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_{20}\omega_8\omega_{18} - 4\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}v_2\omega_8v_1\omega_5\omega_{18} +$
$4\omega_9\omega_{12}\omega_{22}v_3^2\omega_{13}\omega_{20}v_2v_1\omega_5\omega_{18} - 2\omega_9\omega_{12}\omega_{22}c_s^2\omega_{13}\omega_{20}v_2^2\omega_5\omega_{18} - 2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}v_2^2\omega_{18} + 2\omega_9\omega_6\omega_{22}v_3^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5\omega_{18} +$
$\omega_{12}\omega_6v_3^2\omega_{13}\omega_{20}\omega_{14}v_2^2\omega_8\omega_5\omega_{18} + 2\omega_{12}\omega_6\omega_{22}c_s^2v_3^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18} + 4\omega_9\omega_{12}\omega_{22}v_3^2\omega_{20}v_2\omega_8v_1\omega_5\omega_{18} + 2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}v_2\omega_8v_1\omega_{18} -$
$\omega_{12}\omega_6\omega_{22}v_3^2\omega_{13}\omega_{20}\omega_{14}v_2^2\omega_8\omega_5\omega_{18} + 4\omega_{12}\omega_6\omega_{22}c_s^2\omega_{20}v_2\omega_8v_1\omega_5\omega_{18} - 2\omega_9\omega_{12}\omega_{22}v_3^2\omega_{13}\omega_{14}v_2^2\omega_8\omega_5 - 2\omega_9\omega_{12}\omega_6\omega_{22}v_3^2\omega_{13}\omega_{14}v_2\omega_8v_1\omega_5 +$
$2\omega_9\omega_{12}\omega_{22}c_s^2\omega_{20}\omega_{14}v_2^2\omega_8\omega_5\omega_{18} - 2\omega_9\omega_{12}\omega_{22}c_s^2\omega_{13}\omega_{20}\omega_{14}v_2^2\omega_8\omega_5\omega_{18} - 2\omega_9\omega_{12}c_s^2\omega_{20}\omega_{14}v_2^2\omega_8\omega_5\omega_{18} - \omega_9\omega_{12}\omega_6c_s^2v_3^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18} -$
$2\omega_9\omega_{12}\omega_{22}c_s^2\omega_{13}\omega_{14}v_2^2\omega_8\omega_5 + 2\omega_9\omega_{12}c_s^2\omega_{13}\omega_{20}\omega_{14}v_2^2\omega_8\omega_5\omega_{18} + 2\omega_{12}\omega_6\omega_{22}v_3^2\omega_{20}\omega_{14}v_2^2\omega_8\omega_5\omega_{18} - 4\omega_9\omega_{12}\omega_{22}v_3^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5 -$
$2\omega_{12}\omega_6\omega_{22}c_s^2v_3^2\omega_{20}\omega_8\omega_5\omega_{18} - 4\omega_9\omega_{12}\omega_{22}c_s^2\omega_{13}\omega_{20}v_2\omega_8v_1\omega_5\omega_{18} + 4\omega_9\omega_{12}\omega_{22}c_s^2\omega_{20}v_2\omega_8v_1\omega_5\omega_{18} + 4\omega_{12}\omega_6\omega_{22}v_3^2\omega_{20}v_2\omega_8v_1\omega_5\omega_{18} +$
$4\omega_9\omega_{12}v_3^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5 + \omega_9\omega_{12}\omega_6\omega_{22}v_3^2\omega_{13}\omega_{14}v_2^2\omega_8\omega_{18} - 2\omega_9\omega_{12}v_3^2\omega_{20}\omega_{14}v_2^2\omega_8\omega_5\omega_{18} + \omega_{12}\omega_6c_s^2\omega_{13}\omega_{20}\omega_{14}v_2^2\omega_8\omega_5\omega_{18} +$
$2\omega_9\omega_{12}\omega_{22}v_3^2\omega_{20}\omega_{14}v_2^2\omega_8\omega_5\omega_{18} - 2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{14}v_2\omega_8v_1\omega_5 + 2\omega_9\omega_{12}\omega_{22}c_s^2v_3^2\omega_{13}\omega_{20}\omega_{14}\omega_5\omega_{18} - 4\omega_{12}\omega_6\omega_{22}v_3^2\omega_{13}\omega_{20}v_2\omega_8v_1\omega_5\omega_{18} -$
$2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5\omega_{18} + 2\omega_{12}\omega_6\omega_{22}c_s^2\omega_{20}\omega_{14}v_2^2\omega_8\omega_5\omega_{18} + \omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{14}v_2^2\omega_8\omega_{18} + 2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}v_2^2\omega_5\omega_{18} +$
$\omega_9\omega_{12}\omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_{14}\omega_8\omega_{18} + 2\omega_9\omega_{12}\omega_{22}c_s^2v_3^2\omega_{13}\omega_{14}\omega_8\omega_5\omega_{18} - 2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{14}v_2^2\omega_{18} - 2\omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18} +$
$2\omega_9\omega_{12}\omega_6\omega_{22}v_3^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5 - 2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18} + 4\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}v_2\omega_8v_1\omega_5\omega_{18} -$
$\omega_9\omega_{12}\omega_6\omega_{22}v_3^2\omega_{13}\omega_{20}\omega_{14}v_2^2\omega_8\omega_5 - \omega_9\omega_{12}\omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_{18} + 2\omega_9\omega_{12}\omega_6\omega_{22}v_3^2\omega_{13}\omega_{20}v_2^2\omega_5\omega_{18} -$
$2\omega_6\omega_{22}v_3^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5\omega_{18} + \omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}\omega_{14}v_2^2\omega_8\omega_5\omega_{18} + \omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}\omega_{14}v_2^2\omega_8\omega_5\omega_{18} - 2\omega_9\omega_{12}\omega_{22}c_s^2v_3^2\omega_{13}\omega_{14}\omega_8\omega_5 +$
$4\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}v_2\omega_8v_1\omega_5\omega_{18} - 2\omega_9\omega_{12}\omega_{22}c_s^2\omega_{20}v_2^2\omega_8\omega_5\omega_{18} - 4\omega_9\omega_{12}\omega_6v_3^2\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5\omega_{18} + 2\omega_9\omega_{12}\omega_6c_s^2v_3^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18} +$
$2\omega_9\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5\omega_{18} - \omega_9\omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18} - \omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}\omega_{14}v_2^2\omega_8\omega_5 - 2\omega_9\omega_{12}\omega_{22}v_3^2\omega_{20}v_2^2\omega_8\omega_5\omega_{18} +$
$2\omega_9\omega_{12}\omega_{22}c_s^2v_3^2\omega_{13}\omega_{20}\omega_{14}v_2^2\omega_5\omega_{18} - 2\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}v_2^2\omega_8\omega_5\omega_{18} + 4\omega_9\omega_{12}\omega_{22}c_s^2\omega_{13}\omega_{14}v_2v_1\omega_5\omega_{18} + 4\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}v_2v_1\omega_{18} +$
$2\omega_9\omega_{12}\omega_6v_3^2\omega_{20}\omega_{14}v_2^2\omega_8\omega_5\omega_{18} - 2\omega_9\omega_{12}\omega_6\omega_{22}v_3^2\omega_{13}\omega_{14}v_2\omega_8v_1\omega_{18} - 2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}v_2^2\omega_8\omega_5\omega_{18} + \omega_6\omega_{22}v_3^2\omega_{13}\omega_{20}\omega_{14}v_2^2\omega_8\omega_5\omega_{18} +$
$2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5 + 4\omega_9\omega_{12}\omega_6\omega_{22}v_3^2\omega_{13}\omega_{20}v_2\omega_8v_1\omega_5\omega_{18} + 4\omega_9\omega_{12}\omega_6\omega_{22}v_3^2\omega_{13}\omega_{20}v_2v_1\omega_{18} +$
$4\omega_6\omega_{22}v_3^2\omega_{13}\omega_{20}v_2\omega_8v_1\omega_5\omega_{18} + \omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{14}v_2^2\omega_8\omega_5 + 2\omega_9\omega_{12}\omega_{22}v_3^2\omega_{13}\omega_{20}\omega_{14}v_2^2\omega_5\omega_{18} - 4\omega_9\omega_{12}\omega_6c_s^2\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5\omega_{18} -$
$2\omega_9\omega_{12}\omega_6\omega_{22}v_3^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5\omega_{18} + 4\omega_9\omega_{12}\omega_{22}v_3^2\omega_{13}\omega_{14}v_2v_1\omega_5\omega_{18} - 2\omega_6\omega_{22}v_3^2\omega_{13}\omega_{20}v_2^2\omega_8\omega_5\omega_{18} + 2\omega_9\omega_{12}\omega_6c_s^2\omega_{20}\omega_{14}v_2^2\omega_8\omega_5\omega_{18} -$
$2\omega_9\omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_{20}\omega_8\omega_{18} - 2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{14}v_2\omega_8v_1\omega_{18} + \omega_9\omega_{12}\omega_6\omega_{22}v_3^2\omega_{13}\omega_{20}\omega_{14}v_2^2\omega_8\omega_5\omega_{18} - 2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_{14}\omega_{18} +$
$\omega_9\omega_{12}\omega_6\omega_{22}v_3^2\omega_{13}\omega_{14}v_2^2\omega_8\omega_5 - 2\omega_9\omega_{12}\omega_6\omega_{22}v_3^2\omega_{13}\omega_{20}v_2^2\omega_8\omega_5\omega_{18} + 2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_{20}\omega_{14}\omega_{18} - 2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_{20}\omega_{14}\omega_5\omega_{18} +$
$2\omega_9\omega_{12}\omega_6\omega_{22}v_3^2\omega_{13}\omega_{20}v_2^2\omega_8\omega_{18} - 2\omega_{12}\omega_6c_s^2v_3^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18} + \omega_{12}\omega_6c_s^2v_3^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18} + 4\omega_9\omega_{12}\omega_{22}v_3^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5\omega_{18} +$
$4\omega_9\omega_{12}\omega_{22}c_s^2\omega_{13}\omega_{14}v_2\omega_8v_1\omega_5 - 2\omega_9\omega_{12}\omega_6\omega_{22}v_3^2\omega_{20}\omega_{14}v_2^2\omega_8\omega_5\omega_{18} + 2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}v_2^2\omega_8\omega_{18} - 2\omega_9\omega_{12}\omega_6v_3^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5 +$
$2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_{14}\omega_5\omega_{18} - 2\omega_9\omega_{12}\omega_{22}c_s^2v_3^2\omega_{13}\omega_{20}\omega_5\omega_{18} + 4\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}\omega_{14}v_2v_1\omega_5\omega_{18} - 4\omega_9\omega_{12}v_3^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5\omega_{18} -$

$4\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{20}v_2\omega_8v_1\omega_5\omega_{18} + \omega_9\omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_{18} + 2\omega_9\omega_{12}c_s^2v_3^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18} + 2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{14}v_2\omega_8v_1\omega_5\omega_{18} +$
$2\omega_9\omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18} - \omega_9\omega_{12}\omega_6c_s^2\omega_{13}\omega_{20}\omega_{14}v_2^2\omega_8\omega_5\omega_{18} - 2\omega_9\omega_{12}\omega_{22}c_s^2v_3^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18} - 2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{20}\omega_{14}v_2^2\omega_8\omega_5\omega_{18} +$
$4\omega_9\omega_{12}\omega_{22}v_3^2\omega_{13}\omega_{14}v_2\omega_8v_1\omega_5 - 2\omega_9\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}\omega_{14}v_2^2\omega_8\omega_5 + 4\omega_9\omega_{12}\omega_6\omega_{22}v_3^2\omega_{20}\omega_{14}v_2^2\omega_8\omega_5\omega_{18} - 2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}\omega_{14}v_2^2\omega_8\omega_5\omega_{18} +$
$2\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5\omega_{18} - 4\omega_9\omega_{12}\omega_6\omega_{22}v_3^2\omega_{20}v_2\omega_8v_1\omega_5\omega_{18} + 2\omega_9\omega_6\omega_{22}v_3^2\omega_{13}\omega_{20}v_2^2\omega_8\omega_5\omega_{18} - 2\omega_{12}\omega_6c_s^2\omega_{20}\omega_{14}v_2^2\omega_8\omega_5\omega_{18} -$
$2\omega_9\omega_{12}\omega_{22}v_3^2\omega_{13}\omega_{14}v_2^2\omega_5\omega_{18} - 4\omega_9\omega_{12}\omega_6\omega_{22}v_3^2\omega_{13}\omega_{20}v_2v_1\omega_5\omega_{18} - 2\omega_{12}\omega_6v_3^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5\omega_{18} +$
$4\omega_9\omega_{12}\omega_6\omega_{22}v_3^2\omega_{13}\omega_{20}\omega_{14}v_2v_1\omega_5\omega_{18} + \omega_9\omega_{12}\omega_6v_3^2\omega_{13}\omega_{20}\omega_{14}v_2^2\omega_8\omega_5 - 2\omega_9\omega_{12}\omega_{22}c_s^2\omega_{13}\omega_{14}v_2^2\omega_5\omega_{18} + 2\omega_9\omega_{12}\omega_{22}v_3^2\omega_{13}\omega_{14}v_2^2\omega_8\omega_5\omega_{18} -$
$2\omega_9\omega_{12}\omega_6c_s^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5 + 2\omega_9\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}v_2^2\omega_8\omega_5\omega_{18} - 2\omega_{12}\omega_6v_3^2\omega_{20}\omega_{14}v_2^2\omega_8\omega_5\omega_{18} + 4\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5\omega_{18} -$
$2\omega_9\omega_6\omega_{22}v_3^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_8v_1\omega_{18} + 2\omega_9\omega_{12}\omega_6\omega_{22}v_3^2\omega_{13}\omega_{14}v_2\omega_8v_1\omega_5\omega_{18} - \omega_9\omega_{12}\omega_6v_3^2\omega_{13}\omega_{20}\omega_{14}v_2^2\omega_8\omega_5\omega_{18} -$
$2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2v_3^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18} - 4\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}v_2v_1\omega_5\omega_{18} + 2\omega_9\omega_{12}\omega_{22}c_s^2v_3^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5 + 2\omega_9\omega_{12}\omega_{22}c_s^2\omega_{13}\omega_{14}v_2^2\omega_8\omega_5\omega_{18} -$
$2\omega_9\omega_{12}\omega_{22}c_s^2v_3^2\omega_{20}\omega_8\omega_5\omega_{18} - 2\omega_9\omega_{12}c_s^2v_3^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5 + \omega_9\omega_{12}\omega_6c_s^2\omega_{13}\omega_{20}\omega_{14}v_2^2\omega_8\omega_5 - \omega_{12}\omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18} +$
$2\omega_9\omega_{12}\omega_6c_s^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5\omega_{18} + 2\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}v_2^2\omega_8\omega_5\omega_{18} - 2\omega_9\omega_{12}\omega_6\omega_{22}v_3^2\omega_{13}\omega_{14}v_2^2\omega_{18} + 4\omega_9\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}v_2\omega_8v_1\omega_{18} -$
$\omega_9\omega_6\omega_{22}v_3^2\omega_{13}\omega_{20}\omega_{14}v_2^2\omega_8\omega_5\omega_{18} + 2\omega_9\omega_{12}\omega_{22}v_3^2\omega_{13}\omega_{20}v_2^2\omega_8\omega_5\omega_{18} - 4\omega_{12}\omega_6\omega_{22}v_3^2\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5\omega_{18} -$
$4\omega_9\omega_{12}c_s^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5\omega_{18} - 4\omega_9\omega_{12}\omega_6\omega_{22}v_3^2\omega_{13}\omega_{14}v_2v_1\omega_5\omega_{18} - 4\omega_9\omega_{12}\omega_{22}c_s^2\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5\omega_{18} +$
$4\omega_9\omega_{12}\omega_{22}c_s^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5\omega_{18} - 2\omega_9\omega_{12}\omega_6\omega_{22}v_3^2\omega_{13}\omega_{20}\omega_{14}v_2^2\omega_5\omega_{18} - 4\omega_9\omega_{12}\omega_{22}v_3^2\omega_{13}\omega_{14}v_2\omega_8v_1\omega_5\omega_{18} +$
$4\omega_9\omega_{12}c_s^2\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5\omega_{18} + \omega_9\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}\omega_{14}v_2^2\omega_8\omega_{18} + 4\omega_9\omega_6\omega_{22}v_3^2\omega_{13}\omega_{20}v_2\omega_8v_1\omega_{18} + 4\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{14}v_2v_1\omega_{18} -$
$4\omega_9\omega_{12}\omega_{22}v_3^2\omega_{13}\omega_{20}\omega_{14}v_2v_1\omega_5\omega_{18} + 2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_{20}\omega_5\omega_{18} + 2\omega_{12}\omega_6\omega_{22}v_3^2\omega_{13}\omega_{20}v_2^2\omega_8\omega_5\omega_{18} + 2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}\omega_{14}v_2^2\omega_{18} +$
$2\omega_9\omega_{12}\omega_{22}c_s^2\omega_{13}\omega_{20}v_2^2\omega_8\omega_5\omega_{18} - 2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_{20}\omega_{18} + 2\omega_{12}\omega_6\omega_{22}v_3^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5\omega_{18} - 2\omega_{12}\omega_6\omega_{22}v_3^2\omega_{20}v_2^2\omega_8\omega_5\omega_{18} -$
$2\omega_9\omega_{12}\omega_{22}c_s^2v_3^2\omega_{13}\omega_{14}\omega_5\omega_{18} - 4\omega_9\omega_6\omega_{22}v_3^2\omega_{13}\omega_{20}v_2\omega_8v_1\omega_5\omega_{18} + 4\omega_9\omega_{12}\omega_6\omega_{22}v_3^2\omega_{13}\omega_{14}v_2v_1\omega_{18} - 4\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{14}v_2v_1\omega_5\omega_{18} +$
$2\omega_9\omega_{12}\omega_6\omega_{22}v_3^2\omega_{13}\omega_{20}\omega_{14}v_2^2\omega_{18} + 4\omega_{12}\omega_6c_s^2\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5\omega_{18} + \omega_9\omega_6\omega_{22}v_3^2\omega_{13}\omega_{20}\omega_{14}v_2^2\omega_8\omega_{18} - 2\omega_{12}\omega_6\omega_{22}c_s^2\omega_{20}v_2^2\omega_8\omega_5\omega_{18} -$
$2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}\omega_{14}v_2^2\omega_5\omega_{18} + 2\omega_{12}\omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18} - 4\omega_{12}\omega_6\omega_{22}c_s^2\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5\omega_{18} + 2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2v_3^2\omega_{20}\omega_8\omega_5\omega_{18} +$
$\omega_9\omega_{12}\omega_6c_s^2v_3^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5 - 2\omega_9\omega_{12}c_s^2\omega_{13}\omega_{20}\omega_{14}v_2^2\omega_8\omega_5 - 2\omega_9\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}v_2^2\omega_8\omega_{18} - \omega_9\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}\omega_{14}v_2^2\omega_8\omega_5\omega_{18} +$
$2\omega_9\omega_{12}\omega_{22}c_s^2\omega_{13}\omega_{20}\omega_{14}v_2^2\omega_8\omega_5 - 4\omega_9\omega_{12}\omega_6\omega_{22}v_3^2\omega_{13}\omega_{20}\omega_{14}v_2v_1\omega_{18} + 4\omega_9\omega_{12}v_3^2\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5\omega_{18} - 4\omega_9\omega_{12}\omega_{22}c_s^2\omega_{13}\omega_{14}v_2\omega_8v_1\omega_5\omega_{18} -$
$2\omega_9\omega_6\omega_{22}v_3^2\omega_{13}\omega_{20}v_2^2\omega_8\omega_{18} + \omega_9\omega_{12}\omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18} - 4\omega_9\omega_{12}\omega_{22}v_3^2\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5\omega_{18} - 2\omega_{12}\omega_6c_s^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5\omega_{18} +$
$\omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18} + 2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{14}v_2^2\omega_5\omega_{18} - 4\omega_9\omega_{12}\omega_{22}c_s^2\omega_{13}\omega_{20}\omega_{14}v_2v_1\omega_5\omega_{18} + 2\omega_9\omega_{12}\omega_{22}c_s^2v_3^2\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18} +$
$2\omega_9\omega_{12}\omega_{22}v_3^2\omega_{13}\omega_{20}\omega_{14}v_2^2\omega_8\omega_5 + 2\omega_9\omega_{12}\omega_6v_3^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5\omega_{18} - 2\omega_9\omega_{12}v_3^2\omega_{13}\omega_{20}\omega_{14}v_2^2\omega_8\omega_5 - 4\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}\omega_{14}v_2v_1\omega_{18} -$
$4\omega_9\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}v_2\omega_8v_1\omega_5\omega_{18} + 2\omega_9\omega_{12}\omega_6\omega_{22}v_3^2\omega_{13}\omega_{14}v_2^2\omega_5\omega_{18} + 4\omega_{12}\omega_6v_3^2\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5\omega_{18} - \omega_9\omega_{12}\omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_{14}\omega_8\omega_5\omega_{18}$

$C_{20} = 12\omega_9\omega_{12}\omega_6^2\omega_{22}v_3^2\omega_{13}\omega_7\omega_{20}v_1^2\omega_5^2\omega_{18} + 24\omega_9\omega_{12}\omega_6^2c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5^2\omega_{18} + 12\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_5^2\omega_{18} +$
$24\omega_9\omega_{12}\omega_6^3c_s^2\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5^2\omega_{18} + 12\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7\omega_{14}\omega_5^2\omega_{18} + 6\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_3^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_{18} +$
$12\omega_9\omega_{12}\omega_6^2c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2 + 12\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_3^2\omega_{13}\omega_7\omega_{14}\omega_5\omega_{18} - 12\omega_9\omega_6^3\omega_{22}c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_8\omega_5^2\omega_{18} +$
$12\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_5^2\omega_{18} + 6\omega_9\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2\omega_{18} - 12\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_5^2\omega_{18} -$
$6\omega_6^3\omega_{22}c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18} - 24\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_7\omega_{14}v_2\omega_8v_1\omega_5^2 + 12\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7\omega_{20}\omega_8v_1^2\omega_5^2\omega_{18} -$
$24\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_2v_1\omega_5^2\omega_{18} - 18\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18} + 24\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7\omega_{14}v_2v_1\omega_5^2\omega_{18} +$
$12\omega_9\omega_{12}\omega_6^3\omega_{22}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_1^2\omega_5^2\omega_{18} - 24\omega_9\omega_6^3\omega_{22}v_3^2\omega_{13}\omega_7\omega_{20}v_2\omega_8v_1\omega_5\omega_{18} + 12\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5^2\omega_{18} -$
$6\omega_6^3\omega_{22}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2\omega_{18} - 12\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7\omega_{14}v_2\omega_8v_1\omega_5^2\omega_{18} - 12\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5^2\omega_{18} -$
$24\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_7\omega_{20}v_2v_1\omega_5^2\omega_{18} + 12\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7\omega_{20}\omega_8v_1^2\omega_5^2\omega_{18} + 12\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_7\omega_{20}v_1^2\omega_5^2\omega_{18} +$
$24\omega_{12}\omega_6^3\omega_{22}v_3^2\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5^2\omega_{18} + 6\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2 - 6\omega_9\omega_{12}\omega_6^3c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2 +$
$24\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5^2\omega_{18} + 24\omega_9\omega_{12}\omega_6^3\omega_{22}v_3^2\omega_7\omega_{20}v_2\omega_8v_1\omega_5^2\omega_{18} - 12\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2 -$
$24\omega_{12}\omega_6^3v_3^2\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5^2\omega_{18} - 12\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7\omega_{14}v_1^2\omega_5^2\omega_{18} - 12\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^4\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18} +$
$24\omega_{12}\omega_6^3\omega_{22}v_3^2\omega_{13}\omega_7\omega_{20}v_2\omega_8v_1\omega_5^2\omega_{18} + 12\omega_9\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5\omega_{18} + 12\omega_9\omega_{12}\omega_6^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2 +$
$6\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_{18} + 24\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_7\omega_{20}v_2\omega_8v_1\omega_5^2\omega_{18} + 24\omega_9\omega_{12}\omega_6^3\omega_{22}v_3^2\omega_{13}\omega_7\omega_{14}v_2v_1\omega_5^2\omega_{18} +$
$12\omega_9\omega_{12}\omega_6^3\omega_{22}v_3^2\omega_{13}\omega_7\omega_{20}\omega_8v_1^2\omega_5^2\omega_{18} + 12\omega_{12}\omega_6^3c_s^2v_3^2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18} - 6\omega_9\omega_{12}\omega_6^3\omega_{22}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2\omega_{18} +$
$24\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7\omega_{20}v_2\omega_8v_1\omega_5\omega_{18} - 24\omega_9\omega_{12}\omega_6^2\omega_{22}v_3^2\omega_{13}\omega_7\omega_{14}v_2\omega_8v_1\omega_5^2 - 6\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18} -$
$12\omega_9\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18} - 18\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18} - 12\omega_9\omega_{12}\omega_6^3\omega_{22}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5^2 -$
$24\omega_9\omega_{12}\omega_6^2\omega_{22}v_3^2\omega_{13}\omega_7\omega_{20}v_2v_1\omega_5^2\omega_{18} - 12\omega_9\omega_{12}\omega_6^2\omega_{22}v_3^2\omega_{13}\omega_7\omega_{14}\omega_8v_1^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{22}v_3^2\omega_{13}\omega_7\omega_{20}\omega_8v_1^2\omega_5^2\omega_{18} +$
$12\omega_9\omega_{12}\omega_6^2c_s^2v_3^2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18} - 24\omega_9\omega_{12}\omega_6^2v_3^2\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5^2\omega_{18} + 12\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_{18} +$
$24\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_7\omega_{20}\omega_{14}\omega_8v_1\omega_5^2\omega_{18} + 6\omega_9\omega_6^3\omega_{22}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2\omega_{18} - 12\omega_{12}\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18} +$
$12\omega_{12}\omega_6^3c_s^2\omega_7\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2\omega_{18} - 6\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7\omega_{14}\omega_8v_1^2\omega_5^2 + 12\omega_{12}\omega_6^3c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5^2\omega_{18} +$
$6\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18} - 24\omega_9\omega_{12}\omega_6^2\omega_{22}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5^2\omega_{18} - 12\omega_9\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7\omega_{20}\omega_8\omega_5\omega_{18} -$
$24\omega_9\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7\omega_{20}v_2\omega_8v_1\omega_5\omega_{18} + 6\omega_9\omega_{12}\omega_6^3\omega_{22}v_3^2\omega_{13}\omega_7\omega_{14}\omega_8v_1^2\omega_5^2\omega_{18} - 24\omega_9\omega_{12}\omega_6^3\omega_{22}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_2v_1\omega_5^2\omega_{18} +$
$24\omega_9\omega_{12}\omega_6^3\omega_{22}v_3^2\omega_{13}\omega_7\omega_{20}v_2v_1\omega_5^2\omega_{18} + 12\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_3^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2 + 24\omega_9\omega_{12}\omega_6^3v_3^2\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5^2\omega_{18} -$
$24\omega_{12}\omega_6^3\omega_{22}v_3^2\omega_7\omega_{20}v_2\omega_8v_1\omega_5^2\omega_{18} + 12\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7\omega_{20}v_1^2\omega_5\omega_{18} - 24\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_7\omega_{20}v_2\omega_8v_1\omega_5^2\omega_{18} -$
$18\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18} - 6\omega_9\omega_{12}\omega_6^3\omega_{22}v_3^2\omega_{13}\omega_7\omega_{14}\omega_8v_1^2\omega_5^2 + 24\omega_9\omega_{12}\omega_6^2\omega_{22}v_3^2\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5^2\omega_{18} -$
$24\omega_{12}\omega_6^3c_s^2\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5^2\omega_{18} + 12\omega_9\omega_{12}\omega_6^2c_s^2\omega_7\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2\omega_{18} - 12\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5^2\omega_{18} -$
$12\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_8\omega_5\omega_{18} - 12\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_3^2\omega_7\omega_{20}\omega_8\omega_5^2\omega_{18} - 12\omega_9\omega_6^3\omega_{22}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5^2\omega_{18} +$
$12\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_5\omega_{18} - 12\omega_9\omega_{12}\omega_6^3\omega_{22}v_3^2\omega_{13}\omega_7\omega_{14}v_2\omega_8v_1\omega_5^2\omega_{18} - 6\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2\omega_{18} +$
$12\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_3^2\omega_{13}\omega_7\omega_{14}\omega_5^2\omega_{18} + 24\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5^2\omega_{18} - 12\omega_9\omega_{12}\omega_6^2\omega_{22}v_3^2\omega_{13}\omega_7\omega_{20}\omega_8v_1^2\omega_5^2\omega_{18} +$
$6\omega_9\omega_6^3\omega_{22}c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18} - 24\omega_9\omega_{12}\omega_6^2\omega_{22}v_3^2\omega_{13}\omega_7\omega_{14}v_2v_1\omega_5^2\omega_{18} + 12\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_5\omega_{18} +$
$12\omega_9\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7\omega_{20}\omega_8v_1^2\omega_5\omega_{18} + 12\omega_9\omega_{12}\omega_6^3\omega_{22}v_3^2\omega_{13}\omega_7\omega_{14}v_2\omega_8v_1\omega_5^2 - 12\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7\omega_{20}\omega_8v_1^2\omega_5^2\omega_{18} +$
$12\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7\omega_{20}\omega_5^2\omega_{18} + 12\omega_9\omega_{12}\omega_6^3\omega_{22}v_3^2\omega_{13}\omega_7\omega_{20}v_1^2\omega_5\omega_{18} - 12\omega_9\omega_{12}\omega_6^3\omega_{22}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_1^2\omega_5\omega_{18} +$
$24\omega_9\omega_{12}\omega_6^2\omega_{22}v_3^2\omega_{13}\omega_7\omega_{20}v_2\omega_8v_1\omega_5^2\omega_{18} - 6\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2\omega_{18} + 24\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7\omega_{20}v_2v_1\omega_5^2\omega_{18} +$
$6\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7\omega_{14}\omega_8v_1^2\omega_5^2\omega_{18} - 12\omega_{12}\omega_6^3\omega_{22}c_s^4\omega_7\omega_{20}\omega_8\omega_5^2\omega_{18} + 12\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5^2\omega_{18} -$
$12\omega_9\omega_{12}\omega_6^3\omega_{22}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5\omega_{18} + 24\omega_9\omega_{12}\omega_6^3\omega_{22}v_3^2\omega_{13}\omega_7\omega_{20}v_2\omega_8v_1\omega_5\omega_{18} - 12\omega_9\omega_{12}\omega_6^3\omega_{22}v_3^2\omega_7\omega_{20}\omega_8v_1^2\omega_5^2\omega_{18} +$
$12\omega_{12}\omega_6^3v_3^2\omega_7\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2\omega_{18} + 6\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2 - 24\omega_9\omega_{12}\omega_6^2\omega_{22}v_3^2\omega_7\omega_{20}v_2\omega_8v_1\omega_5^2\omega_{18} +$

$12\omega_9\omega_{12}\omega_6\omega_{22}c_s^4\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18} + 24\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7\omega_{20}v_2\omega_8v_1\omega_5^2\omega_{18} + 12\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5 -$
$12\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^4\omega_7\omega_{20}\omega_8\omega_5^2\omega_{18} - 24\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_7\omega_{20}v_2\omega_8v_1\omega_5^2\omega_{18} - 12\omega_9\omega_{12}\omega_6^3v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5^2\omega_{18} -$
$24\omega_9\omega_{12}\omega_6^2c_s^2\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5^2\omega_{18} - 12\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_7\omega_{20}\omega_8v_1^2\omega_5^2\omega_{18} - 12\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_3^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_{18} +$
$12\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_{18} + 12\omega_9\omega_{12}\omega_6^2v_3^2\omega_7\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2\omega_{18} - 12\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7\omega_{20}\omega_8\omega_5^2\omega_{18} -$
$12\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7\omega_{20}\omega_8\omega_5^2\omega_{18} + 12\omega_9\omega_6^3\omega_{22}v_3^2\omega_{13}\omega_7\omega_{20}\omega_8v_1^2\omega_5\omega_{18} - 12\omega_{12}\omega_6^3\omega_{22}v_3^2\omega_{13}\omega_7\omega_{20}\omega_8v_1^2\omega_5^2\omega_{18} +$
$12\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7\omega_{14}v_2\omega_8v_1\omega_5^2 - 12\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5^2 - 12\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_1^2\omega_5\omega_{18} +$
$12\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_5^2\omega_{18} + 12\omega_9\omega_{12}\omega_6\omega_{22}c_s^4\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18} - 24\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_7\omega_{14}v_2v_1\omega_5^2\omega_{18} -$
$12\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_7\omega_{20}\omega_8v_1^2\omega_5^2\omega_{18} + 12\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2\omega_{18} - 12\omega_9\omega_{12}\omega_6^3c_s^2v_3^2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18} -$
$12\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_7\omega_{20}\omega_5^2\omega_{18} - 6\omega_{12}\omega_6^3v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2\omega_{18} + 12\omega_9\omega_{12}\omega_6^3c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5^2 +$
$12\omega_9\omega_{12}\omega_6^3\omega_{22}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5^2\omega_{18} - 24\omega_9\omega_{12}\omega_6^3\omega_{22}v_3^2\omega_{13}\omega_7\omega_{20}v_2\omega_8v_1\omega_5^2\omega_{18} - 24\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7\omega_{20}v_2v_1\omega_5\omega_{18} +$
$6\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1^2\omega_5\omega_{18} - 6\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7\omega_{14}\omega_8v_1^2\omega_5\omega_{18} + 6\omega_{12}\omega_6^3\omega_{22}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2\omega_{18} +$
$24\omega_9\omega_{12}\omega_6\omega_{22}c_s^4\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18} - 12\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_3^2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18} + 6\omega_{12}\omega_6^3\omega_{22}c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18} +$
$24\omega_9\omega_{12}\omega_6^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5^2\omega_{18} - 12\omega_9\omega_{12}\omega_6^2\omega_{22}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2 + 12\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_7\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2\omega_{18} -$
$6\omega_{12}\omega_6^3c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18} + 24\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5^2 + 6\omega_9\omega_{12}\omega_6^3c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2\omega_{18} -$
$6\omega_9\omega_{12}\omega_6^3v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2 + 12\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_1^2\omega_5^2\omega_{18} - 6\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_{18} -$
$12\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_5\omega_{18} + 12\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7\omega_{20}\omega_8\omega_5\omega_{18} - 12\omega_9\omega_6^3\omega_{22}v_3^2\omega_{13}\omega_7\omega_{20}\omega_8v_1^2\omega_5^2\omega_{18} +$
$24\omega_9\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7\omega_{20}v_2\omega_8v_1\omega_5^2\omega_{18} - 6\omega_9\omega_{12}\omega_6^3\omega_{22}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2\omega_{18} - 24\omega_9\omega_{12}\omega_6^3\omega_{22}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_2v_1\omega_5\omega_{18} +$
$24\omega_9\omega_{12}\omega_6^3\omega_{22}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_2v_1\omega_5^2\omega_{18} + 12\omega_9\omega_{12}\omega_6^2\omega_{22}v_3^2\omega_{13}\omega_7\omega_{14}\omega_8v_1^2\omega_5^2\omega_{18} - \omega_9\omega_{12}\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18} -$
$6\omega_9\omega_6^3\omega_{22}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1^2\omega_5\omega_{18} - 12\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7\omega_{20}v_1^2\omega_5^2\omega_{18} + 12\omega_9\omega_{12}\omega_6^2c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2 -$
$12\omega_{12}\omega_6^3\omega_{22}c_s^2v_3^2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18} + 12\omega_6^3\omega_{22}c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_8\omega_5^2\omega_{18} + 12\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^4\omega_7\omega_{20}\omega_8\omega_5^2\omega_{18} +$
$12\omega_9\omega_6^3\omega_{22}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5\omega_{18} - 12\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_5^2\omega_{18} + 12\omega_9\omega_{12}\omega_6^3\omega_{22}v_3^2\omega_{13}\omega_7\omega_{20}\omega_8v_1^2\omega_5^2\omega_{18} +$
$12\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_5^2\omega_{18} - 24\omega_9\omega_{12}\omega_6^2\omega_{22}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5^2 +$
$12\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_3^2\omega_{13}\omega_7\omega_{14}v_1^2\omega_5^2\omega_{18} - 12\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7\omega_{20}\omega_5\omega_{18} - 24\omega_6^3\omega_{22}v_3^2\omega_{13}\omega_7\omega_{20}v_2\omega_8v_1\omega_5^2\omega_{18} -$
$12\omega_9\omega_{12}\omega_6^2c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18} + 12\omega_9\omega_{12}\omega_6^3\omega_{22}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_1^2\omega_5^2\omega_{18} - 12\omega_9\omega_{12}\omega_6^3\omega_{22}v_3^2\omega_{13}\omega_7\omega_{20}v_1^2\omega_5^2\omega_{18} -$
$12\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_5^2\omega_{18} - 12\omega_9\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7\omega_{20}\omega_8v_1^2\omega_5^2\omega_{18} - 24\omega_9\omega_{12}\omega_6^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5^2 +$
$24\omega_9\omega_{12}\omega_6^2\omega_{22}v_3^2\omega_{13}\omega_7\omega_{14}v_2\omega_8v_1\omega_5^2\omega_{18} + 12\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1\omega_5^2\omega_{18} - 6\omega_9\omega_{12}\omega_6^3c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2\omega_{18} -$
$6\omega_{12}\omega_6^3c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2 - 12\omega_{12}\omega_6^3\omega_{22}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5^2\omega_{18} + 12\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_7\omega_{20}\omega_8\omega_5^2\omega_{18} +$
$6\omega_{12}\omega_6^3c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2\omega_{18} + 6\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2 - 12\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_8\omega_5^2\omega_{18} -$
$12\omega_9\omega_{12}\omega_6^2\omega_{22}v_3^2\omega_7\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2\omega_{18} - 12\omega_9\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5^2\omega_{18} - 12\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_7\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2\omega_{18} -$
$12\omega_9\omega_{12}\omega_6^2\omega_{22}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_1^2\omega_5^2\omega_{18} + 6\omega_9\omega_{12}\omega_6^3c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18} + 12\omega_9\omega_{12}\omega_6^2\omega_{22}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2\omega_{18} -$
$12\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2 - 24\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7\omega_{20}v_2\omega_8v_1\omega_5^2\omega_{18} + 12\omega_9\omega_{12}\omega_6^3v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5^2 -$
$6\omega_{12}\omega_6^3c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2\omega_{18} + 12\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_7\omega_{20}\omega_8v_1^2\omega_5^2\omega_{18} - 24\omega_9\omega_{12}\omega_6^3\omega_{22}v_3^2\omega_{13}\omega_7\omega_{14}v_2v_1\omega_5\omega_{18} +$
$6\omega_9\omega_{12}\omega_6^3\omega_{22}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1^2\omega_5\omega_{18} - 12\omega_9\omega_{12}\omega_6^3\omega_{22}v_3^2\omega_{13}\omega_7\omega_{20}\omega_8v_1^2\omega_5\omega_{18} - 12\omega_9\omega_{12}\omega_6^3v_3^2\omega_7\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2\omega_{18} +$
$12\omega_{12}\omega_6^3\omega_{22}v_3^2\omega_7\omega_{20}\omega_8v_1^2\omega_5^2\omega_{18} - 6\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_{18} + 12\omega_{12}\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7\omega_{20}\omega_8\omega_5^2\omega_{18} +$
$12\omega_{12}\omega_6^3v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5^2\omega_{18} + 24\omega_9\omega_{12}\omega_6^2\omega_{22}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5^2 + 12\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18} -$
$6\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5 + 6\omega_9\omega_{12}\omega_6^3v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2\omega_{18} + 12\omega_9\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18} -$
$2\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18} + 6\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18} - 24\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5^2\omega_{18} -$
$12\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_7\omega_{14}\omega_5^2\omega_{18} + 12\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_7\omega_{20}\omega_8v_1^2\omega_5^2\omega_{18} + 12\omega_9\omega_{12}\omega_6^2\omega_{22}v_3^2\omega_7\omega_{20}\omega_8v_1^2\omega_5^2\omega_{18} +$
$12\omega_9\omega_6^3\omega_{22}c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_8\omega_5\omega_{18} - 12\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_3^2\omega_{13}\omega_7\omega_{14}\omega_5^2\omega_{18} - 12\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7\omega_{14}\omega_5\omega_{18} -$
$12\omega_9\omega_{12}\omega_6^3c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5^2\omega_{18} - 12\omega_{12}\omega_6^3\omega_{22}c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_8\omega_5^2\omega_{18} - 12\omega_{12}\omega_6^3\omega_{22}v_3^2\omega_7\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2\omega_{18} -$
$6\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_3^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_{18} + 12\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18} - 12\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_7\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2\omega_{18} +$
$6\omega_9\omega_{12}\omega_6^3\omega_{22}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2 + 24\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_2v_1\omega_5\omega_{18} - 12\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7\omega_{20}\omega_8v_1^2\omega_5\omega_{18} -$
$24\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7\omega_{14}v_2v_1\omega_5\omega_{18} + 10\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18} + 12\omega_9\omega_{12}\omega_6^3\omega_{22}v_3^2\omega_{13}\omega_7\omega_{14}v_1^2\omega_5\omega_{18} +$
$24\omega_9\omega_6^3\omega_{22}v_3^2\omega_{13}\omega_7\omega_{20}v_2\omega_8v_1\omega_5^2\omega_{18} + 12\omega_9\omega_{12}\omega_6^2\omega_{22}v_3^2\omega_{13}\omega_7\omega_{14}\omega_8v_1^2\omega_5^2 - 12\omega_9\omega_{12}\omega_6^3c_s^2\omega_7\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2\omega_{18} -$
$12\omega_9\omega_{12}\omega_6^2c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2\omega_{18} - 12\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_1^2\omega_5^2\omega_{18} + 12\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2v_3^2\omega_7\omega_{20}\omega_8\omega_5^2\omega_{18} +$
$24\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_2v_1\omega_5^2\omega_{18} - 6\omega_9\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1^2\omega_5\omega_{18} - 24\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7\omega_{20}v_2\omega_8v_1\omega_5^2\omega_{18} -$
$6\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_3^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2 + 24\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_7\omega_{14}v_2\omega_8v_1\omega_5^2\omega_{18} - 24\omega_9\omega_{12}\omega_6^2c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5^2 +$
$12\omega_{12}\omega_6^3\omega_{22}c_s^4\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18} - 24\omega_9\omega_{12}\omega_{22}c_s^4\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18} - 12\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5\omega_{18} +$
$12\omega_6^3\omega_{22}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5^2\omega_{18} + 12\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7\omega_{14}v_2\omega_8v_1\omega_5\omega_{18} + 12\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7\omega_{14}v_1^2\omega_5\omega_{18} -$
$24\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5^2\omega_{18} + 12\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_7\omega_{14}\omega_8v_1^2\omega_5^2 + 12\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^4\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18} +$
$12\omega_{12}\omega_6^3\omega_{22}c_s^2v_3^2\omega_7\omega_{20}\omega_8\omega_5^2\omega_{18} + 12\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2v_3^2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}$

$C_{21} = \omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{14}\omega_8v_1\omega_{18} + 2\omega_9\omega_{12}\omega_{22}\omega_{20}\omega_{14}v_2^2\omega_8v_1\omega_5\omega_{18} - 2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}v_2v_1^2\omega_{18} + 2\omega_9\omega_{12}\omega_{22}\omega_{20}v_2\omega_8v_1^2\omega_5\omega_{18} -$
$2\omega_9\omega_{12}\omega_{20}\omega_{14}v_2^2\omega_8v_1\omega_5\omega_{18} - 2\omega_9\omega_{12}\omega_{22}\omega_{13}\omega_{14}v_2^2v_1\omega_5\omega_{18} - \omega_9\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_8\omega_{18} - 2\omega_9\omega_{12}\omega_{22}\omega_{13}\omega_{20}v_2\omega_8v_1^2\omega_5\omega_{18} +$
$2\omega_9\omega_{12}\omega_{13}\omega_{20}\omega_{14}v_2\omega_8v_1^2\omega_5 - 2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{14}v_2v_1^2\omega_5\omega_{18} + \omega_9\omega_{12}\omega_6c_s^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_8\omega_5\omega_{18} - 2\omega_9\omega_{12}\omega_{22}\omega_{13}\omega_{20}\omega_{14}v_2\omega_8v_1^2\omega_5 +$
$2\omega_9\omega_{12}\omega_{13}\omega_{20}\omega_{14}v_2^2\omega_8v_1\omega_5\omega_{18} + 2\omega_9\omega_{12}\omega_6c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5\omega_{18} + 2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{20}\omega_{14}v_2\omega_8\omega_5\omega_{18} -$
$2\omega_9\omega_{12}\omega_{22}\omega_{13}\omega_{20}\omega_{14}v_2^2\omega_8v_1\omega_5\omega_{18} - 2\omega_9\omega_{12}\omega_{22}c_s^2\omega_{13}\omega_{14}\omega_8v_1\omega_5 - 2\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{20}v_2\omega_8v_1^2\omega_5\omega_{18} - 2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{14}v_2^2v_1\omega_{18} +$
$2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_5\omega_{18} + 2\omega_{12}\omega_6\omega_{22}\omega_{20}\omega_{14}v_2^2\omega_8v_1\omega_5\omega_{18} - 2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}\omega_8v_1\omega_5\omega_{18} +$
$2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}v_1\omega_5\omega_{18} - 2\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}\omega_8v_1\omega_5\omega_{18} + \omega_{12}\omega_6\omega_{13}\omega_{20}\omega_{14}v_2^2\omega_8v_1\omega_5\omega_{18} + 2\omega_9\omega_{12}\omega_{22}\omega_{13}\omega_{14}v_2^2\omega_8v_1\omega_5\omega_{18} -$
$2\omega_9\omega_{12}\omega_{22}c_s^2\omega_{13}\omega_{14}v_2\omega_8\omega_5\omega_{18} - \omega_9\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}v_2\omega_8v_1^2\omega_{18} - \omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}v_2^2\omega_8v_1\omega_5\omega_{18} - 2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}v_2^2v_1\omega_5\omega_{18} +$
$2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}v_2^2v_1\omega_{18} + \omega_9\omega_{12}\omega_6\omega_{13}\omega_{20}\omega_{14}v_2^2\omega_8v_1\omega_5 + 2\omega_9\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}v_2\omega_8\omega_{18} + 2\omega_9\omega_{12}c_s^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_8\omega_5 -$
$\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}\omega_{14}\omega_8v_1\omega_{18} - 2\omega_9\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}v_2\omega_8\omega_5\omega_{18} - 2\omega_9\omega_{12}\omega_{22}c_s^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_8\omega_5 - 2\omega_9\omega_{12}\omega_{22}c_s^2\omega_{20}\omega_8v_1\omega_5\omega_{18} +$
$\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}\omega_{14}\omega_8v_1\omega_5\omega_{18} + 2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{20}\omega_{14}v_2^2v_1\omega_5\omega_{18} - 2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}\omega_8v_1\omega_5\omega_{18} +$

$2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{14}v_2\omega_5\omega_{18} + 2\omega_{12}\omega_6c_s^2\omega_{20}\omega_{14}v_2\omega_8\omega_5\omega_{18} + 2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{14}v_2v_1^2\omega_{18} + 2\omega_9\omega_{12}\omega_{22}c_s^2\omega_{13}\omega_{20}\omega_{14}v_1\omega_5\omega_{18} +$
$2\omega_9\omega_{12}\omega_{22}\omega_{13}\omega_{20}v_2v_1^2\omega_5\omega_{18} + \omega_9\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}v_2\omega_8v_1^2\omega_5\omega_{18} + 2\omega_{12}\omega_6\omega_{22}c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5\omega_{18} + 2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{20}\omega_{14}v_2\omega_8v_1^2\omega_5\omega_{18} -$
$2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}v_2\omega_8\omega_{18} + \omega_{12}\omega_6c_s^2\omega_{13}\omega_{20}\omega_{14}\omega_8v_1\omega_5\omega_{18} - 2\omega_9\omega_{12}\omega_{22}c_s^2\omega_{13}\omega_{20}v_1\omega_5\omega_{18} + 2\omega_{12}\omega_6\omega_{22}c_s^2\omega_{20}v_2\omega_8\omega_5\omega_{18} -$
$2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{20}v_2^2\omega_8v_1\omega_5\omega_{18} - 2\omega_6\omega_{22}\omega_{13}\omega_{20}v_2^2\omega_8v_1\omega_5\omega_{18} + \omega_9\omega_{12}\omega_6\omega_{13}\omega_{20}\omega_{14}v_2\omega_8v_1^2\omega_5\omega_{18} - 2\omega_9\omega_{12}\omega_{22}c_s^2\omega_{13}\omega_{20}v_2\omega_8\omega_5\omega_{18} +$
$\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{14}\omega_8v_1\omega_5 + 2\omega_9\omega_{12}c_s^2\omega_{13}\omega_{20}\omega_{14}\omega_8v_1\omega_5\omega_{18} - 2\omega_9\omega_{12}\omega_{22}c_s^2\omega_{13}\omega_{20}\omega_{14}\omega_8v_1\omega_5\omega_{18} - 2\omega_9\omega_{12}c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5\omega_{18} -$
$\omega_9\omega_{12}\omega_6\omega_{13}\omega_{20}\omega_{14}v_2\omega_8v_1^2\omega_5 + 2\omega_9\omega_{12}\omega_{22}\omega_{13}\omega_{14}v_2v_1^2\omega_5\omega_{18} + 2\omega_9\omega_{12}\omega_{22}c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5\omega_{18} - 2\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}v_2\omega_8\omega_5\omega_{18} -$
$2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{20}v_2\omega_8v_1^2\omega_5\omega_{18} + \omega_9\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}v_2^2\omega_8v_1\omega_{18} + 2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{14}v_2^2v_1\omega_5\omega_{18} + 2\omega_9\omega_{12}\omega_6\omega_{20}\omega_{14}v_2^2\omega_8v_1\omega_5\omega_{18} +$
$\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{14}v_2\omega_8v_1^2\omega_5\omega_{18} - 2\omega_9\omega_6\omega_{22}\omega_{13}\omega_{20}v_2\omega_8v_1^2\omega_5\omega_{18} - \omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}\omega_{14}\omega_8v_1\omega_5 - 2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{20}v_2v_1^2\omega_5\omega_{18} +$
$2\omega_9\omega_{12}\omega_{22}c_s^2\omega_{13}\omega_{14}v_2\omega_5\omega_{18} + \omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}v_2^2\omega_8v_1\omega_5\omega_{18} - 2\omega_9\omega_{12}\omega_{22}\omega_{13}\omega_{20}v_2^2v_1\omega_5\omega_{18} + 2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{20}\omega_8v_1\omega_5\omega_{18} +$
$2\omega_9\omega_{12}\omega_{22}\omega_{13}\omega_{20}\omega_{14}v_2^2\omega_8v_1\omega_5 - 2\omega_{12}\omega_6\omega_{22}\omega_{20}v_2^2\omega_8v_1\omega_5\omega_{18} + \omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}v_2^2\omega_8v_1\omega_5\omega_{18} - 2\omega_9\omega_{12}\omega_{13}\omega_{20}\omega_{14}v_2^2\omega_8v_1\omega_5 +$
$2\omega_{12}\omega_6\omega_{20}\omega_{14}v_2\omega_8v_1^2\omega_5\omega_{18} - \omega_9\omega_{12}\omega_6c_s^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_8\omega_5 - \omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{14}\omega_8v_1\omega_5\omega_{18} - \omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}\omega_{14}\omega_8v_1\omega_5\omega_{18} +$
$2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}v_2v_1^2\omega_5\omega_{18} + 2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}\omega_{14}v_1\omega_{18} + \omega_9\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_8\omega_5\omega_{18} + \omega_9\omega_{12}\omega_6c_s^2\omega_{13}\omega_{20}\omega_{14}\omega_8v_1\omega_5 -$
$2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}\omega_{14}v_1\omega_5\omega_{18} - \omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}v_2^2\omega_8v_1\omega_{18} + 2\omega_{12}\omega_6\omega_{22}\omega_{20}v_2\omega_8v_1^2\omega_5\omega_{18} -$
$\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}v_2\omega_8v_1^2\omega_5\omega_{18} - 2\omega_{12}\omega_6\omega_{20}\omega_{14}v_2^2\omega_8v_1\omega_5\omega_{18} + 2\omega_9\omega_6\omega_{22}\omega_{13}\omega_{20}v_2\omega_8v_1^2\omega_{18} - \omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{14}v_2\omega_8v_1^2\omega_{18} +$
$2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{20}v_2v_1^2\omega_{18} - 2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}v_2\omega_5\omega_{18} - 2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{20}v_2\omega_8\omega_5\omega_{18} + 2\omega_9\omega_{12}\omega_{22}\omega_{13}\omega_{20}\omega_{14}v_2^2v_1\omega_5\omega_{18} -$
$\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}v_2\omega_8v_1^2\omega_5\omega_{18} + \omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_8\omega_5 - \omega_9\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}\omega_{14}\omega_8v_1\omega_5\omega_{18} + \omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_8\omega_5\omega_{18} +$
$\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{14}v_2\omega_8\omega_5\omega_{18} - \omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{14}v_2^2\omega_8v_1\omega_5\omega_{18} + 2\omega_9\omega_6\omega_{22}\omega_{13}\omega_{20}v_2^2\omega_8v_1\omega_5\omega_{18} + 2\omega_9\omega_{12}\omega_{22}\omega_{13}\omega_{14}v_2\omega_8v_1^2\omega_5 +$
$2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{20}v_2^2\omega_8v_1\omega_{18} + 2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{14}v_2\omega_{18} - 2\omega_{12}\omega_6\omega_{22}c_s^2\omega_{20}\omega_8v_1\omega_5\omega_{18} + 2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{20}v_2^2\omega_8v_1\omega_5\omega_{18} -$
$\omega_{12}\omega_6c_s^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_8\omega_5\omega_{18} - 2\omega_9\omega_{12}\omega_6\omega_{20}\omega_{14}v_2\omega_8v_1^2\omega_5\omega_{18} - 2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{20}v_2^2v_1\omega_{18} - 2\omega_{12}\omega_6\omega_{22}c_s^2\omega_{20}\omega_{14}v_2\omega_8\omega_5\omega_{18} +$
$2\omega_9\omega_{12}\omega_{22}c_s^2\omega_{13}\omega_{20}\omega_8v_1\omega_5\omega_{18} + 2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{14}v_1\omega_5\omega_{18} - 2\omega_9\omega_{12}\omega_{22}c_s^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_5\omega_{18} - 2\omega_9\omega_{12}\omega_{22}c_s^2\omega_{20}\omega_{14}v_2\omega_8\omega_5\omega_{18} -$
$2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}v_1\omega_{18} + 2\omega_9\omega_{12}c_s^2\omega_{20}\omega_{14}v_2\omega_8\omega_5\omega_{18} + 2\omega_9\omega_{12}\omega_{22}c_s^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_8\omega_5\omega_{18} + \omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}v_2\omega_8v_1^2\omega_5 -$
$2\omega_9\omega_{12}c_s^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_8\omega_5\omega_{18} + 2\omega_6\omega_{22}\omega_{13}\omega_{20}v_2\omega_8v_1^2\omega_5\omega_{18} + 2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}\omega_8v_1\omega_{18} - \omega_9\omega_{12}\omega_6\omega_{13}\omega_{20}\omega_{14}v_2^2\omega_8v_1\omega_5\omega_{18} +$
$2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{20}v_2\omega_8v_1^2\omega_5\omega_{18} + \omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{14}v_2^2\omega_8v_1\omega_5 - \omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{14}v_2\omega_8\omega_5 - 2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{20}\omega_{14}v_2^2\omega_8v_1\omega_5\omega_{18} +$
$2\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}\omega_8v_1\omega_5\omega_{18} - 2\omega_9\omega_{12}\omega_{22}\omega_{13}\omega_{20}\omega_{14}v_2v_1^2\omega_5\omega_{18} - \omega_9\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8v_1\omega_5\omega_{18} - \omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{14}v_2\omega_8v_1^2\omega_5 -$
$2\omega_9\omega_{12}\omega_{22}c_s^2\omega_{13}\omega_{14}\omega_8v_1\omega_5\omega_{18} - \omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}v_2^2\omega_8v_1\omega_5 - \omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}\omega_{14}\omega_8v_1\omega_5 + 2\omega_9\omega_{12}\omega_{22}c_s^2\omega_{20}v_2\omega_8\omega_5\omega_{18} +$
$2\omega_9\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}\omega_8v_1\omega_5\omega_{18} + 2\omega_9\omega_{12}\omega_{22}c_s^2\omega_{13}\omega_{20}v_2\omega_5\omega_{18} - \omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_8\omega_5\omega_{18} + \omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}v_2\omega_8v_1^2\omega_5\omega_{18} +$
$2\omega_9\omega_{12}\omega_{22}c_s^2\omega_{13}\omega_{20}\omega_{14}\omega_8v_1\omega_5 + \omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}\omega_{14}v_2\omega_8\omega_{18} - 2\omega_9\omega_{12}c_s^2\omega_{13}\omega_{20}\omega_{14}\omega_8v_1\omega_5 - 2\omega_9\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}\omega_8v_1\omega_{18} -$
$2\omega_9\omega_{12}\omega_{22}\omega_{13}\omega_{14}v_2\omega_8v_1^2\omega_5\omega_{18} - 2\omega_{12}\omega_6c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5\omega_{18} - 2\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{20}v_2\omega_8v_1^2\omega_{18} - \omega_{12}\omega_6\omega_{13}\omega_{20}\omega_{14}v_2\omega_8v_1^2\omega_5\omega_{18} +$
$2\omega_9\omega_{12}\omega_{22}c_s^2\omega_{13}\omega_{14}v_2\omega_8\omega_5 - 2\omega_9\omega_{12}\omega_{22}\omega_{13}\omega_{14}v_2^2\omega_8v_1\omega_5 - 2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5\omega_{18} - 2\omega_{12}\omega_6\omega_{22}\omega_{20}\omega_{14}v_2\omega_8v_1^2\omega_5\omega_{18} -$
$2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{14}v_1\omega_{18} - 2\omega_9\omega_{12}\omega_6c_s^2\omega_{20}\omega_{14}v_2\omega_8\omega_5\omega_{18} - \omega_9\omega_{12}\omega_6c_s^2\omega_{13}\omega_{20}\omega_{14}\omega_8v_1\omega_5\omega_{18} + 2\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{20}v_2^2\omega_8v_1\omega_5\omega_{18} +$
$2\omega_9\omega_{12}\omega_{22}\omega_{13}\omega_{20}\omega_{14}v_2\omega_8v_1^2\omega_5\omega_{18} + \omega_9\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}\omega_{14}\omega_8v_1\omega_{18} - 2\omega_9\omega_{12}\omega_{22}c_s^2\omega_{13}\omega_{14}v_1\omega_5\omega_{18} + 2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}v_2\omega_8\omega_5\omega_{18} -$
$2\omega_9\omega_6\omega_{22}\omega_{13}\omega_{20}v_2^2\omega_8v_1\omega_{18} - \omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{14}v_2\omega_8\omega_{18} + \omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{14}v_2^2\omega_8v_1\omega_{18} - 2\omega_9\omega_{12}\omega_{13}\omega_{20}\omega_{14}v_2\omega_8v_1^2\omega_5\omega_{18} +$
$\omega_9\omega_{12}\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}v_2\omega_8v_1^2\omega_{18} + 2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}v_2\omega_{18} + 2\omega_9\omega_{12}\omega_{22}\omega_{13}\omega_{20}v_2^2\omega_8v_1\omega_5\omega_{18} - 2\omega_9\omega_{12}\omega_{22}\omega_{20}v_2^2\omega_8v_1\omega_5\omega_{18} +$
$2\omega_9\omega_{12}\omega_{20}\omega_{14}v_2\omega_8v_1^2\omega_5\omega_{18} + 2\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}v_2\omega_8\omega_5\omega_{18} - 2\omega_9\omega_{12}\omega_{22}\omega_{20}\omega_{14}v_2\omega_8v_1^2\omega_5\omega_{18}$

$C_{22} = -6\omega_6c_s^2\omega_7\omega_{17}v_2^2\omega_8v_1\omega_{18}\omega_{15} - 12c_s^2\omega_7\omega_{20}\omega_{17}v_2^2v_1\omega_5\omega_{18}\omega_{15} - 3\omega_6c_s^2v_3^2\omega_7\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{18}\omega_{15} - 3\omega_6v_3\omega_7\omega_{20}\omega_{17}v_2^2\omega_8v_1^2\omega_5\omega_{15} -$
$6\omega_6c_s^2v_3\omega_7\omega_{20}\omega_{17}\omega_8v_1^2\omega_{18}\omega_{15} - 4\omega_6c_s^4\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{18}\omega_{15} + 12\omega_6c_s^2v_3^2\omega_7\omega_{20}\omega_{17}v_1\omega_5\omega_{18}\omega_{15} - 12\omega_6v_3\omega_7\omega_{20}v_2^2\omega_8v_1^2\omega_{18} -$
$6c_s^2v_3\omega_7\omega_{20}\omega_{17}v_2^2\omega_8\omega_5\omega_{18}\omega_{15} + 6c_s^2\omega_7\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_5\omega_{18}\omega_{15} - 3\omega_6c_s^2v_3\omega_7\omega_{20}\omega_{17}v_2^2\omega_8\omega_5\omega_{18} - 12\omega_6c_s^2v_3\omega_7\omega_{20}\omega_{17}v_1^2\omega_5\omega_{18}\omega_{15} -$
$6\omega_6c_s^2\omega_7\omega_{20}v_2^2\omega_8v_1\omega_5\omega_{18} + 12\omega_6v_3\omega_7\omega_{20}\omega_{17}v_2^2v_1^2\omega_{18}\omega_{15} - 12\omega_6c_s^2v_3^2\omega_7\omega_{17}v_1\omega_5\omega_{18}\omega_{15} - 12\omega_6c_s^2v_3\omega_7\omega_{20}v_1^2\omega_{18}\omega_{15} +$
$12c_s^2v_3^2\omega_7\omega_{17}v_1\omega_5\omega_{18}\omega_{15} + 12v_3\omega_7\omega_{17}v_2^2\omega_8v_1^2\omega_5\omega_{18}\omega_{15} + 12\omega_6v_3^2\omega_7\omega_{20}\omega_{17}v_2^2v_1\omega_5\omega_{18}\omega_{15} + 6\omega_6c_s^2v_3^2\omega_7\omega_{17}\omega_8v_1\omega_5\omega_{18}\omega_{15} +$
$12c_s^2v_3\omega_7\omega_{17}v_2^2\omega_8\omega_5\omega_{18}\omega_{15} - 6\omega_6v_3\omega_7\omega_{20}v_2^2\omega_8v_1^2\omega_5\omega_{18}\omega_{15} - 6\omega_6v_3^2\omega_7\omega_{17}v_2^2\omega_8v_1\omega_{18}\omega_{15} + 12\omega_6c_s^2v_3\omega_7\omega_{20}v_2^2\omega_8\omega_{18}\omega_{15} -$
$12\omega_6c_s^2v_3\omega_7\omega_{20}\omega_{17}v_2^2\omega_5\omega_{18}\omega_{15} - 3\omega_6v_3\omega_7\omega_{20}\omega_{17}v_2^2\omega_8v_1^2\omega_5\omega_{18} + 12\omega_6v_3^2\omega_7\omega_{20}v_2^2\omega_8v_1\omega_{18} - 6\omega_6v_3^2\omega_7\omega_{20}v_2^2\omega_8v_1\omega_5\omega_{18} -$
$12\omega_6c_s^2v_3\omega_7\omega_{20}\omega_8v_1^2\omega_{18} - 6\omega_6c_s^2v_3^2\omega_7\omega_{20}\omega_8v_1\omega_5\omega_{18} + 6\omega_6c_s^2v_3\omega_7\omega_{20}\omega_8v_1^2\omega_5\omega_{18} - 6\omega_6c_s^2v_3\omega_7\omega_{17}\omega_8v_1^2\omega_5\omega_{18}\omega_{15} + 6\omega_6v_3\omega_7\omega_{20}\omega_{17}v_2^2\omega_8v_1^2\omega_{18} +$
$12\omega_6c_s^2\omega_7\omega_{20}v_2^2v_1\omega_{18}\omega_{15} - 3\omega_6c_s^2v_3\omega_7\omega_{20}\omega_{17}v_2^2\omega_8\omega_5\omega_{15} + 6\omega_6c_s^2\omega_7\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_{18}\omega_{15} + 6\omega_6c_s^2v_3\omega_7\omega_{20}\omega_{17}v_2^2\omega_8\omega_{18} +$
$12\omega_6c_s^2\omega_7\omega_{20}v_2^2\omega_8v_1\omega_{18} - 12\omega_6v_3\omega_7\omega_{20}v_2^2v_1^2\omega_{18}\omega_{15} + 12\omega_6v_3^2\omega_7\omega_{20}v_2^2v_1\omega_{18}\omega_{15} - 12v_3\omega_7\omega_{17}v_2^2v_1^2\omega_5\omega_{18}\omega_{15} + 6c_s^2v_3\omega_7\omega_{20}\omega_{17}v_2^2\omega_8\omega_5\omega_{15} +$
$12\omega_6c_s^2v_3\omega_7\omega_{17}v_1^2\omega_5\omega_{18}\omega_{15} + 12c_s^2v_3\omega_7\omega_{17}\omega_8v_1^2\omega_5\omega_{18}\omega_{15} + 12\omega_6c_s^2v_3\omega_7\omega_{20}\omega_{17}v_2^2\omega_{18}\omega_{15} - 12c_s^2v_3^2\omega_7\omega_{17}\omega_8v_1\omega_5\omega_{18}\omega_{15} -$
$6\omega_6c_s^2v_3\omega_7\omega_{17}v_2^2\omega_8\omega_5\omega_{18}\omega_{15} - 12v_3^2\omega_7\omega_{20}\omega_{17}v_2^2v_1\omega_5\omega_{18}\omega_{15} - 12\omega_6v_3^2\omega_7\omega_{20}\omega_{17}v_2^2v_1\omega_{18}\omega_{15} - 6\omega_6v_3\omega_7\omega_{17}v_2^2\omega_8v_1^2\omega_5\omega_{18}\omega_{15} -$
$6\omega_6c_s^2v_3^2\omega_7\omega_{17}\omega_8v_1\omega_{18}\omega_{15} + 12c_s^2v_3\omega_7\omega_{20}\omega_{17}v_2^2\omega_5\omega_{18}\omega_{15} + 6\omega_6c_s^2v_3\omega_7\omega_{17}\omega_8v_1^2\omega_{18}\omega_{15} - 3\omega_6v_3^2\omega_7\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_5\omega_{18}\omega_{15} +$
$12v_3^2\omega_7\omega_{17}v_2^2v_1\omega_5\omega_{18}\omega_{15} + 6v_3\omega_7\omega_{20}v_2^2\omega_8v_1^2\omega_5\omega_{18}\omega_{15} - 12c_s^2v_3\omega_7\omega_{17}v_2^2\omega_8\omega_5\omega_{15} - 6v_3\omega_7\omega_{20}\omega_{17}v_2^2\omega_8v_1^2\omega_5\omega_{18}\omega_{15} +$
$6\omega_6c_s^2v_3^2\omega_7\omega_{20}\omega_{17}\omega_8v_1\omega_{18}\omega_{15} - 6\omega_6v_3^2\omega_7\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_{18} - 12c_s^2v_3\omega_7\omega_{17}v_2^2\omega_5\omega_{18}\omega_{15} - 12\omega_6c_s^2\omega_7\omega_{17}v_2^2v_1\omega_5\omega_{18}\omega_{15} +$
$12c_s^2v_3\omega_7\omega_{20}\omega_{17}v_1^2\omega_5\omega_{18}\omega_{15} + 6\omega_6c_s^2v_3\omega_7\omega_{17}v_2^2\omega_8\omega_5\omega_{15} - 6c_s^2v_3\omega_7\omega_{20}\omega_{17}\omega_8v_1^2\omega_5\omega_{18}\omega_{15} + 6v_3\omega_7\omega_{20}\omega_{17}v_2^2\omega_8v_1^2\omega_5\omega_{15} +$
$12c_s^2\omega_7\omega_{17}v_2^2v_1\omega_5\omega_{18}\omega_{15} + 12\omega_6c_s^2v_3\omega_7\omega_{17}v_2^2\omega_5\omega_{18}\omega_{15} + 12\omega_6c_s^2\omega_7\omega_{20}\omega_{17}v_2^2v_1\omega_5\omega_{18}\omega_{15} - 12\omega_6c_s^2\omega_7\omega_{20}\omega_{17}v_2^2v_1\omega_{18}\omega_{15} -$
$12c_s^2v_3^2\omega_7\omega_{20}\omega_{17}v_1\omega_5\omega_{18}\omega_{15} - 12c_s^2v_3\omega_7\omega_{17}v_1^2\omega_5\omega_{18}\omega_{15} + 6\omega_6v_3\omega_7\omega_{20}v_2^2\omega_8v_1^2\omega_5\omega_{18} + 12\omega_6v_3\omega_7\omega_{17}v_2^2v_1^2\omega_5\omega_{18}\omega_{15} -$
$12\omega_6c_s^2v_3\omega_7\omega_{17}v_1^2\omega_{18}\omega_{15} - 12\omega_6v_3^2\omega_7\omega_{17}v_2^2v_1\omega_5\omega_{18}\omega_{15} - 6\omega_6c_s^2\omega_7\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_{18} + 6\omega_6v_3^2\omega_7\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_{18}\omega_{15} +$
$6\omega_6v_3\omega_7\omega_{17}v_2^2\omega_8v_1^2\omega_{18}\omega_{15} + 2\omega_6c_s^4\omega_7\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{18}\omega_{15} - 12\omega_6c_s^2v_3\omega_7\omega_{20}v_2^2\omega_{18}\omega_{15} - 12c_s^2v_3\omega_7\omega_{20}v_2^2\omega_5\omega_{18}\omega_{15} -$
$6v_3^2\omega_7\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_5\omega_{15} + 3\omega_6v_3\omega_7\omega_{20}\omega_{17}v_2^2\omega_8v_1^2\omega_5\omega_{18}\omega_{15} + 12v_3^2\omega_7\omega_{17}v_2^2\omega_8v_1\omega_5\omega_{15} + 3\omega_6c_s^2\omega_7\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_5\omega_{18} +$
$6\omega_6v_3^2\omega_7\omega_{20}v_2^2\omega_8v_1\omega_5\omega_{18}\omega_{15} - 12\omega_6c_s^2v_3^2\omega_7\omega_{20}\omega_8v_1\omega_{18}\omega_{15} - 12\omega_6v_3^2\omega_7\omega_{20}v_2^2\omega_8v_1\omega_{18}\omega_{15} - 12v_3^2\omega_7\omega_{17}v_2^2\omega_8v_1\omega_5\omega_{18}\omega_{15} +$
$6\omega_6c_s^2v_3^2\omega_7\omega_{20}\omega_8v_1\omega_5\omega_{18}\omega_{15} + 6c_s^2v_3\omega_7\omega_{20}v_2^2\omega_8\omega_5\omega_{18}\omega_{15} + 12\omega_6c_s^2v_3\omega_7\omega_{20}\omega_8v_1^2\omega_{18}\omega_{15} - 12\omega_6v_3\omega_7\omega_{20}\omega_{17}v_2^2v_1^2\omega_5\omega_{18}\omega_{15} +$
$6v_3^2\omega_7\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_5\omega_{18}\omega_{15} - 6\omega_6c_s^2v_3\omega_7\omega_{20}\omega_8v_1^2\omega_5\omega_{18}\omega_{15} - 6\omega_6c_s^2\omega_7\omega_{17}v_2^2\omega_8v_1\omega_5\omega_{15} + 12\omega_6c_s^2v_3\omega_7\omega_{20}v_1^2\omega_5\omega_{18}\omega_{15} -$
$6\omega_6v_3\omega_7\omega_{20}\omega_{17}v_2^2\omega_8v_1^2\omega_{18}\omega_{15} - 3\omega_6c_s^2v_3\omega_7\omega_{20}\omega_{17}\omega_8v_1^2\omega_5\omega_{15} + 6\omega_6c_s^2v_3\omega_7\omega_{20}v_2^2\omega_8\omega_5\omega_{18} + 3\omega_6c_s^2\omega_7\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_5\omega_{15} +$
$12\omega_6c_s^2v_3^2\omega_7\omega_{20}\omega_8v_1\omega_{18} - 12c_s^2v_3\omega_7\omega_{20}v_1^2\omega_5\omega_{18}\omega_{15} + 12c_s^2\omega_7\omega_{17}v_2^2\omega_8v_1\omega_5\omega_{15} - 6c_s^2v_3^2\omega_7\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{15} + 12\omega_6c_s^2v_3\omega_7\omega_{20}v_2^2\omega_5\omega_{18}\omega_{15} -$
$6c_s^2\omega_7\omega_{20}v_2^2\omega_8v_1\omega_5\omega_{18}\omega_{15} - 6\omega_6c_s^2v_3\omega_7\omega_{20}\omega_{17}v_2^2\omega_8\omega_{18}\omega_{15} + 3\omega_6c_s^2v_3\omega_7\omega_{20}\omega_{17}\omega_8v_1^2\omega_5\omega_{18}\omega_{15} + 6\omega_6c_s^2\omega_7\omega_{17}v_2^2\omega_8v_1\omega_5\omega_{18}\omega_{15} -$
$12\omega_6c_s^2\omega_7\omega_{20}v_2^2\omega_8v_1\omega_{18}\omega_{15} - 6\omega_6v_3^2\omega_7\omega_{17}v_2^2\omega_8v_1\omega_5\omega_{15} - 3\omega_6c_s^2v_3\omega_7\omega_{20}\omega_{17}\omega_8v_1^2\omega_5\omega_{18} + 12\omega_6c_s^2v_3^2\omega_7\omega_{20}v_1\omega_{18}\omega_{15} -$
$6c_s^2\omega_7\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_5\omega_{15} + 12\omega_6v_3\omega_7\omega_{20}v_2^2v_1^2\omega_5\omega_{18}\omega_{15} + 3\omega_6c_s^2v_3^2\omega_7\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{15} + 3\omega_6v_3^2\omega_7\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_5\omega_{18} +$

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

$C_{23} = 4\omega_6^2 c_s^4\omega_{20}\omega_{17}\omega_5\omega_{18}\omega_{15} + \omega_6^2 v_3^2\omega_{20}\omega_{17}v_2^2\omega_8\omega_5^2\omega_{15} - 2\omega_6 c_s^4\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18} + 8\omega_6^2 c_s^2 v_3\omega_{17}v_1\omega_5^2\omega_{18}\omega_{15} + 4\omega_6 c_s^4\omega_{20}\omega_{17}\omega_5^2\omega_{18}\omega_{15} -$
$2\omega_6^2 c_s^4\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 8\omega_6^2 v_3\omega_{17}v_2^2 v_1\omega_5^2\omega_{18}\omega_{15} + 4\omega_6 v_3\omega_{20}v_2^2\omega_8 v_1\omega_5^2\omega_{18}\omega_{15} - 12\omega_6 c_s^4\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} - 4\omega_6 c_s^4\omega_{17}\omega_8\omega_5^2\omega_{15} +$
$4c_s^4\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} + 4\omega_6^2 c_s^2 v_3\omega_{20}\omega_8 v_1\omega_5^2\omega_{18} + \omega_6^2 c_s^2\omega_{20}\omega_{17}v_2^2\omega_8\omega_5^2\omega_{15} - 4\omega_6^2 c_s^2 v_3^2\omega_{17}\omega_5^2\omega_{18}\omega_{15} - 8\omega_6^2 c_s^2 v_3\omega_{20}v_1\omega_5\omega_{18}\omega_{15} +$
$2\omega_6 c_s^2 v_3^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} - 2\omega_6^2 c_s^2 v_3^2\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} + 2\omega_6^2 c_s^4\omega_{20}\omega_8\omega_5^2\omega_{18} + 4\omega_6^2 v_3^2\omega_{20}\omega_{17}v_2^2\omega_5^2\omega_{18}\omega_{15} - 4\omega_6^2 c_s^2\omega_{20}v_2^2\omega_8\omega_5\omega_{18}\omega_{15} -$
$4\omega_6^2 v_3\omega_{20}v_2^2\omega_8 v_1\omega_5^2\omega_{18}\omega_{15} + \omega_6^2 v_3^2\omega_{20}\omega_{17}v_2^2\omega_8\omega_5^2\omega_{18} + 4\omega_6^2 c_s^4\omega_{20}\omega_5^2\omega_{18}\omega_{15} - 8\omega_6 v_3\omega_{20}v_2^2 v_1\omega_5^2\omega_{18}\omega_{15} - 4\omega_6 c_s^4\omega_{17}\omega_5^2\omega_{18}\omega_{15} +$
$8\omega_6^2 c_s^2 v_3\omega_{20}\omega_8 v_1\omega_5\omega_{18}\omega_{15} - 4\omega_6 v_3\omega_{20}\omega_{17}v_2^2\omega_8 v_1\omega_5^2\omega_{18}\omega_{15} + 4\omega_6^2 c_s^2\omega_{20}\omega_{17}v_2^2\omega_5^2\omega_{18}\omega_{15} - 2\omega_6^2 c_s^2 v_3^2\omega_{17}\omega_8\omega_5^2\omega_{15} + \omega_6^2 c_s^2\omega_{20}\omega_{17}v_2^2\omega_8\omega_5^2\omega_{18} -$
$\omega_6^2 c_s^2 v_3^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} + 2\omega_6^2 c_s^2 v_3^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15} - 4\omega_6^2 v_3^2\omega_{20}v_2^2\omega_8\omega_5\omega_{18}\omega_{15} - 4\omega_6^2 v_3^2\omega_{17}v_2^2\omega_5^2\omega_{18}\omega_{15} - 4\omega_6 c_s^4\omega_{20}\omega_5^2\omega_{18}\omega_{15} +$
$2\omega_6^2 v_3^2\omega_{20}\omega_{17}v_2^2\omega_8\omega_5\omega_{18}\omega_{15} - 4\omega_6^2 v_3\omega_{17}v_2^2\omega_8 v_1\omega_5^2\omega_{18}\omega_{15} + 4\omega_6^2 c_s^4\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15} - 8\omega_6 c_s^2 v_3\omega_{20}v_1\omega_5^2\omega_{18}\omega_{15} + 4\omega_6^2 c_s^4\omega_{17}\omega_5^2\omega_{15} - 4\omega_6^2 c_s^2\omega_{17}v_2^2\omega_8\omega_5^2\omega_{18}\omega_{15} -$
$4\omega_6^2 c_s^2\omega_{17}v_2^2\omega_5^2\omega_{18}\omega_{15} + 2\omega_6^2 v_3^2\omega_{17}v_2^2\omega_8\omega_5^2\omega_{18}\omega_{15} + 2\omega_6 c_s^4\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15} + 4\omega_6 v_3\omega_{20}\omega_{17}v_2^2\omega_8 v_1\omega_5^2\omega_{15} + 4\omega_6 v_2^2\omega_{20}v_2^2\omega_5^2\omega_{18}\omega_{15} -$
$4\omega_6^2 c_s^2 v_3\omega_{17}\omega_8 v_1\omega_5^2\omega_{18}\omega_{15} + 4\omega_6^2 v_3^2\omega_{20}v_2^2\omega_5\omega_{18}\omega_{15} + 8\omega_6^2 v_3\omega_{20}\omega_{17}v_2^2 v_1\omega_5\omega_{18}\omega_{15} - 2\omega_6^2 v_3\omega_{20}\omega_{17}v_2^2\omega_8 v_1\omega_5^2\omega_{18} +$
$4\omega_6^2 c_s^2 v_3\omega_{20}\omega_{17}\omega_8 v_1\omega_5\omega_{18} + 4\omega_6 c_s^2\omega_{20}v_2^2\omega_5^2\omega_{18}\omega_{15} + 4\omega_6^2 c_s^2\omega_{20}v_2^2\omega_5\omega_{18}\omega_{15} + \omega_6^2 c_s^2 v_3^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} + 4\omega_6 c_s^4\omega_{20}\omega_{17}\omega_8\omega_{18}\omega_{15} +$
$8\omega_6 c_s^2 v_3\omega_{20}\omega_{17}v_1\omega_5^2\omega_{18}\omega_{15} + 2\omega_6^2 c_s^2\omega_{17}v_2^2\omega_8\omega_5^2\omega_{18}\omega_{15} - 2\omega_6^2 c_s^4\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} - 2\omega_6^2 v_3^2\omega_{17}v_2^2\omega_8\omega_5^2\omega_{15} + 8\omega_6 v_3\omega_{17}v_2^2\omega_8 v_1\omega_5^2\omega_{18}\omega_{15} +$
$2\omega_6^2 c_s^2\omega_{20}\omega_{17}v_2^2\omega_8\omega_5\omega_{18}\omega_{15} + 2\omega_6^2 c_s^4\omega_{17}\omega_8\omega_5^2\omega_{15} - 2\omega_6^2 c_s^2\omega_{17}v_2^2\omega_8\omega_5^2\omega_{15} - 2\omega_6 v_3^2\omega_{20}v_2^2\omega_8\omega_5^2\omega_{18}\omega_{15} - 8\omega_6^2 v_3\omega_{20}v_2^2 v_1\omega_5\omega_{18}\omega_{15} +$
$4\omega_6^2 v_3\omega_{20}v_2^2\omega_8 v_1\omega_5^2\omega_{18} - 8\omega_6^2 c_s^2 v_3\omega_{20}\omega_{17}v_1\omega_5^2\omega_{18}\omega_{15} + 4\omega_6^2 c_s^2\omega_{20}v_2^2\omega_8\omega_5\omega_{18} - 8\omega_6 v_3\omega_{17}v_2^2\omega_8 v_1\omega_5^2\omega_{15} - 4\omega_6^2 c_s^2 v_3\omega_{20}\omega_{17}\omega_8 v_1\omega_5\omega_{18}\omega_{15} +$
$2\omega_6^2 v_3\omega_{20}\omega_{17}v_2^2\omega_8 v_1\omega_5^2\omega_{18}\omega_{15} + 8\omega_6 c_s^2 v_3\omega_{17}\omega_8 v_1\omega_5^2\omega_{18}\omega_{15} - 2\omega_6^2 c_s^2 v_3^2\omega_{20}\omega_8\omega_5^2\omega_{18} + 4\omega_6^2 v_3^2\omega_{20}v_2^2\omega_8\omega_5\omega_{18} - 4\omega_6 c_s^2 v_3^2\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} +$
$\omega_6^2 c_s^2 v_3^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18} - 8\omega_6 c_s^2 v_3\omega_{17}\omega_8 v_1\omega_5^2\omega_{15} - 2\omega_6^2 v_3\omega_{20}\omega_{17}v_2^2\omega_8 v_1\omega_5^2\omega_{15} - 2\omega_6 c_s^2\omega_{20}v_2^2\omega_8\omega_5^2\omega_{18}\omega_{15} + 4\omega_6^2 c_s^2 v_3^2\omega_{20}\omega_{17}\omega_5^2\omega_{18}\omega_{15} -$
$4\omega_6^2 c_s^2 v_3^2\omega_{20}\omega_5^2\omega_{18}\omega_{15} + 4\omega_6 c_s^2\omega_{17}v_2^2\omega_5^2\omega_{18}\omega_{15} - 2\omega_6^2 v_3^2\omega_{17}v_2^2\omega_8\omega_5\omega_{18}\omega_{15} - 2\omega_6^2 c_s^4\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15} - 2\omega_6 c_s^2\omega_{20}\omega_{17}v_2^2\omega_8\omega_5^2\omega_{15} +$
$4\omega_6^2 v_3\omega_{17}v_2^2\omega_8 v_1\omega_5\omega_{18}\omega_{15} - 4\omega_6^2 c_s^4\omega_{17}\omega_5\omega_{18}\omega_{15} + 4\omega_6^2 c_s^2\omega_{17}v_2^2\omega_5\omega_{18}\omega_{15} + 2\omega_6 c_s^2\omega_{20}\omega_{17}v_2^2\omega_8\omega_5^2\omega_{18}\omega_{15} + 4\omega_6 v_3^2\omega_{17}v_2^2\omega_5^2\omega_{18}\omega_{15} +$
$4\omega_6^2 v_3^2\omega_{17}v_2^2\omega_5\omega_{18}\omega_{15} - \omega_6^2 v_3^2\omega_{20}\omega_{17}v_2^2\omega_8\omega_5^2\omega_{18}\omega_{15} - 4\omega_6^2 c_s^2\omega_{20}v_2^2\omega_5^2\omega_{18}\omega_{15} - 8\omega_6 c_s^2 v_3\omega_{17}v_1\omega_5^2\omega_{18}\omega_{15} + 2\omega_6^2 c_s^4\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} -$
$2\omega_6^2 c_s^2\omega_{17}v_2^2\omega_8\omega_5\omega_{18}\omega_{15} - 8\omega_6^2 v_3\omega_{20}v_2^2\omega_8 v_1\omega_5\omega_{18} + 4\omega_6 c_s^4\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} - 2\omega_6^2 c_s^4\omega_{20}\omega_{17}\omega_8\omega_{18}\omega_{15} - 8\omega_6^2 v_3\omega_{20}\omega_{17}v_2^2 v_1\omega_5^2\omega_{18}\omega_{15} -$
$2\omega_6^2 c_s^2\omega_{20}v_2^2\omega_8\omega_5^2\omega_{18} - 2\omega_6 v_3^2\omega_{20}\omega_{17}v_2^2\omega_8\omega_5^2\omega_{15} + 4\omega_6^2 c_s^2 v_3\omega_{17}\omega_8 v_1\omega_5\omega_{18}\omega_{15} - 4\omega_6^2 v_3^2\omega_{20}v_2^2\omega_5^2\omega_{18}\omega_{15} - 2\omega_6^2 c_s^2 v_3\omega_{20}\omega_{17}\omega_8 v_1\omega_5^2\omega_{15} -$
$8\omega_6 v_3\omega_{17}v_2^2 v_1\omega_5^2\omega_{18}\omega_{15} + 2\omega_6^2 c_s^4\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} + 4\omega_6^2 c_s^2 v_3^2\omega_{20}\omega_8\omega_5\omega_{18} - 2\omega_6^2 v_3^2\omega_{20}v_2^2\omega_8\omega_5^2\omega_{18} - 2\omega_6^2 c_s^2 v_3^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18} -$
$2\omega_6 c_s^2 v_3^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15} + 2\omega_6 v_3^2\omega_{20}\omega_{17}v_2^2\omega_8\omega_5^2\omega_{18}\omega_{15} + 4\omega_6^2 c_s^2 v_3\omega_{20}\omega_{17}\omega_5^2\omega_{18}\omega_{15} - 4\omega_6 c_s^2 v_3\omega_{20}\omega_{17}\omega_8 v_1\omega_5^2\omega_{15} -$
$\omega_6^2 c_s^2\omega_{20}\omega_{17}\omega_8 v_1\omega_5^2\omega_{15} + 2\omega_6^2 c_s^2 v_3\omega_{20}\omega_{17}\omega_8 v_1\omega_5^2\omega_{18}\omega_{15} + 4\omega_6^2 c_s^2 v_3^2\omega_{20}\omega_5^2\omega_{18}\omega_{15} + 8\omega_6 v_3\omega_{20}\omega_{17}v_2^2 v_1\omega_5^2\omega_{18}\omega_{15} - 4\omega_6^2 v_3\omega_{20}\omega_{17}v_2^2\omega_8 v_1\omega_5\omega_{18}\omega_{15} +$
$4\omega_6^2 v_3\omega_{20}\omega_{17}v_2^2\omega_8 v_1\omega_5\omega_{18} - 2\omega_6^2 c_s^2 v_3\omega_{20}\omega_{17}\omega_8 v_1\omega_5^2\omega_{18} + 8\omega_6^2 v_3\omega_{20}v_2^2 v_1\omega_5^2\omega_{18}\omega_{15} + 8\omega_6^2 c_s^2 v_3\omega_{20}\omega_{17}v_1\omega_5\omega_{18}\omega_{15} -$
$2\omega_6^2 v_3^2\omega_{20}\omega_{17}v_2^2\omega_8\omega_5\omega_{18} + 4\omega_6 c_s^4\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 4\omega_6^2 c_s^4\omega_{20}\omega_8\omega_5\omega_{18} + 2\omega_6 c_s^4\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} - 8\omega_6^2 v_3\omega_{17}v_2^2 v_1\omega_5\omega_{18}\omega_{15} -$
$8\omega_6^2 c_s^2 v_3\omega_{17}v_1\omega_5\omega_{18}\omega_{15} - 4\omega_6 c_s^2 v_3^2\omega_{17}v_2^2\omega_8\omega_5^2\omega_{18}\omega_{15} - 2\omega_6 c_s^2 v_3^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} - 4\omega_6^2 c_s^4\omega_{20}\omega_{17}\omega_5^2\omega_{18}\omega_{15} + 4\omega_6 c_s^2 v_3\omega_{20}\omega_8 v_1\omega_5^2\omega_{18}\omega_{15} -$
$2\omega_6^2 c_s^2\omega_{20}\omega_{17}v_2^2\omega_8\omega_5\omega_{18} + 4\omega_6 c_s^2 v_3^2\omega_{17}\omega_5^2\omega_{18}\omega_{15} - 4\omega_6 v_3^2\omega_{17}v_2^2\omega_8\omega_5^2\omega_{18}\omega_{15} - 2c_s^4\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} + 4\omega_6^2 c_s^2 v_3^2\omega_{17}\omega_5\omega_{18}\omega_{15} +$
$8\omega_6^2 c_s^2 v_3\omega_{20}v_1\omega_5^2\omega_{18}\omega_{15} - 4\omega_6 c_s^2 v_3\omega_{20}\omega_{17}\omega_8 v_1\omega_5^2\omega_{18}\omega_{15} - 4\omega_6^2 c_s^2 v_3\omega_{20}\omega_8 v_1\omega_5^2\omega_{18}\omega_{15} + 4\omega_6^2 v_3\omega_{17}v_2^2\omega_8 v_1\omega_5^2\omega_{15} + 4\omega_6 c_s^4\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18} +$
$2\omega_6^2 c_s^2\omega_{20}v_2^2\omega_8\omega_5^2\omega_{18}\omega_{15} - 4\omega_6 c_s^2 v_3^2\omega_{20}\omega_{17}\omega_5^2\omega_{18}\omega_{15} + 8\omega_6^2 v_3\omega_{20}v_2^2\omega_8 v_1\omega_5\omega_{18}\omega_{15} - 4\omega_6^2 c_s^4\omega_{20}\omega_5\omega_{18}\omega_{15} + 2\omega_6^2 c_s^2 v_3^2\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} +$
$4\omega_6^2 c_s^2 v_3\omega_{17}\omega_5^2\omega_{15} - 4\omega_6^2 v_3^2\omega_{20}\omega_{17}v_2^2\omega_5\omega_{18}\omega_{15} - 8\omega_6^2 c_s^2 v_3\omega_{20}\omega_8 v_1\omega_5\omega_{18} + 2\omega_6^2 c_s^2 v_3^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} - 4\omega_6^2 c_s^2 v_3^2\omega_{20}\omega_8\omega_5\omega_{18}\omega_{15} +$
$2\omega_6^2 v_3^2\omega_{20}v_2^2\omega_8\omega_5^2\omega_{18}\omega_{15} + 4\omega_6 c_s^2 v_3^2\omega_{17}\omega_8\omega_5^2\omega_{15} - 4\omega_6^2 c_s^2\omega_{20}\omega_{17}v_2^2\omega_5\omega_{18}\omega_{15}$

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

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

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

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

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

2.4.4 Conservation of momentum: ρv_2

attached text file: `output_d3q27_nse_clbm1_symbolic_pde_02.txt`

$$v_2\frac{\partial\rho}{\partial t} + \rho\frac{\partial v_2}{\partial t} + \frac{v_2 v_1\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_1} + \frac{\rho v_2\delta_l}{\delta_t}\frac{\partial v_1}{\partial x_1} + \frac{\rho v_1\delta_l}{\delta_t}\frac{\partial v_2}{\partial x_1} + \left(c_s^2 + v_2^2\right)\frac{\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_2} + \frac{2\rho v_2\delta_l}{\delta_t}\frac{\partial v_2}{\partial x_2} + \frac{v_3 v_2\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_3} + \frac{v_3\rho\delta_l}{\delta_t}\frac{\partial v_2}{\partial x_3} +$$
$$\frac{\rho v_2\delta_l}{\delta_t}\frac{\partial v_3}{\partial x_3} + \left(-2+\omega_5\right)\frac{c_s^2\delta_l^2}{2\delta_t\omega_5}\frac{\partial\rho}{\partial x_1}\frac{\partial v_2}{\partial x_1} + \left(-2+\omega_5\right)\frac{c_s^2\delta_l^2}{2\delta_t\omega_5}\frac{\partial\rho}{\partial x_1}\frac{\partial v_1}{\partial x_2} +$$

$$
\begin{aligned}
&(-2+4c_s^2-3\omega_{10}v_2^2+\omega_{10}-2c_s^2\omega_{10}+6v_2^2)\frac{\delta_l^2}{\delta_t\omega_{10}}\frac{\partial\rho}{\partial x_2}\frac{\partial v_2}{\partial x_2}+(2-\omega_{10})\frac{3\rho v_2\delta_l^2}{\delta_t\omega_{10}}\left(\frac{\partial v_2}{\partial x_2}\right)^2+(-2+\omega_7)\frac{c_s^2\delta_l^2}{2\delta_t\omega_7}\frac{\partial\rho}{\partial x_3}\frac{\partial v_3}{\partial x_2}+\\
&(-2+\omega_7)\frac{c_s^2\delta_l^2}{2\delta_t\omega_7}\frac{\partial\rho}{\partial x_3}\frac{\partial v_2}{\partial x_3}+(-2+\omega_5)\frac{c_s^2\rho\delta_l^2}{2\delta_t\omega_5}\frac{\partial^2 v_2}{\partial x_1^2}+(-2+\omega_5)\frac{c_s^2\rho\delta_l^2}{2\delta_t\omega_5}\frac{\partial^2 v_1}{\partial x_1\partial x_2}+\\
&(-2+6c_s^2-\omega_{10}v_2^2+\omega_{10}-3c_s^2\omega_{10}+2v_2^2)\frac{v_2\delta_l^2}{2\delta_t\omega_{10}}\frac{\partial^2\rho}{\partial x_2^2}+(-2+2c_s^2-3\omega_{10}v_2^2+\omega_{10}-c_s^2\omega_{10}+6v_2^2)\frac{\rho\delta_l^2}{2\delta_t\omega_{10}}\frac{\partial^2 v_2}{\partial x_2^2}+\\
&(-2+\omega_7)\frac{c_s^2\rho\delta_l^2}{2\delta_t\omega_7}\frac{\partial^2 v_3}{\partial x_2\partial x_3}+(-2+\omega_7)\frac{c_s^2\rho\delta_l^2}{2\delta_t\omega_7}\frac{\partial^2 v_2}{\partial x_3^2}+(-1+3c_s^2+v_1^2)\frac{v_2v_1\delta_l^3}{12\delta_t}\frac{\partial^3\rho}{\partial x_1^3}+(-1+c_s^2+3v_1^2)\frac{\rho v_2\delta_l^3}{12\delta_t}\frac{\partial^3 v_1}{\partial x_1^3}+\\
&C_1\frac{\rho v_1\delta_l^3}{6\omega_{12}\delta_t\omega_5}\frac{\partial^3 v_2}{\partial x_1^3}+(-12-\omega_5^2+12\omega_5)\frac{c_s^4\delta_l^3}{6\delta_t\omega_5^2}\frac{\partial^3\rho}{\partial x_1^2\partial x_2}-\frac{c_s^2\rho v_2\delta_l^3}{6\delta_t}\frac{\partial^3 v_2}{\partial x_1^2\partial x_2}+C_2\frac{\rho v_2\delta_l^3}{12\delta_t\omega_{10}^2\omega_5\omega_{15}}\frac{\partial^3 v_1}{\partial x_1\partial x_2^2}+C_3\frac{\delta_l^3}{12\delta_t\omega_{10}^2}\frac{\partial^3\rho}{\partial x_2^3}+\\
&(-24+5c_s^2\omega_{10}^2+36c_s^2-4\omega_{10}^2-60\omega_{10}v_2^2+24\omega_{10}-36c_s^2\omega_{10}+60v_2^2+11\omega_{10}^2v_2^2)\frac{\rho v_2\delta_l^3}{6\delta_t\omega_{10}^2}\frac{\partial^3 v_2}{\partial x_2^3}-\frac{c_s^2\rho v_2\delta_l^3}{6\delta_t}\frac{\partial^3 v_3}{\partial x_1^2\partial x_3}+\\
&C_4\frac{\rho v_2\delta_l^3}{12\delta_t\omega_{16}\omega_{10}^2\omega_7}\frac{\partial^3 v_3}{\partial x_2^2\partial x_3}-\frac{c_s^2\rho v_2\delta_l^3}{6\delta_t}\frac{\partial^3 v_1}{\partial x_1\partial x_3^2}+(-12-\omega_7^2+12\omega_7)\frac{c_s^4\delta_l^3}{6\delta_t\omega_7^2}\frac{\partial^3\rho}{\partial x_2\partial x_3^2}-\frac{c_s^2\rho v_2\delta_l^3}{6\delta_t}\frac{\partial^3 v_2}{\partial x_2\partial x_3^2}+\\
&(-1+3c_s^2+v_3^2)\frac{v_3v_2\delta_l^3}{12\delta_t}\frac{\partial^3\rho}{\partial x_3^3}+C_5\frac{v_3\rho\delta_l^3}{6\omega_{19}\delta_t\omega_7}\frac{\partial^3 v_2}{\partial x_3^3}+(-1+c_s^2+3v_3^2)\frac{\rho v_2\delta_l^3}{12\delta_t}\frac{\partial^3 v_3}{\partial x_3^3}+\\
&(3\omega_9v_1^2-2c_s^2-\omega_9c_s^4+6v_1^4-12\omega_9c_s^2v_1^2-3\omega_9v_1^4+2c_s^4+24c_s^2v_1^2+\omega_9c_s^2-6v_1^2)\frac{v_2\delta_l^4}{24\omega_9\delta_t}\frac{\partial^4\rho}{\partial x_1^4}+\\
&(-4+2\omega_9-5\omega_9v_1^2+6c_s^2-3\omega_9c_s^2+10v_1^2)\frac{\rho v_2v_1\delta_l^4}{12\omega_9\delta_t}\frac{\partial^4 v_1}{\partial x_1^4}+C_6\frac{\rho\delta_l^4}{24\omega_{12}^2\delta_t\omega_5^3}\frac{\partial^4 v_2}{\partial x_1^4}+C_7\frac{c_s^2v_1\delta_l^4}{12\omega_9\omega_{12}^2\delta_t\omega_{10}\omega_5^2\omega_{21}\omega_{15}}\frac{\partial^4\rho}{\partial x_1^3\partial x_2}+\\
&C_8\frac{c_s^2\rho\delta_l^4}{12\omega_9\omega_{12}\delta_t\omega_{10}\omega_5^3\omega_{21}\omega_{15}}\frac{\partial^4 v_1}{\partial x_1^3\partial x_2}+\\
&(3\omega_9-3\omega_9v_1^2-\omega_{12}+\omega_9\omega_{12}v_1^2-\omega_9\omega_{12}+\omega_{12}v_1^2+3\omega_{12}c_s^2+3\omega_9\omega_{12}c_s^2-9\omega_9c_s^2)\frac{\rho v_2v_1\delta_l^4}{12\omega_9\omega_{12}\delta_t}\frac{\partial^4 v_2}{\partial x_1^3\partial x_2}+\\
&C_9\frac{c_s^2v_2\delta_l^4}{12\omega_{12}\delta_t\omega_{10}^3\omega_5^2\omega_{21}\omega_{15}^2}\frac{\partial^4\rho}{\partial x_1^2\partial x_2^2}+C_{10}\frac{c_s^2\rho\delta_l^4}{12\omega_{12}\delta_t\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}}\frac{\partial^4 v_2}{\partial x_1^2\partial x_2^2}+C_{11}\frac{\rho\delta_l^4}{12\delta_t\omega_{10}^3\omega_5^3\omega_{15}^2}\frac{\partial^4 v_1}{\partial x_1\partial x_2^3}+C_{12}\frac{v_2\delta_l^4}{12\delta_t\omega_{10}^3}\frac{\partial^4\rho}{\partial x_2^4}+\\
&C_{13}\frac{\rho\delta_l^4}{12\delta_t\omega_{10}^3}\frac{\partial^4 v_2}{\partial x_2^4}+(3\omega_9-3\omega_9v_1^2-\omega_{13}+3c_s^2\omega_{13}+\omega_9\omega_{13}v_1^2+3\omega_9c_s^2\omega_{13}+\omega_{13}v_1^2-\omega_9\omega_{13}-9\omega_9c_s^2)\frac{\rho v_2v_1\delta_l^4}{12\omega_9\delta_t\omega_{13}}\frac{\partial^4 v_3}{\partial x_1^3\partial x_3}\\
&+C_{14}\frac{c_s^4\rho\delta_l^4}{12\omega_{12}\omega_6\delta_t\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}}\frac{\partial^4 v_3}{\partial x_1^2\partial x_2\partial x_3}+C_{15}\frac{\rho\delta_l^4}{12\delta_t\omega_{16}^2\omega_{10}^3\omega_7^3}\frac{\partial^4 v_3}{\partial x_2^3\partial x_3}+C_{16}\frac{\delta_l^4}{12\omega_{12}\omega_6\omega_{19}\delta_t\omega_7\omega_{20}\omega_{14}\omega_8\omega_5}\frac{\partial^4\rho}{\partial x_1^2\partial x_3^2}\\
&+C_{17}\frac{\rho\delta_l^4}{4\omega_{12}\omega_{19}\delta_t\omega_7\omega_{20}\omega_{14}\omega_8\omega_5}\frac{\partial^4 v_1}{\partial x_1^2\partial x_3^2}+C_{18}\frac{\rho\delta_l^4}{4\omega_{12}\omega_{19}\delta_t\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^2}\frac{\partial^4 v_2}{\partial x_1^2\partial x_3^2}+C_{19}\frac{v_3\rho\delta_l^4}{2\omega_{12}\omega_{19}\delta_t\omega_7\omega_{20}\omega_{14}\omega_8\omega_5}\frac{\partial^4 v_3}{\partial x_1^2\partial x_3^2}+\\
&C_{20}\frac{\delta_l^4}{2\omega_{19}\delta_t\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15}}\frac{\partial^4\rho}{\partial x_1\partial x_2\partial x_3^2}+C_{21}\frac{\rho\delta_l^4}{12\omega_6\omega_{19}\delta_t\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}}\frac{\partial^4 v_1}{\partial x_1\partial x_2\partial x_3^2}+\\
&C_{22}\frac{\rho v_2\delta_l^4}{\omega_{19}\delta_t\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15}}\frac{\partial^4 v_2}{\partial x_1\partial x_2\partial x_3^2}+C_{23}\frac{\rho\delta_l^4}{2\omega_{19}\delta_t\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15}}\frac{\partial^4 v_3}{\partial x_1\partial x_2\partial x_3^2}+\\
&C_{24}\frac{c_s^2v_2\delta_l^4}{12\omega_{19}\delta_t\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{23}}\frac{\partial^4\rho}{\partial x_2^2\partial x_3^2}+C_{25}\frac{c_s^2\rho\delta_l^4}{12\omega_{19}\delta_t\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}}\frac{\partial^4 v_2}{\partial x_2^2\partial x_3^2}+\\
&(3c_s^2\omega_{18}+3c_s^2\omega_{11}\omega_{18}+v_3^2\omega_{18}-3v_3^2\omega_{11}+3\omega_{11}-\omega_{11}\omega_{18}-9c_s^2\omega_{11}-\omega_{18}+v_3^2\omega_{11}\omega_{18})\frac{v_3\rho v_2\delta_l^4}{12\delta_t\omega_{11}\omega_{18}}\frac{\partial^4 v_1}{\partial x_1\partial x_3^3}+\\
&C_{26}\frac{c_s^2v_3\delta_l^4}{12\omega_{19}^2\delta_t\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11}}\frac{\partial^4\rho}{\partial x_2\partial x_3^3}+\\
&(\omega_{19}v_3^2+\omega_{19}v_3^2\omega_{11}-\omega_{19}+3\omega_{19}c_s^2+3\omega_{19}c_s^2\omega_{11}-3v_3^2\omega_{11}+3\omega_{11}-9c_s^2\omega_{11}-\omega_{19}\omega_{11})\frac{v_3\rho v_2\delta_l^4}{12\omega_{19}\delta_t\omega_{11}}\frac{\partial^4 v_2}{\partial x_2\partial x_3^3}+\\
&C_{27}\frac{c_s^2\rho\delta_l^4}{12\omega_{19}\delta_t\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}}\frac{\partial^4 v_3}{\partial x_2\partial x_3^3}+\\
&(-2c_s^2-6v_3^2-3v_3^4\omega_{11}+24c_s^2v_3^2-12c_s^2v_3^2\omega_{11}-c_s^4\omega_{11}+3v_3^2\omega_{11}+c_s^2\omega_{11}+2c_s^4+6v_3^4)\frac{v_2\delta_l^4}{24\delta_t\omega_{11}}\frac{\partial^4\rho}{\partial x_3^4}+\\
&C_{28}\frac{\rho\delta_l^4}{24\omega_{19}^2\delta_t\omega_7^3}\frac{\partial^4 v_2}{\partial x_3^4}+(-4+6c_s^2+10v_3^2-5v_3^2\omega_{11}+2\omega_{11}-3c_s^2\omega_{11})\frac{v_3\rho v_2\delta_l^4}{12\delta_t\omega_{11}}\frac{\partial^4 v_3}{\partial x_3^4}=0,
\end{aligned}
$$

where:

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

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

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

$$C_4=-36c_s^2\omega_{10}^2-36c_s^2\omega_{10}\omega_7+18c_s^2\omega_{16}\omega_{10}^2+12\omega_{10}^2+3\omega_{16}\omega_{10}^2\omega_7-12\omega_{10}^2\omega_7-18c_s^2\omega_{16}\omega_{10}\omega_7+36c_s^2\omega_{16}\omega_7+12\omega_{10}^2\omega_7v_2^2-3\omega_{16}\omega_{10}^2\omega_7v_2^2+12\omega_{16}\omega_7v_2^2-12\omega_{16}\omega_7+36c_s^2\omega_{10}^2\omega_7-6\omega_{16}\omega_{10}\omega_7v_2^2-12\omega_{10}\omega_7v_2^2+6\omega_{16}\omega_{10}^2v_2^2+12\omega_{10}\omega_7-12\omega_{10}^2v_2^2+6\omega_{16}\omega_{10}\omega_7-11c_s^2\omega_{16}\omega_{10}^2\omega_7-6\omega_{16}\omega_{10}^2$$

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

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

$C_7 =$
$-12\omega_9\omega_{12}^2\omega_5^2 + 12\omega_9\omega_{12}^2\omega_{10}\omega_5^2 - 18\omega_9\omega_{12}\omega_{10}\omega_5\omega_{21}\omega_{15} - 12\omega_9\omega_{12}\omega_{10}v_1^2\omega_{21}\omega_{15} + 18\omega_{12}^2c_s^2\omega_5^2\omega_{21}\omega_{15} - 6\omega_{12}^2\omega_5^2\omega_{21}\omega_{15} - 36\omega_9\omega_{12}c_s^2\omega_{10}\omega_{21}\omega_{15} - 6\omega_9\omega_{10}\omega_5^2\omega_{21}\omega_{15} + 12\omega_9\omega_{12}^2\omega_{10}v_1^2\omega_{21}\omega_{15} - 12\omega_9\omega_{12}^2\omega_{10}v_1^2\omega_5^2 + 36\omega_9\omega_{12}^2c_s^2\omega_{10}\omega_{21}\omega_{15} - 12\omega_{12}^2v_1^2\omega_5^2\omega_{21} - 3\omega_9\omega_{12}\omega_{10}v_1^2\omega_5^2\omega_{21}\omega_{15} + 12\omega_9\omega_{12}^2\omega_{10}\omega_5\omega_{15} + 12\omega_9\omega_{12}^2v_1^2\omega_5^2 - 9\omega_9\omega_{12}c_s^2\omega_{10}\omega_5^2\omega_{21}\omega_{15} + 12\omega_9\omega_{12}^2\omega_{10}\omega_5\omega_{21}\omega_{15} + 6\omega_9\omega_{12}\omega_{10}\omega_5^2\omega_{15} + 36\omega_{12}^2c_s^2\omega_{10}\omega_5^2\omega_{21} + 12\omega_9\omega_{12}^2\omega_{10}v_1^2\omega_5 - 12\omega_9\omega_{10}v_1^2\omega_5\omega_{21}\omega_{15} + 36\omega_9\omega_{12}c_s^2\omega_{10}\omega_5\omega_{15} + 12\omega_9\omega_{12}\omega_{10}v_1^2\omega_5\omega_{15} - 12\omega_{12}^2\omega_{10}\omega_5^2\omega_{21} + 12\omega_{12}^2\omega_{10}v_1^2\omega_5^2\omega_{21} + \omega_9\omega_{12}^2\omega_{10}v_1^2\omega_5^2\omega_{21}\omega_{15} + 3\omega_9\omega_{12}^2c_s^2\omega_{10}\omega_5^2\omega_{21}\omega_{15} - 36\omega_9c_s^2\omega_{10}\omega_5\omega_{21}\omega_{15} - 36\omega_9\omega_{12}^2c_s^2\omega_{10}\omega_5\omega_{15} - 15\omega_{12}^2c_s^2\omega_{10}\omega_5^2\omega_{21}\omega_{15} - 12\omega_9\omega_{12}^2\omega_{10}v_1^2\omega_5\omega_{15} - 5\omega_{12}^2\omega_{10}v_1^2\omega_5^2\omega_{21}\omega_{15} - 18\omega_9\omega_{12}^2c_s^2\omega_5^2\omega_{15} + 5\omega_{12}^2\omega_{10}\omega_5^2\omega_{21}\omega_{15} - 12\omega_9\omega_{12}^2\omega_{10}\omega_{21}\omega_{15} - 12\omega_9\omega_{12}^2\omega_{10}\omega_5 + 6\omega_9\omega_{12}^2\omega_{10}v_1^2\omega_5^2\omega_{15} + 18\omega_9\omega_{12}^2c_s^2\omega_{10}\omega_5^2\omega_{15} + 18\omega_9c_s^2\omega_{10}\omega_5^2\omega_{21}\omega_{15} - 36\omega_9\omega_{12}^2c_s^2\omega_{10}\omega_5\omega_{21}\omega_{15} + 6\omega_{12}^2v_1^2\omega_5^2\omega_{21}\omega_{15} - 12\omega_9\omega_{12}^2\omega_{10}v_1^2\omega_5\omega_{21}\omega_{15} + 6\omega_9\omega_{10}v_1^2\omega_5^2\omega_{21}\omega_{15} + 18\omega_{12}^2\omega_{10}v_1^2\omega_5\omega_{21}\omega_{15} - 36\omega_9\omega_{12}^2c_s^2\omega_{10}\omega_5^2 - 18\omega_{12}^2\omega_{10}\omega_5\omega_{21}\omega_{15} - 6\omega_9\omega_{12}^2v_1^2\omega_5^2\omega_{15} - 12\omega_9\omega_{12}\omega_{10}\omega_5\omega_{15} + 54\omega_{12}^2c_s^2\omega_{10}\omega_5\omega_{21}\omega_{15} + 12\omega_{12}^2\omega_{10}\omega_5\omega_{21} - 12\omega_{12}^2\omega_{10}v_1^2\omega_5\omega_{21} - 6\omega_9\omega_{12}\omega_{10}v_1^2\omega_5^2\omega_{15} - 18\omega_9\omega_{12}c_s^2\omega_{10}\omega_5^2\omega_{15} - 36\omega_{12}^2c_s^2\omega_{10}\omega_5\omega_{21} - 36\omega_{12}^2c_s^2\omega_{10}\omega_{21}\omega_{15} + 12\omega_{12}^2\omega_{10}\omega_{21}\omega_{15} - 12\omega_{12}^2\omega_{10}v_1^2\omega_{21}\omega_{15} + 3\omega_9\omega_{12}\omega_{10}\omega_5^2\omega_{21}\omega_{15} + 6\omega_9\omega_{12}^2\omega_5^2\omega_{15} + 36\omega_9\omega_{12}^2c_s^2\omega_{10}\omega_5 - 6\omega_9\omega_{12}^2\omega_{10}\omega_5^2\omega_{15} + 36\omega_9\omega_{12}^2c_s^2\omega_5^2 + 12\omega_9\omega_{10}\omega_5\omega_{21}\omega_{15} - 36\omega_{12}^2c_s^2\omega_5^2\omega_{21} + 12\omega_9\omega_{12}\omega_{10}\omega_{21}\omega_{15} + 12\omega_{12}^2\omega_5^2\omega_{21} + 54\omega_9\omega_{12}c_s^2\omega_{10}\omega_5\omega_{21}\omega_{15} - \omega_9\omega_{12}^2\omega_{10}\omega_5^2\omega_{21}\omega_{15} + 18\omega_9\omega_{12}\omega_{10}v_1^2\omega_5\omega_{21}\omega_{15}$

$C_8 = 18\omega_{12}c_s^2\omega_{10}\omega_5^2\omega_{21}\omega_{15} + 54\omega_{12}\omega_{10}v_1^2\omega_5^2\omega_{21}\omega_{15} - 6\omega_9\omega_{12}\omega_{10}\omega_5^3\omega_{15} - 12\omega_9\omega_{12}c_s^2\omega_{10}\omega_{21}\omega_{15} - 12\omega_9\omega_{12}c_s^2\omega_{10}\omega_5^3 + 18\omega_9\omega_{10}\omega_5^2\omega_{21}\omega_{15} + 18\omega_{12}v_1^2\omega_5^3\omega_{21}\omega_{15} - 12\omega_9\omega_{10}\omega_5^2\omega_{15} + 6\omega_9c_s^2\omega_{10}\omega_5^3\omega_{21}\omega_{15} + 18\omega_9\omega_{10}v_1^2\omega_5^3\omega_{21}\omega_{15} - 12\omega_{12}c_s^2\omega_5^3\omega_{21} - 3\omega_9\omega_{12}\omega_{10}v_1^2\omega_5^2\omega_{21}\omega_{15} + 12\omega_9\omega_{12}c_s^2\omega_5^3 - 6\omega_9c_s^2\omega_{10}\omega_5^3\omega_{15} + 12\omega_{12}c_s^2\omega_{10}\omega_5^3\omega_{21} + 12\omega_9\omega_{12}c_s^2\omega_{10}\omega_5^2 - 6\omega_{12}\omega_5^3\omega_{21}\omega_{15} - 18\omega_9\omega_{10}v_1^2\omega_5^3\omega_{15} + 36\omega_{12}\omega_{10}v_1^2\omega_5^3\omega_{21} - 5\omega_9\omega_{12}c_s^2\omega_{10}\omega_5^2\omega_{21}\omega_{15} + 12\omega_9\omega_{12}\omega_{10}\omega_5^2\omega_{15} + 6\omega_9\omega_{12}\omega_5^3\omega_{15} + 36\omega_9\omega_{10}v_1^2\omega_5\omega_{21}\omega_{15} - 18\omega_{12}\omega_{10}\omega_5^2\omega_{21}\omega_{15} + 12\omega_9c_s^2\omega_{10}\omega_5\omega_{21}\omega_{15} + 12\omega_9c_s^2\omega_{10}\omega_5^2\omega_{15} - 12\omega_{12}c_s^2\omega_{10}\omega_5^2\omega_{21} + 36\omega_9\omega_{10}v_1^2\omega_5^2\omega_{15} - 36\omega_{12}\omega_{10}v_1^2\omega_5^2\omega_{21} - 18\omega_9\omega_{12}v_1^2\omega_5^3\omega_{15} + 6\omega_9\omega_{10}\omega_5^3\omega_{15} + 12\omega_{12}\omega_5^3\omega_{21} - \omega_9\omega_{12}c_s^2\omega_{10}\omega_5^3\omega_{21}\omega_{15} + 12\omega_{12}\omega_{10}\omega_5\omega_{21}\omega_{15} - 18\omega_9c_s^2\omega_{10}\omega_5^2\omega_{21}\omega_{15} - 12\omega_{12}\omega_{10}\omega_5^3\omega_{21} - 36\omega_9\omega_{12}\omega_{10}v_1^2\omega_5^3 + 6\omega_{12}c_s^2\omega_5^3\omega_{21}\omega_{15} - 54\omega_9\omega_{10}v_1^2\omega_5^2\omega_{21}\omega_{15} - 6\omega_9\omega_{10}\omega_5^3\omega_{21}\omega_{15} - 6\omega_9\omega_{12}c_s^2\omega_5^3\omega_{15} - 5\omega_{12}c_s^2\omega_{10}\omega_5^3\omega_{21}\omega_{15} - 36\omega_9\omega_{12}\omega_{10}v_1^2\omega_5^2\omega_{15} - 12\omega_9\omega_{12}c_s^2\omega_{10}\omega_5^2\omega_{15} + 36\omega_9\omega_{12}\omega_{10}v_1^2\omega_5^2 - 15\omega_{12}\omega_{10}v_1^2\omega_5^3\omega_{21}\omega_{15} + \omega_9\omega_{12}\omega_{10}\omega_5^2\omega_{21}\omega_{15} - 36\omega_{12}\omega_{10}v_1^2\omega_5\omega_{21}\omega_{15} - 12\omega_9\omega_{12}\omega_{10}\omega_5^2 - 12\omega_{12}c_s^2\omega_{10}\omega_5\omega_{21}\omega_{15} - 12\omega_9\omega_{12}\omega_5^3 + 12\omega_{12}\omega_{10}\omega_5^2\omega_{21} + 36\omega_9\omega_{12}v_1^2\omega_5^3 - 12\omega_9\omega_{10}\omega_5\omega_{21}\omega_{15} + 18\omega_9\omega_{12}\omega_{10}v_1^2\omega_5^3\omega_{15} + 12\omega_9\omega_{12}\omega_{10}\omega_5^3 + 5\omega_{12}\omega_{10}\omega_5^3\omega_{21}\omega_{15} + 6\omega_9\omega_{12}c_s^2\omega_{10}\omega_5^3\omega_{15} - 36\omega_{12}v_1^2\omega_5^3\omega_{21} + 18\omega_9\omega_{12}c_s^2\omega_{10}\omega_5\omega_{21}\omega_{15}$

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

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

$C_{11} = 18c_s^2\omega_{10}^2v_2^2\omega_5^2\omega_{15}^2 + 6c_s^4\omega_{10}^3\omega_5^3\omega_{15} + 36\omega_{10}^3v_2^4\omega_5^3 - 12c_s^4\omega_{10}\omega_5^3\omega_{15}^2 - 6c_s^2\omega_{10}^2\omega_5^2\omega_{15}^2 + 90\omega_{10}v_2^2\omega_5^3\omega_{15}^2 + 36\omega_{10}^2v_2^2\omega_5^3 + 54c_s^2\omega_{10}^3v_2^2\omega_5^2\omega_{15} - 36\omega_{10}v_2^4\omega_5^3\omega_{15} - 36\omega_{10}^3v_2^4\omega_5^2 + 198c_s^2\omega_{10}^2v_2^2\omega_5^3\omega_{15} + 13c_s^4\omega_{10}^3\omega_5^2\omega_{15}^2 - 12c_s^2\omega_{10}^3\omega_5\omega_{15} + 12c_s^2\omega_{10}^3v_2^2\omega_5^3\omega_{15}^2 + 6c_s^2\omega_{10}^2\omega_5^3\omega_{15} + 6c_s^2\omega_{10}^3\omega_5\omega_{15}^2 + 108c_s^2\omega_{10}^3v_2^2\omega_5^3 - 99c_s^2\omega_{10}^3v_2^2\omega_5^3\omega_{15} - c_s^2\omega_{10}^2\omega_5^3\omega_{15}^2 - 90\omega_{10}v_2^4\omega_5^3\omega_{15}^2 - 12c_s^4\omega_{10}\omega_5^2\omega_{15}^2 + 60c_s^2\omega_{10}^2v_2^2\omega_5^3\omega_{15}^2 - 18c_s^4\omega_{10}^3\omega_5^2\omega_{15} - 12c_s^2\omega_{10}^2\omega_5^2\omega_{15} + 36\omega_{10}v_2^2\omega_5^3\omega_{15} + 252c_s^2v_2^2\omega_5^3\omega_{15}^2 - 3c_s^2\omega_{10}^3v_2^2\omega_5^2\omega_{15}^2 - 108c_s^2\omega_{10}^3v_2^2\omega_5^2 + 36c_s^2\omega_{10}^2v_2^2\omega_5^2\omega_{15} - c_s^4\omega_{10}^3\omega_5^3\omega_{15}^2 - 72v_2^2\omega_5^3\omega_{15}^2 + 36\omega_{10}^3v_2^2\omega_5^2 + 12c_s^2\omega_{10}\omega_5^3\omega_{15}^2 - 18c_s^2\omega_{10}^3v_2^2\omega_5\omega_{15}^2 + 36\omega_{10}^3v_2^4\omega_5^2\omega_{15} - 19\omega_{10}^2v_2^2\omega_5^3\omega_{15}^2 - 6c_s^2\omega_{10}^3\omega_5^3\omega_{15} + 39\omega_{10}^3v_2^2\omega_5^3\omega_{15} + 12c_s^4\omega_5^3\omega_{15}^2 - 36c_s^2\omega_{10}v_2^2\omega_5^2\omega_{15}^2 + 6c_s^4\omega_{10}^2\omega_5^2\omega_{15}^2 + 4\omega_{10}^3v_2^4\omega_5^3\omega_{15}^2 - 5c_s^2\omega_{10}^3\omega_5^2\omega_{15}^2 + 12c_s^4\omega_{10}^3\omega_{15}^2 - 36\omega_{10}^3v_2^2\omega_5^3 - 6c_s^4\omega_{10}^2\omega_5^3\omega_{15} - 108c_s^2\omega_{10}v_2^2\omega_5^3\omega_{15} + 72\omega_{10}^2v_2^4\omega_5^3\omega_{15} + 6\omega_{10}^3v_2^2\omega_5^2\omega_{15}^2 + 12c_s^4\omega_{10}^3\omega_5\omega_{15} - 36\omega_{10}^2v_2^4\omega_5^3 + c_s^4\omega_{10}^2\omega_5^3\omega_{15}^2 - 306c_s^2\omega_{10}v_2^2\omega_5^3\omega_{15}^2 + 72v_2^4\omega_5^3\omega_{15}^2 - 36\omega_{10}^3v_2^2\omega_5^2\omega_{15} + 19\omega_{10}^2v_2^4\omega_5^3\omega_{15}^2 - 24c_s^4\omega_{10}^3\omega_5\omega_{15}^2 - 12c_s^2\omega_5^3\omega_{15}^2 - 39\omega_{10}^3v_2^4\omega_5^3\omega_{15} + 18c_s^2\omega_{10}^3\omega_5^2\omega_{15} + 12c_s^2\omega_{10}\omega_5^2\omega_{15}^2 - 4\omega_{10}^3v_2^2\omega_5^3\omega_{15}^2 + 12c_s^4\omega_{10}^2\omega_5^2\omega_{15} - 108c_s^2\omega_{10}^2v_2^2\omega_5^3 + 36c_s^2\omega_{10}^3v_2^2\omega_5\omega_{15} - 72\omega_{10}^2v_2^2\omega_5^3\omega_{15} - 6\omega_{10}^3v_2^4\omega_5^2\omega_{15}^2$

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

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

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

$C_{15} = 12c_s^4\omega_{16}\omega_{10}^2\omega_7^2 + 72\omega_{16}^2\omega_7^3v_2^4 - 12c_s^4\omega_{16}^2\omega_{10}\omega_7^3 - 19\omega_{16}^2\omega_{10}^2\omega_7^3v_2^2 - 90\omega_{16}^2\omega_{10}\omega_7^3v_2^4 - 306c_s^2\omega_{16}^2\omega_{10}\omega_7^3v_2^2 + 36c_s^2\omega_{16}\omega_{10}^2\omega_7^2v_2^2 -$
$5c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2 + 39\omega_{16}\omega_{10}^3\omega_7^3v_2^2 - 12c_s^4\omega_{16}^2\omega_{10}\omega_7^2 + 12c_s^4\omega_{16}\omega_{10}^3\omega_7 - 36\omega_{10}^3\omega_7^3v_2^2 - 6c_s^4\omega_{16}\omega_{10}^2\omega_7^3 - 6\omega_{16}^2\omega_{10}^3\omega_7^2v_2^4 - 3c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2v_2^2 +$
$252c_s^2\omega_{16}^2\omega_7^3v_2^2 + 198c_s^2\omega_{16}\omega_{10}^2\omega_7^3v_2^2 - 6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2 + 72\omega_{16}\omega_{10}^2\omega_7^3v_2^4 + 36c_s^2\omega_{16}\omega_{10}^3\omega_7v_2^2 - 36\omega_{10}^2\omega_7^3v_2^4 - 36c_s^2\omega_{16}^2\omega_{10}\omega_7^2v_2^2 - 18c_s^4\omega_{16}\omega_{10}^3\omega_7^2 +$
$36\omega_{16}\omega_{10}\omega_7^3v_2^2 - c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3 + 4\omega_{16}^2\omega_{10}^3\omega_7^3v_2^4 + 6c_s^2\omega_{16}^2\omega_{10}^3\omega_7 + 12c_s^2\omega_{16}^2\omega_{10}^3\omega_7^3v_2^2 + 36\omega_{10}^3\omega_7^2v_2^2 + 6c_s^4\omega_{16}\omega_{10}^3\omega_7^3 - 108c_s^2\omega_{10}^2\omega_7^3v_2^2 -$
$36\omega_{16}\omega_{10}^3\omega_7^2v_2^2 + 18c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2v_2^2 + 12c_s^4\omega_{16}^2\omega_{10}^3 - 12c_s^2\omega_{16}\omega_{10}^2\omega_7^2 - 36\omega_{16}\omega_{10}\omega_7^3v_2^4 - 108c_s^2\omega_{16}\omega_{10}\omega_7^3v_2^2 + 12c_s^2\omega_{16}^2\omega_{10}\omega_7^3 + 13c_s^4\omega_{16}^2\omega_{10}^3\omega_7^2 -$
$72\omega_{16}\omega_{10}^2\omega_7^3v_2^2 - 12c_s^2\omega_{16}^2\omega_7^3 - 108c_s^2\omega_{10}^3\omega_7^2v_2^2 + 36\omega_{10}^2\omega_7^3v_2^2 - 36\omega_{10}^3\omega_7^2v_2^4 - 12c_s^2\omega_{16}\omega_{10}^3\omega_7 + 12c_s^2\omega_{16}^2\omega_{10}\omega_7^2 + 6c_s^2\omega_{16}\omega_{10}^2\omega_7^3 +$
$36\omega_{16}\omega_{10}^3\omega_7^2v_2^4 + 54c_s^2\omega_{16}\omega_{10}^3\omega_7^2v_2^2 - c_s^4\omega_{16}^2\omega_{10}^3\omega_7^3 - 4\omega_{16}^2\omega_{10}^3\omega_7^3v_2^2 + 108c_s^2\omega_{10}^3\omega_7^3v_2^2 + 90\omega_{16}^2\omega_{10}\omega_7^3v_2^2 + 6c_s^4\omega_{16}^2\omega_{10}^2\omega_7^2 - 18c_s^2\omega_{16}^2\omega_{10}^3\omega_7v_2^2 +$
$18c_s^2\omega_{16}\omega_{10}^3\omega_7^2 - 72\omega_{16}^2\omega_7^3v_2^2 + 60c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3v_2^2 + 12c_s^4\omega_{16}^2\omega_7^3 + 19\omega_{16}^2\omega_{10}^2\omega_7^3v_2^4 + 6\omega_{16}^2\omega_{10}^3\omega_7^2v_2^2 + c_s^4\omega_{16}^2\omega_{10}^2\omega_7^3 - 24c_s^4\omega_{16}^2\omega_{10}^3\omega_7 -$
$39\omega_{16}\omega_{10}^3\omega_7^3v_2^4 - 99c_s^2\omega_{16}\omega_{10}^3\omega_7^3v_2^2 + 36\omega_{10}^3\omega_7^3v_2^4 - 6c_s^2\omega_{16}\omega_{10}^3\omega_7^3$

$C_{16} = 12\omega_{12}\omega_6\omega_{19}v_3^2\omega_7\omega_{20}v_2^2v_1\omega_5 - 3\omega_{12}\omega_6v_3^2\omega_7\omega_{20}\omega_{14}v_2^2\omega_8v_1\omega_5 + 6\omega_{12}\omega_6c_s^2v_3^2\omega_7\omega_{14}\omega_8v_1\omega_5 - 6\omega_{12}\omega_6\omega_{19}v_3^2\omega_7\omega_{20}v_2^2\omega_8v_1\omega_5 +$
$6\omega_{12}\omega_6\omega_{19}c_s^2\omega_7\omega_{14}v_2\omega_8v_1^2\omega_5 + 6\omega_{12}\omega_6c_s^2\omega_{20}\omega_{14}v_2^2\omega_8v_1\omega_5 + 12\omega_{12}\omega_6\omega_{19}c_s^2v_3^2\omega_7\omega_{20}\omega_{14}v_2\omega_5 + 12\omega_{12}\omega_6\omega_{19}c_s^2v_3^2\omega_{20}\omega_{14}v_1\omega_5 +$
$12\omega_{12}\omega_6\omega_{19}c_s^2\omega_{14}v_2v_1^2\omega_5 + 12\omega_{12}\omega_6\omega_{19}c_s^2\omega_7\omega_{20}v_2^2v_1\omega_5 - 12\omega_{12}\omega_6\omega_{19}c_s^2\omega_7\omega_{14}v_2^2v_1 - 3\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{14}v_2^2\omega_8v_1\omega_5 -$
$12\omega_{12}\omega_6\omega_{19}c_s^2v_3^2\omega_7\omega_{20}v_2\omega_5 + 3\omega_{12}\omega_6c_s^2v_3^2\omega_7\omega_{20}\omega_{14}v_2\omega_8\omega_5 - 12\omega_{12}\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{14}v_2v_1^2 - 12\omega_{12}\omega_6\omega_{19}v_3^2\omega_{20}v_2^2v_1\omega_5 +$
$6\omega_{12}\omega_6v_3^2\omega_{20}\omega_{14}v_2^2\omega_8v_1\omega_5 - 6\omega_{12}\omega_6\omega_{19}c_s^2v_3^2\omega_{20}\omega_{14}\omega_8v_1\omega_5 - 6\omega_{12}\omega_6\omega_{19}c_s^2\omega_7\omega_{20}v_2^2\omega_8v_1\omega_5 + 6\omega_{12}\omega_6\omega_{19}v_3^2\omega_7\omega_{14}v_2\omega_8v_1^2\omega_5 +$
$2\omega_{12}\omega_6\omega_{19}c_s^4\omega_7\omega_{20}\omega_{14}v_2\omega_8\omega_5 - 12\omega_{12}\omega_6\omega_{19}v_3^2\omega_7\omega_{20}\omega_{14}v_2v_1^2 + 12\omega_{12}\omega_6\omega_{19}c_s^2v_3^2\omega_7\omega_{14}v_1\omega_5 + 12\omega_{12}\omega_6\omega_{19}v_3^2\omega_7\omega_{14}v_2v_1^2 -$
$3\omega_{12}\omega_6\omega_{19}v_3^2\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1^2\omega_5 + 6\omega_6\omega_{19}c_s^2v_3^2\omega_7\omega_{20}\omega_8v_1\omega_5 + 3\omega_6\omega_{19}c_s^2v_3^2\omega_7\omega_{20}\omega_{14}v_2\omega_8\omega_5 - 12\omega_{12}\omega_6\omega_{19}c_s^2\omega_7\omega_{20}v_2v_1^2\omega_5 -$
$12\omega_{12}\omega_6\omega_{19}c_s^2\omega_{14}v_2^2v_1\omega_5 + 12\omega_{12}\omega_6c_s^2\omega_{14}v_2\omega_8v_1^2\omega_5 + 6\omega_{12}\omega_6c_s^2v_3^2\omega_{20}\omega_{14}\omega_8v_1\omega_5 - 3\omega_{12}\omega_6c_s^2\omega_7\omega_{20}\omega_{14}v_2^2\omega_8v_1\omega_5 +$
$6\omega_{12}\omega_6\omega_{19}v_3^2\omega_{20}\omega_{14}v_2^2\omega_8v_1\omega_5 + 6\omega_{12}\omega_6\omega_{19}v_3^2\omega_{20}v_2^2\omega_8v_1\omega_5 - 6\omega_{12}\omega_6v_3^2\omega_7\omega_{14}v_2\omega_8v_1^2\omega_5 - 12\omega_{12}\omega_6\omega_{19}v_3^2\omega_7\omega_{20}v_2v_1^2\omega_5 +$
$12\omega_{12}\omega_6v_3^2\omega_{14}v_2\omega_8v_1^2\omega_5 + 6\omega_{12}\omega_6\omega_{19}c_s^2\omega_{20}v_2^2\omega_8v_1\omega_5 - 3\omega_6\omega_{19}v_3^2\omega_7\omega_{20}\omega_{14}v_2^2\omega_8v_1\omega_5 + 12\omega_6\omega_{19}c_s^2\omega_7\omega_{20}v_2\omega_8v_1^2 -$
$6\omega_{12}\omega_6\omega_{19}c_s^2v_3^2\omega_{20}v_2\omega_8\omega_5 - 6\omega_{12}\omega_6\omega_{19}c_s^2v_3^2\omega_7\omega_{14}\omega_8v_1\omega_5 - 6\omega_{12}\omega_6c_s^2\omega_7\omega_{14}v_2\omega_8v_1^2\omega_5 - 12\omega_{12}\omega_6\omega_{19}v_3^2\omega_{14}v_2\omega_8v_1^2\omega_5 -$
$6\omega_{12}\omega_6\omega_{19}c_s^2\omega_{20}\omega_{14}v_2^2\omega_8v_1\omega_5 - 3\omega_{12}\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1^2\omega_5 + 12\omega_6\omega_{19}v_3^2\omega_7\omega_{20}v_2\omega_8v_1^2 + 12\omega_{12}\omega_6\omega_{19}v_3^2\omega_{20}v_2v_1^2\omega_5 -$
$12\omega_{12}\omega_6\omega_{19}c_s^2\omega_{14}v_2\omega_8v_1^2\omega_5 + 6\omega_6\omega_{19}c_s^2v_3^2\omega_7\omega_{20}\omega_{14}\omega_8v_1 + 12\omega_{12}\omega_6\omega_{19}v_3^2\omega_7\omega_{20}v_2v_1^2 + 12\omega_{12}\omega_6\omega_{19}c_s^2v_3^2\omega_7\omega_{20}v_1\omega_5 -$
$12\omega_{12}\omega_6\omega_{19}c_s^2v_3^2\omega_{20}\omega_{14}v_2\omega_5 + 12\omega_{12}\omega_6\omega_{19}c_s^2\omega_{14}v_2^2\omega_8v_1\omega_5 - 6\omega_6\omega_{19}c_s^2v_3^2\omega_7\omega_{20}\omega_{14}v_2\omega_8 + 3\omega_{12}\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{14}v_2^2\omega_8v_1\omega_5 +$
$6\omega_{12}\omega_6\omega_{19}c_s^2\omega_{20}\omega_{14}v_2\omega_8v_1^2\omega_5 + 6\omega_{12}\omega_6c_s^2\omega_7\omega_{14}v_2^2\omega_8v_1\omega_5 + 12\omega_{12}\omega_6\omega_{19}v_3^2\omega_{14}v_2^2\omega_8v_1\omega_5 - 12\omega_{12}\omega_6\omega_{19}c_s^2v_3^2\omega_7\omega_{20}\omega_{14}v_1\omega_5 -$
$12\omega_{12}\omega_6\omega_{19}c_s^2v_3^2\omega_7\omega_{14}v_2\omega_5 + 3\omega_6\omega_{19}v_3^2\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1^2\omega_5 - 6\omega_{12}\omega_6\omega_{19}c_s^2\omega_{20}v_2\omega_8v_1^2\omega_5 - 12\omega_{12}\omega_6\omega_{19}c_s^2\omega_7\omega_{20}v_2^2v_1 -$
$12\omega_{12}\omega_6v_3^2\omega_{14}v_2^2\omega_8v_1\omega_5 - 6\omega_{12}\omega_6\omega_{19}v_3^2\omega_{20}v_2\omega_8v_1^2\omega_5 - 12\omega_{12}\omega_6\omega_{19}c_s^2v_3^2\omega_7\omega_{14}v_1 + 6\omega_{12}\omega_6v_3^2\omega_7\omega_{14}v_2^2\omega_8v_1\omega_5 +$
$3\omega_{12}\omega_6c_s^2\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1^2\omega_5 + 6\omega_{12}\omega_6\omega_{19}v_3^2\omega_{20}\omega_{14}v_2\omega_8v_1^2\omega_5 - 12\omega_{12}\omega_6c_s^2\omega_{14}v_2^2\omega_8v_1\omega_5 + 6\omega_{12}\omega_6\omega_{19}v_3^2\omega_7\omega_{14}v_2^2\omega_8v_1 -$
$12\omega_{12}\omega_6\omega_{19}c_s^2\omega_7\omega_{20}v_2\omega_8v_1^2 + 3\omega_{12}\omega_6\omega_{19}v_3^2\omega_7\omega_{20}\omega_{14}v_2^2\omega_8v_1\omega_5 - 6\omega_{12}\omega_6\omega_{19}v_3^2\omega_7\omega_{20}\omega_{14}v_2^2\omega_8v_1 + 6\omega_{12}\omega_6\omega_{19}c_s^2\omega_7\omega_{14}v_2^2\omega_8v_1 -$
$12\omega_{12}\omega_6\omega_{19}v_3^2\omega_7\omega_{20}v_2\omega_8v_1^2 + 6\omega_{12}\omega_6\omega_{19}c_s^2\omega_7\omega_{20}v_2\omega_8v_1^2\omega_5 - 6\omega_{12}\omega_6\omega_{19}v_3^2\omega_7\omega_{14}v_2^2\omega_8v_1\omega_5 - 6\omega_{12}\omega_6v_3^2\omega_{20}\omega_{14}v_2\omega_8v_1^2\omega_5 -$
$3\omega_{12}\omega_6\omega_{19}c_s^2v_3^2\omega_7\omega_{20}\omega_{14}v_2\omega_8\omega_5 - 6\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1^2 - 12\omega_{12}\omega_6c_s^2v_3^2\omega_{14}\omega_8v_1\omega_5 + 3\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1^2\omega_5 -$
$6\omega_{12}\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{14}v_2^2\omega_8v_1 + 6\omega_{12}\omega_6\omega_{19}c_s^2v_3^2\omega_7\omega_{20}v_2\omega_8\omega_5 + 12\omega_{12}\omega_6\omega_{19}c_s^2v_3^2\omega_{14}\omega_8v_1\omega_5 - 6\omega_{12}\omega_6c_s^2\omega_{20}\omega_{14}v_2\omega_8v_1^2\omega_5 +$
$6\omega_{12}\omega_6\omega_{19}v_3^2\omega_7\omega_{20}v_2\omega_8v_1^2\omega_5 - 6\omega_{12}\omega_6\omega_{19}c_s^2\omega_7\omega_{14}v_2^2\omega_8v_1\omega_5 - 6\omega_6\omega_{19}v_3^2\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1^2 + 12\omega_{12}\omega_6\omega_{19}c_s^2v_3^2\omega_7\omega_{14}v_2 +$
$3\omega_{12}\omega_6v_3^2\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1^2\omega_5 - 12\omega_{12}\omega_6\omega_{19}c_s^2v_3^2\omega_{14}v_2\omega_8\omega_5 - 12\omega_6\omega_{19}v_3^2\omega_7\omega_{20}v_2^2\omega_8v_1 + 12\omega_{12}\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{14}v_2^2v_1 -$
$6\omega_{12}\omega_6\omega_{19}c_s^2v_3^2\omega_7\omega_{20}\omega_8v_1\omega_5 + 12\omega_{12}\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{14}v_2v_1^2\omega_5 + 12\omega_{12}\omega_6\omega_{19}v_3^2\omega_7\omega_{20}\omega_{14}v_2^2v_1 + 12\omega_{12}\omega_6\omega_{19}v_3^2\omega_{14}v_2v_1^2\omega_5 -$
$12\omega_6\omega_{19}c_s^2\omega_7\omega_{20}v_2^2\omega_8v_1 - 12\omega_{12}\omega_6\omega_{19}v_3^2\omega_7\omega_{14}v_2^2v_1 + 12\omega_{12}\omega_6\omega_{19}v_3^2\omega_{20}\omega_{14}v_2^2v_1\omega_5 - 12\omega_{12}\omega_6\omega_{19}c_s^2\omega_{20}v_2^2v_1\omega_5 -$
$12\omega_{12}\omega_6\omega_{19}c_s^2\omega_7\omega_{14}v_2v_1^2\omega_5 + 12\omega_{12}\omega_6\omega_{19}c_s^2v_3^2\omega_7\omega_{20}\omega_8v_1 + 12\omega_{12}\omega_6\omega_{19}v_3^2\omega_7\omega_{20}\omega_{14}v_2v_1^2\omega_5 + 12\omega_{12}\omega_6\omega_{19}c_s^2\omega_{20}\omega_{14}v_2^2v_1\omega_5 -$
$6\omega_{12}\omega_6\omega_{19}c_s^2v_3^2\omega_7\omega_{20}\omega_{14}\omega_8v_1 - 12\omega_{12}\omega_6\omega_{19}v_3^2\omega_7\omega_{14}v_2v_1^2\omega_5 + 12\omega_{12}\omega_6c_s^2v_3^2\omega_{14}v_2\omega_8\omega_5 + 3\omega_{12}\omega_6\omega_{19}c_s^2v_3^2\omega_7\omega_{20}\omega_{14}\omega_8v_1\omega_5 +$
$12\omega_{12}\omega_6\omega_{19}c_s^2\omega_7\omega_{14}v_2v_1^2 - 12\omega_{12}\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{14}v_2^2v_1\omega_5 + 6\omega_6\omega_{19}v_3^2\omega_7\omega_{20}v_2^2\omega_8v_1\omega_5 - 12\omega_{12}\omega_6\omega_{19}v_3^2\omega_{14}v_2^2v_1\omega_5 +$
$12\omega_{12}\omega_6\omega_{19}c_s^2v_3^2\omega_{20}v_2\omega_5 + 6\omega_6\omega_{19}c_s^2\omega_7\omega_{20}v_2^2\omega_8v_1\omega_5 - 12\omega_{12}\omega_6\omega_{19}c_s^2\omega_{20}\omega_{14}v_2v_1^2\omega_5 - 12\omega_{12}\omega_6\omega_{19}v_3^2\omega_7\omega_{20}\omega_{14}v_2^2v_1\omega_5 -$
$6\omega_{12}\omega_6\omega_{19}c_s^2v_3^2\omega_7\omega_{14}v_2\omega_8 + 12\omega_{12}\omega_6\omega_{19}v_3^2\omega_7\omega_{14}v_2^2v_1\omega_5 - 12\omega_{12}\omega_6\omega_{19}c_s^2v_3^2\omega_{14}v_1\omega_5 - 12\omega_{12}\omega_6\omega_{19}v_3^2\omega_{20}\omega_{14}v_2v_1^2\omega_5 +$
$12\omega_6\omega_{19}c_s^2v_3^2\omega_7\omega_{20}v_2\omega_8 + 12\omega_{12}\omega_6\omega_{19}c_s^2\omega_7\omega_{14}v_2^2v_1\omega_5 + 12\omega_{12}\omega_6\omega_{19}c_s^2\omega_{20}v_2v_1^2\omega_5 + 6\omega_{12}\omega_6\omega_{19}c_s^2v_3^2\omega_7\omega_{14}v_2\omega_8\omega_5 +$
$6\omega_{12}\omega_6\omega_{19}c_s^2v_3^2\omega_{20}\omega_8v_1\omega_5 + 6\omega_6\omega_{19}v_3^2\omega_7\omega_{20}\omega_{14}v_2^2\omega_8v_1 + 12\omega_{12}\omega_6\omega_{19}c_s^2\omega_7\omega_{20}v_2v_1^2 - 12\omega_6\omega_{19}c_s^2v_3^2\omega_7\omega_{20}\omega_8v_1 +$
$6\omega_{12}\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1^2 + 6\omega_{12}\omega_6\omega_{19}c_s^2v_3^2\omega_7\omega_{14}\omega_8v_1 - 6\omega_6\omega_{19}c_s^2\omega_7\omega_{20}v_2\omega_8v_1^2\omega_5 + 12\omega_{12}\omega_6\omega_{19}c_s^2v_3^2\omega_7\omega_{20}v_2 -$
$3\omega_6\omega_{19}c_s^2v_3^2\omega_7\omega_{20}\omega_{14}\omega_8v_1\omega_5 - 6\omega_6\omega_{19}c_s^2v_3^2\omega_7\omega_{20}v_2\omega_8\omega_5 + 6\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{14}v_2^2\omega_8v_1 - 12\omega_{12}\omega_6\omega_{19}v_3^2\omega_7\omega_{20}v_2^2v_1 -$
$12\omega_{12}\omega_6\omega_{19}c_s^2v_3^2\omega_7\omega_{20}\omega_{14}v_2 - 4\omega_{12}\omega_{19}c_s^4\omega_7\omega_{20}\omega_{14}v_2\omega_8\omega_5 - 6\omega_{12}\omega_6c_s^2v_3^2\omega_{20}\omega_{14}v_2\omega_8\omega_5 - 6\omega_{12}\omega_6\omega_{19}c_s^2\omega_7\omega_{14}v_2\omega_8v_1^2 +$
$12\omega_{12}\omega_6\omega_{19}v_3^2\omega_7\omega_{20}v_2^2\omega_8v_1 + 6\omega_{12}\omega_6\omega_{19}v_3^2\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1^2 - 6\omega_6\omega_{19}v_3^2\omega_7\omega_{20}v_2\omega_8v_1^2\omega_5 - 6\omega_{12}\omega_6\omega_{19}v_3^2\omega_7\omega_{14}v_2\omega_8v_1^2 +$
$12\omega_{12}\omega_6\omega_{19}c_s^2\omega_7\omega_{20}v_2^2\omega_8v_1 - 12\omega_{12}\omega_6\omega_{19}c_s^2v_3^2\omega_{20}v_1\omega_5 + 6\omega_{12}\omega_6\omega_{19}c_s^2v_3^2\omega_7\omega_{20}\omega_{14}v_2\omega_8 + 6\omega_{12}\omega_6\omega_{19}c_s^2v_3^2\omega_{20}\omega_{14}v_2\omega_8\omega_5 -$
$12\omega_{12}\omega_6\omega_{19}c_s^2v_3^2\omega_7\omega_{20}v_2\omega_8 - 6\omega_{12}\omega_6c_s^2v_3^2\omega_7\omega_{14}v_2\omega_8\omega_5 + 12\omega_{12}\omega_6\omega_{19}c_s^2v_3^2\omega_{14}v_2\omega_5 + 12\omega_{12}\omega_6\omega_{19}c_s^2v_3^2\omega_7\omega_{20}\omega_{14}v_1 -$
$12\omega_{12}\omega_6\omega_{19}c_s^2v_3^2\omega_7\omega_{20}v_1 - 3\omega_{12}\omega_6c_s^2v_3^2\omega_7\omega_{20}\omega_{14}\omega_8v_1\omega_5$

$$C_{17} = -8\omega_{12}\omega_{19}c_s^2\omega_7\omega_{20}\omega_{14}v_2v_1 - \omega_{19}v_3^2\omega_7\omega_{20}\omega_{14}v_2^2\omega_8\omega_5 - 2\omega_{12}\omega_{19}c_s^2v_3^2\omega_7\omega_{20}\omega_8\omega_5 + 2\omega_{12}\omega_{19}c_s^2\omega_{20}v_2^2\omega_8\omega_5 + 8\omega_{12}\omega_{19}c_s^2\omega_7\omega_{20}v_2v_1 -$$
$$8\omega_{12}\omega_{19}v_3^2\omega_7\omega_{20}\omega_{14}v_2v_1 - 4\omega_{19}v_3^2\omega_7\omega_{20}v_2\omega_8v_1\omega_5 - 4\omega_{12}\omega_{19}c_s^2\omega_7\omega_{20}\omega_{14}v_2^2\omega_5 - \omega_{19}c_s^2\omega_7\omega_{20}\omega_{14}v_2^2\omega_8\omega_5 + 2\omega_{12}c_s^2\omega_{20}\omega_{14}v_2^2\omega_8\omega_5 -$$
$$8\omega_{12}\omega_{19}c_s^2\omega_7\omega_{14}v_2v_1\omega_5 + 4\omega_{12}\omega_{19}c_s^2v_3^2\omega_{20}\omega_{14}\omega_5 + 4\omega_{12}\omega_{19}c_s^2\omega_7\omega_{20}v_2^2\omega_5 - 4\omega_{12}\omega_{19}v_3^2\omega_7\omega_{20}\omega_{14}v_2^2\omega_5 - 8\omega_{12}\omega_{19}v_3^2\omega_7\omega_{14}v_2v_1\omega_5 +$$
$$2\omega_{12}v_3^2\omega_{20}\omega_{14}v_2^2\omega_8\omega_5 - 4\omega_{19}c_s^2\omega_7\omega_{20}v_2\omega_8v_1\omega_5 + 4\omega_{12}\omega_{19}c_s^2v_3^2\omega_7\omega_{14}\omega_5 - 4\omega_{12}\omega_{19}v_3^2\omega_7\omega_{20}v_2^2 + 4\omega_{12}\omega_{19}c_s^2\omega_7\omega_{14}v_2\omega_8v_1\omega_5 -$$
$$4\omega_{12}\omega_{19}c_s^2v_3^2\omega_{14}\omega_5 - 4\omega_{19}c_s^2\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1 + 2\omega_{19}c_s^2v_3^2\omega_7\omega_{20}\omega_8\omega_5 + 4\omega_{12}\omega_{19}c_s^2v_3^2\omega_{14}\omega_8\omega_5 + 2\omega_{12}\omega_{19}v_3^2\omega_7\omega_{14}v_2^2\omega_8 +$$
$$4\omega_{12}\omega_{19}v_3^2\omega_7\omega_{14}v_2\omega_8v_1\omega_5 + 2\omega_{12}c_s^2\omega_7\omega_{14}v_2^2\omega_8\omega_5 + 4\omega_{12}\omega_{19}v_3^2\omega_{14}v_2^2\omega_8\omega_5 - 8\omega_{12}\omega_{19}c_s^2\omega_{20}\omega_{14}v_2v_1\omega_5 - 4\omega_{19}v_3^2\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1 -$$
$$8\omega_{12}\omega_{19}v_3^2\omega_{20}\omega_{14}v_2v_1\omega_5 + 2\omega_{12}v_3^2\omega_7\omega_{14}v_2^2\omega_8\omega_5 - \omega_{12}c_s^2v_3^2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5 - 4\omega_{19}c_s^2v_3^2\omega_7\omega_{20}\omega_8 + \omega_{12}\omega_{19}c_s^2\omega_7\omega_{20}\omega_{14}v_2^2\omega_8\omega_5 -$$
$$2\omega_{12}\omega_{19}v_3^2\omega_7\omega_{20}v_2^2\omega_8\omega_5 - 2\omega_{12}\omega_{19}c_s^2\omega_7\omega_{20}v_2^2\omega_8\omega_5 - 2\omega_{12}\omega_{19}c_s^2v_3^2\omega_{20}\omega_{14}\omega_8\omega_5 - 4\omega_{12}c_s^2v_3^2\omega_{14}\omega_8\omega_5 + 4\omega_{12}\omega_{19}c_s^2\omega_7\omega_{14}v_2^2\omega_5 +$$
$$4\omega_{12}\omega_{19}c_s^2\omega_7\omega_{20}v_2\omega_8v_1\omega_5 - 4\omega_{12}v_3^2\omega_{14}v_2^2\omega_8\omega_5 + \omega_{12}\omega_{19}v_3^2\omega_7\omega_{20}\omega_{14}v_2^2\omega_8\omega_5 + 8\omega_{19}v_3^2\omega_7\omega_{20}v_2\omega_8v_1 + 4\omega_{12}\omega_{19}c_s^2v_3^2\omega_7\omega_{20}\omega_8 +$$
$$2\omega_{12}v_3^2\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5 - 2\omega_{12}\omega_{19}c_s^2v_3^2\omega_7\omega_{14}\omega_8\omega_5 + 8\omega_{19}c_s^2\omega_7\omega_{20}v_2\omega_8v_1 + 8\omega_{12}\omega_{19}c_s^2\omega_7\omega_{14}v_2v_1 + 4\omega_{12}\omega_{19}c_s^2\omega_7\omega_{20}\omega_{14}v_2^2 +$$
$$4\omega_{12}\omega_{19}v_3^2\omega_7\omega_{20}v_2\omega_8v_1\omega_5 + 4\omega_{12}\omega_{19}c_s^2\omega_{20}\omega_{14}v_2^2\omega_5 - 2\omega_{12}\omega_{19}c_s^2\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5 - 4\omega_{12}\omega_{19}c_s^2\omega_7\omega_{20}v_2^2 + 8\omega_{12}\omega_{19}c_s^2\omega_{14}v_2v_1\omega_5 -$$
$$4\omega_{19}v_3^2\omega_7\omega_{20}v_2^2\omega_8 + 2\omega_{19}c_s^2\omega_7\omega_{20}v_2^2\omega_8\omega_5 + 4\omega_{12}\omega_{19}c_s^2v_3^2\omega_7\omega_{20}\omega_{14} - 4\omega_{12}\omega_{19}c_s^2v_3^2\omega_7\omega_{20}\omega_{14}\omega_5 + 4\omega_{12}\omega_{19}v_3^2\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1 +$$
$$2\omega_{19}v_3^2\omega_7\omega_{20}v_2^2\omega_8\omega_5 + 8\omega_{12}\omega_{19}v_3^2\omega_{20}v_2v_1\omega_5 + 4\omega_{12}\omega_{19}c_s^2\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5 + 2\omega_{12}\omega_{19}c_s^2v_3^2\omega_{20}\omega_8\omega_5 + 8\omega_{12}c_s^2\omega_{14}v_2\omega_8v_1\omega_5 -$$
$$8\omega_{12}\omega_{19}c_s^2\omega_7\omega_{20}v_2\omega_8v_1 + 4\omega_{12}\omega_{19}v_3^2\omega_7\omega_{20}v_2^2\omega_8 - 2\omega_{12}\omega_{19}v_3^2\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5 + 4\omega_{12}\omega_{19}c_s^2\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1 + 8\omega_{12}v_3^2\omega_{14}v_2\omega_8v_1\omega_5 -$$
$$8\omega_{12}\omega_{19}v_3^2\omega_7\omega_{20}v_2\omega_8v_1 + 2\omega_{12}c_s^2\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5 + 4\omega_{12}\omega_{19}v_3^2\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5 - 2\omega_{12}\omega_{19}c_s^2v_3^2\omega_7\omega_{20}\omega_{14}\omega_8 + 2\omega_{12}\omega_{19}v_3^2\omega_{20}v_2^2\omega_8\omega_5 +$$
$$2\omega_{12}c_s^2v_3^2\omega_{20}\omega_{14}\omega_8\omega_5 + 8\omega_{12}\omega_{19}v_3^2\omega_7\omega_{20}v_2v_1 - 4\omega_{12}\omega_{19}c_s^2v_3^2\omega_{20}\omega_5 - 4\omega_{12}\omega_{19}c_s^2v_3^2\omega_7\omega_{20} + 2\omega_{12}c_s^2v_3^2\omega_7\omega_{14}\omega_8\omega_5 + 4\omega_{12}\omega_{19}v_3^2\omega_7\omega_{20}v_2^2\omega_5 -$$
$$4\omega_{12}v_3^2\omega_7\omega_{14}v_2\omega_8v_1\omega_5 - 8\omega_{12}\omega_{19}c_s^2\omega_7\omega_{20}v_2v_1\omega_5 - 4\omega_{12}\omega_{19}v_3^2\omega_{14}v_2^2\omega_5 + 2\omega_{12}\omega_{19}c_s^2\omega_7\omega_{14}v_2^2\omega_8 + 2\omega_{19}c_s^2v_3^2\omega_7\omega_{20}\omega_{14}\omega_8 -$$
$$8\omega_{12}\omega_{19}v_3^2\omega_7\omega_{20}v_2v_1\omega_5 + 8\omega_{12}\omega_{19}c_s^2\omega_7\omega_{20}\omega_{14}v_2v_1\omega_5 + \omega_{12}\omega_{19}c_s^2v_3^2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5 - 4\omega_{12}\omega_{19}v_3^2\omega_7\omega_{14}v_2^2 + 4\omega_{12}\omega_{19}c_s^2\omega_{14}v_2^2\omega_8\omega_5 +$$
$$4\omega_{12}\omega_{19}c_s^2v_3^2\omega_7\omega_{20}\omega_5 - 4\omega_{12}\omega_{19}c_s^2\omega_{20}v_2^2\omega_5 - 8\omega_{12}\omega_{19}v_3^2\omega_{14}v_2\omega_8v_1\omega_5 - 4\omega_{12}c_s^2\omega_7\omega_{14}v_2\omega_8v_1\omega_5 - 8\omega_{12}\omega_{19}c_s^2\omega_{14}v_2\omega_8v_1\omega_5 +$$
$$8\omega_{12}\omega_{19}v_3^2\omega_7\omega_{20}\omega_{14}v_2v_1\omega_5 - \omega_{12}v_3^2\omega_7\omega_{20}\omega_{14}v_2^2\omega_8\omega_5 - 4\omega_{12}\omega_{19}c_s^2\omega_7\omega_{14}v_2\omega_8v_1 + 4\omega_{12}\omega_{19}v_3^2\omega_7\omega_{14}v_2^2\omega_5 - 4\omega_{12}\omega_{19}v_3^2\omega_7\omega_{14}v_2\omega_8v_1 -$$
$$\omega_{12}c_s^2\omega_7\omega_{20}\omega_{14}v_2^2\omega_8\omega_5 - 2\omega_{12}\omega_{19}v_3^2\omega_{20}\omega_{14}v_2^2\omega_8\omega_5 + 2\omega_{19}v_3^2\omega_7\omega_{20}\omega_{14}v_2^2\omega_8 - 4\omega_{12}c_s^2\omega_{14}v_2^2\omega_8\omega_5 - 4\omega_{12}\omega_{19}c_s^2\omega_{20}v_2\omega_8v_1\omega_5 +$$
$$8\omega_{12}\omega_{19}v_3^2\omega_7\omega_{14}v_2v_1 + 4\omega_{12}\omega_{19}v_3^2\omega_{20}\omega_{14}v_2^2\omega_5 + 4\omega_{12}\omega_{19}v_3^2\omega_7\omega_{20}\omega_{14}v_2^2 - 2\omega_{12}\omega_{19}c_s^2\omega_{20}\omega_{14}v_2^2\omega_8\omega_5 - 4\omega_{12}\omega_{19}c_s^2v_3^2\omega_7\omega_{14} +$$
$$8\omega_{12}\omega_{19}v_3^2\omega_{14}v_2v_1\omega_5 + 2\omega_{19}v_3^2\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5 + 2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{14}v_2^2\omega_8 - 4\omega_{12}\omega_{19}v_3^2\omega_{20}v_2\omega_8v_1\omega_5 - 4\omega_{19}c_s^2\omega_7\omega_{20}v_2^2\omega_8 -$$
$$4\omega_{12}\omega_{19}c_s^2\omega_{14}v_2^2\omega_5 + 8\omega_{12}\omega_{19}c_s^2\omega_{20}v_2v_1\omega_5 - 4\omega_{12}v_3^2\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5 + 4\omega_{12}\omega_{19}c_s^2\omega_7\omega_{20}v_2^2\omega_8 - 4\omega_{12}\omega_{19}v_3^2\omega_{20}v_2^2\omega_5 - 4\omega_{12}\omega_{19}c_s^2\omega_7\omega_{14}v_2^2 -$$
$$2\omega_{12}\omega_{19}c_s^2\omega_7\omega_{20}\omega_{14}v_2^2\omega_8 - 2\omega_{12}\omega_{19}v_3^2\omega_7\omega_{14}v_2^2\omega_8\omega_5 + 2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5 + 2\omega_{12}\omega_{19}c_s^2v_3^2\omega_7\omega_{14}\omega_8 - \omega_{19}c_s^2v_3^2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5 -$$
$$2\omega_{12}\omega_{19}c_s^2\omega_7\omega_{14}v_2^2\omega_8\omega_5 - 2\omega_{12}\omega_{19}v_3^2\omega_7\omega_{20}\omega_{14}v_2^2\omega_8 - 4\omega_{12}c_s^2\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5$$

$$C_{18} = -4\omega_{19}c_s^4\omega_7^2\omega_{20}\omega_8\omega_5 - 4\omega_{12}\omega_{19}c_s^4\omega_7^2\omega_{20}\omega_{14}\omega_5^2 - 4\omega_{12}\omega_{19}c_s^4\omega_7\omega_{20}\omega_5^2 - 4\omega_{12}\omega_{19}v_3^2\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5^2 + 4\omega_{19}c_s^2\omega_7^2\omega_{20}v_2\omega_8v_1\omega_5^2 +$$
$$4\omega_{12}\omega_{19}c_s^4\omega_7\omega_{20}\omega_{14}\omega_8 + \omega_{12}v_3^2\omega_7^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2 - 4\omega_{12}\omega_{19}c_s^2v_3^2\omega_7^2\omega_{20}\omega_5^2 + 4\omega_{12}c_s^2\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5^2 + 4\omega_{12}\omega_{19}v_3^2\omega_7^2\omega_{20}\omega_{14}v_1^2\omega_5^2 -$$
$$4\omega_{12}\omega_{19}c_s^2v_3^2\omega_7\omega_{20}\omega_{14}\omega_5^2 + 4\omega_{12}\omega_{19}c_s^4\omega_7^2\omega_{20}\omega_8\omega_5 - 2\omega_{12}\omega_{19}c_s^2\omega_7^2\omega_{14}\omega_8v_1^2\omega_5 + 4\omega_{19}v_3^2\omega_7^2\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5 - 4\omega_{12}\omega_{19}c_s^4\omega_7^2\omega_{14}\omega_5 +$$
$$4\omega_{12}\omega_{19}v_3^2\omega_7^2\omega_{14}v_1^2\omega_5 + 4\omega_{19}v_3^2\omega_7^2\omega_{20}v_2\omega_8v_1\omega_5^2 + 4\omega_{12}\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{14}v_1^2\omega_5^2 + \omega_{12}c_s^2\omega_7^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2 - 2\omega_{12}\omega_{19}v_3^2\omega_7^2\omega_{14}\omega_8v_1^2\omega_5 -$$
$$4\omega_{12}\omega_{19}v_3^2\omega_7\omega_{20}\omega_{14}v_1^2\omega_5^2 - 8\omega_{12}\omega_{19}c_s^2\omega_7^2\omega_{14}v_2v_1\omega_5 - 4\omega_{12}\omega_{19}v_3^2\omega_7^2\omega_{14}v_2\omega_8v_1\omega_5^2 - 8\omega_{12}\omega_{19}v_3^2\omega_7^2\omega_{14}v_2v_1\omega_5 - 4\omega_{12}\omega_{19}c_s^2\omega_7\omega_{20}\omega_{14}v_1^2\omega_5^2 +$$
$$8\omega_{12}\omega_{19}c_s^2\omega_7^2\omega_{20}v_2\omega_8v_1\omega_5 + 4\omega_{12}v_3^2\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5^2 - 4\omega_{12}\omega_{19}c_s^2v_3^2\omega_7\omega_{14}\omega_8\omega_5^2 - 4\omega_{12}\omega_{19}c_s^2\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5^2 + 4\omega_{12}\omega_{19}c_s^2\omega_7\omega_{20}v_1^2\omega_5^2 +$$
$$4\omega_{12}\omega_{19}v_3^2\omega_7\omega_{20}v_2\omega_8v_1\omega_5^2 - 4\omega_{12}\omega_{19}v_3^2\omega_7^2\omega_{20}v_1^2\omega_5^2 + 4\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5 - 4\omega_{12}\omega_{19}c_s^2\omega_7^2\omega_{14}v_2\omega_8v_1\omega_5^2 + 8\omega_{12}\omega_{19}v_3^2\omega_7^2\omega_{14}v_2\omega_8v_1\omega_5 +$$
$$4\omega_{12}\omega_{19}c_s^2\omega_7\omega_{20}v_2\omega_8v_1\omega_5^2 - 2\omega_{12}\omega_{19}c_s^4\omega_7^2\omega_{14}\omega_8\omega_5^2 - 2\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5^2 + 4\omega_{12}\omega_{19}v_3^2\omega_7^2\omega_{20}v_1^2\omega_5 + 8\omega_{12}\omega_{19}v_3^2\omega_7\omega_{14}v_2\omega_8v_1\omega_5^2 +$$
$$4\omega_{12}\omega_{19}c_s^2\omega_7^2\omega_{14}v_2\omega_8v_1\omega_5 - 2\omega_{12}c_s^4\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5 - 4\omega_{12}\omega_{19}v_3^2\omega_7^2\omega_{20}v_2\omega_8v_1\omega_5^2 - 2\omega_{12}c_s^2v_3^2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2 + 2\omega_{12}\omega_{19}c_s^4\omega_7^2\omega_{14}\omega_8\omega_5 +$$
$$8\omega_{12}\omega_{19}c_s^2\omega_7\omega_{14}v_2\omega_8v_1\omega_5^2 + 8\omega_{12}\omega_{19}c_s^2\omega_7^2\omega_{14}v_2v_1\omega_5^2 + 4\omega_{12}\omega_{19}v_3^2\omega_7^2\omega_{14}v_2\omega_8v_1\omega_5 - 4\omega_{12}\omega_{19}c_s^2\omega_7\omega_{14}\omega_8v_1^2\omega_5^2 + 2\omega_{12}c_s^4\omega_7^2\omega_{14}\omega_8\omega_5^2 -$$
$$4\omega_{12}\omega_{19}c_s^2\omega_7^2\omega_{20}v_2\omega_8v_1\omega_5^2 + 8\omega_{12}\omega_{19}v_3^2\omega_7^2\omega_{14}v_2v_1\omega_5^2 - 4\omega_{12}\omega_{19}v_3^2\omega_7\omega_{14}\omega_8v_1^2\omega_5^2 - 8\omega_{12}\omega_{19}c_s^2\omega_7\omega_{14}v_2v_1\omega_5^2 - 4\omega_{12}\omega_{19}v_3^2\omega_7^2\omega_{20}\omega_{14}v_1^2\omega_5 +$$
$$2\omega_{12}\omega_{19}c_s^2\omega_7^2\omega_{14}\omega_8v_1^2\omega_5^2 + 4\omega_{12}\omega_{19}c_s^4\omega_7^2\omega_{14}\omega_5^2 - 2\omega_{19}v_3^2\omega_7^2\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5^2 - 2\omega_{12}\omega_{19}c_s^4\omega_7^2\omega_{20}\omega_8\omega_5^2 - 4\omega_{12}\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{14}v_1^2\omega_5 -$$
$$8\omega_{12}\omega_{19}v_3^2\omega_7\omega_{14}v_2v_1\omega_5^2 - 4\omega_{12}\omega_{19}v_3^2\omega_7^2\omega_{14}v_1^2\omega_5^2 - 8\omega_{19}v_3^2\omega_7^2\omega_{20}v_2\omega_8v_1\omega_5 - 2\omega_{12}v_3^2\omega_7\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2 + 2\omega_{12}\omega_{19}v_3^2\omega_7^2\omega_{14}\omega_8v_1^2\omega_5^2 +$$
$$4\omega_{12}\omega_{19}c_s^2v_3^2\omega_7\omega_{14}\omega_5^2 + 4\omega_{12}\omega_{19}c_s^4\omega_7^2\omega_{20}\omega_{14}\omega_5 - 2\omega_{12}\omega_{19}c_s^2v_3^2\omega_7\omega_{20}\omega_8\omega_5^2 + 2\omega_{19}c_s^4\omega_7^2\omega_{20}\omega_8\omega_5^2 + 4\omega_{12}\omega_{19}c_s^2\omega_7\omega_{14}v_1^2\omega_5^2 -$$
$$2\omega_{12}c_s^2\omega_7\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2 - 8\omega_{19}c_s^2\omega_7^2\omega_{20}v_2\omega_8v_1\omega_5 - 2\omega_{12}c_s^2v_3^2\omega_7^2\omega_{14}\omega_8\omega_5^2 + 4\omega_{12}c_s^4\omega_7\omega_{20}\omega_{14}\omega_8\omega_5 + 4\omega_{12}\omega_{19}c_s^2v_3^2\omega_7^2\omega_{20}\omega_5 +$$
$$\omega_{12}c_s^2v_3^2\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^2 + 4\omega_{19}v_3^2\omega_7^2\omega_{20}\omega_8v_1^2\omega_5 + 2\omega_{12}\omega_{19}c_s^4\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5 + 4\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_8v_1^2\omega_5 + 4\omega_{12}\omega_{19}c_s^2v_3^2\omega_7^2\omega_{20}\omega_{14}\omega_5^2 -$$
$$\omega_{12}\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2 - 2\omega_{12}\omega_{19}c_s^4\omega_7^2\omega_{20}\omega_{14}\omega_8 - 4\omega_{12}\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5 + 4\omega_{12}v_3^2\omega_7\omega_{14}\omega_8v_1^2\omega_5^2 - 8\omega_{12}\omega_{19}c_s^2\omega_7^2\omega_{20}v_2v_1\omega_5 +$$
$$4\omega_{12}\omega_{19}c_s^4\omega_7\omega_{20}\omega_{14}\omega_5^2 - 4\omega_{12}\omega_{19}c_s^2v_3^2\omega_7^2\omega_{20}\omega_8\omega_5 + 4\omega_{19}c_s^4\omega_7\omega_{20}\omega_{14}\omega_8\omega_5 + 4\omega_{12}\omega_{19}c_s^2\omega_7^2\omega_{14}v_1^2\omega_5 + 2\omega_{12}\omega_{19}c_s^2v_3^2\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5 -$$
$$8\omega_{12}\omega_{19}v_3^2\omega_7^2\omega_{20}v_2v_1\omega_5 + 4\omega_{12}c_s^2\omega_7\omega_{14}\omega_8v_1^2\omega_5^2 - \omega_{12}\omega_{19}v_3^2\omega_7^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2 - 4\omega_{12}\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_8v_1^2\omega_5 - 4\omega_{12}\omega_{19}c_s^2v_3^2\omega_7^2\omega_{14}\omega_5^2 +$$
$$4\omega_{12}c_s^2\omega_7^2\omega_{14}v_2\omega_8v_1\omega_5^2 - 2\omega_{12}v_3^2\omega_7^2\omega_{14}\omega_8v_1^2\omega_5^2 + 4\omega_{12}\omega_{19}c_s^4\omega_7\omega_{14}\omega_8\omega_5^2 - 4\omega_{12}\omega_{19}v_3^2\omega_7^2\omega_{20}\omega_8v_1^2\omega_5 - 4\omega_{12}\omega_{19}c_s^4\omega_7\omega_{14}\omega_5^2 +$$
$$4\omega_{12}\omega_{19}v_3^2\omega_7\omega_{20}v_1^2\omega_5^2 - 8\omega_{12}\omega_{19}v_3^2\omega_7^2\omega_{20}\omega_{14}v_2v_1\omega_5^2 - 2\omega_{12}c_s^2\omega_7^2\omega_{14}\omega_8v_1^2\omega_5^2 - 2\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5 - 4\omega_{12}\omega_{19}v_3^2\omega_7^2\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5 +$$
$$2\omega_{12}\omega_{19}c_s^2v_3^2\omega_7^2\omega_{14}\omega_8\omega_5^2 - 12\omega_{12}\omega_{19}c_s^4\omega_7\omega_{20}\omega_{14}\omega_8\omega_5 + 4\omega_{19}c_s^2v_3^2\omega_7^2\omega_{20}\omega_8\omega_5 - 4\omega_{12}\omega_{19}c_s^2\omega_7^2\omega_{20}v_1^2\omega_5^2 - 2\omega_{12}\omega_{19}c_s^4\omega_{20}\omega_{14}\omega_8\omega_5^2 +$$
$$4\omega_{12}v_3^2\omega_7^2\omega_{14}v_2\omega_8v_1\omega_5^2 - 4\omega_{12}\omega_{19}c_s^4\omega_7^2\omega_{20}\omega_5 - 8\omega_{12}\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{14}v_2v_1\omega_5^2 + \omega_{19}c_s^2v_3^2\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^2 - 2\omega_{19}v_3^2\omega_7^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5 +$$
$$2\omega_{12}\omega_{19}c_s^4\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2 - 2\omega_{19}c_s^2v_3^2\omega_7^2\omega_{20}\omega_8\omega_5^2 - 8\omega_{12}c_s^2\omega_7\omega_{14}v_2\omega_8v_1\omega_5^2 - 2\omega_{12}\omega_{19}c_s^2v_3^2\omega_7^2\omega_{14}\omega_8\omega_5 - 4\omega_{12}c_s^4\omega_7\omega_{14}\omega_8\omega_5^2 +$$
$$4\omega_{12}\omega_{19}c_s^2v_3^2\omega_7\omega_{20}\omega_5^2 + 2\omega_{12}\omega_{19}v_3^2\omega_7^2\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5^2 - 2\omega_{12}c_s^2\omega_7^2\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5^2 + 4\omega_{12}\omega_{19}c_s^4\omega_{20}\omega_{14}\omega_8\omega_5 + 4\omega_{12}\omega_{19}c_s^2\omega_7^2\omega_{20}v_1^2\omega_5 +$$
$$8\omega_{12}\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{14}v_2v_1\omega_5 + 4\omega_{12}\omega_{19}c_s^4\omega_7^2\omega_{20}\omega_5^2 + \omega_{19}v_3^2\omega_7^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2 + 8\omega_{12}\omega_{19}v_3^2\omega_7\omega_{20}\omega_{14}v_2v_1\omega_5^2 - 2\omega_{19}c_s^2v_3^2\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5 +$$
$$4\omega_{12}\omega_{19}c_s^2v_3^2\omega_7^2\omega_{14}\omega_5 - 8\omega_{12}v_3^2\omega_7\omega_{14}v_2\omega_8v_1\omega_5^2 + 2\omega_{12}\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_8v_1^2\omega_5^2 - 8\omega_{12}\omega_{19}c_s^2\omega_7\omega_{20}v_2v_1\omega_5^2 + 8\omega_{12}\omega_{19}v_3^2\omega_7^2\omega_{20}\omega_{14}v_2v_1\omega_5 +$$
$$2\omega_{12}\omega_{19}v_3^2\omega_7^2\omega_{20}\omega_8v_1^2\omega_5^2 + 2\omega_{12}\omega_{19}c_s^2v_3^2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2 + 8\omega_{12}\omega_{19}c_s^2\omega_7\omega_{20}\omega_{14}v_2v_1\omega_5^2 + \omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2 - 8\omega_{12}\omega_{19}v_3^2\omega_7\omega_{20}v_2v_1\omega_5^2 -$$
$$2\omega_{12}\omega_{19}c_s^2\omega_7\omega_{20}\omega_8v_1^2\omega_5^2 - 2\omega_{12}v_3^2\omega_7^2\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5^2 + 4\omega_{12}c_s^2v_3^2\omega_7\omega_{14}\omega_8\omega_5^2 + 8\omega_{12}\omega_{19}c_s^2\omega_7^2\omega_{20}v_2v_1\omega_5^2 + 2\omega_{12}\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5^2 +$$
$$2\omega_{12}\omega_{19}c_s^2\omega_7\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2 - 2\omega_{12}\omega_{19}v_3^2\omega_7\omega_{20}\omega_8v_1^2\omega_5^2 + 2\omega_{12}\omega_{19}c_s^2v_3^2\omega_7^2\omega_{20}\omega_8\omega_5^2 - 2\omega_{19}c_s^4\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2 + 2\omega_{12}\omega_{19}v_3^2\omega_7^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5 +$$
$$8\omega_{12}\omega_{19}v_3^2\omega_7^2\omega_{20}v_2v_1\omega_5^2 - \omega_{12}\omega_{19}c_s^2v_3^2\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^2 - 4\omega_{12}\omega_{19}c_s^2\omega_7^2\omega_{14}v_1^2\omega_5^2 + 4\omega_{12}\omega_{19}v_3^2\omega_7\omega_{14}v_1^2\omega_5^2 - 2\omega_{19}v_3^2\omega_7^2\omega_{20}\omega_8v_1^2\omega_5^2 +$$
$$2\omega_{12}\omega_{19}v_3^2\omega_7\omega_{20}\omega_{14}\omega_8v_1^2\omega_5^2 - 2\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_8v_1^2\omega_5^2 - 4\omega_{12}\omega_{19}c_s^2v_3^2\omega_7^2\omega_{20}\omega_{14}\omega_5 + 2\omega_{12}\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5 + 2\omega_{12}\omega_{19}c_s^4\omega_7\omega_{20}\omega_8\omega_5^2$$

$$C_{19} = 4\omega_{12}\omega_{19}\omega_{20}v_2v_1^2\omega_5 + 4\omega_{19}c_s^2\omega_7\omega_{20}v_2\omega_8 + 2\omega_{12}\omega_{20}\omega_{14}v_2^2\omega_8v_1\omega_5 + 4\omega_{19}\omega_7\omega_{20}v_2\omega_8v_1^2 - 4\omega_{12}\omega_{19}c_s^2\omega_7\omega_{20}v_1 + 2\omega_{12}c_s^2\omega_7\omega_{14}\omega_8v_1\omega_5 +$$
$$4\omega_{12}\omega_{19}c_s^2\omega_7\omega_{20}\omega_{14}v_1 + 4\omega_{12}\omega_{19}c_s^2\omega_{14}v_2\omega_5 + 2\omega_{12}\omega_{19}c_s^2\omega_7\omega_{20}\omega_{14}v_2\omega_8 + 2\omega_{12}\omega_{19}\omega_7\omega_{14}v_2^2\omega_8v_1 + 2\omega_{12}\omega_{19}c_s^2\omega_{20}\omega_{14}v_2\omega_8\omega_5 -$$
$$4\omega_{12}\omega_{19}c_s^2\omega_7\omega_{20}v_2\omega_8 + 4\omega_{12}c_s^2\omega_{14}v_2\omega_8\omega_5 - 2\omega_{19}\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1^2 - 4\omega_{12}\omega_{19}\omega_7\omega_{20}v_2\omega_8v_1^2 - 4\omega_{12}\omega_{19}c_s^2\omega_{20}v_1\omega_5 + \omega_{12}c_s^2\omega_7\omega_{20}\omega_{14}v_2\omega_8\omega_5 +$$
$$4\omega_{12}\omega_{19}\omega_7\omega_{14}v_2v_1^2 + 4\omega_{12}\omega_{14}v_2\omega_8v_1^2\omega_5 - \omega_{12}\omega_7\omega_{20}\omega_{14}v_2^2\omega_8v_1\omega_5 - 4\omega_{12}\omega_{19}\omega_{20}v_2^2v_1\omega_5 + 4\omega_{12}\omega_{19}c_s^2\omega_7\omega_{20}v_2 + 2\omega_{12}c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5 -$$

$2\omega_{12}\omega_{19}\omega_{20}v_2\omega_8v_1^2\omega_5 - 4\omega_{12}\omega_{19}c_s^2\omega_7\omega_{20}\omega_{14}v_2 - \omega_{19}c_s^2\omega_7\omega_{20}\omega_{14}\omega_8v_1\omega_5 + 2\omega_{12}\omega_{19}c_s^2\omega_7\omega_{14}v_2\omega_8\omega_5 + 2\omega_{12}\omega_{19}\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1^2 +$
$2\omega_{12}\omega_{19}c_s^2\omega_7\omega_{14}\omega_8v_1 - 2\omega_{12}\omega_7\omega_{14}v_2\omega_8v_1^2\omega_5 + 2\omega_{12}\omega_{19}c_s^2\omega_{20}\omega_8v_1\omega_5 - 2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{14}v_2\omega_8 + 4\omega_{12}\omega_{19}\omega_{14}v_2^2\omega_8v_1\omega_5 -$
$4\omega_{12}\omega_{19}\omega_{14}v_2\omega_8v_1^2\omega_5 + 2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{14}\omega_8v_1 - 4\omega_{12}\omega_{19}c_s^2\omega_{14}v_1\omega_5 + 2\omega_{12}\omega_7\omega_{14}v_2^2\omega_8v_1\omega_5 - 2\omega_{12}\omega_{19}c_s^2\omega_7\omega_{14}v_2\omega_8 + 2\omega_{12}\omega_{19}\omega_{20}v_2^2\omega_8v_1\omega_5 +$
$4\omega_{12}\omega_{19}c_s^2\omega_{20}v_2\omega_5 - 4\omega_{12}\omega_{19}\omega_7\omega_{20}\omega_{14}v_2^2v_1\omega_5 - 4\omega_{12}\omega_{14}v_2^2\omega_8v_1\omega_5 + \omega_{12}\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1^2\omega_5 + 2\omega_{19}c_s^2\omega_7\omega_{20}\omega_8v_1\omega_5 - 4\omega_{12}\omega_{19}\omega_7\omega_{20}v_2v_1^2\omega_5 -$
$2\omega_{12}\omega_{19}c_s^2\omega_7\omega_{20}\omega_{14}\omega_8v_1 - 4\omega_{12}\omega_{19}\omega_7\omega_{20}\omega_{14}v_2v_1^2 + 4\omega_{12}\omega_{19}c_s^2\omega_7\omega_{20}\omega_8v_1 + 4\omega_{12}\omega_{19}\omega_7\omega_{20}\omega_{14}v_2v_1^2\omega_5 - 2\omega_{12}\omega_{19}c_s^2\omega_7\omega_{20}\omega_8v_1\omega_5 +$
$4\omega_{12}\omega_{19}\omega_7\omega_{20}v_2^2v_1\omega_5 - 2\omega_{12}\omega_{20}\omega_{14}v_2\omega_8v_1^2\omega_5 + 4\omega_{12}\omega_{19}\omega_7\omega_{20}v_2v_1^2 - 4\omega_{19}c_s^2\omega_7\omega_{20}\omega_8v_1 - 4\omega_{12}\omega_{19}c_s^2\omega_{14}v_2\omega_8\omega_5 + \omega_{12}\omega_{19}c_s^2\omega_7\omega_{20}\omega_{14}\omega_8v_1\omega_5 +$
$4\omega_{12}\omega_{19}c_s^2\omega_7\omega_{14}v_2 - 2\omega_{12}\omega_{19}\omega_7\omega_{14}v_2^2\omega_8v_1\omega_5 + 2\omega_{12}\omega_{19}c_s^2\omega_7\omega_{20}v_2\omega_8\omega_5 - \omega_{12}\omega_{19}c_s^2\omega_7\omega_{20}\omega_{14}v_2\omega_8\omega_5 - 2\omega_{12}\omega_{19}\omega_7\omega_{20}\omega_{14}v_2^2\omega_8v_1 +$
$4\omega_{12}\omega_{19}c_s^2\omega_{14}\omega_8v_1\omega_5 + 2\omega_{12}\omega_{19}\omega_7\omega_{20}v_2\omega_8v_1^2\omega_5 + \omega_{19}\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1^2\omega_5 - 4\omega_{12}\omega_{19}\omega_{14}v_2^2v_1\omega_5 + 4\omega_{12}\omega_{19}\omega_7\omega_{20}v_2^2\omega_8v_1 - 4\omega_{12}\omega_{19}c_s^2\omega_7\omega_{14}v_1 +$
$2\omega_{19}\omega_7\omega_{20}\omega_{14}v_2^2\omega_8v_1 - 4\omega_{12}\omega_{19}c_s^2\omega_7\omega_{14}v_2\omega_5 - 2\omega_{12}\omega_{19}\omega_7\omega_{14}v_2\omega_8v_1^2 - 2\omega_{19}c_s^2\omega_7\omega_{20}v_2\omega_8\omega_5 + 2\omega_{12}\omega_{19}\omega_{20}\omega_{14}v_2\omega_8v_1^2\omega_5 -$
$4\omega_{12}\omega_{19}\omega_7\omega_{14}v_2^2v_1 + \omega_{12}\omega_{19}\omega_7\omega_{20}\omega_{14}v_2^2\omega_8v_1\omega_5 - 4\omega_{19}\omega_7\omega_{20}v_2^2\omega_8v_1 + 4\omega_{12}\omega_{19}\omega_{14}v_2v_1^2\omega_5 + 4\omega_{12}\omega_{19}c_s^2\omega_7\omega_{20}v_1\omega_5 - 2\omega_{19}\omega_7\omega_{20}v_2\omega_8v_1^2\omega_5 -$
$4\omega_{12}\omega_{19}c_s^2\omega_{20}\omega_{14}v_2\omega_5 - 4\omega_{12}\omega_{19}c_s^2\omega_7\omega_{20}\omega_{14}v_1\omega_5 + 4\omega_{12}\omega_{19}\omega_7\omega_{14}v_2^2v_1\omega_5 - 2\omega_{12}\omega_{19}c_s^2\omega_7\omega_{14}\omega_8v_1\omega_5 + 2\omega_{19}\omega_7\omega_{20}v_2^2\omega_8v_1\omega_5 -$
$\omega_{12}\omega_{19}\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1^2\omega_5 - 2\omega_{12}\omega_{19}c_s^2\omega_{20}v_2\omega_8\omega_5 - 2\omega_{12}\omega_{19}\omega_{20}\omega_{14}v_2^2\omega_8v_1\omega_5 - 4\omega_{12}\omega_{19}\omega_{20}\omega_{14}v_2v_1^2\omega_5 + \omega_{19}c_s^2\omega_7\omega_{20}\omega_{14}v_2\omega_8\omega_5 -$
$2\omega_{12}c_s^2\omega_{20}\omega_{14}v_2\omega_8\omega_5 + 4\omega_{12}\omega_{19}c_s^2\omega_7\omega_{14}v_1\omega_5 + 4\omega_{12}\omega_{19}\omega_{20}\omega_{14}v_2^2v_1\omega_5 - 2\omega_{12}\omega_{19}c_s^2\omega_{20}\omega_{14}\omega_8v_1\omega_5 - \omega_{19}\omega_7\omega_{20}\omega_{14}v_2^2\omega_8v_1\omega_5 -$
$4\omega_{12}\omega_{19}\omega_7\omega_{14}v_2v_1^2\omega_5 - 4\omega_{12}c_s^2\omega_{14}\omega_8v_1\omega_5 - \omega_{12}c_s^2\omega_7\omega_{20}\omega_{14}\omega_8v_1\omega_5 - 4\omega_{12}\omega_{19}\omega_7\omega_{20}v_2^2v_1 - 2\omega_{12}\omega_{19}\omega_7\omega_{20}v_2^2\omega_8v_1\omega_5 + 4\omega_{12}\omega_{19}c_s^2\omega_{20}\omega_{14}v_1\omega_5 -$
$4\omega_{12}\omega_{19}c_s^2\omega_7\omega_{20}v_2\omega_5 + 4\omega_{12}\omega_{19}c_s^2\omega_7\omega_{20}\omega_{14}v_2\omega_5 - 2\omega_{12}c_s^2\omega_7\omega_{14}v_2\omega_8\omega_5 + 4\omega_{12}\omega_{19}\omega_7\omega_{20}\omega_{14}v_2^2v_1 + 2\omega_{12}\omega_{19}\omega_7\omega_{14}v_2\omega_8v_1^2\omega_5$

$C_{20} = \omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8 + 2\omega_{19}\omega_{10}v_3^2\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_5\omega_{15} + c_s^2\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{17}v_2^2\omega_8\omega_5\omega_{15} +$
$\omega_{19}c_s^2\omega_{16}\omega_{10}v_3^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5 + 2\omega_{19}c_s^2v_3^2\omega_7\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{15} - \omega_{19}c_s^2\omega_{16}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1^2\omega_5\omega_{15} +$
$2\omega_{19}c_s^2v_3^2\omega_7\omega_{23}\omega_{20}\omega_8v_1\omega_5\omega_{15} + 2\omega_{19}c_s^2\omega_{16}\omega_{10}v_3^2\omega_7\omega_{23}\omega_{20}\omega_8v_1 + \omega_{16}\omega_{10}v_3\omega_7\omega_{20}\omega_{17}v_2^2\omega_8v_1^2\omega_5\omega_{15} + 2\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_{20}\omega_{17}v_2^2\omega_8\omega_5\omega_{15} -$
$2\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{17}v_2^2v_1\omega_5\omega_{15} + 2\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{17}v_1^2\omega_5\omega_{15} +$
$2\omega_{19}\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{17}v_2^2v_1^2\omega_5\omega_{15} - \omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{17}\omega_8v_1^2\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{16}\omega_{10}v_3^2\omega_7\omega_{23}\omega_{17}v_1\omega_5\omega_{15} -$
$\omega_{19}\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{17}v_2^2\omega_8v_1^2\omega_5\omega_{15} + \omega_{19}c_s^2\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_5\omega_{15} + 2\omega_{19}c_s^2\omega_{16}\omega_{10}v_3^2\omega_7\omega_{23}\omega_{17}v_1\omega_{15} +$
$2\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_{23}\omega_{20}v_2^2\omega_8\omega_5\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}\omega_8v_1^2 -$
$2\omega_{19}c_s^2\omega_{10}v_3\omega_{20}\omega_{17}v_2^2\omega_8\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2v_1\omega_{15} + \omega_{19}\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8v_1^2 -$
$2c_s^2\omega_{16}\omega_{10}v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}v_2^2\omega_8v_1\omega_5 - 2\omega_{19}c_s^2\omega_{10}v_3\omega_{23}\omega_{20}v_2^2\omega_8\omega_5\omega_{15} -$
$\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1^2\omega_{15} - \omega_{19}c_s^2\omega_{16}v_3^2\omega_7\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{15} - 2c_s^2\omega_{16}\omega_{10}\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_5\omega_{15} -$
$2\omega_{19}c_s^2\omega_{16}v_3^2\omega_7\omega_{23}\omega_{20}\omega_8v_1\omega_5\omega_{15} - \omega_{19}\omega_{16}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8v_1^2\omega_5\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}v_3\omega_{20}\omega_{17}v_2^2\omega_8v_1^2\omega_5\omega_{15} -$
$2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_5\omega_{15} + 2\omega_{16}\omega_{10}v_3^2\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_5\omega_{15} - \omega_{19}\omega_{16}v_3^2\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_5 + 2\omega_{19}v_3^2\omega_7\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_5\omega_{15} -$
$2\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_7\omega_{23}\omega_{20}v_2^2\omega_8v_1\omega_{15} + \omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1^2\omega_5\omega_{15} + 2\omega_{19}v_3^2\omega_7\omega_{23}\omega_{20}v_2^2\omega_8v_1\omega_5\omega_{15} +$
$2\omega_{19}\omega_{16}\omega_{10}v_3\omega_{23}\omega_{20}v_2^2\omega_8v_1^2\omega_5\omega_{15} - \omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_{23}\omega_{20}v_2^2\omega_8v_1\omega_5\omega_{15} +$
$\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_{15} + 2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2v_1\omega_5\omega_{15} - 2\omega_{19}\omega_{10}v_3\omega_{20}\omega_{17}v_2^2\omega_8v_1^2\omega_5\omega_{15} +$
$\omega_{16}\omega_{10}v_3^2\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_5\omega_{15} - \omega_{19}\omega_{16}v_3^2\omega_7\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_5\omega_{15} + 2\omega_{19}c_s^2v_3\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1^2\omega_5\omega_{15} +$
$2\omega_{19}c_s^2\omega_{10}\omega_{23}\omega_{20}v_2^2\omega_8v_1\omega_5\omega_{15} - c_s^2\omega_{16}\omega_{10}v_3^2\omega_7\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{15} - 2\omega_{19}\omega_{10}v_3^2\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_5\omega_{15} - 2c_s^2\omega_{16}\omega_{10}v_3\omega_{23}\omega_{17}\omega_8v_1^2\omega_5\omega_{15} +$
$2\omega_{19}\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2v_1^2\omega_{15} + \omega_{19}c_s^2\omega_{16}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8\omega_5 + 2\omega_{19}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8v_1^2\omega_5\omega_{15} -$
$2\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}v_1^2\omega_{15} + 2\omega_{19}c_s^2\omega_{10}\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_5\omega_{15} - 2\omega_{19}\omega_{16}v_3^2\omega_7\omega_{23}\omega_{20}v_2^2\omega_8v_1\omega_5\omega_{15} + 2\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}v_2^2\omega_8\omega_{15} +$
$2\omega_{19}\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}v_2^2\omega_8v_1^2\omega_5 - 2\omega_{19}c_s^2\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_5\omega_{15} - 2\omega_{19}\omega_{10}v_3\omega_{23}\omega_{20}v_2^2\omega_8v_1^2\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_{23}\omega_{17}v_1^2\omega_5\omega_{15} +$
$2c_s^2\omega_{16}\omega_{10}v_3^2\omega_{23}\omega_{17}\omega_8v_1\omega_5\omega_{15} + \omega_{19}c_s^2\omega_{16}v_3\omega_7\omega_{20}\omega_{17}\omega_8v_1^2\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{10}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1^2\omega_5\omega_{15} -$
$2\omega_{19}\omega_{16}\omega_{10}v_3\omega_{23}\omega_{17}v_2^2v_1^2\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7\omega_{20}\omega_{17}\omega_8v_1^2\omega_5 +$
$2\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_{23}\omega_{17}v_2^2v_1\omega_5\omega_{15} + 2\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}\omega_8v_1^2\omega_5 + \omega_{19}\omega_{16}\omega_{10}v_3^2\omega_7\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_5\omega_{15} +$
$2\omega_{19}c_s^2\omega_{10}v_3\omega_7\omega_{20}\omega_{17}v_2^2\omega_8\omega_5\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_7\omega_{23}\omega_{17}v_2^2v_1\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_{23}\omega_{20}v_1^2\omega_5\omega_{15} -$
$\omega_{16}\omega_{10}v_3^2\omega_7\omega_{23}\omega_{17}v_2^2\omega_8v_1\omega_5\omega_{15} + 2\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}v_2^2\omega_8\omega_5 + \omega_{19}\omega_{16}\omega_{10}v_3^2\omega_7\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_5\omega_{15} -$
$\omega_{19}c_s^2\omega_{16}\omega_{10}v_3^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1 + c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_5\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}v_2^2\omega_8v_1^2\omega_{15} +$
$2\omega_{19}c_s^2\omega_{10}v_3\omega_7\omega_{23}\omega_{20}v_2^2\omega_8\omega_5\omega_{15} + \omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{17}v_2^2\omega_8\omega_{15} + \omega_{19}c_s^2\omega_{16}\omega_{10}v_3^2\omega_7\omega_{23}\omega_{17}\omega_8v_1\omega_5\omega_{15} -$
$2c_s^2\omega_{16}\omega_{10}v_3\omega_{20}\omega_{17}v_2^2\omega_8\omega_5\omega_{15} - c_s^2\omega_{16}\omega_{10}\omega_7\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_5\omega_{15} - 2\omega_{19}c_s^2v_3\omega_7\omega_{20}\omega_{17}\omega_8v_1^2\omega_5\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_7\omega_{23}\omega_{20}v_2^2\omega_8v_1\omega_5\omega_{15} -$
$c_s^2\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1^2\omega_5\omega_{15} + \omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{17}v_2^2\omega_8v_1\omega_5\omega_{15} + 2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}v_2^2\omega_8v_1 -$
$2\omega_{19}c_s^2v_3\omega_7\omega_{23}\omega_{20}v_2^2\omega_8\omega_5\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_7\omega_{23}\omega_{17}v_2^2v_1\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}v_1^2\omega_5\omega_{15} -$
$2\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}v_2^2\omega_8v_1\omega_5\omega_{15} - \omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}v_2^2\omega_{15} - \omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1^2\omega_5 +$
$2\omega_{19}c_s^2\omega_{10}v_3\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8\omega_5\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_7\omega_{23}\omega_{20}v_2^2\omega_8v_1 - 2\omega_{19}\omega_{10}v_3^2\omega_7\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_5\omega_{15} -$
$\omega_{19}c_s^2\omega_{16}\omega_7\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_5\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_{23}\omega_{20}v_2^2\omega_8v_1\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{16}\omega_7\omega_{23}\omega_{20}v_2^2\omega_8v_1\omega_5\omega_{15} -$
$2\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_5\omega_{15} + 2c_s^2\omega_{16}\omega_{10}\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}v_2^2\omega_8v_1\omega_{15} -$
$2\omega_{19}\omega_{10}v_3^2\omega_7\omega_{23}\omega_{20}v_2^2\omega_8v_1\omega_5\omega_{15} - 2\omega_{16}\omega_{10}v_3\omega_{20}\omega_{17}v_2^2\omega_8v_1^2\omega_5\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2v_1\omega_5\omega_{15} +$
$2\omega_{19}c_s^2v_3\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8\omega_5\omega_{15} + \omega_{19}\omega_{16}v_3^2\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_5\omega_{15} - 2c_s^2\omega_{16}\omega_{10}v_3\omega_{23}\omega_{17}v_2^2\omega_8\omega_5\omega_{15} +$
$2\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}\omega_8v_1^2\omega_5 - 2\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_7\omega_{23}\omega_{20}v_2^2v_1\omega_5\omega_{15} + \omega_{19}c_s^2\omega_{16}\omega_{10}v_3^2\omega_7\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{15} -$
$2\omega_{19}\omega_{16}v_3\omega_7\omega_{23}\omega_{20}v_2^2\omega_8v_1^2\omega_5 - 2\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{17}v_1^2\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{17}v_2^2v_1^2\omega_{15} - \omega_{19}\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8v_1^2\omega_5 +$
$2\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_{15} + 2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{17}v_2^2v_1\omega_{15} + 2\omega_{19}c_s^2\omega_{16}\omega_{10}v_3^2\omega_7\omega_{23}\omega_{20}\omega_8v_1\omega_5\omega_{15} +$
$\omega_{19}\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{17}v_2^2\omega_8v_1^2\omega_{15} + \omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{17}\omega_8v_1^2\omega_{15} - 2\omega_{19}c_s^2\omega_{10}\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_5\omega_{15} +$
$2\omega_{19}\omega_{10}v_3\omega_7\omega_{20}\omega_{17}v_2^2\omega_8v_1^2\omega_5\omega_{15} - \omega_{19}c_s^2\omega_{16}v_3^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5 + \omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8\omega_5\omega_{15} -$
$2\omega_{19}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8v_1^2\omega_5\omega_{15} + 2\omega_{19}c_s^2\omega_{16}\omega_{10}v_3^2\omega_{23}\omega_{17}v_1\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_{23}\omega_{17}v_2^2\omega_8v_1\omega_5\omega_{15} -$

$2\omega_{19}c_s^2\omega_{10}v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}v_3\omega_{23}\omega_{17}v_2^2\omega_8v_1^2\omega_5\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}v_3\omega_{23}\omega_{20}v_2^2v_1^2\omega_5\omega_{15} -$
$2\omega_{19}c_s^2\omega_{16}v_3\omega_7\omega_{23}\omega_{20}v_2^2\omega_8\omega_5 + 2\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{17}v_2^2\omega_5\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_{23}\omega_{20}v_2^2v_1\omega_5\omega_{15} + 2\omega_{16}\omega_{10}v_3^2\omega_{23}\omega_{17}v_2^2\omega_8v_1\omega_5\omega_{15} +$
$2\omega_{19}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}v_2^2\omega_8v_1^2\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}v_1^2\omega_5\omega_{15} + \omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_{15} +$
$2\omega_{19}c_s^2\omega_{10}v_3^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{15} + 2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_5\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_7\omega_{23}\omega_{17}v_2^2v_1\omega_{15} -$
$\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8v_1^2\omega_5\omega_{15} - \omega_{19}c_s^2\omega_{16}\omega_{10}v_3^2\omega_7\omega_{23}\omega_{17}\omega_8v_1\omega_{15} - 2\omega_{19}c_s^2\omega_{10}v_3\omega_{20}\omega_{17}\omega_8v_1^2\omega_5\omega_{15} + 2\omega_{19}c_s^2\omega_{10}v_3^2\omega_{23}\omega_{20}\omega_8v_1\omega_5\omega_{15} -$
$2\omega_{19}c_s^2\omega_{10}v_3\omega_{23}\omega_{20}\omega_8v_1^2\omega_5\omega_{15} + 2\omega_{19}c_s^2\omega_{10}v_3^2\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{15} - \omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{17}v_2^2\omega_8v_1\omega_{15} - 2\omega_{19}c_s^2\omega_{16}\omega_{10}v_3^2\omega_7\omega_{23}\omega_{20}\omega_8v_1\omega_5 +$
$2\omega_{19}c_s^2\omega_{16}\omega_{10}v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_{23}\omega_{17}v_2^2\omega_5\omega_{15} - \omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8\omega_5 -$
$2\omega_{16}\omega_{10}v_3^2\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_5\omega_{15} - 2\omega_{19}v_3^2\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_5\omega_{15} - \omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8v_1 -$
$2\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_{23}\omega_{20}\omega_{17}v_2^2v_1\omega_5\omega_{15} + c_s^2\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{17}\omega_8v_1^2\omega_5\omega_{15} + 2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_{23}\omega_{20}v_2^2v_1\omega_5\omega_{15} +$
$\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{17}v_2^2\omega_8v_1^2\omega_5\omega_{15} - \omega_{19}\omega_{16}\omega_{10}v_3\omega_7\omega_{20}\omega_{17}v_2^2\omega_8v_1^2\omega_5\omega_{15} - \omega_{19}c_s^2\omega_{16}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8\omega_5\omega_{15} -$
$2\omega_{19}c_s^2\omega_{10}v_3^2\omega_7\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}v_2^2\omega_8v_1^2\omega_5\omega_{15} + 2\omega_{19}c_s^2\omega_{16}\omega_{10}v_3^2\omega_7\omega_{23}\omega_{20}v_1\omega_{15} -$
$2\omega_{19}c_s^2\omega_{16}\omega_{10}v_3^2\omega_{23}\omega_{20}\omega_8v_1\omega_5\omega_{15} + 2\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_{20}\omega_{17}\omega_8v_1^2\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{16}\omega_{10}v_3^2\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{15} +$
$2\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_{23}\omega_{20}\omega_8v_1^2\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{10}v_3^2\omega_7\omega_{23}\omega_{20}\omega_8v_1\omega_5\omega_{15} + c_s^2\omega_{16}\omega_{10}v_3^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{15} -$
$\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{17}v_2^2\omega_8\omega_5\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_{23}\omega_{17}v_2^2\omega_8v_1\omega_5\omega_{15} + 2\omega_{19}c_s^2\omega_{10}v_3\omega_{23}\omega_{20}\omega_{17}\omega_8v_1^2\omega_5\omega_{15} -$
$\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8\omega_{15} - 2\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_{23}\omega_{20}v_2^2\omega_5\omega_{15} - 2\omega_{16}\omega_{10}v_3\omega_{23}\omega_{17}v_2^2\omega_8v_1^2\omega_5\omega_{15} - 2\omega_{19}v_3\omega_7\omega_{20}\omega_{17}v_2^2\omega_8v_1^2\omega_5\omega_{15} +$
$2\omega_{19}c_s^2\omega_{16}\omega_{10}v_3^2\omega_7\omega_{23}\omega_{20}\omega_{17}v_1\omega_5\omega_{15} + 2c_s^2\omega_{16}\omega_{10}\omega_{23}\omega_{17}v_2^2\omega_8v_1\omega_5\omega_{15} - \omega_{19}c_s^2\omega_{16}\omega_{10}v_3^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{15} +$
$2\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}v_1^2\omega_{15} - 2\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{17}v_2^2\omega_{15} - 2\omega_{19}v_3\omega_7\omega_{23}\omega_{20}v_2^2\omega_8v_1^2\omega_5\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}v_2^2\omega_8v_1^2 +$
$2\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_7\omega_{23}\omega_{20}v_2^2v_1\omega_{15} - 2\omega_{19}c_s^2\omega_{16}\omega_{10}v_3^2\omega_7\omega_{23}\omega_{20}\omega_8v_1\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}v_2^2v_1^2\omega_5\omega_{15} -$
$\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7\omega_{20}\omega_{17}\omega_8v_1^2\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_5\omega_{15} + 2\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_{23}\omega_{17}v_2^2\omega_8\omega_5\omega_{15} -$
$2\omega_{19}c_s^2v_3^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{15} + \omega_{19}\omega_{16}v_3\omega_7\omega_{20}\omega_{17}v_2^2\omega_8v_1^2\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{10}\omega_7\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_5\omega_{15} +$
$2\omega_{19}\omega_{10}v_3\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8v_1^2\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}\omega_8v_1^2\omega_5\omega_{15} + \omega_{19}\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8v_1^2\omega_5\omega_{15} -$
$2\omega_{19}c_s^2\omega_{10}\omega_7\omega_{23}\omega_{20}v_2^2\omega_8v_1\omega_5\omega_{15} + 2\omega_{19}\omega_{16}v_3\omega_7\omega_{23}\omega_{20}v_2^2\omega_8v_1^2\omega_5\omega_{15} + 2\omega_{19}c_s^2\omega_{16}\omega_7\omega_{23}\omega_{20}v_2^2\omega_8v_1\omega_5 + c_s^2\omega_{16}\omega_{10}v_3\omega_7\omega_{20}\omega_{17}v_2^2\omega_8\omega_5\omega_{15} +$
$2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}v_2^2v_1\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}v_2^2v_1^2\omega_{15} + 2c_s^2\omega_{16}\omega_{10}v_3^2\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{15} - c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{17}v_2^2\omega_8v_1\omega_5\omega_{15} +$
$2\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}\omega_8v_1^2\omega_{15} + 2\omega_{19}c_s^2\omega_{10}v_3\omega_7\omega_{20}\omega_{17}\omega_8v_1^2\omega_5\omega_{15} + \omega_{19}c_s^2\omega_{16}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1^2\omega_5 +$
$2\omega_{19}c_s^2\omega_{10}v_3\omega_7\omega_{23}\omega_{20}\omega_8v_1^2\omega_5\omega_{15} + \omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_5\omega_{15} - 2c_s^2\omega_{16}\omega_{10}v_3\omega_{20}\omega_{17}\omega_8v_1^2\omega_5\omega_{15} -$
$\omega_{19}\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8v_1^2\omega_{15} + \omega_{19}c_s^2\omega_{16}v_3^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{15} - \omega_{16}\omega_{10}v_3^2\omega_7\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_5\omega_{15} +$
$2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}v_2^2\omega_8v_1\omega_5\omega_{15} - c_s^2\omega_{16}\omega_{10}v_3^2\omega_7\omega_{23}\omega_{17}\omega_8v_1\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{16}\omega_{10}v_3^2\omega_7\omega_{23}\omega_{20}\omega_{17}v_1\omega_{15} -$
$2\omega_{19}c_s^2v_3\omega_7\omega_{20}\omega_{17}v_2^2\omega_8\omega_5\omega_{15} - c_s^2\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8\omega_5\omega_{15} + \omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1^2 - 2\omega_{19}c_s^2v_3\omega_7\omega_{23}\omega_{20}v_2^2\omega_8\omega_5\omega_{15} +$
$\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_7\omega_{23}\omega_{17}v_2^2\omega_8v_1\omega_5\omega_{15} + \omega_{19}\omega_{16}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8v_1^2\omega_5 - 2\omega_{19}\omega_{16}\omega_{10}v_3\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8v_1^2\omega_5\omega_{15} +$
$2\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}v_2^2\omega_5\omega_{15} + \omega_{19}c_s^2\omega_{16}v_3\omega_7\omega_{20}\omega_{17}v_2^2\omega_8\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{16}\omega_{10}v_3^2\omega_{23}\omega_{20}\omega_{17}v_1\omega_5\omega_{15} -$
$2\omega_{19}c_s^2\omega_{10}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_{23}\omega_{20}\omega_{17}\omega_8v_1^2\omega_5\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}v_3\omega_{23}\omega_{20}\omega_{17}v_2^2v_1^2\omega_5\omega_{15} +$
$2\omega_{19}c_s^2\omega_{16}v_3\omega_7\omega_{23}\omega_{20}v_2^2\omega_8\omega_5\omega_{15} + 2\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}v_1^2\omega_5\omega_{15} - \omega_{19}\omega_{16}\omega_{10}v_3^2\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8v_1 -$
$2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_{23}\omega_{20}\omega_{17}v_2^2v_1\omega_5\omega_{15} + \omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_5 + 2\omega_{19}c_s^2\omega_{16}\omega_{10}v_3^2\omega_{23}\omega_{20}v_1\omega_5\omega_{15} -$
$2\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}v_2^2\omega_8 + 2\omega_{19}\omega_{16}v_3^2\omega_7\omega_{23}\omega_{20}v_2^2\omega_8v_1\omega_5 + 2c_s^2\omega_{16}\omega_{10}v_3\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8\omega_5\omega_{15} - \omega_{19}\omega_{16}\omega_{10}v_3^2\omega_7\omega_{23}\omega_{17}v_2^2\omega_8v_1\omega_{15}$

$C_{21} = -18\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} - 24\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}\omega_{20}\omega_8v_1\omega_5^2\omega_{15} - 24\omega_6\omega_{19}c_s^2v_3\omega_7^3\omega_{20}\omega_{17}\omega_8v_1\omega_5^2\omega_{15} -$
$6\omega_6c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 12\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_5^2\omega_{15} - 6\omega_6\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{20}\omega_{17}v_2^2\omega_8\omega_5^2\omega_{15} -$
$24\omega_6\omega_{19}c_s^2v_3\omega_7^3\omega_{23}\omega_{20}\omega_8v_1\omega_5^2\omega_{15} - 12\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7^3\omega_{20}\omega_{17}\omega_8v_1\omega_5^2\omega_{15} - 12\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}v_3^2\omega_7^2\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} -$
$12\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}v_3^2\omega_7^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} - 12\omega_6\omega_{19}\omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_5^2 - 12\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} -$
$6\omega_6\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8\omega_5 - 12\omega_6\omega_{19}c_s^2\omega_{16}v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} + 12\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}v_2^2\omega_5\omega_{15} -$
$6\omega_6\omega_{19}c_s^2\omega_{16}v_3^2\omega_7^3\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} - 12\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{15} - 24\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}\omega_{20}\omega_8v_1\omega_5 -$
$12\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_{17}v_2^2\omega_8\omega_5^2\omega_{15} - 24\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}\omega_{20}v_2^2v_1\omega_5\omega_{15} - 12\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}v_2^2\omega_8\omega_5^2\omega_{15} -$
$12\omega_6c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8\omega_5^2\omega_{15} + 12\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_5^2\omega_{15} + 24\omega_6\omega_{19}\omega_{16}v_3\omega_7^3\omega_{23}\omega_{20}v_2^2\omega_8v_1\omega_5^2\omega_{15} -$
$24\omega_6\omega_{16}\omega_{10}v_3\omega_7^2\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_5^2\omega_{15} + 6\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} - 12\omega_6\omega_{19}c_s^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}v_2^2\omega_8\omega_5^2\omega_{15} +$
$12\omega_6\omega_{19}\omega_{16}v_3\omega_7^3\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_5^2\omega_{15} - 12\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5^2 + 12\omega_6\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} +$
$12\omega_6\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_7^2\omega_{23}\omega_{17}v_2^2\omega_5^2\omega_{15} - 12\omega_6\omega_{19}c_s^2\omega_{10}\omega_7^3\omega_{20}\omega_{17}v_2^2\omega_8\omega_5^2\omega_{15} - 6\omega_6\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}\omega_{17}v_2^2\omega_8\omega_5\omega_{15} -$
$6\omega_6\omega_{19}c_s^2\omega_{16}v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2 - 24\omega_6c_s^2\omega_{16}\omega_{10}v_3\omega_7^2\omega_{20}\omega_{17}\omega_8v_1\omega_5^2\omega_{15} + 6\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8\omega_5^2 +$
$12\omega_6\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}\omega_{20}v_2^2\omega_5\omega_{15} - 12\omega_6\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_5^2\omega_{15} + 12\omega_6\omega_{19}\omega_{10}v_3^2\omega_7^2\omega_{20}\omega_{17}v_2^2\omega_8\omega_5^2\omega_{15} +$
$12\omega_6\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}\omega_{20}v_2^2\omega_8\omega_5^2\omega_{15} + 6\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 12\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} +$
$12\omega_6\omega_{19}\omega_{10}v_3^2\omega_7^2\omega_{23}\omega_{20}v_2^2\omega_8\omega_5^2\omega_{15} + 6\omega_6\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{20}\omega_{17}v_2^2\omega_8\omega_5^2\omega_{15} + 12\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5 +$
$24\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7^2\omega_{23}\omega_{20}\omega_{17}v_1\omega_5^2\omega_{15} + 24\omega_6\omega_{19}v_3\omega_7^3\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_5^2\omega_{15} + 24\omega_6\omega_{19}\omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}\omega_{17}v_2^2v_1\omega_5^2\omega_{15} +$
$12\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_5^2\omega_{15} - 24\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5^2\omega_{15} - 12\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}v_3^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_5^2\omega_{15} +$
$12\omega_6c_s^2\omega_{16}\omega_{10}v_3^2\omega_7^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} - 12\omega_6\omega_{19}c_s^4\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} - 12\omega_6\omega_{19}\omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_5\omega_{15} +$
$12\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{17}v_2^2\omega_5^2\omega_{15} - 12\omega_6\omega_{19}c_s^2\omega_{10}v_3^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} - 6\omega_6\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8\omega_5^2\omega_{15} +$
$24\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}\omega_{20}v_1\omega_5^2\omega_{15} - 6\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} - 12\omega_6\omega_{19}\omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}\omega_{17}v_2^2\omega_8v_1\omega_5^2\omega_{15} +$
$12\omega_6c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_{17}v_2^2\omega_8\omega_5^2\omega_{15} - 12\omega_6\omega_{19}c_s^2\omega_{16}v_3\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5^2\omega_{15} - 12\omega_6\omega_{19}\omega_{10}v_3^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8\omega_5^2\omega_{15} +$
$12\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}\omega_{17}\omega_8v_1\omega_5\omega_{15} - 12\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}\omega_{17}\omega_5^2\omega_{15} + 12\omega_6c_s^2\omega_{16}\omega_{10}v_3^2\omega_7^2\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15} -$
$12\omega_6\omega_{19}c_s^4\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} - 12\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_5^2\omega_{15} + 12\omega_6\omega_{19}c_s^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8\omega_5^2\omega_{15} -$
$6\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17}v_2^2\omega_8\omega_5^2\omega_{15} - 24\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_5^2\omega_{15} - 12\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}\omega_{20}\omega_{17}v_2^2v_1\omega_5^2\omega_{15} +$
$24\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}v_3^3\omega_7^3\omega_{23}\omega_{20}\omega_{17}v_1\omega_5^2\omega_{15} + 12\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15} - 18\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} -$
$12\omega_6\omega_{19}\omega_{10}v_3^2\omega_7^3\omega_{23}\omega_{20}v_2^2\omega_8\omega_5^2\omega_{15} - 12\omega_6\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_7^2\omega_{20}\omega_{17}v_2^2\omega_8\omega_5^2\omega_{15} - 12\omega_6\omega_{19}\omega_{10}v_3^2\omega_7^3\omega_{20}\omega_{17}v_2^2\omega_8\omega_5^2\omega_{15} +$
$12\omega_6\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}\omega_{17}v_2^2\omega_5\omega_{15} + 12\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_{15} - 12\omega_6\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_7^2\omega_{23}\omega_{20}v_2^2\omega_8\omega_5^2\omega_{15} +$
$12\omega_6c_s^2\omega_{16}\omega_{10}v_3\omega_7^3\omega_{20}\omega_{17}\omega_8v_1\omega_5^2\omega_{15} + 12\omega_6\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_5^2\omega_{15} + 24\omega_6\omega_{19}\omega_{16}\omega_{10}v_3\omega_7^2\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_5^2\omega_{15} +$
$12\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_5\omega_{15} + 24\omega_6\omega_{19}\omega_{10}v_3\omega_7^3\omega_{23}\omega_{20}v_2^2\omega_8v_1\omega_5^2\omega_{15} + 12\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}v_3^2\omega_7^2\omega_{23}\omega_{20}\omega_5^2\omega_{15} -$

$6\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8\omega_5 - 12\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2 - 24\omega_6\omega_{19}\omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}\omega_{20}\omega_{17}v_2^2v_1\omega_5^2\omega_{15} -$
$12\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} - 6\omega_6c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{20}\omega_{17}v_2^2\omega_8\omega_5^2\omega_{15} + 12\omega_6\omega_{19}v_3^2\omega_7^3\omega_{20}\omega_{17}v_2^2\omega_8\omega_5^2\omega_{15} -$
$12\omega_6c_s^4\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15} + 12\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}v_2^2\omega_5^2\omega_{15} + 12\omega_6\omega_{19}v_3^2\omega_7^3\omega_{23}\omega_{20}v_2^2\omega_8\omega_5^2\omega_{15} +$
$24\omega_6\omega_{19}\omega_{16}\omega_{10}v_3\omega_7^2\omega_{23}\omega_{20}v_2^2\omega_8v_1\omega_5^2\omega_{15} + 24\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}\omega_{17}v_1\omega_5^2\omega_{15} + 12\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8\omega_5^2\omega_{15} +$
$24\omega_6\omega_{19}\omega_{10}v_3\omega_7^3\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_5^2\omega_{15} + 12\omega_6\omega_{19}c_s^2\omega_{10}v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} + 12\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17}v_2^2\omega_5\omega_{15} +$
$24\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}\omega_{20}\omega_8v_1\omega_5^2 + 12\omega_6\omega_{19}c_s^2\omega_{16}v_3\omega_7^3\omega_{20}\omega_{17}\omega_8v_1\omega_5^2\omega_{15} - 12\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}v_3^2\omega_7^2\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15} +$
$12\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2 + 6\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8\omega_5\omega_{15} + 24\omega_6\omega_{19}c_s^2\omega_{16}v_3\omega_7^3\omega_{23}\omega_{20}\omega_8v_1\omega_5^2\omega_{15} -$
$12\omega_6c_s^2\omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5^2\omega_{15} + 24\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} + 24\omega_6\omega_{19}\omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}\omega_{20}v_2^2\omega_8v_1\omega_5\omega_{15} +$
$24\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7^2\omega_{20}\omega_{17}\omega_8v_1\omega_5^2\omega_{15} + 12\omega_6\omega_{19}c_s^2\omega_{10}v_3^2\omega_7^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} + 12\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5 +$
$12\omega_6\omega_{19}c_s^2\omega_{10}v_3^2\omega_7^2\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} - 24\omega_6\omega_{19}\omega_{16}v_3\omega_7^3\omega_{23}\omega_{20}v_2^2\omega_8v_1\omega_5^2 + 24\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7^2\omega_{23}\omega_{20}\omega_8v_1\omega_5^2\omega_{15} +$
$10\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} - 24\omega_6\omega_{19}\omega_{16}\omega_{10}v_3\omega_7^2\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_5^2\omega_{15} + 12\omega_6c_s^4\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} +$
$12\omega_6\omega_{16}\omega_{10}v_3^2\omega_7^2\omega_{20}\omega_{17}v_2^2\omega_8\omega_5^2\omega_{15} + 12\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_5\omega_{15} + 12\omega_6\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_7^2\omega_{23}\omega_{20}v_2^2\omega_5^2\omega_{15} +$
$12\omega_6\omega_{19}c_s^2\omega_{10}\omega_7^2\omega_{20}\omega_{17}v_2^2\omega_8\omega_5^2\omega_{15} - 24\omega_6\omega_{19}\omega_{10}v_3\omega_7^3\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_5^2\omega_{15} - 24\omega_6\omega_{19}v_3\omega_7^3\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_5^2\omega_{15} +$
$12\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} + 12\omega_6\omega_{19}c_s^2\omega_{10}\omega_7^2\omega_{23}\omega_{20}v_2^2\omega_8\omega_5^2\omega_{15} + 12\omega_6\omega_{19}c_s^2\omega_7^3\omega_{23}\omega_{20}v_2^2\omega_8\omega_5^2\omega_{15} -$
$24\omega_6\omega_{19}c_s^2\omega_{10}v_3\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5^2\omega_{15} + 6\omega_6\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8\omega_5^2 - 12\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_5\omega_{15} -$
$12\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_5^2\omega_{15} + 12\omega_6\omega_{19}\omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_5 + 6\omega_6\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8\omega_5^2\omega_{15} +$
$12\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}v_2^2\omega_8\omega_5^2\omega_{15} - 12\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_5\omega_{15} + 6\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{20}\omega_{17}v_2^2\omega_8\omega_5^2\omega_{15} +$
$6\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 24\omega_6\omega_{19}v_3\omega_7^3\omega_{23}\omega_{20}v_2^2\omega_8v_1\omega_5^2\omega_{15} + 12\omega_6\omega_{19}c_s^2\omega_7^3\omega_{20}\omega_{17}v_2^2\omega_8\omega_5^2\omega_{15} +$
$12\omega_6\omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}\omega_{17}v_2^2\omega_8v_1\omega_5^2\omega_{15} + 12\omega_6\omega_{19}c_s^2\omega_{16}v_3\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5^2 + 12\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} -$
$24\omega_6\omega_{19}\omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}\omega_{20}v_2^2\omega_8v_1\omega_5^2\omega_{15} - 6\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8\omega_5^2\omega_{15} + 12\omega_6\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}\omega_{20}v_2^2\omega_8\omega_5 -$
$24\omega_6\omega_{19}\omega_{10}v_3\omega_7^2\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_5^2\omega_{15} - 12\omega_6\omega_{19}c_s^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8\omega_5^2\omega_{15} - 6\omega_6c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17}v_2^2\omega_8\omega_5^2\omega_{15} -$
$24\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7^2\omega_{23}\omega_{20}v_1\omega_5^2\omega_{15} + 24\omega_6\omega_{19}\omega_{16}\omega_{10}v_3\omega_7^2\omega_{23}\omega_{20}\omega_{17}v_2^2v_1\omega_5^2\omega_{15} + 12\omega_6\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}v_2^2\omega_8\omega_5^2 -$
$12\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17}v_2^2\omega_5^2\omega_{15} - 18\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 12\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_5^2\omega_{15} -$
$12\omega_6\omega_{19}\omega_{16}\omega_{10}v_3\omega_7^3\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_5^2\omega_{15} - 24\omega_6\omega_{19}\omega_{10}v_3\omega_7^2\omega_{23}\omega_{20}v_2^2\omega_8v_1\omega_5^2\omega_{15} - 6\omega_6\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8\omega_5^2 +$
$12\omega_6c_s^2\omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}\omega_{17}\omega_8v_1\omega_5^2\omega_{15} - 12\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} + 12\omega_6\omega_{19}\omega_{16}v_3^2\omega_7^3\omega_{23}\omega_{20}v_2^2\omega_8\omega_5^2 -$
$12\omega_6\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_7^2\omega_{23}\omega_{17}v_2^2\omega_8\omega_5^2\omega_{15} - 6\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} - 12\omega_6\omega_{19}c_s^2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8\omega_5^2\omega_{15} -$
$6\omega_6c_s^2\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} + 12\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} + 24\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7^2\omega_{23}\omega_{17}\omega_8v_1\omega_5^2\omega_{15} -$
$12\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} + 24\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}\omega_{17}v_1\omega_5\omega_{15} + 24\omega_6c_s^2\omega_{16}\omega_{10}v_3\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5^2\omega_{15} +$
$6\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} + 12\omega_6\omega_{19}c_s^2v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} + 12\omega_6\omega_{19}c_s^2v_3^2\omega_7^3\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} +$
$24\omega_6\omega_{19}\omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}\omega_{20}\omega_{17}v_2^2v_1\omega_5\omega_{15} - 12\omega_6c_s^2\omega_{16}\omega_{10}v_3^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} - 12\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^2 +$
$12\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} + 24\omega_6\omega_{19}c_s^2\omega_{10}v_3\omega_7^3\omega_{20}\omega_{17}\omega_8v_1\omega_5^2\omega_{15} - \omega_6\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} +$
$12\omega_6\omega_{16}\omega_{10}v_3\omega_7^3\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_5^2\omega_{15} - 12\omega_6\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}\omega_{20}v_2^2\omega_8\omega_5\omega_{15} - 12\omega_6\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}\omega_{20}v_2^2\omega_5^2\omega_{15} +$
$24\omega_6\omega_{19}c_s^2\omega_{10}v_3\omega_7^3\omega_{23}\omega_{20}\omega_8v_1\omega_5^2\omega_{15} + 24\omega_6\omega_{19}\omega_{10}v_3\omega_7^2\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_5^2\omega_{15} - 12\omega_6\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}v_2^2\omega_8\omega_5^2\omega_{15} +$
$6\omega_6c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8\omega_5^2\omega_{15} + 12\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} - 12\omega_6\omega_{19}v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8\omega_5^2\omega_{15} +$
$12\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5 - 24\omega_6\omega_{19}\omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}\omega_{17}v_2^2v_1\omega_5\omega_{15} - 12\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{17}v_2^2\omega_8\omega_5^2\omega_{15} -$
$6\omega_6\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{20}\omega_{17}v_2^2\omega_8\omega_5^2\omega_{15} - 12\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_5\omega_{15} + 12\omega_6\omega_{19}\omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}\omega_{20}v_2^2\omega_8\omega_5 +$
$6\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15} + 12\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} + 24\omega_6\omega_{19}\omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}\omega_{20}v_2^2\omega_8v_1\omega_5 +$
$6\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15} - 24\omega_6\omega_{19}c_s^2\omega_{16}v_3\omega_7^3\omega_{23}\omega_{20}\omega_8v_1\omega_5^2 - 24\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} +$
$6\omega_6\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8\omega_5\omega_{15} - 24\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}\omega_{20}v_1\omega_5\omega_{15} + 12\omega_6\omega_{19}\omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_5^2\omega_{15} +$
$12\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}\omega_{17}\omega_5\omega_{15} - 12\omega_{19}c_s^4\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} - 12\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5 -$
$12\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}\omega_{17}\omega_8v_1\omega_5^2\omega_{15} - 12\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}v_2^2\omega_8\omega_5^2 - 6\omega_6\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}\omega_{17}v_2^2\omega_8\omega_5^2\omega_{15} -$
$12\omega_6\omega_{19}c_s^2\omega_{10}v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} - 12\omega_6\omega_{19}c_s^2\omega_{10}v_3^2\omega_7^3\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} - 6\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5 +$
$12\omega_6\omega_{19}\omega_{10}v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8\omega_5^2\omega_{15} + 12\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}\omega_{17}\omega_5^2\omega_{15} + 24\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}\omega_{20}\omega_8v_1\omega_5\omega_{15} +$
$6\omega_6\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8\omega_5^2\omega_{15} + 12\omega_6\omega_{19}c_s^2\omega_{16}v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^2 - 12\omega_6\omega_{19}\omega_{16}v_3^2\omega_7^3\omega_{23}\omega_{20}v_2^2\omega_8\omega_5^2\omega_{15} -$
$24\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7^2\omega_{23}\omega_{17}v_1\omega_5^2\omega_{15} + 24\omega_6\omega_{19}\omega_{16}\omega_{10}v_3\omega_7^2\omega_{23}\omega_{17}v_2^2\omega_8v_1\omega_5^2\omega_{15} + 12\omega_6c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{17}v_2^2\omega_8\omega_5^2\omega_{15} -$
$12\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}v_2^2\omega_5^2\omega_{15} + 6\omega_6c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15} + 12\omega_6\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8\omega_5^2\omega_{15} -$
$6\omega_6\omega_{19}\omega_{16}v_3^2\omega_7^2\omega_{20}\omega_{17}v_2^2\omega_8\omega_5^2\omega_{15} - 12\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^2 - 12\omega_6\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}\omega_{20}v_2^2\omega_8\omega_5^2 -$
$12\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_5\omega_{15} - 12\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_5^2\omega_{15} + 24\omega_6\omega_{19}\omega_{16}\omega_{10}v_3\omega_7^3\omega_{23}\omega_{20}v_2^2v_1\omega_5^2\omega_{15} +$
$12\omega_6\omega_{19}c_s^4\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} + 12\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}v_3^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} - 6\omega_6c_s^2\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15} +$
$12\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5^2\omega_{15} + 6\omega_6\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}\omega_{17}v_2^2\omega_8\omega_5^2\omega_{15} + 24\omega_6\omega_{19}c_s^2v_3\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5^2\omega_{15} -$
$12\omega_6\omega_{19}\omega_{16}v_3\omega_7^3\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_5^2\omega_{15} - 24\omega_6c_s^2\omega_{16}\omega_{10}v_3\omega_7^2\omega_{23}\omega_{17}\omega_8v_1\omega_5^2\omega_{15} + 6\omega_6\omega_{19}c_s^2\omega_{16}v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} -$
$6\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15} + 24\omega_6\omega_{16}\omega_{10}v_3\omega_7^2\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_5^2\omega_{15}$

$C_{22} = 2\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_7\omega_{23}\omega_{17}v_1\omega_{15} - \omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_{15} - 2\omega_{19}\omega_{16}v_3^2\omega_7\omega_{23}\omega_{20}\omega_8v_1\omega_5\omega_{15} +$
$\omega_{16}\omega_{10}v_3^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{15} - \omega_{19}\omega_{16}v_3^2\omega_7\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{15} - \omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{15} +$
$2\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_7\omega_{23}\omega_{20}\omega_8v_1 + 2\omega_{19}v_3^2\omega_7\omega_{23}\omega_{20}\omega_8v_1\omega_5\omega_{15} - 2\omega_{16}\omega_{10}v_3\omega_{20}\omega_{17}\omega_8v_1^2\omega_5\omega_{15} + 2\omega_{16}\omega_{10}v_3^2\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{15} +$

$2\omega_{19}v_3^2\omega_7\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{15} + \omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_7\omega_{23}\omega_{17}v_1\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}\omega_{15} +$
$2\omega_{19}\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{17}v_1^2\omega_5\omega_{15} + \omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{17}v_1\omega_{15} - 2\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_{23}\omega_{17}\omega_5\omega_{15} -$
$2c_s^2\omega_{16}\omega_{10}v_3\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}\omega_8v_1^2 + 2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8v_1 + 2c_s^2\omega_{16}\omega_{10}\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{15} +$
$2c_s^2\omega_{16}\omega_{10}v_3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_8v_1\omega_5\omega_{15} - \omega_{19}c_s^2\omega_{16}\omega_7\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{15} - \omega_{19}\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1^2\omega_{15} +$
$2\omega_{19}c_s^2\omega_{16}v_3\omega_7\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{10}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + \omega_{19}c_s^2\omega_{16}v_3\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{15} -$
$2\omega_{19}c_s^2v_3\omega_7\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} + 2\omega_{19}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1^2\omega_5\omega_{15} - 2\omega_{19}c_s^2v_3\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_{19}c_s^2\omega_7\omega_{23}\omega_{20}\omega_8v_1\omega_5\omega_{15} -$
$2\omega_{19}\omega_{16}\omega_{10}v_3\omega_{23}\omega_{17}v_1^2\omega_5\omega_{15} + \omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_8v_1\omega_5\omega_{15} - \omega_{19}\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{17}\omega_8v_1^2\omega_5\omega_{15} + 2\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}\omega_5\omega_{15} -$
$2\omega_{19}\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}v_1^2\omega_{15} - \omega_{16}\omega_{10}v_3^2\omega_7\omega_{23}\omega_{17}\omega_8v_1\omega_5\omega_{15} - \omega_{19}\omega_{16}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1^2\omega_5\omega_{15} + 2\omega_{19}c_s^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{15} +$
$\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5 - 2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{17}v_1\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{17}\omega_{15} + \omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{17}\omega_8\omega_{15} -$
$\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1 - 2\omega_{19}\omega_{16}v_3\omega_7\omega_{23}\omega_{20}\omega_8v_1^2\omega_5 - \omega_{19}\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1^2\omega_5 - 2\omega_{19}v_3\omega_7\omega_{23}\omega_{20}\omega_8v_1^2\omega_5\omega_{15} -$
$2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_{23}\omega_{17}\omega_8v_1\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}v_1\omega_5\omega_{15} + \omega_{19}\omega_{16}\omega_{10}v_3^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_{15} - 2\omega_{19}v_3\omega_7\omega_{20}\omega_{17}\omega_8v_1^2\omega_5\omega_{15} +$
$\omega_{19}\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1^2\omega_5\omega_{15} + 2\omega_{19}\omega_{16}v_3\omega_7\omega_{23}\omega_{20}\omega_8v_1^2\omega_5\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}v_3\omega_{23}\omega_{20}v_1^2\omega_5\omega_{15} + \omega_{19}\omega_{16}v_3\omega_7\omega_{20}\omega_{17}\omega_8v_1^2\omega_5\omega_{15} +$
$2\omega_{19}\omega_{16}v_3^2\omega_7\omega_{23}\omega_{20}\omega_8v_1\omega_5 + \omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5 + 2\omega_{19}c_s^2\omega_{10}v_3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - \omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1 +$
$\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_7\omega_{23}\omega_{17}\omega_8v_1\omega_5\omega_{15} - \omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5 + \omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{17}\omega_8v_1^2\omega_5\omega_{15} +$
$2\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{15} - c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_8v_1\omega_5\omega_{15} + 2\omega_{19}c_s^2\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_8v_1\omega_5 - 2\omega_{19}c_s^2\omega_{16}v_3\omega_7\omega_{23}\omega_{20}\omega_8\omega_5 -$
$2c_s^2\omega_{16}\omega_{10}v_3\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}v_1^2\omega_5\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}v_3\omega_{23}\omega_{17}\omega_8v_1^2\omega_5\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_{23}\omega_{17}\omega_8v_1\omega_5\omega_{15} -$
$2\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_{19}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1^2\omega_5\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_7\omega_{23}\omega_{20}v_1\omega_5\omega_{15} -$
$\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{17}v_1^2\omega_{15} + 2\omega_{19}c_s^2\omega_{10}\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{15} +$
$2\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{17}\omega_5\omega_{15} - \omega_{19}c_s^2\omega_{16}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_{23}\omega_{20}\omega_8v_1\omega_5\omega_{15} - 2\omega_{19}\omega_{10}v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5 -$
$2c_s^2\omega_{16}\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{15} + \omega_{19}\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{17}\omega_8v_1^2\omega_{15} - \omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_8v_1\omega_{15} + 2\omega_{16}\omega_{10}v_3\omega_{23}\omega_{20}\omega_{17}\omega_8v_1^2\omega_5\omega_{15} -$
$2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8v_1\omega_5 + 2\omega_{19}\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}\omega_8v_1^2\omega_5 + 2\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{15} + 2\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}\omega_8\omega_5 +$
$\omega_{19}c_s^2\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_{23}\omega_{17}v_1\omega_5\omega_{15} + 2\omega_{19}c_s^2v_3\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}\omega_8 +$
$2\omega_{19}\omega_{10}v_3^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}v_1^2\omega_5\omega_{15} + 2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}v_1\omega_{15} - 2\omega_{19}\omega_{10}v_3^2\omega_7\omega_{23}\omega_{20}\omega_8v_1\omega_5\omega_{15} +$
$2\omega_{19}\omega_{16}\omega_{10}v_3\omega_{23}\omega_{20}\omega_8v_1^2\omega_5\omega_{15} + 2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - c_s^2\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} +$
$2\omega_{19}\omega_{10}v_3^2\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{15} - 2\omega_{19}\omega_{10}v_3\omega_{23}\omega_{20}\omega_8v_1^2\omega_5\omega_{15} + 2\omega_{19}\omega_{10}v_3^2\omega_{23}\omega_{20}\omega_8v_1\omega_5\omega_{15} - \omega_{19}c_s^2\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5 -$
$2\omega_{19}\omega_{10}v_3\omega_{20}\omega_{17}\omega_8v_1^2\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_{23}\omega_{20}\omega_5\omega_{15} + c_s^2\omega_{16}\omega_{10}v_3\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + \omega_{16}\omega_{10}v_3\omega_7\omega_{20}\omega_{17}\omega_8v_1^2\omega_5\omega_{15} -$
$c_s^2\omega_{16}\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_7\omega_{23}\omega_{20}\omega_8v_1\omega_5\omega_{15} + \omega_{19}\omega_{16}\omega_{10}v_3^2\omega_7\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{15} + c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{15} +$
$2\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_7\omega_{23}\omega_{20}v_1\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_7\omega_{23}\omega_{20}\omega_8v_1\omega_5 - \omega_{19}\omega_{16}\omega_{10}v_3^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{15} -$
$\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_7\omega_{23}\omega_{17}\omega_8v_1\omega_{15} - 2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_{23}\omega_{20}\omega_{17}v_1\omega_5\omega_{15} - 2\omega_{16}\omega_{10}v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{15} - 2\omega_{19}v_3^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{15} -$
$2\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_5\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}v_3\omega_{23}\omega_{20}\omega_{17}\omega_8v_1^2\omega_5\omega_{15} + 2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{15} -$
$2\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_7\omega_{23}\omega_{20}\omega_8v_1\omega_{15} + 2\omega_{16}\omega_{10}v_3^2\omega_{23}\omega_{17}\omega_8v_1\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{10}v_3\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} - 2\omega_{16}\omega_{10}v_3\omega_{23}\omega_{17}\omega_8v_1^2\omega_5\omega_{15} -$
$2\omega_{19}c_s^2\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{10}v_3\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}v_1\omega_{15} +$
$2\omega_{19}\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}v_1^2\omega_{15} + \omega_{19}\omega_{16}v_3^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{15} + 2\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + c_s^2\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} +$
$2\omega_{19}\omega_{10}v_3\omega_{23}\omega_{20}\omega_{17}\omega_8v_1^2\omega_5\omega_{15} + \omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 + 2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_{23}\omega_{20}v_1\omega_5\omega_{15} - \omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1^2\omega_5\omega_{15} -$
$2\omega_{19}\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}\omega_8v_1^2\omega_5\omega_{15} - \omega_{16}\omega_{10}v_3^2\omega_7\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}v_3\omega_{23}\omega_{20}\omega_{17}v_1^2\omega_5\omega_{15} +$
$2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8v_1\omega_5\omega_{15} + \omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} -$
$2\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_{23}\omega_{20}\omega_{17}v_1\omega_5\omega_{15} - \omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - \omega_{19}\omega_{16}\omega_{10}v_3\omega_7\omega_{20}\omega_{17}\omega_8v_1^2\omega_5\omega_{15} +$
$\omega_{19}\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1^2 - 2\omega_{19}c_s^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8v_1\omega_5\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_7\omega_{23}\omega_{20}\omega_{17}v_1\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_{23}\omega_{20}v_1\omega_5\omega_{15} +$
$2\omega_{19}c_s^2\omega_{10}v_3\omega_7\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{15} + 2\omega_{19}c_s^2\omega_{10}v_3\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_7\omega_{23}\omega_{20}\omega_{17}v_1\omega_5\omega_{15} +$
$2\omega_{19}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}\omega_8v_1^2\omega_5\omega_{15} + 2\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_{23}\omega_{20}\omega_{17}\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8v_1\omega_{15} + \omega_{19}\omega_{16}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1^2\omega_5 +$
$2c_s^2\omega_{16}\omega_{10}\omega_{23}\omega_{17}\omega_8v_1\omega_5\omega_{15} + 2\omega_{19}\omega_{10}v_3\omega_7\omega_{20}\omega_{17}\omega_8v_1^2\omega_5\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}\omega_8v_1^2\omega_{15} + 2\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}\omega_8\omega_{15}$

$C_{23} = 2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}v_2^2v_1^2\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8v_1^2\omega_5\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_{15} +$
$2\omega_{19}\omega_{10}\omega_7\omega_{20}\omega_{17}v_2^2\omega_8v_1^2\omega_5\omega_{15} + 4\omega_{19}v_3\omega_7\omega_{23}\omega_{20}v_2^2\omega_8v_1\omega_5\omega_{15} - 4\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}\omega_8v_1\omega_{15} - 2\omega_{19}c_s^2\omega_{16}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5 +$
$4\omega_{19}\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}v_2^2v_1\omega_{15} + 4\omega_{16}\omega_{10}v_3\omega_{23}\omega_{17}v_2^2\omega_8v_1\omega_5\omega_{15} - 2\omega_{19}\omega_{16}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_5 + 2\omega_{19}\omega_{10}\omega_7\omega_{23}\omega_{20}v_2^2\omega_8v_1^2\omega_5\omega_{15} +$
$2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}v_2^2\omega_5\omega_{15} + 4\omega_{19}v_3\omega_7\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_5\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}v_2^2v_1^2\omega_{15} - 4\omega_{19}c_s^2\omega_{10}v_3\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{15} +$
$2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_{23}\omega_{20}\omega_{17}v_1^2\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}v_2^2\omega_{15} + 2\omega_{16}\omega_{10}\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8v_1^2\omega_5\omega_{15} + c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{17}v_2^2\omega_8\omega_5\omega_{15} +$
$\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1^2 - 2\omega_{19}\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_5\omega_{15} - 4\omega_{19}\omega_{16}v_3\omega_7\omega_{23}\omega_{20}v_2^2\omega_8v_1\omega_5\omega_{15} -$
$\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{20}\omega_{17}v_2^2\omega_8v_1^2\omega_5\omega_{15} - 2\omega_{19}\omega_{16}v_3\omega_7\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_5\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}v_2^2\omega_8v_1^2\omega_5\omega_{15} +$
$2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8v_1^2\omega_{15} + 2\omega_{19}c_s^2\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8v_1^2\omega_5\omega_{15} - 4\omega_{19}\omega_{10}v_3\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_5\omega_{15} +$
$4\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}\omega_8v_1\omega_5\omega_{15} - 4\omega_{19}\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}v_2^2v_1\omega_5\omega_{15} + 2\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{15} -$
$\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8v_1^2\omega_5\omega_{15} - 4\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}v_1\omega_{15} - \omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8v_1^2\omega_5\omega_{15} -$
$2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}v_2^2\omega_8v_1^2 + 2\omega_{19}\omega_{16}\omega_{10}\omega_{23}\omega_{20}\omega_{17}v_2^2v_1^2\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8v_1^2\omega_5\omega_{15} -$
$4\omega_{19}c_s^2\omega_{10}v_3\omega_7\omega_{23}\omega_{20}\omega_8v_1\omega_5\omega_{15} + 4c_s^2\omega_{16}\omega_{10}v_3\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{15} + 2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_{23}\omega_{17}v_2^2\omega_8\omega_5\omega_{15} - \omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8v_1^2\omega_5 -$
$4\omega_{19}c_s^2\omega_{10}v_3\omega_7\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_{23}\omega_{20}v_1^2\omega_5\omega_{15} - 2c_s^2\omega_{16}\omega_{10}\omega_{23}\omega_{17}\omega_8v_1^2\omega_5\omega_{15} - \omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8\omega_{15} -$
$2\omega_{19}\omega_{16}\omega_{10}v_3\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_5\omega_{15} - 4\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_{23}\omega_{20}\omega_{17}v_1\omega_5\omega_{15} + 2\omega_{19}c_s^2\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8v_1^2\omega_5\omega_{15} +$
$4\omega_{19}\omega_{16}\omega_{10}v_3\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_5\omega_{15} + 2\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8v_1^2\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8v_1^2\omega_5 -$
$4\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}\omega_8v_1^2\omega_5 - 4\omega_{19}\omega_{16}\omega_{10}v_3\omega_{23}\omega_{20}\omega_{17}v_2^2v_1\omega_5\omega_{15} + 4\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_{23}\omega_{20}\omega_{17}v_1\omega_5\omega_{15} + 2\omega_{19}c_s^2\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8v_1^2\omega_5\omega_{15} +$
$2\omega_{19}\omega_{16}\omega_{10}v_3\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8v_1^2\omega_5\omega_{15} + 2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8v_1^2\omega_5\omega_{15} + 2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_{20}\omega_{17}\omega_8v_1^2\omega_5\omega_{15} +$
$2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_{23}\omega_{20}\omega_8v_1^2\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8\omega_5\omega_{15} - \omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8v_1^2\omega_{15} -$
$2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}v_1^2\omega_{15} + \omega_{16}\omega_{10}\omega_7\omega_{20}\omega_{17}v_2^2\omega_8v_1^2\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{10}\omega_{23}\omega_{20}\omega_8v_1^2\omega_5\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_{23}\omega_{17}v_2^2\omega_8v_1^2\omega_5\omega_{15} +$
$\omega_{19}c_s^2\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1^2\omega_5 + 2\omega_{19}c_s^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1^2\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{10}\omega_{20}\omega_{17}\omega_8v_1^2\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{16}\omega_7\omega_{23}\omega_{20}v_2^2\omega_8\omega_5 -$
$\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{17}v_2^2\omega_8\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_7\omega_{23}\omega_{20}v_2^2\omega_8\omega_5\omega_{15} - 4\omega_{19}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}v_2^2\omega_8v_1\omega_5\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8v_1^2\omega_5\omega_{15} +$

$4\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}v_1\omega_5\omega_{15} - \omega_{19}c_s^2\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1^2\omega_5\omega_{15} + 4\omega_{19}\omega_{16}\omega_{10}v_3\omega_{23}\omega_{20}v_2^2v_1\omega_5\omega_{15} -$
$4\omega_{19}\omega_{16}\omega_{10}v_3\omega_{23}\omega_{17}v_2^2\omega_8v_1\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{17}v_2^2\omega_8\omega_5\omega_{15} + \omega_{19}c_s^2\omega_{16}\omega_7\omega_{20}\omega_{17}v_2^2\omega_8\omega_5\omega_{15} - \omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8\omega_5 +$
$4\omega_{19}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_5\omega_{15} + 2c_s^2\omega_{16}\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8v_1^2\omega_5\omega_{15} + 2\omega_{19}c_s^2\omega_{16}\omega_7\omega_{23}\omega_{20}v_2^2\omega_8\omega_5\omega_{15} - 2\omega_{16}\omega_{10}\omega_{20}\omega_{17}v_2^2\omega_8v_1^2\omega_5\omega_{15} -$
$2c_s^2\omega_{16}\omega_{10}\omega_{20}\omega_{17}v_2^2\omega_8\omega_5\omega_{15} - 4\omega_{19}\omega_{10}v_3\omega_7\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_5\omega_{15} + \omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{17}v_2^2\omega_8v_1^2\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8v_1 +$
$4\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}\omega_8v_1 - 2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{17}v_2^2v_1^2\omega_{15} + 2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{17}v_2^2\omega_5\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{17}v_2^2\omega_8v_1\omega_{15} +$
$4\omega_{19}c_s^2\omega_{10}v_3\omega_{23}\omega_{20}\omega_8v_1\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{17}\omega_8v_1\omega_{15} + 4\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{17}v_1\omega_{15} + 4\omega_{19}\omega_{16}v_3\omega_7\omega_{23}\omega_{20}v_2^2\omega_8v_1\omega_5 +$
$4\omega_{19}\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{17}v_2^2v_1\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_5 - 4\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}\omega_8v_1\omega_5 -$
$2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8v_1^2 + 2\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}v_1^2\omega_5\omega_{15} +$
$4\omega_{19}c_s^2\omega_{10}v_3\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{15} - 4\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_{23}\omega_{20}\omega_8v_1\omega_5\omega_{15} - 2\omega_{19}\omega_{16}\omega_{10}\omega_{23}\omega_{20}v_2^2v_1^2\omega_5\omega_{15} + 2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8v_1^2\omega_5 +$
$2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_{15} + 4\omega_{19}\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}v_2^2\omega_8v_1\omega_5\omega_{15} + \omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8\omega_5\omega_{15} +$
$\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_8v_1^2\omega_{15} - 4\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}v_3\omega_7\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_5\omega_{15} -$
$c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1^2\omega_5\omega_{15} - 2c_s^2\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{17}\omega_8v_1\omega_5\omega_{15} - 2\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{17}v_2^2\omega_8v_1\omega_5\omega_{15} +$
$c_s^2\omega_{16}\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8v_1^2\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}v_2^2\omega_8 - 4\omega_{16}\omega_{10}v_3\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_5\omega_{15} - 4c_s^2\omega_{16}\omega_{10}v_3\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{15} -$
$2c_s^2\omega_{16}\omega_{10}\omega_{23}\omega_{17}v_2^2\omega_8\omega_5\omega_{15} - \omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1^2\omega_5 + 2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}v_2^2\omega_8v_1^2\omega_{15} - 4\omega_{19}c_s^2\omega_{16}v_3\omega_7\omega_{23}\omega_{20}\omega_8v_1\omega_5\omega_{15} +$
$2\omega_{19}c_s^2\omega_{10}\omega_7\omega_{20}\omega_{17}v_2^2\omega_8\omega_5\omega_{15} + 4\omega_{19}c_s^2\omega_{10}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{16}v_3\omega_7\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{15} +$
$4\omega_{19}\omega_{16}\omega_{10}v_3\omega_{23}\omega_{17}v_2^2v_1\omega_5\omega_{15} + 2\omega_{19}c_s^2\omega_{10}\omega_7\omega_{23}\omega_{20}v_2^2\omega_8\omega_5\omega_{15} + \omega_{19}c_s^2\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8\omega_5 - \omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7\omega_{20}\omega_{17}v_2^2\omega_8\omega_5\omega_{15} +$
$2c_s^2\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{15} + 4\omega_{19}c_s^2v_3\omega_7\omega_{23}\omega_{20}\omega_8v_1\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}v_2^2\omega_8\omega_5\omega_{15} +$
$2\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5 + 4\omega_{19}c_s^2v_3\omega_7\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_8v_1^2\omega_5 + 2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_5\omega_{15} +$
$4\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_{23}\omega_{20}v_1\omega_5\omega_{15} + 2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_{23}\omega_{17}\omega_8v_1^2\omega_5\omega_{15} + \omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8v_1^2\omega_5 + \omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8v_1^2\omega_5\omega_{15} +$
$2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}v_1^2\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1 - 2c_s^2\omega_{16}\omega_{10}v_3\omega_7\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{15} - 2\omega_{19}\omega_7\omega_{23}\omega_{20}v_2^2\omega_8v_1^2\omega_5\omega_{15} +$
$c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_8v_1^2\omega_5\omega_{15} + 4\omega_{19}c_s^2\omega_{16}v_3\omega_7\omega_{23}\omega_{20}\omega_8v_1\omega_5 + \omega_{19}\omega_{16}\omega_7\omega_{20}\omega_{17}v_2^2\omega_8v_1^2\omega_5\omega_{15} + 2\omega_{19}c_s^2\omega_{10}\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8\omega_5\omega_{15} -$
$2\omega_{19}\omega_{16}\omega_{10}\omega_{23}\omega_{17}v_2^2v_1^2\omega_5\omega_{15} - 4\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_{23}\omega_{17}\omega_8v_1\omega_5\omega_{15} + 2\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}v_2^2\omega_8v_1^2\omega_5\omega_{15} -$
$4\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}v_1\omega_5\omega_{15} + 2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}v_2^2\omega_8\omega_5 + 4\omega_{19}\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2v_1\omega_5\omega_{15} -$
$\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{17}v_2^2\omega_8v_1^2\omega_5\omega_{15} + \omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{17}v_2^2\omega_8\omega_{15} - 2\omega_{19}\omega_7\omega_{20}\omega_{17}v_2^2\omega_8v_1^2\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8\omega_5\omega_{15} +$
$4\omega_{16}\omega_{10}v_3\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_5\omega_{15} - 4\omega_{19}\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}v_2^2\omega_8v_1\omega_{15} - 2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_{23}\omega_{20}v_2^2\omega_5\omega_{15} + 4\omega_{19}\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}v_2^2\omega_8v_1 -$
$2\omega_{19}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8v_1^2\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{17}v_2^2\omega_{15} + 2\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{17}\omega_8v_1\omega_5\omega_{15} +$
$2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{17}v_2^2\omega_8v_1\omega_5\omega_{15} + \omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8v_1^2 + 2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}v_2^2\omega_8\omega_{15} -$
$2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2v_1^2\omega_5\omega_{15} - 2\omega_{16}\omega_{10}v_3\omega_7\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_5\omega_{15} + \omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1^2\omega_5\omega_{15} -$
$4\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{17}v_1\omega_5\omega_{15} - 4\omega_{19}\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{17}v_2^2v_1\omega_5\omega_{15} + 2\omega_{19}c_s^2\omega_{16}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{15} -$
$c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8\omega_5\omega_{15} + c_s^2\omega_{16}\omega_{10}\omega_7\omega_{20}\omega_{17}v_2^2\omega_8\omega_5\omega_{15} + 2\omega_{19}\omega_{16}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_5\omega_{15} -$
$2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_{23}\omega_{17}v_2^2\omega_5\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{17}v_2^2v_1^2\omega_5\omega_{15} - 4\omega_{19}\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}v_2^2\omega_8v_1\omega_5 + 4\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}v_1\omega_{15} -$
$4\omega_{19}\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2v_1\omega_{15} - 4\omega_{19}\omega_{16}\omega_{10}v_3\omega_{23}\omega_{20}v_2^2\omega_8v_1\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_7\omega_{23}\omega_{20}\omega_8v_1^2\omega_5\omega_{15} - 2\omega_{16}\omega_{10}\omega_{23}\omega_{17}v_2^2\omega_8v_1^2\omega_5\omega_{15} -$
$2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{17}\omega_8v_1^2\omega_5\omega_{15} - \omega_{19}c_s^2\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8\omega_5\omega_{15} + \omega_{19}c_s^2\omega_{16}\omega_7\omega_{20}\omega_{17}\omega_8v_1^2\omega_5\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2v_1^2\omega_{15} -$
$2\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{15} - \omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1^2\omega_{15} - 4\omega_{19}\omega_{16}\omega_{10}v_3\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_5\omega_{15} +$
$2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}v_2^2\omega_8v_1^2\omega_5 - 2c_s^2\omega_{16}\omega_{10}\omega_{20}\omega_{17}\omega_8v_1^2\omega_5\omega_{15} + 2c_s^2\omega_{16}\omega_{10}\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8\omega_5\omega_{15} + 2\omega_{19}c_s^2\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_8v_1^2\omega_5\omega_{15} +$
$2\omega_{19}\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8v_1^2\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{17}v_1^2\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_{20}\omega_{17}v_2^2\omega_8v_1^2\omega_5\omega_{15} + 2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_{20}\omega_{17}v_2^2\omega_8\omega_5\omega_{15} +$
$2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{17}v_1^2\omega_5\omega_{15} + 4\omega_{19}\omega_{10}v_3\omega_{23}\omega_{20}v_2^2\omega_8v_1\omega_5\omega_{15} + \omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{17}v_2^2\omega_8v_1^2\omega_5\omega_{15} + 4\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_{23}\omega_{17}v_1\omega_5\omega_{15} +$
$4c_s^2\omega_{16}\omega_{10}v_3\omega_{23}\omega_{17}\omega_8v_1\omega_5\omega_{15} - 2\omega_{19}\omega_{10}\omega_{23}\omega_{20}v_2^2\omega_8v_1^2\omega_5\omega_{15} - 4\omega_{19}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_5\omega_{15} + 2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_{23}\omega_{20}v_2^2\omega_8\omega_5\omega_{15} -$
$2\omega_{19}c_s^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1^2\omega_5\omega_{15} - 2\omega_{19}\omega_{10}\omega_{20}\omega_{17}v_2^2\omega_8v_1^2\omega_5\omega_{15} + \omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8 -$
$2\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_5\omega_{15} - 4\omega_{19}c_s^2v_3\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{10}\omega_{23}\omega_{20}v_2^2\omega_8\omega_5\omega_{15} +$
$2\omega_{19}c_s^2\omega_{16}\omega_{10}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_{15} + 2\omega_{19}\omega_{16}\omega_{10}\omega_{23}\omega_{20}v_2^2\omega_8v_1^2\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{10}\omega_{20}\omega_{17}v_2^2\omega_8\omega_5\omega_{15} -$
$\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8v_1^2\omega_5\omega_{15} - \omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_8v_1^2\omega_5\omega_{15} + 2\omega_{19}c_s^2\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8\omega_5\omega_{15} + 4\omega_{19}\omega_{10}v_3\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_5\omega_{15}$

$C_{24} = 6\omega_{19}\omega_{16}\omega_{10}^3\omega_7^2\omega_{23} - 36\omega_{19}c_s^2\omega_{10}^3\omega_7\omega_{23} + 12\omega_{16}^2\omega_{10}^3\omega_7v_2^2 + 12\omega_{19}\omega_{10}^3\omega_7\omega_{23} - 6\omega_{19}\omega_{16}\omega_{10}^3\omega_7^2\omega_{23}v_2^2 - 12\omega_{19}\omega_{10}^3\omega_7\omega_{23}v_2^2 -$
$12\omega_{19}\omega_{16}^2\omega_7^2\omega_{23} - 18\omega_{19}c_s^2\omega_{16}\omega_{10}^3\omega_7^2\omega_{23} - 12\omega_{19}\omega_{16}\omega_{10}^3\omega_7 + 36\omega_{19}c_s^2\omega_{16}^2\omega_7^2\omega_{23} + 36\omega_{19}c_s^2\omega_{16}\omega_{10}^3\omega_7 - 18c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2 + 12\omega_{19}\omega_{16}\omega_{10}^3\omega_7v_2^2 +$
$6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}v_2^2 + 12\omega_{19}\omega_{16}^2\omega_7^2\omega_{23}v_2^2 + 2\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23} + 12\omega_{19}\omega_{16}\omega_{10}^3\omega_{23} + 36\omega_{19}c_s^2\omega_{16}\omega_{10}^2\omega_7^2 - 36\omega_{19}c_s^2\omega_{16}\omega_{10}^3\omega_{23} - 12\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2 -$
$6\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23} + \omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{23}v_2^2 - 12\omega_{19}\omega_{16}^2\omega_{10}^2\omega_{23}v_2^2 + 18c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23} - 2\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}v_2^2 - 36\omega_{19}c_s^2\omega_{10}^2\omega_7^2\omega_{23} +$
$12\omega_{19}\omega_{10}^2\omega_7^2\omega_{23} + 6\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^2v_2^2 + 18\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}v_2^2 + 12\omega_{19}\omega_{16}\omega_{10}^3\omega_7^2 - 12\omega_{19}\omega_{16}\omega_{10}^3\omega_{23}v_2^2 - 36\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23} -$
$40\omega_{19}c_s^2\omega_{16}^2\omega_{10}^3\omega_7\omega_{23} + 36c_s^2\omega_{16}^2\omega_{10}^3\omega_7 - 36\omega_{19}c_s^2\omega_{16}\omega_{10}^3\omega_7^2 + 12\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2v_2^2 + 12\omega_{16}^2\omega_{10}^2\omega_7\omega_{23} + 12\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23} +$
$12\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7\omega_{23} - 12\omega_{16}^2\omega_{10}^3\omega_7 + 5\omega_{19}c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{23} - 6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23} - \omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{23} + 18\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}v_2^2 - 36c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{23} +$
$18\omega_{19}c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2 + 54\omega_{19}c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{23} + 12\omega_{19}\omega_{16}^2\omega_{10}^2\omega_{23} - 6\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^2 - 36\omega_{19}c_s^2\omega_{16}^2\omega_{10}\omega_{23} - 12\omega_{19}\omega_{10}^2\omega_7^2\omega_{23}v_2^2 -$
$18\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2\omega_{23} - 12\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7\omega_7v_2^2 + 18\omega_{19}\omega_{16}\omega_{10}^3\omega_7\omega_{23}v_2^2 - 12\omega_{19}\omega_{16}\omega_{10}^3\omega_7^2v_2^2 - 12\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}v_2^2 - 18\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7\omega_{23} -$
$36\omega_{19}c_s^2\omega_{16}^2\omega_{10}^3\omega_7 + 12\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7 + 54\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{23} + 12\omega_{19}\omega_{10}^3\omega_7^2\omega_{23}v_2^2 + 12\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{23} + 36\omega_{19}c_s^2\omega_{10}^3\omega_7^2\omega_{23} - 6\omega_{16}^2\omega_{10}^3\omega_7^2v_2^2 -$
$18\omega_{19}\omega_{16}\omega_{10}^3\omega_7\omega_{23} - 12\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}v_2^2 - 6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2v_2^2 - 12\omega_{19}\omega_{10}^3\omega_7^2\omega_{23} + 6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2 + 12\omega_{19}\omega_{16}^2\omega_{10}^3\omega_{23}v_2^2 - 36\omega_{19}c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{23} -$
$12\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7\omega_{23}v_2^2 + 36\omega_{19}c_s^2\omega_{16}^2\omega_{10}^3\omega_{23} + 54\omega_{19}c_s^2\omega_{16}\omega_{10}^3\omega_7\omega_{23} + 6\omega_{16}^2\omega_{10}^3\omega_7^2 - 18\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2 - 12\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}v_2^2 - 12\omega_{19}\omega_{16}^2\omega_{10}^3\omega_{23}$

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

$12\omega_{19}c_s^2\omega_{10}^2\omega_7^3 + 12\omega_{19}\omega_{10}^2\omega_7^3 - 18\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_2^2 + 6\omega_{19}\omega_{16}\omega_{10}\omega_7^3 + 72\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}v_2^2 - \omega_{19}c_s^2\omega_{16}\omega_{10}^2\omega_7^3\omega_{23} - 6\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3$

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

$C_{27} = 18\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23}\omega_{11} + 36\omega_{19}v_3^2\omega_7^3\omega_{11} + 18\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{11} + 12\omega_{19}\omega_{10}\omega_7^3\omega_{11} - 12\omega_{16}\omega_{10}\omega_7^2\omega_{11} - 12\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_{23}\omega_{11} -$
$12\omega_{19}c_s^2\omega_{10}\omega_7^3\omega_{11} + 5\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23} + 36\omega_{19}\omega_{10}v_3^2\omega_7^2\omega_{11} + 54\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_7^2\omega_{23} - 6\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11} - 5\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23} -$
$18c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11} + 18\omega_{19}\omega_{16}v_3^2\omega_7^3\omega_{23} + 6\omega_{16}\omega_{10}\omega_7^3\omega_{11} - 3\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_7^2\omega_{23}\omega_{11} + 12\omega_{19}c_s^2\omega_{10}\omega_7^2\omega_{11} - 12\omega_{19}\omega_{10}\omega_7^2\omega_{11} -$
$6\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{11} - 12\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{11} + 6\omega_{19}\omega_{16}\omega_7^3\omega_{11} + 18\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23} - 15\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{23} + 12\omega_{19}\omega_7^3\omega_{23} - 12\omega_{19}c_s^2\omega_7^3\omega_{23} -$
$\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11} - 18\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23} + 36\omega_{16}\omega_{10}v_3^2\omega_7\omega_{23}\omega_{11} - 36\omega_{19}\omega_{10}v_3^2\omega_7^3\omega_{11} + 6c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11} - 6\omega_{19}\omega_{16}\omega_7^3\omega_{23} +$
$36\omega_{16}\omega_{10}v_3^2\omega_7^2\omega_{11} + 6\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23} - 12\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23} + 12\omega_{19}\omega_{10}\omega_7^2\omega_{23} - 6c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{11} - 12\omega_{19}c_s^2\omega_{10}\omega_7^2\omega_{23} +$
$18\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11} + 12\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23} + 36\omega_{19}\omega_{10}v_3^2\omega_7^3\omega_{23} + 12\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{11} + 12\omega_{19}c_s^2\omega_7^3\omega_{11} - 12\omega_{19}\omega_7^3\omega_{11} +$
$18\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_7^3\omega_{11} - 54\omega_{16}\omega_{10}v_3^2\omega_7^2\omega_{23}\omega_{11} - 12\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{11} - 5\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11} + 12\omega_{19}c_s^2\omega_{10}\omega_7^3\omega_{23} - 12\omega_{19}\omega_{10}\omega_7^3\omega_{23} -$
$36\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_7\omega_{23} + 12c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{11} - 36\omega_{19}v_3^2\omega_7^4\omega_{23} - 18\omega_{16}\omega_{10}v_3^4\omega_7^3\omega_{11} + \omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11} - 18\omega_{19}\omega_{16}v_3^2\omega_7^3\omega_{11} +$
$6\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{11} - 36\omega_{19}\omega_{16}\omega_{10}v_3^2\omega_7^2\omega_{11} + 12c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{11} - 36\omega_{19}\omega_{10}v_3^2\omega_7^2\omega_{23} - 6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{11}$

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

2.4.5 Conservation of momentum: ρv_3

attached text file: `output_d3q27_nse_clbm1_symbolic_pde_03.txt`

$$v_3\frac{\partial\rho}{\partial t} + \rho\frac{\partial v_3}{\partial t} + \frac{v_3v_1\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_1} + \frac{v_3\rho\delta_l}{\delta_t}\frac{\partial v_1}{\partial x_1} + \frac{\rho v_1\delta_l}{\delta_t}\frac{\partial v_3}{\partial x_1} + \frac{v_3v_2\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_2} + \frac{v_3\rho\delta_l}{\delta_t}\frac{\partial v_2}{\partial x_2} + \frac{\rho v_2\delta_l}{\delta_t}\frac{\partial v_3}{\partial x_2} + (c_s^2+v_3^2)\frac{\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_3} +$$
$$\frac{2v_3\rho\delta_l}{\delta_t}\frac{\partial v_3}{\partial x_3} + (-2+\omega_6)\frac{c_s^2\delta_l^2}{2\omega_6\delta_t}\frac{\partial\rho}{\partial x_1}\frac{\partial v_3}{\partial x_1} + (-2+\omega_6)\frac{c_s^2\delta_l^2}{2\omega_6\delta_t}\frac{\partial\rho}{\partial x_1}\frac{\partial v_1}{\partial x_3} + (-2+\omega_7)\frac{c_s^2\delta_l^2}{2\delta_t\omega_7}\frac{\partial\rho}{\partial x_2}\frac{\partial v_3}{\partial x_2} + (-2+\omega_7)\frac{c_s^2\delta_l^2}{2\delta_t\omega_7}\frac{\partial\rho}{\partial x_2}\frac{\partial v_2}{\partial x_3}$$
$$+ (-2+4c_s^2+6v_3^2-3v_3^2\omega_{11}+\omega_{11}-2c_s^2\omega_{11})\frac{\delta_l^2}{\delta_t\omega_{11}}\frac{\partial\rho}{\partial x_3}\frac{\partial v_3}{\partial x_3} + (2-\omega_{11})\frac{3v_3\rho\delta_l^2}{\delta_t\omega_{11}}\left(\frac{\partial v_3}{\partial x_3}\right)^2 + (-2+\omega_6)\frac{c_s^2\rho\delta_l^2}{2\omega_6\delta_t}\frac{\partial^2 v_3}{\partial x_1^2} +$$
$$(-2+\omega_7)\frac{c_s^2\rho\delta_l^2}{2\delta_t\omega_7}\frac{\partial^2 v_3}{\partial x_2^2} + (-2+\omega_6)\frac{c_s^2\rho\delta_l^2}{2\omega_6\delta_t}\frac{\partial^2 v_1}{\partial x_1\partial x_3} + (-2+\omega_7)\frac{c_s^2\rho\delta_l^2}{2\delta_t\omega_7}\frac{\partial^2 v_2}{\partial x_2\partial x_3} +$$
$$(-2+6c_s^2+2v_3^2-v_3^2\omega_{11}+\omega_{11}-3c_s^2\omega_{11})\frac{v_3\delta_l^2}{2\delta_t\omega_{11}}\frac{\partial^2\rho}{\partial x_3^2} + (-2+2c_s^2+6v_3^2-3v_3^2\omega_{11}+\omega_{11}-c_s^2\omega_{11})\frac{\rho\delta_l^2}{2\delta_t\omega_{11}}\frac{\partial^2 v_3}{\partial x_3^2} +$$
$$(-1+3c_s^2+v_1^2)\frac{v_3v_1\delta_l^3}{12\delta_t}\frac{\partial^3\rho}{\partial x_1^3} + (-1+c_s^2+3v_1^2)\frac{v_3\rho\delta_l^3}{12\delta_t}\frac{\partial^3 v_1}{\partial x_1^3} + C_1\frac{\rho v_1\delta_l^3}{6\omega_6\delta_t\omega_{13}}\frac{\partial^3 v_3}{\partial x_1^3} - \frac{c_s^2v_3\rho\delta_l^3}{6\delta_t}\frac{\partial^3 v_2}{\partial x_1^2\partial x_2} - \frac{c_s^2v_3\rho\delta_l^3}{6\delta_t}\frac{\partial^3 v_1}{\partial x_1\partial x_2^2} +$$
$$(-1+3c_s^2+v_2^2)\frac{v_3v_2\delta_l^3}{12\delta_t}\frac{\partial^3\rho}{\partial x_2^3} + (-1+c_s^2+3v_2^2)\frac{v_3\rho\delta_l^3}{12\delta_t}\frac{\partial^3 v_2}{\partial x_2^3} + C_2\frac{\rho v_2\delta_l^3}{6\delta_t\omega_{16}\omega_7}\frac{\partial^3 v_3}{\partial x_2^3} + (-12+12\omega_6-\omega_6^2)\frac{c_s^4\delta_l^3}{6\omega_6^2\delta_t}\frac{\partial^3\rho}{\partial x_1^2\partial x_3} -$$
$$\frac{c_s^2v_3\rho\delta_l^3}{6\delta_t}\frac{\partial^3 v_3}{\partial x_1^2\partial x_3} + (-12-\omega_7^2+12\omega_7)\frac{c_s^4\delta_l^3}{6\delta_t\omega_7^2}\frac{\partial^3\rho}{\partial x_2^2\partial x_3} - \frac{c_s^2v_3\rho\delta_l^3}{6\delta_t}\frac{\partial^3 v_3}{\partial x_2^2\partial x_3} + C_3\frac{v_3\rho\delta_l^3}{12\omega_6\delta_t\omega_{11}^2\omega_{18}}\frac{\partial^3 v_1}{\partial x_1\partial x_3^2} +$$
$$C_4\frac{v_3\rho\delta_l^3}{12\omega_{19}\delta_t\omega_7\omega_{11}^2}\frac{\partial^3 v_2}{\partial x_2\partial x_3^2} + C_5\frac{\delta_l^3}{12\delta_t\omega_{11}^2}\frac{\partial^3\rho}{\partial x_3^3} +$$
$$(-24+36c_s^2+60v_3^2-60v_3^2\omega_{11}+24\omega_{11}+5c_s^2\omega_{11}^2-4\omega_{11}^2-36c_s^2\omega_{11}+11v_3^2\omega_{11}^2)\frac{v_3\rho\delta_l^3}{6\delta_t\omega_{11}^2}\frac{\partial^3 v_3}{\partial x_3^3} +$$
$$(3\omega_9v_1^2-2c_s^2-\omega_9c_s^4+6v_1^4-12\omega_9c_s^2v_1^2-3\omega_9v_1^4+2c_s^4+24c_s^2v_1^2+\omega_9c_s^2-6v_1^2)\frac{v_3\delta_l^4}{24\omega_9\delta_t}\frac{\partial^4\rho}{\partial x_1^4} +$$
$$(-4+2\omega_9-5\omega_9v_1^2+6c_s^2-3\omega_9c_s^2+10v_1^2)\frac{v_3\rho v_1\delta_l^4}{12\omega_9\delta_t}\frac{\partial^4 v_1}{\partial x_1^4} + C_6\frac{\rho\delta_l^4}{24\omega_6^3\delta_t\omega_{13}^2}\frac{\partial^4 v_3}{\partial x_1^4} +$$
$$(3\omega_9-3\omega_9v_1^2-\omega_{12}+\omega_9\omega_{12}v_1^2-\omega_9\omega_{12}+\omega_{12}v_1^2+3\omega_{12}c_s^2+3\omega_9\omega_{12}c_s^2-9\omega_9c_s^2)\frac{v_3\rho v_1\delta_l^4}{12\omega_9\omega_{12}\delta_t}\frac{\partial^4 v_2}{\partial x_1^3\partial x_2} +$$
$$(-2+\omega_5)\frac{c_s^4v_3\delta_l^4}{6\delta_t\omega_5}\frac{\partial^4\rho}{\partial x_1^2\partial x_2^2} + C_7\frac{c_s^4\rho\delta_l^4}{2\omega_6^2\delta_t\omega_{16}\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8}\frac{\partial^4 v_3}{\partial x_1^2\partial x_2^2} +$$

$$
\begin{aligned}
&(3c_s^2\omega_{15} - 3\omega_{10}v_2^2 + 3c_s^2\omega_{10}\omega_{15} + 3\omega_{10} - 9c_s^2\omega_{10} + v_2^2\omega_{15} - \omega_{10}\omega_{15} + \omega_{10}v_2^2\omega_{15} - \omega_{15})\frac{v_3\rho v_2\delta_l^4}{12\delta_t\omega_{10}\omega_{15}}\frac{\partial^4 v_1}{\partial x_1\partial x_2^3} + \\
&(6v_2^4 - 2c_s^2 + 3\omega_{10}v_2^2 + c_s^2\omega_{10} - 3\omega_{10}v_2^4 + 24c_s^2v_2^2 - c_s^4\omega_{10} - 6v_2^2 + 2c_s^4 - 12c_s^2\omega_{10}v_2^2)\frac{v_3\delta_l^4}{24\delta_t\omega_{10}}\frac{\partial^4\rho}{\partial x_2^4} + \\
&(-4 + 6c_s^2 - 5\omega_{10}v_2^2 + 2\omega_{10} - 3c_s^2\omega_{10} + 10v_2^2)\frac{v_3\rho v_2\delta_l^4}{12\delta_t\omega_{10}}\frac{\partial^4 v_2}{\partial x_2^4} + C_8\frac{\rho\delta_l^4}{24\delta_t\omega_{16}^2\omega_7^3}\frac{\partial^4 v_3}{\partial x_2^4} + C_9\frac{c_s^2v_1\delta_l^4}{12\omega_9\omega_6^2\omega_{22}\delta_t\omega_{13}^2\omega_{11}\omega_{18}}\frac{\partial^4\rho}{\partial x_1^3\partial x_3} + \\
&C_{10}\frac{c_s^2\rho\delta_l^4}{12\omega_9\omega_6^3\omega_{22}\delta_t\omega_{13}\omega_{11}\omega_{18}}\frac{\partial^4 v_1}{\partial x_1^3\partial x_3} + \\
&(3\omega_9 - 3\omega_9v_1^2 - \omega_{13} + 3c_s^2\omega_{13} + \omega_9\omega_{13}v_1^2 + 3\omega_9c_s^2\omega_{13} + \omega_{13}v_1^2 - \omega_9\omega_{13} - 9\omega_9c_s^2)\frac{v_3\rho v_1\delta_l^4}{12\omega_9\delta_t\omega_{13}}\frac{\partial^4 v_3}{\partial x_1^3\partial x_3} + \\
&C_{11}\frac{\delta_l^4}{2\omega_6\omega_{22}\omega_{19}\delta_t\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}}\frac{\partial^4\rho}{\partial x_1^2\partial x_2\partial x_3} + C_{12}\frac{\rho\delta_l^4}{2\omega_6\omega_{22}\omega_{19}\delta_t\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}}\frac{\partial^4 v_1}{\partial x_1^2\partial x_2\partial x_3} + \\
&C_{13}\frac{\rho\delta_l^4}{12\omega_6^3\omega_{22}\omega_{19}\delta_t\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}}\frac{\partial^4 v_2}{\partial x_1^2\partial x_2\partial x_3} + C_{14}\frac{v_3\rho\delta_l^4}{\omega_6\omega_{22}\omega_{19}\delta_t\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}}\frac{\partial^4 v_3}{\partial x_1^2\partial x_2\partial x_3} + \\
&C_{15}\frac{\delta_l^4}{2\omega_6\omega_{19}\delta_t\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}}\frac{\partial^4\rho}{\partial x_1\partial x_2^2\partial x_3} + C_{16}\frac{\rho\delta_l^4}{12\omega_6^2\omega_{19}\delta_t\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}}\frac{\partial^4 v_1}{\partial x_1\partial x_2^2\partial x_3} + \\
&C_{17}\frac{\rho v_2\delta_l^4}{\omega_6\omega_{19}\delta_t\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}}\frac{\partial^4 v_2}{\partial x_1\partial x_2^2\partial x_3} + C_{18}\frac{\rho\delta_l^4}{2\omega_6\omega_{19}\delta_t\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}}\frac{\partial^4 v_3}{\partial x_1\partial x_2^2\partial x_3} + \\
&C_{19}\frac{c_s^2v_2\delta_l^4}{12\omega_{19}\delta_t\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}}\frac{\partial^4\rho}{\partial x_2^3\partial x_3} + C_{20}\frac{c_s^2\rho\delta_l^4}{12\omega_{19}\delta_t\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}}\frac{\partial^4 v_2}{\partial x_2^3\partial x_3} + \\
&(-3\omega_{10}v_2^2 + \omega_{16}\omega_{10}v_2^2 + \omega_{16}v_2^2 - \omega_{16} + 3\omega_{10} + 3c_s^2\omega_{16} - 9c_s^2\omega_{10} + 3c_s^2\omega_{16}\omega_{10} - \omega_{16}\omega_{10})\frac{v_3\rho v_2\delta_l^4}{12\delta_t\omega_{16}\omega_{10}}\frac{\partial^4 v_3}{\partial x_2^3\partial x_3} + \\
&C_{21}\frac{c_s^2v_3\delta_l^4}{12\omega_6^2\omega_{22}\delta_t\omega_{13}\omega_{11}^3\omega_{18}^2}\frac{\partial^4\rho}{\partial x_1^2\partial x_3^2} + C_{22}\frac{c_s^2\rho\delta_l^4}{12\omega_6^3\omega_{22}\delta_t\omega_{13}\omega_{11}^2\omega_{18}}\frac{\partial^4 v_3}{\partial x_1^2\partial x_3^2} + C_{23}\frac{c_s^2v_3\delta_l^4}{12\omega_{19}^2\delta_t\omega_{16}\omega_7^2\omega_{23}\omega_{11}^3}\frac{\partial^4\rho}{\partial x_2^2\partial x_3^2} + \\
&C_{24}\frac{c_s^2\rho\delta_l^4}{12\omega_{19}\delta_t\omega_{16}\omega_7^3\omega_{23}\omega_{11}^2}\frac{\partial^4 v_3}{\partial x_2^2\partial x_3^2} + C_{25}\frac{\rho\delta_l^4}{12\omega_6^3\delta_t\omega_{11}^3\omega_{18}^2}\frac{\partial^4 v_1}{\partial x_1\partial x_3^3} + C_{26}\frac{\rho\delta_l^4}{12\omega_{19}^2\delta_t\omega_7^3\omega_{11}^3}\frac{\partial^4 v_2}{\partial x_2\partial x_3^3} + C_{27}\frac{v_3\delta_l^4}{12\delta_t\omega_{11}^3}\frac{\partial^4\rho}{\partial x_3^4} + \\
&C_{28}\frac{\rho\delta_l^4}{12\delta_t\omega_{11}^3}\frac{\partial^4 v_3}{\partial x_3^4} = 0,
\end{aligned}
$$

where:

$$C_1 = 6 - 18c_s^2 - 3\omega_6 + 3\omega_6v_1^2 - 3\omega_{13} + 9c_s^2\omega_{13} + 3\omega_{13}v_1^2 + 9\omega_6c_s^2 - \omega_6\omega_{13}v_1^2 - 3\omega_6c_s^2\omega_{13} + \omega_6\omega_{13} - 6v_1^2$$

$$C_2 = 6 - 18c_s^2 - 3c_s^2\omega_{16}\omega_7 + 9c_s^2\omega_7 + 3\omega_{16}v_2^2 - 3\omega_{16} - 3\omega_7 + 9c_s^2\omega_{16} - \omega_{16}\omega_7v_2^2 + 3\omega_7v_2^2 + \omega_{16}\omega_7 - 6v_2^2$$

$$C_3 = -12\omega_6\omega_{11}^2 + 6v_3^2\omega_{11}^2\omega_{18} + 36\omega_6c_s^2\omega_{11}^2 + 6\omega_6\omega_{11}\omega_{18} - 18\omega_6c_s^2\omega_{11}\omega_{18} - 12\omega_6v_3^2\omega_{11} - 3\omega_6v_3^2\omega_{11}^2\omega_{18} - 6\omega_{11}^2\omega_{18} + 12\omega_6v_3^2\omega_{11}^2 + 12\omega_6\omega_{11} - 36\omega_6c_s^2\omega_{11} + 36\omega_6c_s^2\omega_{18} - 12\omega_6\omega_{18} - 36c_s^2\omega_{11}^2 + 18c_s^2\omega_{11}^2\omega_{18} + 12\omega_{11}^2 - 6\omega_6v_3^2\omega_{11}\omega_{18} + 12\omega_6v_3^2\omega_{18} + 3\omega_6\omega_{11}^2\omega_{18} - 12v_3^2\omega_{11}^2 - 11\omega_6c_s^2\omega_{11}^2\omega_{18}$$

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

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

$$
\begin{aligned}
C_6 = {} & -72\omega_6^2\omega_{13}v_1^2 - 48\omega_6c_s^4\omega_{13}^2 + 36\omega_6^3v_1^4 + 6\omega_6^3c_s^4\omega_{13} - 36\omega_6c_s^2\omega_{13}^2v_1^2 + 108\omega_6^3c_s^2v_1^2 - 12\omega_6^2\omega_{13}^2v_1^4 - 72\omega_6^3c_s^2\omega_{13}v_1^2 + 24\omega_6^2c_s^2\omega_{13} - 8\omega_6^2c_s^2\omega_{13}^2 + 24\omega_6c_s^4\omega_{13} + \\
& 144\omega_6^2c_s^2\omega_{13}v_1^2 - 3\omega_6^3c_s^4\omega_{13}^2 - 3\omega_6^3\omega_{13}^2v_1^2 - 30\omega_6^3\omega_{13}v_1^4 - 72\omega_6^2v_1^4 + 12\omega_6c_s^2\omega_{13}^2 - 6\omega_6^3c_s^2\omega_{13} + 24c_s^4\omega_{13}^2 + 3\omega_6^3\omega_{13}^2v_1^4 - 216\omega_6^2c_s^2v_1^2 - 24\omega_6^2c_s^4\omega_{13} + \\
& 72\omega_6^2v_1^2 - 12\omega_6^2c_s^2\omega_{13}^2v_1^2 + 30\omega_6^3\omega_{13}v_1^2 + 72\omega_6c_s^2\omega_{13}v_1^2 + 6\omega_6^3c_s^2\omega_{13}^2v_1^2 + 72\omega_6^2\omega_{13}v_1^4 + 12\omega_6^2\omega_{13}^2v_1^2 + 24\omega_6^2c_s^4\omega_{13}^2 - 24\omega_6c_s^2\omega_{13} + \omega_6^3c_s^2\omega_{13}^2 - 36\omega_6^3v_1^2
\end{aligned}
$$

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

$$
\begin{aligned}
C_8 = {} & 3\omega_{16}^2\omega_7^3v_2^4 - 24c_s^4\omega_{16}\omega_7^2 - 36\omega_7^3v_2^2 + 30\omega_{16}\omega_7^3v_2^2 - 24c_s^2\omega_{16}\omega_7 + 6c_s^2\omega_{16}^2\omega_7^3v_2^2 + 6c_s^4\omega_{16}\omega_7^3 + 72\omega_7^2v_2^2 - 72\omega_{16}\omega_7^2v_2^2 + 72c_s^2\omega_{16}\omega_7v_2^2 + 24c_s^2\omega_{16}\omega_7^2 - \\
& 12\omega_{16}^2\omega_7^2v_2^4 - 12c_s^2\omega_{16}^2\omega_7^2v_2^2 + 24c_s^4\omega_{16}\omega_7 - 6c_s^2\omega_{16}\omega_7^3 - 48c_s^4\omega_{16}^2\omega_7 - 36c_s^2\omega_{16}^2\omega_7v_2^2 + 12\omega_{16}^2\omega_7^2v_2^2 - 72\omega_7^2v_2^4 + 72\omega_{16}\omega_7^2v_2^4 + c_s^2\omega_{16}^2\omega_7^3 + 144c_s^2\omega_{16}\omega_7^2v_2^2 - \\
& 216c_s^2\omega_7^2v_2^2 + 24c_s^4\omega_{16}^2 - 8c_s^2\omega_{16}^2\omega_7^2 + 12c_s^2\omega_{16}^2\omega_7 + 36\omega_7^3v_2^4 - 30\omega_{16}\omega_7^3v_2^4 - 3\omega_{16}^2\omega_7^3v_2^2 - 3c_s^4\omega_{16}^2\omega_7^3 + 108c_s^2\omega_7^3v_2^2 + 24c_s^4\omega_{16}^2\omega_7^2 - 72c_s^2\omega_{16}\omega_7^3v_2^2
\end{aligned}
$$

$$
\begin{aligned}
C_9 = {} & -3\omega_9\omega_6^2\omega_{22}\omega_{13}\omega_{11}v_1^2\omega_{18} - 36\omega_9\omega_6\omega_{22}c_s^2\omega_{11}\omega_{18} - 18\omega_9\omega_6\omega_{22}\omega_{13}\omega_{11}\omega_{18} + 36\omega_9\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_{18} + 6\omega_6^2\omega_{22}\omega_{13}^2v_1^2\omega_{18} + \\
& 12\omega_9\omega_6\omega_{13}^2\omega_{11}\omega_{18} + 12\omega_9\omega_6\omega_{22}\omega_{11}\omega_{18} + 12\omega_9\omega_{22}\omega_{13}^2\omega_{11}v_1^2\omega_{18} + 12\omega_6^2\omega_{22}\omega_{13}^2 + 36\omega_9\omega_6^2c_s^2\omega_{13}^2 - 12\omega_9\omega_{22}\omega_{13}^2\omega_{11}\omega_{18} + 18\omega_9\omega_6^2\omega_{22}c_s^2\omega_{11}\omega_{18} + \\
& 3\omega_9\omega_6^2\omega_{22}\omega_{13}\omega_{11}\omega_{18} + 54\omega_9\omega_6\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18} - 12\omega_9\omega_6^2\omega_{13}^2\omega_{11}v_1^2 + 6\omega_9\omega_6^2\omega_{13}^2\omega_{18} + 6\omega_9\omega_6^2\omega_{13}\omega_{11}\omega_{18} - 36\omega_9\omega_6^2c_s^2\omega_{13}^2\omega_{11} - 12\omega_6^2\omega_{22}\omega_{13}^2\omega_{11} - \\
& 12\omega_9\omega_6\omega_{22}\omega_{11}v_1^2\omega_{18} + 18\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_{18} - 12\omega_9\omega_6^2\omega_{13}^2 - 12\omega_9\omega_6\omega_{13}^2\omega_{11}v_1^2\omega_{18} - 9\omega_9\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18} - 18\omega_6\omega_{22}\omega_{13}^2\omega_{11}\omega_{18} - \\
& 36\omega_9\omega_6c_s^2\omega_{13}^2\omega_{11}\omega_{18} + 18\omega_9\omega_6\omega_{22}\omega_{13}\omega_{11}v_1^2\omega_{18} + 6\omega_9\omega_6^2\omega_{13}^2\omega_{11}v_1^2\omega_{18} + 18\omega_9\omega_6^2c_s^2\omega_{13}^2\omega_{11}\omega_{18} + 5\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}\omega_{18} - 12\omega_9\omega_6\omega_{13}^2\omega_{11} - \\
& 12\omega_6^2\omega_{22}\omega_{13}^2v_1^2 + 6\omega_9\omega_6^2\omega_{22}\omega_{11}v_1^2\omega_{18} - 12\omega_{22}\omega_{13}^2\omega_{11}v_1^2\omega_{18} - 6\omega_9\omega_6^2\omega_{22}\omega_{11}\omega_{18} - 12\omega_9\omega_{22}\omega_{13}\omega_{11}v_1^2\omega_{18} - 6\omega_9\omega_6^2\omega_{13}^2\omega_{11}\omega_{18} + 12\omega_9\omega_6^2\omega_{13}^2v_1^2 - \\
& 36\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_{18} - 12\omega_6\omega_{22}\omega_{13}^2\omega_{11}v_1^2 + 3\omega_9\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_{18} - 36\omega_6\omega_{22}c_s^2\omega_{13}^2\omega_{11} + 36\omega_9\omega_6c_s^2\omega_{13}\omega_{11}\omega_{18} + \omega_9\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}v_1^2\omega_{18} - \\
& 5\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}v_1^2\omega_{18} + 12\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}v_1^2 - 18\omega_9\omega_6^2c_s^2\omega_{13}\omega_{11}\omega_{18} + 36\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_{11} - 15\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_{18} - 18\omega_9\omega_6^2c_s^2\omega_{13}^2\omega_{18} -
\end{aligned}
$$

$6\omega_6^2\omega_{22}\omega_{13}^2\omega_{18} + 12\omega_9\omega_6^2\omega_{13}^2\omega_{11} + 12\omega_9\omega_6\omega_{22}\omega_{13}^2\omega_{11}\omega_{18} + 18\omega_6\omega_{22}\omega_{13}^2\omega_{11}v_1^2\omega_{18} + 54\omega_6\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_{18} + 12\omega_9\omega_6\omega_{13}\omega_{11}v_1^2\omega_{18} +$
$12\omega_9\omega_6\omega_{13}^2\omega_{11}v_1^2 - 36\omega_6^2\omega_{22}c_s^2\omega_{13}^2 - 36\omega_9\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18} - 12\omega_9\omega_6\omega_{13}\omega_{11}\omega_{18} + 12\omega_6\omega_{22}\omega_{13}^2\omega_{11} + 36\omega_9\omega_6c_s^2\omega_{13}^2\omega_{11} - 36\omega_9\omega_6\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_{18} -$
$6\omega_9\omega_6^2\omega_{13}^2v_1^2\omega_{18} - \omega_9\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}\omega_{18} + 12\omega_9\omega_{22}\omega_{13}\omega_{11}\omega_{18} + 12\omega_{22}\omega_{13}^2\omega_{11}\omega_{18} - 6\omega_9\omega_6^2\omega_{13}\omega_{11}v_1^2\omega_{18} - 12\omega_9\omega_6\omega_{22}\omega_{13}^2\omega_{11}v_1^2\omega_{18}$

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

$C_{11} = -\omega_6\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2^2\omega_8v_1\omega_{18} + \omega_6\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_2^2\omega_8v_1\omega_{18} - \omega_6\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_2^2\omega_8v_1\omega_{18} +$
$2\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_{20}\omega_{11}v_2v_1^2\omega_{18} - 2\omega_6\omega_{19}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1^2 - 2\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8\omega_{18} +$
$\omega_6\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2^2\omega_8v_1\omega_{18} + \omega_6\omega_{22}v_3^2\omega_{13}\omega_{20}\omega_{11}\omega_{14}v_2^2\omega_8v_1\omega_{18} + 2\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1^2 -$
$2\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1 + 2\omega_6\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}v_1\omega_{18} + 2\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2v_1^2\omega_{18} -$
$2\omega_6\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_{20}\omega_{11}\omega_{14}v_2\omega_{18} - 2\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}v_2\omega_8v_1^2\omega_{18} - 2\omega_6\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_1\omega_{18} +$
$\omega_6\omega_{22}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1^2\omega_{18} + 2\omega_6\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_{20}\omega_{11}v_2v_1^2\omega_{18} - \omega_6\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_2\omega_8\omega_{18} -$
$2\omega_{22}\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1^2\omega_{18} + 2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2^2\omega_8v_1 + 2\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{14}v_2^2\omega_8v_1\omega_{18} -$
$2\omega_{19}v_3^2\omega_7\omega_{20}\omega_{11}\omega_{14}v_2^2\omega_8v_1\omega_{18} - 2\omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_7\omega_{11}\omega_{14}v_2\omega_8\omega_{18} - 2\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7\omega_{11}\omega_{14}v_2^2\omega_8v_1 +$
$2\omega_6\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_{20}\omega_{11}\omega_{14}v_2^2v_1\omega_{18} - 2\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_{20}\omega_{11}\omega_{14}v_2v_1^2\omega_{18} + \omega_6\omega_{22}\omega_{19}v_3^2\omega_7\omega_{20}\omega_{11}v_2^2\omega_8v_1\omega_{18} -$
$2\omega_6\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8v_1\omega_{18} + 2\omega_6\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_{11}\omega_{14}v_2^2\omega_8v_1\omega_{18} + \omega_6\omega_{22}\omega_{19}c_s^2v_3^2\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8\omega_{18} +$
$2\omega_6\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7\omega_{11}\omega_{14}v_2\omega_8v_1^2\omega_{18} + 2\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1^2\omega_{18} - 2\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2^2v_1\omega_{18} +$
$2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1^2\omega_{18} - 2\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2^2\omega_8v_1 + 2\omega_{22}\omega_{19}v_3^2\omega_7\omega_{20}\omega_{11}\omega_{14}v_2^2\omega_8v_1\omega_{18} + 2\omega_6\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1 -$
$2\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8v_1 - 2\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_{20}\omega_{11}v_2^2v_1\omega_{18} - 2\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{11}\omega_{14}v_2^2\omega_8v_1\omega_{18} -$
$2\omega_6\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{11}\omega_{14}v_2\omega_{18} + 2\omega_6\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7\omega_{14}v_2^2\omega_8v_1\omega_{18} - 2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{11}\omega_{14}v_2^2\omega_8v_1 -$
$\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1^2\omega_{18} - 2\omega_6\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{14}v_2\omega_8\omega_{18} + 2\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_{20}\omega_{11}\omega_{14}v_2^2v_1\omega_{18} +$
$\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1^2\omega_{18} - \omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1\omega_{18} + \omega_6\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}v_2\omega_8\omega_{18} -$
$\omega_6\omega_{19}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1^2\omega_{18} + 2\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_{11}\omega_{14}v_2^2\omega_8v_1\omega_{18} + 2\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1 +$
$2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}v_2^2\omega_8v_1\omega_{18} - 2\omega_6\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_{20}\omega_{11}v_2^2v_1\omega_{18} + \omega_6\omega_{22}\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}v_2^2\omega_8v_1\omega_{18} -$
$\omega_6\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8\omega_{18} - 2\omega_6\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_{20}\omega_{11}\omega_{14}v_2v_1^2\omega_{18} + 2\omega_{19}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2^2\omega_8v_1\omega_{18} -$
$2\omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_7\omega_{14}\omega_8v_1\omega_{18} - 2\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8 + 2\omega_6\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_{20}\omega_{11}\omega_{14}v_1\omega_{18} -$
$2\omega_{19}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1^2\omega_{18} + 2\omega_{22}\omega_{19}c_s^2v_3^2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1\omega_{18} + 2\omega_6\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2v_1^2\omega_{18} -$
$2\omega_6\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}v_2\omega_{18} - \omega_6\omega_{22}\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}v_2\omega_8v_1^2\omega_{18} - 2\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{11}\omega_{14}v_2\omega_8\omega_{18} -$
$2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}v_2\omega_8v_1^2\omega_{18} + 2\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{14}v_2\omega_8v_1^2 - 2\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_{11}\omega_{14}v_2\omega_8v_1^2\omega_{18} +$
$2\omega_6\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8\omega_{18} + 2\omega_6\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1\omega_{18} + \omega_6\omega_{19}c_s^2v_3^2\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8\omega_{18} - 2\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_2^2\omega_8v_1 -$
$\omega_6\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1\omega_{18} + 2\omega_6\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_{11}\omega_{14}\omega_8v_1\omega_{18} + \omega_6\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_2\omega_8\omega_{18} -$
$2\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{11}\omega_{14}v_2\omega_8v_1^2 - \omega_6\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_{20}\omega_{11}\omega_{14}v_2\omega_8\omega_{18} + 2\omega_6\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{11}\omega_{14}v_1\omega_{18} -$
$\omega_6\omega_{22}\omega_{19}v_3^2\omega_7\omega_{20}\omega_{11}v_2\omega_8v_1^2\omega_{18} - 2\omega_6\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2^2v_1\omega_{18} + 2\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8v_1\omega_{18} +$
$2\omega_6\omega_{19}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1^2 + 2\omega_{19}v_3^2\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1^2\omega_{18} - 2\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{14}v_2\omega_8v_1^2\omega_{18} + 2\omega_{22}\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}\omega_{14}v_2^2\omega_8v_1\omega_{18} -$
$2\omega_{19}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2^2\omega_8v_1 - \omega_6\omega_{22}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2^2\omega_8v_1\omega_{18} + 2\omega_{22}\omega_{19}c_s^2v_3^2\omega_7\omega_{20}\omega_{11}v_2\omega_8\omega_{18} -$
$2\omega_6\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7\omega_{11}\omega_{14}v_2v_1^2\omega_{18} + 2\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8 - 2\omega_{19}c_s^2v_3^2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1\omega_{18} + 2\omega_6\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_2^2\omega_8v_1 +$
$2\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}v_2^2\omega_8v_1\omega_{18} - 2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}v_2^2v_1\omega_{18} - \omega_6\omega_{22}v_3^2\omega_{13}\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1^2\omega_{18} +$
$2\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}v_2v_1^2\omega_{18} - \omega_6\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1^2\omega_{18} - \omega_6\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_{20}\omega_{11}v_2\omega_8\omega_{18} -$
$2\omega_6\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7\omega_{11}\omega_{14}v_2\omega_8v_1^2 + \omega_6\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1^2\omega_{18} + \omega_6\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1^2\omega_{18} +$
$2\omega_6\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{11}\omega_{14}v_2^2v_1\omega_{18} - \omega_6\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1^2\omega_{18} + \omega_6\omega_{22}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1^2\omega_{18} + 2\omega_{19}c_s^2v_3^2\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8\omega_{18} -$
$2\omega_6\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1 + 2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{11}\omega_{14}v_2v_1^2\omega_{18} + \omega_6\omega_{22}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1^2\omega_{18} - 2\omega_{22}\omega_{19}c_s^2v_3^2\omega_7\omega_{20}\omega_{11}\omega_8v_1\omega_{18} +$
$2\omega_6\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}v_2^2v_1\omega_{18} + \omega_6\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1^2\omega_{18} + \omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_{20}\omega_{11}v_2^2\omega_8v_1\omega_{18} -$
$2\omega_6\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{11}\omega_{14}v_2\omega_8 + 2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{11}\omega_{14}v_2^2\omega_8v_1\omega_{18} - \omega_6\omega_{22}\omega_{19}v_3^2\omega_7\omega_{20}\omega_{11}\omega_{14}v_2^2\omega_8v_1\omega_{18} +$
$\omega_6\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_{20}\omega_{11}\omega_8v_1\omega_{18} - 2\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}v_2v_1^2\omega_{18} + \omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}\omega_{14}v_2^2\omega_8v_1\omega_{18} + 2\omega_6\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_{11}\omega_{14}v_2\omega_{18} -$
$2\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7\omega_{11}\omega_{14}v_2^2v_1\omega_{18} + 2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2^2v_1\omega_{18} + 2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{11}\omega_{14}v_2\omega_8v_1^2 - 2\omega_6\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{14}\omega_8v_1 -$
$\omega_6\omega_{19}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2^2\omega_8v_1\omega_{18} + 2\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}v_2\omega_{18} + \omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2^2\omega_8v_1\omega_{18} -$
$2\omega_6\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1 + 2\omega_{22}\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}v_2\omega_8v_1^2\omega_{18} + 2\omega_6\omega_{22}c_s^2\omega_{13}\omega_7\omega_{14}v_2\omega_8v_1^2\omega_{18} -$

$\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}v_2^2\omega_8v_1\omega_{18} - 2\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1\omega_{18} - 2\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}v_2\omega_8\omega_{18} +$
$2\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1^2 + 2\omega_6\omega_{22}v_3^2\omega_{13}\omega_{11}\omega_{14}v_2\omega_8v_1^2\omega_{18} + 2\omega_6\omega_{22}v_3^2\omega_{13}\omega_7\omega_{11}\omega_{14}v_2^2\omega_8v_1\omega_{18} + 2\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}v_2^2v_1\omega_{18} +$
$\omega_6\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}v_2\omega_8v_1^2\omega_{18} + 2\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_1\omega_{18} + \omega_6\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_{20}\omega_{11}v_2^2\omega_8v_1\omega_{18} -$
$2\omega_6\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_{11}\omega_{14}v_2\omega_8\omega_{18} + \omega_6\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_{20}\omega_{11}\omega_{14}v_2\omega_8\omega_{18} + \omega_6\omega_{19}c_s^2v_3^2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1\omega_{18} -$
$\omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_2\omega_8\omega_{18} - \omega_6\omega_{22}\omega_{19}c_s^2v_3^2\omega_7\omega_{20}\omega_{11}v_2\omega_8\omega_{18} + 2\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7\omega_{11}\omega_{14}v_2v_1^2\omega_{18} - 2\omega_6\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8 -$
$2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2v_1^2\omega_{18} + \omega_6\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8\omega_{18} - 2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{11}\omega_{14}v_2^2v_1\omega_{18} -$
$2\omega_6\omega_{22}c_s^2\omega_{13}\omega_7\omega_{11}\omega_{14}v_2\omega_8v_1^2\omega_{18} - 2\omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_{11}\omega_{14}\omega_8v_1\omega_{18} + 2\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7\omega_{11}\omega_{14}v_2\omega_8v_1^2 + \omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_8v_1\omega_{18} -$
$\omega_6\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1\omega_{18} - 2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1^2 + 2\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2^2\omega_8v_1\omega_{18} -$
$2\omega_6\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7\omega_{11}\omega_{14}v_2v_1^2\omega_{18} - 2\omega_6\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_{20}\omega_{11}v_1\omega_{18} - 2\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{11}\omega_{14}v_1\omega_{18} -$
$2\omega_{22}\omega_{19}c_s^2v_3^2\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8\omega_{18} + 2\omega_6\omega_{22}v_3^2\omega_{13}\omega_7\omega_{14}v_2\omega_8v_1^2\omega_{18} + 2\omega_{22}\omega_{19}v_3^2\omega_7\omega_{20}\omega_{11}v_2\omega_8v_1^2\omega_{18} - 2\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7\omega_{11}\omega_{14}v_2\omega_8v_1^2\omega_{18} +$
$2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1^2\omega_{18} - \omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_{20}\omega_{11}\omega_{14}v_2^2\omega_8v_1\omega_{18} + \omega_6\omega_{22}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_2^2\omega_8v_1\omega_{18} +$
$2\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8v_1\omega_{18} - 2\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2^2\omega_8v_1 + 2\omega_6\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{14}v_2\omega_8v_1^2\omega_{18} +$
$2\omega_6\omega_{19}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2^2\omega_8v_1 - \omega_6\omega_{19}v_3^2\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1^2\omega_{18} + \omega_6\omega_{22}\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1^2\omega_{18} -$
$2\omega_6\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_{11}\omega_{14}v_1\omega_{18} - \omega_6\omega_{22}\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}\omega_{14}v_2^2\omega_8v_1\omega_{18} + 2\omega_6\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{14}\omega_8v_1\omega_{18} +$
$\omega_6\omega_{19}v_3^2\omega_7\omega_{20}\omega_{11}\omega_{14}v_2^2\omega_8v_1\omega_{18} + 2\omega_6\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7\omega_{11}\omega_{14}v_2^2\omega_8v_1 + 2\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2^2v_1\omega_{18} -$
$\omega_6\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8v_1\omega_{18} + \omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8\omega_{18} - 2\omega_6\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{14}v_2^2\omega_8v_1\omega_{18} -$
$\omega_6\omega_{22}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1^2\omega_{18} - 2\omega_6\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1^2 + \omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1^2\omega_{18} +$
$2\omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_7\omega_{14}v_2\omega_8\omega_{18} - 2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2^2\omega_8v_1\omega_{18} - 2\omega_{22}\omega_{19}v_3^2\omega_7\omega_{20}\omega_{11}v_2^2\omega_8v_1\omega_{18} - 2\omega_6\omega_{22}v_3^2\omega_{13}\omega_7\omega_{14}v_2^2\omega_8v_1\omega_{18} +$
$2\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7\omega_{11}\omega_{14}v_2^2\omega_8v_1\omega_{18} + \omega_6\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1\omega_{18} + 2\omega_6\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_{11}\omega_{14}v_2v_1^2\omega_{18} +$
$2\omega_{19}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1^2 - 2\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1^2\omega_{18} + 2\omega_6\omega_{22}c_s^2\omega_{13}\omega_7\omega_{11}\omega_{14}v_2^2\omega_8v_1\omega_{18} - 2\omega_6\omega_{19}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_2^2\omega_8v_1 +$
$2\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_{11}\omega_{14}v_2v_1^2\omega_{18} - \omega_6\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_{20}\omega_{11}v_2\omega_8v_1^2\omega_{18} + 2\omega_6\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1 -$
$\omega_6\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}v_2^2\omega_8v_1\omega_{18} - 2\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}v_1\omega_{18} - 2\omega_6\omega_{22}v_3^2\omega_{13}\omega_7\omega_{11}\omega_{14}v_2\omega_8v_1^2\omega_{18} +$
$\omega_6\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1\omega_{18} - 2\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1^2 - 2\omega_6\omega_{22}v_3^2\omega_{13}\omega_{11}\omega_{14}v_2^2\omega_8v_1\omega_{18} + 2\omega_6\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_{20}\omega_{11}v_2\omega_{18} -$
$2\omega_6\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_{11}\omega_{14}v_2^2v_1\omega_{18} + 2\omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8v_1\omega_{18} + 2\omega_6\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{11}\omega_{14}v_2^2\omega_8v_1 +$
$2\omega_6\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{11}\omega_{14}v_2\omega_8\omega_{18} - 2\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1^2 + \omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}v_2\omega_8v_1^2\omega_{18} -$
$\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1^2\omega_{18} - 2\omega_6\omega_{22}c_s^2\omega_{13}\omega_7\omega_{14}v_2^2\omega_8v_1\omega_{18} - 2\omega_{22}\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}v_2^2\omega_8v_1\omega_{18} - 2\omega_6\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7\omega_{14}v_2^2\omega_8v_1 -$
$2\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1\omega_{18} + 2\omega_6\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{14}v_2\omega_8 + 2\omega_6\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8 +$
$\omega_6\omega_{19}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1^2\omega_{18} - \omega_6\omega_{22}\omega_{19}c_s^2v_3^2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1\omega_{18} - 2\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2v_1^2\omega_{18} -$
$2\omega_6\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2^2\omega_8v_1 - 2\omega_6\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_2^2\omega_8v_1 + 2\omega_6\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2^2\omega_8v_1 -$
$\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1^2\omega_{18} - 2\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_{11}\omega_{14}v_2^2v_1\omega_{18} + 2\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1\omega_{18} +$
$\omega_6\omega_{22}\omega_{19}v_3^2\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1^2\omega_{18} - 2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{11}\omega_{14}v_2\omega_8v_1^2\omega_{18} - 2\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{14}v_2^2\omega_8v_1 -$
$\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_{20}\omega_{11}v_2\omega_8v_1^2\omega_{18} - \omega_6\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_{20}\omega_{11}\omega_{14}v_2^2\omega_8v_1\omega_{18} + 2\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{11}\omega_{14}v_2\omega_{18} +$
$2\omega_6\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_2\omega_8 - \omega_6\omega_{22}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2^2\omega_8v_1\omega_{18} + \omega_6\omega_{22}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_2^2\omega_8v_1\omega_{18} + 2\omega_6\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8v_1$

$C_{12} = -\omega_6\omega_{19}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2^2\omega_8\omega_{18} + \omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2^2\omega_8\omega_{18} + 2\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_2^2\omega_8 -$
$4\omega_6\omega_{22}v_3^2\omega_{13}\omega_7\omega_{11}\omega_{14}v_2\omega_8v_1\omega_{18} - 4\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2v_1\omega_{18} + 2\omega_6\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}v_2^2\omega_{18} +$
$\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_{20}\omega_{11}v_2^2\omega_8\omega_{18} + 2\omega_6\omega_{19}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1\omega_{18} - 2\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1\omega_{18} +$
$\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}\omega_{14}v_2^2\omega_8\omega_{18} - 2\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7\omega_{11}\omega_{14}v_2^2\omega_{18} + 2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2^2\omega_{18} - 4\omega_6\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7\omega_{11}\omega_{14}v_2\omega_8v_1 +$
$2\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}v_2\omega_8v_1\omega_{18} + 2\omega_6\omega_{22}\omega_{19}v_3^2\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1\omega_{18} - \omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_{20}\omega_{11}\omega_{14}v_2^2\omega_8\omega_{18} -$
$2\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1\omega_{18} + \omega_6\omega_{22}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_2^2\omega_8\omega_{18} + 2\omega_6\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_2^2\omega_8 + 2\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}v_2^2\omega_{18} +$
$\omega_6\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_{20}\omega_{11}v_2^2\omega_8\omega_{18} + 4\omega_6\omega_{19}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1 + \omega_6\omega_{19}c_s^2v_3^2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} - 2\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_{20}\omega_{11}v_2\omega_8v_1\omega_{18} -$
$2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{11}\omega_{14}v_2^2\omega_{18} - 4\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{11}\omega_{14}v_2\omega_8v_1\omega_{18} - 2\omega_6\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_{20}\omega_{11}\omega_{18} + 4\omega_6\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7\omega_{14}v_2\omega_8v_1 -$
$2\omega_6\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_{11}\omega_{14}\omega_{18} + 2\omega_6\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_{18} + \omega_6\omega_{19}v_3^2\omega_7\omega_{20}\omega_{11}\omega_{14}v_2^2\omega_8\omega_{18} + 4\omega_6\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_{11}\omega_{14}v_2v_1\omega_{18} +$
$2\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2^2\omega_{18} + 2\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1\omega_{18} - \omega_6\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18} -$
$2\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 - 4\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{11}\omega_{14}v_2\omega_8v_1 - 2\omega_6\omega_{22}v_3^2\omega_{13}\omega_7\omega_{14}v_2^2\omega_8\omega_{18} - 2\omega_6\omega_{22}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1\omega_{18} +$
$\omega_6\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 + 4\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{14}v_2\omega_8v_1 -$
$4\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1\omega_{18} - \omega_6\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_{20}\omega_{11}\omega_{14}v_2^2\omega_8\omega_{18} + \omega_6\omega_{22}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_2^2\omega_8\omega_{18} -$
$2\omega_6\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_{20}\omega_{11}v_2\omega_8v_1\omega_{18} + \omega_6\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_{18} - 2\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8 + 4\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_{11}\omega_{14}v_2v_1\omega_{18} -$
$2\omega_6\omega_{22}c_s^2\omega_{13}\omega_7\omega_{14}v_2^2\omega_8\omega_{18} + 4\omega_6\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1 + 4\omega_6\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1 - 4\omega_6\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1 +$
$2\omega_6\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 + 4\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7\omega_{11}\omega_{14}v_2v_1\omega_{18} - 4\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2v_1\omega_{18} +$
$2\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{14}v_2^2\omega_8\omega_{18} - 2\omega_{19}v_3^2\omega_7\omega_{20}\omega_{11}\omega_{14}v_2^2\omega_8\omega_{18} + 2\omega_6\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_{20}\omega_{11}\omega_{14}v_2^2\omega_{18} - 2\omega_6\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8\omega_{18} +$
$2\omega_6\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}v_2\omega_8v_1\omega_{18} - 4\omega_6\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}v_2v_1\omega_{18} - \omega_6\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2^2\omega_8\omega_{18} +$
$\omega_6\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_2^2\omega_8\omega_{18} + \omega_6\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2^2\omega_8\omega_{18} - 2\omega_6\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_{18} -$
$4\omega_6\omega_{22}c_s^2\omega_{13}\omega_7\omega_{11}\omega_{14}v_2\omega_8v_1\omega_{18} + 2\omega_6\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8 + 2\omega_6\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7\omega_{14}v_2^2\omega_8\omega_{18} + 2\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_{20}\omega_{11}\omega_{14}v_2^2\omega_{18} +$
$4\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1\omega_{18} + 2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}v_2^2\omega_8\omega_{18} - 2\omega_6\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2^2\omega_8 -$
$2\omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_{18} - 4\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7\omega_{11}\omega_{14}v_2\omega_8v_1\omega_{18} + 4\omega_6\omega_{22}v_3^2\omega_{13}\omega_7\omega_{14}v_2\omega_8v_1\omega_{18} + 4\omega_{22}\omega_{19}v_3^2\omega_7\omega_{20}\omega_{11}v_2\omega_8v_1\omega_{18} +$
$2\omega_6\omega_{22}\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1\omega_{18} + 2\omega_{22}\omega_{19}v_3^2\omega_7\omega_{20}\omega_{11}\omega_{14}v_2^2\omega_8\omega_{18} - 2\omega_6\omega_{19}v_3^2\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1\omega_{18} -$
$2\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{11}\omega_{14}v_2^2\omega_8\omega_{18} + 4\omega_6\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{14}v_2\omega_8v_1\omega_{18} - 2\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}v_2^2\omega_{18} +$
$2\omega_6\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1\omega_{18} + \omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_{18} - \omega_6\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_8v_1\omega_{18} + 2\omega_6\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8v_1\omega_{18} +$
$4\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{11}\omega_{14}v_2v_1\omega_{18} + 2\omega_6\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7\omega_{11}\omega_{14}v_2^2\omega_{18} + 2\omega_6\omega_{22}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1\omega_{18} -$
$\omega_6\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} - 2\omega_6\omega_{22}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1\omega_{18} - 2\omega_6\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{14}\omega_8 - 2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}\omega_{14}v_2^2\omega_8\omega_{18} +$
$2\omega_{22}\omega_{19}c_s^2v_3^2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + \omega_6\omega_{19}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_2^2\omega_8\omega_{18} - 4\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}v_2v_1\omega_{18} - 2\omega_6\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8 -$
$2\omega_{19}c_s^2v_3^2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}v_2^2\omega_8\omega_{18} + 4\omega_{22}\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}v_2\omega_8v_1\omega_{18} + 4\omega_6\omega_{22}c_s^2\omega_{13}\omega_7\omega_{14}v_2\omega_8v_1\omega_{18} -$
$2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}v_2^2\omega_{18} - 2\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2^2\omega_8 + 4\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1 -$

$4\omega_6\omega_{19}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1+2\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{11}\omega_{14}v_2^2\omega_{18}-2\omega_6\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7\omega_{11}\omega_{14}v_2^2\omega_8\omega_{18}+4\omega_6\omega_{22}v_3^2\omega_{13}\omega_{11}\omega_{14}v_2\omega_8v_1\omega_{18}+$
$2\omega_{22}\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}\omega_{14}v_2^2\omega_8\omega_{18}+2\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2^2\omega_8-2\omega_6\omega_{22}\omega_{19}v_3^2\omega_7\omega_{20}\omega_{11}v_2\omega_8v_1\omega_{18}-\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}v_2^2\omega_8\omega_{18}-$
$2\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}-4\omega_6\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_{11}\omega_{14}v_2\omega_8v_1\omega_{18}+2\omega_6\omega_{22}v_3^2\omega_{13}\omega_7\omega_{11}\omega_{14}v_2^2\omega_8\omega_{18}-2\omega_{22}\omega_{19}c_s^2v_3^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18}+$
$2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{11}\omega_{14}v_2^2\omega_8\omega_{18}-\omega_6\omega_{22}\omega_{19}v_3^2\omega_7\omega_{20}\omega_{11}\omega_{14}v_2^2\omega_8\omega_{18}+\omega_6\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_{20}\omega_{11}\omega_8\omega_{18}+4\omega_{19}v_3^2\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1\omega_{18}-$
$4\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{14}v_2\omega_8v_1\omega_{18}-2\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_{18}-4\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1+2\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8\omega_{18}-$
$4\omega_6\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7\omega_{11}\omega_{14}v_2v_1\omega_{18}+2\omega_6\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1\omega_{18}+2\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_{18}-$
$2\omega_6\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1\omega_{18}-2\omega_{19}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2^2\omega_8+2\omega_6\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1\omega_{18}-$
$4\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1-2\omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_{11}\omega_{14}\omega_8\omega_{18}+\omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}-\omega_6\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_{18}+$
$4\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}v_2v_1\omega_{18}-2\omega_6\omega_{22}v_3^2\omega_{13}\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1\omega_{18}+2\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2^2\omega_8\omega_{18}-$
$2\omega_6\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1\omega_{18}+4\omega_{19}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1-4\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_{11}\omega_{14}v_2\omega_8v_1\omega_{18}+$
$2\omega_6\omega_{22}c_s^2\omega_{13}\omega_7\omega_{11}\omega_{14}v_2^2\omega_8\omega_{18}-4\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}v_2\omega_8v_1\omega_{18}+4\omega_6\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2v_1\omega_{18}-$
$2\omega_6\omega_{22}\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}v_2\omega_8v_1\omega_{18}-2\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7\omega_{11}\omega_{14}v_2^2\omega_8+2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2^2\omega_8-4\omega_{19}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1\omega_{18}-$
$\omega_6\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}v_2^2\omega_8\omega_{18}-2\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{18}-\omega_6\omega_{22}\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}\omega_{14}v_2^2\omega_8\omega_{18}-$
$4\omega_6\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7\omega_{14}v_2\omega_8v_1\omega_{18}-2\omega_6\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{14}v_2^2\omega_8\omega_{18}-2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2^2\omega_8\omega_{18}+2\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7\omega_{11}\omega_{14}v_2^2\omega_8\omega_{18}-$
$2\omega_{22}\omega_{19}v_3^2\omega_7\omega_{20}\omega_{11}v_2^2\omega_8\omega_{18}+4\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{11}\omega_{14}v_2\omega_8v_1\omega_{18}-4\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{11}\omega_{14}v_2v_1\omega_{18}-$
$2\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_{11}\omega_{14}v_2^2\omega_{18}+2\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}-\omega_6\omega_{22}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2^2\omega_8\omega_{18}-2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{11}\omega_{14}v_2^2\omega_8-$
$2\omega_6\omega_{22}v_3^2\omega_{13}\omega_{11}\omega_{14}v_2^2\omega_8\omega_{18}-2\omega_6\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_{11}\omega_{14}v_2^2\omega_{18}+4\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}v_2v_1\omega_{18}+2\omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8\omega_{18}+$
$2\omega_6\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8-2\omega_{22}\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}v_2^2\omega_8\omega_{18}-2\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2^2\omega_8-4\omega_{22}\omega_{19}v_3^2\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1\omega_{18}-$
$\omega_6\omega_{22}\omega_{19}c_s^2v_3^2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}-4\omega_6\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1+4\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1\omega_{18}+\omega_6\omega_{22}\omega_{19}v_3^2\omega_7\omega_{20}\omega_{11}v_2^2\omega_8\omega_{18}-$
$2\omega_6\omega_{19}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_2^2\omega_8+2\omega_6\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_{11}\omega_{14}v_2^2\omega_8\omega_{18}+4\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1\omega_{18}-$
$\omega_6\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_2^2\omega_8\omega_{18}+\omega_6\omega_{22}v_3^2\omega_{13}\omega_{20}\omega_{11}\omega_{14}v_2^2\omega_8\omega_{18}+2\omega_6\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{18}+2\omega_6\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7\omega_{11}\omega_{14}v_2^2\omega_8-$
$2\omega_6\omega_{19}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1\omega_{18}+2\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1\omega_{18}-\omega_6\omega_{22}c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}-$
$2\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{14}v_2^2\omega_8+2\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_{11}\omega_{14}v_2^2\omega_8\omega_{18}-2\omega_6\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_{20}\omega_{11}v_2^2\omega_{18}+\omega_6\omega_{22}\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}v_2^2\omega_8\omega_{18}-$
$2\omega_6\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_2^2\omega_8+2\omega_6\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2^2\omega_8+2\omega_{19}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2^2\omega_8\omega_{18}-2\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1\omega_{18}-$
$4\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1-2\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2^2\omega_{18}+4\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7\omega_{11}\omega_{14}v_2\omega_8v_1-$
$4\omega_6\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_{20}\omega_{11}\omega_{14}v_2v_1\omega_{18}-2\omega_6\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7\omega_{14}v_2^2\omega_8+2\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{11}\omega_{14}v_2^2\omega_8-2\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_{20}\omega_{11}v_2^2\omega_{18}+$
$\omega_6\omega_{22}\omega_{19}c_s^2v_3^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18}+2\omega_6\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_{11}\omega_{14}\omega_8\omega_{18}+4\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_{20}\omega_{11}v_2v_1\omega_{18}-2\omega_6\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8-$
$2\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2^2\omega_8\omega_{18}+2\omega_6\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_{18}+4\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1-$
$4\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}v_2\omega_8v_1\omega_{18}+4\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2v_1\omega_{18}-\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_2^2\omega_8\omega_{18}+$
$\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}\omega_{11}\omega_{14}v_2^2\omega_8\omega_{18}+2\omega_6\omega_{19}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2^2\omega_8-4\omega_{22}\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1\omega_{18}+$
$2\omega_6\omega_{22}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1\omega_{18}+4\omega_6\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_{20}\omega_{11}v_2v_1\omega_{18}+2\omega_6\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_{18}+$
$4\omega_6\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7\omega_{11}\omega_{14}v_2\omega_8v_1\omega_{18}-2\omega_6\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2^2\omega_{18}+2\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18}+$
$4\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{11}\omega_{14}v_2\omega_8v_1-4\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_{20}\omega_{11}\omega_{14}v_2v_1\omega_{18}-\omega_6\omega_{22}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2^2\omega_8\omega_{18}$

$C_{13}=12\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}v_2\omega_8v_1\omega_5\omega_{18}-12\omega_6^2\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_5\omega_{18}-12\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5\omega_{18}-$
$6\omega_6^3\omega_{22}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2\omega_5\omega_{18}-24\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}v_2v_1\omega_5\omega_{18}-24\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2\omega_{14}v_2\omega_8v_1\omega_5\omega_{18}-$
$24\omega_6^3\omega_{19}v_3^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5+6\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2\omega_5\omega_{18}-12\omega_6^3\omega_{19}v_3^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1\omega_5\omega_{18}-$
$24\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}v_2v_1\omega_5\omega_{18}+12\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}v_1^2\omega_5\omega_{18}+24\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{14}v_2\omega_8v_1\omega_5\omega_{18}-$
$24\omega_6^3\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1\omega_5+12\omega_6^2\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_5\omega_{18}-12\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}+$
$12\omega_6^2\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2\omega_5\omega_{18}-12\omega_6^3\omega_{19}v_3^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2\omega_5+24\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1\omega_5-$
$12\omega_6^3\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7^2\omega_{11}\omega_{14}v_1^2\omega_5\omega_{18}-24\omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1\omega_5\omega_{18}-6\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2\omega_5\omega_{18}-$
$6\omega_6^3\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2\omega_5\omega_{18}-12\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8v_1^2\omega_5\omega_{18}-12\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5\omega_{18}+$
$6\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}+6\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}+12\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5\omega_{18}+$
$6\omega_6^3\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2\omega_5\omega_{18}-12\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_5\omega_{18}-2\omega_6^2\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}-$
$12\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8-12\omega_6^2\omega_{19}c_s^2v_3^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}-12\omega_6^3\omega_{19}c_s^2v_3^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5-$
$24\omega_6^2\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7^2\omega_{11}\omega_{14}v_2\omega_8v_1\omega_5+12\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_8v_1^2\omega_5\omega_{18}+12\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8v_1^2\omega_5+$
$12\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_5\omega_{18}+12\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8v_1^2\omega_5\omega_{18}+24\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1\omega_5\omega_{18}-$
$6\omega_6^3\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8v_1^2\omega_5\omega_{18}-24\omega_6^2\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1\omega_5+12\omega_6^3\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_5\omega_{18}-$
$12\omega_6^2\omega_{22}\omega_{19}v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2\omega_5\omega_{18}-6\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}+12\omega_6^2\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}-$
$12\omega_6^3\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}v_2\omega_8v_1\omega_5\omega_{18}-12\omega_6^2\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}+12\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}v_2\omega_8v_1\omega_5\omega_{18}-$
$12\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_5\omega_{18}-12\omega_6^2\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8v_1^2\omega_5\omega_{18}-12\omega_6^3\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1\omega_5\omega_{18}+$
$12\omega_6^2\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}v_1^2\omega_5\omega_{18}-18\omega_6^2\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}+12\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}v_1^2\omega_5\omega_{18}+$
$12\omega_6^3\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}+12\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}+12\omega_6^2\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}+$
$24\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}v_2\omega_8v_1\omega_5\omega_{18}-12\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{11}\omega_{14}v_1^2\omega_5\omega_{18}+6\omega_6^3\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5\omega_{18}+$
$12\omega_6^2\omega_{19}c_s^2v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}-12\omega_6^3\omega_{22}c_s^2v_3^2\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}+12\omega_6^2\omega_{22}\omega_{19}v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_8v_1^2\omega_5\omega_{18}+$
$12\omega_6^2\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8v_1^2\omega_5+24\omega_6^3\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7^2\omega_{11}\omega_{14}v_2v_1\omega_5\omega_{18}-12\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2\omega_5-$
$6\omega_6^3\omega_{22}v_3^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5\omega_{18}-12\omega_6^3\omega_{22}\omega_{19}v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1\omega_5\omega_{18}-12\omega_6^2\omega_{19}v_3^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2\omega_5\omega_{18}-$
$6\omega_6^3\omega_{19}c_s^2v_3^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}-24\omega_6^2\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}v_2v_1\omega_5\omega_{18}-12\omega_6^3\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_5\omega_{18}-$
$24\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7\omega_{11}\omega_{14}v_2\omega_8v_1\omega_5\omega_{18}+12\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8-12\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_5\omega_{18}+$
$24\omega_6^3\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7^2\omega_{14}v_2\omega_8v_1\omega_5\omega_{18}-12\omega_6^3\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2\omega_5+12\omega_6^3\omega_{19}v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1\omega_5\omega_{18}+$
$24\omega_6^3\omega_{22}v_3^2\omega_{13}\omega_7^2\omega_{11}\omega_{14}v_2\omega_8v_1\omega_5\omega_{18}-12\omega_6^3\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5\omega_{18}+12\omega_6^3\omega_{22}\omega_{19}v_3^2\omega_7^2\omega_{20}\omega_{11}v_2\omega_8v_1\omega_5\omega_{18}-$
$24\omega_6^3\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}v_2v_1\omega_5\omega_{18}-12\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5-24\omega_6^3\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5+$
$24\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{11}\omega_{14}v_2\omega_8v_1\omega_5\omega_{18}-24\omega_6^3\omega_{22}v_3^2\omega_{13}\omega_7^2\omega_{14}v_2\omega_8v_1\omega_5\omega_{18}+12\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{11}\omega_{14}v_1^2\omega_5\omega_{18}-$
$24\omega_6^3\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7^2\omega_{11}\omega_{14}v_2\omega_8v_1\omega_5\omega_{18}-24\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{11}\omega_{14}v_2\omega_8v_1\omega_5+24\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{11}\omega_{14}v_2\omega_8v_1\omega_5\omega_{18}-$

$12\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8v_1^2\omega_5\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} -$
$12\omega_6^3\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7^2\omega_{14}\omega_8v_1^2\omega_5\omega_{18} - 12\omega_6^3\omega_{22}v_3^2\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8v_1^2\omega_5\omega_{18} + 12\omega_6^3\omega_{22}c_s^2v_3^2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} -$
$6\omega_6^3\omega_{19}v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2\omega_5\omega_{18} + 24\omega_6^2\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}v_2v_1\omega_5\omega_{18} + 12\omega_6^2\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_5\omega_{18} -$
$12\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_{18} - 12\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8v_1^2\omega_5\omega_{18} - 12\omega_6^2\omega_{22}\omega_{19}c_s^4\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} -$
$12\omega_6^2\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5 - 6\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8v_1^2\omega_5\omega_{18} + 12\omega_6^2\omega_{22}\omega_{19}c_s^2v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} +$
$6\omega_6^3\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2\omega_5\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5 + 6\omega_6^3\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} +$
$12\omega_6^2\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8 + 12\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8\omega_5 +$
$12\omega_6^3\omega_{19}c_s^2v_3^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5 + 6\omega_6^3\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} - 12\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2\omega_5\omega_{18} -$
$12\omega_6^2\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_5\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_5\omega_{18} + 24\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{11}\omega_{14}v_2v_1\omega_5\omega_{18} -$
$6\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5\omega_{18} - 12\omega_6^2\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2\omega_5 + 24\omega_6^3\omega_{19}v_3^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1\omega_5 +$
$12\omega_6^3\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7\omega_{11}\omega_{14}v_1^2\omega_5\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8v_1^2\omega_5\omega_{18} - 6\omega_6^3\omega_{22}c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} +$
$12\omega_6^3\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}v_1^2\omega_5\omega_{18} + 12\omega_6^3\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5\omega_{18} + 24\omega_6\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} +$
$24\omega_6^3\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2v_1\omega_5\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_5\omega_{18} + 12\omega_6^2\omega_{22}\omega_{19}c_s^4\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} -$
$24\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}v_2v_1\omega_5\omega_{18} + 6\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_5\omega_{18} -$
$24\omega_6^3\omega_{19}v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1\omega_5\omega_{18} - 6\omega_6^3\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2\omega_5\omega_{18} + 12\omega_6\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} +$
$6\omega_6^3\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18} + 24\omega_6^2\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1\omega_5 - 12\omega_6^2\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8\omega_5 +$
$6\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2\omega_5\omega_{18} + 24\omega_6^2\omega_{19}v_3^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1\omega_5\omega_{18} + 12\omega_6^3\omega_{22}v_3^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5\omega_{18} +$
$24\omega_6^3\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}v_2v_1\omega_5\omega_{18} - 6\omega_6^3\omega_{22}c_s^2v_3^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18} + 12\omega_6^2\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8\omega_5 -$
$6\omega_6^3\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} - 6\omega_6^3\omega_{19}v_3^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5\omega_{18} + 12\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} -$
$6\omega_6^3\omega_{22}\omega_{19}c_s^2v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}v_1^2\omega_5\omega_{18} - 24\omega_6^2\omega_{22}\omega_{19}v_3^2\omega_7^2\omega_{20}\omega_{11}v_2\omega_8v_1\omega_5\omega_{18} -$
$12\omega_6^2\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8v_1^2\omega_5\omega_{18} - 6\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2\omega_5\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5\omega_{18} +$
$24\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{11}\omega_{14}v_2\omega_8v_1\omega_5 + 12\omega_6^3\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5 + 6\omega_6^3\omega_{22}v_3^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2\omega_5\omega_{18} +$
$12\omega_6^3\omega_{22}v_3^2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8v_1^2\omega_5\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5 - 12\omega_6^3\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8v_1^2\omega_5\omega_{18} +$
$12\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2\omega_5\omega_{18} - 6\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} - 24\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1\omega_5 +$
$12\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5 + 24\omega_6^2\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1\omega_5\omega_{18} +$
$6\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8v_1^2\omega_5\omega_{18} + 12\omega_6^2\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2\omega_5 + 24\omega_6^2\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}v_2\omega_8v_1\omega_5\omega_{18} -$
$6\omega_6^3\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5\omega_{18} + 6\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2\omega_5\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}v_1^2\omega_5\omega_{18} -$
$12\omega_6^2\omega_{22}\omega_{19}c_s^2v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}v_2\omega_8v_1\omega_5\omega_{18} - 12\omega_6^2\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1\omega_5\omega_{18} +$
$12\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 12\omega_6\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} - 24\omega_6^2\omega_{19}v_3^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1\omega_5 +$
$24\omega_6^2\omega_{22}\omega_{19}v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1\omega_5\omega_{18} + 6\omega_6^3\omega_{22}c_s^2v_3^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} + 12\omega_6^2\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8\omega_5 -$
$12\omega_6^2\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_1^2\omega_5\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2\omega_5 - 12\omega_6^3\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5 -$
$24\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{11}\omega_{14}v_2v_1\omega_5\omega_{18} + 6\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} - 18\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} +$
$12\omega_6^3\omega_{19}v_3^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8v_1^2\omega_5 - 24\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{11}\omega_{14}v_2v_1\omega_5\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}v_2\omega_8v_1\omega_5\omega_{18} +$
$24\omega_6^3\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5 + 12\omega_6^2\omega_{19}v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2\omega_5\omega_{18} - 12\omega_6^2\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}v_1^2\omega_5\omega_{18} +$
$12\omega_6^2\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}v_2\omega_8v_1\omega_5\omega_{18} - 24\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1\omega_5\omega_{18} + 24\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}v_2\omega_8v_1\omega_5\omega_{18} -$
$24\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}v_2\omega_8v_1\omega_5\omega_{18} - 6\omega_6^3\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1\omega_5\omega_{18} + 24\omega_6^2\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1\omega_5\omega_{18} -$
$12\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8v_1^2\omega_5 + 6\omega_6^3\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2\omega_5\omega_{18} +$
$24\omega_6^3\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1\omega_5\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1\omega_5\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8v_1^2\omega_5 -$
$12\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1\omega_5\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}v_1^2\omega_5\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2\omega_5 +$
$6\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2\omega_5\omega_{18} + 24\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2\omega_5\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8v_1^2\omega_5 +$
$6\omega_6^3\omega_{19}c_s^2v_3^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_5\omega_{18} - \omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} +$
$12\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1\omega_5\omega_{18} + 12\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8v_1^2\omega_5\omega_{18} + 6\omega_6^3\omega_{22}\omega_{19}v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2\omega_5\omega_{18} -$
$24\omega_6^2\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1\omega_5\omega_{18} - 12\omega_6^2\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_5\omega_{18} + 24\omega_6^3\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1\omega_5 +$
$24\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2v_1\omega_5\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}v_1^2\omega_5\omega_{18} + 12\omega_6^3\omega_{19}v_3^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5\omega_{18} +$
$6\omega_6^3\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8v_1^2\omega_5\omega_{18} + 12\omega_6^2\omega_{19}v_3^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2\omega_5 + 6\omega_6^3\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} -$
$24\omega_6^3\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1\omega_5\omega_{18} - 12\omega_6^2\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} - 12\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} -$
$12\omega_6^3\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_5\omega_{18} + 12\omega_6^2\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2\omega_5\omega_{18} + 24\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}v_2v_1\omega_5\omega_{18} -$
$24\omega_6^3\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7^2\omega_{11}\omega_{14}v_2\omega_8v_1\omega_5\omega_{18} + 24\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}v_2\omega_8v_1\omega_5 - 12\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1\omega_5\omega_{18} -$
$24\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{14}v_2\omega_8v_1\omega_5 - 12\omega_6^2\omega_{22}\omega_{19}c_s^2v_3^2\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8\omega_5 -$
$12\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1\omega_5\omega_{18} - 12\omega_6^2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}v_1^2\omega_5\omega_{18} + 12\omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2\omega_5\omega_{18} +$
$12\omega_6^3\omega_{22}v_3^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1\omega_5\omega_{18} + 6\omega_6^3\omega_{19}v_3^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2\omega_5\omega_{18} + 12\omega_6^2\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_5\omega_{18} -$
$12\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_1^2\omega_5\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2\omega_5 - 24\omega_6^2\omega_{22}\omega_{19}v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1\omega_5\omega_{18} +$
$12\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8v_1^2\omega_5\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}v_3^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1\omega_5\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8v_1^2\omega_5 -$
$6\omega_6^3\omega_{22}\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_8v_1^2\omega_5\omega_{18} + 12\omega_6^2\omega_{19}c_s^2v_3^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_1^2\omega_5$

$C_{14} = -2\omega_6\omega_{22}c_s^2\omega_{13}\omega_7\omega_{14}\omega_8v_1\omega_{18} + 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14}v_2\omega_8v_1^2\omega_{18} + 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_{11}\omega_{14}v_2v_1^2\omega_{18} +$
$2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}v_2^2v_1\omega_{18} + \omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{11}\omega_{14}v_2^2\omega_8v_1\omega_{18} - \omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{14}v_2^2\omega_8v_1\omega_{18} - 2\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_{11}\omega_{14}v_2\omega_8\omega_{18} -$
$\omega_6\omega_{22}\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}v_2\omega_8\omega_{18} + \omega_6\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1^2\omega_{18} + 2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}v_2^2\omega_8v_1\omega_{18} - 2\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_{11}\omega_{14}v_1\omega_{18} -$
$2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_{11}\omega_{14}v_2^2v_1\omega_{18} + \omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_2\omega_8\omega_{18} - 2\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1 - 2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14}v_2^2\omega_8v_1 -$

$\omega_6\omega_{22}c_s^2\omega_{13}\omega_{20}\omega_{11}\omega_{14}v_2\omega_8\omega_{18} - 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}v_2v_1^2\omega_{18} - 2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8v_1 - 2\omega_6\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{14}v_2^2\omega_8v_1 -$
$2\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2^2\omega_8v_1 + \omega_6\omega_{22}\omega_{19}\omega_{13}\omega_{20}\omega_{11}v_2^2\omega_8v_1\omega_{18} + \omega_6\omega_{22}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1\omega_{18} + 2\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1^2\omega_{18} -$
$\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_8v_1\omega_{18} + \omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2^2\omega_8v_1\omega_{18} + \omega_6\omega_{22}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8\omega_{18} + 2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2^2\omega_8v_1 +$
$2\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{14}v_2\omega_8 - 2\omega_{22}\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1^2\omega_{18} + \omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_{20}\omega_{11}\omega_8v_1\omega_{18} + \omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2^2\omega_8v_1\omega_{18} +$
$2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1 - 2\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{11}\omega_{14}v_2\omega_8 + 2\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_{20}\omega_{11}v_2\omega_{18} + \omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1\omega_{18} +$
$2\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_{18} + 2\omega_6\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2^2\omega_8v_1 + 2\omega_{22}\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1\omega_{18} + 2\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8v_1 -$
$2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8 - 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1^2 - \omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1^2\omega_{18} - 2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{11}\omega_{14}v_2\omega_8\omega_{18} +$
$2\omega_6\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1 - 2\omega_6\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1 + 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14}v_2^2\omega_8v_1 + 2\omega_{22}\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2^2\omega_8v_1\omega_{18} -$
$2\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{14}\omega_8v_1 + 2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}v_2v_1^2\omega_{18} + \omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}v_2\omega_8\omega_{18} + 2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{11}\omega_{14}v_2\omega_8 -$
$\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1^2\omega_{18} - 2\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8\omega_{18} - 2\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2^2\omega_8v_1\omega_{18} - \omega_6\omega_{22}\omega_{19}\omega_{13}\omega_{20}\omega_{11}v_2\omega_8v_1^2\omega_{18} +$
$2\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_{11}\omega_{14}v_2\omega_{18} + 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2v_1^2\omega_{18} - 2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1\omega_{18} + 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1^2 +$
$2\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8 + 2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8\omega_{18} - 2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}v_2\omega_8v_1^2\omega_{18} - 2\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8v_1\omega_{18} +$
$\omega_6\omega_{22}\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8\omega_{18} - \omega_6\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2^2\omega_8v_1\omega_{18} - 2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}v_1\omega_{18} + 2\omega_6\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{14}v_2\omega_8\omega_{18} +$
$\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1^2\omega_{18} + 2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8v_1\omega_{18} - \omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1^2\omega_{18} - 2\omega_6\omega_{22}c_s^2\omega_{13}\omega_7\omega_{11}\omega_{14}v_2\omega_8\omega_{18} +$
$2\omega_{22}\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}v_2\omega_8\omega_{18} - 2\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_{20}\omega_{11}v_1\omega_{18} - 2\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_1\omega_{18} - 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14}v_2^2\omega_8v_1\omega_{18} +$
$\omega_6\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1\omega_{18} - \omega_6\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1\omega_{18} - 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2^2v_1\omega_{18} + 2\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{14}\omega_8v_1\omega_{18} -$
$2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2v_1^2\omega_{18} - 2\omega_{22}\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}\omega_8v_1\omega_{18} - 2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2^2\omega_8v_1\omega_{18} + \omega_6\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8\omega_{18} -$
$\omega_6\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_2\omega_8\omega_{18} + 2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{11}\omega_{14}v_2^2\omega_8v_1^2\omega_{18} - 2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1^2 -$
$2\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{14}v_2\omega_8\omega_{18} + 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{14}v_2\omega_8v_1^2 + \omega_6\omega_{22}\omega_{19}\omega_{13}\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1^2\omega_{18} + 2\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{11}\omega_{14}v_2\omega_8\omega_{18} -$
$2\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{11}\omega_{14}v_2\omega_{18} + 2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14}v_2v_1^2\omega_{18} - 2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1\omega_{18} + \omega_6\omega_{22}\omega_{19}\omega_7\omega_{20}\omega_{11}v_2^2\omega_8v_1\omega_{18} +$
$2\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1^2 - 2\omega_6\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{14}\omega_8v_1\omega_{18} + 2\omega_6\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1^2 + 2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}v_2\omega_{18} +$
$2\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8 + 2\omega_6\omega_{22}\omega_{13}\omega_{11}\omega_{14}v_2\omega_8v_1^2\omega_{18} + 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_{11}\omega_{14}v_2^2\omega_8v_1\omega_{18} - \omega_6\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_{14}v_2\omega_8v_1^2\omega_{18} -$
$\omega_6\omega_{22}\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1\omega_{18} - 2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}v_2\omega_8\omega_{18} + 2\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_{20}\omega_{11}\omega_{14}v_2\omega_8 + 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_{20}\omega_{11}v_2v_1^2\omega_{18} +$
$2\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{11}\omega_{14}v_1\omega_{18} + \omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_{20}\omega_{11}\omega_{14}v_2\omega_8\omega_{18} - 2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}v_1\omega_{18} - 2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14}v_2\omega_8v_1^2\omega_{18} -$
$\omega_6\omega_{22}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_2\omega_8\omega_{18} - 2\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}v_2\omega_8 + \omega_6\omega_{22}\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1^2\omega_{18} -$
$2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2^2\omega_8v_1 - 2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_{18} + \omega_6\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_{14}v_2^2\omega_8v_1\omega_{18} + \omega_6\omega_{22}\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}\omega_8v_1\omega_{18} -$
$2\omega_6\omega_{22}\omega_{13}\omega_{11}\omega_{14}v_2^2\omega_8v_1\omega_{18} - 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_{11}\omega_{14}v_2\omega_8v_1^2\omega_{18} + 2\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_{11}\omega_{14}\omega_8v_1\omega_{18} - 2\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1 -$
$\omega_6\omega_{22}\omega_{19}\omega_7\omega_{20}\omega_{11}v_2\omega_8v_1^2\omega_{18} - \omega_6\omega_{22}\omega_{19}\omega_{13}\omega_{20}\omega_{11}\omega_{14}v_2^2\omega_8v_1\omega_{18} + 2\omega_6\omega_{22}c_s^2\omega_{13}\omega_7\omega_{14}v_2\omega_8\omega_{18} - 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14}v_2\omega_8v_1^2 -$
$2\omega_6\omega_{22}\omega_{13}\omega_7\omega_{11}\omega_{14}v_2\omega_8v_1^2\omega_{18} + 2\omega_{22}\omega_{19}\omega_7\omega_{20}\omega_{11}v_2^2\omega_8v_1\omega_{18} + 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{14}v_2^2\omega_8v_1 + 2\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{11}\omega_{14}v_2\omega_{18} -$
$2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{11}\omega_{14}v_2v_1^2\omega_{18} + 2\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_{20}\omega_{11}\omega_{14}v_1\omega_{18} + 2\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1^2\omega_{18} -$
$2\omega_6\omega_{22}\omega_{19}c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}v_2\omega_{18} - 2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_{20}\omega_{11}v_2^2v_1\omega_{18} - 2\omega_6\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_8v_1^2$

$C_{15} = -\omega_{19}\omega_{16}v_3^2\omega_7\omega_{23}\omega_{20}\omega_{11}v_2^2\omega_8v_1\omega_{18} + \omega_6\omega_{19}c_s^2\omega_{16}v_3\omega_7\omega_{20}\omega_{17}v_2^2\omega_8\omega_{18} - 2\omega_6\omega_{19}c_s^2\omega_{16}v_3\omega_{23}\omega_{20}\omega_{11}v_1^2\omega_{18} -$
$2\omega_6\omega_{16}v_3\omega_7\omega_{20}\omega_{17}v_2^2\omega_8v_1^2\omega_{18} - \omega_6\omega_{19}c_s^2\omega_{16}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1^2\omega_{18} + \omega_6\omega_{19}v_3\omega_7\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8v_1^2\omega_{18} +$
$\omega_6\omega_{19}c_s^2\omega_{16}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1^2\omega_{18} - 2\omega_6\omega_{19}c_s^2\omega_{16}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8v_1\omega_{18} + \omega_6\omega_{19}c_s^2v_3\omega_7\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8\omega_{18} +$
$2\omega_{19}c_s^2\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_8v_1 - 2\omega_6\omega_{19}c_s^2\omega_{16}\omega_{23}\omega_{20}\omega_{11}v_2^2\omega_8v_1\omega_{18} + 2\omega_6\omega_{16}v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8v_1^2\omega_{18} -$
$2\omega_6\omega_{19}c_s^2\omega_{16}v_3^2\omega_{23}\omega_{17}\omega_{11}\omega_8v_1\omega_{18} - \omega_{19}\omega_{16}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8v_1^2\omega_{18} - \omega_6\omega_{19}\omega_{16}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8v_1^2\omega_{18} +$
$\omega_6\omega_{19}c_s^2v_3^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_{18} + \omega_6\omega_{19}c_s^2v_3\omega_7\omega_{23}\omega_{20}\omega_{11}v_2^2\omega_8\omega_{18} + \omega_6\omega_{19}v_3\omega_7\omega_{23}\omega_{20}\omega_{11}v_2^2\omega_8v_1^2\omega_{18} +$
$2\omega_6\omega_{19}c_s^2\omega_{16}v_3^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_1\omega_{18} - 2\omega_6c_s^2\omega_{16}v_3\omega_7\omega_{20}\omega_{17}v_2^2\omega_8\omega_{18} + \omega_6\omega_{19}\omega_{16}v_3\omega_7\omega_{20}\omega_{17}v_2^2\omega_8v_1^2\omega_{18} - 2\omega_{19}c_s^2\omega_{16}v_3\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8v_1^2 -$
$2\omega_6\omega_{19}\omega_{16}v_3\omega_7\omega_{23}\omega_{17}v_2^2\omega_8v_1^2 + 2\omega_6c_s^2\omega_{16}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8v_1\omega_{18} + 2\omega_6\omega_{19}\omega_{16}v_3\omega_7\omega_{23}\omega_{17}\omega_{11}v_2^2v_1^2\omega_{18} + \omega_{19}c_s^2\omega_{16}v_3\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8v_1^2\omega_{18} +$
$2\omega_6c_s^2\omega_{16}v_3^2\omega_{23}\omega_{17}\omega_{11}\omega_8v_1\omega_{18} + 2\omega_6\omega_{19}\omega_{16}v_3\omega_7\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_8v_1^2 + 2\omega_{19}c_s^2\omega_{16}v_3\omega_7\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_8\omega_{18} - 2\omega_{19}\omega_{16}v_3\omega_7\omega_{23}\omega_{20}\omega_{11}v_2^2v_1^2\omega_{18} -$
$2\omega_6\omega_{19}c_s^2\omega_{16}v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_1\omega_{18} + 2\omega_6\omega_{19}\omega_{16}v_3^2\omega_7\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_8v_1\omega_{18} - 2\omega_6\omega_{16}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8v_1^2\omega_{18} -$
$\omega_6\omega_{19}c_s^2v_3\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8\omega_{18} + 2\omega_6\omega_{19}\omega_{16}v_3^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2v_1\omega_{18} + \omega_6\omega_{19}c_s^2\omega_{16}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8 +$
$2\omega_6\omega_{19}c_s^2\omega_{16}v_3^2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8v_1\omega_{18} - 2\omega_{19}c_s^2\omega_{16}v_3\omega_7\omega_{23}\omega_{17}\omega_{11}v_1^2\omega_{18} + 2\omega_6\omega_{19}c_s^2\omega_{16}v_3\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8\omega_{18} +$
$2\omega_6\omega_{19}c_s^2\omega_{16}v_3\omega_{23}\omega_{20}\omega_{11}v_2^2\omega_8\omega_{18} + 2\omega_6c_s^2\omega_{16}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1^2\omega_{18} + 2\omega_6c_s^2\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8v_1\omega_{18} -$
$2\omega_6\omega_{19}c_s^2\omega_{16}v_3\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_{18} - 2\omega_6\omega_{19}\omega_{16}v_3^2\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8v_1\omega_{18} + 2\omega_6\omega_{19}c_s^2\omega_{16}v_3\omega_{23}\omega_{17}\omega_{11}\omega_8v_1^2\omega_{18} + 2\omega_{19}\omega_{16}v_3^2\omega_7\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_8v_1 +$
$2\omega_6\omega_{16}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8v_1^2\omega_{18} - 2\omega_6\omega_{19}c_s^2\omega_{16}v_3\omega_7\omega_{23}\omega_{17}\omega_8v_1^2 + 2\omega_6\omega_{19}c_s^2\omega_{16}v_3\omega_7\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_8 + 2\omega_6\omega_{19}c_s^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8\omega_{18} -$
$2\omega_6\omega_{19}\omega_{16}v_3^2\omega_{23}\omega_{20}\omega_{11}v_2^2\omega_8v_1\omega_{18} - \omega_{19}\omega_{16}v_3^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8v_1 - 2\omega_6\omega_{19}\omega_{16}v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8v_1^2\omega_{18} -$
$2\omega_6c_s^2\omega_{16}v_3\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8\omega_{18} + 2\omega_{19}c_s^2\omega_{16}v_3^2\omega_7\omega_{23}\omega_{17}\omega_{11}v_1\omega_{18} + \omega_{19}c_s^2\omega_{16}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8 - 2\omega_6c_s^2\omega_{16}v_3\omega_{23}\omega_{17}\omega_{11}\omega_8v_1^2\omega_{18} +$
$2\omega_6\omega_{16}v_3^2\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8v_1\omega_{18} - 2\omega_6\omega_{19}c_s^2\omega_{16}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_{18} + \omega_{19}c_s^2\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8v_1\omega_{18} +$
$2\omega_6\omega_{19}c_s^2\omega_{16}v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_1^2\omega_{18} + \omega_6\omega_{19}v_3^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8v_1\omega_{18} - 2\omega_{19}c_s^2\omega_{16}v_3\omega_7\omega_{23}\omega_{20}\omega_{11}v_2^2\omega_{18} -$
$\omega_{19}c_s^2\omega_{16}v_3^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1 - 2\omega_6c_s^2\omega_{16}v_3^2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8v_1\omega_{18} - 2\omega_6\omega_{16}v_3^2\omega_7\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_8v_1\omega_{18} + 2\omega_6\omega_{19}c_s^2\omega_{16}v_3^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1 -$
$\omega_{19}c_s^2\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{11}v_2^2\omega_8v_1\omega_{18} - \omega_6\omega_{19}c_s^2\omega_{16}\omega_7\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_{18} - 2\omega_6\omega_{16}v_3\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8v_1^2\omega_{18} + 2\omega_6\omega_{19}v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8v_1^2\omega_{18} -$
$2\omega_6\omega_{19}c_s^2\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_{11}v_2^2v_1\omega_{18} - 2\omega_6\omega_{19}c_s^2\omega_{16}v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8\omega_{18} - 2\omega_6\omega_{19}c_s^2v_3\omega_{20}\omega_{17}\omega_{11}\omega_8v_1^2\omega_{18} -$

$\omega_6\omega_{19}c_s^2\omega_{16}v_3^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1 + 2\omega_{19}c_s^2\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{11}v_2^2v_1\omega_{18} - 2\omega_6c_s^2\omega_{16}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1^2\omega_{18} +$
$2\omega_6c_s^2\omega_{16}v_3\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8v_1^2\omega_{18} - 2\omega_6\omega_{19}c_s^2\omega_{16}v_3\omega_{23}\omega_{20}\omega_{11}v_2^2\omega_{18} - 2\omega_6\omega_{19}c_s^2v_3\omega_{23}\omega_{20}\omega_{11}\omega_8v_1^2\omega_{18} + 2\omega_6\omega_{16}v_3\omega_7\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8v_1^2\omega_{18} +$
$2\omega_6c_s^2\omega_{16}v_3\omega_7\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8\omega_{18} + 2\omega_6c_s^2\omega_{16}\omega_7\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_{18} - 2\omega_6\omega_{19}\omega_{16}v_3\omega_{23}\omega_{20}\omega_{11}v_2^2v_1^2\omega_{18} - 2\omega_{19}c_s^2\omega_{16}v_3\omega_7\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_{18} +$
$\omega_6\omega_{19}\omega_{16}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8v_1^2\omega_{18} - 2\omega_6c_s^2\omega_{16}v_3^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_{18} + 2\omega_6\omega_{19}\omega_{16}v_3\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8v_1^2\omega_{18} +$
$2\omega_6\omega_{19}c_s^2\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_8v_1\omega_{18} - \omega_{19}c_s^2\omega_{16}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1^2\omega_{18} + 2\omega_6\omega_{19}\omega_{16}v_3\omega_{23}\omega_{20}\omega_{11}v_2^2\omega_8v_1^2\omega_{18} +$
$2\omega_6\omega_{19}c_s^2\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2v_1\omega_{18} + 2\omega_{19}c_s^2\omega_{16}v_3^2\omega_7\omega_{23}\omega_{20}\omega_{11}v_1\omega_{18} + 2\omega_6\omega_{19}c_s^2v_3^2\omega_{23}\omega_{20}\omega_{11}\omega_8v_1\omega_{18} -$
$\omega_6\omega_{19}\omega_{16}v_3^2\omega_7\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_{18} - \omega_6\omega_{19}\omega_{16}v_3\omega_7\omega_{23}\omega_{20}\omega_{11}v_2^2\omega_8v_1^2\omega_{18} - 2\omega_6\omega_{19}\omega_{16}v_3^2\omega_7\omega_{23}\omega_{17}\omega_{11}v_2^2v_1\omega_{18} +$
$2\omega_6\omega_{19}c_s^2v_3^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_{18} - \omega_{19}c_s^2\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8v_1 - \omega_{19}c_s^2\omega_{16}v_3^2\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8v_1\omega_{18} -$
$\omega_6\omega_{19}c_s^2\omega_{16}v_3\omega_7\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8\omega_{18} - \omega_6\omega_{19}\omega_{16}v_3\omega_7\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8v_1^2\omega_{18} + 2\omega_{19}\omega_{16}v_3^2\omega_7\omega_{23}\omega_{20}\omega_{11}v_2^2v_1\omega_{18} +$
$2\omega_6c_s^2\omega_{16}v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8\omega_{18} - 2\omega_6\omega_{19}c_s^2\omega_{16}v_3\omega_{23}\omega_{17}\omega_{11}v_1^2\omega_{18} - \omega_6\omega_{19}c_s^2\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8v_1\omega_{18} -$
$\omega_6\omega_{19}c_s^2\omega_{16}v_3\omega_7\omega_{23}\omega_{20}\omega_{11}v_2^2\omega_8\omega_{18} + 2\omega_6\omega_{19}c_s^2\omega_{16}v_3\omega_7\omega_{23}\omega_{17}v_2^2\omega_8\omega_{18} + 2\omega_6\omega_{19}c_s^2\omega_{16}\omega_{23}\omega_{20}\omega_{11}v_2^2v_1\omega_{18} -$
$2\omega_6\omega_{19}c_s^2\omega_{16}v_3\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8v_1^2\omega_{18} + 2\omega_6\omega_{16}v_3^2\omega_7\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_{18} + \omega_6\omega_{19}c_s^2\omega_{16}v_3^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_{18} -$
$2\omega_{19}c_s^2\omega_{16}v_3\omega_7\omega_{23}\omega_{20}\omega_{11}v_1^2\omega_{18} - \omega_6\omega_{19}c_s^2\omega_{16}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1^2 + \omega_6\omega_{19}\omega_{16}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8v_1^2 +$
$\omega_{19}\omega_{16}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8v_1^2 + 2\omega_{19}\omega_{16}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2v_1^2\omega_{18} - 2\omega_6c_s^2\omega_{16}v_3\omega_7\omega_{23}\omega_{17}v_2^2\omega_8\omega_{18} -$
$2\omega_6c_s^2\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_8v_1\omega_{18} + 2\omega_6\omega_{19}c_s^2\omega_{16}v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_{18} - 2\omega_6\omega_{19}c_s^2\omega_{16}v_3^2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8v_1 +$
$2\omega_{19}\omega_{16}v_3\omega_7\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_8v_1^2\omega_{18} + 2\omega_6\omega_{19}\omega_{16}v_3^2\omega_{23}\omega_{20}\omega_{11}v_2^2v_1\omega_{18} - 2\omega_6\omega_{19}c_s^2\omega_{16}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_1^2\omega_{18} -$
$\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8v_1\omega_{18} + 2\omega_6c_s^2\omega_{16}v_3^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_{18} - \omega_{19}c_s^2\omega_{16}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8\omega_{18} +$
$2\omega_6\omega_{19}c_s^2\omega_{16}v_3\omega_7\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_{18} - 2\omega_6c_s^2\omega_{16}\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8v_1\omega_{18} + 2\omega_6\omega_{19}c_s^2\omega_{16}v_3^2\omega_{23}\omega_{20}\omega_{11}v_1\omega_{18} -$
$2\omega_6\omega_{19}c_s^2v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_{18} + \omega_6\omega_{19}c_s^2\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_{18} - 2\omega_6\omega_{16}v_3^2\omega_7\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8v_1\omega_{18} -$
$\omega_6\omega_{19}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8v_1^2\omega_{18} + \omega_6\omega_{19}\omega_{16}v_3^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8v_1 + 2\omega_6c_s^2\omega_{16}v_3^2\omega_7\omega_{23}\omega_{17}\omega_8v_1\omega_{18} -$
$2\omega_6\omega_{19}\omega_{16}v_3\omega_{23}\omega_{17}\omega_{11}v_2^2v_1^2\omega_{18} - 2\omega_6\omega_{19}c_s^2\omega_{16}v_3^2\omega_7\omega_{23}\omega_{20}\omega_{11}v_1\omega_{18} + 2\omega_6c_s^2\omega_{16}\omega_7\omega_{23}\omega_{17}v_2^2\omega_8v_1\omega_{18} - 2\omega_6\omega_{19}v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8v_1\omega_{18} -$
$\omega_6\omega_{19}c_s^2\omega_7\omega_{23}\omega_{20}\omega_{11}v_2^2\omega_8v_1\omega_{18} + 2\omega_6\omega_{16}v_3^2\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_8v_1\omega_{18} - 2\omega_6\omega_{19}c_s^2\omega_{16}v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1^2\omega_{18} +$
$2\omega_{19}c_s^2\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_{11}v_2^2v_1\omega_{18} + \omega_{19}c_s^2\omega_{16}v_3^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_{18} - \omega_6\omega_{19}\omega_{16}v_3^2\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8v_1 +$
$2\omega_6\omega_{19}v_3^2\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8v_1\omega_{18} - 2\omega_6c_s^2\omega_{16}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8\omega_{18} + 2\omega_6c_s^2\omega_{16}v_3\omega_7\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_8\omega_{18} -$
$2\omega_6\omega_{19}c_s^2v_3\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8\omega_{18} - 2\omega_6\omega_{19}c_s^2v_3\omega_{23}\omega_{20}\omega_{11}v_2^2\omega_8\omega_{18} + \omega_6\omega_{19}c_s^2\omega_{16}v_3^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1 + 2\omega_6c_s^2\omega_{16}v_3\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8v_1^2\omega_{18} +$
$2\omega_{19}c_s^2\omega_{16}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_{18} - 2\omega_6\omega_{19}\omega_{16}v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2v_1\omega_{18} - 2\omega_6\omega_{19}c_s^2\omega_{16}v_3^2\omega_7\omega_{23}\omega_{17}\omega_8v_1\omega_{18} -$
$2\omega_6\omega_{19}\omega_{16}v_3^2\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_8v_1\omega_{18} - 2\omega_6\omega_{19}c_s^2\omega_{16}v_3^2\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8v_1 - 2\omega_6c_s^2\omega_{16}v_3^2\omega_7\omega_{23}\omega_{17}\omega_8v_1\omega_{18} +$
$2\omega_6\omega_{19}\omega_{16}v_3^2\omega_7\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8v_1\omega_{18} - \omega_6\omega_{19}c_s^2\omega_{16}v_3^2\omega_7\omega_{23}\omega_{20}\omega_{11}v_2^2\omega_8v_1\omega_{18} + 2\omega_6\omega_{19}\omega_{16}v_3^2\omega_7\omega_{23}\omega_{17}v_2^2\omega_8v_1 + 2\omega_6\omega_{16}v_3^2\omega_7\omega_{23}\omega_{17}v_2^2\omega_8v_1\omega_{18} +$
$2\omega_6c_s^2\omega_{16}\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_8v_1\omega_{18} - \omega_6\omega_{19}c_s^2\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8v_1 + 2\omega_{19}\omega_{16}v_3^2\omega_7\omega_{23}\omega_{17}\omega_{11}v_2^2v_1\omega_{18} -$
$\omega_6\omega_{19}c_s^2\omega_{16}v_3\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8v_1^2\omega_{18} - 2\omega_{19}\omega_{16}v_3^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2v_1\omega_{18} + \omega_{19}\omega_{16}v_3^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8v_1\omega_{18} -$
$2\omega_{19}c_s^2\omega_{16}v_3^2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8v_1^2\omega_{18} + 2\omega_6c_s^2\omega_{16}v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8v_1^2\omega_{18} - \omega_6\omega_{19}c_s^2\omega_{16}v_3\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8v_1^2\omega_{18} +$
$2\omega_6\omega_{19}c_s^2\omega_{16}\omega_{23}\omega_{17}\omega_{11}v_2^2v_1\omega_{18} - 2\omega_6\omega_{19}c_s^2\omega_{16}v_3\omega_7\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_8\omega_{18} + 2\omega_6\omega_{19}c_s^2\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8v_1\omega_{18} +$
$2\omega_6\omega_{19}c_s^2\omega_{16}v_3\omega_7\omega_{23}\omega_{17}\omega_8v_1^2\omega_{18} - 2\omega_{19}\omega_{16}v_3^2\omega_7\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_8v_1\omega_{18} - 2\omega_6\omega_{19}c_s^2\omega_{16}\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2v_1\omega_{18} +$
$2\omega_6\omega_{19}c_s^2\omega_{23}\omega_{20}\omega_{11}v_2^2\omega_8v_1\omega_{18} - 2\omega_6\omega_{19}\omega_{16}v_3^2\omega_7\omega_{23}\omega_{20}\omega_{11}v_2^2v_1\omega_{18} - 2\omega_6\omega_{19}c_s^2\omega_{16}\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_8v_1\omega_{18} + 2\omega_6\omega_{19}c_s^2\omega_{16}\omega_7\omega_{23}\omega_{17}v_2^2\omega_8v_1 -$
$2\omega_6\omega_{19}\omega_{16}v_3^2\omega_7\omega_{23}\omega_{17}v_2^2\omega_8v_1\omega_{18} - 2\omega_{19}\omega_{16}v_3\omega_7\omega_{23}\omega_{17}\omega_{11}v_2^2v_1^2\omega_{18} - 2\omega_6\omega_{16}v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8v_1\omega_{18} +$
$\omega_{19}c_s^2\omega_{16}v_3\omega_7\omega_{23}\omega_{20}\omega_{11}v_2^2\omega_8\omega_{18} + \omega_6\omega_{19}c_s^2\omega_{16}v_3^2\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_{18} + 2\omega_{19}c_s^2\omega_{16}v_3\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8v_1^2\omega_{18} -$
$\omega_6\omega_{19}c_s^2\omega_{16}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1^2\omega_{18} + \omega_6\omega_{19}c_s^2\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8v_1 - 2\omega_6c_s^2\omega_{16}v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_{18} +$
$2\omega_6c_s^2\omega_{16}v_3^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_{18} + \omega_6\omega_{19}c_s^2\omega_{16}v_3^2\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8v_1\omega_{18} - \omega_6\omega_{19}v_3^2\omega_7\omega_{23}\omega_{20}\omega_{11}v_2^2\omega_8v_1\omega_{18} +$
$2\omega_6\omega_{19}c_s^2\omega_{16}v_3\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8v_1^2 - 2\omega_6\omega_{19}c_s^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8v_1\omega_{18} - 2\omega_6\omega_{19}c_s^2\omega_{16}v_3\omega_7\omega_{23}\omega_{17}v_2^2\omega_8 - 2\omega_6c_s^2\omega_{16}\omega_7\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8v_1\omega_{18} +$
$\omega_6\omega_{19}\omega_{16}v_3^2\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_{18} - \omega_6\omega_{19}v_3^2\omega_7\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8v_1\omega_{18} - \omega_6\omega_{19}c_s^2\omega_{16}v_3^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_{18} +$
$2\omega_6\omega_{19}\omega_{16}v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8v_1\omega_{18} - 2\omega_6c_s^2\omega_{16}v_3^2\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_{18} + 2\omega_6c_s^2\omega_{16}v_3^2\omega_7\omega_{20}\omega_{17}\omega_8v_1\omega_{18} -$
$2\omega_6c_s^2\omega_{16}v_3\omega_{20}\omega_{17}\omega_{11}\omega_8v_1^2\omega_{18} + 2\omega_6\omega_{19}\omega_{16}v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2v_1^2\omega_{18} - \omega_6\omega_{19}\omega_{16}v_3^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8v_1\omega_{18} +$
$2\omega_6\omega_{19}\omega_{16}v_3\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_8v_1^2\omega_{18} - 2\omega_6c_s^2\omega_{16}v_3\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_8\omega_{18} + 2\omega_6\omega_{19}c_s^2\omega_{16}v_3^2\omega_{23}\omega_{17}\omega_{11}v_1\omega_{18} +$
$2\omega_6\omega_{19}c_s^2\omega_{16}v_3\omega_7\omega_{23}\omega_{20}\omega_{11}v_2^2\omega_{18} + \omega_6\omega_{19}c_s^2\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{11}v_2^2\omega_8v_1\omega_{18} - 2\omega_6\omega_{19}v_3\omega_{23}\omega_{20}\omega_{11}v_2^2\omega_8v_1^2\omega_{18} -$
$2\omega_{19}c_s^2\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2v_1\omega_{18} + \omega_6\omega_{19}c_s^2\omega_{16}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1^2 + 2\omega_6\omega_{19}c_s^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1^2\omega_{18} -$
$2\omega_{19}c_s^2\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_8v_1\omega_{18} - \omega_6\omega_{19}c_s^2\omega_{16}v_3^2\omega_7\omega_{20}\omega_{17}\omega_8v_1\omega_{18} + 2\omega_6\omega_{16}v_3\omega_7\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_8v_1^2\omega_{18} +$
$2\omega_6\omega_{19}c_s^2\omega_{16}v_3\omega_{20}\omega_{17}\omega_{11}\omega_8v_1^2\omega_{18} + 2\omega_6c_s^2\omega_{16}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8\omega_{18} + 2\omega_6\omega_{19}c_s^2\omega_{16}v_3\omega_{23}\omega_{20}\omega_{11}\omega_8v_1^2\omega_{18} -$
$2\omega_6\omega_{16}v_3\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_8v_1^2\omega_{18} - 2\omega_6\omega_{19}\omega_{16}v_3^2\omega_7\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_8v_1 - 2\omega_{19}c_s^2\omega_{16}v_3\omega_7\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_8 + 2\omega_6\omega_{19}c_s^2\omega_{16}v_3\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_8\omega_{18}$

$C_{16} = 24\omega_6^2\omega_{19}c_s^2\omega_{16}v_3\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8v_1\omega_5 + 24\omega_6\omega_{19}c_s^2\omega_{16}v_3\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_1\omega_5\omega_{18} + 24\omega_6^2\omega_{19}\omega_{16}v_3\omega_7^3\omega_{23}\omega_{17}v_2^2\omega_8v_1\omega_5\omega_{18} -$
$12\omega_6^2\omega_{19}c_s^2\omega_{16}v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_5\omega_{18} + 24\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} - 12\omega_6^2\omega_{19}\omega_{16}v_3^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_5\omega_{18} -$
$12\omega_6^2\omega_{16}v_3^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8\omega_5\omega_{18} - 12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5 - 12\omega_6^2\omega_{19}\omega_{16}v_3^2\omega_7^2\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_8\omega_5\omega_{18} +$

$12\omega_6^2\omega_{19}v_3^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8\omega_5\omega_{18} + 6\omega_6^2\omega_{19}\omega_{16}v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8\omega_5\omega_{18} + 24\omega_6^2\omega_{19}\omega_{16}v_3\omega_7^3\omega_{23}\omega_{20}\omega_{11}v_2^2v_1\omega_5\omega_{18} +$
$12\omega_6^2c_s^2\omega_{16}\omega_7^2\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8\omega_5\omega_{18} + 24\omega_6^2c_s^2\omega_{16}v_3\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8v_1\omega_5\omega_{18} + 12\omega_6^2\omega_{19}v_3^2\omega_7^2\omega_{23}\omega_{20}\omega_{11}v_2^2\omega_8\omega_5\omega_{18} +$
$12\omega_6\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_5\omega_{18} - 12\omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8\omega_5\omega_{18} + 12\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{11}v_2^2\omega_5\omega_{18} -$
$6\omega_6\omega_{19}\omega_{16}v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}v_2^2\omega_8\omega_5\omega_{18} + 6\omega_6\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8\omega_5\omega_{18} - 12\omega_6^2\omega_{19}c_s^2\omega_{16}v_3^2\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5\omega_{18} -$
$24\omega_6^2\omega_{16}v_3\omega_7^2\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_8v_1\omega_5\omega_{18} + 24\omega_6^2\omega_{16}v_3\omega_7^3\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_5\omega_{18} + 24\omega_6^2\omega_{16}v_3\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8v_1\omega_5\omega_{18} -$
$12\omega_6^2\omega_{19}c_s^2v_3^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} + 12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5 - 12\omega_6^2c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5\omega_{18} -$
$24\omega_6^2\omega_{19}c_s^2\omega_{16}v_3\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_5\omega_{18} + 10\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + 24\omega_6^2\omega_{19}c_s^2\omega_{16}v_3\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_1\omega_5\omega_{18} +$
$6\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8\omega_5 - 6\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} - 12\omega_6^2c_s^2\omega_{16}v_3^2\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} +$
$24\omega_6^2\omega_{19}c_s^2\omega_{16}v_3\omega_7^3\omega_{23}\omega_{17}\omega_8v_1\omega_5\omega_{18} - 12\omega_6^2\omega_{19}\omega_{16}v_3^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_8\omega_5 - 12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_5\omega_{18} +$
$12\omega_6^2\omega_{19}c_s^2\omega_{16}v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_5\omega_{18} + 24\omega_6\omega_{19}c_s^2\omega_{16}v_3\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8v_1\omega_5\omega_{18} + 6\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8\omega_5\omega_{18} -$
$12\omega_6^2\omega_{19}c_s^2\omega_{16}v_3\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_5 + 6\omega_6^2\omega_{19}v_3^3\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8\omega_5\omega_{18} + 24\omega_6^2\omega_{19}v_3\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8v_1\omega_5\omega_{18} +$
$12\omega_6\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 - 12\omega_6\omega_{19}c_s^2\omega_{16}v_3\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_5\omega_{18} - 12\omega_6^2\omega_{19}\omega_{16}v_3\omega_7^3\omega_{23}\omega_{20}\omega_{11}v_2^2\omega_8v_1\omega_5\omega_{18} +$
$12\omega_6\omega_{19}\omega_{16}v_3^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_5\omega_{18} + 6\omega_6\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} - 12\omega_6^2\omega_{16}v_3^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_8\omega_5\omega_{18} +$
$12\omega_6^2\omega_{19}\omega_{16}v_3^2\omega_7^2\omega_{23}\omega_{20}\omega_{11}v_2^2\omega_5\omega_{18} + 6\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{11}v_2^2\omega_8\omega_5\omega_{18} + 12\omega_6^2\omega_{19}c_s^2\omega_{16}v_3^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} +$
$12\omega_6^2\omega_{19}c_s^2v_3^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} - 12\omega_6^2\omega_{19}\omega_{16}v_3\omega_7^3\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8v_1\omega_5\omega_{18} - 24\omega_6\omega_{19}\omega_{16}v_3\omega_7^3\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_8v_1\omega_5 +$
$12\omega_6^2\omega_{19}c_s^2v_3\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8v_1\omega_5\omega_{18} + 12\omega_6^2\omega_{19}c_s^2v_3^2\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} - 12\omega_6\omega_{19}\omega_{16}v_3\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8v_1\omega_5\omega_{18} -$
$24\omega_6^2c_s^2\omega_{16}v_3\omega_7^3\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{18} + 12\omega_6\omega_{19}c_s^4\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} - 6\omega_6\omega_{19}\omega_{16}v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8\omega_5 +$
$24\omega_6^2\omega_{19}c_s^2\omega_{16}v_3\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8v_1\omega_5\omega_{18} + 12\omega_6^2c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} - 12\omega_6^2\omega_{19}c_s^2\omega_{16}v_3\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_5\omega_{18} +$
$24\omega_6^2\omega_{19}c_s^2\omega_{16}v_3\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_1\omega_5\omega_{18} + 12\omega_6^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8\omega_5\omega_{18} - 12\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_8\omega_5 +$
$12\omega_6^2\omega_{19}c_s^2v_3\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_5\omega_{18} - 12\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_5\omega_{18} - 12\omega_6^2\omega_{19}\omega_{16}v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}v_2^2\omega_5\omega_{18} +$
$12\omega_6^2c_s^2\omega_{16}v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} - 12\omega_6^2\omega_{19}\omega_{16}v_3^2\omega_7^3\omega_{23}\omega_{17}v_2^2\omega_8\omega_5\omega_{18} + 12\omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{23}\omega_{20}\omega_{11}v_2^2\omega_8\omega_5\omega_{18} -$
$12\omega_6\omega_{19}c_s^2\omega_{16}v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_5\omega_{18} + 6\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8\omega_5\omega_{18} + 12\omega_6^2c_s^2\omega_{16}\omega_7^3\omega_{20}\omega_{17}v_2^2\omega_8\omega_5\omega_{18} -$
$12\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_8\omega_5\omega_{18} + 12\omega_6^2\omega_{19}v_3\omega_7^3\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8v_1\omega_5\omega_{18} - 24\omega_6^2\omega_{19}\omega_{16}v_3\omega_7^3\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_8v_1\omega_5\omega_{18} -$
$\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} - 12\omega_6\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5 + 12\omega_6^2\omega_{16}v_3^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8\omega_5\omega_{18} -$
$6\omega_6\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{11}v_2^2\omega_8\omega_5\omega_{18} - 24\omega_6^2\omega_{19}\omega_{16}v_3\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2v_1\omega_5\omega_{18} - 12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_5\omega_{18} -$
$12\omega_6^2\omega_{19}c_s^2\omega_{16}v_3^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_5\omega_{18} - 24\omega_6^2\omega_{16}v_3\omega_7^3\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_5\omega_{18} + 12\omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8\omega_5\omega_{18} -$
$6\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8\omega_5 + 24\omega_6^2\omega_{19}\omega_{16}v_3\omega_7^3\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_8v_1\omega_5 - 12\omega_6^2\omega_{19}c_s^2\omega_{16}v_3\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8v_1\omega_5\omega_{18} -$
$6\omega_6^2\omega_{19}\omega_{16}v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8\omega_5\omega_{18} - 12\omega_6\omega_{19}c_s^2\omega_{16}v_3^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} - 24\omega_6^2\omega_{19}c_s^2\omega_{16}v_3\omega_7^2\omega_{23}\omega_{20}\omega_{11}v_1\omega_5\omega_{18} -$
$12\omega_6^2\omega_{19}v_3\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8v_1\omega_5\omega_{18} - 12\omega_6^2c_s^4\omega_{16}\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} - 24\omega_6\omega_{19}c_s^2\omega_{16}v_3\omega_7^3\omega_{23}\omega_{20}\omega_{11}v_1\omega_5\omega_{18} -$
$6\omega_6^2\omega_{19}c_s^2v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} + 12\omega_6\omega_{19}c_s^2\omega_{16}v_3^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5 + 6\omega_6^2\omega_{19}\omega_{16}v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8\omega_5 -$
$6\omega_6^2\omega_{19}c_s^2v_3^2\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} + 12\omega_6^2\omega_{19}v_3\omega_7^3\omega_{23}\omega_{20}\omega_{11}v_2^2\omega_8v_1\omega_5\omega_{18} - 12\omega_6^2\omega_{19}c_s^2\omega_{16}v_3^2\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} -$
$12\omega_6^2\omega_{19}c_s^2\omega_{16}v_3\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_5\omega_{18} + 6\omega_6^2\omega_{19}c_s^2\omega_{16}v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18} - 24\omega_6^2\omega_{19}c_s^2\omega_{16}v_3\omega_7^3\omega_{23}\omega_{20}\omega_{11}v_1\omega_5\omega_{18} +$
$12\omega_6\omega_{19}\omega_{16}v_3\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8v_1\omega_5 + 6\omega_6\omega_{19}c_s^2\omega_{16}v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} - 12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_{18} -$
$24\omega_6^2\omega_{19}\omega_{16}v_3\omega_7^2\omega_{23}\omega_{17}\omega_{11}v_2^2v_1\omega_5\omega_{18} + 12\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8\omega_5\omega_{18} - 24\omega_6^2c_s^2\omega_{16}v_3\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_5\omega_{18} +$
$6\omega_6^2\omega_{19}\omega_{16}v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}v_2^2\omega_8\omega_5\omega_{18} - 12\omega_6^2\omega_{19}c_s^2v_3\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_5\omega_{18} + 12\omega_6^2\omega_{19}c_s^2\omega_{16}v_3\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5 -$
$12\omega_6^2c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_8\omega_5\omega_{18} - 12\omega_6^2\omega_{19}c_s^2\omega_{16}v_3^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_5\omega_{18} - 6\omega_6^2\omega_{19}\omega_{16}v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8\omega_5 +$
$12\omega_6^2\omega_{19}c_s^2\omega_{16}v_3^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} - 24\omega_6^2c_s^2\omega_{16}v_3\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_5\omega_{18} + 12\omega_6\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} -$
$24\omega_6^2\omega_{19}\omega_{16}v_3\omega_7^3\omega_{23}\omega_{17}v_2^2\omega_8v_1\omega_5 + 12\omega_6^2c_s^2\omega_{16}v_3^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} - 18\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} +$
$12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} - 6\omega_6\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8\omega_5 + 12\omega_6^2\omega_{19}c_s^2\omega_{16}v_3^2\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5 -$
$24\omega_6^2\omega_{19}c_s^2\omega_{16}v_3\omega_7^3\omega_{23}\omega_{17}\omega_8v_1\omega_5 - 6\omega_6^2\omega_{19}c_s^2\omega_{16}v_3^2\omega_7^3\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18} - 12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 +$
$12\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - 12\omega_6^2c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8\omega_5\omega_{18} + 24\omega_6\omega_{19}\omega_{16}v_3\omega_7^3\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_8v_1\omega_5\omega_{18} -$
$12\omega_6^2\omega_{19}c_s^2\omega_{16}v_3^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} - 24\omega_6\omega_{19}c_s^2\omega_{16}v_3\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_1\omega_5\omega_{18} + 24\omega_6^2\omega_{19}c_s^2\omega_{16}v_3\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_5\omega_{18} -$
$12\omega_6^2\omega_{19}c_s^2\omega_{16}v_3^2\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} + 12\omega_6^2c_s^2\omega_{16}v_3^2\omega_7^3\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18} - 6\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} -$
$6\omega_6\omega_{19}c_s^2\omega_{16}v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} + 24\omega_6\omega_{19}\omega_{16}v_3\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2v_1\omega_5\omega_{18} + 24\omega_6^2\omega_{19}\omega_{16}v_3\omega_7^2\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8v_1\omega_5\omega_{18} +$
$12\omega_6^2\omega_{19}\omega_{16}v_3\omega_7^3\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_5 + 12\omega_6^2c_s^4\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + 24\omega_6^2\omega_{19}c_s^2\omega_{16}v_3\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8v_1\omega_5\omega_{18} +$
$12\omega_6\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_8\omega_5 - 24\omega_6^2\omega_{19}c_s^2\omega_{16}v_3\omega_7^2\omega_{23}\omega_{17}\omega_{11}v_1\omega_5\omega_{18} + 24\omega_6^2\omega_{19}\omega_{16}v_3\omega_7^2\omega_{23}\omega_{20}\omega_{11}v_2^2\omega_8v_1\omega_5\omega_{18} -$
$6\omega_6^2\omega_{19}c_s^2\omega_7^3\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8\omega_5\omega_{18} - 2\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} + 12\omega_6\omega_{19}c_s^2\omega_{16}v_3\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8v_1\omega_5\omega_{18} +$
$12\omega_6^2c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_{18} + 12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_5\omega_{18} + 6\omega_6^2\omega_{19}c_s^4\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} +$
$6\omega_6\omega_{19}\omega_{16}v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8\omega_5\omega_{18} - 12\omega_6^2\omega_{16}v_3^2\omega_7^3\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8\omega_5\omega_{18} - 24\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} +$
$12\omega_6^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{17}v_2^2\omega_8\omega_5\omega_{18} + 12\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_8\omega_5\omega_{18} - 12\omega_6^2c_s^2\omega_{16}v_3^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_5\omega_{18} +$
$12\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_5\omega_{18} - 12\omega_6^2c_s^2\omega_{16}v_3^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} - 6\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{11}v_2^2\omega_8\omega_5\omega_{18} -$
$12\omega_6^2\omega_{19}v_3^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8\omega_5\omega_{18} - 6\omega_6^2\omega_{19}\omega_{16}v_3^2\omega_7^3\omega_{20}\omega_{17}v_2^2\omega_8\omega_5\omega_{18} - 12\omega_6\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_5\omega_{18} +$
$6\omega_6^2\omega_{19}c_s^2\omega_{16}v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5 - 12\omega_6^2c_s^2\omega_{16}v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18} + 24\omega_6^2\omega_{16}v_3\omega_7^3\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_8v_1\omega_5\omega_{18} +$
$12\omega_6^2c_s^2\omega_{16}v_3^2\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} + 6\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} - 18\omega_6\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} +$
$12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} - 12\omega_6^2\omega_{19}\omega_{16}v_3\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8v_1\omega_5 + 12\omega_6^2\omega_{19}c_s^2\omega_{16}v_3\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_5\omega_{18} -$
$6\omega_6^2\omega_{19}c_s^2\omega_{16}v_3\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8\omega_5 + 24\omega_6^2\omega_{19}\omega_{16}v_3\omega_7^3\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_8v_1\omega_5 - 12\omega_6^2\omega_{19}c_s^2\omega_{16}v_3\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8v_1\omega_5\omega_{18} +$
$12\omega_6^2\omega_{19}\omega_{16}v_3\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8v_1\omega_5 + 12\omega_6^2\omega_{19}c_s^2\omega_{16}v_3\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8\omega_5 - 6\omega_6^2\omega_{19}c_s^2\omega_{16}v_3^2\omega_7^3\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18} -$
$6\omega_6^2\omega_{19}\omega_{16}v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8\omega_5\omega_{18} + 12\omega_6^2\omega_{19}c_s^2\omega_{16}v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} - 12\omega_6^2\omega_{19}\omega_{16}v_3^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_5\omega_{18} +$
$12\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_5\omega_{18} - 12\omega_6^2c_s^2\omega_{16}v_3^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} - 6\omega_6^2\omega_{19}c_s^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}v_2^2\omega_8\omega_5\omega_{18} -$
$12\omega_6^2\omega_{19}v_3^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8\omega_5\omega_{18} - 6\omega_6^2\omega_{19}\omega_{16}v_3^2\omega_7^3\omega_{20}\omega_{17}v_2^2\omega_8\omega_5\omega_{18} - 12\omega_6\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_5\omega_{18} +$
$6\omega_6^2\omega_{19}c_s^2\omega_{16}v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5 - 12\omega_6^2c_s^2\omega_{16}v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18} + 24\omega_6^2\omega_{16}v_3\omega_7^3\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_8v_1\omega_5\omega_{18} +$
$12\omega_6^2c_s^2\omega_{16}v_3^2\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} + 6\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} - 18\omega_6\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} +$
$12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} - 12\omega_6^2\omega_{19}\omega_{16}v_3\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8v_1\omega_5 + 12\omega_6^2\omega_{19}c_s^2\omega_{16}v_3\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_5\omega_{18} -$
$6\omega_6^2\omega_{19}c_s^2\omega_{16}v_3\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} + 12\omega_6\omega_{19}\omega_{16}v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8v_1\omega_5 - 24\omega_6^2\omega_{19}c_s^2\omega_{16}v_3\omega_7^3\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_8\omega_5 + 24\omega_6^2\omega_{19}\omega_{16}v_3\omega_7^3\omega_{23}\omega_{17}\omega_{11}v_2^2v_1\omega_5\omega_{18} -$
$12\omega_6^2\omega_{19}\omega_{16}v_3^2\omega_7^2\omega_{23}\omega_{20}\omega_{11}v_2^2\omega_8\omega_5\omega_{18} + 24\omega_6^2c_s^2\omega_{16}v_3\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_5\omega_{18} + 12\omega_6\omega_{19}c_s^2\omega_{16}v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_5\omega_{18} -$
$12\omega_6^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8\omega_5\omega_{18} + 12\omega_6^2c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_8\omega_5\omega_{18} + 12\omega_6^2\omega_{19}c_s^2\omega_{16}v_3^2\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_5\omega_{18} +$
$6\omega_6^2\omega_{19}c_s^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8\omega_5\omega_{18} - 12\omega_6\omega_{19}\omega_{16}v_3^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_8\omega_5\omega_{18} + 12\omega_6^2\omega_{19}\omega_{16}v_3\omega_7^3\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_5\omega_{18} +$
$12\omega_6^2\omega_{16}v_3^2\omega_7^3\omega_{23}\omega_{17}v_2^2\omega_8\omega_5\omega_{18} - 12\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_5\omega_{18} - 12\omega_6^2\omega_{19}\omega_{16}v_3^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8\omega_5\omega_{18} +$

$12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_5\omega_{18} + 12\omega_6^2\omega_{19}\omega_{16}v_3\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8v_1\omega_5\omega_{18} + 12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} +$
$12\omega_6^2\omega_{16}v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8\omega_5\omega_{18} - 12\omega_6\omega_{19}\omega_{16}v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_5\omega_{18} - 6\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{20}\omega_{17}v_2^2\omega_8\omega_5\omega_{18} +$
$12\omega_6^2\omega_{19}c_s^2\omega_{16}v_3\omega_7^3\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{18} - 12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} + 12\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{17}v_2^2\omega_8\omega_5 -$
$24\omega_6^2\omega_{19}c_s^2\omega_{16}v_3\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_1\omega_5\omega_{18} - 12\omega_6^2c_s^2\omega_{16}v_3^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} + 12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8 -$
$6\omega_6\omega_{19}c_s^2\omega_{16}v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5 + 24\omega_6^2c_s^2\omega_{16}v_3\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_5\omega_{18} - 24\omega_6^2\omega_{19}\omega_{16}v_3\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8v_1\omega_5\omega_{18} -$
$12\omega_6\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_5\omega_{18} + 6\omega_6^2\omega_{19}c_s^2v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} + 12\omega_6\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{11}v_2^2\omega_5\omega_{18} -$
$24\omega_6\omega_{19}\omega_{16}v_3\omega_7^3\omega_{23}\omega_{17}\omega_{11}v_2^2v_1\omega_5\omega_{18} - 12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_5\omega_{18} + 12\omega_6^2\omega_{19}\omega_{16}v_3^2\omega_7^3\omega_{23}\omega_{17}v_2^2\omega_8\omega_5 -$
$12\omega_6^2c_s^2\omega_{16}\omega_7^3\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8\omega_5\omega_{18} - 6\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8\omega_5\omega_{18} + 12\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_5\omega_{18} +$
$24\omega_6^2\omega_{19}c_s^2v_3\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_5\omega_{18} + 24\omega_6^2c_s^2\omega_{16}v_3\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_5\omega_{18} - 6\omega_6^2\omega_{19}v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}v_2^2\omega_8\omega_5\omega_{18} -$
$24\omega_6^2c_s^2\omega_{16}v_3\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8v_1\omega_5\omega_{18} + 12\omega_6^2\omega_{19}c_s^2\omega_{16}v_3^2\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_5\omega_{18} - 6\omega_6^2\omega_{19}v_3^2\omega_7^3\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8\omega_5\omega_{18} +$
$12\omega_6^2\omega_{19}\omega_{16}v_3^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_8\omega_5\omega_{18} - 24\omega_6^2\omega_{19}\omega_{16}v_3\omega_7^2\omega_{23}\omega_{20}\omega_{11}v_2^2v_1\omega_5\omega_{18} - 6\omega_6^2\omega_{19}c_s^2\omega_{16}v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5 +$
$24\omega_6^2\omega_{16}v_3\omega_7^3\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8v_1\omega_5\omega_{18} + 12\omega_6^2\omega_{19}\omega_{16}v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_5\omega_{18} + 12\omega_6\omega_{19}c_s^2\omega_{16}v_3^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_5\omega_{18} +$
$12\omega_6\omega_{19}c_s^2\omega_{16}v_3\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_5 + 24\omega_6^2\omega_{19}c_s^2\omega_{16}v_3\omega_7^3\omega_{23}\omega_{17}\omega_{11}v_1\omega_5\omega_{18} - 24\omega_6^2\omega_{19}c_s^2v_3\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_5\omega_{18} -$
$12\omega_6^2c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - 24\omega_6^2\omega_{19}c_s^2\omega_{16}v_3\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8v_1\omega_5\omega_{18} - 6\omega_6\omega_{19}c_s^4\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} -$
$24\omega_6^2\omega_{19}v_3\omega_7^2\omega_{23}\omega_{20}\omega_{11}v_2^2\omega_8v_1\omega_5\omega_{18} + 12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5\omega_{18} + 6\omega_6^2\omega_{19}c_s^2\omega_{16}v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} -$
$12\omega_6^2\omega_{19}c_s^2\omega_{16}v_3^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5 - 24\omega_6^2c_s^2\omega_{16}v_3\omega_7^3\omega_{23}\omega_{17}\omega_8v_1\omega_5\omega_{18} + 12\omega_6^2c_s^2\omega_{16}v_3^2\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5\omega_{18} +$
$12\omega_6^2\omega_{19}\omega_{16}v_3^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8\omega_5\omega_{18} + 12\omega_6\omega_{19}\omega_{16}v_3\omega_7^3\omega_{23}\omega_{20}\omega_{11}v_2^2\omega_8v_1\omega_5\omega_{18} + 6\omega_6^2\omega_{19}c_s^2\omega_{16}v_3^2\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} -$
$24\omega_6^2\omega_{19}c_s^2v_3\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8v_1\omega_5\omega_{18} + 12\omega_6^2\omega_{16}v_3^2\omega_7^2\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_8\omega_5\omega_{18} + 12\omega_6\omega_{19}\omega_{16}v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}v_2^2\omega_5\omega_{18} -$
$12\omega_6^2\omega_{16}v_3^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8\omega_5\omega_{18} - 12\omega_6^2\omega_{19}c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{11}v_2^2\omega_8\omega_5\omega_{18} + 12\omega_6^2\omega_{19}c_s^2\omega_{16}v_3^2\omega_7^2\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_5\omega_{18} -$
$24\omega_6^2\omega_{16}v_3\omega_7^3\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_5\omega_{18} + 24\omega_6^2\omega_{19}\omega_{16}v_3\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2v_1\omega_5\omega_{18} - 18\omega_6\omega_{19}c_s^4\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} -$
$12\omega_6^2\omega_{19}c_s^4\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} + 12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_5\omega_{18} - 12\omega_6\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_8\omega_5\omega_{18} -$
$12\omega_6\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_5\omega_{18} + 24\omega_6^2\omega_{19}\omega_{16}v_3\omega_7^2\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_8v_1\omega_5\omega_{18} - 24\omega_6^2\omega_{19}v_3\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_5\omega_{18} -$
$12\omega_6^2\omega_{19}c_s^2\omega_{16}v_3\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_5\omega_{18}$

$C_{17} = -\omega_6\omega_{19}\omega_{16}v_3^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_{18} - 2\omega_6\omega_{19}c_s^2\omega_{16}v_3\omega_7\omega_{23}\omega_{17}\omega_8 - \omega_{19}c_s^2\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1 +$
$2\omega_6\omega_{19}\omega_{16}v_3\omega_7\omega_{23}\omega_{17}\omega_8v_1^2\omega_{18} - 2\omega_6\omega_{16}v_3^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_{18} + \omega_{19}\omega_{16}v_3\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8v_1^2\omega_{18} - 2\omega_6\omega_{19}\omega_{16}v_3\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8v_1^2\omega_{18} -$
$2\omega_6\omega_{19}c_s^2\omega_{16}v_3\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_{19}\omega_{16}v_3\omega_7\omega_{23}\omega_{17}\omega_{11}v_1^2\omega_{18} - \omega_6\omega_{19}v_3^2\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_{18} + \omega_6\omega_{19}\omega_{16}v_3^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_{18} -$
$2\omega_6\omega_{19}c_s^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_{18} - \omega_6\omega_{19}v_3^2\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8v_1\omega_{18} - \omega_{19}c_s^2\omega_{16}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - \omega_6\omega_{19}\omega_{16}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1^2 +$
$2\omega_6\omega_{19}\omega_{16}v_3\omega_7\omega_{23}\omega_{20}\omega_{11}v_1^2\omega_{18} + 2\omega_6\omega_{16}v_3\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8v_1^2\omega_{18} - 2\omega_6\omega_{19}\omega_{16}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_1^2\omega_{18} - 2\omega_{19}\omega_{16}v_3\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8v_1^2 -$
$2\omega_6\omega_{16}v_3\omega_{23}\omega_{17}\omega_{11}\omega_8v_1^2\omega_{18} - 2\omega_6\omega_{19}c_s^2v_3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} - 2\omega_6\omega_{19}c_s^2v_3\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_6c_s^2\omega_{16}v_3\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} +$
$2\omega_6\omega_{19}c_s^2\omega_{16}v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{18} + 2\omega_6c_s^2\omega_{16}\omega_{23}\omega_{17}\omega_{11}\omega_8v_1\omega_{18} - 2\omega_6c_s^2\omega_{16}v_3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} + \omega_6\omega_{19}c_s^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_{18} -$
$\omega_{19}\omega_{16}v_3^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1 + 2\omega_6\omega_{16}v_3^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_{18} - 2\omega_6c_s^2\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_{18} - 2\omega_6\omega_{19}\omega_{16}v_3^2\omega_7\omega_{23}\omega_{17}\omega_8v_1\omega_{18} +$
$2\omega_6c_s^2\omega_{16}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_{18} - 2\omega_6\omega_{19}c_s^2\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{11}v_1\omega_{18} + 2\omega_{19}c_s^2\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_{11}v_1\omega_{18} - \omega_6\omega_{19}c_s^2\omega_{16}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 +$
$2\omega_6\omega_{16}v_3^2\omega_{23}\omega_{17}\omega_{11}\omega_8v_1\omega_{18} - \omega_6\omega_{19}c_s^2\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8v_1\omega_{18} - 2\omega_6\omega_{19}\omega_{16}v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_{18} - 2\omega_{19}c_s^2\omega_{16}v_3\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_{18} +$
$\omega_6\omega_{19}c_s^2\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_{18} + 2\omega_6\omega_{19}\omega_{16}v_3^2\omega_{23}\omega_{17}\omega_{11}v_1\omega_{18} - \omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_{18} - 2\omega_6\omega_{19}c_s^2\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_8v_1\omega_{18} -$
$2\omega_6\omega_{19}c_s^2\omega_{16}v_3\omega_{23}\omega_{20}\omega_{11}\omega_{18} - 2\omega_6\omega_{19}\omega_{16}v_3^2\omega_7\omega_{23}\omega_{20}\omega_{11}v_1\omega_{18} - \omega_6\omega_{19}c_s^2\omega_{16}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_{18} + 2\omega_{19}\omega_{16}v_3^2\omega_7\omega_{23}\omega_{17}\omega_{11}v_1\omega_{18} +$
$2\omega_{19}c_s^2\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{11}v_1\omega_{18} + \omega_6\omega_{19}\omega_{16}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1^2 + 2\omega_6\omega_{19}v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1^2\omega_{18} - \omega_6\omega_{19}c_s^2\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_{18} +$
$2\omega_6\omega_{19}c_s^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - \omega_6\omega_{19}\omega_{16}v_3^2\omega_7\omega_{20}\omega_{17}\omega_8v_1\omega_{18} - 2\omega_6\omega_{19}c_s^2\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_{11}v_1\omega_{18} + 2\omega_6\omega_{19}\omega_{16}v_3\omega_{20}\omega_{17}\omega_{11}\omega_8v_1^2\omega_{18} -$
$2\omega_6c_s^2\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8v_1\omega_{18} + 2\omega_6\omega_{19}c_s^2\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_1\omega_{18} + 2\omega_6\omega_{19}\omega_{16}v_3\omega_{23}\omega_{20}\omega_{11}\omega_8v_1^2\omega_{18} - 2\omega_6c_s^2\omega_{16}v_3\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} +$
$2\omega_{19}\omega_{16}v_3^2\omega_7\omega_{23}\omega_{20}\omega_{11}v_1\omega_{18} + 2\omega_{19}c_s^2\omega_{16}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{18} - 2\omega_6\omega_{19}\omega_{16}v_3^2\omega_7\omega_{23}\omega_{17}\omega_{11}v_1\omega_{18} - \omega_6\omega_{19}c_s^2\omega_{16}\omega_7\omega_{20}\omega_{17}\omega_8v_1\omega_{18} -$
$\omega_{19}c_s^2\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8v_1\omega_{18} + 2\omega_6\omega_{19}\omega_{16}v_3^2\omega_{23}\omega_{20}\omega_{11}v_1\omega_{18} + 2\omega_6\omega_{19}c_s^2\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8v_1\omega_{18} - 2\omega_6c_s^2\omega_{16}v_3\omega_7\omega_{20}\omega_{17}\omega_8\omega_{18} +$
$2\omega_6\omega_{19}c_s^2\omega_{16}v_3\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_{18} - \omega_6\omega_{19}c_s^2\omega_{16}v_3\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} - \omega_6\omega_{19}c_s^2\omega_{16}v_3\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} -$
$2\omega_6\omega_{19}\omega_{16}v_3^2\omega_{23}\omega_{20}\omega_{11}\omega_8v_1\omega_{18} + \omega_6\omega_{19}v_3\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8v_1^2\omega_{18} - 2\omega_6\omega_{19}\omega_{16}v_3^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_{18} - \omega_{19}\omega_{16}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1^2\omega_{18} -$
$\omega_6\omega_{19}\omega_{16}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1^2\omega_{18} + \omega_6\omega_{19}v_3\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8v_1^2\omega_{18} + 2\omega_6c_s^2\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_{18} - 2\omega_6\omega_{16}v_3^2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8v_1\omega_{18} -$
$2\omega_6c_s^2\omega_{16}v_3\omega_7\omega_{23}\omega_{17}\omega_8\omega_{18} + 2\omega_6\omega_{19}\omega_{16}v_3^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_1\omega_{18} + \omega_6\omega_{19}\omega_{16}v_3\omega_7\omega_{20}\omega_{17}\omega_8v_1^2\omega_{18} + \omega_6\omega_{19}v_3^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_{18} +$
$2\omega_6\omega_{19}c_s^2\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_8v_1 + \omega_6\omega_{19}c_s^2\omega_{16}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 + 2\omega_6c_s^2\omega_{16}v_3\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_6\omega_{19}c_s^2\omega_{16}\omega_{23}\omega_{20}\omega_{11}\omega_8v_1\omega_{18} -$
$2\omega_6\omega_{19}c_s^2\omega_{16}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_{18} + 2\omega_6\omega_{16}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1^2\omega_{18} - \omega_{19}\omega_{16}v_3^2\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8v_1\omega_{18} + 2\omega_6\omega_{19}\omega_{16}v_3\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8v_1^2 +$
$2\omega_6\omega_{19}\omega_{16}v_3^2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8v_1\omega_{18} + 2\omega_6\omega_{19}\omega_{16}v_3\omega_7\omega_{23}\omega_{17}\omega_{11}v_1^2\omega_{18} - 2\omega_{19}\omega_{16}v_3\omega_7\omega_{23}\omega_{20}\omega_{11}v_1^2\omega_{18} + \omega_6\omega_{19}c_s^2\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8v_1\omega_{18} -$
$2\omega_6\omega_{19}c_s^2\omega_{16}v_3\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_{18} + 2\omega_6\omega_{19}\omega_{16}v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_1^2\omega_{18} - 2\omega_6\omega_{19}c_s^2\omega_{16}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{18} +$
$2\omega_6\omega_{19}\omega_{16}v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_{18} + \omega_6\omega_{19}c_s^2\omega_{16}\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_{18} - 2\omega_6\omega_{16}v_3\omega_7\omega_{23}\omega_{17}\omega_8v_1^2\omega_{18} - 2\omega_{19}c_s^2\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_{18} -$
$2\omega_6\omega_{19}c_s^2\omega_{16}v_3\omega_{23}\omega_{17}\omega_{11}\omega_{18} - 2\omega_6\omega_{19}v_3\omega_{20}\omega_{17}\omega_{11}\omega_8v_1^2\omega_{18} + 2\omega_6\omega_{19}\omega_{16}v_3\omega_{23}\omega_{17}\omega_{11}\omega_8v_1^2\omega_{18} - 2\omega_6c_s^2\omega_{16}\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_{18} -$
$2\omega_6\omega_{19}v_3\omega_{23}\omega_{20}\omega_{11}\omega_8v_1^2\omega_{18} - 2\omega_6\omega_{16}v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_{18} - 2\omega_{19}c_s^2\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_1\omega_{18} - 2\omega_6c_s^2\omega_{16}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} -$
$2\omega_{19}c_s^2\omega_{16}v_3\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8 + \omega_6\omega_{19}\omega_{16}v_3^2\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8v_1\omega_{18} + 2\omega_6\omega_{16}v_3^2\omega_7\omega_{23}\omega_{17}\omega_8v_1\omega_{18} - \omega_6\omega_{19}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1^2\omega_{18} +$
$2\omega_6\omega_{19}c_s^2\omega_{16}\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_{18} + 2\omega_{19}\omega_{16}v_3^2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8v_1 + \omega_6\omega_{19}\omega_{16}v_3^2\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_{18} +$
$2\omega_6\omega_{19}c_s^2\omega_{16}v_3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_6\omega_{19}c_s^2\omega_{16}\omega_{23}\omega_{17}\omega_{11}\omega_8v_1\omega_{18} - 2\omega_6\omega_{19}\omega_{16}v_3^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_1\omega_{18} + 2\omega_6\omega_{19}c_s^2\omega_{23}\omega_{20}\omega_{11}\omega_8v_1\omega_{18} +$
$2\omega_6\omega_{19}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_{18} - 2\omega_{19}\omega_{16}v_3^2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8v_1\omega_{18} + \omega_{19}\omega_{16}v_3^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_{18} + 2\omega_6c_s^2\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_8v_1\omega_{18} -$
$2\omega_6\omega_{19}\omega_{16}v_3\omega_{23}\omega_{17}\omega_{11}v_1^2\omega_{18} + 2\omega_{19}c_s^2\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8v_1 - 2\omega_6\omega_{16}v_3^2\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_{18} - 2\omega_6c_s^2\omega_{16}\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_{18} +$
$\omega_{19}c_s^2\omega_{16}v_3\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} + 2\omega_6\omega_{19}v_3^2\omega_{23}\omega_{20}\omega_{11}\omega_8v_1\omega_{18} - 2\omega_6\omega_{19}c_s^2\omega_{16}\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_1\omega_{18} - 2\omega_6\omega_{19}\omega_{16}v_3^2\omega_{23}\omega_{17}\omega_{11}\omega_8v_1\omega_{18} +$
$\omega_6\omega_{19}c_s^2\omega_{16}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_{19}\omega_{16}v_3^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_1\omega_{18} + 2\omega_6\omega_{19}c_s^2\omega_{16}\omega_{23}\omega_{17}\omega_{11}v_1\omega_{18} +$
$2\omega_6\omega_{16}v_3\omega_{20}\omega_{17}\omega_{11}\omega_8v_1^2\omega_{18} + \omega_{19}\omega_{16}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1^2 + 2\omega_6\omega_{16}v_3\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8v_1^2\omega_{18} + 2\omega_6\omega_{19}c_s^2\omega_{16}v_3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} +$
$2\omega_6\omega_{19}c_s^2\omega_{16}v_3\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + \omega_6\omega_{19}\omega_{16}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1^2\omega_{18} + 2\omega_{19}\omega_{16}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_1^2\omega_{18} + 2\omega_6\omega_{16}v_3^2\omega_7\omega_{20}\omega_{17}\omega_8v_1\omega_{18} -$
$2\omega_6\omega_{19}\omega_{16}v_3^2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8v_1 + \omega_6\omega_{19}c_s^2v_3\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} - \omega_6\omega_{19}\omega_{16}v_3\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8v_1^2\omega_{18} + \omega_6\omega_{19}c_s^2\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1 +$
$2\omega_6\omega_{19}c_s^2\omega_{16}\omega_{23}\omega_{20}\omega_{11}v_1\omega_{18} + \omega_6\omega_{19}c_s^2v_3\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - \omega_6\omega_{19}\omega_{16}v_3\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8v_1^2\omega_{18} + \omega_6\omega_{19}c_s^2\omega_{16}v_3\omega_7\omega_{20}\omega_{17}\omega_8\omega_{18} -$
$\omega_6\omega_{19}c_s^2v_3\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_6\omega_{19}\omega_{16}v_3\omega_{23}\omega_{20}\omega_{11}v_1^2\omega_{18} + 2\omega_{19}c_s^2\omega_{16}v_3\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_{19}\omega_{16}v_3\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8v_1^2\omega_{18} -$

$$
\begin{gathered}
2\omega_{6}\omega_{19}c_s^2\omega_{16}\omega_{7}\omega_{23}\omega_{17}\omega_{11}\omega_{8}v_1 + 2\omega_{6}c_s^2\omega_{16}\omega_{7}\omega_{20}\omega_{17}\omega_{8}v_1\omega_{18} + 2\omega_{6}\omega_{19}c_s^2\omega_{16}v_3\omega_{7}\omega_{23}\omega_{17}\omega_{8}\omega_{18} + 2\omega_{6}c_s^2\omega_{16}v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{8}\omega_{18} - \\
2\omega_{6}\omega_{16}v_3\omega_{7}\omega_{20}\omega_{17}\omega_{8}v_1^2\omega_{18} + 2\omega_{6}\omega_{19}\omega_{16}v_3^2\omega_{7}\omega_{23}\omega_{17}\omega_{8}v_1 + 2\omega_{6}\omega_{16}v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{8}v_1^2\omega_{18} - \omega_{6}\omega_{19}c_s^2\omega_{16}\omega_{7}\omega_{23}\omega_{20}\omega_{17}\omega_{8}v_1 + \\
2\omega_{6}\omega_{19}c_s^2\omega_{16}v_3\omega_{7}\omega_{23}\omega_{20}\omega_{11}\omega_{18} - 2\omega_{6}\omega_{16}v_3\omega_{7}\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{8}v_1^2\omega_{18} + 2\omega_{6}\omega_{16}v_3^2\omega_{20}\omega_{17}\omega_{11}\omega_{8}v_1\omega_{18} + \omega_{19}c_s^2\omega_{16}\omega_{7}\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{8}v_1\omega_{18} - \\
2\omega_{6}\omega_{19}\omega_{16}v_3\omega_{7}\omega_{23}\omega_{17}\omega_{8}v_1^2 - 2\omega_{6}\omega_{19}c_s^2\omega_{16}v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{8}\omega_{18} + \omega_{6}\omega_{19}\omega_{16}v_3^2\omega_{7}\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{8}v_1 + 2\omega_{6}\omega_{19}c_s^2\omega_{16}v_3\omega_{7}\omega_{23}\omega_{17}\omega_{11}\omega_{8} - \\
2\omega_{6}\omega_{19}\omega_{16}v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{8}v_1^2\omega_{18} - \omega_{6}\omega_{19}\omega_{16}v_3^2\omega_{7}\omega_{23}\omega_{20}\omega_{17}\omega_{8}v_1 + \omega_{19}c_s^2\omega_{16}v_3\omega_{7}\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{8} + 2\omega_{6}c_s^2\omega_{16}\omega_{20}\omega_{17}\omega_{11}\omega_{8}v_1\omega_{18}
\end{gathered}
$$

$$
\begin{gathered}
C_{18} = 2\omega_{6}\omega_{19}c_s^2\omega_{16}v_3\omega_{7}\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{8}v_1 + 4\omega_{6}\omega_{19}v_3\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_{8}v_1\omega_{18} + \omega_{19}\omega_{16}\omega_{7}\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_{8}v_1^2 - \\
\omega_{6}\omega_{19}\omega_{16}\omega_{7}\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_{8}v_1^2\omega_{18} + 2\omega_{6}\omega_{19}c_s^2\omega_{16}\omega_{7}\omega_{23}\omega_{17}v_2^2\omega_{8}\omega_{18} - 2\omega_{6}\omega_{19}\omega_{16}v_3\omega_{7}\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_{8}v_1 - \\
2\omega_{19}\omega_{16}v_3\omega_{7}\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_{8}v_1 + 2\omega_{19}\omega_{16}\omega_{7}\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2v_1^2\omega_{18} + \omega_{6}\omega_{19}c_s^2\omega_{7}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_{8}\omega_{18} + 4\omega_{6}\omega_{19}v_3\omega_{23}\omega_{20}\omega_{11}v_2^2\omega_{8}v_1\omega_{18} - \\
4\omega_{6}\omega_{19}\omega_{16}v_3\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_{8}v_1\omega_{18} - \omega_{6}\omega_{19}c_s^2\omega_{16}\omega_{7}\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_{8}\omega_{18} - \omega_{19}c_s^2\omega_{16}\omega_{7}\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{8}v_1^2\omega_{18} + \\
2\omega_{19}\omega_{16}\omega_{7}\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_{8}v_1^2\omega_{18} + \omega_{6}\omega_{19}c_s^2\omega_{7}\omega_{23}\omega_{20}\omega_{11}v_2^2\omega_{8}\omega_{18} - 4\omega_{6}\omega_{19}\omega_{16}v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2v_1\omega_{18} + 4\omega_{6}c_s^2\omega_{16}v_3\omega_{20}\omega_{17}\omega_{11}\omega_{8}v_1\omega_{18} - \\
2\omega_{6}\omega_{19}c_s^2\omega_{16}\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_{18} + 2\omega_{6}\omega_{19}\omega_{16}\omega_{7}\omega_{23}\omega_{17}\omega_{11}v_2^2v_1^2\omega_{18} - 4\omega_{6}\omega_{16}v_3\omega_{7}\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_{8}v_1\omega_{18} + 2\omega_{6}\omega_{19}c_s^2\omega_{16}\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_{18} + \\
2\omega_{6}\omega_{16}\omega_{7}\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_{8}v_1^2\omega_{18} - 4\omega_{6}\omega_{19}c_s^2v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{8}v_1\omega_{18} - 2\omega_{6}\omega_{19}\omega_{16}\omega_{7}\omega_{23}\omega_{17}v_2^2\omega_{8}v_1^2 + \omega_{6}\omega_{19}\omega_{16}\omega_{7}\omega_{20}\omega_{17}v_2^2\omega_{8}v_1^2\omega_{18} + \\
2\omega_{6}c_s^2\omega_{16}\omega_{7}\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_{8}\omega_{18} + 4\omega_{6}\omega_{16}v_3\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_{8}v_1\omega_{18} - 4\omega_{6}\omega_{19}c_s^2\omega_{16}v_3\omega_{23}\omega_{20}\omega_{11}\omega_{8}v_1\omega_{18} - 2\omega_{6}c_s^2\omega_{16}\omega_{20}\omega_{17}\omega_{11}\omega_{8}v_1^2\omega_{18} - \\
\omega_{6}\omega_{19}c_s^2\omega_{7}\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_{8}\omega_{18} - 2\omega_{6}\omega_{19}c_s^2\omega_{16}\omega_{7}\omega_{23}\omega_{17}\omega_{8}v_1^2 - 4\omega_{6}\omega_{19}c_s^2\omega_{16}v_3\omega_{20}\omega_{17}\omega_{11}\omega_{8}v_1\omega_{18} + 2\omega_{6}\omega_{19}\omega_{16}\omega_{7}\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_{8}v_1^2 - \\
2\omega_{6}c_s^2\omega_{16}\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_{8}\omega_{18} + 2\omega_{6}\omega_{19}c_s^2v_3\omega_{7}\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{8}v_1\omega_{18} - 4\omega_{19}c_s^2\omega_{16}v_3\omega_{7}\omega_{23}\omega_{17}\omega_{11}\omega_{8}v_1\omega_{18} - \\
2\omega_{6}\omega_{19}\omega_{16}\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_{8}v_1^2\omega_{18} + 4\omega_{19}\omega_{16}v_3\omega_{7}\omega_{23}\omega_{17}\omega_{11}v_2^2v_1\omega_{18} - \omega_{6}\omega_{19}\omega_{7}\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_{8}v_1^2\omega_{18} - \\
4\omega_{6}\omega_{19}\omega_{16}v_3\omega_{7}\omega_{23}\omega_{17}v_2^2\omega_{8}v_1\omega_{18} + 2\omega_{6}\omega_{19}c_s^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_{8}\omega_{18} - 4\omega_{6}\omega_{19}\omega_{16}v_3\omega_{7}\omega_{23}\omega_{20}\omega_{11}v_2^2v_1\omega_{18} - 2\omega_{19}c_s^2\omega_{16}\omega_{7}\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_{8} - \\
2\omega_{19}\omega_{16}v_3\omega_{7}\omega_{23}\omega_{20}\omega_{11}v_2^2\omega_{8}v_1\omega_{18} + 4\omega_{6}c_s^2\omega_{16}v_3\omega_{7}\omega_{20}\omega_{17}\omega_{8}v_1\omega_{18} - 4\omega_{6}\omega_{19}c_s^2\omega_{16}v_3\omega_{7}\omega_{23}\omega_{17}\omega_{11}v_1\omega_{18} + \\
2\omega_{19}c_s^2\omega_{16}\omega_{7}\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_{18} - 2\omega_{6}\omega_{19}c_s^2v_3\omega_{7}\omega_{23}\omega_{20}\omega_{11}\omega_{8}v_1\omega_{18} + 4\omega_{6}\omega_{19}\omega_{16}v_3\omega_{7}\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2v_1\omega_{18} - \\
2\omega_{6}\omega_{19}c_s^2\omega_{16}\omega_{23}\omega_{20}\omega_{11}v_1^2\omega_{18} - 4\omega_{19}c_s^2\omega_{16}v_3\omega_{7}\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_1\omega_{18} + 2\omega_{6}\omega_{16}\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_{8}v_1^2\omega_{18} + \\
4\omega_{6}\omega_{19}\omega_{16}v_3\omega_{7}\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_{8}v_1\omega_{18} - 2\omega_{6}\omega_{19}c_s^2v_3\omega_{7}\omega_{20}\omega_{17}\omega_{11}\omega_{8}v_1\omega_{18} - 2\omega_{6}c_s^2\omega_{16}\omega_{7}\omega_{20}\omega_{17}\omega_{8}v_1^2\omega_{18} + 4\omega_{6}\omega_{16}v_3\omega_{7}\omega_{23}\omega_{17}v_2^2\omega_{8}v_1\omega_{18} - \\
2\omega_{6}\omega_{19}c_s^2\omega_{16}v_3\omega_{7}\omega_{20}\omega_{17}\omega_{8}v_1\omega_{18} + 2\omega_{6}\omega_{19}c_s^2\omega_{16}\omega_{7}\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_{8} + \omega_{6}\omega_{19}\omega_{16}\omega_{7}\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_{8}v_1^2\omega_{18} - \\
4\omega_{6}\omega_{19}c_s^2\omega_{16}v_3\omega_{7}\omega_{23}\omega_{20}\omega_{11}v_1\omega_{18} - 2\omega_{6}\omega_{19}c_s^2\omega_{16}\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{8}v_1^2\omega_{18} + 4\omega_{6}c_s^2\omega_{16}v_3\omega_{7}\omega_{23}\omega_{17}\omega_{8}v_1\omega_{18} - 2\omega_{6}\omega_{16}\omega_{7}\omega_{23}\omega_{17}v_2^2\omega_{8}v_1^2\omega_{18} - \\
2\omega_{6}\omega_{19}c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_{8}v_1^2\omega_{18} + 2\omega_{6}\omega_{19}c_s^2\omega_{16}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_{8}\omega_{18} - 2\omega_{6}\omega_{19}c_s^2\omega_{23}\omega_{20}\omega_{11}\omega_{8}v_1^2\omega_{18} + 2\omega_{6}\omega_{19}c_s^2\omega_{16}\omega_{23}\omega_{20}\omega_{11}v_2^2\omega_{8}\omega_{18} - \\
\omega_{6}\omega_{19}c_s^2\omega_{16}\omega_{7}\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_{8} + 2\omega_{6}\omega_{19}c_s^2\omega_{16}\omega_{23}\omega_{17}\omega_{11}\omega_{8}v_1^2\omega_{18} + 2\omega_{6}c_s^2\omega_{16}\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{8}v_1^2\omega_{18} - 2\omega_{6}\omega_{19}\omega_{16}\omega_{23}\omega_{20}\omega_{11}v_2^2v_1^2\omega_{18} - \\
4\omega_{6}\omega_{19}c_s^2\omega_{16}v_3\omega_{7}\omega_{23}\omega_{17}\omega_{8}v_1\omega_{18} - 4\omega_{6}c_s^2\omega_{16}v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{8}v_1\omega_{18} + 2\omega_{6}\omega_{19}c_s^2\omega_{16}v_3\omega_{7}\omega_{23}\omega_{20}\omega_{11}\omega_{8}v_1\omega_{18} + \\
2\omega_{6}\omega_{19}\omega_{16}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_{8}v_1^2\omega_{18} + 2\omega_{6}\omega_{19}c_s^2\omega_{16}v_3\omega_{7}\omega_{20}\omega_{17}\omega_{11}\omega_{8}v_1\omega_{18} - 2\omega_{6}c_s^2\omega_{16}\omega_{7}\omega_{23}\omega_{17}\omega_{8}v_1^2\omega_{18} - 2\omega_{6}\omega_{19}c_s^2\omega_{16}\omega_{23}\omega_{17}\omega_{11}v_1^2\omega_{18} + \\
4\omega_{6}\omega_{19}c_s^2\omega_{16}v_3\omega_{7}\omega_{23}\omega_{17}\omega_{8}v_1 - 2\omega_{6}c_s^2\omega_{16}\omega_{7}\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_{8}\omega_{18} + 2\omega_{6}\omega_{19}\omega_{16}\omega_{23}\omega_{20}\omega_{11}v_2^2\omega_{8}v_1^2\omega_{18} + 2\omega_{6}\omega_{19}c_s^2\omega_{16}\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_1^2\omega_{18} - \\
2\omega_{6}\omega_{16}\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_{8}v_1^2\omega_{18} - \omega_{6}\omega_{19}c_s^2\omega_{16}\omega_{7}\omega_{20}\omega_{17}\omega_{11}\omega_{8}v_1^2\omega_{18} + 4\omega_{19}c_s^2\omega_{16}v_3\omega_{7}\omega_{23}\omega_{17}\omega_{11}\omega_{8}v_1 - \omega_{6}\omega_{19}\omega_{16}\omega_{7}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_{8}v_1^2\omega_{18} + \\
2\omega_{6}\omega_{19}v_3\omega_{7}\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_{8}v_1\omega_{18} - 2\omega_{6}\omega_{19}c_s^2\omega_{16}\omega_{7}\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_{8}\omega_{18} - 2\omega_{6}\omega_{16}\omega_{7}\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_{8}v_1^2\omega_{18} + \\
4\omega_{6}\omega_{19}\omega_{16}v_3\omega_{7}\omega_{23}\omega_{17}v_2^2\omega_{8}v_1 - \omega_{6}\omega_{19}c_s^2\omega_{16}\omega_{7}\omega_{23}\omega_{20}\omega_{11}\omega_{8}v_1^2\omega_{18} - 4\omega_{6}\omega_{19}\omega_{16}v_3\omega_{7}\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_{8}v_1 + \omega_{6}\omega_{19}c_s^2\omega_{16}\omega_{7}\omega_{20}\omega_{17}v_2^2\omega_{8}\omega_{18} + \\
\omega_{19}c_s^2\omega_{16}\omega_{7}\omega_{23}\omega_{20}\omega_{11}v_2^2\omega_{8}\omega_{18} + 2\omega_{19}c_s^2\omega_{16}\omega_{7}\omega_{23}\omega_{17}\omega_{11}\omega_{8}v_1^2\omega_{18} - \omega_{6}\omega_{19}\omega_{16}\omega_{7}\omega_{23}\omega_{20}\omega_{11}v_2^2\omega_{8}v_1^2\omega_{18} + 4\omega_{6}\omega_{19}\omega_{16}v_3\omega_{23}\omega_{17}\omega_{11}v_2^2v_1\omega_{18} - \\
4\omega_{6}c_s^2\omega_{16}v_3\omega_{7}\omega_{20}\omega_{17}\omega_{11}\omega_{8}v_1\omega_{18} + \omega_{6}\omega_{19}\omega_{16}\omega_{7}\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_{8}v_1^2 + 2\omega_{6}c_s^2\omega_{16}\omega_{7}\omega_{20}\omega_{17}\omega_{11}\omega_{8}v_1^2\omega_{18} + 2\omega_{6}\omega_{16}\omega_{7}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_{8}v_1^2\omega_{18} - \\
2\omega_{19}\omega_{16}\omega_{7}\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_{8}v_1^2 + 4\omega_{6}\omega_{19}c_s^2\omega_{16}v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{8}v_1\omega_{18} + 2\omega_{6}c_s^2\omega_{16}\omega_{7}\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_{8}\omega_{18} + \omega_{19}c_s^2\omega_{16}\omega_{7}\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{8}v_1^2 + \\
\omega_{6}\omega_{19}c_s^2\omega_{16}\omega_{7}\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_{8} - 2\omega_{19}\omega_{16}\omega_{7}\omega_{23}\omega_{17}\omega_{11}v_2^2v_1^2\omega_{18} + 2\omega_{19}c_s^2\omega_{16}\omega_{7}\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_1^2\omega_{18} + \omega_{6}\omega_{19}c_s^2\omega_{16}\omega_{7}\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_{8}\omega_{18} - \\
2\omega_{6}\omega_{19}c_s^2\omega_{16}\omega_{23}\omega_{20}\omega_{11}v_2^2\omega_{18} + 2\omega_{6}\omega_{19}\omega_{16}v_3\omega_{7}\omega_{23}\omega_{20}\omega_{11}v_2^2\omega_{8}v_1\omega_{18} - 2\omega_{19}c_s^2\omega_{16}\omega_{7}\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_{18} - \\
2\omega_{6}\omega_{19}c_s^2\omega_{16}v_3\omega_{7}\omega_{23}\omega_{20}\omega_{17}\omega_{8}v_1 - 2\omega_{6}c_s^2\omega_{16}\omega_{7}\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{8}v_1^2\omega_{18} - 2\omega_{6}\omega_{19}\omega_{23}\omega_{20}\omega_{11}v_2^2\omega_{8}v_1^2\omega_{18} + 2\omega_{6}\omega_{19}c_s^2\omega_{16}\omega_{7}\omega_{23}\omega_{20}\omega_{11}v_2^2\omega_{18} + \\
2\omega_{6}c_s^2\omega_{16}\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_{8}\omega_{18} + 4\omega_{6}\omega_{19}c_s^2\omega_{16}v_3\omega_{7}\omega_{23}\omega_{17}\omega_{11}\omega_{8}v_1\omega_{18} - 2\omega_{6}\omega_{19}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_{8}v_1^2\omega_{18} - 2\omega_{6}\omega_{19}\omega_{16}\omega_{23}\omega_{17}\omega_{11}v_2^2v_1^2\omega_{18} + \\
4\omega_{6}\omega_{19}c_s^2\omega_{16}v_3\omega_{23}\omega_{17}\omega_{11}v_1\omega_{18} + 2\omega_{6}\omega_{19}\omega_{16}v_3\omega_{7}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_{8}v_1\omega_{18} - 2\omega_{6}c_s^2\omega_{16}\omega_{7}\omega_{23}\omega_{17}v_2^2\omega_{8}\omega_{18} + 2\omega_{6}\omega_{19}\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_{8}v_1^2\omega_{18} + \\
2\omega_{6}\omega_{19}c_s^2\omega_{16}\omega_{20}\omega_{17}\omega_{11}\omega_{8}v_1^2\omega_{18} - 2\omega_{6}\omega_{19}c_s^2\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_{8}\omega_{18} + 2\omega_{6}\omega_{19}c_s^2\omega_{16}\omega_{23}\omega_{20}\omega_{11}\omega_{8}v_1^2\omega_{18} + 4\omega_{19}c_s^2\omega_{16}v_3\omega_{7}\omega_{23}\omega_{20}\omega_{11}v_1\omega_{18} - \\
2\omega_{6}\omega_{19}c_s^2\omega_{23}\omega_{20}\omega_{11}v_2^2\omega_{8}\omega_{18} + 2\omega_{6}\omega_{19}c_s^2\omega_{16}\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_{8}\omega_{18} + 4\omega_{6}\omega_{19}c_s^2\omega_{16}v_3\omega_{7}\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_1\omega_{18} + \omega_{6}\omega_{19}c_s^2\omega_{16}\omega_{7}\omega_{23}\omega_{20}\omega_{17}\omega_{8}v_1^2 - \\
2\omega_{6}\omega_{19}c_s^2\omega_{16}\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_{8}\omega_{18} + \omega_{19}c_s^2\omega_{16}\omega_{7}\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_{8} - 4\omega_{19}\omega_{16}v_3\omega_{7}\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_{8}v_1\omega_{18} - \\
4\omega_{19}\omega_{16}v_3\omega_{7}\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2v_1\omega_{18} - 2\omega_{6}\omega_{16}\omega_{7}\omega_{20}\omega_{17}v_2^2\omega_{8}v_1^2\omega_{18} - 4\omega_{6}\omega_{19}v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_{8}v_1\omega_{18} + \\
2\omega_{6}\omega_{19}c_s^2\omega_{16}\omega_{7}\omega_{23}\omega_{17}\omega_{11}v_1^2\omega_{18} - \omega_{6}\omega_{19}c_s^2\omega_{16}\omega_{7}\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{8}v_1^2 + 4\omega_{6}\omega_{16}v_3\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_{8}v_1\omega_{18} - 2\omega_{19}\omega_{16}\omega_{7}\omega_{23}\omega_{20}\omega_{11}v_2^2v_1^2\omega_{18} - \\
2\omega_{19}c_s^2\omega_{16}\omega_{7}\omega_{23}\omega_{20}\omega_{11}v_1^2\omega_{18} + \omega_{6}\omega_{19}c_s^2\omega_{16}\omega_{7}\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{8}v_1^2\omega_{18} - 4\omega_{6}\omega_{16}v_3\omega_{7}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_{8}v_1\omega_{18} + \\
4\omega_{6}\omega_{19}c_s^2v_3\omega_{23}\omega_{20}\omega_{11}\omega_{8}v_1\omega_{18} + 2\omega_{6}c_s^2\omega_{16}\omega_{7}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_{8}\omega_{18} + 2\omega_{6}\omega_{19}\omega_{16}v_3\omega_{7}\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_{8}v_1 + 4\omega_{6}\omega_{19}c_s^2v_3\omega_{20}\omega_{17}\omega_{11}\omega_{8}v_1\omega_{18} - \\
2\omega_{19}c_s^2\omega_{16}v_3\omega_{7}\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{8}v_1 + 2\omega_{6}\omega_{19}c_s^2\omega_{16}\omega_{7}\omega_{23}\omega_{17}\omega_{11}\omega_{8}v_1^2 + 4\omega_{6}c_s^2\omega_{16}v_3\omega_{7}\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{8}v_1\omega_{18} - \\
4\omega_{6}c_s^2\omega_{16}v_3\omega_{7}\omega_{23}\omega_{17}\omega_{11}\omega_{8}v_1\omega_{18} - 2\omega_{6}\omega_{19}c_s^2\omega_{16}\omega_{7}\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_1^2\omega_{18} + 2\omega_{6}c_s^2\omega_{16}\omega_{7}\omega_{23}\omega_{17}\omega_{11}\omega_{8}v_1^2\omega_{18} + \\
\omega_{6}\omega_{19}c_s^2\omega_{16}\omega_{7}\omega_{20}\omega_{17}\omega_{8}v_1^2\omega_{18} + \omega_{19}c_s^2\omega_{16}\omega_{7}\omega_{23}\omega_{20}\omega_{11}\omega_{8}v_1^2\omega_{18} - 4\omega_{6}\omega_{19}\omega_{16}v_3\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_{8}v_1\omega_{18} + 2\omega_{19}c_s^2\omega_{16}\omega_{7}\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_{8}\omega_{18} - \\
2\omega_{6}\omega_{19}\omega_{16}v_3\omega_{7}\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_{8}v_1\omega_{18} + 4\omega_{6}\omega_{19}\omega_{16}v_3\omega_{23}\omega_{20}\omega_{11}v_2^2v_1\omega_{18} - 4\omega_{6}\omega_{19}c_s^2\omega_{16}v_3\omega_{7}\omega_{23}\omega_{17}\omega_{11}\omega_{8}v_1 - \\
\omega_{6}\omega_{19}c_s^2\omega_{16}\omega_{7}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_{8}\omega_{18} + \omega_{19}\omega_{16}\omega_{7}\omega_{23}\omega_{20}\omega_{11}v_2^2\omega_{8}v_1^2\omega_{18} - 2\omega_{6}\omega_{19}c_s^2\omega_{16}\omega_{7}\omega_{23}\omega_{17}\omega_{11}\omega_{8}v_1^2\omega_{18} - \\
4\omega_{6}\omega_{19}\omega_{16}v_3\omega_{23}\omega_{20}\omega_{11}v_2^2\omega_{8}v_1\omega_{18} + 2\omega_{19}c_s^2\omega_{16}v_3\omega_{7}\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{8}v_1\omega_{18} + 4\omega_{19}\omega_{16}v_3\omega_{7}\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_{8}v_1 - \\
\omega_{6}\omega_{19}c_s^2\omega_{16}\omega_{7}\omega_{23}\omega_{20}\omega_{11}v_2^2\omega_{8}\omega_{18} - 4\omega_{6}\omega_{19}c_s^2\omega_{16}v_3\omega_{23}\omega_{17}\omega_{11}\omega_{8}v_1\omega_{18} + 2\omega_{6}c_s^2\omega_{16}\omega_{7}\omega_{23}\omega_{20}\omega_{17}\omega_{8}v_1^2\omega_{18} - 2\omega_{6}c_s^2\omega_{16}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_{8}\omega_{18} - \\
4\omega_{6}c_s^2\omega_{16}v_3\omega_{7}\omega_{23}\omega_{20}\omega_{17}\omega_{8}v_1\omega_{18} - \omega_{6}\omega_{19}c_s^2\omega_{7}\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{8}v_1^2\omega_{18} - 2\omega_{6}c_s^2\omega_{16}\omega_{23}\omega_{17}\omega_{11}\omega_{8}v_1^2\omega_{18} - 2\omega_{19}c_s^2\omega_{16}\omega_{7}\omega_{23}\omega_{17}\omega_{11}\omega_{8}v_1^2 + \\
2\omega_{6}\omega_{19}\omega_{16}\omega_{7}\omega_{23}\omega_{20}\omega_{11}v_2^2v_1^2\omega_{18} + 4\omega_{6}\omega_{19}\omega_{16}v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_{8}v_1\omega_{18} + 2\omega_{6}\omega_{16}\omega_{7}\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_{8}v_1^2\omega_{18} + \\
2\omega_{6}\omega_{19}\omega_{16}\omega_{7}\omega_{23}\omega_{17}v_2^2\omega_{8}v_1^2\omega_{18} - 2\omega_{19}c_s^2\omega_{16}\omega_{7}\omega_{23}\omega_{17}\omega_{11}v_1^2\omega_{18} + 2\omega_{6}\omega_{19}c_s^2\omega_{16}\omega_{7}\omega_{23}\omega_{20}\omega_{11}v_1^2\omega_{18} - 4\omega_{6}\omega_{16}v_3\omega_{7}\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_{8}v_1\omega_{18} - \\
4\omega_{6}\omega_{19}c_s^2\omega_{16}v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_1\omega_{18} + \omega_{6}\omega_{19}c_s^2\omega_{7}\omega_{20}\omega_{17}\omega_{11}\omega_{8}v_1^2\omega_{18} + 4\omega_{6}c_s^2\omega_{16}v_3\omega_{23}\omega_{17}\omega_{11}\omega_{8}v_1\omega_{18} - \omega_{6}\omega_{19}\omega_{16}\omega_{7}\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_{8}v_1^2 - \\
\omega_{19}c_s^2\omega_{16}\omega_{7}\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_{8}\omega_{18} - \omega_{6}\omega_{19}c_s^2\omega_{16}\omega_{7}\omega_{23}\omega_{20}\omega_{17}\omega_{8}v_1^2\omega_{18} + \omega_{6}\omega_{19}\omega_{7}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_{8}v_1^2\omega_{18} + \omega_{6}\omega_{19}c_s^2\omega_{7}\omega_{23}\omega_{20}\omega_{11}\omega_{8}v_1^2\omega_{18} + \\
\omega_{6}\omega_{19}\omega_{7}\omega_{23}\omega_{20}\omega_{11}v_2^2\omega_{8}v_1^2\omega_{18} - 2\omega_{6}\omega_{16}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_{8}v_1^2\omega_{18} - 2\omega_{6}\omega_{19}\omega_{16}\omega_{7}\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_{8}v_1^2\omega_{18} - \\
2\omega_{6}\omega_{19}\omega_{16}\omega_{7}\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2v_1^2\omega_{18} + 2\omega_{6}\omega_{19}c_s^2\omega_{16}\omega_{7}\omega_{23}\omega_{17}\omega_{8}v_1^2\omega_{18} - 2\omega_{6}c_s^2\omega_{16}\omega_{7}\omega_{20}\omega_{17}v_2^2\omega_{8}\omega_{18} - 2\omega_{6}\omega_{19}v_3\omega_{7}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_{8}v_1\omega_{18} - \\
2\omega_{6}\omega_{19}c_s^2\omega_{16}v_3\omega_{7}\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{8}v_1\omega_{18} + 4\omega_{6}\omega_{16}v_3\omega_{7}\omega_{20}\omega_{17}v_2^2\omega_{8}v_1\omega_{18} + 4\omega_{6}\omega_{19}c_s^2\omega_{16}v_3\omega_{23}\omega_{20}\omega_{11}v_1\omega_{18} - \\
2\omega_{6}\omega_{19}c_s^2\omega_{16}\omega_{7}\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_{18} + 2\omega_{6}\omega_{19}c_s^2\omega_{16}v_3\omega_{7}\omega_{23}\omega_{20}\omega_{17}\omega_{8}v_1\omega_{18} + 2\omega_{6}\omega_{19}\omega_{16}\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_{8}v_1^2\omega_{18} - \\
2\omega_{6}\omega_{19}v_3\omega_{7}\omega_{23}\omega_{20}\omega_{11}v_2^2\omega_{8}v_1\omega_{18} + 2\omega_{19}\omega_{16}v_3\omega_{7}\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_{8}v_1\omega_{18} + 2\omega_{6}\omega_{19}\omega_{16}v_3\omega_{7}\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_{8}v_1\omega_{18} +
\end{gathered}
$$

$2\omega_6\omega_{19}c_s^2\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_{18} - \omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8v_1^2\omega_{18} + 2\omega_6\omega_{19}\omega_{16}\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2v_1^2\omega_{18} -$
$4\omega_6\omega_{16}v_3\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8v_1\omega_{18} - 2\omega_{19}c_s^2\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{11}v_2^2\omega_{18} - 4\omega_6\omega_{19}\omega_{16}v_3\omega_7\omega_{23}\omega_{17}\omega_{11}v_2^2v_1\omega_{18} - 2\omega_6\omega_{19}c_s^2\omega_{16}\omega_7\omega_{23}\omega_{17}v_2^2\omega_8 +$
$2\omega_6\omega_{19}c_s^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1^2\omega_{18} - 2\omega_6\omega_{19}\omega_{16}v_3\omega_7\omega_{20}\omega_{17}v_2^2\omega_8v_1\omega_{18} + 4\omega_{19}c_s^2\omega_{16}v_3\omega_7\omega_{23}\omega_{17}\omega_{11}v_1\omega_{18} +$
$4\omega_6\omega_{16}v_3\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_8v_1\omega_{18} + 4\omega_{19}\omega_{16}v_3\omega_7\omega_{23}\omega_{20}\omega_{11}v_2^2v_1\omega_{18} - 2\omega_{19}c_s^2\omega_{16}v_3\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8v_1\omega_{18}$

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

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

$C_{21} = -18\omega_6\omega_{22}\omega_{13}\omega_{11}^2\omega_{18}^2 - 36\omega_6\omega_{22}c_s^2\omega_{11}^2\omega_{18}^2 - 36\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18}^2 + 6\omega_6^2\omega_{11}^3\omega_{18}^2 + 6\omega_6^2\omega_{22}\omega_{13}\omega_{11}^3\omega_{18} + 36\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{11}^3 +$
$6\omega_6^2\omega_{13}\omega_{11}^2\omega_{18}^2 - 12\omega_6^2\omega_{22}v_3^2\omega_{13}\omega_{11}\omega_{18} - 12\omega_6^2\omega_{22}\omega_{13}\omega_{18}^2 - 18\omega_6\omega_{22}\omega_{13}\omega_{11}^3\omega_{18} - 36\omega_6\omega_{22}c_s^2\omega_{13}\omega_{11}^3 - 36\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{11}^2 + 2\omega_6^2\omega_{22}\omega_{13}\omega_{11}^2\omega_{18}^2 +$
$12\omega_6^2\omega_{13}\omega_{11}^3\omega_{18} + 18\omega_6^2\omega_{22}c_s^2\omega_{11}^2\omega_{18}^2 - 18\omega_6^2\omega_{22}\omega_{13}\omega_{11}^2\omega_{18} - 6\omega_6^2\omega_{13}\omega_{11}^3\omega_{18}^2 + 12\omega_6\omega_{22}\omega_{11}^2\omega_{18}^2 - 18\omega_6^2c_s^2\omega_{11}^3\omega_{18}^2 - 12\omega_6^2\omega_{22}v_3^2\omega_{13}\omega_{11}\omega_{18}^2 +$
$12\omega_6\omega_{22}\omega_{13}\omega_{11}^3\omega_{18}^2 - 36\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18} + 12\omega_6^2\omega_{22}v_3^2\omega_{13}\omega_{18}^2 + 12\omega_6\omega_{22}\omega_{13}\omega_{11}^3 - \omega_6^2\omega_{22}\omega_{13}\omega_{11}^3\omega_{18}^2 - 12\omega_6^2\omega_{13}\omega_{11}^2\omega_{18} + 18\omega_{19}c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{11} -$
$36\omega_{16}\omega_7^3\omega_{23}v_2^2 - 5\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11} - 12c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{11} - 36\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{11}v_2^2 - 3\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11}v_2^2 + 12c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{11} +$
$12\omega_{16}\omega_7^3\omega_{23} + \omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11} - 18\omega_{19}\omega_{16}\omega_{10}\omega_7^3v_2^2 + 12\omega_{19}c_s^2\omega_{10}\omega_7\omega_{23}\omega_{11} + 6\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{11} + 36\omega_{19}\omega_{10}\omega_7\omega_{23}\omega_{11}v_2^2 +$
$18\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{11}v_2^2 + 6\omega_{19}\omega_{16}\omega_{10}\omega_7^3 - 12\omega_{19}\omega_{10}\omega_7\omega_{23}\omega_{11} - 6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{11} - 6\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3$

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

$C_{23} = 12\omega_{19}\omega_{16}v_3^2\omega_7\omega_{11}^3 + 18\omega_{19}^2\omega_{16}v_3^2\omega_7\omega_{23}\omega_{11}^2 + 12\omega_{19}^2\omega_{16}\omega_7\omega_{23}\omega_{11}^3 + 18\omega_{19}^2c_s^2\omega_7^2\omega_{23}\omega_{11}^2 - 18\omega_{19}^2\omega_{16}\omega_7\omega_{23}\omega_{11}^2 + 12\omega_{19}^2\omega_{16}\omega_7\omega_{11}^3 -$
$12\omega_{19}^2\omega_{16}v_3^2\omega_7\omega_{23}\omega_{11}^3 + 54\omega_{19}c_s^2\omega_{16}\omega_7\omega_{23}\omega_{11}^3 - 12\omega_{19}^2\omega_{16}v_3^2\omega_7\omega_{11}^3 - 18\omega_{19}^2c_s^2\omega_7^2\omega_{11}^3 - 12\omega_{16}v_3^2\omega_7\omega_{23}\omega_{11}^3 - 18\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{11}^3 +$
$12\omega_{19}^2\omega_{16}\omega_{23}\omega_{11}^2 - 12\omega_{19}^2\omega_{16}\omega_7^2\omega_{23} - 18\omega_{19}^2c_s^2\omega_{16}\omega_7^2\omega_{11}^2 - 12\omega_{19}\omega_{16}v_3^2\omega_{23}\omega_{11}^3 - 40\omega_{19}^2c_s^2\omega_{16}\omega_7\omega_{23}\omega_{11}^3 + 18\omega_{19}\omega_{16}v_3^2\omega_7\omega_{23}\omega_{11}^3 +$
$6\omega_{19}^2v_3^2\omega_7^2\omega_{23}\omega_{11}^2 - 12\omega_{16}\omega_7^2\omega_{23}\omega_{11}^3 - 36c_s^2\omega_{16}\omega_7\omega_{23}\omega_{11}^3 - 12\omega_{19}^2\omega_{16}v_3^2\omega_{23}\omega_{11}^2 + 12\omega_{19}^2\omega_{16}v_3^2\omega_7^2\omega_{23} - 36\omega_{19}c_s^2\omega_{16}\omega_7^2\omega_{11}^3 + 12\omega_{19}\omega_{16}\omega_7^2\omega_{11}^3 +$
$12\omega_{19}^2\omega_7\omega_{23}\omega_{11}^2 + 12\omega_{16}\omega_7^2\omega_{23}\omega_{11}^2 + 6\omega_{19}^2\omega_7^2\omega_{11}^3 + 54\omega_{19}^2c_s^2\omega_{16}\omega_7\omega_{23}\omega_{11}^2 + 18\omega_{19}^2c_s^2\omega_{16}\omega_7^2\omega_{11}^3 - 12\omega_{19}^2\omega_{16}\omega_{23}\omega_{11}^3 - 12\omega_{19}\omega_{16}\omega_7^2\omega_{11}^2 +$
$12\omega_{19}^2v_3^2\omega_7^2\omega_{11}^3 + 36\omega_{19}c_s^2\omega_{16}\omega_7^2\omega_{11}^2 + 12\omega_{19}^2\omega_{16}v_3^2\omega_{23}\omega_{11}^3 - 6\omega_{19}\omega_{16}v_3^2\omega_7^2\omega_{23}\omega_{11}^3 - 36\omega_{19}^2c_s^2\omega_{16}\omega_7\omega_{11}^3 - 12\omega_{19}^2\omega_7\omega_{11}^3 - 12\omega_{19}^2v_3^2\omega_7\omega_{23}\omega_{11}^2 +$
$12\omega_{16}\omega_7\omega_{23}\omega_{11}^3 + 5\omega_{19}^2c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}^3 - 6\omega_{19}^2v_3^2\omega_7^2\omega_{11}^3 + 36c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}^3 + 12\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}\omega_{11} - 6\omega_{19}^2c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}^2 +$
$12\omega_{19}\omega_{16}\omega_7^2\omega_{23}\omega_{11} + 18\omega_{19}\omega_{16}v_3^2\omega_7^2\omega_{23}\omega_{11}^2 - 6\omega_{19}^2\omega_7^2\omega_{23}\omega_{11}^2 + 36\omega_{19}c_s^2\omega_{16}\omega_7\omega_{11}^3 - 36c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}^2 - 12\omega_{19}^2\omega_{16}v_3^2\omega_7^2\omega_{23}\omega_{11} -$
$12\omega_{19}\omega_{16}\omega_7\omega_{11}^3 - 36\omega_{19}c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{11} - \omega_{19}^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}^3 - 36\omega_{19}^2c_s^2\omega_7\omega_{23}\omega_{11}^2 - 6\omega_{19}^2\omega_{16}\omega_7^2\omega_{11}^3 + 36\omega_{19}^2c_s^2\omega_{16}\omega_{23}\omega_{11}^3 -$
$2\omega_{19}^2\omega_{16}v_3^2\omega_7^2\omega_{23}\omega_{11}^2 + 12\omega_{19}\omega_{16}v_3^2\omega_7^2\omega_{11}^2 + 54\omega_{19}c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}^2 + 36\omega_{19}^2c_s^2\omega_7\omega_{11}^3 + 6\omega_{19}^2\omega_{16}v_3^2\omega_7^2\omega_{11}^3 - 12\omega_{16}v_3^2\omega_7^2\omega_{23}\omega_{11}^2 -$
$36\omega_{19}^2c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{11} - 12\omega_{19}\omega_{16}v_3^2\omega_7^2\omega_{23}\omega_{11} - 18\omega_{19}\omega_{16}\omega_7^2\omega_{23}\omega_{11}^2 - 18\omega_{19}c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}^3 + 36\omega_{19}^2c_s^2\omega_{16}\omega_7^2\omega_{23} - 12\omega_{19}\omega_{16}v_3^2\omega_7^2\omega_{11}^3 +$

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

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

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

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

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

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

2.5 CLBM2

2.5.1 Definitions

Collision operator $\boldsymbol{C}$:

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

where

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

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

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

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

The transformation matrix $\mathbf{K}$ satisfies

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

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

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

i.e.,

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

2.5.2 Conservation of mass: ρ

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

2.5.3 Conservation of momentum: ρv_1

attached text file: `output_d3q27_nse_clbm2_symbolic_pde_01.txt`

$$
\begin{aligned}
&v_1\frac{\partial \rho}{\partial t} + \rho\frac{\partial v_1}{\partial t} + (c_s^2+v_1^2)\frac{\delta_l}{\delta_t}\frac{\partial \rho}{\partial x_1} + \frac{2\rho\delta_l v_1}{\delta_t}\frac{\partial v_1}{\partial x_1} + \frac{v_2\delta_l v_1}{\delta_t}\frac{\partial \rho}{\partial x_2} + \frac{v_2\rho\delta_l}{\delta_t}\frac{\partial v_1}{\partial x_2} + \frac{\rho\delta_l v_1}{\delta_t}\frac{\partial v_2}{\partial x_2} + \frac{v_3\delta_l v_1}{\delta_t}\frac{\partial \rho}{\partial x_3} + \frac{v_3\rho\delta_l}{\delta_t}\frac{\partial v_1}{\partial x_3} + \\
&\frac{\rho\delta_l v_1}{\delta_t}\frac{\partial v_3}{\partial x_3} + (-2 - 2\omega_9c_s^2 + 4c_s^2 + 6v_1^2 + \omega_9 - 3v_1^2\omega_9)\frac{\delta_l^2}{\omega_9\delta_t}\frac{\partial \rho}{\partial x_1}\frac{\partial v_1}{\partial x_1} + (2-\omega_9)\frac{3\rho\delta_l^2 v_1}{\omega_9\delta_t}\left(\frac{\partial v_1}{\partial x_1}\right)^2 + \\
&(-2+\omega_5)\frac{\delta_l^2 c_s^2}{2\omega_5\delta_t}\frac{\partial \rho}{\partial x_2}\frac{\partial v_2}{\partial x_1} + (-2+\omega_5)\frac{\delta_l^2 c_s^2}{2\omega_5\delta_t}\frac{\partial \rho}{\partial x_2}\frac{\partial v_1}{\partial x_2} + (-2+\omega_6)\frac{\delta_l^2 c_s^2}{2\omega_6\delta_t}\frac{\partial \rho}{\partial x_3}\frac{\partial v_3}{\partial x_1} + (-2+\omega_6)\frac{\delta_l^2 c_s^2}{2\omega_6\delta_t}\frac{\partial \rho}{\partial x_3}\frac{\partial v_1}{\partial x_3} + \\
&(-2 - 3\omega_9c_s^2 + 6c_s^2 + 2v_1^2 + \omega_9 - v_1^2\omega_9)\frac{\delta_l^2 v_1}{2\omega_9\delta_t}\frac{\partial^2 \rho}{\partial x_1^2} + (-2 - \omega_9c_s^2 + 2c_s^2 + 6v_1^2 + \omega_9 - 3v_1^2\omega_9)\frac{\rho\delta_l^2}{2\omega_9\delta_t}\frac{\partial^2 v_1}{\partial x_1^2} + \\
&(-2+\omega_5)\frac{\rho\delta_l^2 c_s^2}{2\omega_5\delta_t}\frac{\partial^2 v_2}{\partial x_1\partial x_2} + (-2+\omega_5)\frac{\rho\delta_l^2 c_s^2}{2\omega_5\delta_t}\frac{\partial^2 v_1}{\partial x_2^2} + (-2+\omega_6)\frac{\rho\delta_l^2 c_s^2}{2\omega_6\delta_t}\frac{\partial^2 v_3}{\partial x_1\partial x_3} + (-2+\omega_6)\frac{\rho\delta_l^2 c_s^2}{2\omega_6\delta_t}\frac{\partial^2 v_1}{\partial x_3^2} + C_1\frac{\delta_l^3}{12\omega_9^2\delta_t}\frac{\partial^3 \rho}{\partial x_1^3} + \\
&(-24 - 36\omega_9c_s^2 + 36c_s^2 + 11v_1^2\omega_9^2 + 60v_1^2 + 24\omega_9 - 4\omega_9^2 + 5\omega_9^2c_s^2 - 60v_1^2\omega_9)\frac{\rho\delta_l^3 v_1}{6\omega_9^2\delta_t}\frac{\partial^3 v_1}{\partial x_1^3} + C_2\frac{\rho\delta_l^3 v_1}{12\omega_5\omega_9^2\omega_{12}\delta_t}\frac{\partial^3 v_2}{\partial x_1^2\partial x_2} + \\
&(-12 - \omega_5^2 + 12\omega_5)\frac{\delta_l^3 c_s^4}{6\omega_5^2\delta_t}\frac{\partial^3 \rho}{\partial x_1\partial x_2^2} - \frac{\rho\delta_l^3 v_1 c_s^2}{6\delta_t}\frac{\partial^3 v_1}{\partial x_1\partial x_2^2} + (-1+3c_s^2+v_2^2)\frac{v_2\delta_l^3 v_1}{12\delta_t}\frac{\partial^3 \rho}{\partial x_2^3} + C_3\frac{v_2\rho\delta_l^3}{6\omega_5\omega_{15}\delta_t}\frac{\partial^3 v_1}{\partial x_2^3} + \\
&(-1+c_s^2+3v_2^2)\frac{\rho\delta_l^3 v_1}{12\delta_t}\frac{\partial^3 v_2}{\partial x_2^3} + C_4\frac{\rho\delta_l^3 v_1}{12\omega_{13}\omega_9^2\omega_6\delta_t}\frac{\partial^3 v_3}{\partial x_1^2\partial x_3} - \frac{\rho\delta_l^3 v_1 c_s^2}{6\delta_t}\frac{\partial^3 v_3}{\partial x_2^2\partial x_3} + (-12 - \omega_6^2 + 12\omega_6)\frac{\delta_l^3 c_s^4}{6\omega_6^2\delta_t}\frac{\partial^3 \rho}{\partial x_1\partial x_3^2} - \\
&\frac{\rho\delta_l^3 v_1 c_s^2}{6\delta_t}\frac{\partial^3 v_1}{\partial x_1\partial x_3^2} - \frac{\rho\delta_l^3 v_1 c_s^2}{6\delta_t}\frac{\partial^3 v_2}{\partial x_2\partial x_3^2} + (-1+3c_s^2+v_3^2)\frac{v_3\delta_l^3 v_1}{12\delta_t}\frac{\partial^3 \rho}{\partial x_3^3} + C_5\frac{v_3\rho\delta_l^3}{6\omega_{18}\omega_6\delta_t}\frac{\partial^3 v_1}{\partial x_3^3} + (-1+c_s^2+3v_3^2)\frac{\rho\delta_l^3 v_1}{12\delta_t}\frac{\partial^3 v_3}{\partial x_3^3} +
\end{aligned}
$$

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

where:

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

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

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

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

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

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

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

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

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

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

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

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

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

$$C_{14} = -\omega_{13}^2\omega_9^2\omega_6^3c_s^2 - 3\omega_{13}^2v_1^2\omega_9^3\omega_6^2c_s^2 + 6\omega_{13}^2\omega_9^3\omega_6c_s^2 + 12\omega_{13}\omega_9^2\omega_6^2c_s^4 - 36\omega_{13}v_1^4\omega_9\omega_6^3 - 12\omega_{13}^2\omega_9\omega_6^3c_s^4 - 6\omega_{13}^2v_1^4\omega_9^3\omega_6^2 - 108\omega_{13}v_1^2\omega_9\omega_6^3c_s^2 -$$
$$6\omega_{13}\omega_9^3\omega_6^3c_s^2 + 12\omega_{13}^2\omega_6^3c_s^4 - 306\omega_{13}^2v_1^2\omega_9\omega_6^3c_s^2 - 19\omega_{13}^2v_1^2\omega_9^2\omega_6^3 + 4\omega_{13}^2v_1^4\omega_9^3\omega_6^3 + 72\omega_{13}^2v_1^4\omega_6^3 + 13\omega_{13}^2\omega_9^3\omega_6^2c_s^4 + 54\omega_{13}v_1^2\omega_9^3\omega_6^2c_s^2 -$$
$$12\omega_{13}^2\omega_9\omega_6^2c_s^4 + 12\omega_{13}\omega_9^3\omega_6c_s^4 - 6\omega_{13}\omega_9^2\omega_6^3c_s^4 + 36\omega_{13}v_1^2\omega_9\omega_6^3 + 12\omega_{13}^2v_1^2\omega_9^3\omega_6^3c_s^2 + 6\omega_{13}^2v_1^2\omega_9^3\omega_6^2 - 6\omega_{13}^2\omega_9^2\omega_6^2c_s^2 - \omega_{13}^2\omega_9^3\omega_6^3c_s^4 -$$
$$99\omega_{13}v_1^2\omega_9^3\omega_6^3c_s^2 - 108v_1^2\omega_9^2\omega_6^3c_s^2 + 19\omega_{13}^2v_1^4\omega_9^2\omega_6^3 + 18\omega_{13}\omega_9^3\omega_6^2c_s^2 - 4\omega_{13}^2v_1^2\omega_9^3\omega_6^3 - 36\omega_{13}^2v_1^2\omega_9\omega_6^2c_s^2 + 36\omega_{13}v_1^4\omega_9^3\omega_6^2 - 108v_1^2\omega_9^3\omega_6^2c_s^2 +$$
$$252\omega_{13}^2v_1^2\omega_6^3c_s^2 + 36\omega_{13}v_1^2\omega_9^2\omega_6^2c_s^2 - 90\omega_{13}^2v_1^4\omega_9\omega_6^3 + 6\omega_{13}^2\omega_9^2\omega_6^2c_s^4 + 12\omega_{13}^2\omega_9\omega_6^2c_s^2 - 12\omega_{13}\omega_9^3\omega_6c_s^2 - 72\omega_{13}^2v_1^2\omega_6^3 + 36v_1^2\omega_9^3\omega_6^2 + 6\omega_{13}\omega_9^2\omega_6^3c_s^2 +$$
$$12\omega_{13}^2\omega_9^3c_s^4 - 18\omega_{13}\omega_9^3\omega_6^2c_s^4 - 39\omega_{13}v_1^4\omega_9^3\omega_6^3 - 36v_1^4\omega_9^2\omega_6^3 - 36v_1^2\omega_9^3\omega_6^3 - 72\omega_{13}v_1^2\omega_9^2\omega_6^3 + 18\omega_{13}^2v_1^2\omega_9^2\omega_6^2c_s^2 - 36\omega_{13}v_1^2\omega_9^3\omega_6^2 - 12\omega_{13}\omega_9^2\omega_6^2c_s^2 +$$
$$90\omega_{13}^2v_1^2\omega_9\omega_6^3 + 12\omega_{13}^2\omega_9\omega_6^3c_s^2 + 198\omega_{13}v_1^2\omega_9^2\omega_6^3c_s^2 + \omega_{13}^2\omega_9^2\omega_6^3c_s^4 + 36\omega_{13}v_1^2\omega_9^3\omega_6c_s^2 - 36v_1^4\omega_9^3\omega_6^2 + 108v_1^2\omega_9^3\omega_6^3c_s^2 - 24\omega_{13}^2\omega_9^3\omega_6c_s^4 +$$
$$60\omega_{13}^2v_1^2\omega_9^2\omega_6^3c_s^2 - 18\omega_{13}^2v_1^2\omega_9^3\omega_6c_s^2 - 5\omega_{13}^2\omega_9^3\omega_6^2c_s^2 + 36v_1^2\omega_9^2\omega_6^3 + 39\omega_{13}v_1^2\omega_9^3\omega_6^3 + 72\omega_{13}v_1^4\omega_9^2\omega_6^3 + 36v_1^4\omega_9^3\omega_6^3 + 6\omega_{13}\omega_9^3\omega_6^3c_s^4 - 12\omega_{13}^2\omega_6^3c_s^2$$

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

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

$C_{16} = -6\omega_{13}\omega_{18}v_1^2\omega_9^3\omega_6^2\omega_{22} + 12\omega_{13}^2\omega_{18}\omega_9\omega_6^2\omega_{22} + 36\omega_{13}^2\omega_9^3\omega_6c_s^2 - 12\omega_{13}\omega_{18}\omega_9^3\omega_6 - 12\omega_{13}^2\omega_{18}v_1^2\omega_9\omega_6^2\omega_{22} + 12\omega_{18}\omega_9^3\omega_6\omega_{22} -$
$18\omega_{13}^2\omega_{18}\omega_9^2\omega_6\omega_{22} - 36\omega_{18}\omega_9^2\omega_6^2\omega_{22}c_s^2 + 12\omega_{13}^2v_1^2\omega_9^3\omega_6 + 6\omega_{13}^2\omega_9^3\omega_6^2 + 12\omega_{13}\omega_{18}\omega_9^3\omega_{22} + 36\omega_{13}^2\omega_{18}\omega_6^2\omega_{22}c_s^2 - 6\omega_{13}^2\omega_{18}\omega_9^2\omega_6^2\omega_{22}c_s^2 +$
$12\omega_{13}\omega_{18}\omega_9\omega_6^2\omega_{22} - 18\omega_{13}\omega_{18}\omega_9^3\omega_6^2\omega_{22}c_s^2 - 12\omega_{13}\omega_{18}\omega_9^2\omega_6^2 + 18\omega_{13}^2\omega_{18}v_1^2\omega_9^2\omega_6\omega_{22} + 6\omega_{13}\omega_{18}\omega_9^3\omega_6^2\omega_{22} + 18\omega_{13}^2\omega_{18}\omega_9^3\omega_6^2c_s^2 -$
$12\omega_{13}^2\omega_{18}\omega_6^2\omega_{22} + 36\omega_{18}\omega_9^3\omega_6^2\omega_{22}c_s^2 + 12\omega_{13}^2\omega_{18}v_1^2\omega_6^2\omega_{22} + 12\omega_{18}\omega_9^2\omega_6^2\omega_{22} + 54\omega_{13}\omega_{18}\omega_9^2\omega_6^2\omega_{22}c_s^2 - 6\omega_{13}^2v_1^2\omega_9^3\omega_6^2 - 12\omega_{13}^2\omega_9^3\omega_6 -$
$36\omega_{13}^2\omega_{18}\omega_9^2\omega_{22}c_s^2 + 5\omega_{13}^2\omega_{18}\omega_9^3\omega_6^2\omega_{22}c_s^2 + 18\omega_{13}^2\omega_9^2\omega_6^2\omega_{22}c_s^2 + 12\omega_{13}\omega_{18}\omega_9^3\omega_6^2 + \omega_{13}^2\omega_{18}v_1^2\omega_9^3\omega_6^2\omega_{22} - 12\omega_{13}^2v_1^2\omega_9^2\omega_6\omega_{22} - 6\omega_{13}^2\omega_9^2\omega_6^2\omega_{22} -$
$\omega_{13}^2\omega_{18}\omega_9^3\omega_6^2\omega_{22} - 36\omega_{13}\omega_{18}\omega_9^3\omega_6^2c_s^2 - 12\omega_{13}\omega_{18}v_1^2\omega_9\omega_6^2\omega_{22} + 12\omega_{18}v_1^2\omega_9^3\omega_6^2\omega_{22} - 12\omega_{13}^2\omega_{18}v_1^2\omega_9^3\omega_6 - 36\omega_{18}\omega_9^3\omega_6\omega_{22}c_s^2 + 6\omega_{13}^2v_1^2\omega_9^2\omega_6^2\omega_{22} +$
$12\omega_{13}^2\omega_9^2\omega_6\omega_{22} - 12\omega_{13}^2\omega_{18}v_1^2\omega_9^3\omega_6\omega_{22} + 12\omega_{13}^2\omega_{18}\omega_9^3\omega_6 - 40\omega_{13}^2\omega_{18}\omega_9^3\omega_6\omega_{22}c_s^2 - 12\omega_{13}\omega_{18}v_1^2\omega_9^3\omega_{22} + 12\omega_{13}^2\omega_{18}\omega_9^3\omega_6\omega_{22} +$
$36\omega_{13}\omega_{18}\omega_9^3\omega_6c_s^2 + 12\omega_{13}\omega_{18}v_1^2\omega_9^2\omega_6^2 - 12\omega_{18}v_1^2\omega_9^3\omega_6\omega_{22} - 18\omega_{13}\omega_{18}\omega_9^3\omega_6\omega_{22} - 36\omega_{13}^2\omega_{18}\omega_9^3\omega_6c_s^2 + 6\omega_{13}^2\omega_{18}\omega_9^2\omega_6^2 + 12\omega_{13}^2\omega_{18}v_1^2\omega_9^3\omega_{22} -$
$12\omega_{13}^2\omega_{18}\omega_9^3\omega_{22} - 36\omega_{13}^2\omega_{18}\omega_9\omega_6^2\omega_{22}c_s^2 - 6\omega_{13}^2\omega_{18}v_1^2\omega_9^2\omega_6^2 - 36\omega_{13}^2\omega_9^2\omega_6\omega_{22}c_s^2 + 12\omega_{13}\omega_{18}v_1^2\omega_9^3\omega_6 + 18\omega_{13}\omega_{18}v_1^2\omega_9^2\omega_6^2\omega_{22} -$
$12\omega_{13}\omega_{18}v_1^2\omega_9^3\omega_6^2 + 2\omega_{13}^2\omega_{18}\omega_9^2\omega_6^2\omega_{22} + 36\omega_{13}\omega_{18}\omega_9^2\omega_6^2c_s^2 - 12\omega_{18}v_1^2\omega_9^2\omega_6^2\omega_{22} - 36\omega_{13}\omega_{18}\omega_9\omega_6^2\omega_{22}c_s^2 - 2\omega_{13}^2\omega_{18}v_1^2\omega_9^2\omega_6^2\omega_{22} -$
$36\omega_{13}\omega_{18}\omega_9^3\omega_{22}c_s^2 - 18\omega_{13}^2\omega_9^3\omega_6^2c_s^2 + 36\omega_{13}^2\omega_{18}\omega_9^3\omega_{22}c_s^2 + 18\omega_{13}\omega_{18}v_1^2\omega_9^3\omega_6\omega_{22} + 6\omega_{13}^2\omega_{18}v_1^2\omega_9^3\omega_6^2 + 12\omega_{13}^2\omega_{18}\omega_9^2\omega_{22} - 18\omega_{13}\omega_{18}\omega_9^2\omega_6^2\omega_{22} -$
$18\omega_{13}^2\omega_{18}\omega_9^2\omega_6^2c_s^2 + 54\omega_{13}\omega_{18}\omega_9^3\omega_6\omega_{22}c_s^2 - 12\omega_{18}\omega_9^3\omega_6^2\omega_{22} - 12\omega_{13}^2\omega_{18}v_1^2\omega_9^2\omega_{22} - 6\omega_{13}^2\omega_{18}\omega_9^3\omega_6^2 + 54\omega_{13}^2\omega_{18}\omega_9^2\omega_6\omega_{22}c_s^2$

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

$C_{18} = -2\omega_{13}\omega_{14}v_2\omega_5\omega_{18}v_1^2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2 - 2\omega_{13}\omega_{20}\omega_8v_2v_3^2\omega_5\omega_{18}v_1^2\omega_9\omega_6\omega_{22} + \omega_{13}\omega_{20}\omega_{14}\omega_8v_3^2\omega_{18}v_1\omega_9\omega_6\omega_{22}c_s^2 +$
$\omega_{13}\omega_{20}\omega_{14}\omega_8v_2\omega_5\omega_{18}v_1^2\omega_9\omega_{12}\omega_6c_s^2 - 2\omega_{13}\omega_{14}v_2v_3^2\omega_5\omega_{18}v_1^2\omega_9\omega_{12}\omega_6\omega_{22} + 2\omega_{13}\omega_{20}\omega_8v_2v_3^2\omega_5\omega_{18}\omega_6\omega_{22}c_s^2 -$
$2\omega_{13}\omega_{20}\omega_{14}\omega_8v_2v_3^2\omega_5v_1^2\omega_9\omega_{12}\omega_{22} - 2\omega_{20}\omega_{14}\omega_8v_3^2\omega_5\omega_{18}v_1\omega_{12}\omega_6c_s^2 + \omega_{13}\omega_{20}\omega_{14}\omega_8v_2v_3^2\omega_5\omega_9\omega_{12}\omega_6\omega_{22}c_s^2 -$
$2\omega_{13}\omega_{20}\omega_8v_2^2v_3^2\omega_5\omega_{18}v_1\omega_9\omega_{12}\omega_6\omega_{22} + 2\omega_{13}\omega_{20}\omega_8v_2^2v_3^2\omega_5\omega_{18}v_1\omega_9\omega_6\omega_{22} - \omega_{13}\omega_{20}\omega_{14}\omega_8v_2\omega_5v_1^2\omega_9\omega_{12}\omega_6c_s^2 - 2\omega_{13}\omega_{20}v_2^2\omega_{18}v_1\omega_9\omega_{12}\omega_6\omega_{22}c_s^2 +$
$\omega_{13}\omega_{20}\omega_{14}\omega_8v_3^2\omega_5\omega_{18}v_1\omega_9\omega_{12}\omega_6\omega_{22}c_s^2 - \omega_{13}\omega_{20}\omega_{14}\omega_8v_3^2\omega_5\omega_{18}v_1\omega_{12}\omega_6\omega_{22}c_s^2 - 2\omega_{20}\omega_{14}\omega_8v_2v_3^2\omega_5\omega_{18}v_1^2\omega_{12}\omega_6\omega_{22} +$
$2\omega_{13}\omega_{20}\omega_8v_3^2\omega_5\omega_{18}v_1\omega_9\omega_6\omega_{22}c_s^2 + 2\omega_{13}\omega_{20}\omega_{14}v_2v_3^2\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}c_s^2 - \omega_{13}\omega_{20}\omega_{14}\omega_8v_2\omega_5\omega_{18}v_1^2\omega_{12}\omega_6c_s^2 -$
$2\omega_{20}\omega_8v_3^2\omega_5\omega_{18}v_1\omega_{12}\omega_6\omega_{22}c_s^2 - 2\omega_{20}\omega_8v_2v_3^2\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}c_s^2 - 2\omega_{20}\omega_{14}\omega_8v_2^2\omega_5\omega_{18}v_1\omega_9\omega_{12}\omega_6\omega_{22}c_s^2 - \omega_{13}\omega_{14}\omega_8v_2v_3^2\omega_5v_1^2\omega_9\omega_{12}\omega_6 +$
$2\omega_{13}\omega_{20}\omega_{14}\omega_8v_2^2v_3^2\omega_5\omega_{18}v_1\omega_9\omega_{12}c_s^2 + 2\omega_{13}\omega_{20}\omega_8v_2v_3^2\omega_5\omega_{18}v_1^2\omega_9\omega_{12}\omega_6\omega_{22} - 2\omega_{13}\omega_{20}v_3^2\omega_5\omega_{18}v_1\omega_9\omega_{12}\omega_{22}c_s^2 + 2\omega_{20}\omega_8v_3^2\omega_5\omega_{18}v_1\omega_9\omega_{12}\omega_6\omega_{22}c_s^2 -$
$\omega_{13}\omega_{14}\omega_8v_2\omega_5v_1^2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2 + 2\omega_{13}\omega_{20}\omega_8v_2\omega_5\omega_{18}v_1^2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2 - \omega_{13}\omega_{20}\omega_{14}\omega_8v_2v_3^2\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}c_s^2 +$
$2\omega_{20}\omega_{14}\omega_8v_2v_3^2\omega_5\omega_{18}v_1\omega_{12}\omega_6\omega_{22} + \omega_{13}\omega_{20}\omega_{14}\omega_8v_2^2\omega_{18}v_1\omega_9\omega_6\omega_{22}c_s^2 - \omega_{13}\omega_{20}\omega_{14}\omega_8v_2v_3^2\omega_5\omega_{18}\omega_{12}\omega_6c_s^2 -$
$2\omega_{20}\omega_{14}\omega_8v_3^2\omega_5\omega_{18}v_1\omega_9\omega_{12}\omega_6c_s^2 - 2\omega_{13}\omega_{20}\omega_{14}\omega_8v_3^2\omega_5v_1\omega_9\omega_{12}c_s^2 + \omega_{13}\omega_{14}\omega_8v_3^2\omega_{18}v_1\omega_9\omega_{12}\omega_6\omega_{22}c_s^2 - 2\omega_{20}\omega_{14}\omega_8v_2^2\omega_5\omega_{18}v_1\omega_{12}\omega_6c_s^2 +$
$2\omega_{13}\omega_{14}v_2\omega_5\omega_{18}v_1^2\omega_9\omega_{12}\omega_{22}c_s^2 - 2\omega_{13}\omega_{20}\omega_8v_2v_3^2\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}c_s^2 - \omega_{13}\omega_{20}\omega_{14}\omega_8v_2v_3^2\omega_5\omega_{18}\omega_{12}\omega_6c_s^2 -$
$\omega_{13}\omega_{14}\omega_8v_2^2\omega_5\omega_{18}v_1\omega_9\omega_{12}\omega_6\omega_{22}c_s^2 + 2\omega_{13}\omega_{14}\omega_8v_2\omega_5v_1^2\omega_9\omega_{12}\omega_{22}c_s^2 + 2\omega_{20}\omega_{14}\omega_8v_2\omega_5\omega_{18}v_1^2\omega_9\omega_{12}c_s^2 - 2\omega_{13}\omega_{20}\omega_8v_2^2v_3^2\omega_{18}v_1\omega_9\omega_6\omega_{22} +$
$\omega_{13}\omega_{20}\omega_{14}\omega_8v_2^2v_3^2\omega_5\omega_{18}v_1\omega_{12}\omega_6 + 2\omega_{13}\omega_{20}\omega_{14}v_2^2v_3^2\omega_{18}v_1\omega_9\omega_{12}\omega_6\omega_{22} - 2\omega_{13}\omega_{20}\omega_8v_2\omega_5\omega_{18}v_1^2\omega_9\omega_{12}\omega_{22}c_s^2 +$
$2\omega_{13}\omega_{14}v_2v_3^2\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}c_s^2 + 2\omega_{13}\omega_{20}\omega_{14}\omega_8v_2v_3^2\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}c_s^2 - \omega_{13}\omega_{20}\omega_{14}\omega_8v_2v_3^2\omega_5\omega_{18}v_1^2\omega_{12}\omega_6 -$
$2\omega_{13}\omega_{20}\omega_8v_2\omega_{18}v_1^2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2 + 2\omega_{20}\omega_8v_2v_3^2\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}c_s^2 + 2\omega_{20}\omega_{14}\omega_8v_2^2\omega_5\omega_{18}v_1\omega_9\omega_{12}\omega_{22}c_s^2 - 2\omega_{13}\omega_{20}\omega_{14}v_2v_3^2\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}c_s^2 -$
$\omega_{13}\omega_{20}\omega_{14}\omega_8v_2^2v_3^2\omega_{18}v_1\omega_9\omega_{12}\omega_6\omega_{22} - \omega_{13}\omega_{20}\omega_{14}\omega_8v_2^2\omega_5\omega_{18}v_1\omega_9\omega_6\omega_{22}c_s^2 - 2\omega_{13}\omega_{20}v_2^2v_3^2\omega_5\omega_{18}v_1\omega_9\omega_{12}\omega_{22} -$
$\omega_{13}\omega_{20}\omega_{14}\omega_8v_2^2\omega_5v_1\omega_9\omega_{12}\omega_6\omega_{22}c_s^2 + 2\omega_{13}\omega_{14}\omega_8v_2^2\omega_5\omega_{18}v_1\omega_{12}\omega_6\omega_{22}c_s^2 - 2\omega_{13}\omega_{20}\omega_8v_2^2\omega_5\omega_{18}v_1\omega_{12}\omega_6\omega_{22}c_s^2 -$
$2\omega_{20}\omega_{14}\omega_8v_2\omega_5\omega_{18}v_1^2\omega_{12}\omega_6\omega_{22}c_s^2 + 2\omega_{13}\omega_{20}\omega_8v_2\omega_5\omega_{18}v_1^2\omega_6\omega_{22}c_s^2 + 2\omega_{13}\omega_{20}\omega_{14}\omega_8v_3^2\omega_5\omega_{18}v_1\omega_9\omega_{12}c_s^2 - 2\omega_{13}\omega_{14}\omega_8v_2^2v_3^2\omega_5v_1\omega_9\omega_{12}\omega_{22} +$
$2\omega_{13}\omega_{20}v_2v_3^2\omega_{18}v_1^2\omega_9\omega_{12}\omega_6\omega_{22} + 2\omega_{13}\omega_{20}\omega_{14}\omega_8v_2v_3^2\omega_5\omega_9\omega_{12}c_s^2 + 2\omega_{13}\omega_{20}v_2v_3^2\omega_5\omega_{18}v_1^2\omega_9\omega_{12}\omega_{22} + 2\omega_{20}\omega_{14}\omega_8v_2^2v_3^2\omega_5\omega_{18}v_1\omega_9\omega_{12}\omega_{22} +$
$2\omega_{13}\omega_{14}v_2v_3^2\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}c_s^2 + \omega_{13}\omega_{20}\omega_{14}\omega_8v_2v_3^2\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}c_s^2 + 2\omega_{20}\omega_{14}\omega_8v_2v_3^2\omega_5\omega_{18}\omega_{12}\omega_6c_s^2 - 2\omega_{13}\omega_{20}\omega_{14}\omega_8v_2\omega_5v_1^2\omega_9\omega_{12}\omega_{22}c_s^2 -$
$2\omega_{20}\omega_{14}\omega_8v_2^2v_3^2\omega_5\omega_{18}v_1\omega_9\omega_{12}\omega_6\omega_{22} + \omega_{13}\omega_{20}\omega_{14}\omega_8v_2^2\omega_{18}v_1\omega_6\omega_{22}c_s^2 - 2\omega_{13}\omega_{20}\omega_8v_3^2\omega_5\omega_{18}v_1\omega_6\omega_{22}c_s^2 - 2\omega_{13}\omega_{14}v_2^2v_3^2\omega_{18}v_1\omega_9\omega_{12}\omega_6\omega_{22} -$
$2\omega_{13}\omega_{20}\omega_{14}v_2\omega_5\omega_{18}v_1^2\omega_9\omega_{12}\omega_{22}c_s^2 + 2\omega_{20}\omega_8v_2\omega_5\omega_{18}v_1^2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2 + 2\omega_{13}\omega_{20}\omega_{14}\omega_8v_2\omega_5\omega_{18}v_1^2\omega_9\omega_{12}c_s^2 - 2\omega_{20}\omega_{14}\omega_8v_2^2v_3^2\omega_5\omega_{18}v_1\omega_9\omega_{12}\omega_6 -$
$2\omega_{13}\omega_{20}\omega_8v_2^2v_3^2\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}c_s^2 + 2\omega_{13}\omega_{20}\omega_{14}\omega_8v_2\omega_5v_1^2\omega_9\omega_{12}c_s^2 + 2\omega_{20}\omega_{14}\omega_8v_2v_3^2\omega_5\omega_{18}v_1^2\omega_{12}\omega_6 - 2\omega_{20}\omega_{14}\omega_8v_2v_3^2\omega_5\omega_{18}v_1^2\omega_9\omega_{12}\omega_{22} -$
$2\omega_{13}\omega_{20}\omega_{14}v_2\omega_{18}v_1^2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2 - 2\omega_{20}\omega_8v_2\omega_5\omega_{18}v_1\omega_{12}\omega_6\omega_{22}c_s^2 - 2\omega_{13}\omega_{14}\omega_8v_2v_3^2\omega_5\omega_{18}v_1^2\omega_9\omega_{12}\omega_{22} - 2\omega_{20}\omega_{14}\omega_8v_2v_3^2\omega_5\omega_{18}\omega_{12}\omega_6\omega_{22}c_s^2 -$
$2\omega_{13}\omega_{20}\omega_8v_2^2v_3^2\omega_5\omega_{18}v_1\omega_6\omega_{22} - \omega_{13}\omega_{14}\omega_8v_2v_3^2\omega_{18}v_1^2\omega_9\omega_{12}\omega_6\omega_{22} - \omega_{13}\omega_{20}\omega_{14}\omega_8v_2^2\omega_5\omega_{18}v_1\omega_{12}\omega_6\omega_{22}c_s^2 -$
$2\omega_{13}\omega_{20}\omega_8v_2^2v_3^2\omega_5\omega_{18}v_1\omega_9\omega_{12}\omega_6\omega_{22}c_s^2 + 2\omega_{13}\omega_{20}\omega_8v_2v_3^2\omega_5\omega_{18}v_1^2\omega_6\omega_{22} + 2\omega_{13}\omega_{20}\omega_{14}\omega_8v_2^2\omega_5\omega_{18}v_1\omega_9\omega_6\omega_{22}c_s^2 +$
$2\omega_{13}\omega_{20}\omega_{14}\omega_8v_2^2v_3^2\omega_5v_1\omega_9\omega_{12}\omega_{22} - 2\omega_{20}\omega_{14}\omega_8v_3^2\omega_5\omega_{18}v_1\omega_9\omega_{12}c_s^2 + 2\omega_{20}\omega_{14}\omega_8v_2v_3^2\omega_5\omega_{18}v_1^2\omega_9\omega_{12}\omega_{22} -$
$\omega_{13}\omega_{20}\omega_{14}\omega_8v_2v_3^2\omega_{18}v_1\omega_9\omega_{12}\omega_6\omega_{22}c_s^2 + \omega_{13}\omega_{20}\omega_{14}\omega_8v_2\omega_5\omega_{18}v_1\omega_{12}\omega_6\omega_{22}c_s^2 - 2\omega_{13}\omega_{20}\omega_{14}\omega_8v_2v_3^2\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}c_s^2 -$
$2\omega_{13}\omega_{20}\omega_{14}v_2v_3^2\omega_{18}v_1^2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2 - 2\omega_{20}\omega_8v_2\omega_5\omega_{18}v_1\omega_{12}\omega_6\omega_{22}c_s^2 - 2\omega_{13}\omega_{14}\omega_8v_2v_3^2\omega_5\omega_{18}v_1^2\omega_9\omega_{12}\omega_{22} - 2\omega_{20}\omega_{14}\omega_8v_2v_3^2\omega_5\omega_{18}\omega_{12}\omega_6\omega_{22}c_s^2 -$
$2\omega_{13}\omega_{20}\omega_8v_2^2v_3^2\omega_5\omega_{18}v_1\omega_{12}\omega_{22} - \omega_{13}\omega_{14}\omega_8v_2v_3^2\omega_{18}v_1^2\omega_9\omega_{12}\omega_6\omega_{22} - \omega_{13}\omega_{20}\omega_{14}\omega_8v_2^2\omega_5\omega_{18}v_1\omega_{12}\omega_6\omega_{22}c_s^2 -$
$2\omega_{13}\omega_{20}\omega_8v_2^2v_3^2\omega_5\omega_{18}v_1\omega_9\omega_{12}\omega_6\omega_{22}c_s^2 + 2\omega_{13}\omega_{20}\omega_8v_2v_3^2\omega_5\omega_{18}v_1^2\omega_6\omega_{22} + 2\omega_{13}\omega_{20}\omega_{14}\omega_8v_2^2\omega_5\omega_{18}v_1\omega_9\omega_6\omega_{22}c_s^2 +$
$2\omega_{13}\omega_{20}\omega_{14}\omega_8v_2^2v_3^2\omega_5v_1\omega_9\omega_{12}\omega_{22} - 2\omega_{20}\omega_{14}\omega_8v_3^2\omega_5\omega_{18}v_1\omega_9\omega_{12}c_s^2 + 2\omega_{20}\omega_{14}\omega_8v_2v_3^2\omega_5\omega_{18}v_1^2\omega_9\omega_{12}\omega_{22} -$
$\omega_{13}\omega_{20}\omega_{14}\omega_8v_2v_3^2\omega_{18}\omega_9\omega_6\omega_{22}c_s^2 - 2\omega_{13}\omega_{20}v_2^2\omega_5\omega_{18}v_1\omega_9\omega_{12}\omega_{22}c_s^2 + 2\omega_{20}\omega_{14}\omega_8v_2\omega_5\omega_{18}v_1^2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2 +$
$2\omega_{13}\omega_{14}\omega_8v_2^2v_3^2\omega_5\omega_{18}v_1\omega_9\omega_{12}\omega_{22} + \omega_{13}\omega_{14}\omega_8v_2^2\omega_{18}v_1\omega_9\omega_{12}\omega_6\omega_{22}c_s^2 + \omega_{13}\omega_{14}\omega_8v_2\omega_5\omega_{18}v_1^2\omega_9\omega_{12}\omega_6\omega_{22}c_s^2 +$
$\omega_{13}\omega_{20}\omega_{14}\omega_8v_2v_3^2\omega_5\omega_{18}\omega_9\omega_{12}\omega_6c_s^2 + 2\omega_{20}\omega_{14}\omega_8v_2^2v_3^2\omega_5\omega_{18}v_1\omega_9\omega_{12}\omega_6 + \omega_{13}\omega_{14}\omega_8v_2v_3^2\omega_5\omega_{18}v_1^2\omega_9\omega_{12}\omega_6\omega_{22} +$

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

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

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

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

$12\omega_{13}\omega_7\omega_{20}v_3^2\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2 - 12\omega_7\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^4 - 12\omega_{13}\omega_7\omega_{14}\omega_8v_2\omega_5^2\omega_{18}v_1\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2 -$
$24\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_{22}c_s^4 + 12\omega_{13}\omega_7\omega_{14}\omega_8v_2v_3^2\omega_5\omega_{18}v_1\omega_9\omega_{12}\omega_6^3\omega_{22} + 12\omega_7\omega_{20}\omega_8\omega_5^2\omega_{18}v_1^2\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2 -$
$24\omega_{13}\omega_7\omega_{14}v_2v_3^2\omega_5^2\omega_{18}v_1\omega_9\omega_{12}\omega_6^2\omega_{22} + 12\omega_{13}\omega_7\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9\omega_6^3\omega_{22}c_s^4 - 18\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^4 -$
$24\omega_{13}\omega_7\omega_{14}v_2\omega_5\omega_{18}v_1\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2 - 6\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_3^2\omega_5^2\omega_{18}v_1^2\omega_6^3\omega_{22} + 6\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_3^2\omega_5^2\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2 +$
$12\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_2\omega_5^2\omega_{18}v_1\omega_6^3\omega_{22}c_s^2 + 12\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^4 - 12\omega_{13}\omega_7\omega_{14}v_3^2\omega_5^2\omega_{18}v_1^2\omega_9\omega_{12}\omega_6^3\omega_{22} +$
$12\omega_{13}\omega_7\omega_{20}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^4 + 12\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_5^2\omega_{18}v_1^2\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2 + 12\omega_{13}\omega_7\omega_{14}\omega_5\omega_{18}v_1^2\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2 -$
$12\omega_{13}\omega_7\omega_{14}v_3^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2 + 24\omega_7\omega_{20}\omega_{14}\omega_8v_2\omega_5^2\omega_{18}v_1\omega_{12}\omega_6^3\omega_{22}c_s^2 + 6\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_3^2\omega_5^2v_1^2\omega_9\omega_{12}\omega_6^3\omega_{22} -$
$12\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^4 - 2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^4 - 12\omega_{13}\omega_7\omega_{20}\omega_8v_3^2\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2 -$
$12\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}v_1^2\omega_9\omega_{12}\omega_6^2c_s^2 + 24\omega_{13}\omega_7\omega_{20}\omega_{14}v_2v_3^2\omega_5^2\omega_{18}v_1\omega_9\omega_{12}\omega_6^2\omega_{22} - 12\omega_7\omega_{20}\omega_8v_3^2\omega_5^2\omega_{18}v_1^2\omega_9\omega_{12}\omega_6^3\omega_{22} -$
$6\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_3^2\omega_5^2\omega_{18}v_1^2\omega_{12}\omega_6^3 - 24\omega_{13}\omega_7\omega_{20}v_2v_3^2\omega_5\omega_{18}v_1\omega_9\omega_{12}\omega_6^3\omega_{22} + 12\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^4 -$
$24\omega_7\omega_{20}\omega_8v_2v_3^2\omega_5^2\omega_{18}v_1\omega_{12}\omega_6^3\omega_{22} + 24\omega_{13}\omega_7\omega_{20}v_2\omega_5^2\omega_{18}v_1\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2 + 12\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}c_s^4 +$
$12\omega_{13}\omega_7\omega_{14}\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^4 + 24\omega_{13}\omega_7\omega_{20}\omega_{14}v_2\omega_5\omega_{18}v_1\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2 - 6\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_3^2\omega_5^2v_1^2\omega_9\omega_{12}\omega_6^3 +$
$12\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_3^2\omega_5^2\omega_{18}v_1^2\omega_9\omega_{12}\omega_6^2\omega_{22} - 12\omega_7\omega_{20}\omega_8v_3^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2 + 6\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}v_1^2\omega_9\omega_6^3\omega_{22}c_s^2 +$
$12\omega_7\omega_{20}\omega_8v_3^2\omega_5^2\omega_{18}v_1^2\omega_{12}\omega_6^3\omega_{22} - 12\omega_{13}\omega_7\omega_{20}\omega_8v_3^2\omega_5\omega_{18}v_1^2\omega_9\omega_{12}\omega_6^3\omega_{22} - 24\omega_{13}\omega_7\omega_{14}v_2\omega_5^2\omega_{18}v_1\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2 +$
$12\omega_7\omega_{20}\omega_{14}\omega_8v_3^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2c_s^2 + 24\omega_7\omega_{20}\omega_{14}\omega_8v_2\omega_5^2\omega_{18}v_1\omega_9\omega_{12}\omega_6^3c_s^2 + 24\omega_7\omega_{20}\omega_8v_2v_3^2\omega_5^2\omega_{18}v_1\omega_9\omega_{12}\omega_6^3\omega_{22} +$
$12\omega_{13}\omega_7\omega_{14}\omega_8v_3^2\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2 - 24\omega_{13}\omega_7\omega_{20}\omega_8v_2v_3^2\omega_5\omega_{18}v_1\omega_9\omega_6^3\omega_{22} - 6\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^4 +$
$12\omega_{13}\omega_7\omega_{14}\omega_5^2\omega_{18}v_1^2\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2 + 12\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_2\omega_5\omega_{18}v_1\omega_9\omega_6^3\omega_{22}c_s^2 + 12\omega_{13}\omega_7\omega_{20}\omega_8v_3^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}c_s^2 -$
$12\omega_{13}\omega_7\omega_{20}\omega_{14}v_3^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2 - 12\omega_7\omega_{20}\omega_{14}\omega_8v_3^2\omega_5^2\omega_{18}v_1^2\omega_{12}\omega_6^3\omega_{22} - 12\omega_{13}\omega_7\omega_{14}\omega_8v_2v_3^2\omega_5^2\omega_{18}v_1\omega_9\omega_{12}\omega_6^3\omega_{22} +$
$24\omega_{13}\omega_7\omega_{20}\omega_8v_2\omega_5^2\omega_{18}v_1\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2 + 24\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_2v_3^2\omega_5^2\omega_{18}v_1\omega_9\omega_{12}\omega_6^2 - 12\omega_{13}\omega_7\omega_{20}v_3^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2 -$
$24\omega_7\omega_{20}\omega_8v_2\omega_5^2\omega_{18}v_1\omega_{12}\omega_6^3\omega_{22}c_s^2 + 12\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_2v_3^2\omega_5^2v_1\omega_9\omega_{12}\omega_6^3 + 6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_{18}v_1^2\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2 -$
$12\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_2v_3^2\omega_5^2\omega_{18}v_1\omega_9\omega_6^3\omega_{22} - 12\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_2v_3^2\omega_5^2v_1\omega_9\omega_{12}\omega_6^3\omega_{22} + 12\omega_{13}\omega_7\omega_{20}\omega_5\omega_{18}v_1^2\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2 +$
$10\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^4 + 6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^4 - 24\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_2v_3^2\omega_5^2\omega_{18}v_1\omega_9\omega_{12}\omega_6^2\omega_{22} -$
$12\omega_{13}\omega_7\omega_{20}\omega_8v_3^2\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22}c_s^2 + 12\omega_{13}\omega_7\omega_{20}\omega_8v_3^2\omega_5\omega_{18}\omega_9\omega_6^3\omega_{22}c_s^2 + 12\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}v_1^2\omega_{12}\omega_6^3c_s^2 +$
$12\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_3^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2 - 6\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_3^2\omega_5^2\omega_{18}\omega_{12}\omega_6^3c_s^2 - 12\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_2\omega_5\omega_{18}v_1\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2 -$
$12\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2v_1^2\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2 - 12\omega_{13}\omega_7\omega_{20}\omega_8\omega_5^2\omega_{18}v_1^2\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2 - 12\omega_{13}\omega_7\omega_{20}v_3^2\omega_5^2\omega_{18}v_1^2\omega_9\omega_{12}\omega_6^3\omega_{22} +$
$12\omega_{13}\omega_7\omega_{14}\omega_8v_3^2\omega_5^2v_1^2\omega_9\omega_{12}\omega_6^2\omega_{22} - 6\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_3^2\omega_5\omega_{18}v_1^2\omega_9\omega_6^3\omega_{22} + 24\omega_7\omega_{20}\omega_{14}\omega_8v_2v_3^2\omega_5^2\omega_{18}v_1\omega_9\omega_{12}\omega_6^2\omega_{22} -$
$12\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}v_1^2\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2 + 12\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^4 - 12\omega_{13}\omega_7\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_6^3\omega_{22}c_s^4 +$
$12\omega_{13}\omega_7\omega_{14}v_3^2\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2 + 12\omega_{13}\omega_7\omega_{14}v_3^2\omega_5\omega_{18}v_1^2\omega_9\omega_{12}\omega_6^3\omega_{22} - 12\omega_{13}\omega_7\omega_{20}\omega_{14}v_3^2\omega_5^2\omega_{18}v_1^2\omega_9\omega_{12}\omega_6^2\omega_{22} -$
$12\omega_{13}\omega_7\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^4 + 12\omega_{13}\omega_7\omega_{14}\omega_8v_2\omega_5^2v_1\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2 + 24\omega_{13}\omega_7\omega_{20}\omega_8v_2v_3^2\omega_5^2\omega_{18}v_1\omega_{12}\omega_6^3\omega_{22} +$
$24\omega_{13}\omega_7\omega_{20}\omega_8v_2\omega_5\omega_{18}v_1\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2 - 12\omega_{13}\omega_7\omega_{14}\omega_8v_3^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2 + 12\omega_{13}\omega_7\omega_{20}\omega_5^2\omega_{18}v_1^2\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2 +$
$6\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_3^2\omega_5^2\omega_{18}\omega_9\omega_6^3\omega_{22}c_s^2 + 12\omega_{13}\omega_7\omega_{20}\omega_8v_3^2\omega_5^2\omega_{18}v_1^2\omega_9\omega_{12}\omega_6^3\omega_{22} - 6\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}v_1^2\omega_9\omega_6^3\omega_{22}c_s^2 +$
$12\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}v_1^2\omega_9\omega_{12}\omega_6^2c_s^2 + 24\omega_{13}\omega_7\omega_{20}\omega_8v_2v_3^2\omega_5^2\omega_{18}v_1\omega_9\omega_{12}\omega_6^2\omega_{22} - 12\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_3^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2c_s^2 -$
$24\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_2v_3^2\omega_5^2v_1\omega_9\omega_{12}\omega_6^2 - 18\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^4 + 12\omega_{13}\omega_7\omega_{20}\omega_8v_3^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2 +$
$12\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2v_1^2\omega_9\omega_{12}\omega_6^2c_s^2 - 12\omega_{13}\omega_7\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^4 - 12\omega_{13}\omega_7\omega_{20}\omega_8\omega_5\omega_{18}v_1^2\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2 -$
$24\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_2\omega_5^2\omega_{18}v_1\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2 - 12\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^4 + 12\omega_{13}\omega_7\omega_{14}\omega_8v_2v_3^2\omega_5^2\omega_{18}v_1\omega_9\omega_{12}\omega_6^3\omega_{22} -$
$6\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}v_1^2\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2 + 24\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^4 - 6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2v_1^2\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2 +$
$24\omega_{13}\omega_7\omega_{20}v_2v_3^2\omega_5^2\omega_{18}v_1\omega_9\omega_{12}\omega_6^3\omega_{22} - 12\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_2v_3^2\omega_5^2\omega_{18}v_1\omega_9\omega_{12}\omega_6^3 + 24\omega_7\omega_{20}\omega_{14}\omega_8v_2\omega_5^2\omega_{18}v_1\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2 +$
$12\omega_7\omega_{20}\omega_{14}\omega_8v_3^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2 - 12\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_2\omega_5^2v_1\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2 - 12\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_2\omega_5^2\omega_{18}v_1\omega_9\omega_6^3\omega_{22}c_s^2 +$
$12\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_2\omega_5^2v_1\omega_9\omega_{12}\omega_6^2c_s^2 + 24\omega_7\omega_{20}\omega_{14}\omega_8v_2v_3^2\omega_5^2\omega_{18}v_1\omega_{12}\omega_6^3\omega_{22} + 24\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_2\omega_5^2\omega_{18}v_1\omega_9\omega_{12}\omega_6^2c_s^2 +$
$24\omega_7\omega_{20}\omega_8v_2\omega_5^2\omega_{18}v_1\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2 + 12\omega_7\omega_{20}\omega_{14}\omega_8v_3^2\omega_5^2\omega_{18}v_1^2\omega_9\omega_{12}\omega_6^3\omega_{22} - 24\omega_{13}\omega_7\omega_{20}\omega_8v_2v_3^2\omega_5^2\omega_{18}v_1\omega_6^3\omega_{22} -$
$12\omega_{13}\omega_7\omega_{20}\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^4 - 12\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_3^2\omega_5^2\omega_{18}v_1^2\omega_9\omega_6^3\omega_{22} - 6\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_3^2\omega_5^2\omega_{18}v_1^2\omega_6^3\omega_{22}c_s^2 +$
$6\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_3^2\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22}c_s^2 - 6\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_3^2\omega_5\omega_{18}\omega_9\omega_6^3\omega_{22}c_s^2 - 24\omega_7\omega_{20}\omega_{14}\omega_8v_2\omega_5^2\omega_{18}v_1\omega_{12}\omega_6^3c_s^2 -$
$12\omega_{13}\omega_7\omega_{20}\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^4 - 6\omega_{13}\omega_7\omega_{14}\omega_8v_3^2\omega_5^2\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2 + 12\omega_{13}\omega_7\omega_{20}\omega_{14}v_3^2\omega_5^2\omega_{18}v_1^2\omega_9\omega_{12}\omega_6^3\omega_{22} +$
$12\omega_{13}\omega_7\omega_{20}\omega_{14}v_3^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2 - 6\omega_{13}\omega_7\omega_{14}\omega_8v_3^2\omega_5^2v_1^2\omega_9\omega_{12}\omega_6^3\omega_{22} - 12\omega_{13}\omega_7\omega_{14}\omega_5^2\omega_{18}v_1^2\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2 -$
$12\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_5\omega_{18}v_1^2\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2 + 12\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^4 - 12\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}v_1^2\omega_{12}\omega_6^3\omega_{22}c_s^2 -$
$24\omega_7\omega_{20}\omega_{14}\omega_8v_2v_3^2\omega_5^2\omega_{18}v_1\omega_9\omega_{12}\omega_6^3\omega_{22} - 24\omega_{13}\omega_7\omega_{20}v_2\omega_5^2\omega_{18}v_1\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2 - 6\omega_{13}\omega_7\omega_{14}\omega_8v_3^2\omega_5\omega_{18}v_1^2\omega_9\omega_{12}\omega_6^3\omega_{22} -$
$12\omega_{13}\omega_7\omega_{14}\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^4 + 12\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_2v_3^2\omega_5^2\omega_{18}v_1\omega_9\omega_{12}\omega_6^3\omega_{22} - 12\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_2\omega_5^2\omega_{18}v_1\omega_{12}\omega_6^3\omega_{22}c_s^2 +$
$6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^4 + 12\omega_{13}\omega_7\omega_{20}v_3^2\omega_5^2\omega_{18}v_1^2\omega_9\omega_{12}\omega_6^2\omega_{22} - \omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^4 +$
$24\omega_{13}\omega_7\omega_{14}v_2\omega_5^2\omega_{18}v_1\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2 + 24\omega_{13}\omega_7\omega_{14}\omega_8v_2v_3^2\omega_5^2\omega_{18}v_1\omega_9\omega_{12}\omega_6^2\omega_{22} + 12\omega_{13}\omega_7\omega_{20}\omega_8v_3^2\omega_5\omega_{18}v_1^2\omega_9\omega_6^3\omega_{22} -$
$24\omega_{13}\omega_7\omega_{14}v_2v_3^2\omega_5\omega_{18}v_1\omega_9\omega_{12}\omega_6^3\omega_{22} - 6\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_3^2\omega_5^2\omega_{18}\omega_6^3\omega_{22}c_s^2 + 12\omega_7\omega_{20}\omega_8v_3^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2 +$
$12\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_2v_3^2\omega_5^2\omega_{18}v_1\omega_{12}\omega_6^3 + 6\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_3^2\omega_5^2\omega_{18}v_1^2\omega_9\omega_{12}\omega_6^3 - 6\omega_{13}\omega_7\omega_{14}\omega_8v_3^2\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2 +$
$12\omega_{13}\omega_7\omega_{14}\omega_8v_2\omega_5\omega_{18}v_1\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2 + 24\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_2v_3^2\omega_5^2v_1\omega_9\omega_{12}\omega_6^2\omega_{22} + 12\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_2v_3^2\omega_5\omega_{18}v_1\omega_9\omega_6^3\omega_{22} -$
$12\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_2\omega_5^2\omega_{18}v_1\omega_9\omega_{12}\omega_6^3c_s^2 - 12\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^4 - 12\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_3^2\omega_5^2\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2 -$
$12\omega_7\omega_{20}\omega_{14}\omega_8v_3^2\omega_5^2\omega_{18}v_1^2\omega_9\omega_{12}\omega_6^2\omega_{22} - 6\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}v_1^2\omega_{12}\omega_6^3c_s^2 + 12\omega_7\omega_{20}\omega_8v_3^2\omega_5^2\omega_{18}\omega_{12}\omega_6^3\omega_{22}c_s^2 +$
$12\omega_{13}\omega_7\omega_{14}v_3^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2 - 24\omega_{13}\omega_7\omega_{20}\omega_8v_2\omega_5\omega_{18}v_1\omega_9\omega_6^3\omega_{22}c_s^2 + 12\omega_{13}\omega_7\omega_{20}\omega_8v_3^2\omega_5^2\omega_{18}v_1^2\omega_6^3\omega_{22} -$
$24\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_2\omega_5^2v_1\omega_9\omega_{12}\omega_6^2c_s^2 + 12\omega_{13}\omega_7\omega_{20}\omega_8\omega_5\omega_{18}v_1^2\omega_9\omega_6^3\omega_{22}c_s^2 - 12\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_5^2\omega_{18}v_1^2\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2 -$
$12\omega_{13}\omega_7\omega_{20}\omega_8v_3^2\omega_5^2\omega_{18}\omega_9\omega_6^3\omega_{22}c_s^2 + 12\omega_7\omega_{20}\omega_{14}\omega_8v_3^2\omega_5^2\omega_{18}\omega_{12}\omega_6^3c_s^2 - 24\omega_{13}\omega_7\omega_{20}v_2\omega_5\omega_{18}v_1\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2 -$
$6\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2v_1^2\omega_9\omega_{12}\omega_6^3c_s^2 - 24\omega_{13}\omega_7\omega_{20}\omega_{14}v_2\omega_5^2\omega_{18}v_1\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2 - 12\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_3^2\omega_5^2\omega_{18}v_1^2\omega_9\omega_{12}\omega_6^2 +$
$24\omega_{13}\omega_7\omega_{20}\omega_{14}v_2v_3^2\omega_5\omega_{18}v_1\omega_9\omega_{12}\omega_6^3\omega_{22} + 6\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_3^2\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3c_s^2 + 6\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_3^2\omega_5^2\omega_{18}v_1^2\omega_9\omega_6^3\omega_{22} -$
$24\omega_{13}\omega_7\omega_{20}v_2v_3^2\omega_5^2\omega_{18}v_1\omega_9\omega_{12}\omega_6^2\omega_{22} + 12\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^4 + 6\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_3^2\omega_5\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2 -$
$24\omega_{13}\omega_7\omega_{14}\omega_8v_2v_3^2\omega_5^2v_1\omega_9\omega_{12}\omega_6^2\omega_{22} + 12\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_2v_3^2\omega_5^2\omega_{18}v_1\omega_6^3\omega_{22} + 6\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_3^2\omega_5\omega_{18}v_1^2\omega_9\omega_{12}\omega_6^3\omega_{22} -$
$24\omega_{13}\omega_7\omega_{20}\omega_8v_2v_3^2\omega_5^2\omega_{18}v_1\omega_9\omega_{12}\omega_6^3\omega_{22} + 12\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}c_s^4 - 12\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}v_1^2\omega_9\omega_{12}\omega_6^3c_s^2 -$
$12\omega_7\omega_{20}\omega_8\omega_5^2\omega_{18}v_1^2\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^2 - 12\omega_{13}\omega_7\omega_{20}\omega_8v_3^2\omega_5^2\omega_{18}v_1^2\omega_9\omega_{12}\omega_6^2\omega_{22} + 24\omega_{13}\omega_7\omega_{14}\omega_8v_2\omega_5^2\omega_{18}v_1\omega_9\omega_{12}\omega_6^2\omega_{22}c_s^2 +$

$12\omega_7\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}\omega_6^3\omega_{22}c_s^4$

$C_{21} =$
$-2\omega_{13}\omega_{20}\omega_{14}\omega_8v_2\omega_5\omega_{18}\omega_9\omega_{12}c_s^2 + \omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}v_1\omega_{12}\omega_6c_s^2 + 2\omega_{13}\omega_{20}\omega_{14}v_2^2\omega_{18}v_1\omega_9\omega_{12}\omega_6\omega_{22} - 2\omega_{13}\omega_{20}\omega_8v_2\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}c_s^2 -$
$2\omega_{13}\omega_{14}\omega_{18}v_1\omega_9\omega_{12}\omega_6\omega_{22}c_s^2 + \omega_{13}\omega_{20}\omega_{14}\omega_8v_2\omega_5\omega_{18}\omega_9\omega_6\omega_{22}c_s^2 + 2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}v_1\omega_9\omega_{12}\omega_{22}c_s^2 - 2\omega_{20}\omega_{14}\omega_8v_2\omega_5\omega_{18}\omega_{12}\omega_6\omega_{22}c_s^2 +$
$2\omega_{13}\omega_{14}\omega_8\omega_5\omega_{18}v_1\omega_9\omega_{12}\omega_{22}c_s^2 + 2\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18}v_1\omega_9\omega_6\omega_{22}c_s^2 - \omega_{13}\omega_{20}\omega_{14}\omega_8v_2^2\omega_5\omega_{18}v_1\omega_9\omega_{12}\omega_6 - 2\omega_{13}\omega_{14}\omega_8v_2\omega_5\omega_{18}v_1^2\omega_9\omega_{12}\omega_{22} -$
$\omega_{13}\omega_{14}\omega_8v_2\omega_{18}v_1^2\omega_9\omega_{12}\omega_6\omega_{22} + 2\omega_{13}\omega_{20}\omega_8v_2\omega_5\omega_{18}\omega_6\omega_{22}c_s^2 + 2\omega_{20}\omega_{14}\omega_8v_2^2\omega_5\omega_{18}v_1\omega_{12}\omega_6\omega_{22} - 2\omega_{20}\omega_{14}\omega_8v_2\omega_5\omega_{18}v_1^2\omega_9\omega_{12}\omega_{22} -$
$2\omega_{13}\omega_{14}v_2^2\omega_5\omega_{18}v_1\omega_9\omega_{12}\omega_{22} + 2\omega_{13}\omega_{20}v_2\omega_{18}v_1^2\omega_9\omega_{12}\omega_6\omega_{22} + 2\omega_{13}\omega_{20}v_2\omega_5\omega_{18}v_1^2\omega_9\omega_{12}\omega_{22} + 2\omega_{13}\omega_{20}v_2^2\omega_5\omega_{18}v_1\omega_9\omega_{12}\omega_6\omega_{22} -$
$\omega_{13}\omega_{20}\omega_{14}\omega_8v_2\omega_{18}\omega_9\omega_6\omega_{22}c_s^2 - 2\omega_{13}\omega_{20}\omega_8v_2\omega_5\omega_{18}v_1^2\omega_9\omega_6\omega_{22} + \omega_{13}\omega_{20}\omega_{14}\omega_8v_2\omega_5\omega_{18}v_1^2\omega_{12}\omega_6\omega_{22} + \omega_{13}\omega_{14}\omega_8v_2\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}c_s^2 -$
$2\omega_{13}\omega_{20}\omega_{14}\omega_8v_2^2\omega_5\omega_{18}v_1\omega_9\omega_{12}\omega_{22} - \omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}v_1\omega_9\omega_{12}\omega_6c_s^2 - 2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}v_1\omega_{12}\omega_6c_s^2 - 2\omega_{13}\omega_{20}\omega_{14}v_2\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}c_s^2 +$
$2\omega_{13}\omega_{20}\omega_8v_2^2\omega_{18}v_1\omega_9\omega_{12}\omega_6\omega_{22} + 2\omega_{20}\omega_{14}\omega_8v_2\omega_5\omega_{18}\omega_9\omega_{12}c_s^2 - 2\omega_{20}\omega_8v_2\omega_5\omega_{18}v_1^2\omega_9\omega_{12}\omega_6\omega_{22} + 2\omega_{13}\omega_{20}\omega_5\omega_{18}v_1\omega_9\omega_{12}\omega_6\omega_{22}c_s^2 +$
$2\omega_{13}\omega_{20}\omega_{14}v_2\omega_5\omega_{18}v_1^2\omega_9\omega_{12}\omega_6\omega_{22} + \omega_{13}\omega_{20}\omega_{14}\omega_8v_2^2\omega_5\omega_{18}v_1\omega_6\omega_{22} - \omega_{13}\omega_{20}\omega_{14}\omega_8\omega_{18}v_1\omega_9\omega_{12}\omega_6\omega_{22}c_s^2 - 2\omega_{13}\omega_{14}\omega_8v_2^2\omega_5v_1\omega_9\omega_{12}\omega_{22} -$
$\omega_{13}\omega_{20}\omega_{14}\omega_8v_2\omega_5\omega_{18}v_1^2\omega_9\omega_{12}\omega_6\omega_{22} + 2\omega_{20}\omega_{14}\omega_8v_2\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}c_s^2 - 2\omega_{13}\omega_{20}\omega_5\omega_{18}v_1\omega_9\omega_{12}\omega_{22}c_s^2 + \omega_{13}\omega_{20}\omega_{14}\omega_8v_2\omega_5v_1^2\omega_9\omega_{12}\omega_6\omega_{22} -$
$2\omega_{20}\omega_{14}\omega_8v_2\omega_5\omega_{18}v_1^2\omega_9\omega_{12}\omega_6 - 2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}v_1\omega_9\omega_{12}\omega_6\omega_{22}c_s^2 + 2\omega_{13}\omega_{20}\omega_8v_2\omega_5\omega_{18}v_1^2\omega_6\omega_{22} - 2\omega_{20}\omega_{14}\omega_8v_2\omega_5\omega_{18}v_1^2\omega_{12}\omega_6\omega_{22} +$
$2\omega_{13}\omega_{14}\omega_8v_2^2\omega_5\omega_{18}v_1\omega_9\omega_{12}\omega_{22} + 2\omega_{20}\omega_{14}\omega_8v_2^2\omega_5\omega_{18}v_1\omega_9\omega_{12}\omega_{22} - 2\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18}v_1\omega_6\omega_{22}c_s^2 - 2\omega_{13}\omega_{20}v_2\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}c_s^2 -$
$\omega_{13}\omega_{14}\omega_8v_2^2\omega_5\omega_{18}v_1\omega_9\omega_{12}\omega_6\omega_{22} - 2\omega_{13}\omega_{14}\omega_8\omega_5v_1\omega_9\omega_{12}\omega_{22}c_s^2 + 2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}v_1\omega_9\omega_{12}\omega_6c_s^2 + 2\omega_{13}\omega_{14}v_2\omega_5\omega_{18}v_1^2\omega_9\omega_{12}\omega_{22} +$
$2\omega_{13}\omega_{14}v_2\omega_{18}v_1^2\omega_9\omega_{12}\omega_6\omega_{22} + \omega_{13}\omega_{20}\omega_{14}\omega_8v_2^2\omega_{18}v_1\omega_9\omega_6\omega_{22} + 2\omega_{13}\omega_{20}\omega_8v_2\omega_5\omega_{18}v_1^2\omega_9\omega_{12}\omega_6\omega_{22} - \omega_{13}\omega_{14}\omega_8v_2\omega_5v_1^2\omega_9\omega_{12}\omega_6\omega_{22} -$
$2\omega_{13}\omega_{14}\omega_5\omega_{18}v_1\omega_9\omega_{12}\omega_{22}c_s^2 + 2\omega_{13}\omega_{20}\omega_{14}\omega_8v_2^2\omega_5\omega_{18}v_1\omega_9\omega_{12} - 2\omega_{20}\omega_{14}\omega_8v_2^2\omega_5\omega_{18}v_1\omega_9\omega_{12}\omega_6\omega_{22} - \omega_{13}\omega_{20}\omega_{14}\omega_8v_2\omega_5\omega_{18}v_1^2\omega_{12}\omega_6 +$
$2\omega_{20}\omega_8v_2\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}c_s^2 - 2\omega_{13}\omega_{20}\omega_{14}v_2\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}c_s^2 - \omega_{13}\omega_{20}\omega_{14}\omega_8v_2\omega_5v_1^2\omega_9\omega_{12}\omega_6 - 2\omega_{20}\omega_8\omega_5\omega_{18}v_1\omega_{12}\omega_6\omega_{22}c_s^2 +$
$\omega_{13}\omega_{14}\omega_8\omega_{18}v_1\omega_9\omega_{12}\omega_6\omega_{22}c_s^2 - \omega_{13}\omega_{14}\omega_8\omega_5\omega_{18}v_1\omega_9\omega_{12}\omega_6\omega_{22}c_s^2 + \omega_{13}\omega_{20}\omega_{14}\omega_8v_2^2\omega_5v_1^2\omega_9\omega_{12}\omega_6 - 2\omega_{13}\omega_{14}v_2\omega_5\omega_{18}v_1^2\omega_9\omega_{12}\omega_{22} +$
$\omega_{13}\omega_{20}\omega_{14}\omega_8v_2\omega_5\omega_{18}\omega_{12}\omega_6c_s^2 + 2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}v_1\omega_9\omega_{12}c_s^2 - 2\omega_{20}\omega_{14}\omega_8v_2^2\omega_5\omega_{18}v_1\omega_9\omega_{12} + 2\omega_{20}\omega_{14}\omega_8v_2\omega_5\omega_{18}v_1^2\omega_{12}\omega_6 +$
$\omega_{13}\omega_{20}\omega_{14}\omega_8v_2\omega_5\omega_{18}\omega_{12}\omega_6\omega_{22}c_s^2 + \omega_{13}\omega_{20}\omega_{14}\omega_8\omega_{18}v_1\omega_9\omega_6\omega_{22}c_s^2 - 2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}v_1\omega_9\omega_{12}\omega_{22}c_s^2 + 2\omega_{13}\omega_{14}\omega_8v_2\omega_5\omega_9\omega_{12}\omega_{22}c_s^2 +$
$2\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18}v_1\omega_{12}\omega_6\omega_{22}c_s^2 - 2\omega_{13}\omega_{20}\omega_8v_2\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}c_s^2 + 2\omega_{13}\omega_{20}\omega_8v_2\omega_{18}v_1^2\omega_9\omega_6\omega_{22} + 2\omega_{20}\omega_{14}\omega_8v_2^2\omega_5\omega_{18}v_1\omega_9\omega_{12}\omega_6 -$
$2\omega_{13}\omega_{20}\omega_{18}v_1\omega_9\omega_{12}\omega_6\omega_{22}c_s^2 - 2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}v_1\omega_9\omega_{12}c_s^2 + 2\omega_{20}\omega_{14}\omega_8v_2\omega_5\omega_{18}\omega_{12}\omega_6c_s^2 - 2\omega_{13}\omega_{20}v_2^2\omega_5\omega_{18}v_1\omega_9\omega_{12}\omega_{22} +$
$2\omega_{13}\omega_{20}\omega_8v_2^2\omega_5\omega_{18}v_1\omega_9\omega_6\omega_{22} - \omega_{13}\omega_{20}\omega_{14}\omega_8v_2^2\omega_5\omega_{18}v_1\omega_{12}\omega_6\omega_{22} + 2\omega_{13}\omega_{20}\omega_{14}\omega_8v_2\omega_5v_1^2\omega_9\omega_{12} + 2\omega_{13}\omega_{20}\omega_{14}\omega_8v_2\omega_5\omega_{18}v_1^2\omega_9\omega_{12}\omega_{22} +$
$\omega_{13}\omega_{20}\omega_{14}\omega_8v_2\omega_{18}v_1^2\omega_9\omega_{12}\omega_6\omega_{22} - 2\omega_{13}\omega_{20}\omega_{14}\omega_8v_2\omega_5v_1^2\omega_9\omega_{12}\omega_{22} + 2\omega_{13}\omega_{20}\omega_{14}\omega_8v_2^2\omega_5\omega_{18}v_1\omega_9\omega_{12}\omega_6\omega_{22} - 2\omega_{13}\omega_{20}\omega_8v_2^2\omega_{18}v_1\omega_9\omega_6\omega_{22} +$
$2\omega_{20}\omega_8v_2^2\omega_5\omega_{18}v_1\omega_9\omega_{12}\omega_6\omega_{22} - \omega_{13}\omega_{20}\omega_{14}\omega_8v_2\omega_5\omega_9\omega_{12}\omega_6c_s^2 - 2\omega_{13}\omega_{14}v_2\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}c_s^2 - 2\omega_{13}\omega_{20}\omega_{14}v_2^2\omega_5\omega_{18}v_1\omega_9\omega_{12}\omega_6\omega_{22} +$
$2\omega_{13}\omega_{20}\omega_8v_2^2\omega_5\omega_{18}v_1\omega_9\omega_{12}\omega_{22} + 2\omega_{13}\omega_{20}\omega_8v_2\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}c_s^2 - \omega_{13}\omega_{14}\omega_8v_2\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}c_s^2 - \omega_{13}\omega_{20}\omega_{14}\omega_8v_2^2\omega_5\omega_{18}v_1^2\omega_6\omega_{22} +$
$\omega_{13}\omega_{20}\omega_{14}\omega_8v_2^2\omega_5v_1\omega_9\omega_{12}\omega_6 + 2\omega_{20}\omega_8v_2\omega_5\omega_{18}v_1^2\omega_{12}\omega_6\omega_{22} + 2\omega_{13}\omega_{20}\omega_{14}v_2^2\omega_5\omega_{18}v_1\omega_9\omega_{12}\omega_{22} - 2\omega_{20}\omega_8v_2^2\omega_5\omega_{18}v_1\omega_9\omega_{12}\omega_{22} +$
$\omega_{13}\omega_{14}\omega_8v_2^2\omega_5v_1\omega_9\omega_{12}\omega_6\omega_{22} - 2\omega_{13}\omega_{20}\omega_8v_2\omega_5\omega_{18}\omega_9\omega_6\omega_{22}c_s^2 + \omega_{13}\omega_{20}\omega_{14}\omega_8v_2\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}c_s^2 + \omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5v_1\omega_9\omega_{12}\omega_6c_s^2 -$
$\omega_{13}\omega_{20}\omega_{14}\omega_8v_2\omega_{18}v_1^2\omega_9\omega_6\omega_{22} + 2\omega_{13}\omega_{20}\omega_{14}\omega_{18}v_1\omega_9\omega_{12}\omega_6\omega_{22}c_s^2 - 2\omega_{13}\omega_{14}\omega_8v_2\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}c_s^2 - 2\omega_{13}\omega_{14}v_2^2\omega_{18}v_1\omega_9\omega_{12}\omega_6\omega_{22} +$
$2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}v_1\omega_{12}\omega_6\omega_{22}c_s^2 - 2\omega_{20}\omega_{14}\omega_8v_2\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}c_s^2 - 2\omega_{13}\omega_{20}\omega_8\omega_{18}v_1\omega_9\omega_6\omega_{22}c_s^2 - \omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}v_1\omega_9\omega_6\omega_{22}c_s^2 -$
$\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5v_1\omega_9\omega_{12}\omega_6\omega_{22}c_s^2 + 2\omega_{13}\omega_{20}\omega_8v_2^2\omega_5\omega_{18}v_1\omega_{12}\omega_6\omega_{22} - \omega_{13}\omega_{20}\omega_{14}\omega_8v_2^2\omega_5\omega_{18}v_1\omega_9\omega_6\omega_{22} - \omega_{13}\omega_{20}\omega_{14}\omega_8v_2^2\omega_5v_1\omega_9\omega_{12}\omega_6\omega_{22} -$
$2\omega_{13}\omega_{20}\omega_8v_2\omega_{18}v_1^2\omega_9\omega_{12}\omega_6\omega_{22} - 2\omega_{13}\omega_{20}\omega_8v_2\omega_5\omega_{18}v_1^2\omega_9\omega_{12}\omega_{22} + 2\omega_{20}\omega_{14}\omega_8v_2\omega_5\omega_{18}v_1^2\omega_9\omega_{12} + 2\omega_{13}\omega_{14}\omega_8v_2\omega_5v_1^2\omega_9\omega_{12}\omega_{22} -$
$2\omega_{20}\omega_{14}\omega_8v_2^2\omega_5\omega_{18}v_1\omega_{12}\omega_6 - \omega_{13}\omega_{20}\omega_{14}\omega_8v_2\omega_5\omega_{18}\omega_6\omega_{22}c_s^2 + \omega_{13}\omega_{14}\omega_8\omega_5v_1\omega_9\omega_{12}\omega_6\omega_{22}c_s^2 + 2\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18}v_1\omega_9\omega_{12}\omega_{22}c_s^2 -$
$2\omega_{13}\omega_{20}\omega_8v_2\omega_5\omega_{18}\omega_{12}\omega_6\omega_{22}c_s^2 - 2\omega_{13}\omega_{20}v_2^2\omega_{18}v_1\omega_9\omega_{12}\omega_6\omega_{22} + 2\omega_{13}\omega_{20}\omega_{14}\omega_8v_2\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}c_s^2 - \omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}v_1\omega_{12}\omega_6\omega_{22}c_s^2 -$
$2\omega_{13}\omega_{20}\omega_{14}\omega_8v_2\omega_5\omega_9\omega_{12}\omega_{22}c_s^2 - \omega_{13}\omega_{14}\omega_8v_2\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}c_s^2 - 2\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18}v_1\omega_9\omega_{12}\omega_6\omega_{22}c_s^2 + 2\omega_{20}\omega_8v_2\omega_5\omega_{18}\omega_{12}\omega_6\omega_{22}c_s^2 -$
$2\omega_{20}\omega_8\omega_5\omega_{18}v_1\omega_9\omega_{12}\omega_{22}c_s^2 + 2\omega_{13}\omega_{20}\omega_{14}\omega_5\omega_{18}v_1\omega_9\omega_{12}\omega_{22}c_s^2 + 2\omega_{13}\omega_{20}v_2\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}c_s^2 + 2\omega_{13}\omega_{14}\omega_5\omega_{18}v_1\omega_9\omega_{12}\omega_6\omega_{22}c_s^2 -$
$2\omega_{13}\omega_{20}\omega_8v_2^2\omega_5\omega_{18}v_1\omega_6\omega_{22} + 2\omega_{13}\omega_{14}v_2\omega_5\omega_{18}\omega_9\omega_{12}\omega_{22}c_s^2 + \omega_{13}\omega_{14}\omega_8v_2\omega_5\omega_{18}v_1^2\omega_9\omega_{12}\omega_6\omega_{22} + \omega_{13}\omega_{14}\omega_8v_2^2\omega_{18}v_1\omega_9\omega_{12}\omega_6\omega_{22} -$
$2\omega_{20}\omega_{14}\omega_8v_2\omega_5\omega_{18}\omega_9\omega_{12}\omega_6c_s^2 + 2\omega_{20}\omega_{14}\omega_8v_2\omega_5\omega_{18}v_1^2\omega_9\omega_{12}\omega_6\omega_{22} - 2\omega_{13}\omega_{20}\omega_8v_2^2\omega_5\omega_{18}v_1\omega_9\omega_{12}\omega_6\omega_{22} + \omega_{13}\omega_{20}\omega_{14}\omega_8v_2\omega_5\omega_9\omega_{12}\omega_6\omega_{22}c_s^2 -$
$2\omega_{20}\omega_8v_2^2\omega_5\omega_{18}v_1\omega_{12}\omega_6\omega_{22} - 2\omega_{13}\omega_{20}\omega_{14}v_2\omega_{18}v_1^2\omega_9\omega_{12}\omega_6\omega_{22} + 2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5v_1\omega_9\omega_{12}\omega_{22}c_s^2 - 2\omega_{20}\omega_8v_2\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}c_s^2 -$
$2\omega_{13}\omega_{20}\omega_{14}\omega_8v_2\omega_5\omega_{18}v_1^2\omega_9\omega_{12} - 2\omega_{13}\omega_{20}\omega_{14}v_2\omega_5\omega_{18}v_1^2\omega_9\omega_{12}\omega_{22} + 2\omega_{13}\omega_{20}\omega_{14}v_2\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}c_s^2 + 2\omega_{13}\omega_{14}v_2^2\omega_5\omega_{18}v_1\omega_9\omega_{12}\omega_6\omega_{22} +$
$2\omega_{20}\omega_8v_2\omega_5\omega_{18}v_1^2\omega_9\omega_{12}\omega_{22} + 2\omega_{13}\omega_{20}\omega_8v_2\omega_{18}\omega_9\omega_6\omega_{22}c_s^2 + \omega_{13}\omega_{20}\omega_{14}\omega_8v_2^2\omega_5\omega_{18}v_1\omega_{12}\omega_6 - \omega_{13}\omega_{20}\omega_{14}\omega_8v_2\omega_5\omega_{18}\omega_9\omega_{12}\omega_6\omega_{22}c_s^2$

$C_{22} = -12\omega_7\omega_{20}v_3\omega_{18}v_1^2\omega_{15}\omega_6c_s^2 + 12\omega_7\omega_{17}v_2^2\omega_{18}v_1\omega_{15}\omega_6c_s^2 + 6\omega_7\omega_{20}\omega_8v_3\omega_5\omega_{18}v_1^2\omega_6c_s^2 - 3\omega_7\omega_{20}\omega_{17}\omega_8v_3\omega_5v_1^2\omega_{15}\omega_6c_s^2 -$
$12\omega_7\omega_{20}v_2^2\omega_5\omega_{18}v_1\omega_{15}\omega_6c_s^2 - 12\omega_7\omega_{17}\omega_8v_3\omega_5v_1^2\omega_{15}c_s^2 - 12\omega_7\omega_{20}\omega_{17}v_2^2v_3\omega_5\omega_{18}v_1^2\omega_{15}\omega_6 + 6\omega_7\omega_{20}\omega_{17}\omega_8v_2^2v_3\omega_{18}v_1^2\omega_6 -$
$6\omega_7\omega_{17}\omega_8v_3\omega_5\omega_{18}v_1^2\omega_{15}\omega_6c_s^2 - 6\omega_7\omega_{20}\omega_8v_2^2v_3^2\omega_5\omega_{18}v_1\omega_6 - 12\omega_7\omega_{20}v_2^2v_3\omega_{18}v_1^2\omega_{15}\omega_6 + 3\omega_7\omega_{20}\omega_{17}\omega_8v_2^2v_3\omega_5\omega_{18}v_1^2\omega_{15}\omega_6 -$
$6\omega_7\omega_{20}\omega_8v_2^2v_3\omega_5\omega_{18}\omega_{15}\omega_6c_s^2 - 12\omega_7\omega_{20}\omega_8v_2^2\omega_{18}v_1\omega_{15}\omega_6c_s^2 + 6\omega_7\omega_{20}\omega_{17}\omega_8v_2^2v_3\omega_5\omega_{15}c_s^2 + 12\omega_7\omega_{17}\omega_8v_2^2v_3\omega_5\omega_{18}\omega_{15}c_s^2 +$
$12\omega_7\omega_{20}\omega_8v_3^2\omega_{18}v_1\omega_6c_s^2 + 12\omega_7\omega_{17}v_2^2v_3\omega_5\omega_{18}\omega_{15}\omega_6c_s^2 + 6\omega_7\omega_{20}\omega_8v_2^2v_3\omega_5\omega_{18}v_1^2\omega_{15} - 3\omega_7\omega_{20}\omega_{17}\omega_8v_2^2v_3\omega_5\omega_{18}\omega_6c_s^2 -$
$12\omega_7\omega_{17}v_2^2v_3\omega_5\omega_{18}v_1^2\omega_{15} - 12\omega_7\omega_{17}\omega_8v_2^2v_3^2\omega_5\omega_{18}v_1\omega_{15} + 12\omega_7\omega_{20}\omega_{17}v_3\omega_{18}v_1^2\omega_{15}\omega_6c_s^2 - 6\omega_7\omega_{20}\omega_{17}\omega_8v_3\omega_{18}v_1^2\omega_{15}\omega_6c_s^2 -$
$12\omega_7\omega_{20}v_3^2\omega_5\omega_{18}v_1\omega_{15}\omega_6c_s^2 - 12\omega_7\omega_{20}\omega_8v_2^2v_3\omega_{18}v_1^2\omega_6 - 6\omega_7\omega_{20}\omega_{17}\omega_8v_2^2v_3\omega_{18}v_1^2\omega_{15}\omega_6 + 6\omega_7\omega_{20}\omega_{17}\omega_8v_2^2v_3\omega_5\omega_{15}\omega_6c_s^2 +$
$6\omega_7\omega_{20}\omega_8v_2^2v_3^2\omega_5\omega_{18}v_1\omega_{15}\omega_6 + 12\omega_7\omega_{20}\omega_{17}v_2^2v_3\omega_{18}v_1^2\omega_{15}\omega_6 + 12\omega_7\omega_{17}\omega_8v_2^2\omega_5v_1\omega_{15}c_s^2 - 12\omega_7\omega_{20}\omega_{17}v_3\omega_5\omega_{18}v_1^2\omega_{15}\omega_6c_s^2 +$
$12\omega_7\omega_{17}v_3^2\omega_5\omega_{18}v_1\omega_{15}c_s^2 - 12\omega_7\omega_{17}v_2^2v_3^2\omega_5\omega_{18}v_1\omega_{15}\omega_6 - 6\omega_7\omega_{20}\omega_{17}\omega_8v_3^2\omega_{18}v_1\omega_6c_s^2 - 6\omega_7\omega_{20}\omega_8v_3^2\omega_5\omega_{18}v_1\omega_{15}c_s^2 -$
$3\omega_7\omega_{20}\omega_{17}\omega_8v_2^2v_3\omega_5v_1^2\omega_{15}\omega_6 + 6\omega_7\omega_{17}\omega_8v_2^2v_3\omega_{18}\omega_{15}\omega_6c_s^2 + 3\omega_7\omega_{20}\omega_{17}\omega_8v_3\omega_5\omega_{18}v_1^2\omega_{15}\omega_6c_s^2 - 6\omega_7\omega_{20}\omega_8v_2^2\omega_5\omega_{18}v_1\omega_6c_s^2 -$
$6\omega_7\omega_{17}\omega_8v_2^2v_3\omega_5\omega_{18}v_1^2\omega_{15}\omega_6 + 12\omega_7\omega_{20}\omega_{17}v_2^2\omega_5\omega_{18}v_1\omega_{15}\omega_6c_s^2 - 6\omega_7\omega_{17}\omega_8v_3^2\omega_{18}v_1\omega_{15}\omega_6c_s^2 + 12\omega_7\omega_{20}v_2^2v_3\omega_5\omega_{18}v_1^2\omega_{15}\omega_6 -$
$3\omega_7\omega_{20}\omega_{17}\omega_8v_3\omega_5\omega_{18}v_1^2\omega_6c_s^2 + 6\omega_7\omega_{20}\omega_{17}\omega_8v_3\omega_5v_1^2\omega_{15}c_s^2 - 3\omega_7\omega_{20}\omega_{17}\omega_8v_2^2\omega_5\omega_{18}v_1\omega_{15}\omega_6c_s^2 + 6\omega_7\omega_{20}\omega_{17}\omega_8v_2^2\omega_{18}v_1\omega_{15}\omega_6c_s^2 +$
$12\omega_7\omega_{17}\omega_8v_3\omega_5\omega_{18}v_1^2\omega_{15}c_s^2 - 6\omega_7\omega_{17}\omega_8v_2^2v_3^2\omega_{18}v_1\omega_{15}\omega_6 - 12\omega_7\omega_{20}\omega_{17}v_2^2\omega_{18}v_1\omega_{15}\omega_6c_s^2 + 3\omega_7\omega_{20}\omega_{17}\omega_8v_2^2v_3^2\omega_5\omega_{18}v_1\omega_6 -$
$6\omega_7\omega_{20}\omega_{17}\omega_8v_2^2v_3\omega_5\omega_{18}v_1^2\omega_{15} + 2\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}v_1\omega_{15}\omega_6c_s^4 + 12\omega_7\omega_{20}\omega_8v_2^2v_3^2\omega_{18}v_1\omega_6 + 12\omega_7\omega_{20}\omega_{17}v_2^2v_3\omega_5\omega_{18}v_1^2\omega_{15} +$
$6\omega_7\omega_{17}\omega_8v_3^2\omega_5\omega_{18}v_1\omega_{15}\omega_6c_s^2 + 12\omega_7\omega_{20}v_3^2\omega_5\omega_{18}v_1\omega_{15}c_s^2 + 6\omega_7\omega_{20}\omega_8v_2^2v_3\omega_5\omega_{18}\omega_6c_s^2 - 6\omega_7\omega_{17}\omega_8v_2^2v_3^2\omega_5v_1\omega_{15}\omega_6 - 12\omega_7\omega_{17}\omega_8v_2^2v_3\omega_5\omega_{15}c_s^2 -$
$6\omega_7\omega_{17}\omega_8v_3^2\omega_5v_1\omega_{15}\omega_6c_s^2 + 12\omega_7\omega_{20}\omega_8v_3\omega_{18}v_1^2\omega_{15}\omega_6c_s^2 - 12\omega_7\omega_{17}v_2^2v_3\omega_{18}v_1^2\omega_{15}\omega_6 + 12\omega_7\omega_{20}\omega_{17}v_3^2\omega_5\omega_{18}v_1\omega_{15}\omega_6c_s^2 -$

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

$C_{23} = -\omega_{20}\omega_{17}\omega_8 v_3^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 c_s^2 - 2\omega_{20}\omega_{17}\omega_8 v_3^2\omega_5^2\omega_{15}\omega_6 c_s^2 + 8\omega_{20}\omega_{17}v_2^2 v_3\omega_5^2\omega_{18}v_1\omega_{15}\omega_6 - 2\omega_{20}\omega_{17}\omega_8\omega_{18}\omega_{15}\omega_6^2 c_s^4 -$
$4\omega_{20}\omega_{17}\omega_8 v_2^2 v_3\omega_5^2\omega_{18}v_1\omega_{15}\omega_6 + 8\omega_{17}\omega_8 v_3\omega_5^2\omega_{18}v_1\omega_{15}\omega_6 c_s^2 - 4\omega_{17}v_3^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 c_s^2 - 2\omega_{20}\omega_8 v_2^2 v_3^2\omega_5^2\omega_{18}\omega_{15}\omega_6 + 4\omega_{20}\omega_5^2\omega_{18}\omega_{15}\omega_6^2 c_s^4 +$
$8\omega_{20}v_3\omega_5^2\omega_{18}v_1\omega_{15}\omega_6^2 c_s^2 + 4\omega_{20}\omega_{17}v_2^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 c_s^2 + 4\omega_{20}v_2^2\omega_5^2\omega_{18}\omega_{15}\omega_6 c_s^2 - 2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15}\omega_6^2 c_s^4 - 8\omega_{17}v_2^2 v_3\omega_5^2\omega_{18}v_1\omega_{15}\omega_6 +$
$2\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2 c_s^4 - 2\omega_{20}\omega_{17}\omega_8 v_2^2\omega_5\omega_{18}\omega_6^2 c_s^2 + 2\omega_{17}\omega_8 v_3^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 c_s^2 - 4\omega_{20}\omega_{17}v_2^2\omega_5\omega_{18}\omega_{15}\omega_6^2 c_s^2 - 4\omega_{20}\omega_5\omega_{18}\omega_{15}\omega_6^2 c_s^4 -$
$2\omega_{20}\omega_8 v_3^2\omega_5^2\omega_{18}\omega_{15}\omega_6 c_s^2 + 2\omega_{20}\omega_{17}\omega_8 v_2^2 v_3^2\omega_5\omega_{18}\omega_{15}\omega_6^2 - 8\omega_{17}v_3\omega_5^2\omega_{18}v_1\omega_{15}\omega_6 c_s^2 + 4\omega_{17}v_2^2 v_3^2\omega_5\omega_{18}\omega_{15}\omega_6^2 + \omega_{20}\omega_{17}\omega_8 v_2^2\omega_5^2\omega_{15}\omega_6^2 c_s^2 -$
$2\omega_{17}\omega_8 v_3^2\omega_5\omega_{18}\omega_{15}\omega_6^2 c_s^2 - 2\omega_{20}\omega_{17}\omega_8 v_2^2 v_3^2\omega_5^2\omega_{15}\omega_6 - 2\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2 c_s^4 - 4\omega_{20}\omega_{17}\omega_8 v_3\omega_5^2\omega_{18}v_1\omega_{15}\omega_6 c_s^2 +$
$2\omega_{20}\omega_{17}\omega_8 v_3^2\omega_5\omega_{18}\omega_{15}\omega_6^2 c_s^2 + 8\omega_{20}\omega_8 v_3\omega_5\omega_{18}v_1\omega_{15}\omega_6^2 c_s^2 + 4\omega_{20}\omega_8 v_3^2\omega_5\omega_{18}\omega_6^2 c_s^2 - 8\omega_{20}\omega_8 v_2^2 v_3\omega_5\omega_{18}v_1\omega_6^2 + 8\omega_{20}\omega_{17}v_3\omega_5^2\omega_{18}v_1\omega_{15}\omega_6 c_s^2 +$
$8\omega_{17}\omega_8 v_2^2 v_3\omega_5^2\omega_{18}v_1\omega_{15}\omega_6 - 2\omega_{17}\omega_8 v_2^2 v_3^2\omega_5\omega_{18}\omega_{15}\omega_6^2 + 4\omega_{20}\omega_{17}v_2^2 v_3^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 + 4\omega_{17}v_3^2\omega_5\omega_{18}\omega_{15}\omega_6^2 c_s^2 - 4\omega_{17}\omega_5^2\omega_{18}\omega_{15}\omega_6 c_s^4 -$
$2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6^2 c_s^4 + 8\omega_{20}\omega_{17}v_2^2 v_3\omega_5\omega_{18}v_1\omega_{15}\omega_6^2 - 2\omega_{20}\omega_{17}\omega_8 v_2^2 v_3^2\omega_5\omega_{18}\omega_6^2 + 4\omega_{17}\omega_8 v_2^2\omega_5^2\omega_{15}\omega_6 c_s^2 + 4\omega_{20}v_2^2 v_3^2\omega_5\omega_{18}\omega_{15}\omega_6^2 +$
$2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6 c_s^4 - 4\omega_{20}\omega_{17}\omega_8 v_2^2 v_3\omega_5\omega_{18}v_1\omega_{15}\omega_6^2 + 2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6^2 c_s^4 - 8\omega_{17}\omega_8 v_3\omega_5^2 v_1\omega_{15}\omega_6 c_s^2 - 4\omega_{17}\omega_8 v_2^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 -$
$4\omega_{20}\omega_{17}v_2^2 v_3^2\omega_5^2\omega_{18}\omega_{15}\omega_6 + \omega_{20}\omega_{17}\omega_8 v_3^2\omega_5^2\omega_{18}\omega_6^2 c_s^2 + 4\omega_{20}v_3^2\omega_5\omega_{18}\omega_{15}\omega_6^2 c_s^2 + 2\omega_{20}\omega_8 v_2^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 c_s^2 - 2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}c_s^4 +$
$4\omega_{20}\omega_{17}\omega_5\omega_{18}\omega_{15}\omega_6^2 c_s^4 - 4\omega_{20}\omega_8 v_3\omega_5^2\omega_{18}v_1\omega_{15}\omega_6^2 c_s^2 - 8\omega_{20}\omega_8 v_3\omega_5\omega_{18}v_1\omega_6^2 c_s^2 + 4\omega_{20}\omega_{17}\omega_8 v_3\omega_5^2 v_1\omega_{15}\omega_6 c_s^2 + 2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_6^2 c_s^4 +$
$4\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}\omega_6 c_s^4 - 8\omega_{17}v_2^2 v_3\omega_5\omega_{18}v_1\omega_{15}\omega_6^2 + \omega_{20}\omega_{17}\omega_8 v_2^2 v_3^2\omega_5^2\omega_{15}\omega_6^2 - 4\omega_{20}\omega_8 v_2^2\omega_5\omega_{18}\omega_{15}\omega_6^2 c_s^2 - 4\omega_{20}\omega_{17}\omega_5^2\omega_{18}\omega_{15}\omega_6^2 c_s^4 -$
$4\omega_{20}v_3^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 c_s^2 - 4\omega_{20}\omega_{17}v_3^2\omega_5^2\omega_{18}\omega_{15}\omega_6 c_s^2 + 4\omega_{20}\omega_8 v_3\omega_5^2\omega_{18}v_1\omega_6^2 c_s^2 - 2\omega_{20}\omega_8 v_2^2\omega_5^2\omega_{18}\omega_6^2 c_s^2 - 4\omega_{17}\omega_8 v_2^2\omega_5^2\omega_{18}\omega_{15}\omega_6 c_s^2 -$
$2\omega_{20}\omega_8 v_2^2 v_3^2\omega_5^2\omega_{18}\omega_6^2 - 2\omega_{17}\omega_8 v_3^2\omega_5^2\omega_{15}\omega_6^2 c_s^2 - 2\omega_{20}\omega_{17}\omega_8 v_2^2 v_3\omega_5^2\omega_{18}v_1\omega_6^2 + 8\omega_{17}v_2^2 v_3\omega_5^2\omega_{18}v_1\omega_{15}\omega_6^2 - 8\omega_{20}\omega_{17}v_2^2 v_3\omega_5^2\omega_{18}v_1\omega_{15}\omega_6^2 +$
$4\omega_{20}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2 c_s^4 - 12\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6 c_s^4 + 2\omega_{20}\omega_{17}\omega_8 v_2^2 v_3\omega_5^2\omega_{18}v_1\omega_{15}\omega_6^2 + 2\omega_{20}\omega_{17}\omega_8 v_2^2\omega_5^2\omega_{18}\omega_{15}\omega_6 c_s^2 -$
$8\omega_{20}v_3\omega_5\omega_{18}v_1\omega_{15}\omega_6^2 c_s^2 + 4\omega_{17}\omega_8 v_2^2 v_3\omega_5\omega_{18}v_1\omega_{15}\omega_6^2 + 4\omega_{17}v_2^2\omega_5^2\omega_{18}\omega_{15}\omega_6 c_s^2 + 2\omega_{20}\omega_8 v_2^2 v_3^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 - 8\omega_{20}v_2^2 v_3\omega_5\omega_{18}v_1\omega_{15}\omega_6^2 +$
$4\omega_{20}\omega_8 v_2^2 v_3\omega_5^2\omega_{18}v_1\omega_{15}\omega_6 + 4\omega_{20}\omega_{17}v_3^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 c_s^2 + 4\omega_{20}v_3^2\omega_5^2\omega_{18}\omega_{15}\omega_6 c_s^2 + \omega_{20}\omega_{17}\omega_8 v_2^2\omega_5^2\omega_{18}\omega_6^2 c_s^2 + 4\omega_{20}\omega_{17}\omega_5^2\omega_{18}\omega_{15}\omega_6 c_s^4 +$
$\omega_{20}\omega_{17}\omega_8 v_2^2 v_3^2\omega_5^2\omega_{18}\omega_6^2 - 8\omega_{17}\omega_8 v_2^2 v_3\omega_5^2 v_1\omega_{15}\omega_6 + 4\omega_{17}\omega_8 v_3^2\omega_5^2\omega_{15}\omega_6 c_s^2 + 2\omega_{17}\omega_8 v_2^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 c_s^2 + 4\omega_{17}\omega_8 v_3\omega_5\omega_{18}v_1\omega_{15}\omega_6^2 c_s^2 -$
$\omega_{20}\omega_{17}\omega_8 v_2^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 c_s^2 + 2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}\omega_6^2 c_s^4 - 4\omega_{17}\omega_5\omega_{18}\omega_{15}\omega_6^2 c_s^4 + 4\omega_{20}\omega_{17}\omega_8 v_2^2 v_3\omega_5^2 v_1\omega_{15}\omega_6 + 4\omega_{20}\omega_{17}\omega_8 v_3\omega_5\omega_{18}v_1\omega_6^2 c_s^2 -$
$4\omega_{17}v_2^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 c_s^2 + 2\omega_{17}\omega_8 v_2^2 v_3^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 + 4\omega_{17}\omega_8 v_2^2 v_3^2\omega_5^2\omega_{15}\omega_6 + 2\omega_{20}\omega_{17}\omega_8 v_2^2\omega_5\omega_{18}\omega_{15}\omega_6^2 c_s^2 - 2\omega_{17}\omega_8 v_2^2\omega_5^2\omega_{15}\omega_6^2 c_s^2 -$
$4\omega_{20}\omega_{17}v_2^2 v_3^2\omega_5\omega_{18}\omega_{15}\omega_6^2 + 4\omega_{20}\omega_8 v_2^2 v_3^2\omega_5\omega_{18}\omega_6^2 - 2\omega_{20}\omega_{17}\omega_8 v_3\omega_5^2\omega_{18}v_1\omega_6^2 c_s^2 + 4\omega_{17}\omega_5^2\omega_{18}\omega_{15}\omega_6^2 c_s^4 + 2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6 c_s^4 -$
$8\omega_{17}v_3\omega_5\omega_{18}v_1\omega_{15}\omega_6^2 c_s^2 + 4\omega_{17}\omega_8 v_3\omega_5^2 v_1\omega_{15}\omega_6^2 c_s^2 - 4\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6 c_s^4 - 2\omega_{20}\omega_8 v_3^2\omega_5^2\omega_{18}\omega_6^2 c_s^2 + 4\omega_{17}v_2^2\omega_5\omega_{18}\omega_{15}\omega_6^2 c_s^2 +$
$4\omega_{20}\omega_8 v_2^2 v_3\omega_5^2\omega_{18}v_1\omega_6^2 + 4\omega_{20}v_2^2 v_3^2\omega_5^2\omega_{18}\omega_{15}\omega_6 - 4\omega_{20}\omega_{17}v_3^2\omega_5\omega_{18}\omega_{15}\omega_6^2 c_s^2 - 4\omega_{20}\omega_{17}\omega_8 v_3\omega_5\omega_{18}v_1\omega_{15}\omega_6^2 c_s^2 - 4\omega_{17}v_2^2 v_3^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 -$
$2\omega_{20}\omega_{17}\omega_8 v_3\omega_5^2 v_1\omega_{15}\omega_6^2 c_s^2 + 8\omega_{20}v_2^2 v_3\omega_5^2\omega_{18}v_1\omega_{15}\omega_6^2 + 8\omega_{20}\omega_{17}v_3\omega_5\omega_{18}v_1\omega_{15}\omega_6^2 c_s^2 - 2\omega_{20}\omega_8 v_2^2\omega_5^2\omega_{18}\omega_{15}\omega_6 c_s^2 +$
$4\omega_{20}\omega_8 v_3\omega_5^2\omega_{18}v_1\omega_{15}\omega_6 c_s^2 - 2\omega_{17}\omega_8 v_2^2\omega_5\omega_{18}\omega_{15}\omega_6^2 c_s^2 - \omega_{20}\omega_{17}\omega_8 v_2^2 v_3^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 + 8\omega_{20}\omega_8 v_2^2 v_3\omega_5\omega_{18}v_1\omega_{15}\omega_6^2 + 4\omega_{20}v_2^2\omega_5\omega_{18}\omega_{15}\omega_6^2 c_s^2 -$
$2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_6 c_s^4 - 8\omega_{20}v_2^2 v_3\omega_5^2\omega_{18}v_1\omega_{15}\omega_6 + 4\omega_{17}v_2^2 v_3^2\omega_5^2\omega_{18}\omega_{15}\omega_6 + 2\omega_{20}\omega_8 v_3^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 c_s^2 + 4\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}\omega_6 c_s^4 -$
$2\omega_{20}\omega_{17}\omega_8 v_2^2\omega_5^2\omega_{15}\omega_6 c_s^2 + 4\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}c_s^4 + 2\omega_{20}\omega_{17}\omega_8 v_2^2 v_3^2\omega_5^2\omega_{18}\omega_{15}\omega_6 + 8\omega_{17}v_3\omega_5^2\omega_{18}v_1\omega_{15}\omega_6^2 c_s^2 - 4\omega_{20}\omega_8\omega_5\omega_{18}\omega_6^2 c_s^4 -$
$8\omega_{20}\omega_{17}v_3\omega_5^2\omega_{18}v_1\omega_{15}\omega_6^2 c_s^2 - 2\omega_{17}\omega_8 v_2^2 v_3^2\omega_5^2\omega_{15}\omega_6^2 - 4\omega_{17}\omega_8 v_2^2 v_3^2\omega_5^2\omega_{18}\omega_{15}\omega_6 + 2\omega_{20}\omega_{17}\omega_8 v_3\omega_5^2\omega_{18}v_1\omega_{15}\omega_6^2 c_s^2 -$
$2\omega_{20}\omega_{17}\omega_8 v_3^2\omega_5\omega_{18}\omega_6^2 c_s^2 - 4\omega_{20}v_2^2 v_3^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 + 4\omega_{20}\omega_{17}\omega_8\omega_{18}\omega_{15}\omega_6 c_s^4 + \omega_{20}\omega_{17}\omega_8 v_3^2\omega_5^2\omega_{15}\omega_6^2 c_s^2 - 4\omega_{20}\omega_8 v_2^2 v_3^2\omega_5\omega_{18}\omega_{15}\omega_6^2 -$
$2\omega_{20}\omega_{17}\omega_8 v_2^2 v_3\omega_5^2 v_1\omega_{15}\omega_6^2 + 2\omega_{20}\omega_{17}\omega_8 v_3^2\omega_5^2\omega_{18}\omega_{15}\omega_6 c_s^2 - 4\omega_{17}\omega_8 v_3^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 c_s^2 + 4\omega_{17}v_3^2\omega_5^2\omega_{18}\omega_{15}\omega_6 c_s^2 - 4\omega_{20}\omega_8 v_3^2\omega_5\omega_{18}\omega_{15}\omega_6^2 c_s^2 -$
$4\omega_{20}\omega_8 v_2^2 v_3\omega_5^2\omega_{18}v_1\omega_{15}\omega_6^2 - 4\omega_{20}v_2^2\omega_5^2\omega_{18}\omega_{15}\omega_6^2 c_s^2 + 4\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15}\omega_6 c_s^4 - 8\omega_{20}v_3\omega_5^2\omega_{18}v_1\omega_{15}\omega_6 c_s^2 + 4\omega_{20}\omega_{17}\omega_8 v_2^2 v_3\omega_5\omega_{18}v_1\omega_6^2 -$
$4\omega_{20}\omega_{17}v_2^2\omega_5^2\omega_{18}\omega_{15}\omega_6 c_s^2 - 4\omega_{20}\omega_5^2\omega_{18}\omega_{15}\omega_6 c_s^4 + 4\omega_{17}\omega_8 v_2^2 v_3\omega_5^2 v_1\omega_{15}\omega_6^2 - 4\omega_{17}\omega_8 v_3^2\omega_5^2\omega_{18}\omega_{15}\omega_6 c_s^2 + 4\omega_{20}\omega_8 v_2^2\omega_5\omega_{18}\omega_6^2 c_s^2$

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

$$
2\omega_{20}\omega_{17}\omega_8\omega_{18}v_1\omega_{15}\omega_6c_s^2 + 4\omega_{20}\omega_{17}v_3\omega_5\omega_{18}\omega_{15}c_s^2 + 2\omega_{20}\omega_8v_3^2\omega_5\omega_{18}v_1\omega_{15}\omega_6 + \omega_{20}\omega_{17}\omega_8v_3^2\omega_5\omega_{18}v_1\omega_6 + 4\omega_{17}\omega_{18}v_1\omega_{15}\omega_6c_s^2 +
4\omega_{20}\omega_8v_3\omega_{18}\omega_{15}\omega_6c_s^2 + 4\omega_{20}v_3\omega_5\omega_{18}v_1^2\omega_{15}\omega_6 - 4\omega_{20}\omega_{17}v_3^2\omega_5\omega_{18}v_1\omega_{15} + 2\omega_{20}\omega_8v_3\omega_5\omega_{18}v_1^2\omega_6 + 2\omega_{17}\omega_8\omega_5\omega_{18}v_1\omega_{15}\omega_6c_s^2 +
\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}v_1\omega_6c_s^2 - 2\omega_{20}\omega_{17}\omega_8\omega_5v_1\omega_{15}c_s^2 + 2\omega_{20}\omega_8v_3\omega_5\omega_{18}\omega_{15}c_s^2 - 2\omega_{20}\omega_8v_3\omega_5\omega_{18}\omega_{15}\omega_6c_s^2 - 4\omega_{17}\omega_5\omega_{18}v_1\omega_{15}\omega_6c_s^2 +
\omega_{20}\omega_{17}\omega_8\omega_5v_1\omega_{15}\omega_6c_s^2 - 4\omega_{20}\omega_8v_3\omega_{18}v_1^2\omega_6 - 4\omega_{17}\omega_8\omega_5\omega_{18}v_1\omega_{15}c_s^2 + 4\omega_{20}\omega_{17}v_3\omega_{18}\omega_{15}\omega_6c_s^2 - 2\omega_{20}\omega_{17}\omega_8v_3^2\omega_{18}v_1\omega_6 + 4\omega_{17}\omega_8v_3^2\omega_5v_1\omega_{15} -
2\omega_{20}\omega_8v_3^2\omega_5\omega_{18}v_1\omega_{15} + 4\omega_{20}v_3^2\omega_{18}v_1\omega_{15}\omega_6 - \omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}v_1\omega_{15}\omega_6c_s^2 - 4\omega_{20}v_3\omega_{18}v_1^2\omega_{15}\omega_6 - \omega_{20}\omega_{17}\omega_8v_3\omega_5\omega_{18}v_1^2\omega_6 + 4\omega_{20}\omega_8\omega_{18}v_1\omega_6c_s^2 -
2\omega_{20}\omega_8\omega_5\omega_{18}v_1\omega_6c_s^2 + 2\omega_{20}\omega_{17}\omega_8v_3\omega_{18}\omega_6c_s^2 + 4\omega_{20}\omega_{17}v_3\omega_5\omega_{18}v_1^2\omega_{15} + 2\omega_{17}\omega_8v_3^2\omega_5\omega_{18}v_1\omega_{15}\omega_6 - 2\omega_{20}\omega_{17}\omega_8v_3\omega_5\omega_{18}\omega_{15}c_s^2 -
4\omega_{20}\omega_{17}\omega_{18}v_1\omega_{15}\omega_6c_s^2 - \omega_{20}\omega_{17}\omega_8v_3^2\omega_5\omega_{18}v_1\omega_{15}\omega_6 - 4\omega_{17}v_3\omega_5\omega_{18}\omega_{15}c_s^2 + 4\omega_{17}v_3^2\omega_5\omega_{18}v_1\omega_{15} - 4\omega_{17}v_3^2\omega_5\omega_{18}v_1\omega_{15}\omega_6 +
2\omega_{20}\omega_{17}\omega_8v_3^2\omega_5\omega_{18}v_1\omega_{15} + 2\omega_{20}\omega_8v_3\omega_5\omega_{18}v_1^2\omega_{15} - \omega_{20}\omega_{17}\omega_8v_3\omega_5\omega_{15}\omega_6c_s^2 - 2\omega_{17}\omega_8v_3\omega_5\omega_{18}\omega_{15}\omega_6c_s^2 + 2\omega_{17}\omega_8v_3\omega_5v_1^2\omega_{15}\omega_6 -
4\omega_{20}\omega_8\omega_{18}v_1\omega_{15}\omega_6c_s^2 + \omega_{20}\omega_{17}\omega_8v_3\omega_5\omega_{18}\omega_{15}\omega_6c_s^2 - 2\omega_{20}\omega_8v_3^2\omega_5\omega_{18}v_1\omega_6 + 4\omega_{17}\omega_8\omega_5v_1\omega_{15}c_s^2 - 2\omega_{20}\omega_{17}\omega_8v_3\omega_{18}\omega_{15}\omega_6c_s^2 -
4\omega_{20}\omega_{17}v_3\omega_5\omega_{18}v_1^2\omega_{15}\omega_6 - 2\omega_{20}\omega_{17}\omega_8v_3^2\omega_5v_1\omega_{15} + 4\omega_{17}v_3\omega_5\omega_{18}\omega_{15}\omega_6c_s^2 + 2\omega_{20}\omega_8\omega_5\omega_{18}v_1\omega_{15}\omega_6c_s^2 + 2\omega_{17}\omega_8v_3\omega_{18}v_1^2\omega_{15}\omega_6 -
4\omega_{17}v_3\omega_{18}\omega_{15}\omega_6c_s^2 + 2\omega_{20}\omega_{17}\omega_8v_3\omega_5v_1^2\omega_{15} + 4\omega_{17}\omega_8v_3\omega_5\omega_{18}v_1^2\omega_{15} + 4\omega_{17}v_3^2\omega_{18}v_1\omega_{15}\omega_6 + 2\omega_{20}\omega_{17}\omega_8v_3^2\omega_{18}v_1\omega_{15}\omega_6 +
4\omega_{20}\omega_8v_3\omega_{18}v_1^2\omega_{15}\omega_6 + 4\omega_{20}v_3\omega_5\omega_{18}\omega_{15}\omega_6c_s^2 - 4\omega_{17}\omega_8v_3\omega_5\omega_{15}c_s^2 + \omega_{20}\omega_{17}\omega_8v_3^2\omega_5v_1\omega_{15}\omega_6 - 2\omega_{17}\omega_8\omega_{18}v_1\omega_{15}\omega_6c_s^2 + 4\omega_{20}\omega_{18}v_1\omega_{15}\omega_6c_s^2 +
2\omega_{20}\omega_8v_3\omega_5\omega_{18}\omega_6c_s^2 + 4\omega_{20}\omega_{17}v_3\omega_{18}v_1^2\omega_{15}\omega_6 + 4\omega_{17}\omega_5\omega_{18}v_1\omega_{15}c_s^2 - 2\omega_{20}\omega_{17}\omega_8\omega_{18}v_1\omega_6c_s^2 - 4\omega_{20}v_3^2\omega_5\omega_{18}v_1\omega_{15}\omega_6 - 4\omega_{20}\omega_8v_3\omega_{18}\omega_6c_s^2 +
2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}v_1\omega_{15}c_s^2 - 4\omega_{20}v_3\omega_5\omega_{18}v_1^2\omega_{15} - 2\omega_{20}\omega_8v_3\omega_5\omega_{18}v_1^2\omega_{15}\omega_6 + 4\omega_{20}\omega_{17}\omega_5\omega_{18}v_1\omega_{15}\omega_6c_s^2 - 2\omega_{17}\omega_8\omega_5v_1\omega_{15}\omega_6c_s^2
$$

$$
C_{25} = -4\omega_{17}\omega_8v_2^2v_3\omega_{18}v_1\omega_{15}\omega_6 - 4\omega_{20}v_2^2\omega_5\omega_{18}v_1^2\omega_{15} - 4\omega_{20}\omega_8v_2^2\omega_{18}v_1^2\omega_6 + 4\omega_{20}\omega_{17}\omega_{18}v_1^2\omega_{15}\omega_6c_s^2 + 4\omega_{17}\omega_8v_2^2v_3\omega_5\omega_{18}v_1\omega_{15}\omega_6 +
4\omega_{20}\omega_{17}v_2^2\omega_{18}v_1^2\omega_{15}\omega_6 + 2\omega_{20}\omega_{17}\omega_8v_2^2v_3\omega_5v_1\omega_{15}\omega_6 - 2\omega_{20}\omega_8v_2^2\omega_5\omega_{18}v_1^2\omega_{15}\omega_6 + 8\omega_{17}v_2^2v_3\omega_{18}v_1\omega_{15}\omega_6 - 4\omega_{17}\omega_8v_2^2v_3\omega_5v_1\omega_{15}\omega_6 +
2\omega_{20}\omega_8v_2^2\omega_5\omega_{18}\omega_6c_s^2 + 4\omega_{20}\omega_{17}\omega_8v_2^2v_3\omega_{18}v_1\omega_{15}\omega_6 - 4\omega_{20}\omega_8v_3\omega_5\omega_{18}v_1\omega_{15}c_s^2 - 2\omega_{20}\omega_8\omega_5\omega_{18}v_1^2\omega_{15}\omega_6c_s^2 + 4\omega_{20}v_2^2\omega_5\omega_{18}\omega_{15}\omega_6c_s^2 +
8\omega_{20}v_3\omega_{18}v_1\omega_{15}\omega_6c_s^2 + 4\omega_{20}\omega_8\omega_{18}v_1^2\omega_{15}\omega_6c_s^2 + 4\omega_{20}\omega_8v_2^2\omega_{18}v_1^2\omega_{15}\omega_6 + 8\omega_{20}v_2^2v_3\omega_5\omega_{18}v_1\omega_{15} - 8\omega_{17}v_2^2v_3\omega_5\omega_{18}v_1\omega_{15}\omega_6 +
8\omega_{20}\omega_{17}v_2^2v_3\omega_5\omega_{18}v_1\omega_{15}\omega_6 - 2\omega_{20}\omega_{17}\omega_8v_2^2v_3\omega_5\omega_{18}v_1\omega_{15}\omega_6 - 2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}v_1^2\omega_{15}c_s^2 + 4\omega_{17}\omega_8v_2^2\omega_5\omega_{18}v_1^2\omega_{15} - 4\omega_{17}\omega_5\omega_{18}v_1^2\omega_{15}c_s^2 +
2\omega_{20}\omega_{17}\omega_8\omega_{18}v_1^2\omega_6c_s^2 - 2\omega_{20}\omega_{17}\omega_8v_2^2\omega_{18}\omega_{15}\omega_6c_s^2 + 8\omega_{17}v_2^2v_3\omega_5\omega_{18}v_1\omega_{15} - 4\omega_{17}v_2^2\omega_{18}\omega_{15}\omega_6c_s^2 + 2\omega_{17}\omega_8v_2^2\omega_{18}v_1^2\omega_{15}\omega_6 -
4\omega_{20}\omega_8v_2^2v_3\omega_5\omega_{18}v_1\omega_6 + \omega_{20}\omega_{17}\omega_8v_2^2\omega_5\omega_{18}\omega_{15}\omega_6c_s^2 + 4\omega_{20}\omega_{17}\omega_8v_3\omega_{18}v_1\omega_{15}\omega_6c_s^2 + 2\omega_{17}\omega_8\omega_{18}v_1^2\omega_{15}\omega_6c_s^2 + 4\omega_{17}v_2^2\omega_5\omega_{18}\omega_{15}\omega_6c_s^2 +
8\omega_{17}v_3\omega_{18}v_1\omega_{15}\omega_6c_s^2 + 2\omega_{20}\omega_8\omega_5\omega_{18}v_1^2\omega_6c_s^2 - 8\omega_{17}v_3\omega_5\omega_{18}v_1\omega_{15}\omega_6c_s^2 - 4\omega_{20}\omega_8\omega_{18}v_1^2\omega_6c_s^2 + 4\omega_{20}\omega_{17}\omega_8v_2^2v_3\omega_5\omega_{18}v_1\omega_{15} -
4\omega_{20}\omega_{17}v_2^2\omega_5\omega_{18}v_1^2\omega_{15}\omega_6 - 8\omega_{17}\omega_8v_2^2v_3\omega_5\omega_{18}v_1\omega_{15} - 4\omega_{20}\omega_{17}\omega_8v_2^2v_3\omega_5v_1\omega_{15} + 8\omega_{20}\omega_{17}v_3\omega_5\omega_{18}v_1\omega_{15}\omega_6c_s^2 - \omega_{20}\omega_{17}\omega_8v_2^2\omega_5\omega_{15}\omega_6c_s^2 +
2\omega_{20}\omega_8v_2^2\omega_5\omega_{18}v_1^2\omega_{15} + 2\omega_{17}\omega_8v_2^2\omega_5v_1^2\omega_{15}\omega_6 - 2\omega_{20}\omega_{17}\omega_8v_3\omega_5\omega_{18}v_1\omega_{15}\omega_6c_s^2 - 2\omega_{17}\omega_8v_2^2\omega_5\omega_{18}\omega_{15}\omega_6c_s^2 - 4\omega_{17}\omega_8v_3\omega_{18}v_1\omega_{15}\omega_6c_s^2 +
2\omega_{20}\omega_{17}\omega_8v_2^2\omega_5\omega_{15}c_s^2 - 8\omega_{20}\omega_{17}v_3\omega_5\omega_{18}v_1\omega_{15}c_s^2 + 2\omega_{17}\omega_8\omega_5v_1^2\omega_{15}\omega_6c_s^2 - 4\omega_{20}\omega_{17}\omega_5\omega_{18}v_1^2\omega_{15}\omega_6c_s^2 + 2\omega_{20}\omega_{17}\omega_8v_3\omega_5v_1\omega_{15}\omega_6c_s^2 +
4\omega_{17}\omega_8v_3\omega_5\omega_{18}v_1\omega_{15}\omega_6c_s^2 - 2\omega_{20}\omega_{17}\omega_8v_2^2\omega_5\omega_{18}\omega_{15}c_s^2 - 4\omega_{17}v_2^2\omega_5\omega_{18}\omega_{15}c_s^2 + 2\omega_{20}\omega_{17}\omega_8v_3\omega_5\omega_{18}v_1\omega_6c_s^2 + 8\omega_{20}\omega_8v_2^2v_3\omega_{18}v_1\omega_6 +
4\omega_{20}\omega_{17}v_2^2\omega_5\omega_{18}v_1^2\omega_{15} + 8\omega_{17}\omega_8v_3\omega_5v_1\omega_{15}c_s^2 - 4\omega_{20}\omega_{17}\omega_8v_3\omega_{18}v_1\omega_6c_s^2 - 4\omega_{17}\omega_8v_3\omega_5v_1\omega_{15}\omega_6c_s^2 + 2\omega_{20}\omega_{17}\omega_8v_2^2\omega_{18}v_1^2\omega_6 -
4\omega_{20}\omega_{18}v_1^2\omega_{15}\omega_6c_s^2 - 4\omega_{20}v_2^2\omega_{18}v_1^2\omega_{15}\omega_6 - 4\omega_{17}\omega_8\omega_5v_1^2\omega_{15}c_s^2 - \omega_{20}\omega_{17}\omega_8v_2^2\omega_5\omega_{18}v_1^2\omega_6 + 8\omega_{20}v_2^2v_3\omega_{18}v_1\omega_{15}\omega_6 - 4\omega_{17}\omega_8v_2^2\omega_5v_1^2\omega_{15} +
8\omega_{20}v_3\omega_5\omega_{18}v_1\omega_{15}c_s^2 + 4\omega_{20}\omega_{17}v_2^2\omega_{18}\omega_{15}\omega_6c_s^2 + 4\omega_{20}\omega_5\omega_{18}v_1^2\omega_{15}\omega_6c_s^2 - 8\omega_{20}\omega_8v_3\omega_{18}v_1\omega_{15}\omega_6c_s^2 - 2\omega_{20}\omega_8v_2^2\omega_5\omega_{18}\omega_{15}\omega_6c_s^2 +
2\omega_{20}\omega_{17}\omega_8v_2^2v_3\omega_5\omega_{18}v_1\omega_6 - 4\omega_{20}\omega_5\omega_{18}v_1^2\omega_{15}c_s^2 - 4\omega_{20}\omega_8v_2^2\omega_{18}\omega_6c_s^2 + 2\omega_{20}\omega_8v_2^2\omega_5\omega_{18}\omega_{15}c_s^2 - 4\omega_{20}\omega_8v_2^2v_3\omega_5\omega_{18}v_1\omega_{15} -
8\omega_{20}v_3\omega_5\omega_{18}v_1\omega_{15}\omega_6c_s^2 - 4\omega_{20}\omega_{17}\omega_8v_2^2v_3\omega_{18}v_1\omega_6 + 8\omega_{20}\omega_8v_3\omega_{18}v_1\omega_6c_s^2 + 2\omega_{20}\omega_8v_2^2\omega_5\omega_{18}v_1^2\omega_6 - 8\omega_{20}\omega_{17}v_2^2v_3\omega_{18}v_1\omega_{15}\omega_6 +
4\omega_{20}\omega_8v_2^2\omega_{18}\omega_{15}\omega_6c_s^2 - 4\omega_{17}\omega_8v_2^2\omega_5\omega_{15}c_s^2 - \omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}v_1^2\omega_6c_s^2 + 4\omega_{20}\omega_{17}v_2^2\omega_5\omega_{18}\omega_{15}c_s^2 + 4\omega_{20}v_2^2\omega_5\omega_{18}v_1^2\omega_{15}\omega_6 -
2\omega_{20}\omega_{17}\omega_8v_2^2\omega_5\omega_{18}v_1^2\omega_{15} - 4\omega_{20}\omega_8v_3\omega_5\omega_{18}v_1\omega_6c_s^2 + 4\omega_{20}\omega_8v_2^2v_3\omega_5\omega_{18}v_1\omega_{15}\omega_6 - 4\omega_{17}v_2^2\omega_5\omega_{18}v_1^2\omega_{15} + 4\omega_{17}\omega_8\omega_5\omega_{18}v_1^2\omega_{15}c_s^2 +
2\omega_{20}\omega_{17}\omega_8v_2^2\omega_5v_1^2\omega_{15} + 2\omega_{20}\omega_{17}\omega_8\omega_5v_1^2\omega_{15}c_s^2 + 4\omega_{17}v_2^2\omega_5\omega_{18}v_1^2\omega_{15}\omega_6 - 8\omega_{20}\omega_{17}v_3\omega_{18}v_1\omega_{15}\omega_6c_s^2 - 4\omega_{20}\omega_{17}v_2^2\omega_5\omega_{18}\omega_{15}\omega_6c_s^2 -
2\omega_{20}\omega_{17}\omega_8\omega_{18}v_1^2\omega_{15}\omega_6c_s^2 - 2\omega_{20}\omega_{17}\omega_8v_2^2\omega_{18}v_1^2\omega_{15}\omega_6 + \omega_{20}\omega_{17}\omega_8v_2^2\omega_5\omega_{18}v_1^2\omega_{15}\omega_6 - 8\omega_{20}\omega_{17}v_2^2v_3\omega_5\omega_{18}v_1\omega_{15} - 4\omega_{17}v_2^2\omega_{18}v_1^2\omega_{15}\omega_6 +
2\omega_{17}\omega_8v_2^2\omega_{18}\omega_{15}\omega_6c_s^2 - 4\omega_{17}\omega_{18}v_1^2\omega_{15}\omega_6c_s^2 + 4\omega_{20}\omega_8v_3\omega_5\omega_{18}v_1\omega_{15}\omega_6c_s^2 - 2\omega_{17}\omega_8v_2^2\omega_5\omega_{18}v_1^2\omega_{15}\omega_6 - \omega_{20}\omega_{17}\omega_8v_2^2\omega_5v_1^2\omega_{15}\omega_6 +
2\omega_{20}\omega_8\omega_5\omega_{18}v_1^2\omega_{15}c_s^2 - 4\omega_{20}v_2^2\omega_5\omega_{18}\omega_{15}c_s^2 + 2\omega_{17}\omega_8v_2^2\omega_5\omega_{15}\omega_6c_s^2 + 8\omega_{17}\omega_8v_2^2v_3\omega_5v_1\omega_{15} - 8\omega_{20}\omega_8v_2^2v_3\omega_{18}v_1\omega_{15}\omega_6 +
4\omega_{20}\omega_{17}\omega_8v_3\omega_5\omega_{18}v_1\omega_{15}c_s^2 + 4\omega_{17}\omega_8v_2^2\omega_5\omega_{18}\omega_{15}c_s^2 + \omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}v_1^2\omega_{15}\omega_6c_s^2 - \omega_{20}\omega_{17}\omega_8\omega_5v_1^2\omega_{15}\omega_6c_s^2 + 4\omega_{17}\omega_5\omega_{18}v_1^2\omega_{15}\omega_6c_s^2 +
8\omega_{17}v_3\omega_5\omega_{18}v_1\omega_{15}c_s^2 - 8\omega_{20}v_2^2v_3\omega_5\omega_{18}v_1\omega_{15}\omega_6 - 4\omega_{20}v_2^2\omega_{18}\omega_{15}\omega_6c_s^2 - 2\omega_{17}\omega_8\omega_5\omega_{18}v_1^2\omega_{15}\omega_6c_s^2 - \omega_{20}\omega_{17}\omega_8v_2^2\omega_5\omega_{18}\omega_6c_s^2 +
4\omega_{20}\omega_{17}\omega_5\omega_{18}v_1^2\omega_{15}c_s^2 - 4\omega_{20}\omega_{17}\omega_8v_3\omega_5v_1\omega_{15}c_s^2 + 2\omega_{20}\omega_{17}\omega_8v_2^2\omega_{18}\omega_6c_s^2 - 8\omega_{17}\omega_8v_3\omega_5\omega_{18}v_1\omega_{15}c_s^2
$$

$$
C_{26} = 18\omega_{13}\omega_{11}\omega_9\omega_6^2\omega_{22}c_s^2 + 12\omega_{13}\omega_{11}v_3^2\omega_{18}^2\omega_9\omega_{22} - 6\omega_{13}\omega_{18}^2\omega_6^2\omega_{22} - 18\omega_{13}\omega_{11}\omega_{18}\omega_9\omega_6\omega_{22} - 12\omega_{18}^2\omega_9\omega_6^2\omega_{22} - 36\omega_{18}^2\omega_6^2\omega_{22}c_s^2 +
36\omega_{13}\omega_{11}\omega_{18}\omega_9\omega_6c_s^2 - 12\omega_{13}\omega_{11}v_3^2\omega_{18}^2\omega_9\omega_6 - 12\omega_{11}v_3^2\omega_{18}^2\omega_9\omega_6^2 - 36\omega_{11}\omega_{18}^2\omega_9\omega_6^2c_s^2 - 12v_3^2\omega_{18}^2\omega_6^2\omega_{22} + 54\omega_{13}\omega_{18}^2\omega_9\omega_6\omega_{22}c_s^2 -
12\omega_{11}\omega_{18}^2\omega_9\omega_6 + 12\omega_{13}\omega_{11}\omega_9\omega_6\omega_{22} - 12v_3^2\omega_{18}^2\omega_9\omega_6\omega_{22} - 36\omega_{13}\omega_{18}^2\omega_9\omega_{22}c_s^2 + 6\omega_{13}\omega_{11}\omega_{18}^2\omega_6^2 + \omega_{13}\omega_{11}v_3^2\omega_{18}^2\omega_9\omega_6^2\omega_{22} + 6\omega_{13}\omega_{11}\omega_{18}\omega_9\omega_6^2 +
18\omega_{13}\omega_{11}v_3^2\omega_{18}\omega_9\omega_6\omega_{22} + 12\omega_{13}\omega_{18}^2\omega_9\omega_{22} - 36\omega_{18}^2\omega_9\omega_6\omega_{22}c_s^2 - 18\omega_{13}\omega_{18}^2\omega_9\omega_6\omega_{22} + 12\omega_{11}\omega_{18}^2\omega_9\omega_6^2 - 12\omega_{13}\omega_{11}\omega_{18}\omega_9\omega_6 +
18\omega_{13}v_3^2\omega_{18}^2\omega_9\omega_6\omega_{22} + 12\omega_{18}^2\omega_6^2\omega_{22} + 12\omega_{11}v_3^2\omega_{18}^2\omega_6^2 - 9\omega_{13}\omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{22}c_s^2 + 12\omega_{11}v_3^2\omega_{18}^2\omega_9\omega_6 + 6\omega_{13}\omega_{11}v_3^2\omega_{18}^2\omega_9\omega_6^2 +
18\omega_{13}\omega_{11}\omega_{18}^2\omega_9\omega_6^2c_s^2 - 12\omega_{11}\omega_{18}^2\omega_6^2 + 12\omega_{13}\omega_{11}\omega_{18}\omega_9\omega_{22} - \omega_{13}\omega_{11}\omega_{18}^2\omega_9\omega_6^2\omega_{22} + 3\omega_{13}\omega_{11}\omega_{18}^2\omega_9\omega_6^2\omega_{22}c_s^2 - 36\omega_{13}\omega_{11}\omega_{18}\omega_9\omega_{22}c_s^2 +
6\omega_{13}\omega_{11}v_3^2\omega_9\omega_6^2\omega_{22} + 36\omega_{11}\omega_{18}^2\omega_6^2c_s^2 + 12\omega_{13}\omega_{11}\omega_{18}^2\omega_9\omega_6 + 12\omega_{13}\omega_{11}\omega_{18}^2\omega_9\omega_6\omega_{22} + 36\omega_{18}^2\omega_9\omega_6^2\omega_{22}c_s^2 - 12\omega_{13}\omega_{11}v_3^2\omega_9\omega_6\omega_{22} +
54\omega_{13}\omega_{11}\omega_{18}\omega_9\omega_6\omega_{22}c_s^2 - 6\omega_{13}\omega_{11}v_3^2\omega_{18}\omega_9\omega_6^2 + 6\omega_{13}v_3^2\omega_{18}^2\omega_6^2\omega_{22} + 18\omega_{13}\omega_{18}^2\omega_6^2\omega_{22}c_s^2 + 5\omega_{13}\omega_{18}^2\omega_9\omega_6^2\omega_{22} - 12\omega_{13}\omega_{11}\omega_{18}^2\omega_9\omega_{22} -
3\omega_{13}\omega_{11}v_3^2\omega_{18}\omega_9\omega_6^2\omega_{22} - 36\omega_{13}\omega_{11}\omega_{18}^2\omega_9\omega_6\omega_{22}c_s^2 - 5\omega_{13}v_3^2\omega_{18}^2\omega_9\omega_6^2\omega_{22} - 36\omega_{13}\omega_{11}\omega_{18}^2\omega_9\omega_6c_s^2 - 18\omega_{13}\omega_{11}\omega_{18}\omega_9\omega_6^2c_s^2 -
12\omega_{13}\omega_{11}v_3^2\omega_{18}\omega_9\omega_{22} - 18\omega_{13}\omega_{11}\omega_{18}^2\omega_6^2c_s^2 - 12\omega_{13}v_3^2\omega_{18}^2\omega_9\omega_{22} - 36\omega_{13}\omega_{11}\omega_9\omega_6\omega_{22}c_s^2 + 36\omega_{11}\omega_{18}^2\omega_9\omega_6c_s^2 - 12\omega_{13}\omega_{11}v_3^2\omega_{18}^2\omega_9\omega_6\omega_{22} +
12v_3^2\omega_{18}^2\omega_9\omega_6^2\omega_{22} - 6\omega_{13}\omega_{11}\omega_9\omega_6^2\omega_{22} + 12\omega_{13}\omega_{11}v_3^2\omega_{18}\omega_9\omega_6 - 6\omega_{13}\omega_{11}v_3^2\omega_{18}^2\omega_6^2 + 3\omega_{13}\omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{22} - 6\omega_{13}\omega_{11}\omega_{18}^2\omega_9\omega_6^2 +
36\omega_{13}\omega_{11}\omega_{18}^2\omega_9\omega_{22}c_s^2 - 15\omega_{13}\omega_{18}^2\omega_9\omega_6^2\omega_{22}c_s^2 + 12\omega_{18}^2\omega_9\omega_6\omega_{22}
$$

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

$\omega_{13}\omega_{11}\omega_{18}\omega_9\omega_6^3\omega_{22}c_s^2 + \omega_{13}\omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{22} + 6\omega_{13}\omega_{11}\omega_{18}\omega_6^3 + 36\omega_{13}\omega_{11}v_3^2\omega_9\omega_6^2$

$C_{28} =$
$-12v_3^4\omega_{18}^2\omega_6^2 - 12v_3^2\omega_{18}^2\omega_6^2c_s^2 + \omega_{18}^2\omega_6^3c_s^2 + 108v_3^2\omega_6^3c_s^2 + 72v_3^2\omega_{18}\omega_6c_s^2 + 3v_3^4\omega_{18}^2\omega_6^3 + 6\omega_{18}\omega_6^3c_s^4 - 72v_3^4\omega_6^2 + 6v_3^2\omega_{18}^2\omega_6^3c_s^2 - 48\omega_{18}^2\omega_6c_s^4 + 12v_3^2\omega_{18}^2\omega_6^2 -$
$24\omega_{18}\omega_6c_s^2 - 24\omega_{18}\omega_6^2c_s^4 + 36v_3^4\omega_6^3 - 216v_3^2\omega_6^2c_s^2 - 3v_3^2\omega_{18}^2\omega_6^3 - 8\omega_{18}^2\omega_6^2c_s^2 + 24\omega_{18}\omega_6c_s^4 - 72v_3^2\omega_{18}\omega_6^3c_s^2 + 30v_3^2\omega_{18}\omega_6^3 + 12\omega_{18}^2\omega_6c_s^2 + 24\omega_{18}^2\omega_6^2c_s^4 +$
$24\omega_{18}\omega_6^2c_s^2 - 72v_3^2\omega_{18}\omega_6^2 - 36v_3^2\omega_6^3 + 144v_3^2\omega_{18}\omega_6^2c_s^2 + 24\omega_{18}^2c_s^4 - 30v_3^4\omega_{18}\omega_6^3 + 72v_3^2\omega_6^2 - 6\omega_{18}\omega_6^3c_s^2 + 72v_3^4\omega_{18}\omega_6^2 - 3\omega_{18}^2\omega_6^3c_s^4 - 36v_3^2\omega_{18}^2\omega_6c_s^2$

2.5.4 Conservation of momentum: ρv_2

attached text file: `output_d3q27_nse_clbm2_symbolic_pde_02.txt`

$v_2\frac{\partial\rho}{\partial t} + \rho\frac{\partial v_2}{\partial t} + \frac{v_2\delta_l v_1}{\delta_t}\frac{\partial\rho}{\partial x_1} + \frac{v_2\rho\delta_l}{\delta_t}\frac{\partial v_1}{\partial x_1} + \frac{\rho\delta_l v_1}{\delta_t}\frac{\partial v_2}{\partial x_1} + (c_s^2+v_2^2)\frac{\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_2} + \frac{2v_2\rho\delta_l}{\delta_t}\frac{\partial v_2}{\partial x_2} + \frac{v_2v_3\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_3} + \frac{v_3\rho\delta_l}{\delta_t}\frac{\partial v_2}{\partial x_3} +$
$\frac{v_2\rho\delta_l}{\delta_t}\frac{\partial v_3}{\partial x_3} + (-2+\omega_5)\frac{\delta_l^2c_s^2}{2\omega_5\delta_t}\frac{\partial\rho}{\partial x_1}\frac{\partial v_2}{\partial x_1} + (-2+\omega_5)\frac{\delta_l^2c_s^2}{2\omega_5\delta_t}\frac{\partial\rho}{\partial x_1}\frac{\partial v_1}{\partial x_2} +$
$(-2+4c_s^2+6v_2^2-3v_2^2\omega_{10}-2c_s^2\omega_{10}+\omega_{10})\frac{\delta_l^2}{\delta_t\omega_{10}}\frac{\partial\rho}{\partial x_2}\frac{\partial v_2}{\partial x_2} + (2-\omega_{10})\frac{3v_2\rho\delta_l^2}{\delta_t\omega_{10}}\left(\frac{\partial v_2}{\partial x_2}\right)^2 + (-2+\omega_7)\frac{\delta_l^2c_s^2}{2\omega_7\delta_t}\frac{\partial\rho}{\partial x_3}\frac{\partial v_3}{\partial x_2} +$
$(-2+\omega_7)\frac{\delta_l^2c_s^2}{2\omega_7\delta_t}\frac{\partial\rho}{\partial x_3}\frac{\partial v_2}{\partial x_3} + (-2+\omega_5)\frac{\rho\delta_l^2c_s^2}{2\omega_5\delta_t}\frac{\partial^2v_2}{\partial x_1^2} + (-2+\omega_5)\frac{\rho\delta_l^2c_s^2}{2\omega_5\delta_t}\frac{\partial^2v_1}{\partial x_1\partial x_2} +$
$(-2+6c_s^2+2v_2^2-v_2^2\omega_{10}-3c_s^2\omega_{10}+\omega_{10})\frac{v_2\delta_l^2}{2\delta_t\omega_{10}}\frac{\partial^2\rho}{\partial x_2^2} + (-2+2c_s^2+6v_2^2-3v_2^2\omega_{10}-c_s^2\omega_{10}+\omega_{10})\frac{\rho\delta_l^2}{2\delta_t\omega_{10}}\frac{\partial^2v_2}{\partial x_2^2} +$
$(-2+\omega_7)\frac{\rho\delta_l^2c_s^2}{2\omega_7\delta_t}\frac{\partial^2v_3}{\partial x_2\partial x_3} + (-2+\omega_7)\frac{\rho\delta_l^2c_s^2}{2\omega_7\delta_t}\frac{\partial^2v_2}{\partial x_3^2} + (-1+3c_s^2+v_1^2)\frac{v_2\delta_l^3v_1}{12\delta_t}\frac{\partial^3\rho}{\partial x_1^3} + (-1+c_s^2+3v_1^2)\frac{v_2\rho\delta_l^3}{12\delta_t}\frac{\partial^3v_1}{\partial x_1^3} +$
$C_1\frac{\rho\delta_l^3v_1}{6\omega_5\omega_{12}\delta_t}\frac{\partial^3v_2}{\partial x_1^3} + (-12-\omega_5^2+12\omega_5)\frac{\delta_l^3c_s^4}{6\omega_5^2\delta_t}\frac{\partial^3\rho}{\partial x_1^2\partial x_2} - \frac{v_2\rho\delta_l^3c_s^2}{6\delta_t}\frac{\partial^3v_2}{\partial x_1^2\partial x_2} + C_2\frac{v_2\rho\delta_l^3}{12\omega_5\omega_{15}\delta_t\omega_{10}^2}\frac{\partial^3v_1}{\partial x_1\partial x_2^2} + C_3\frac{\delta_l^3}{12\delta_t\omega_{10}^2}\frac{\partial^3\rho}{\partial x_2^3} +$
$(-24-4\omega_{10}^2+36c_s^2+60v_2^2-60v_2^2\omega_{10}+5c_s^2\omega_{10}^2-36c_s^2\omega_{10}+11v_2^2\omega_{10}^2+24\omega_{10})\frac{v_2\rho\delta_l^3}{6\delta_t\omega_{10}^2}\frac{\partial^3v_2}{\partial x_2^3} - \frac{v_2\rho\delta_l^3c_s^2}{6\delta_t}\frac{\partial^3v_3}{\partial x_1^2\partial x_3} +$
$C_4\frac{v_2\rho\delta_l^3}{12\omega_7\delta_t\omega_{16}\omega_{10}^2}\frac{\partial^3v_3}{\partial x_2^2\partial x_3} - \frac{v_2\rho\delta_l^3c_s^2}{6\delta_t}\frac{\partial^3v_1}{\partial x_1\partial x_3^2} + (-12+12\omega_7-\omega_7^2)\frac{\delta_l^3c_s^4}{6\omega_7^2\delta_t}\frac{\partial^3\rho}{\partial x_2\partial x_3^2} - \frac{v_2\rho\delta_l^3c_s^2}{6\delta_t}\frac{\partial^3v_2}{\partial x_2\partial x_3^2} +$
$(-1+3c_s^2+v_3^2)\frac{v_2v_3\delta_l^3}{12\delta_t}\frac{\partial^3\rho}{\partial x_3^3} + C_5\frac{v_3\rho\delta_l^3}{6\omega_7\omega_{19}\delta_t}\frac{\partial^3v_2}{\partial x_3^3} + (-1+c_s^2+3v_3^2)\frac{v_2\rho\delta_l^3}{12\delta_t}\frac{\partial^3v_3}{\partial x_3^3} +$
$(\omega_9c_s^2+24v_1^2c_s^2-12v_1^2\omega_9c_s^2-2c_s^2+6v_1^4-3v_1^4\omega_9+2c_s^4-6v_1^2-\omega_9c_s^4+3v_1^2\omega_9)\frac{v_2\delta_l^4}{24\omega_9\delta_t}\frac{\partial^4\rho}{\partial x_1^4} +$
$(-4-3\omega_9c_s^2+6c_s^2+10v_1^2+2\omega_9-5v_1^2\omega_9)\frac{v_2\rho\delta_l^4v_1}{12\omega_9\delta_t}\frac{\partial^4v_1}{\partial x_1^4} + C_6\frac{\rho\delta_l^4}{24\omega_5^3\omega_{12}^2\delta_t}\frac{\partial^4v_2}{\partial x_1^4} + C_7\frac{\delta_l^4v_1c_s^2}{12\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2\delta_t\omega_{10}}\frac{\partial^4\rho}{\partial x_1^3\partial x_2} +$
$C_8\frac{\rho\delta_l^4c_s^2}{12\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}\delta_t\omega_{10}}\frac{\partial^4v_1}{\partial x_1^3\partial x_2} +$
$(-9\omega_9c_s^2+3\omega_{12}c_s^2+3\omega_9\omega_{12}c_s^2+v_1^2\omega_9\omega_{12}+3\omega_9-\omega_{12}+v_1^2\omega_{12}-\omega_9\omega_{12}-3v_1^2\omega_9)\frac{v_2\rho\delta_l^4v_1}{12\omega_9\omega_{12}\delta_t}\frac{\partial^4v_2}{\partial x_1^3\partial x_2} +$
$C_9\frac{v_2\delta_l^4c_s^2}{12\omega_5^2\omega_{21}\omega_{15}^2\omega_{12}\delta_t\omega_{10}^3}\frac{\partial^4\rho}{\partial x_1^2\partial x_2^2} + C_{10}\frac{\rho\delta_l^4c_s^2}{12\omega_5^3\omega_{21}\omega_{15}\omega_{12}\delta_t\omega_{10}^2}\frac{\partial^4v_2}{\partial x_1^2\partial x_2^2} + C_{11}\frac{\rho\delta_l^4}{12\omega_5^3\omega_{15}^2\delta_t\omega_{10}^3}\frac{\partial^4v_1}{\partial x_1\partial x_2^3} + C_{12}\frac{v_2\delta_l^4}{12\delta_t\omega_{10}^3}\frac{\partial^4\rho}{\partial x_2^4} +$
$C_{13}\frac{\rho\delta_l^4}{12\delta_t\omega_{10}^3}\frac{\partial^4v_2}{\partial x_2^4} + (-\omega_{13}-9\omega_9c_s^2+3\omega_{13}\omega_9c_s^2-\omega_{13}\omega_9+\omega_{13}v_1^2+3\omega_{13}c_s^2+3\omega_9+\omega_{13}v_1^2\omega_9-3v_1^2\omega_9)\frac{v_2\rho\delta_l^4v_1}{12\omega_{13}\omega_9\delta_t}\frac{\partial^4v_3}{\partial x_1^3\partial x_3}$
$+ C_{14}\frac{\rho\delta_l^4c_s^4}{12\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12}\omega_6\delta_t\omega_{16}\omega_{10}}\frac{\partial^4v_3}{\partial x_1^2\partial x_2\partial x_3} + C_{15}\frac{\rho\delta_l^4}{12\omega_7^3\delta_t\omega_{16}^2\omega_{10}^3}\frac{\partial^4v_3}{\partial x_2^3\partial x_3} + C_{16}\frac{\delta_l^4}{12\omega_7\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12}\omega_6\omega_{19}\delta_t}\frac{\partial^4\rho}{\partial x_1^2\partial x_3^2}$
$+ C_{17}\frac{\rho\delta_l^4}{4\omega_7\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12}\omega_{19}\delta_t}\frac{\partial^4v_1}{\partial x_1^2\partial x_3^2} + C_{18}\frac{\rho\delta_l^4}{4\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_{19}\delta_t}\frac{\partial^4v_2}{\partial x_1^2\partial x_3^2} + C_{19}\frac{v_3\rho\delta_l^4}{2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12}\omega_{19}\delta_t}\frac{\partial^4v_3}{\partial x_1^2\partial x_3^2} +$
$C_{20}\frac{\delta_l^4}{2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\delta_t\omega_{16}\omega_{10}}\frac{\partial^4\rho}{\partial x_1\partial x_2\partial x_3^2} + C_{21}\frac{\rho\delta_l^4}{12\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}\delta_t\omega_{16}\omega_{10}}\frac{\partial^4v_1}{\partial x_1\partial x_2\partial x_3^2} +$
$C_{22}\frac{v_2\rho\delta_l^4}{\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\delta_t\omega_{16}\omega_{10}}\frac{\partial^4v_2}{\partial x_1\partial x_2\partial x_3^2} + C_{23}\frac{\rho\delta_l^4}{2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}\delta_t\omega_{16}\omega_{10}}\frac{\partial^4v_3}{\partial x_1\partial x_2\partial x_3^2} +$
$C_{24}\frac{v_2\delta_l^4c_s^2}{12\omega_7^2\omega_{23}\omega_{19}\delta_t\omega_{16}^2\omega_{10}^3}\frac{\partial^4\rho}{\partial x_2^2\partial x_3^2} + C_{25}\frac{\rho\delta_l^4c_s^2}{12\omega_7^3\omega_{23}\omega_{19}\delta_t\omega_{16}\omega_{10}^2}\frac{\partial^4v_2}{\partial x_2^2\partial x_3^2} +$
$(-\omega_{11}\omega_{18}+\omega_{11}v_3^2\omega_{18}+v_3^2\omega_{18}+3\omega_{11}-\omega_{18}-9\omega_{11}c_s^2-3\omega_{11}v_3^2+3\omega_{11}\omega_{18}c_s^2+3\omega_{18}c_s^2)\frac{v_2v_3\rho\delta_l^4}{12\omega_{11}\omega_{18}\delta_t}\frac{\partial^4v_1}{\partial x_1\partial x_3^3} +$
$C_{26}\frac{v_3\delta_l^4c_s^2}{12\omega_7^2\omega_{23}\omega_{11}\omega_{19}^2\delta_t\omega_{16}\omega_{10}}\frac{\partial^4\rho}{\partial x_2\partial x_3^3} +$
$(3\omega_{19}c_s^2+3\omega_{11}\omega_{19}c_s^2+3\omega_{11}-9\omega_{11}c_s^2-3\omega_{11}v_3^2-\omega_{11}\omega_{19}+\omega_{11}v_3^2\omega_{19}+v_3^2\omega_{19}-\omega_{19})\frac{v_2v_3\rho\delta_l^4}{12\omega_{11}\omega_{19}\delta_t}\frac{\partial^4v_2}{\partial x_2\partial x_3^3} +$
$C_{27}\frac{\rho\delta_l^4c_s^2}{12\omega_7^3\omega_{23}\omega_{11}\omega_{19}\delta_t\omega_{16}\omega_{10}}\frac{\partial^4v_3}{\partial x_2\partial x_3^3} +$
$(-\omega_{11}c_s^4-3\omega_{11}v_3^4-2c_s^2-6v_3^2+2c_s^4-12\omega_{11}v_3^2c_s^2+24v_3^2c_s^2+6v_3^4+\omega_{11}c_s^2+3\omega_{11}v_3^2)\frac{v_2\delta_l^4}{24\omega_{11}\delta_t}\frac{\partial^4\rho}{\partial x_3^4} +$

$$C_{28}\frac{\rho\delta_l^4}{24\omega_7^3\omega_{19}^2\delta_t}\frac{\partial^4 v_2}{\partial x_3^4} + (-4+2\omega_{11}+6c_s^2+10v_3^2-3\omega_{11}c_s^2-5\omega_{11}v_3^2)\frac{v_2v_3\rho\delta_l^4}{12\omega_{11}\delta_t}\frac{\partial^4 v_3}{\partial x_3^4} = 0,$$

where:

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

$$C_2 = 12\omega_5\omega_{10}-36\omega_5c_s^2\omega_{10}-6v_2^2\omega_5\omega_{15}\omega_{10}-6\omega_{15}\omega_{10}^2-11\omega_5\omega_{15}c_s^2\omega_{10}^2-18\omega_5\omega_{15}c_s^2\omega_{10}+12\omega_{10}^2-3v_2^2\omega_5\omega_{15}\omega_{10}^2+36\omega_5c_s^2\omega_{10}^2-12\omega_5\omega_{10}^2+12v_2^2\omega_5\omega_{15}-36c_s^2\omega_{10}^2+6\omega_5\omega_{15}\omega_{10}+12v_2^2\omega_5\omega_{10}^2-12\omega_5\omega_{15}-12v_2^2\omega_5\omega_{10}+36\omega_5\omega_{15}c_s^2+18\omega_{15}c_s^2\omega_{10}^2+3\omega_5\omega_{15}\omega_{10}^2-12v_2^2\omega_{10}^2+6v_2^2\omega_{15}\omega_{10}^2$$

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

$$C_4 = -36\omega_7c_s^2\omega_{10}+12\omega_7v_2^2\omega_{10}^2+36\omega_7c_s^2\omega_{16}-6\omega_7v_2^2\omega_{16}\omega_{10}+18c_s^2\omega_{16}\omega_{10}^2+12\omega_{10}^2+12\omega_7v_2^2\omega_{16}-6\omega_{16}\omega_{10}^2-3\omega_7v_2^2\omega_{16}\omega_{10}^2-12\omega_7v_2^2\omega_{10}+36\omega_7c_s^2\omega_{10}^2+3\omega_7\omega_{16}\omega_{10}^2+12\omega_7\omega_{10}-11\omega_7c_s^2\omega_{16}\omega_{10}^2-12\omega_7\omega_{16}-36c_s^2\omega_{10}^2+6v_2^2\omega_{16}\omega_{10}^2-12v_2^2\omega_{10}^2+6\omega_7\omega_{16}\omega_{10}-12\omega_7\omega_{10}^2-18\omega_7c_s^2\omega_{16}\omega_{10}$$

$$C_5 = 6-3\omega_7+9\omega_{19}c_s^2-\omega_7v_3^2\omega_{19}-18c_s^2-6v_3^2+\omega_7\omega_{19}-3\omega_7\omega_{19}c_s^2+3v_3^2\omega_{19}-3\omega_{19}+9\omega_7c_s^2+3\omega_7v_3^2$$

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

$$C_7 = 12\omega_5\omega_{21}\omega_{15}\omega_9\omega_{10}+12\omega_5v_1^2\omega_{15}\omega_9\omega_{12}\omega_{10}+12\omega_5^2\omega_{21}\omega_{12}^2-36\omega_5\omega_{21}\omega_{15}\omega_9c_s^2\omega_{10}-15\omega_5^2\omega_{21}\omega_{15}\omega_{12}^2c_s^2\omega_{10}+12\omega_{21}\omega_{15}\omega_9\omega_{12}\omega_{10}-5\omega_5^2\omega_{21}v_1^2\omega_{15}\omega_{12}^2\omega_{10}-36\omega_5\omega_{15}\omega_9\omega_{12}^2c_s^2\omega_{10}+12\omega_{21}v_1^2\omega_{15}\omega_9\omega_{12}^2\omega_{10}-12\omega_5\omega_9\omega_{12}^2\omega_{10}-36\omega_{21}\omega_{15}\omega_9\omega_{12}c_s^2\omega_{10}+12\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}^2\omega_{10}-6\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{10}+18\omega_5\omega_{21}v_1^2\omega_{15}\omega_9\omega_{12}\omega_{10}-\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2\omega_{10}+36\omega_5\omega_9\omega_{12}^2c_s^2\omega_{10}+12\omega_5\omega_{21}\omega_{12}^2\omega_{10}+12\omega_{21}\omega_{15}\omega_{12}^2\omega_{10}-36\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}^2c_s^2\omega_{10}+6\omega_5^2\omega_{15}\omega_9\omega_{12}\omega_{10}-9\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}c_s^2\omega_{10}+\omega_5^2\omega_{21}v_1^2\omega_{15}\omega_9\omega_{12}^2\omega_{10}+18\omega_5^2\omega_{21}\omega_{15}\omega_9c_s^2\omega_{10}-6\omega_5^2v_1^2\omega_{15}\omega_9\omega_{12}\omega_{10}-12\omega_5\omega_{15}\omega_9\omega_{12}\omega_{10}+54\omega_5\omega_{21}\omega_{15}\omega_{12}^2c_s^2\omega_{10}+18\omega_5\omega_{21}v_1^2\omega_{15}\omega_{12}^2\omega_{10}-36\omega_5^2\omega_9\omega_{12}^2c_s^2\omega_{10}+18\omega_5^2\omega_{15}\omega_9\omega_{12}^2c_s^2\omega_{10}-3\omega_5^2\omega_{21}v_1^2\omega_{15}\omega_9\omega_{12}\omega_{10}+12\omega_5^2\omega_{21}v_1^2\omega_{12}^2\omega_{10}+6\omega_5^2v_1^2\omega_{15}\omega_9\omega_{12}^2\omega_{10}+12\omega_5\omega_{15}\omega_9\omega_{12}^2\omega_{10}+5\omega_5^2\omega_{21}\omega_{15}\omega_{12}^2\omega_{10}+12\omega_5v_1^2\omega_9\omega_{12}^2\omega_{10}+3\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2c_s^2\omega_{10}+54\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}c_s^2\omega_{10}+36\omega_5^2\omega_{21}\omega_{12}^2c_s^2\omega_{10}-12\omega_5^2v_1^2\omega_9\omega_{12}^2\omega_{10}-36\omega_5^2\omega_{21}\omega_{12}^2c_s^2-12\omega_{21}v_1^2\omega_{15}\omega_{12}^2\omega_{10}+6\omega_5^2\omega_{21}v_1^2\omega_{15}\omega_9\omega_{10}-36\omega_{21}\omega_{15}\omega_{12}^2c_s^2\omega_{10}+3\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}\omega_{10}-12\omega_5^2\omega_{21}v_1^2\omega_{12}^2-36\omega_5\omega_{21}\omega_{12}^2c_s^2\omega_{10}-6\omega_5^2v_1^2\omega_{15}\omega_9\omega_{12}^2-12\omega_5\omega_{21}v_1^2\omega_{15}\omega_9\omega_{12}^2\omega_{10}-6\omega_5^2\omega_{21}\omega_{15}\omega_{12}^2-12\omega_5\omega_{21}v_1^2\omega_{12}^2\omega_{10}-18\omega_5^2\omega_{15}\omega_9\omega_{12}c_s^2\omega_{10}+6\omega_5^2\omega_{15}\omega_9\omega_{12}^2-12\omega_5^2\omega_9\omega_{12}^2-6\omega_5^2\omega_{15}\omega_9\omega_{12}^2\omega_{10}+12\omega_5^2v_1^2\omega_9\omega_{12}^2+12\omega_5^2\omega_9\omega_{12}^2\omega_{10}-18\omega_5\omega_{21}\omega_{15}\omega_{12}^2\omega_{10}-12\omega_5\omega_{21}v_1^2\omega_{15}\omega_9\omega_{10}-12\omega_5^2\omega_{21}\omega_{12}^2\omega_{10}-18\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}\omega_{10}+36\omega_5^2\omega_9\omega_{12}^2c_s^2+36\omega_5\omega_{15}\omega_9\omega_{12}c_s^2\omega_{10}-18\omega_5^2\omega_{15}\omega_9\omega_{12}^2c_s^2+18\omega_5^2\omega_{21}\omega_{15}\omega_{12}^2c_s^2+6\omega_5^2\omega_{21}v_1^2\omega_{15}\omega_{12}^2+36\omega_{21}\omega_{15}\omega_9\omega_{12}^2c_s^2\omega_{10}-12\omega_5v_1^2\omega_{15}\omega_9\omega_{12}^2\omega_{10}-12\omega_{21}\omega_{15}\omega_9\omega_{12}^2\omega_{10}-12\omega_{21}v_1^2\omega_{15}\omega_9\omega_{12}\omega_{10}$$

$$C_8 = -12\omega_5\omega_{21}\omega_{15}\omega_9\omega_{10}+6\omega_5^3\omega_{15}\omega_9\omega_{12}c_s^2\omega_{10}-18\omega_5^3v_1^2\omega_{15}\omega_9\omega_{12}+12\omega_5\omega_{21}\omega_{15}\omega_9c_s^2\omega_{10}+18\omega_5^3\omega_{21}v_1^2\omega_{15}\omega_9\omega_{10}+6\omega_5^3\omega_{15}\omega_9\omega_{10}-12\omega_{21}\omega_{15}\omega_9\omega_{12}c_s^2\omega_{10}+12\omega_5^2\omega_{21}\omega_{12}\omega_{10}-12\omega_5^3\omega_{21}\omega_{12}c_s^2-\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}c_s^2\omega_{10}+18\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{10}+12\omega_5^3\omega_9\omega_{12}\omega_{10}-12\omega_5^3\omega_{21}\omega_{12}\omega_{10}+36\omega_5^2v_1^2\omega_9\omega_{12}\omega_{10}-6\omega_5^3\omega_{15}\omega_9c_s^2\omega_{10}-15\omega_5^3\omega_{21}v_1^2\omega_{15}\omega_{12}\omega_{10}-12\omega_5^2\omega_{15}\omega_9\omega_{10}+18\omega_5^3\omega_{21}v_1^2\omega_{15}\omega_{12}+36\omega_5^2v_1^2\omega_{15}\omega_9\omega_{10}-12\omega_5^2\omega_{21}\omega_{12}c_s^2\omega_{10}+12\omega_5\omega_{21}\omega_{15}\omega_{12}\omega_{10}+12\omega_5^3\omega_9\omega_{12}c_s^2+12\omega_5^2\omega_{15}\omega_9\omega_{12}\omega_{10}-12\omega_5^2\omega_9\omega_{12}\omega_{10}-5\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}c_s^2\omega_{10}-36\omega_5^2\omega_{21}v_1^2\omega_{12}\omega_{10}-12\omega_5^3\omega_9\omega_{12}c_s^2\omega_{10}-18\omega_5^2\omega_{21}\omega_{15}\omega_9c_s^2\omega_{10}-18\omega_5^2\omega_{21}\omega_{15}\omega_{12}\omega_{10}-36\omega_5^2v_1^2\omega_{15}\omega_9\omega_{12}\omega_{10}-5\omega_5^3\omega_{21}\omega_{15}\omega_{12}c_s^2\omega_{10}-12\omega_5^3\omega_9\omega_{12}-3\omega_5^2\omega_{21}v_1^2\omega_{15}\omega_9\omega_{12}\omega_{10}-6\omega_5^3\omega_{15}\omega_9\omega_{12}\omega_{10}-18\omega_5^3v_1^2\omega_{15}\omega_9\omega_{10}+12\omega_5^3\omega_{21}\omega_{12}c_s^2\omega_{10}+18\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}c_s^2\omega_{10}-36\omega_5\omega_{21}v_1^2\omega_{15}\omega_{12}\omega_{10}+12\omega_5^2\omega_{15}\omega_9c_s^2\omega_{10}-36\omega_5^3v_1^2\omega_9\omega_{12}\omega_{10}+36\omega_5^3v_1^2\omega_9\omega_{12}-54\omega_5^2\omega_{21}v_1^2\omega_{15}\omega_9\omega_{10}+\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}\omega_{10}+6\omega_5^3\omega_{15}\omega_9\omega_{12}+5\omega_5^3\omega_{21}\omega_{15}\omega_{12}\omega_{10}-6\omega_5^3\omega_{21}\omega_{15}\omega_{12}+12\omega_5^2\omega_9\omega_{12}c_s^2\omega_{10}-12\omega_5^2\omega_{15}\omega_9\omega_{12}c_s^2\omega_{10}-36\omega_5^3\omega_{21}v_1^2\omega_{12}+36\omega_5^3\omega_{21}v_1^2\omega_{12}\omega_{10}-12\omega_5\omega_{21}\omega_{15}\omega_{12}c_s^2\omega_{10}+36\omega_5\omega_{21}v_1^2\omega_{15}\omega_9\omega_{10}+12\omega_5^3\omega_{21}\omega_{12}+18\omega_5^2\omega_{21}\omega_{15}\omega_{12}c_s^2\omega_{10}+18\omega_5^3v_1^2\omega_{15}\omega_9\omega_{12}\omega_{10}+6\omega_5^3\omega_{21}\omega_{15}\omega_9c_s^2\omega_{10}+6\omega_5^3\omega_{21}\omega_{15}\omega_{12}c_s^2-6\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{10}-6\omega_5^3\omega_{15}\omega_9\omega_{12}c_s^2+54\omega_5^2\omega_{21}v_1^2\omega_{15}\omega_{12}\omega_{10}$$

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

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

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

$C_{11} = -\omega_5^3\omega_{15}^2c_s^2\omega_{10}^2 + 12\omega_5^2\omega_{15}c_s^4\omega_{10}^2 + 39v_2^2\omega_5^3\omega_{15}\omega_{10}^3 + 36v_2^2\omega_5^3\omega_{10}^2 - 108v_2^2\omega_5^2c_s^2\omega_{10}^3 + 60v_2^2\omega_5^3\omega_{15}^2c_s^2\omega_{10}^2 - 12\omega_5\omega_{15}c_s^2\omega_{10}^3 - 36v_2^2\omega_5^2\omega_{15}^2c_s^2\omega_{10} + 12\omega_5^2\omega_{15}^2c_s^2\omega_{10} + 36v_2^2\omega_5\omega_{15}c_s^2\omega_{10}^3 + 12v_2^2\omega_5^3\omega_{15}^2c_s^2\omega_{10}^3 - 36v_2^2\omega_5^3\omega_{10}^3 - 18\omega_5^2\omega_{15}c_s^4\omega_{10}^3 - 72v_2^2\omega_5^3\omega_{15}\omega_{10}^2 - 90v_2^4\omega_5^3\omega_{15}^2\omega_{10} - 36v_2^4\omega_5^2\omega_{10}^3 + 36v_2^4\omega_5^2\omega_{15}\omega_{10}^3 - 5\omega_5^2\omega_{15}^2c_s^2\omega_{10}^3 - 36v_2^4\omega_5^3\omega_{10}^2 + 6\omega_5^3\omega_{15}c_s^4\omega_{10}^3 + 19v_2^4\omega_5^3\omega_{15}^2\omega_{10}^2 - 3v_2^2\omega_5^2\omega_{15}^2c_s^2\omega_{10}^3 - 12\omega_5^3\omega_{15}^2c_s^2 + 6v_2^2\omega_5^2\omega_{15}^2\omega_{10}^3 + 36v_2^2\omega_5^3\omega_{15}\omega_{10} + 18v_2^2\omega_5^2\omega_{15}^2c_s^2\omega_{10}^2 + 36v_2^4\omega_5^3\omega_{10}^2 - 6\omega_5^2\omega_{15}^2c_s^2\omega_{10}^2 + 4v_2^4\omega_5^3\omega_{15}^2\omega_{10}^3 - 6\omega_5^3\omega_{15}c_s^4\omega_{10}^2 + 36v_2^2\omega_5^2\omega_{10}^3 + 12\omega_5^3\omega_{15}^2c_s^2\omega_{10} - 306v_2^2\omega_5^3\omega_{15}^2c_s^2\omega_{10} - 24\omega_5\omega_{15}^2c_s^4\omega_{10}^3 + 12\omega_5^3\omega_{15}^2c_s^4 + 54v_2^2\omega_5^2\omega_{15}c_s^2\omega_{10}^3 - 39v_2^4\omega_5^3\omega_{15}\omega_{10}^3 + 18\omega_5^2\omega_{15}c_s^2\omega_{10}^3 + 12\omega_{15}^2c_s^4\omega_{10}^3 - \omega_5^3\omega_{15}^2c_s^4\omega_{10}^3 - 108v_2^2\omega_5^3c_s^2\omega_{10}^2 - 12\omega_5^2\omega_{15}c_s^2\omega_{10}^2 + \omega_5^3\omega_{15}^2c_s^4\omega_{10}^2 + 72v_2^4\omega_5^3\omega_{15}\omega_{10}^2 + 36v_2^2\omega_5^2\omega_{15}c_s^2\omega_{10}^2 - 108v_2^2\omega_5^3\omega_{15}c_s^2\omega_{10} - 36v_2^2\omega_5^2\omega_{15}\omega_{10}^3 - 72v_2^2\omega_5^3\omega_{15}^2 + 12\omega_5\omega_{15}c_s^4\omega_{10}^3 + 90v_2^2\omega_5^3\omega_{15}^2\omega_{10} - 12\omega_5^2\omega_{15}^2c_s^4\omega_{10} + 108v_2^2\omega_5^3c_s^2\omega_{10}^3 + 198v_2^2\omega_5^3\omega_{15}c_s^2\omega_{10}^2 - 19v_2^2\omega_5^3\omega_{15}^2\omega_{10}^2 + 6\omega_5^3\omega_{15}c_s^2\omega_{10}^2 + 6\omega_5^2\omega_{15}^2c_s^4\omega_{10}^2 - 12\omega_5^3\omega_{15}^2c_s^4\omega_{10} - 18v_2^2\omega_5\omega_{15}^2c_s^2\omega_{10}^3 + 252v_2^2\omega_5^3\omega_{15}^2c_s^2 - 36v_2^4\omega_5^3\omega_{15}\omega_{10} - 6v_2^4\omega_5^2\omega_{15}^2\omega_{10}^3 + 6\omega_5\omega_{15}^2c_s^2\omega_{10}^3 - 6\omega_5^3\omega_{15}c_s^2\omega_{10}^3 + 13\omega_5^2\omega_{15}^2c_s^4\omega_{10}^3 - 4v_2^2\omega_5^3\omega_{15}^2\omega_{10}^3 - 99v_2^2\omega_5^3\omega_{15}c_s^2\omega_{10}^3 + 72v_2^4\omega_5^3\omega_{15}^2$

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

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

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

$C_{15} = -24\omega_7c_s^4\omega_{16}^2\omega_{10}^3 + 90\omega_7^3v_2^2\omega_{16}^2\omega_{10} + 6\omega_7^3c_s^4\omega_{16}\omega_{10}^3 + 4\omega_7^3v_2^4\omega_{16}^2\omega_{10}^3 - 12\omega_7^2c_s^2\omega_{16}\omega_{10}^2 - 12\omega_7^3c_s^2\omega_{16}^2 - 306\omega_7^3v_2^2c_s^2\omega_{16}^2\omega_{10} - 108\omega_7^2v_2^2c_s^2\omega_{10}^3 + 18\omega_7^2c_s^2\omega_{16}\omega_{10}^3 + 19\omega_7^3v_2^4\omega_{16}^2\omega_{10}^2 + 6\omega_7^2v_2^2\omega_{16}^2\omega_{10}^3 - 6\omega_7^3c_s^4\omega_{16}\omega_{10}^2 - 36\omega_7^2v_2^4\omega_{10}^3 + 108\omega_7^3v_2^2c_s^2\omega_{10}^3 + 6\omega_7c_s^2\omega_{16}^2\omega_{10}^3 + 54\omega_7^2v_2^2c_s^2\omega_{16}\omega_{10}^3 - 90\omega_7^3v_2^4\omega_{16}^2\omega_{10} + 12\omega_7^2c_s^4\omega_{16}\omega_{10}^2 - 4\omega_7^3v_2^2\omega_{16}^2\omega_{10}^3 - 36\omega_7^3v_2^2\omega_{10}^3 - 6\omega_7^3c_s^2\omega_{16}\omega_{10}^3 + 60\omega_7^3v_2^2c_s^2\omega_{16}^2\omega_{10}^2 + 36\omega_7^2v_2^2c_s^2\omega_{16}\omega_{10}^2 - 108\omega_7^3v_2^2c_s^2\omega_{10}^2 - 72\omega_7^3v_2^2\omega_{16}^2 + 12\omega_7^3v_2^2c_s^2\omega_{16}^2\omega_{10}^3 + 6\omega_7^3c_s^2\omega_{16}\omega_{10}^2 - 6\omega_7^2v_2^4\omega_{16}^2\omega_{10}^3 + 36\omega_7^3v_2^2\omega_{10}^2 + 36\omega_7v_2^2c_s^2\omega_{16}\omega_{10}^3 + 252\omega_7^3v_2^2c_s^2\omega_{16}^2 - 19\omega_7^3v_2^2\omega_{16}^2\omega_{10}^2 - 18\omega_7^2c_s^4\omega_{16}\omega_{10}^3 + 12\omega_7^2c_s^2\omega_{16}^2\omega_{10} + 18\omega_7^2v_2^2c_s^2\omega_{16}^2\omega_{10}^2 - 99\omega_7^3v_2^2c_s^2\omega_{16}\omega_{10}^3 - 72\omega_7^3v_2^2\omega_{16}\omega_{10}^2 + 13\omega_7^2c_s^4\omega_{16}^2\omega_{10}^3 - \omega_7^3c_s^2\omega_{16}^2\omega_{10}^2 + 36\omega_7^2v_2^4\omega_{16}\omega_{10}^3 - 18\omega_7v_2^2c_s^2\omega_{16}^2\omega_{10}^3 - 12\omega_7c_s^2\omega_{16}\omega_{10} - 12\omega_7^3c_s^4\omega_{16}^2\omega_{10} - 3\omega_7^2v_2^2c_s^2\omega_{16}^2\omega_{10}^3 - 36\omega_7^3v_2^4\omega_{16}\omega_{10} + 6\omega_7^2c_s^4\omega_{16}^2\omega_{10}^2 + 39\omega_7^3v_2^2\omega_{16}\omega_{10}^3 + 198\omega_7^3v_2^2c_s^2\omega_{16}\omega_{10}^2 + 12\omega_7^3c_s^4\omega_{16}^2 - 12\omega_7^2c_s^4\omega_{16}^2\omega_{10} + 12c_s^4\omega_{16}^2\omega_{10}^3 + 72\omega_7^3v_2^4\omega_{16}^2 - 108\omega_7^3v_2^2c_s^2\omega_{16}\omega_{10} - 36\omega_7^3v_2^4\omega_{10}^2 - 36\omega_7^2v_2^2\omega_{16}\omega_{10}^3 + \omega_7^3c_s^4\omega_{16}^2\omega_{10}^2 - 5\omega_7^2c_s^2\omega_{16}^2\omega_{10}^3 + 72\omega_7^3v_2^4\omega_{16}\omega_{10}^2 + 36\omega_7^2v_2^2\omega_{10}^3 + 12\omega_7c_s^4\omega_{16}\omega_{10}^3 + 36\omega_7^3v_2^2\omega_{16}\omega_{10} + 12\omega_7^3c_s^2\omega_{16}^2\omega_{10} - 36\omega_7^2v_2^2c_s^2\omega_{16}^2\omega_{10} - 39\omega_7^3v_2^4\omega_{16}\omega_{10}^3 - 6\omega_7^2c_s^2\omega_{16}^2\omega_{10}^2 - \omega_7^3c_s^4\omega_{16}^2\omega_{10}^3 + 36\omega_7^3v_2^4\omega_{10}^3$

$C_{16} = -12\omega_7\omega_{14}v_2v_3^2\omega_5\omega_{12}\omega_6\omega_{19}c_s^2 - 6\omega_7\omega_{20}\omega_8v_2v_3^2\omega_5\omega_6\omega_{19}c_s^2 - 12\omega_{20}v_2^2\omega_5v_1\omega_{12}\omega_6\omega_{19}c_s^2 - 6\omega_7\omega_{20}\omega_{14}\omega_8v_2v_3^2v_1^2\omega_6\omega_{19} - 3\omega_7\omega_{20}\omega_{14}\omega_8v_2^2v_3^2\omega_5v_1\omega_{12}\omega_6 + 3\omega_7\omega_{20}\omega_{14}\omega_8v_2v_3^2\omega_5v_1^2\omega_6\omega_{19} - 12\omega_7\omega_{20}\omega_8v_2^2v_3^2v_1\omega_6\omega_{19} + 12\omega_7\omega_{20}\omega_8v_2v_3^2\omega_6\omega_{19}c_s^2 - 6\omega_{20}\omega_{14}\omega_8v_2^2v_3^2\omega_5v_1\omega_{12}\omega_6\omega_{19} + 6\omega_7\omega_{14}\omega_8v_2^2v_1\omega_{12}\omega_6\omega_{19}c_s^2 + 12\omega_{20}v_2v_3^2\omega_5\omega_{12}\omega_6\omega_{19}c_s^2 - 6\omega_7\omega_{20}\omega_8v_2^2v_3^2\omega_5v_1\omega_{12}\omega_6\omega_{19} - 6\omega_7\omega_{20}\omega_{14}\omega_8v_3^2v_1\omega_{12}\omega_6\omega_{19}c_s^2 + 12\omega_7\omega_{14}v_2^2\omega_5v_1\omega_{12}\omega_6\omega_{19}c_s^2 + 6\omega_7\omega_{20}\omega_8v_3^2\omega_5v_1\omega_6\omega_{19}c_s^2 - 12\omega_7\omega_{20}v_2^2v_1\omega_{12}\omega_6\omega_{19}c_s^2 - 6\omega_{20}\omega_{14}\omega_8v_2\omega_5v_1^2\omega_{12}\omega_6 - 12\omega_7\omega_{20}\omega_{14}v_2v_3^2\omega_{12}\omega_6\omega_{19}c_s^2 - 12\omega_7\omega_{20}\omega_{14}v_2^2v_3^2\omega_5v_1\omega_{12}\omega_6\omega_{19} - 3\omega_7\omega_{20}\omega_{14}\omega_8v_2^2\omega_5v_1\omega_{12}\omega_6c_s^2 - 12\omega_7\omega_{20}\omega_8v_2v_1^2\omega_{12}\omega_6\omega_{19}c_s^2 - 12\omega_{20}v_3^2\omega_5v_1\omega_{12}\omega_6\omega_{19}c_s^2 + 6\omega_7\omega_{14}\omega_8v_3^2\omega_5v_1\omega_{12}\omega_6c_s^2 + 12\omega_7\omega_{20}\omega_{14}v_2^2v_3^2v_1\omega_{12}\omega_6\omega_{19} + 12\omega_{14}\omega_8v_2^2v_3^2\omega_5v_1\omega_{12}\omega_6\omega_{19} - 6\omega_7\omega_{14}\omega_8v_2v_3^2\omega_5\omega_{12}\omega_6c_s^2 + 12\omega_7\omega_{20}v_2v_3^2v_1^2\omega_{12}\omega_6\omega_{19} - 6\omega_7\omega_{14}\omega_8v_2v_3^2\omega_5v_1^2\omega_{12}\omega_6 + 12\omega_7\omega_{14}v_3^2\omega_5v_1\omega_{12}\omega_6\omega_{19}c_s^2 - 12\omega_7\omega_{14}v_3^2v_1\omega_{12}\omega_6\omega_{19}c_s^2 - 6\omega_7\omega_{14}\omega_8v_2v_3^2v_1^2\omega_{12}\omega_6\omega_{19} - 6\omega_7\omega_{20}\omega_{14}\omega_8v_2v_1^2\omega_6\omega_{19}c_s^2 + 12\omega_{14}\omega_8v_2\omega_5v_1^2\omega_{12}\omega_6c_s^2 - 6\omega_7\omega_{14}\omega_8v_2\omega_5v_1^2\omega_{12}\omega_6c_s^2 + 12\omega_{14}\omega_8v_2v_3^2\omega_5v_1^2\omega_{12}\omega_6 - 12\omega_{14}v_3^2\omega_5v_1\omega_{12}\omega_6\omega_{19}c_s^2 + 6\omega_7\omega_{20}\omega_8v_2v_3^2\omega_5v_1^2\omega_{12}\omega_6\omega_{19} - 6\omega_7\omega_{14}\omega_8v_2v_1^2\omega_{12}\omega_6\omega_{19}c_s^2 - 3\omega_7\omega_{20}\omega_{14}\omega_8v_2v_3^2\omega_5\omega_{12}\omega_6\omega_{19}c_s^2 + 6\omega_{20}\omega_8v_2^2\omega_5v_1\omega_{12}\omega_6\omega_{19}c_s^2 + 6\omega_7\omega_{20}\omega_8v_2\omega_5v_1^2\omega_{12}\omega_6\omega_{19}c_s^2 + 12\omega_7\omega_{20}v_2v_1^2\omega_{12}\omega_6\omega_{19}c_s^2 + 6\omega_{20}\omega_{14}\omega_8v_3^2\omega_5v_1\omega_{12}\omega_6c_s^2 + 6\omega_7\omega_{20}\omega_{14}\omega_8v_2v_3^2\omega_{12}\omega_6\omega_{19}c_s^2 - 6\omega_7\omega_{14}\omega_8v_3^2\omega_5v_1\omega_{12}\omega_6\omega_{19}c_s^2 + 12\omega_{14}\omega_8v_2v_3^2\omega_5\omega_{12}\omega_6c_s^2 - 6\omega_{20}\omega_{14}\omega_8v_2v_5v_1^2\omega_{12}\omega_6\omega_{19}c_s^2 - 6\omega_{20}\omega_8v_2v_3^2\omega_5\omega_{12}\omega_6\omega_{19}c_s^2 - 12\omega_{14}\omega_8v_3^2\omega_5v_1\omega_{12}\omega_6c_s^2 + 6\omega_7\omega_{20}\omega_8v_2^2v_3^2\omega_5v_1\omega_6\omega_{19} - 12\omega_7\omega_{20}\omega_8v_2v_3^2v_1^2\omega_{12}\omega_6\omega_{19} + 12\omega_7\omega_{20}v_3^2\omega_5v_1\omega_{12}\omega_6\omega_{19}c_s^2 - 6\omega_{20}\omega_{14}\omega_8v_2v_3^2\omega_5v_1^2\omega_{12}\omega_6 + 12\omega_{20}\omega_{14}v_3^2\omega_5v_1\omega_{12}\omega_6\omega_{19}c_s^2 + 3\omega_7\omega_{20}\omega_{14}\omega_8v_2^2\omega_5v_1\omega_{12}\omega_6\omega_{19}c_s^2 + 6\omega_{20}\omega_{14}\omega_8v_2v_3^2\omega_5v_1^2\omega_{12}\omega_6\omega_{19} - 6\omega_7\omega_{20}\omega_{14}\omega_8v_2^2v_3^2v_1\omega_{12}\omega_6\omega_{19} + 6\omega_7\omega_{20}\omega_{14}\omega_8v_3^2v_1\omega_6\omega_{19}c_s^2 - 12\omega_{20}\omega_{14}v_2v_3^2\omega_5\omega_{12}\omega_6\omega_{19}c_s^2 - 12\omega_{14}\omega_8v_2v_3^2\omega_5v_1^2\omega_{12}\omega_6\omega_{19} - 12\omega_{14}v_2^2\omega_5v_1\omega_{12}\omega_6\omega_{19}c_s^2 - 4\omega_7\omega_{20}\omega_{14}\omega_8v_2\omega_5\omega_{12}\omega_{19}c_s^4 + 6\omega_{20}\omega_8v_3^2\omega_5v_1\omega_{12}\omega_6\omega_{19}c_s^2 - 6\omega_7\omega_{14}\omega_8v_2^2\omega_5v_1\omega_{12}\omega_6\omega_{19}c_s^2 - 12\omega_7\omega_{20}\omega_8v_2^2v_1\omega_6\omega_{19}c_s^2 - 12\omega_7\omega_{20}v_2v_3^2\omega_5\omega_{12}\omega_6\omega_{19}c_s^2 + 12\omega_7\omega_{14}v_2v_3^2\omega_{12}\omega_6\omega_{19}c_s^2 - 12\omega_{14}\omega_8v_2\omega_5v_1^2\omega_{12}\omega_6\omega_{19}c_s^2 + 12\omega_7\omega_{20}v_2^2\omega_5v_1\omega_{12}\omega_6\omega_{19}c_s^2 + 12\omega_7\omega_{20}\omega_{14}v_3^2\omega_5v_1\omega_{12}\omega_6\omega_{19}c_s^2 - 6\omega_7\omega_{20}\omega_8v_2\omega_5v_1^2\omega_6\omega_{19}c_s^2 + 6\omega_7\omega_{14}\omega_8v_2v_3^2\omega_5\omega_{12}\omega_6\omega_{19}c_s^2 + 12\omega_7\omega_{20}\omega_{14}v_2v_3^2\omega_5v_1^2\omega_{12}\omega_6\omega_{19}c_s^2 + 12\omega_{20}\omega_{14}v_2^2\omega_5v_1\omega_{12}\omega_6\omega_{19}c_s^2 + 12\omega_{14}v_2v_3^2\omega_5\omega_{12}\omega_6\omega_{19}c_s^2 - 3\omega_7\omega_{20}\omega_{14}\omega_8v_2^2\omega_5v_1\omega_6\omega_{19}c_s^2 - 12\omega_7\omega_{14}v_2^2v_3^2v_1\omega_{12}\omega_6\omega_{19}c_s^2 + 12\omega_7\omega_{20}\omega_8v_2^2v_1\omega_{12}\omega_6\omega_{19}c_s^2 - 12\omega_7\omega_{20}v_2v_3^2\omega_5v_1^2\omega_{12}\omega_6\omega_{19}c_s^2 + 6\omega_7\omega_{14}\omega_8v_3^2\omega_5v_1\omega_{12}\omega_6\omega_{19}c_s^2 + 12\omega_{20}\omega_{14}v_2v_3^2\omega_5v_1^2\omega_{12}\omega_6\omega_{19}c_s^2 - 12\omega_7\omega_{20}\omega_{14}v_2^2\omega_5v_1\omega_{12}\omega_6\omega_{19}c_s^2 - 6\omega_7\omega_{20}\omega_{14}\omega_8v_2^2v_1\omega_{12}\omega_6\omega_{19}c_s^2 - 6\omega_{20}\omega_{14}\omega_8v_3^2\omega_5v_1\omega_{12}\omega_6\omega_{19}c_s^2 +$

$6\omega_7\omega_{20}\omega_8 v_2^2\omega_5 v_1\omega_6\omega_{19}c_s^2 - 12\omega_7\omega_{20}v_2\omega_5 v_1^2\omega_{12}\omega_6\omega_{19}c_s^2 - 12\omega_{14}\omega_8 v_2 v_3^2\omega_5\omega_{12}\omega_6\omega_{19}c_s^2 - 12\omega_{20}\omega_{14}v_2 v_3^2\omega_5 v_1^2\omega_{12}\omega_6\omega_{19} -$
$12\omega_7\omega_{20}v_3^2 v_1\omega_{12}\omega_6\omega_{19}c_s^2 + 6\omega_7\omega_{14}\omega_8 v_2^2 v_3^2\omega_5 v_1\omega_{12}\omega_6 - 6\omega_7\omega_{20}\omega_8 v_3^2\omega_5 v_1\omega_{12}\omega_6\omega_{19}c_s^2 + 12\omega_{14}v_2 v_3^2\omega_5 v_1^2\omega_{12}\omega_6\omega_{19} +$
$6\omega_7\omega_{14}\omega_8 v_2\omega_5 v_1^2\omega_{12}\omega_6\omega_{19}c_s^2 + 12\omega_{14}\omega_8 v_2^2\omega_5 v_1\omega_{12}\omega_6\omega_{19}c_s^2 + 6\omega_7\omega_{20}\omega_{14}\omega_8 v_2^2 v_1\omega_6\omega_{19}c_s^2 + 12\omega_7\omega_{20}\omega_{14}v_2 v_3^2\omega_5\omega_{12}\omega_6\omega_{19}c_s^2 +$
$6\omega_7\omega_{14}\omega_8 v_2 v_3^2\omega_5 v_1^2\omega_{12}\omega_6\omega_{19} + 12\omega_{14}v_2\omega_5 v_1^2\omega_{12}\omega_6\omega_{19}c_s^2 + 3\omega_7\omega_{20}\omega_{14}\omega_8 v_2 v_3^2\omega_5 v_1^2\omega_{12}\omega_6 - 12\omega_7\omega_{20}\omega_{14}v_3^2\omega_5 v_1\omega_{12}\omega_6\omega_{19}c_s^2 +$
$6\omega_7\omega_{20}\omega_{14}\omega_8 v_2 v_3^2 v_1^2\omega_{12}\omega_6\omega_{19} - 12\omega_7\omega_{20}\omega_8 v_3^2 v_1\omega_6\omega_{19}c_s^2 - 3\omega_7\omega_{20}\omega_{14}\omega_8 v_2^2 v_3^2\omega_5 v_1\omega_6\omega_{19} - 3\omega_7\omega_{20}\omega_{14}\omega_8 v_2\omega_5 v_1^2\omega_{12}\omega_6\omega_{19}c_s^2 -$
$6\omega_{20}\omega_{14}\omega_8 v_2^2\omega_5 v_1\omega_{12}\omega_6\omega_{19}c_s^2 + 6\omega_7\omega_{20}\omega_8 v_2 v_3^2\omega_5\omega_{12}\omega_6\omega_{19}c_s^2 + 12\omega_7\omega_{20}\omega_8 v_2^2 v_3^2 v_1\omega_{12}\omega_6\omega_{19} - 3\omega_7\omega_{20}\omega_{14}\omega_8 v_2 v_3^2\omega_5 v_1^2\omega_{12}\omega_6\omega_{19} +$
$3\omega_7\omega_{20}\omega_{14}\omega_8 v_2 v_3^2\omega_5\omega_{12}\omega_6 c_s^2 - 12\omega_7\omega_{14}v_2^2 v_1\omega_{12}\omega_6\omega_{19}c_s^2 - 12\omega_{20}v_2^2 v_3^2\omega_5 v_1\omega_{12}\omega_6\omega_{19} - 12\omega_7\omega_{20}\omega_{14}v_2 v_1^2\omega_{12}\omega_6\omega_{19}c_s^2 -$
$6\omega_{20}\omega_8 v_2\omega_5 v_1^2\omega_{12}\omega_6\omega_{19}c_s^2 + 2\omega_7\omega_{20}\omega_{14}\omega_8 v_2\omega_5\omega_{12}\omega_6\omega_{19}c_s^4 - 6\omega_7\omega_{20}\omega_8 v_2^2\omega_5 v_1\omega_{12}\omega_6\omega_{19}c_s^2 + 6\omega_{20}\omega_{14}\omega_8 v_2 v_3^2\omega_5\omega_{12}\omega_6\omega_{19}c_s^2 +$
$12\omega_{14}\omega_8 v_3^2\omega_5 v_1\omega_{12}\omega_6\omega_{19}c_s^2 - 3\omega_7\omega_{20}\omega_{14}\omega_8 v_3^2\omega_5 v_1\omega_{12}\omega_6 c_s^2 - 12\omega_7\omega_{20}\omega_8 v_2 v_3^2\omega_{12}\omega_6\omega_{19}c_s^2 - 6\omega_{20}\omega_8 v_2 v_3^2\omega_5 v_1^2\omega_{12}\omega_6\omega_{19} +$
$12\omega_7\omega_{14}v_2^2 v_3^2\omega_5 v_1\omega_{12}\omega_6\omega_{19} + 6\omega_7\omega_{14}\omega_8 v_2^2\omega_5 v_1\omega_{12}\omega_6 c_s^2 - 12\omega_{14}v_2^2 v_3^2\omega_5 v_1\omega_{12}\omega_6\omega_{19} - 12\omega_{14}\omega_8 v_2^2\omega_5 v_1\omega_{12}\omega_6 c_s^2 +$
$6\omega_7\omega_{14}\omega_8 v_2^2 v_3^2 v_1\omega_{12}\omega_6\omega_{19} + 12\omega_7\omega_{20}\omega_8 v_2 v_1^2\omega_6\omega_{19}c_s^2 - 12\omega_7\omega_{20}v_2^2 v_3^2 v_1\omega_{12}\omega_6\omega_{19} - 6\omega_7\omega_{14}\omega_8 v_2^2 v_3^2\omega_5 v_1\omega_{12}\omega_6\omega_{19} -$
$12\omega_7\omega_{20}\omega_{14}v_2 v_3^2 v_1^2\omega_{12}\omega_6\omega_{19} + 12\omega_7\omega_{20}v_2^2 v_3^2\omega_5 v_1\omega_{12}\omega_6\omega_{19} - 6\omega_7\omega_{14}\omega_8 v_2 v_3^2\omega_{12}\omega_6\omega_{19}c_s^2 + 12\omega_7\omega_{20}v_2 v_3^2\omega_{12}\omega_6\omega_{19}c_s^2 +$
$3\omega_7\omega_{20}\omega_{14}\omega_8 v_2\omega_5 v_1^2\omega_{12}\omega_6 c_s^2 + 6\omega_{20}\omega_{14}\omega_8 v_2^2\omega_5 v_1\omega_{12}\omega_6 c_s^2 + 6\omega_7\omega_{20}\omega_{14}\omega_8 v_2 v_1^2\omega_{12}\omega_6\omega_{19}c_s^2 + 12\omega_{20}\omega_{14}v_2^2 v_3^2\omega_5 v_1\omega_{12}\omega_6\omega_{19} -$
$12\omega_7\omega_{14}v_2\omega_5 v_1^2\omega_{12}\omega_6\omega_{19}c_s^2 + 12\omega_7\omega_{20}\omega_{14}v_2^2 v_1\omega_{12}\omega_6\omega_{19}c_s^2 - 12\omega_{14}\omega_8 v_2^2 v_3^2\omega_5 v_1\omega_{12}\omega_6 - 3\omega_7\omega_{20}\omega_{14}\omega_8 v_3^2\omega_5 v_1\omega_6\omega_{19}c_s^2 +$
$6\omega_{20}\omega_8 v_2^2 v_3^2\omega_5 v_1\omega_{12}\omega_6\omega_{19} + 12\omega_7\omega_{20}\omega_8 v_3^2 v_1\omega_{12}\omega_6\omega_{19}c_s^2 - 12\omega_7\omega_{14}v_2 v_3^2\omega_5 v_1^2\omega_{12}\omega_6\omega_{19} + 3\omega_7\omega_{20}\omega_{14}\omega_8 v_2 v_3^2\omega_5\omega_6\omega_{19}c_s^2 +$
$12\omega_{20}v_2\omega_5 v_1^2\omega_{12}\omega_6\omega_{19}c_s^2 + 6\omega_{20}\omega_{14}\omega_8 v_2^2 v_3^2\omega_5 v_1\omega_{12}\omega_6 + 12\omega_7\omega_{20}\omega_8 v_2 v_3^2 v_1^2\omega_6\omega_{19} - 6\omega_7\omega_{20}\omega_{14}\omega_8 v_2 v_3^2\omega_6\omega_{19}c_s^2 + 6\omega_7\omega_{20}\omega_{14}\omega_8 v_2^2 v_3^2 v_1\omega_6\omega_{19} -$
$6\omega_7\omega_{20}\omega_8 v_2 v_3^2\omega_5 v_1^2\omega_6\omega_{19} + 3\omega_7\omega_{20}\omega_{14}\omega_8 v_2^2 v_3^2\omega_5 v_1\omega_{12}\omega_6\omega_{19} + 12\omega_7\omega_{14}v_2 v_1^2\omega_{12}\omega_6\omega_{19}c_s^2 + 12\omega_{20}v_2 v_3^2\omega_5 v_1^2\omega_{12}\omega_6\omega_{19}$

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

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

$4\omega_7^2\omega_{14}\omega_8v_2v_3^2\omega_5v_1\omega_{12}\omega_{19} - 4\omega_7^2\omega_{20}\omega_{14}\omega_8v_2\omega_5v_1\omega_{12}\omega_{19}c_s^2 - 2\omega_7^2\omega_{14}\omega_8v_3^2\omega_5\omega_{12}\omega_{19}c_s^2 + 4\omega_7^2\omega_{14}v_3^2\omega_5\omega_{12}\omega_{19}c_s^2 + \omega_7^2\omega_{20}\omega_{14}\omega_8v_3^2\omega_5^2\omega_{19}c_s^2 +$
$8\omega_7\omega_{20}\omega_{14}v_2\omega_5^2v_1\omega_{12}\omega_{19}c_s^2 + \omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^2v_1^2\omega_{12}c_s^2 + 4\omega_7^2\omega_{20}\omega_{14}\omega_5^2v_1^2\omega_{12}\omega_{19}c_s^2 + 2\omega_7^2\omega_{20}\omega_{14}\omega_8v_3^2\omega_5v_1^2\omega_{12}\omega_{19} - 2\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_{12}\omega_{19}c_s^4 +$
$2\omega_7^2\omega_{20}\omega_8\omega_5^2\omega_{19}c_s^4 - 2\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_{19}c_s^4 + 4\omega_7^2\omega_{14}\omega_8v_2\omega_5^2v_1\omega_{12}c_s^2 + 4\omega_7^2\omega_{20}\omega_{14}\omega_8v_2\omega_5v_1\omega_{19}c_s^2 + 2\omega_7^2\omega_{20}\omega_{14}\omega_8v_2\omega_5^2v_1\omega_{12}\omega_{19}c_s^2 +$
$4\omega_7\omega_{20}\omega_{14}\omega_8v_2v_3^2\omega_5^2v_1\omega_{12} - 8\omega_7^2\omega_{20}\omega_{14}v_2\omega_5^2v_1\omega_{12}\omega_{19}c_s^2 + 4\omega_7^2\omega_{20}\omega_{14}v_3^2\omega_5^2v_1^2\omega_{12}\omega_{19} + 4\omega_7^2\omega_{20}\omega_5v_1^2\omega_{12}\omega_{19}c_s^2 - 4\omega_7^2\omega_{14}\omega_5\omega_{12}\omega_{19}c_s^4 -$
$4\omega_7\omega_{20}\omega_{14}\omega_8v_2v_3^2\omega_5^2v_1\omega_{12}\omega_{19} + 2\omega_7^2\omega_{20}\omega_8v_3^2\omega_5^2\omega_{12}\omega_{19}c_s^2 + 8\omega_7^2\omega_{20}v_2v_3^2\omega_5^2v_1\omega_{12}\omega_{19} - 8\omega_7^2\omega_{20}\omega_8v_2v_3^2\omega_5v_1\omega_{19} - 2\omega_7^2\omega_{20}\omega_8v_3^2\omega_5^2\omega_{19}c_s^2 +$
$4\omega_7^2\omega_{20}v_3^2\omega_5\omega_{12}\omega_{19}c_s^2 - 8\omega_7^2\omega_{20}v_2\omega_5v_1\omega_{12}\omega_{19}c_s^2 + 4\omega_7\omega_{14}v_3^2\omega_5^2\omega_{12}\omega_{19}c_s^2 - 4\omega_7^2\omega_{14}v_3^2\omega_5^2v_1^2\omega_{12}\omega_{19} + 2\omega_7^2\omega_{14}\omega_8v_3^2\omega_5^2v_1^2\omega_{12}\omega_{19} -$
$8\omega_7\omega_{14}v_2\omega_5^2v_1\omega_{12}\omega_{19}c_s^2 - 2\omega_7^2\omega_{20}\omega_8\omega_5^2v_1^2\omega_{19}c_s^2 + 2\omega_7\omega_{20}\omega_{14}\omega_8v_3^2\omega_5^2\omega_{12}\omega_{19}c_s^2 - 4\omega_7^2\omega_{14}\omega_5^2v_1^2\omega_{12}\omega_{19}c_s^2 + 2\omega_7^2\omega_{14}\omega_8\omega_5^2v_1^2\omega_{12}\omega_{19}c_s^2 +$
$4\omega_7\omega_{14}\omega_8v_3^2\omega_5^2v_1^2\omega_{12} + 8\omega_7\omega_{20}\omega_{14}v_2v_3^2\omega_5^2v_1\omega_{12}\omega_{19} + 4\omega_7\omega_{20}\omega_{14}\omega_5^2\omega_{12}\omega_{19}c_s^4 + \omega_7^2\omega_{20}\omega_{14}\omega_8v_3^2\omega_5^2v_1^2\omega_{19} - 12\omega_7\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12}\omega_{19}c_s^4 -$
$4\omega_7^2\omega_{20}\omega_{14}v_3^2\omega_5\omega_{12}\omega_{19}c_s^2 - 4\omega_7\omega_{20}\omega_5^2\omega_{12}\omega_{19}c_s^4 - 8\omega_7\omega_{14}\omega_8v_2v_3^2\omega_5^2v_1\omega_{12} - 4\omega_7^2\omega_{20}\omega_8v_3^2\omega_5v_1^2\omega_{12}\omega_{19} - 2\omega_7^2\omega_{14}\omega_8\omega_5^2v_1^2\omega_{12}c_s^2 -$
$2\omega_7^2\omega_{14}\omega_8\omega_5v_1^2\omega_{12}\omega_{19}c_s^2 + 4\omega_7^2\omega_{14}\omega_5v_1^2\omega_{12}\omega_{19}c_s^2 - 8\omega_7^2\omega_{20}\omega_8v_2\omega_5v_1\omega_{19}c_s^2 - 2\omega_7\omega_{20}\omega_8v_3^2\omega_5^2v_1^2\omega_{12}\omega_{19} + 2\omega_7^2\omega_{20}\omega_{14}\omega_8v_2v_3^2\omega_5^2v_1\omega_{12}\omega_{19} -$
$4\omega_7\omega_{20}\omega_{14}v_3^2\omega_5^2\omega_{12}\omega_{19}c_s^2 + \omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^2v_1^2\omega_{19}c_s^2 + 8\omega_7^2\omega_{20}v_2\omega_5^2v_1\omega_{12}\omega_{19}c_s^2 - 2\omega_7^2\omega_{20}\omega_8\omega_5^2\omega_{12}\omega_{19}c_s^4 + \omega_7^2\omega_{20}\omega_{14}\omega_8v_3^2\omega_5^2\omega_{12}c_s^2 -$
$4\omega_7\omega_{20}\omega_{14}\omega_8v_2\omega_5^2v_1\omega_{12}\omega_{19}c_s^2 - \omega_7^2\omega_{20}\omega_{14}\omega_8v_3^2\omega_5^2\omega_{12}\omega_{19}c_s^2 + 8\omega_7^2\omega_{20}\omega_8v_2v_3^2\omega_5v_1\omega_{12}\omega_{19} - 8\omega_7^2\omega_{20}\omega_{14}v_2v_3^2\omega_5^2v_1\omega_{12}\omega_{19} -$
$2\omega_7\omega_{20}\omega_8\omega_5^2v_1^2\omega_{12}\omega_{19}c_s^2 + 4\omega_7^2\omega_{20}\omega_{14}\omega_8v_2v_3^2\omega_5v_1\omega_{19} - 2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{12}\omega_{19}c_s^4 - 2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{19}c_s^4 - 2\omega_7\omega_{20}\omega_{14}\omega_8v_3^2\omega_5^2v_1^2\omega_{12} -$
$2\omega_7^2\omega_{20}\omega_8v_3^2\omega_5^2v_1^2\omega_{19}$

$C_{19} = 4\omega_{20}\omega_{14}v_2^2\omega_5v_1\omega_{12}\omega_{19} + 4\omega_7\omega_{20}\omega_8v_2^2v_1\omega_{12}\omega_{19} - 2\omega_7\omega_{14}\omega_8v_2v_1^2\omega_{12}\omega_{19} + 2\omega_{20}\omega_{14}\omega_8v_2\omega_5v_1^2\omega_{12}\omega_{19} + 2\omega_7\omega_{14}\omega_8v_2^2\omega_5v_1\omega_{12} -$
$2\omega_7\omega_{20}\omega_{14}\omega_8v_2\omega_{19}c_s^2 + 4\omega_{20}\omega_{14}\omega_5v_1\omega_{12}\omega_{19}c_s^2 - 4\omega_{14}\omega_8\omega_5v_1\omega_{12}c_s^2 + 4\omega_7\omega_{14}v_2v_1^2\omega_{12}\omega_{19} + 4\omega_7\omega_{20}\omega_8v_2\omega_{19}c_s^2 + 2\omega_7\omega_{20}\omega_{14}\omega_8v_2v_1^2\omega_{12}\omega_{19} -$
$\omega_7\omega_{20}\omega_{14}\omega_8v_2^2\omega_5v_1\omega_{12} - 4\omega_{20}\omega_{14}v_2\omega_5\omega_{12}\omega_{19}c_s^2 - \omega_7\omega_{20}\omega_{14}\omega_8\omega_5v_1\omega_{19}c_s^2 + 4\omega_{14}\omega_8v_2\omega_5v_1^2\omega_{12} - 2\omega_{20}\omega_8v_2\omega_5v_1^2\omega_{12}\omega_{19} -$
$4\omega_7\omega_{20}v_2\omega_5v_1^2\omega_{12}\omega_{19} + 4\omega_{14}v_2\omega_5v_1^2\omega_{12}\omega_{19} + 2\omega_7\omega_{14}\omega_8v_2\omega_5v_1^2\omega_{12}\omega_{19} + 2\omega_7\omega_{20}\omega_8v_2\omega_5\omega_{12}\omega_{19}c_s^2 + 4\omega_7\omega_{20}v_2\omega_{12}\omega_{19}c_s^2 - 4\omega_7\omega_{20}\omega_8v_2^2v_1\omega_{19} +$
$4\omega_7\omega_{20}\omega_{14}v_2\omega_5v_1^2\omega_{12}\omega_{19} - 4\omega_{14}\omega_8v_2\omega_5\omega_{12}\omega_{19}c_s^2 - 4\omega_{14}\omega_8v_2^2\omega_5v_1\omega_{12} + \omega_7\omega_{20}\omega_{14}\omega_8v_2\omega_5v_1^2\omega_{12} + 2\omega_7\omega_{20}\omega_8\omega_5v_1\omega_{19}c_s^2 -$
$4\omega_7\omega_{20}\omega_8v_2v_1^2\omega_{12}\omega_{19} - 2\omega_7\omega_{20}\omega_8\omega_5v_1\omega_{12}\omega_{19}c_s^2 + 4\omega_7\omega_{20}\omega_{14}v_1\omega_{12}\omega_{19}c_s^2 - 2\omega_7\omega_{20}\omega_{14}\omega_8v_2v_1^2\omega_{19} + 4\omega_{14}\omega_8\omega_5v_1\omega_{12}\omega_{19}c_s^2 -$
$\omega_7\omega_{20}\omega_{14}\omega_8\omega_5v_1\omega_{12}c_s^2 + 2\omega_7\omega_{14}\omega_8v_2^2v_1\omega_{12}\omega_{19} - 4\omega_7\omega_{14}v_2\omega_5v_1^2\omega_{12}\omega_{19} + 4\omega_{20}v_2\omega_5v_1^2\omega_{12}\omega_{19} - 2\omega_{20}\omega_{14}\omega_8v_2\omega_5\omega_{12}c_s^2 + 4\omega_7\omega_{20}\omega_8v_2v_1^2\omega_{19} -$
$2\omega_7\omega_{14}\omega_8v_2\omega_5v_1^2\omega_{12} - 4\omega_7\omega_{20}v_1\omega_{12}\omega_{19}c_s^2 - 4\omega_7\omega_{14}v_2^2v_1\omega_{12}\omega_{19} - \omega_7\omega_{20}\omega_{14}\omega_8v_2\omega_5v_1^2\omega_{12}\omega_{19} - 2\omega_7\omega_{20}\omega_8v_2^2\omega_5v_1\omega_{12}\omega_{19} -$
$2\omega_7\omega_{20}\omega_{14}\omega_8v_2^2v_1\omega_{12}\omega_{19} + 2\omega_7\omega_{14}\omega_8\omega_5v_1\omega_{12}c_s^2 - 4\omega_7\omega_{20}\omega_{14}v_2\omega_{12}\omega_{19}c_s^2 + 2\omega_7\omega_{20}\omega_{14}\omega_8v_2^2v_1\omega_{19} + 4\omega_{14}\omega_8v_2^2\omega_5v_1\omega_{12}\omega_{19} -$
$4\omega_{14}\omega_8v_2\omega_5v_1^2\omega_{12}\omega_{19} + 2\omega_7\omega_{20}\omega_{14}\omega_8v_1\omega_{19}c_s^2 - \omega_7\omega_{20}\omega_{14}\omega_8v_2^2\omega_5v_1\omega_{19} - 2\omega_7\omega_{20}\omega_8v_2\omega_5v_1^2\omega_{19} + 4\omega_7\omega_{20}v_2v_1^2\omega_{12}\omega_{19} +$
$2\omega_7\omega_{20}\omega_8v_2\omega_5v_1^2\omega_{12}\omega_{19} + 2\omega_{20}\omega_{14}\omega_8v_2^2\omega_5v_1\omega_{12} + 4\omega_7\omega_{20}\omega_{14}v_2\omega_5\omega_{12}\omega_{19}c_s^2 + \omega_7\omega_{20}\omega_{14}\omega_8v_2^2\omega_5v_1\omega_{12}\omega_{19} - 4\omega_7\omega_{20}\omega_8v_2\omega_{12}\omega_{19}c_s^2 -$
$4\omega_{20}v_2^2\omega_5v_1\omega_{12}\omega_{19} + 4\omega_7\omega_{14}v_2^2\omega_5v_1\omega_{12}\omega_{19} - 4\omega_7\omega_{20}\omega_{14}\omega_5v_1\omega_{12}\omega_{19}c_s^2 + \omega_7\omega_{20}\omega_{14}\omega_8\omega_5v_1\omega_{12}\omega_{19}c_s^2 - 4\omega_7\omega_{14}v_2\omega_5\omega_{12}\omega_{19}c_s^2 +$
$4\omega_{14}\omega_8v_2\omega_5\omega_{12}c_s^2 + 4\omega_{20}v_2\omega_5\omega_{12}\omega_{19}c_s^2 + 4\omega_7\omega_{20}\omega_8v_1\omega_{12}\omega_{19}c_s^2 - 4\omega_7\omega_{20}\omega_{14}v_2v_1^2\omega_{12}\omega_{19} + 4\omega_7\omega_{14}\omega_5v_1\omega_{12}\omega_{19}c_s^2 - 4\omega_7\omega_{20}\omega_{14}v_2^2\omega_5v_1\omega_{12}\omega_{19} -$
$\omega_7\omega_{20}\omega_{14}\omega_8v_2\omega_5\omega_{12}\omega_{19}c_s^2 + \omega_7\omega_{20}\omega_{14}\omega_8v_2\omega_5\omega_{19}c_s^2 - 4\omega_{20}\omega_5v_1\omega_{12}\omega_{19}c_s^2 - 4\omega_7\omega_{20}\omega_8v_1\omega_{19}c_s^2 - 4\omega_7\omega_{14}v_1\omega_{12}\omega_{19}c_s^2 -$
$2\omega_7\omega_{14}\omega_8v_2^2\omega_5v_1\omega_{12}\omega_{19} - 4\omega_{14}v_2^2\omega_5v_1\omega_{12}\omega_{19} - 2\omega_7\omega_{14}\omega_8v_2\omega_{12}\omega_{19}c_s^2 - 2\omega_7\omega_{20}\omega_8v_2\omega_5\omega_{19}c_s^2 + 2\omega_{20}\omega_{14}\omega_8v_2\omega_5\omega_{12}\omega_{19}c_s^2 +$
$4\omega_7\omega_{20}v_2^2\omega_5v_1\omega_{12}\omega_{19} - 2\omega_7\omega_{20}\omega_{14}\omega_8v_1\omega_{12}\omega_{19}c_s^2 + 2\omega_{20}\omega_8v_2^2\omega_5v_1\omega_{12}\omega_{19} - 2\omega_{20}\omega_{14}\omega_8\omega_5v_1\omega_{12}\omega_{19}c_s^2 + \omega_7\omega_{20}\omega_{14}\omega_8v_2\omega_5\omega_{12}c_s^2 -$
$4\omega_7\omega_{20}v_2^2v_1\omega_{12}\omega_{19} + 4\omega_7\omega_{20}\omega_5v_1\omega_{12}\omega_{19}c_s^2 + 4\omega_7\omega_{20}\omega_{14}v_2^2v_1\omega_{12}\omega_{19} + 2\omega_{20}\omega_{14}\omega_8\omega_5v_1\omega_{12}c_s^2 - 2\omega_7\omega_{14}\omega_8\omega_5v_1\omega_{12}\omega_{19}c_s^2 +$
$2\omega_7\omega_{20}\omega_{14}\omega_8v_2\omega_{12}\omega_{19}c_s^2 - 4\omega_{14}\omega_5v_1\omega_{12}\omega_{19}c_s^2 + 2\omega_{20}\omega_8\omega_5v_1\omega_{12}\omega_{19}c_s^2 + 4\omega_7\omega_{14}v_2\omega_{12}\omega_{19}c_s^2 + 2\omega_7\omega_{14}\omega_8v_1\omega_{12}\omega_{19}c_s^2 -$
$2\omega_{20}\omega_{14}\omega_8v_2^2\omega_5v_1\omega_{12}\omega_{19} - 4\omega_7\omega_{20}v_2\omega_5\omega_{12}\omega_{19}c_s^2 - 2\omega_7\omega_{14}\omega_8v_2\omega_5\omega_{12}c_s^2 - 2\omega_{20}\omega_{14}\omega_8v_2\omega_5v_1^2\omega_{12} + 4\omega_{14}v_2\omega_5\omega_{12}\omega_{19}c_s^2 +$
$2\omega_7\omega_{14}\omega_8v_2\omega_5\omega_{12}\omega_{19}c_s^2 + 2\omega_7\omega_{20}\omega_8v_2^2\omega_5v_1\omega_{19} + \omega_7\omega_{20}\omega_{14}\omega_8v_2\omega_5v_1^2\omega_{19} - 4\omega_{20}\omega_{14}v_2\omega_5v_1^2\omega_{12}\omega_{19} - 2\omega_{20}\omega_8v_2\omega_5\omega_{12}\omega_{19}c_s^2$

$C_{20} = 2\omega_{23}\omega_{17}\omega_8v_3\omega_5v_1^2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} - \omega_7\omega_{23}\omega_{17}\omega_8v_3^2v_1\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} + \omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_3^2\omega_5v_1\omega_{19}c_s^2\omega_{16}\omega_{10} -$
$\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_3\omega_5v_1^2\omega_{15}\omega_{19}c_s^2\omega_{16} + 2\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2v_3\omega_5v_1^2\omega_{15}\omega_{19}\omega_{10} - 2\omega_7\omega_{20}\omega_{17}\omega_8v_2^2\omega_5v_1\omega_{15}\omega_{19}c_s^2\omega_{10} +$
$\omega_7\omega_{23}\omega_{17}\omega_8v_2^2v_3\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} - 2\omega_{23}\omega_{20}\omega_{17}\omega_8v_3^2\omega_5v_1\omega_{15}\omega_{19}c_s^2\omega_{10} - 2\omega_7\omega_{23}\omega_{20}\omega_8v_2^2v_3\omega_5\omega_{15}\omega_{19}c_s^2 -$
$2\omega_{23}\omega_{20}\omega_{17}\omega_8v_3\omega_5v_1^2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} + \omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2v_3^2\omega_5v_1\omega_{15}\omega_{19}\omega_{16} - 2\omega_{23}\omega_{17}\omega_8v_2^2v_3^2\omega_5v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10} +$
$\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2v_3\omega_5\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} - \omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2v_3^2\omega_5v_1\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} + 2\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2v_3^2\omega_5v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10} -$
$2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2\omega_5v_1\omega_{15}\omega_{19}c_s^2 + 2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2v_3^2\omega_5v_1\omega_{15}\omega_{19}\omega_{10} - 2\omega_{23}\omega_{20}v_2^2v_3\omega_5\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} -$
$\omega_7\omega_{20}\omega_{17}\omega_8v_2^2\omega_5v_1\omega_{15}\omega_{19}c_s^2\omega_{16} + 2\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2v_3v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10} - 2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_3\omega_5v_1^2\omega_{15}\omega_{19}c_s^2\omega_{10} +$
$2\omega_7\omega_{23}\omega_{20}\omega_8v_3v_1^2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} + 2\omega_7\omega_{23}\omega_{17}v_2^2v_1\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} - 2\omega_7\omega_{23}\omega_{20}\omega_8v_3v_1^2\omega_{19}c_s^2\omega_{16}\omega_{10} -$
$2\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2v_1\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} - \omega_7\omega_{23}\omega_{17}\omega_8v_2^2v_3\omega_5v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10} + \omega_7\omega_{20}\omega_{17}\omega_8v_2^2v_3\omega_5\omega_{15}c_s^2\omega_{16}\omega_{10} +$
$\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2v_3\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} + \omega_7\omega_{23}\omega_{17}\omega_8v_3^2\omega_5v_1\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} - 2\omega_7\omega_{23}\omega_{17}v_2^2v_3v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10} -$
$2\omega_{20}\omega_{17}\omega_8v_2^2\omega_5v_1\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} + \omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_3^2v_1\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} + \omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2v_3\omega_5\omega_{19}c_s^2\omega_{16} -$
$\omega_7\omega_{23}\omega_{17}\omega_8v_2^2v_1\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} + \omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2\omega_5v_1\omega_{19}c_s^2\omega_{16}\omega_{10} - \omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_3^2\omega_5v_1\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} +$
$2\omega_7\omega_{20}\omega_{17}\omega_8v_2^2v_3\omega_5v_1^2\omega_{15}\omega_{19}\omega_{10} + \omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2v_3\omega_5v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10} - 2\omega_7\omega_{20}\omega_{17}\omega_8v_3^2\omega_5v_1\omega_{15}\omega_{19}c_s^2\omega_{10} -$
$2\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2\omega_5v_1\omega_{15}\omega_{19}c_s^2\omega_{10} + 2\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_5v_1\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} - 2\omega_{23}\omega_{20}\omega_8v_2^2v_3\omega_5\omega_{15}\omega_{19}c_s^2\omega_{10} +$
$\omega_7\omega_{23}\omega_{17}\omega_8v_2^2v_3v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10} - 2\omega_{20}\omega_{17}\omega_8v_3\omega_5v_1^2\omega_{15}\omega_{19}c_s^2\omega_{10} + 2\omega_7\omega_{23}\omega_{20}\omega_8v_2^2\omega_5v_1\omega_{19}c_s^2\omega_{16} + 2\omega_7\omega_{23}\omega_{20}\omega_8v_2^2\omega_5v_1\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} +$
$2\omega_{20}\omega_{17}\omega_8v_2^2v_3^2\omega_5v_1\omega_{15}\omega_{19}\omega_{10} - 2\omega_7\omega_{20}\omega_{17}\omega_8v_2^2v_3\omega_5\omega_{15}\omega_{19}c_s^2 + 2\omega_7\omega_{23}\omega_{20}\omega_8v_2^2v_3\omega_5\omega_{19}c_s^2\omega_{16}\omega_{10} - \omega_7\omega_{20}\omega_{17}\omega_8v_3^2\omega_5v_1\omega_{15}\omega_{19}c_s^2\omega_{16} -$
$\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2v_3^2v_1\omega_{19}\omega_{16}\omega_{10} - 2\omega_7\omega_{23}\omega_{20}v_2^2v_3\omega_5v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10} - 2\omega_7\omega_{23}\omega_{17}v_2^2v_3\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} +$
$\omega_7\omega_{20}\omega_{17}\omega_8v_2^2v_3\omega_5v_1^2\omega_{15}\omega_{19}\omega_{16} + 2\omega_7\omega_{23}\omega_{20}\omega_8v_2^2v_3\omega_5v_1^2\omega_{19}\omega_{16}\omega_{10} + 2\omega_7\omega_{23}\omega_{17}v_3^2v_1\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} -$
$\omega_7\omega_{23}\omega_{17}\omega_8v_2^2v_3\omega_5\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} - \omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2v_3v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10} - 2\omega_7\omega_{23}\omega_{17}v_2^2\omega_5v_1\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} +$
$2\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2v_3\omega_5\omega_{15}c_s^2\omega_{16}\omega_{10} + 2\omega_7\omega_{23}\omega_{20}v_3\omega_5v_1^2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} - 2\omega_7\omega_{23}\omega_{20}\omega_{17}v_3^2v_1\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} -$
$2\omega_{23}\omega_{17}\omega_8v_2^2v_3\omega_5\omega_{15}c_s^2\omega_{16}\omega_{10} + \omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2v_1\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} - 2\omega_{23}\omega_{20}v_2^2v_3\omega_5v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10} + 2\omega_{23}\omega_{20}v_3^2\omega_5v_1\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} +$
$2\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2v_3\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} + 2\omega_{23}\omega_{20}\omega_8v_2^2v_3^2\omega_5v_1\omega_{15}\omega_{19}\omega_{10} - \omega_7\omega_{20}\omega_{17}\omega_8v_3\omega_5v_1^2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} -$
$2\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2v_3\omega_5\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} - 2\omega_{20}\omega_{17}\omega_8v_2^2v_3\omega_5\omega_{15}\omega_{19}c_s^2\omega_{10} - 2\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2v_3^2v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10} -$
$2\omega_{23}\omega_{20}\omega_8v_3\omega_5v_1^2\omega_{15}\omega_{19}c_s^2\omega_{10} - 2\omega_7\omega_{23}\omega_{20}\omega_8v_2^2v_3\omega_5v_1\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} - 2\omega_7\omega_{23}\omega_{20}v_3v_1^2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} -$
$2\omega_7\omega_{23}\omega_{20}\omega_8v_3\omega_5v_1^2\omega_{19}c_s^2\omega_{16} + \omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2v_3^2\omega_5v_1\omega_{15}c_s^2\omega_{16}\omega_{10} - 2\omega_7\omega_{23}\omega_{20}\omega_8v_2^2v_3v_1^2\omega_{19}\omega_{16}\omega_{10} + 2\omega_7\omega_{23}\omega_{17}v_2^2v_3^2v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10} +$
$\omega_7\omega_{20}\omega_{17}\omega_8v_2^2v_3^2\omega_5v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10} + 2\omega_7\omega_{23}\omega_{20}\omega_8v_2^2v_3\omega_5v_1^2\omega_{15}\omega_{19}\omega_{10} - 2\omega_7\omega_{23}\omega_{20}\omega_8v_3^2\omega_5v_1\omega_{15}\omega_{19}c_s^2\omega_{10} +$
$\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2v_3\omega_5v_1\omega_{15}\omega_{16}\omega_{10} - 2\omega_7\omega_{23}\omega_{20}\omega_8v_2^2v_3\omega_5v_1^2\omega_{15}\omega_{19} + 2\omega_7\omega_{23}\omega_{20}\omega_8v_3^2\omega_5v_1\omega_{15}\omega_{19}c_s^2 - 2\omega_7\omega_{23}\omega_{20}\omega_8v_2^2v_3\omega_{19}c_s^2\omega_{16}\omega_{10} +$
$2\omega_7\omega_{23}\omega_{20}\omega_8v_3^2v_1\omega_{19}c_s^2\omega_{16}\omega_{10} - \omega_7\omega_{23}\omega_{17}\omega_8v_2^2v_3^2\omega_5v_1\omega_{15}\omega_{16}\omega_{10} - 2\omega_{23}\omega_{17}\omega_8v_3\omega_5v_1^2\omega_{15}c_s^2\omega_{16}\omega_{10} + 2\omega_{23}\omega_{20}\omega_{17}\omega_8v_3\omega_5v_1^2\omega_{15}c_s^2\omega_{16}\omega_{10} -$

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

$C_{21} = -12\omega_7^3\omega_{23}\omega_{20}\omega_8 v_3^2\omega_5^2\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10} - 12\omega_7^3\omega_{23}\omega_{20}\omega_8 v_2^2\omega_5^2\omega_{15}\omega_6\omega_{19}c_s^2\omega_{16} - 6\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8 v_2^2 v_3^2\omega_5\omega_6\omega_{19}\omega_{16}\omega_{10} +$
$24\omega_7^3\omega_{23}\omega_{20}\omega_8 v_3\omega_5^2 v_1\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10} + 24\omega_7^3\omega_{23}\omega_{20}\omega_8 v_3\omega_5 v_1\omega_{15}\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10} - 24\omega_7^2\omega_{23}\omega_{20}\omega_8 v_2^2 v_3\omega_5^2 v_1\omega_{15}\omega_6\omega_{19}\omega_{10} -$
$12\omega_7^2\omega_{20}\omega_{17}\omega_8 v_2^2 v_3^2\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10} - 6\omega_7^3\omega_{23}\omega_{17}\omega_8 v_2^2\omega_5^2\omega_{15}\omega_6 c_s^2\omega_{16}\omega_{10} + 12\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_5\omega_{15}\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10} -$
$6\omega_7^3\omega_{20}\omega_{17}\omega_8 v_2^2 v_3^2\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16} - 24\omega_7^3\omega_{23}\omega_{20}\omega_8 v_2^2 v_3\omega_5^2 v_1\omega_{15}\omega_6\omega_{19} - 12\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8 v_3^2\omega_5^2\omega_{15}\omega_6 c_s^2\omega_{16}\omega_{10} +$
$24\omega_7^3\omega_{23}\omega_{20}\omega_{17} v_3\omega_5 v_1\omega_{15}\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10} + 12\omega_7^3\omega_{20}\omega_{17}\omega_8 v_2^2 v_3\omega_5^2 v_1\omega_{15}\omega_6\omega_{19}\omega_{16} + 6\omega_7^3\omega_{20}\omega_{17}\omega_8 v_2^2\omega_5^2\omega_{15}\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10} -$
$6\omega_7^3\omega_{23}\omega_{17}\omega_8 v_2^2 v_3^2\omega_5\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10} + 12\omega_7^3\omega_{23}\omega_{20} v_3^2\omega_5\omega_{15}\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10} + 24\omega_7^2\omega_{23}\omega_{17}\omega_8 v_2^2 v_3\omega_5^2 v_1\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10} +$
$12\omega_7^2\omega_{20}\omega_{17}\omega_8 v_3^2\omega_5^2\omega_{15}\omega_6 c_s^2\omega_{16}\omega_{10} + 24\omega_7^2\omega_{23}\omega_{20}\omega_{17} v_3\omega_5^2 v_1\omega_{15}\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10} - 18\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10} -$
$12\omega_7^2\omega_{23}\omega_{20}\omega_8 v_2^2\omega_5^2\omega_{15}\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10} + 12\omega_7^2\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10} - 12\omega_7^3\omega_{23}\omega_{20}\omega_8 v_2^2\omega_5^2\omega_{15}\omega_6\omega_{19}c_s^2\omega_{10} -$
$12\omega_7^2\omega_{23}\omega_{20}\omega_5^2\omega_{15}\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10} + 12\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8 v_2^2 v_3\omega_5 v_1\omega_6\omega_{19}\omega_{16}\omega_{10} + 12\omega_7^2\omega_{23}\omega_{17} v_2^2 v_3^2\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10} -$

$12\omega_7^2\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_5^2\omega_{15}\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10} - 24\omega_7^2\omega_{23}\omega_{20}v_2^2v_3\omega_5^2v_1\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10} - 6\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2\omega_5\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10} +$
$12\omega_7^3\omega_{23}\omega_{20}\omega_8v_2^2v_3^2\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10} + 24\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8v_3\omega_5^2v_1\omega_{15}\omega_6\omega_{19}c_s^2\omega_{10} + 24\omega_7^2\omega_{23}\omega_{20}\omega_8v_3\omega_5^2v_1\omega_{15}\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10} -$
$24\omega_7^3\omega_{23}\omega_{20}v_2^2v_3\omega_5v_1\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10} - 12\omega_7^3\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_5\omega_{15}\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10} + 24\omega_7^3\omega_{20}\omega_{17}\omega_8v_2^2v_3\omega_5^2v_1\omega_{15}\omega_6\omega_{19}\omega_{10} +$
$12\omega_7^3\omega_{23}\omega_{20}\omega_{17}v_2^2v_3^2\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10} - 24\omega_7^3\omega_{20}\omega_{17}\omega_8v_3\omega_5^2v_1\omega_{15}\omega_6\omega_{19}c_s^2 + 12\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{19}c_s^4\omega_{16}\omega_{10} -$
$12\omega_7^3\omega_{20}\omega_{17}\omega_8v_2^2v_3^2\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{10} - 12\omega_7^3\omega_{23}\omega_{20}\omega_8v_2^2\omega_5\omega_{15}\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10} - \omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10} -$
$12\omega_7^3\omega_{23}\omega_{20}\omega_8v_3^2\omega_5^2\omega_{15}\omega_6\omega_{19}c_s^2\omega_{16} - 24\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2v_3\omega_5^2v_1\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10} + 24\omega_7^3\omega_{23}\omega_{20}\omega_8v_3\omega_5^2v_1\omega_{15}\omega_6\omega_{19}c_s^2\omega_{16} +$
$12\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2v_3^2\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{10} + 24\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8v_3\omega_5^2v_1\omega_{15}\omega_6\omega_{19}c_s^2 - 12\omega_7^3\omega_{23}\omega_{20}\omega_8v_2^2\omega_5^2\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10} -$
$12\omega_7^2\omega_{23}\omega_{17}\omega_8v_3^2\omega_5^2\omega_{15}\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10} - 6\omega_7^3\omega_{23}\omega_{17}\omega_8v_3^2\omega_5^2\omega_{15}\omega_6c_s^2\omega_{16}\omega_{10} - 12\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19}c_s^4\omega_{10} +$
$12\omega_7^2\omega_{23}\omega_{20}v_3^2\omega_5^2\omega_{15}\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10} - 12\omega_7^3\omega_{20}\omega_{17}\omega_8v_3\omega_5^2v_1\omega_{15}\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10} - 6\omega_7^3\omega_{23}\omega_{17}\omega_8v_3^2\omega_5\omega_{15}\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10} +$
$12\omega_7^3\omega_{23}\omega_{20}v_2^2v_3^2\omega_5\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10} - 12\omega_7^2\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}c_s^4\omega_{10} - 12\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2\omega_5^2\omega_{15}\omega_6c_s^2\omega_{16}\omega_{10} -$
$24\omega_7^2\omega_{20}\omega_{17}\omega_8v_3\omega_5^2v_1\omega_{15}\omega_6\omega_{19}c_s^2\omega_{10} - 24\omega_7^2\omega_{23}\omega_{17}\omega_8v_2^2v_3\omega_5^2v_1\omega_{15}\omega_6\omega_{16}\omega_{10} - 24\omega_7^2\omega_{23}\omega_{17}\omega_8v_3\omega_5^2v_1\omega_{15}\omega_6c_s^2\omega_{16}\omega_{10} -$
$12\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{19}c_s^4\omega_{16}\omega_{10} + 12\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_5^2\omega_{15}\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10} + 12\omega_7^2\omega_{20}\omega_{17}\omega_8v_2^2\omega_5^2\omega_{15}\omega_6c_s^2\omega_{16}\omega_{10} -$
$12\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19}c_s^4\omega_{16} + 6\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2v_3^2\omega_5^2\omega_6\omega_{19}\omega_{16}\omega_{10} - 6\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8v_3^2\omega_5^2\omega_{15}\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10} -$
$6\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8v_3^2\omega_5\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10} + 6\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2v_3^2\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16} + 24\omega_7^3\omega_{23}\omega_{20}\omega_8v_3\omega_5^2v_1\omega_{15}\omega_6\omega_{19}c_s^2\omega_{10} +$
$12\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2v_3^2\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10} - 12\omega_7^3\omega_{23}\omega_{20}\omega_8v_3^2\omega_5^2\omega_{15}\omega_6\omega_{19}c_s^2\omega_{10} - 12\omega_7^3\omega_{23}\omega_{17}v_2^2\omega_5^2\omega_{15}\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10} +$
$12\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15}\omega_6c_s^4\omega_{16}\omega_{10} + 6\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10} - 12\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2v_3\omega_5^2v_1\omega_{15}\omega_6\omega_{16}\omega_{10} -$
$12\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8v_3\omega_5^2v_1\omega_{15}\omega_6c_s^2\omega_{16}\omega_{10} + 12\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2v_3\omega_5^2v_1\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10} + 24\omega_7^3\omega_{23}\omega_{20}v_3\omega_5^2v_1\omega_{15}\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10} -$
$6\omega_7^3\omega_{20}\omega_{17}\omega_8v_2^2v_3^2\omega_5^2\omega_{15}\omega_6\omega_{16}\omega_{10} - 12\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}c_s^4 + 12\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2\omega_5^2\omega_{15}\omega_6\omega_{19}c_s^2\omega_{10} +$
$12\omega_7^3\omega_{23}\omega_{20}\omega_8v_2^2\omega_5\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10} + 12\omega_7^3\omega_{20}\omega_{17}\omega_8v_2^2v_3\omega_5^2v_1\omega_{15}\omega_6\omega_{16}\omega_{10} + 12\omega_7^3\omega_{20}\omega_{17}\omega_8v_3\omega_5^2v_1\omega_{15}\omega_6c_s^2\omega_{16}\omega_{10} -$
$12\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8v_3\omega_5v_1\omega_{15}\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10} + 24\omega_7^2\omega_{20}\omega_{17}\omega_8v_2^2v_3\omega_5^2v_1\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10} + 6\omega_7^3\omega_{20}\omega_{17}\omega_8v_3^2\omega_5^2\omega_{15}\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10} +$
$12\omega_7^3\omega_{23}\omega_{20}v_2^2\omega_5\omega_{15}\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10} + 24\omega_7^3\omega_{23}\omega_{17}v_3\omega_5^2v_1\omega_{15}\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10} - 6\omega_7^3\omega_{20}\omega_{17}\omega_8v_3^2\omega_5^2\omega_{15}\omega_6\omega_{19}c_s^2\omega_{16} -$
$12\omega_7^3\omega_{23}\omega_{20}v_2^2v_3^2\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10} - 12\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10} + 12\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}c_s^4\omega_{16} +$
$6\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8v_3^2\omega_5^2\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10} - 6\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2\omega_5^2\omega_6\omega_{19}c_s^2\omega_{16} - 18\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19}c_s^4\omega_{16}\omega_{10} +$
$12\omega_7^3\omega_{23}\omega_{20}\omega_8v_2^2v_3^2\omega_5^2\omega_{15}\omega_6\omega_{19} + 12\omega_7^3\omega_{23}\omega_{20}\omega_8v_2^2v_3^2\omega_5\omega_6\omega_{19}\omega_{16}\omega_{10} - 24\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10} +$
$6\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2\omega_5^2\omega_{15}\omega_6\omega_{19}c_s^2\omega_{16} - 12\omega_7^2\omega_{23}\omega_{20}\omega_{17}v_3^2\omega_5^2\omega_{15}\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10} + 12\omega_7^3\omega_{20}\omega_{17}\omega_8v_2^2\omega_5^2\omega_{15}\omega_6\omega_{19}c_s^2 +$
$12\omega_7^3\omega_{23}\omega_{17}\omega_8v_2^2v_3\omega_5v_1\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10} + 12\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19}c_s^4\omega_{10} - 12\omega_7^2\omega_{23}\omega_{20}\omega_8v_3^2\omega_5^2\omega_{15}\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10} +$
$24\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2v_3\omega_5^2v_1\omega_{15}\omega_6\omega_{19} + 12\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}c_s^4\omega_{10} - 12\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8v_3^2\omega_5^2\omega_{15}\omega_6\omega_{19}c_s^2 -$
$12\omega_7^3\omega_{23}\omega_{20}\omega_8v_3^2\omega_5\omega_{15}\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10} - 12\omega_7^3\omega_{20}\omega_{17}\omega_8v_3^2\omega_5^2\omega_{15}\omega_6\omega_{19}c_s^2\omega_{10} - 6\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_{15}\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10} -$
$12\omega_7^3\omega_{23}\omega_{20}\omega_{17}v_3^2\omega_5\omega_{15}\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10} - 12\omega_7^2\omega_{23}\omega_{17}\omega_8v_2^2\omega_5^2\omega_{15}\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10} - 12\omega_7^3\omega_{23}\omega_{20}\omega_8v_2^2v_3^2\omega_5^2\omega_6\omega_{19}\omega_{16}\omega_{10} -$
$24\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2v_3\omega_5^2v_1\omega_{15}\omega_6\omega_{19}\omega_{10} + 12\omega_7^2\omega_{23}\omega_{20}v_2^2\omega_5^2\omega_{15}\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10} + 12\omega_7^3\omega_{23}\omega_{20}\omega_8v_2^2\omega_5^2\omega_{15}\omega_6\omega_{19}c_s^2 +$
$12\omega_7^3\omega_{23}\omega_{20}\omega_5^2\omega_{15}\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10} + 12\omega_7^3\omega_{23}\omega_{20}\omega_8v_3^2\omega_5\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10} - 12\omega_7^3\omega_{23}\omega_{20}\omega_8v_2^2v_3^2\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16} -$
$24\omega_7^2\omega_{23}\omega_{17}v_2^2v_3\omega_5^2v_1\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10} - 24\omega_7^3\omega_{20}\omega_{17}\omega_8v_2^2v_3\omega_5^2v_1\omega_{15}\omega_6\omega_{19} + 12\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8v_3^2\omega_5^2\omega_{15}\omega_6\omega_{19}c_s^2\omega_{10} +$
$12\omega_7^3\omega_{20}\omega_{17}\omega_8v_2^2v_3^2\omega_5^2\omega_{15}\omega_6\omega_{19} - 24\omega_7^3\omega_{23}\omega_{17}v_2^2v_3\omega_5v_1\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10} + 12\omega_7^3\omega_{23}\omega_{20}\omega_8v_3^2\omega_5^2\omega_6\omega_{19}c_s^2\omega_{16} +$
$12\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8v_3\omega_5v_1\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10} + 6\omega_7^3\omega_{23}\omega_{17}\omega_8v_2^2v_3^2\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10} - 6\omega_7^3\omega_{23}\omega_{17}\omega_8v_2^2\omega_5\omega_{15}\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10} -$
$6\omega_7^3\omega_{20}\omega_{17}\omega_8v_2^2\omega_5^2\omega_{15}\omega_6\omega_{19}c_s^2\omega_{16} - 6\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2v_3^2\omega_5^2\omega_6\omega_{19}\omega_{16} + 6\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8v_3^2\omega_5^2\omega_{15}\omega_6\omega_{19}c_s^2\omega_{16} +$
$12\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10} - 24\omega_7^3\omega_{23}\omega_{20}\omega_{17}v_2^2v_3\omega_5^2v_1\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10} - 24\omega_7^3\omega_{23}\omega_{20}\omega_8v_3\omega_5^2v_1\omega_{15}\omega_6\omega_{19}c_s^2 +$
$6\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2\omega_5^2\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10} - 12\omega_7^3\omega_{23}\omega_{17}\omega_8v_3\omega_5^2v_1\omega_{15}\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10} - 12\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2v_3\omega_5^2v_1\omega_6\omega_{19}\omega_{16}\omega_{10} -$
$12\omega_7^3\omega_{23}\omega_{20}\omega_8v_2^2v_3^2\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{10} - 12\omega_7^3\omega_{23}\omega_{17}\omega_5\omega_{15}\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10} + 12\omega_7^2\omega_{23}\omega_{17}\omega_8v_2^2v_3^2\omega_5^2\omega_{15}\omega_6\omega_{16}\omega_{10} -$
$6\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2\omega_5^2\omega_{15}\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10} - 12\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2v_3\omega_5^2v_1\omega_{15}\omega_6\omega_{19}\omega_{16} - 12\omega_7^3\omega_{20}\omega_{17}\omega_8v_2^2\omega_5^2\omega_{15}\omega_6\omega_{19}c_s^2\omega_{10} -$
$12\omega_7^3\omega_{23}\omega_{20}\omega_{17}v_2^2v_3^2\omega_5\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10} - 24\omega_7^3\omega_{23}\omega_{20}\omega_8v_2^2v_3\omega_5^2v_1\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10} - 12\omega_7^3\omega_{23}\omega_{17}v_3^2\omega_5^2\omega_{15}\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10} -$
$12\omega_7^3\omega_{23}\omega_{20}\omega_8v_2^2v_3^2\omega_5\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10} + 12\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{19}c_s^4\omega_{16} + 6\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2v_3^2\omega_5^2\omega_{15}\omega_6\omega_{16}\omega_{10} -$
$24\omega_7^3\omega_{23}\omega_{20}\omega_8v_2^2v_3\omega_5^2v_1\omega_6\omega_{19}\omega_{16} - 12\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8v_3\omega_5^2v_1\omega_{15}\omega_6\omega_{19}c_s^2\omega_{16} - 24\omega_7^2\omega_{20}\omega_{17}\omega_8v_3\omega_5^2v_1\omega_{15}\omega_6c_s^2\omega_{16}\omega_{10} -$
$24\omega_7^2\omega_{20}\omega_{17}\omega_8v_2^2v_3\omega_5^2v_1\omega_{15}\omega_6\omega_{16}\omega_{10} - 12\omega_7^3\omega_{23}\omega_{20}v_2^2\omega_5^2\omega_{15}\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10} - 12\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2\omega_5^2\omega_{15}\omega_6\omega_{19}c_s^2\omega_{10} +$
$12\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15}\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10} + 12\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10} - 24\omega_7^2\omega_{23}\omega_{17}v_3\omega_5^2v_1\omega_{15}\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10} -$
$12\omega_7^2\omega_{20}\omega_{17}\omega_8v_3^2\omega_5^2\omega_{15}\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10} + 12\omega_7^2\omega_{23}\omega_{20}\omega_8v_2^2v_3^2\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{10} + 12\omega_7^3\omega_{23}\omega_{20}\omega_8v_3^2\omega_5^2\omega_{15}\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10} +$
$12\omega_7^3\omega_{23}\omega_{17}v_2^2v_3^2\omega_5\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10} + 12\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_{15}\omega_{19}c_s^4\omega_{16}\omega_{10} + 12\omega_7^3\omega_{23}\omega_{20}\omega_{17}v_3^2\omega_5^2\omega_{15}\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10} -$
$24\omega_7^3\omega_{23}\omega_{20}\omega_8v_3\omega_5^2v_1\omega_{15}\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10} - 6\omega_7^3\omega_{23}\omega_{17}\omega_8v_2^2v_3^2\omega_5^2\omega_{15}\omega_6\omega_{16}\omega_{10} - 24\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8v_3\omega_5^2v_1\omega_{15}\omega_6\omega_{19}c_s^2\omega_{10} +$
$12\omega_7^2\omega_{20}\omega_{17}\omega_8v_2^2\omega_5^2\omega_{15}\omega_6\omega_{19}c_s^2\omega_{10} - 24\omega_7^3\omega_{23}\omega_{20}\omega_{17}v_3\omega_5^2v_1\omega_{15}\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10} - 12\omega_7^3\omega_{23}\omega_{17}\omega_8v_2^2v_3\omega_5^2v_1\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10} +$
$12\omega_7^2\omega_{23}\omega_{17}v_3^2\omega_5^2\omega_{15}\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10} - 12\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8v_3^2\omega_5^2\omega_{15}\omega_6\omega_{19}c_s^2\omega_{10} - 12\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8v_3\omega_5^2v_1\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10} +$
$12\omega_7^2\omega_{20}\omega_{17}\omega_8v_2^2v_3^2\omega_5^2\omega_{15}\omega_6\omega_{16}\omega_{10} + 24\omega_7^3\omega_{23}\omega_{17}v_2^2v_3\omega_5^2v_1\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10} + 6\omega_7^3\omega_{23}\omega_{17}\omega_8v_2^2\omega_5^2\omega_{15}\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10} +$
$24\omega_7^2\omega_{20}\omega_{17}\omega_8v_3\omega_5^2v_1\omega_{15}\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10} - 24\omega_7^3\omega_{23}\omega_{20}v_3\omega_5v_1\omega_{15}\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10} - 12\omega_7^2\omega_{23}\omega_{17}\omega_8v_2^2v_3^2\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10} -$
$12\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_6\omega_{19}c_s^4\omega_{16} + 12\omega_7^2\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10} + 12\omega_7^2\omega_{23}\omega_{20}v_2^2v_3^2\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10} -$
$12\omega_7^3\omega_{23}\omega_{20}\omega_5\omega_{15}\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10} + 24\omega_7^3\omega_{23}\omega_{20}\omega_8v_2^2v_3\omega_5v_1\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10} + 24\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8v_3\omega_5^2v_1\omega_{15}\omega_6c_s^2\omega_{16}\omega_{10} +$
$24\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2v_3\omega_5^2v_1\omega_{15}\omega_6\omega_{16}\omega_{10} + 10\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19}c_s^4\omega_{16}\omega_{10} - 24\omega_7^3\omega_{23}\omega_{20}\omega_8v_2^2v_3\omega_5v_1\omega_6\omega_{19}\omega_{16}\omega_{10} +$
$12\omega_7^3\omega_{23}\omega_{17}v_3^2\omega_5\omega_{15}\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10} - 12\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2v_3^2\omega_5^2\omega_{15}\omega_6\omega_{16}\omega_{10} - 12\omega_7^2\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6c_s^4\omega_{16}\omega_{10} +$
$12\omega_7^2\omega_{20}\omega_{17}\omega_8v_3^2\omega_5^2\omega_{15}\omega_6\omega_{19}c_s^2\omega_{10} + 12\omega_7^3\omega_{23}\omega_{17}\omega_5^2\omega_{15}\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10} + 12\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8v_3\omega_5^2v_1\omega_6\omega_{19}c_s^2\omega_{16} +$
$24\omega_7^3\omega_{23}\omega_{20}\omega_{17}v_2^2v_3\omega_5v_1\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10} + 24\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10} - 6\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2v_3^2\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10} +$
$12\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8v_3^2\omega_5^2\omega_{15}\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10} + 6\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2\omega_5\omega_{15}\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10} - 6\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8v_3^2\omega_5^2\omega_6\omega_{19}c_s^2\omega_{16} +$
$6\omega_7^3\omega_{20}\omega_{17}\omega_8v_2^2v_3^2\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10} + 24\omega_7^3\omega_{23}\omega_{20}\omega_8v_2^2v_3\omega_5^2v_1\omega_{15}\omega_6\omega_{19}\omega_{10} - 12\omega_7^3\omega_{23}\omega_{20}v_3^2\omega_5^2\omega_{15}\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10} +$
$12\omega_7^3\omega_{20}\omega_{17}\omega_8v_3^2\omega_5^2\omega_{15}\omega_6\omega_{19}c_s^2 + 12\omega_7^2\omega_{23}\omega_{17}\omega_8v_3^2\omega_5^2\omega_{15}\omega_6c_s^2\omega_{16}\omega_{10} - 24\omega_7^3\omega_{23}\omega_{20}\omega_8v_3\omega_5v_1\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10} -$
$12\omega_7^3\omega_{20}\omega_{17}\omega_8v_2^2v_3\omega_5^2v_1\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10} - 12\omega_7^2\omega_{23}\omega_{17}\omega_5^2\omega_{15}\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10} + 6\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6c_s^4\omega_{16}\omega_{10} -$
$12\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2\omega_5^2\omega_{15}\omega_6\omega_{19}c_s^2 - 12\omega_7^2\omega_{20}\omega_{17}\omega_8v_2^2\omega_5^2\omega_{15}\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10} + 6\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8v_3^2\omega_5^2\omega_{15}\omega_6c_s^2\omega_{16}\omega_{10} -$
$12\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_5^2\omega_{15}\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10} - 24\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8v_3\omega_5^2v_1\omega_{15}\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10} + 24\omega_7^3\omega_{23}\omega_{20}v_2^2v_3\omega_5^2v_1\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10} +$

$12\omega_7^3\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_5^2\omega_{15}\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10} + 12\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8v_3\omega_5^2v_1\omega_{15}\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10} + 12\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2v_3\omega_5^2v_1\omega_6\omega_{19}\omega_{16} +$
$24\omega_7^3\omega_{23}\omega_{20}\omega_8v_2^2v_3\omega_5^2v_1\omega_6\omega_{19}\omega_{16}\omega_{10} - 6\omega_7^3\omega_{20}\omega_{17}\omega_8v_2^2\omega_5^2\omega_{15}\omega_6c_s^2\omega_{16}\omega_{10} + 12\omega_7^2\omega_{23}\omega_{20}\omega_8v_3^2\omega_5^2\omega_{15}\omega_6\omega_{19}c_s^2\omega_{10} +$
$6\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15}\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10} + 12\omega_7^3\omega_{23}\omega_{20}\omega_8v_2^2\omega_5^2\omega_{15}\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10} + 24\omega_7^3\omega_{23}\omega_{20}\omega_8v_2^2v_3\omega_5^2v_1\omega_{15}\omega_6\omega_{19}\omega_{16} -$
$18\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15}\omega_{19}c_s^4\omega_{16}\omega_{10} + 12\omega_7^3\omega_{23}\omega_{20}\omega_8v_2^2v_3^2\omega_5^2\omega_6\omega_{19}\omega_{16} - 2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10} -$
$6\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15}\omega_6c_s^4\omega_{16}\omega_{10} - 24\omega_7^3\omega_{23}\omega_{17}v_3\omega_5v_1\omega_{15}\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10} + 12\omega_7^2\omega_{23}\omega_{17}v_2^2\omega_5^2\omega_{15}\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10} -$
$12\omega_7^2\omega_{23}\omega_{20}\omega_{17}v_2^2v_3^2\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10} - 24\omega_7^2\omega_{20}\omega_{17}\omega_8v_2^2v_3\omega_5^2v_1\omega_{15}\omega_6\omega_{19}\omega_{10} - 12\omega_7^2\omega_{23}\omega_{20}\omega_8v_2^2v_3^2\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10} +$
$6\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2v_3^2\omega_5\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10} + 12\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19}c_s^4\omega_{16}\omega_{10} + 6\omega_7^3\omega_{23}\omega_{17}\omega_8v_3^2\omega_5^2\omega_{15}\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10} +$
$12\omega_7^3\omega_{23}\omega_{17}\omega_8v_3\omega_5v_1\omega_{15}\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10} - 12\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2v_3^2\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{10} + 12\omega_7^2\omega_{23}\omega_{17}\omega_8v_2^2\omega_5^2\omega_{15}\omega_6c_s^2\omega_{16}\omega_{10} -$
$24\omega_7^3\omega_{23}\omega_{20}\omega_8v_3\omega_5^2v_1\omega_6\omega_{19}c_s^2\omega_{16} - 12\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10} + 12\omega_7^3\omega_{23}\omega_{17}\omega_8v_3\omega_5^2v_1\omega_{15}\omega_6c_s^2\omega_{16}\omega_{10} +$
$24\omega_7^3\omega_{20}\omega_{17}\omega_8v_3\omega_5^2v_1\omega_{15}\omega_6\omega_{19}c_s^2\omega_{10} + 12\omega_7^3\omega_{23}\omega_{17}\omega_8v_2^2v_3\omega_5^2v_1\omega_{15}\omega_6\omega_{16}\omega_{10} + 6\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2\omega_5^2\omega_{15}\omega_6c_s^2\omega_{16}\omega_{10} +$
$24\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2v_3\omega_5^2v_1\omega_{15}\omega_6\omega_{19}\omega_{10} - 6\omega_7^3\omega_{20}\omega_{17}\omega_8v_3^2\omega_5^2\omega_{15}\omega_6c_s^2\omega_{16}\omega_{10} - 24\omega_7^2\omega_{23}\omega_{20}\omega_8v_3\omega_5^2v_1\omega_{15}\omega_6\omega_{19}c_s^2\omega_{10} +$
$12\omega_7^3\omega_{23}\omega_{17}v_2^2\omega_5\omega_{15}\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10} + 12\omega_7^3\omega_{23}\omega_{20}\omega_8v_3^2\omega_5^2\omega_{15}\omega_6\omega_{19}c_s^2 - 12\omega_7^3\omega_{23}\omega_{17}v_2^2v_3^2\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10} -$
$12\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2v_3\omega_5v_1\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10} + 24\omega_7^2\omega_{23}\omega_{20}\omega_8v_2^2v_3\omega_5^2v_1\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10} + 12\omega_7^2\omega_{23}\omega_{20}\omega_8v_2^2\omega_5^2\omega_{15}\omega_6\omega_{19}c_s^2\omega_{10} -$
$6\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10} - 24\omega_7^2\omega_{23}\omega_{20}v_3\omega_5^2v_1\omega_{15}\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10} - 12\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2v_3^2\omega_5^2\omega_{15}\omega_6\omega_{19} +$
$6\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8v_3^2\omega_5\omega_{15}\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10} + 12\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2\omega_5^2\omega_{15}\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10} + 12\omega_7^3\omega_{23}\omega_{20}\omega_8v_2^2\omega_5^2\omega_6\omega_{19}c_s^2\omega_{16} +$
$12\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{19}c_s^4 + 12\omega_7^3\omega_{20}\omega_{17}\omega_8v_3\omega_5^2v_1\omega_{15}\omega_6\omega_{19}c_s^2\omega_{16} + 12\omega_7^2\omega_{20}\omega_{17}\omega_8v_2^2v_3^2\omega_5^2\omega_{15}\omega_6\omega_{19}\omega_{10} +$
$24\omega_7^2\omega_{23}\omega_{17}\omega_8v_3\omega_5^2v_1\omega_{15}\omega_6\omega_{19}c_s^2\omega_{16}\omega_{10} + 24\omega_7^2\omega_{23}\omega_{20}\omega_{17}v_2^2v_3\omega_5^2v_1\omega_{15}\omega_6\omega_{19}\omega_{16}\omega_{10}$

$C_{22} = -2\omega_7\omega_{23}\omega_{20}v_3\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} + \omega_7\omega_{23}\omega_{17}\omega_8v_3^2\omega_5v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10} - \omega_7\omega_{20}\omega_{17}\omega_8v_3\omega_5\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} -$
$2\omega_7\omega_{23}\omega_{20}\omega_8v_3v_1^2\omega_{19}\omega_{16}\omega_{10} - \omega_7\omega_{20}\omega_{17}\omega_8v_3^2\omega_5v_1\omega_{15}\omega_{19}\omega_{16} + 2\omega_7\omega_{23}\omega_{20}\omega_8\omega_5v_1\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} + 2\omega_7\omega_{23}\omega_{20}\omega_8v_3v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10} -$
$2\omega_{23}\omega_{20}\omega_{17}\omega_8v_3^2\omega_5v_1\omega_{15}\omega_{19}\omega_{10} - 2\omega_7\omega_{23}\omega_{20}\omega_8v_3\omega_5v_1^2\omega_{15}\omega_{19} - 2\omega_7\omega_{23}\omega_{20}\omega_8v_3\omega_{19}c_s^2\omega_{16}\omega_{10} + 2\omega_{23}\omega_{20}\omega_8\omega_5v_1\omega_{15}\omega_{19}c_s^2\omega_{10} -$
$\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5v_1\omega_{19}c_s^2\omega_{16} - 2\omega_{23}\omega_{20}\omega_{17}\omega_8v_3\omega_5v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10} - 2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_3\omega_5v_1^2\omega_{15}\omega_{19}\omega_{10} -$
$2\omega_7\omega_{23}\omega_{20}\omega_8v_1\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} + 2\omega_{23}\omega_{17}\omega_8v_3\omega_5v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10} + 2\omega_{23}\omega_{20}v_3^2\omega_5v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10} - 2\omega_7\omega_{23}\omega_{20}\omega_8\omega_5v_1\omega_{19}c_s^2\omega_{16}\omega_{10} -$
$2\omega_{20}\omega_{17}\omega_8v_3\omega_5v_1^2\omega_{15}\omega_{19}\omega_{10} - 2\omega_7\omega_{23}\omega_{20}\omega_{17}v_3^2v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10} + 2\omega_7\omega_{23}\omega_{20}v_3\omega_5v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10} - 2\omega_7\omega_{20}\omega_{17}\omega_8v_3^2\omega_5v_1\omega_{15}\omega_{19}\omega_{10} +$
$2\omega_7\omega_{23}\omega_{17}v_3^2v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10} + 2\omega_{23}\omega_{20}\omega_{17}v_3\omega_5\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} - 2\omega_{23}\omega_{17}v_3\omega_5\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} - \omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_3\omega_5v_1^2\omega_{15}\omega_{19}\omega_{16} -$
$2\omega_7\omega_{20}\omega_{17}\omega_8v_3\omega_5v_1^2\omega_{15}\omega_{19} - \omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_3^2\omega_5v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10} - 2\omega_{23}\omega_{20}\omega_{17}\omega_8v_3\omega_5\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} -$
$2\omega_7\omega_{23}\omega_{20}\omega_8v_3^2\omega_5v_1\omega_{15}\omega_{19}\omega_{10} - 2\omega_{20}\omega_{17}\omega_8v_3^2\omega_5v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10} + 2\omega_{23}\omega_{17}\omega_8v_3\omega_5\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} - 2\omega_{23}\omega_{20}\omega_8v_3\omega_5v_1^2\omega_{15}\omega_{19}\omega_{10} +$
$2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_3\omega_5\omega_{15}\omega_{19}c_s^2 + 2\omega_7\omega_{23}\omega_{20}v_1\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} + 2\omega_7\omega_{23}\omega_{20}\omega_8v_3\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} - 2\omega_7\omega_{23}\omega_{20}v_3v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10} -$
$2\omega_{20}\omega_{17}\omega_8v_3\omega_5\omega_{15}c_s^2\omega_{16}\omega_{10} - \omega_7\omega_{20}\omega_{17}\omega_8v_3\omega_5v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10} + 2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5v_1\omega_{15}\omega_{19}c_s^2\omega_{10} - \omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_3\omega_5\omega_{15}c_s^2\omega_{16}\omega_{10} +$
$2\omega_{20}\omega_{17}\omega_8\omega_5v_1\omega_{15}\omega_{19}c_s^2\omega_{10} + 2\omega_{23}\omega_{20}\omega_{17}v_3\omega_5v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10} - 2\omega_7\omega_{23}\omega_{20}\omega_8v_3^2\omega_5v_1\omega_{15}\omega_{19}\omega_{16} - 2\omega_{23}\omega_{17}v_3\omega_5v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10} -$
$2\omega_7\omega_{23}\omega_{17}v_3^2\omega_5v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10} - 2\omega_7\omega_{23}\omega_{20}\omega_8v_3\omega_5v_1^2\omega_{19}\omega_{16} + \omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5v_1\omega_{15}\omega_{19}c_s^2\omega_{16} + 2\omega_7\omega_{23}\omega_{20}\omega_{17}v_3^2\omega_5v_1\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} +$
$\omega_7\omega_{23}\omega_{17}\omega_8v_3\omega_5\omega_{15}c_s^2\omega_{16}\omega_{10} + 2\omega_{23}\omega_{20}\omega_{17}\omega_8v_3^2\omega_5v_1\omega_{19}\omega_{16}\omega_{10} + \omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_3^2\omega_5v_1\omega_{15}\omega_{16}\omega_{10} - 2\omega_7\omega_{23}\omega_{20}\omega_8v_3\omega_5\omega_{15}c_s^2\omega_{16}\omega_{10} +$
$2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5v_1\omega_{15}c_s^2\omega_{16}\omega_{10} - 2\omega_{23}\omega_{20}\omega_{17}\omega_8v_3^2\omega_5v_1\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} + 2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_3\omega_5v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10} - \omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_3^2\omega_5v_1\omega_{19}\omega_{16}\omega_{10} -$
$2\omega_7\omega_{23}\omega_{20}\omega_8v_3\omega_5v_1^2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} + 2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_3\omega_5v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10} - \omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_3^2\omega_5v_1\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} +$
$\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5v_1\omega_{15}c_s^2\omega_{16}\omega_{10} - 2\omega_{20}\omega_{17}\omega_8v_3\omega_5\omega_{15}\omega_{19}c_s^2\omega_{10} + 2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_5v_1\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} - 2\omega_7\omega_{23}\omega_{17}\omega_5v_1\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} -$
$\omega_7\omega_{23}\omega_{17}\omega_8\omega_5v_1\omega_{15}c_s^2\omega_{16}\omega_{10} - \omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_3\omega_5\omega_{15}\omega_{19}c_s^2\omega_{16} + 2\omega_7\omega_{20}\omega_{17}\omega_8\omega_5v_1\omega_{15}\omega_{19}c_s^2 + \omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_3^2\omega_5v_1\omega_{19}\omega_{16}\omega_{10} -$
$\omega_7\omega_{23}\omega_{17}\omega_8v_3^2\omega_5v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10} - 2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_3^2\omega_5v_1\omega_{15}\omega_{19} + 2\omega_7\omega_{23}\omega_{20}\omega_8v_1\omega_{19}c_s^2\omega_{16}\omega_{10} + 2\omega_7\omega_{23}\omega_{20}\omega_8\omega_5v_1\omega_{15}\omega_{19}c_s^2 +$
$2\omega_{23}\omega_{20}\omega_8v_3\omega_5\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} + 2\omega_{20}\omega_{17}\omega_8\omega_5v_1\omega_{15}c_s^2\omega_{16}\omega_{10} - 2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_3\omega_5\omega_{15}\omega_{19}c_s^2\omega_{10} - 2\omega_{20}\omega_{17}\omega_8\omega_5v_1\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} +$
$2\omega_7\omega_{23}\omega_{20}\omega_8v_3\omega_5v_1^2\omega_{19}\omega_{16}\omega_{10} - \omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5v_1\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} + \omega_7\omega_{20}\omega_{17}\omega_8\omega_5v_1\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} + \omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_3\omega_5\omega_{15}c_s^2\omega_{16}\omega_{10} +$
$2\omega_7\omega_{23}\omega_{20}\omega_{17}v_3\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} + \omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_3v_1^2\omega_{19}\omega_{16}\omega_{10} - 2\omega_7\omega_{23}\omega_{17}v_3\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} - 2\omega_7\omega_{23}\omega_{20}\omega_8v_3\omega_5\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} +$
$\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_3\omega_{19}c_s^2\omega_{16}\omega_{10} + 2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_3\omega_5v_1^2\omega_{15}\omega_{19} + 2\omega_{23}\omega_{20}\omega_{17}\omega_8v_3\omega_5\omega_{15}\omega_{19}c_s^2\omega_{10} - 2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5v_1\omega_{15}c_s^2\omega_{16}\omega_{10} +$
$2\omega_{23}\omega_{17}\omega_8\omega_5v_1\omega_{15}c_s^2\omega_{16}\omega_{10} - 2\omega_{23}\omega_{20}\omega_{17}\omega_5v_1\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} + 2\omega_{23}\omega_{17}\omega_5v_1\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} - \omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_3\omega_5v_1^2\omega_{19}\omega_{16}\omega_{10} -$
$\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_3\omega_5\omega_{19}c_s^2\omega_{16}\omega_{10} + 2\omega_7\omega_{23}\omega_{20}v_3^2v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10} + 2\omega_7\omega_{20}\omega_{17}\omega_8v_3\omega_5\omega_{15}\omega_{19}c_s^2\omega_{10} + \omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_3^2v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10} +$
$\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5v_1\omega_{15}c_s^2\omega_{16}\omega_{10} - 2\omega_{20}\omega_{17}\omega_8v_3\omega_5\omega_{15}\omega_{19}c_s^2\omega_{10} + 2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_5v_1\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} - 2\omega_7\omega_{23}\omega_{17}\omega_5v_1\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} -$
$\omega_7\omega_{23}\omega_{17}\omega_8\omega_5v_1\omega_{15}c_s^2\omega_{16}\omega_{10} - \omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_3\omega_5\omega_{15}\omega_{19}c_s^2\omega_{16} + 2\omega_7\omega_{20}\omega_{17}\omega_8\omega_5v_1\omega_{15}\omega_{19}c_s^2 + \omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_3^2\omega_5v_1\omega_{19}\omega_{16}\omega_{10} -$
$\omega_7\omega_{23}\omega_{17}\omega_8v_3^2\omega_5v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10} - 2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_3^2\omega_5v_1\omega_{15}\omega_{19} + 2\omega_7\omega_{23}\omega_{20}\omega_8v_1\omega_{19}c_s^2\omega_{16}\omega_{10} + 2\omega_7\omega_{23}\omega_{20}\omega_8\omega_5v_1\omega_{15}\omega_{19}c_s^2 +$
$2\omega_{23}\omega_{20}\omega_8v_3\omega_5\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} + 2\omega_{20}\omega_{17}\omega_8\omega_5v_1\omega_{15}c_s^2\omega_{16}\omega_{10} - 2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_3\omega_5\omega_{15}\omega_{19}c_s^2\omega_{10} - 2\omega_{20}\omega_{17}\omega_8\omega_5v_1\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} +$
$2\omega_7\omega_{23}\omega_{20}\omega_8v_3\omega_5v_1^2\omega_{19}\omega_{16}\omega_{10} - \omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5v_1\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} - \omega_7\omega_{23}\omega_{17}\omega_8v_3^2\omega_5v_1\omega_{15}\omega_{16}\omega_{10} + 2\omega_{23}\omega_{20}\omega_{17}\omega_8v_3\omega_5v_1^2\omega_{15}\omega_{16}\omega_{10} +$
$2\omega_7\omega_{23}\omega_{20}\omega_8v_3\omega_5\omega_{19}c_s^2\omega_{16}\omega_{10} - 2\omega_{23}\omega_{17}\omega_8v_3\omega_5v_1^2\omega_{15}\omega_{16}\omega_{10} + 2\omega_7\omega_{23}\omega_{20}\omega_8v_3^2v_1\omega_{19}\omega_{16}\omega_{10} + \omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_3^2\omega_5v_1\omega_{15}\omega_{16}\omega_{10} +$
$2\omega_{23}\omega_{20}\omega_5v_1\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} - \omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_3^2\omega_5v_1\omega_{19}\omega_{16} - 2\omega_{23}\omega_{20}\omega_8v_3\omega_5\omega_{15}\omega_{19}c_s^2\omega_{10} + 2\omega_{20}\omega_{17}\omega_8v_3^2\omega_5v_1\omega_{15}\omega_{16}\omega_{10} +$
$\omega_7\omega_{20}\omega_{17}\omega_8v_3\omega_5v_1^2\omega_{15}\omega_{16}\omega_{10} + 2\omega_{23}\omega_{20}\omega_8v_3\omega_5v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10} - 2\omega_7\omega_{23}\omega_{20}\omega_8v_3\omega_5\omega_{19}c_s^2\omega_{16} + 2\omega_7\omega_{23}\omega_{20}\omega_8v_3^2\omega_5v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10} +$
$\omega_7\omega_{23}\omega_{17}\omega_8\omega_5v_1\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} - 2\omega_7\omega_{23}\omega_{20}\omega_{17}v_3\omega_5v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10} - \omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_3^2\omega_5v_1\omega_{19}\omega_{16}\omega_{10} +$
$\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_3\omega_{19}c_s^2\omega_{16}\omega_{10} - 2\omega_{23}\omega_{17}\omega_8v_3\omega_5\omega_{15}c_s^2\omega_{16}\omega_{10} - 2\omega_{23}\omega_{20}v_3\omega_5\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} + 2\omega_{23}\omega_{20}\omega_{17}\omega_8v_3\omega_5\omega_{15}c_s^2\omega_{16}\omega_{10} +$
$2\omega_7\omega_{23}\omega_{20}\omega_8v_3^2\omega_5v_1\omega_{19}\omega_{16} + \omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_3\omega_5\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} + 2\omega_7\omega_{23}\omega_{20}\omega_8v_3\omega_5v_1^2\omega_{15}\omega_{19}\omega_{16} - 2\omega_7\omega_{20}\omega_{17}\omega_8\omega_5v_1\omega_{15}\omega_{19}c_s^2\omega_{10} +$
$2\omega_{23}\omega_{17}v_3^2\omega_5v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10} - 2\omega_{23}\omega_{20}\omega_{17}v_3^2\omega_5v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10} + 2\omega_7\omega_{23}\omega_{17}v_3\omega_5v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10} - \omega_7\omega_{23}\omega_{17}\omega_8v_1\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} +$
$\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_3\omega_5\omega_{19}c_s^2\omega_{16} + \omega_7\omega_{20}\omega_{17}\omega_8v_3\omega_5\omega_{15}c_s^2\omega_{16}\omega_{10} + \omega_7\omega_{20}\omega_{17}\omega_8v_3^2\omega_5v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10} - \omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_3v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10} +$
$\omega_7\omega_{23}\omega_{17}\omega_8v_3\omega_5v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10} + \omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_3\omega_5v_1^2\omega_{15}\omega_{19}\omega_{16} - 2\omega_7\omega_{23}\omega_{20}\omega_8\omega_5v_1\omega_{15}\omega_{19}c_s^2\omega_{16} - 2\omega_7\omega_{23}\omega_{20}v_3^2\omega_5v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10} -$
$2\omega_7\omega_{20}\omega_{17}\omega_8v_3\omega_5v_1^2\omega_{15}\omega_{19}\omega_{10} - 2\omega_{23}\omega_{20}v_3\omega_5v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10} - 2\omega_7\omega_{23}\omega_{20}\omega_8\omega_5v_1\omega_{15}\omega_{19}c_s^2\omega_{16} - 2\omega_7\omega_{23}\omega_{20}v_3^2\omega_5v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10} -$
$2\omega_7\omega_{23}\omega_{20}\omega_{17}v_3\omega_5\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} + 2\omega_{20}\omega_{17}\omega_8v_3^2\omega_5v_1\omega_{15}\omega_{19}\omega_{10} - 2\omega_{23}\omega_{20}\omega_8\omega_5v_1\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} + 2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_3^2\omega_5v_1\omega_{15}\omega_{19}\omega_{10} +$
$\omega_7\omega_{23}\omega_{17}\omega_8v_3\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} + 2\omega_{23}\omega_{20}\omega_{17}\omega_8v_3^2\omega_5v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10} - 2\omega_{23}\omega_{17}\omega_8v_3^2\omega_5v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10} + 2\omega_{20}\omega_{17}\omega_8v_3\omega_5\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} +$
$2\omega_7\omega_{23}\omega_{20}\omega_8v_3^2\omega_5v_1\omega_{15}\omega_{19} + 2\omega_{23}\omega_{20}\omega_{17}\omega_8v_3\omega_5v_1^2\omega_{15}\omega_{19}\omega_{10} - \omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_3\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} - \omega_7\omega_{23}\omega_{17}\omega_8v_3\omega_5v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10} -$
$\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_{19}c_s^2\omega_{16}\omega_{10} - 2\omega_7\omega_{23}\omega_{20}\omega_8\omega_5v_1\omega_{15}\omega_{19}c_s^2\omega_{10} - 2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5v_1\omega_{15}\omega_{19}c_s^2 + \omega_7\omega_{20}\omega_{17}\omega_8v_3\omega_5v_1^2\omega_{15}\omega_{19}\omega_{16}$

$C_{23} = -2\omega_{23}\omega_{20}v_2^2\omega_5v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10} + \omega_7\omega_{23}\omega_{17}\omega_8v_2^2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} - 2\omega_{20}\omega_{17}\omega_8\omega_5v_1^2\omega_{15}\omega_{19}c_s^2\omega_{10} -$
$2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2v_3v_1\omega_{19}\omega_{16}\omega_{10} + 2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2v_3v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10} - 2\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_5\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} +$
$2\omega_7\omega_{23}\omega_{17}v_2^2\omega_5\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} + \omega_7\omega_{20}\omega_{17}\omega_8v_2^2\omega_5v_1^2\omega_{15}\omega_{19}\omega_{16} - \omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5v_1^2\omega_{15}\omega_{19}c_s^2\omega_{16} +$
$2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2v_3\omega_5v_1\omega_{19}\omega_{16}\omega_{10} - 2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_3\omega_5v_1\omega_{19}c_s^2\omega_{16} - \omega_7\omega_{20}\omega_{17}\omega_8\omega_5v_1^2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} +$
$\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2\omega_5v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10} + 2\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2\omega_5v_1^2\omega_{15}\omega_{19}\omega_{10} + 4\omega_{23}\omega_{20}v_2^2v_3\omega_5v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10} -$
$\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} - 2\omega_7\omega_{23}\omega_{20}\omega_8\omega_5v_1^2\omega_{15}\omega_{19}c_s^2 + 4\omega_{23}\omega_{17}v_3\omega_5v_1\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} -$
$4\omega_{23}\omega_{20}\omega_{17}v_3\omega_5v_1\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} - \omega_7\omega_{23}\omega_{17}\omega_8v_2^2\omega_5v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10} - 2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2v_3\omega_5v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10} -$
$2\omega_7\omega_{20}\omega_{17}\omega_8\omega_5v_1^2\omega_{15}\omega_{19}c_s^2 - 2\omega_{23}\omega_{17}\omega_5v_1^2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} + 4\omega_{20}\omega_{17}\omega_8v_2^2v_3\omega_5v_1\omega_{15}\omega_{16}\omega_{10} - 4\omega_{23}\omega_{20}\omega_8v_3\omega_5v_1\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} +$
$2\omega_{23}\omega_{20}\omega_{17}\omega_5v_1^2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} + 4\omega_{20}\omega_{17}\omega_8v_3\omega_5v_1\omega_{15}\omega_{19}c_s^2\omega_{10} - 2\omega_7\omega_{23}\omega_{17}\omega_8v_2^2v_3v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10} +$
$2\omega_7\omega_{20}\omega_{17}\omega_8v_2^2\omega_5v_1^2\omega_{15}\omega_{19}\omega_{10} - 2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5v_1^2\omega_{15}\omega_{19}c_s^2\omega_{10} + 4\omega_7\omega_{20}\omega_{17}\omega_8v_3\omega_5v_1\omega_{15}\omega_{19}c_s^2 + 2\omega_{20}\omega_{17}\omega_8v_2^2\omega_5\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} -$
$4\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2v_3v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10} + \omega_7\omega_{20}\omega_{17}\omega_8v_2^2\omega_5\omega_{15}c_s^2\omega_{16}\omega_{10} + \omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2\omega_5\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} +$
$4\omega_7\omega_{23}\omega_{20}v_3v_1\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} + 2\omega_7\omega_{23}\omega_{20}\omega_8\omega_5v_1^2\omega_{19}c_s^2\omega_{16}\omega_{10} - \omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10} + 2\omega_7\omega_{23}\omega_{17}v_2^2\omega_5v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10} +$
$4\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_3\omega_5v_1\omega_{15}\omega_{19}c_s^2\omega_{10} + 2\omega_7\omega_{20}\omega_{17}\omega_8v_3\omega_5v_1\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} + 4\omega_{23}\omega_{20}\omega_8v_2^2v_3\omega_5v_1\omega_{15}\omega_{19}\omega_{10} +$
$4\omega_7\omega_{23}\omega_{20}\omega_8v_3\omega_5v_1\omega_{15}\omega_{19}c_s^2 + 2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2v_3\omega_5v_1\omega_{15}\omega_{16}\omega_{10} - 2\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_5v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10} +$
$\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2\omega_5\omega_{19}c_s^2\omega_{16} + 2\omega_7\omega_{23}\omega_{20}\omega_{17}v_1^2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} + 4\omega_7\omega_{23}\omega_{20}\omega_8v_3v_1\omega_{19}c_s^2\omega_{16}\omega_{10} + 2\omega_7\omega_{23}\omega_{20}\omega_8v_2^2\omega_5v_1^2\omega_{15}\omega_{19}\omega_{10} +$
$2\omega_7\omega_{23}\omega_{17}\omega_8v_2^2v_3\omega_5v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10} + 2\omega_{23}\omega_{17}\omega_8\omega_5v_1^2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} - 2\omega_{23}\omega_{20}v_2^2\omega_5\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} +$
$\omega_7\omega_{23}\omega_{17}\omega_8v_2^2v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10} - 2\omega_7\omega_{23}\omega_{17}v_1^2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} + 4\omega_7\omega_{23}\omega_{17}v_2^2v_3v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10} - 2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5v_1^2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} -$
$2\omega_{23}\omega_{17}\omega_8v_2^2\omega_5\omega_{15}c_s^2\omega_{16}\omega_{10} + 2\omega_7\omega_{23}\omega_{20}\omega_5v_1^2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} + 2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_3\omega_5v_1\omega_{15}\omega_{19}c_s^2\omega_{16} + 2\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2\omega_5\omega_{15}c_s^2\omega_{16}\omega_{10} +$
$2\omega_{20}\omega_{17}\omega_8v_2^2\omega_5v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10} - 2\omega_{23}\omega_{20}\omega_8\omega_5v_1^2\omega_{15}\omega_{19}c_s^2\omega_{10} - 2\omega_7\omega_{23}\omega_{17}\omega_8v_2^2v_3\omega_5v_1\omega_{15}\omega_{16}\omega_{10} + 2\omega_7\omega_{23}\omega_{20}\omega_8v_2^2\omega_5v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10} -$
$\omega_7\omega_{23}\omega_{17}\omega_8v_2^2\omega_5\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} - 2\omega_7\omega_{23}\omega_{20}\omega_8v_2^2\omega_5\omega_{19}c_s^2\omega_{16} + \omega_7\omega_{20}\omega_{17}\omega_8v_2^2\omega_5v_1^2\omega_{15}\omega_{16}\omega_{10} + 2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5v_1^2\omega_{15}c_s^2\omega_{16}\omega_{10} -$
$2\omega_{23}\omega_{17}\omega_8\omega_5v_1^2\omega_{15}c_s^2\omega_{16}\omega_{10} - 4\omega_7\omega_{23}\omega_{17}v_2^2v_3\omega_5v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10} - 2\omega_7\omega_{23}\omega_{20}v_1^2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} - 2\omega_{23}\omega_{20}\omega_8v_2^2\omega_5\omega_{15}\omega_{19}c_s^2\omega_{10} -$
$2\omega_7\omega_{20}\omega_{17}\omega_8v_3\omega_5v_1\omega_{15}c_s^2\omega_{16}\omega_{10} + 4\omega_{20}\omega_{17}\omega_8v_2^2v_3\omega_5v_1\omega_{15}\omega_{19}\omega_{10} + 2\omega_7\omega_{23}\omega_{20}\omega_8v_2^2\omega_5\omega_{19}c_s^2\omega_{16}\omega_{10} + 2\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2\omega_5v_1^2\omega_{15}\omega_{16}\omega_{10} -$
$2\omega_{23}\omega_{17}\omega_8v_2^2\omega_5v_1^2\omega_{15}\omega_{16}\omega_{10} - 4\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2v_3\omega_5v_1\omega_{15}\omega_{19} + \omega_7\omega_{20}\omega_{17}\omega_8\omega_5v_1^2\omega_{15}c_s^2\omega_{16}\omega_{10} + 2\omega_7\omega_{23}\omega_{20}\omega_8v_2^2\omega_5v_1^2\omega_{19}\omega_{16}\omega_{10} +$
$4\omega_7\omega_{23}\omega_{20}\omega_8v_2^2v_3\omega_5v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10} + 4\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2v_3\omega_5v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10} - 4\omega_7\omega_{23}\omega_{20}v_3\omega_5v_1\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} +$
$2\omega_{23}\omega_{20}\omega_8v_2^2\omega_5v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10} - 2\omega_7\omega_{23}\omega_{20}\omega_8\omega_5v_1^2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} + 4\omega_{23}\omega_{20}\omega_{17}\omega_8v_3\omega_5v_1\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} +$
$2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2v_3\omega_5v_1\omega_{15}\omega_{19}\omega_{16} - 4\omega_{23}\omega_{20}\omega_{17}\omega_8v_3\omega_5v_1\omega_{15}c_s^2\omega_{16}\omega_{10} - 4\omega_{23}\omega_{17}\omega_8v_3\omega_5v_1\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} +$
$2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5v_1^2\omega_{15}\omega_{19}c_s^2 + 4\omega_{23}\omega_{17}\omega_8v_3\omega_5v_1\omega_{15}c_s^2\omega_{16}\omega_{10} - 4\omega_{20}\omega_{17}\omega_8v_2^2v_3\omega_5v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10} + 2\omega_7\omega_{23}\omega_{20}\omega_8v_2^2\omega_5v_1^2\omega_{19}\omega_{16}\omega_{10} +$
$4\omega_7\omega_{23}\omega_{20}\omega_8v_3\omega_5v_1\omega_{19}c_s^2\omega_{16}\omega_{10} - 2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2v_3\omega_5v_1\omega_{19}\omega_{16} - 2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2\omega_5\omega_{15}\omega_{19}c_s^2\omega_{10} -$
$2\omega_{20}\omega_{17}\omega_8v_2^2\omega_5\omega_{15}\omega_{19}c_s^2\omega_{10} + 2\omega_{23}\omega_{20}\omega_8v_2^2\omega_5\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} - 4\omega_7\omega_{23}\omega_{20}\omega_8v_3v_1\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} + 4\omega_{23}\omega_{20}\omega_8v_3\omega_5v_1\omega_{15}\omega_{19}c_s^2\omega_{10} +$
$4\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2v_3\omega_5v_1\omega_{15}\omega_{19}\omega_{10} - \omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2\omega_5\omega_{15}\omega_{19}c_s^2\omega_{16} - 4\omega_7\omega_{23}\omega_{20}\omega_8v_3\omega_5v_1\omega_{15}\omega_{19}c_s^2\omega_{10} +$
$2\omega_7\omega_{20}\omega_{17}\omega_8v_2^2v_3\omega_5v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10} + 4\omega_7\omega_{23}\omega_{20}\omega_8v_2^2v_3\omega_5v_1\omega_{15}\omega_{19} - \omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2\omega_5\omega_{19}c_s^2\omega_{16}\omega_{10} -$
$\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2\omega_5v_1^2\omega_{19}\omega_{16}\omega_{10} - 2\omega_7\omega_{23}\omega_{20}\omega_8v_2^2\omega_5\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} + 2\omega_7\omega_{20}\omega_{17}\omega_8v_2^2\omega_5\omega_{15}\omega_{19}c_s^2\omega_{10} +$
$2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_3\omega_5v_1\omega_{15}c_s^2\omega_{16}\omega_{10} + 2\omega_7\omega_{23}\omega_{17}\omega_8v_3\omega_5v_1\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} + \omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2v_1^2\omega_{19}\omega_{16}\omega_{10} +$
$\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5v_1^2\omega_{19}c_s^2\omega_{16} - 2\omega_7\omega_{23}\omega_{17}\omega_8v_3\omega_5v_1\omega_{15}c_s^2\omega_{16}\omega_{10} + \omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2\omega_{19}c_s^2\omega_{16}\omega_{10} + 2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2\omega_5v_1^2\omega_{15}\omega_{19} +$
$2\omega_{23}\omega_{20}\omega_8\omega_5v_1^2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} - 4\omega_7\omega_{23}\omega_{20}\omega_8v_3\omega_5v_1\omega_{15}\omega_{19}c_s^2\omega_{10} + 2\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_5\omega_{15}\omega_{19}c_s^2\omega_{10} + 2\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2\omega_5\omega_{15}\omega_{19}c_s^2\omega_{10} +$
$2\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} + \omega_7\omega_{20}\omega_{17}\omega_8v_2^2\omega_5\omega_{15}\omega_{19}c_s^2\omega_{16} - 4\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2v_3\omega_5v_1\omega_{15}\omega_{19}\omega_{10} -$
$4\omega_7\omega_{23}\omega_{20}\omega_8v_2^2v_3v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10} - \omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2\omega_5v_1^2\omega_{15}\omega_{16}\omega_{10} - 2\omega_7\omega_{23}\omega_{20}\omega_8v_1^2\omega_{19}c_s^2\omega_{16}\omega_{10} + 4\omega_{23}\omega_{20}v_3\omega_5v_1\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} -$
$2\omega_7\omega_{20}\omega_{17}\omega_8v_2^2v_3\omega_5v_1\omega_{15}\omega_{19}\omega_{16} - 2\omega_{20}\omega_{17}\omega_8\omega_5v_1^2\omega_{15}c_s^2\omega_{16}\omega_{10} - 2\omega_7\omega_{23}\omega_{20}\omega_8v_2^2\omega_5v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10} + 2\omega_7\omega_{23}\omega_{20}\omega_8v_2^2\omega_5\omega_{15}\omega_{19}c_s^2\omega_{16} +$
$\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2\omega_5v_1^2\omega_{19}\omega_{16} + \omega_7\omega_{23}\omega_{17}\omega_8v_2^2\omega_5v_1^2\omega_{15}\omega_{16}\omega_{10} - 2\omega_7\omega_{20}\omega_{17}\omega_8v_2^2\omega_5\omega_{15}\omega_{19}c_s^2 - 4\omega_7\omega_{23}\omega_{20}\omega_8v_2^2v_3\omega_5v_1\omega_{19}\omega_{16}\omega_{10} -$
$4\omega_{23}\omega_{20}\omega_8v_2^2v_3\omega_5v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10} + 2\omega_7\omega_{23}\omega_{20}\omega_{17}v_2^2v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10} - 2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_3\omega_5v_1\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} +$
$4\omega_{20}\omega_{17}\omega_8v_3\omega_5v_1\omega_{15}c_s^2\omega_{16}\omega_{10} - 4\omega_{23}\omega_{20}\omega_{17}v_2^2v_3\omega_5v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10} - 2\omega_7\omega_{23}\omega_{20}\omega_8v_2^2\omega_5\omega_{15}\omega_{19}c_s^2 - \omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5v_1^2\omega_{15}c_s^2\omega_{16}\omega_{10} -$
$2\omega_7\omega_{23}\omega_{17}v_2^2v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10} + \omega_7\omega_{23}\omega_{17}\omega_8v_1^2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} + 4\omega_7\omega_{20}\omega_{17}\omega_8v_2^2v_3\omega_5v_1\omega_{15}\omega_{19} + 4\omega_{23}\omega_{17}v_2^2v_3\omega_5v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10} -$
$\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1^2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} - 4\omega_7\omega_{20}\omega_{17}\omega_8v_2^2v_3\omega_5v_1\omega_{15}c_s^2\omega_{16}\omega_{10} - 2\omega_{20}\omega_{17}\omega_8v_2^2\omega_5v_1^2\omega_{15}\omega_{16}\omega_{10} + 2\omega_7\omega_{23}\omega_{20}\omega_8v_2^2\omega_5\omega_{15}\omega_{19}c_s^2\omega_{10} +$
$4\omega_7\omega_{23}\omega_{20}\omega_8v_2^2v_3\omega_5v_1\omega_{19}\omega_{16} - 4\omega_7\omega_{20}\omega_{17}\omega_8v_2^2v_3\omega_5v_1\omega_{15}\omega_{19}\omega_{10} - 4\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2v_3\omega_5v_1\omega_{15}\omega_{16}\omega_{10} - 2\omega_7\omega_{23}\omega_{20}\omega_8v_2^2\omega_5v_1^2\omega_{19}\omega_{16} +$
$4\omega_{23}\omega_{17}\omega_8v_2^2v_3\omega_5v_1\omega_{15}\omega_{16}\omega_{10} - 4\omega_{23}\omega_{17}\omega_8v_2^2v_3\omega_5v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10} + 4\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2v_3\omega_5v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10} -$
$4\omega_7\omega_{23}\omega_{20}\omega_8v_2^2v_3\omega_5v_1\omega_{15}\omega_{19}\omega_{16} - \omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2\omega_5v_1^2\omega_{15}c_s^2\omega_{16}\omega_{10} + \omega_7\omega_{23}\omega_{20}\omega_{17}\omega_5v_1^2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} -$
$2\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2\omega_5v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10} - 4\omega_7\omega_{23}\omega_{17}v_3\omega_5v_1\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} - 2\omega_{20}\omega_{17}\omega_8v_2^2\omega_5v_1^2\omega_{15}\omega_{19}\omega_{10} - 2\omega_7\omega_{20}\omega_{17}\omega_8v_2^2\omega_5v_1^2\omega_{15}\omega_{19} +$
$2\omega_{23}\omega_{17}\omega_8v_2^2\omega_5v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10} + 2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5v_1^2\omega_{15}\omega_{19}c_s^2\omega_{10} - \omega_7\omega_{20}\omega_{17}\omega_8v_2^2\omega_5\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} + 2\omega_7\omega_{23}\omega_{17}\omega_5v_1^2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} -$
$4\omega_7\omega_{20}\omega_{17}\omega_8v_3\omega_5v_1\omega_{15}\omega_{19}c_s^2\omega_{10} - \omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2\omega_5v_1^2\omega_{15}\omega_{19}\omega_{16} + \omega_7\omega_{20}\omega_{17}\omega_8\omega_5v_1^2\omega_{15}\omega_{19}c_s^2\omega_{16} - \omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5v_1^2\omega_{19}c_s^2\omega_{16}\omega_{10} +$
$2\omega_7\omega_{23}\omega_{20}\omega_8v_2^2v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10} - 2\omega_{23}\omega_{17}v_2^2\omega_5\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} + 2\omega_{23}\omega_{20}\omega_{17}v_2^2\omega_5\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} - 4\omega_7\omega_{23}\omega_{20}\omega_{17}v_3v_1\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} +$
$4\omega_7\omega_{23}\omega_{20}v_2^2v_3v_1\omega_{15}\omega_{19}\omega_{16}\omega_{10} - 2\omega_7\omega_{23}\omega_{20}v_2^2\omega_5v_1^2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} - 2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_3v_1\omega_{19}c_s^2\omega_{16}\omega_{10} + 2\omega_{20}\omega_{17}\omega_8\omega_5v_1^2\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} -$
$2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2\omega_5v_1^2\omega_{15}\omega_{19}\omega_{10} + 2\omega_7\omega_{20}\omega_{17}\omega_8\omega_5v_1^2\omega_{15}\omega_{19}c_s^2\omega_{10} - 2\omega_7\omega_{23}\omega_{20}\omega_8v_2^2v_1^2\omega_{19}\omega_{16}\omega_{10} - 2\omega_7\omega_{23}\omega_{20}\omega_8\omega_5v_1^2\omega_{19}c_s^2\omega_{16} -$
$4\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2\omega_5v_1^2\omega_{19}\omega_{16}\omega_{10} + 2\omega_7\omega_{23}\omega_{20}v_2^2\omega_5v_1^2\omega_{15}\omega_{19}\omega_{16}\omega_{10} + 4\omega_7\omega_{23}\omega_{20}\omega_{17}v_3\omega_5v_1\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} -$
$4\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_3\omega_5v_1\omega_{15}\omega_{19}c_s^2 - 2\omega_7\omega_{20}\omega_{17}\omega_8v_3\omega_5v_1\omega_{15}\omega_{19}c_s^2\omega_{16} - 2\omega_7\omega_{23}\omega_{20}\omega_8v_2^2\omega_5v_1^2\omega_{15}\omega_{19} - 2\omega_7\omega_{23}\omega_{20}\omega_8v_2^2\omega_{19}c_s^2\omega_{16}\omega_{10} +$
$4\omega_7\omega_{23}\omega_{17}v_3v_1\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10} + 4\omega_7\omega_{23}\omega_{20}\omega_8v_3\omega_5v_1\omega_{15}\omega_{19}c_s^2\omega_{16}\omega_{10}$

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

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

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

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

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

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

2.5.5 Conservation of momentum: ρv_3

attached text file: `output_d3q27_nse_clbm2_symbolic_pde_03.txt`

$v_3\frac{\partial\rho}{\partial t} + \rho\frac{\partial v_3}{\partial t} + \frac{v_3\delta_l v_1}{\delta_t}\frac{\partial\rho}{\partial x_1} + \frac{v_3\rho\delta_l}{\delta_t}\frac{\partial v_1}{\partial x_1} + \frac{\rho\delta_l v_1}{\delta_t}\frac{\partial v_3}{\partial x_1} + \frac{v_2 v_3\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_2} + \frac{v_3\rho\delta_l}{\delta_t}\frac{\partial v_2}{\partial x_2} + \frac{v_2\rho\delta_l}{\delta_t}\frac{\partial v_3}{\partial x_2} + (c_s^2 + v_3^2)\frac{\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_3} +$
$\frac{2v_3\rho\delta_l}{\delta_t}\frac{\partial v_3}{\partial x_3} + (-2+\omega_6)\frac{\delta_l^2 c_s^2}{2\omega_6\delta_t}\frac{\partial\rho}{\partial x_1}\frac{\partial v_3}{\partial x_1} + (-2+\omega_6)\frac{\delta_l^2 c_s^2}{2\omega_6\delta_t}\frac{\partial\rho}{\partial x_1}\frac{\partial v_1}{\partial x_3} + (-2+\omega_7)\frac{\delta_l^2 c_s^2}{2\omega_7\delta_t}\frac{\partial\rho}{\partial x_2}\frac{\partial v_3}{\partial x_2} + (-2+\omega_7)\frac{\delta_l^2 c_s^2}{2\omega_7\delta_t}\frac{\partial\rho}{\partial x_2}\frac{\partial v_2}{\partial x_3}$
$+ (-2+\omega_{11}+4c_s^2+6v_3^2-2\omega_{11}c_s^2-3\omega_{11}v_3^2)\frac{\delta_l^2}{\omega_{11}\delta_t}\frac{\partial\rho}{\partial x_3}\frac{\partial v_3}{\partial x_3} + (2-\omega_{11})\frac{3v_3\rho\delta_l^2}{\omega_{11}\delta_t}\left(\frac{\partial v_3}{\partial x_3}\right)^2 + (-2+\omega_6)\frac{\rho\delta_l^2 c_s^2}{2\omega_6\delta_t}\frac{\partial^2 v_3}{\partial x_1^2} +$

$$
\begin{aligned}
&(-2+\omega_7)\frac{\rho\delta_l^2c_s^2}{2\omega_7\delta_t}\frac{\partial^2v_3}{\partial x_2^2} + (-2+\omega_6)\frac{\rho\delta_l^2c_s^2}{2\omega_6\delta_t}\frac{\partial^2v_1}{\partial x_1\partial x_3} + (-2+\omega_7)\frac{\rho\delta_l^2c_s^2}{2\omega_7\delta_t}\frac{\partial^2v_2}{\partial x_2\partial x_3} + \\
&(-2+\omega_{11}+6c_s^2+2v_3^2-3\omega_{11}c_s^2-\omega_{11}v_3^2)\frac{v_3\delta_l^2}{2\omega_{11}\delta_t}\frac{\partial^2\rho}{\partial x_3^2} + (-2+\omega_{11}+2c_s^2+6v_3^2-\omega_{11}c_s^2-3\omega_{11}v_3^2)\frac{\rho\delta_l^2}{2\omega_{11}\delta_t}\frac{\partial^2v_3}{\partial x_3^2} + \\
&(-1+3c_s^2+v_1^2)\frac{v_3\delta_l^3v_1}{12\delta_t}\frac{\partial^3\rho}{\partial x_1^3} + (-1+c_s^2+3v_1^2)\frac{v_3\rho\delta_l^3}{12\delta_t}\frac{\partial^3v_1}{\partial x_1^3} + C_1\frac{\rho\delta_l^3v_1}{6\omega_{13}\omega_6\delta_t}\frac{\partial^3v_3}{\partial x_1^3} - \frac{v_3\rho\delta_l^3c_s^2}{6\delta_t}\frac{\partial^3v_2}{\partial x_1^2\partial x_2} - \frac{v_3\rho\delta_l^3c_s^2}{6\delta_t}\frac{\partial^3v_1}{\partial x_1\partial x_2^2} + \\
&(-1+3c_s^2+v_2^2)\frac{v_2v_3\delta_l^3}{12\delta_t}\frac{\partial^3\rho}{\partial x_2^3} + (-1+c_s^2+3v_2^2)\frac{v_3\rho\delta_l^3}{12\delta_t}\frac{\partial^3v_2}{\partial x_2^3} + C_2\frac{v_2\rho\delta_l^3}{6\omega_7\delta_t\omega_{16}}\frac{\partial^3v_3}{\partial x_2^3} + (-12-\omega_6^2+12\omega_6)\frac{\delta_l^3c_s^4}{6\omega_6^2\delta_t}\frac{\partial^3\rho}{\partial x_1^2\partial x_3} - \\
&\frac{v_3\rho\delta_l^3c_s^2}{6\delta_t}\frac{\partial^3v_3}{\partial x_1^2\partial x_3} + (-12+12\omega_7-\omega_7^2)\frac{\delta_l^3c_s^4}{6\omega_7^2\delta_t}\frac{\partial^3\rho}{\partial x_2^2\partial x_3} - \frac{v_3\rho\delta_l^3c_s^2}{6\delta_t}\frac{\partial^3v_3}{\partial x_2^2\partial x_3} + C_3\frac{v_3\rho\delta_l^3}{12\omega_{11}^2\omega_{18}\omega_6\delta_t}\frac{\partial^3v_1}{\partial x_1\partial x_3^2} + \\
&C_4\frac{v_3\rho\delta_l^3}{12\omega_7\omega_{11}^2\omega_{19}\delta_t}\frac{\partial^3v_2}{\partial x_2\partial x_3^2} + C_5\frac{\delta_l^3}{12\omega_{11}^2\delta_t}\frac{\partial^3\rho}{\partial x_3^3} + \\
&(-24-4\omega_{11}^2+24\omega_{11}+36c_s^2+60v_3^2+11\omega_{11}^2v_3^2+5\omega_{11}^2c_s^2-36\omega_{11}c_s^2-60\omega_{11}v_3^2)\frac{v_3\rho\delta_l^3}{6\omega_{11}^2\delta_t}\frac{\partial^3v_3}{\partial x_3^3} + \\
&(\omega_9c_s^2+24v_1^2c_s^2-12v_1^2\omega_9c_s^2-2c_s^2+6v_1^4-3v_1^4\omega_9+2c_s^4-6v_1^2-\omega_9c_s^4+3v_1^2\omega_9)\frac{v_3\delta_l^4}{24\omega_9\delta_t}\frac{\partial^4\rho}{\partial x_1^4} + \\
&(-4-3\omega_9c_s^2+6c_s^2+10v_1^2+2\omega_9-5v_1^2\omega_9)\frac{v_3\rho\delta_l^4v_1}{12\omega_9\delta_t}\frac{\partial^4v_1}{\partial x_1^4} + C_6\frac{\rho\delta_l^4}{24\omega_{13}^2\omega_6^3\delta_t}\frac{\partial^4v_3}{\partial x_1^4} + \\
&(-9\omega_9c_s^2+3\omega_{12}c_s^2+3\omega_9\omega_{12}c_s^2+v_1^2\omega_9\omega_{12}+3\omega_9-\omega_{12}+v_1^2\omega_{12}-\omega_9\omega_{12}-3v_1^2\omega_9)\frac{v_3\rho\delta_l^4v_1}{12\omega_9\omega_{12}\delta_t}\frac{\partial^4v_2}{\partial x_1^3\partial x_2} + \\
&(-2+\omega_5)\frac{v_3\delta_l^4c_s^4}{6\omega_5\delta_t}\frac{\partial^4\rho}{\partial x_1^2\partial x_2^2} + C_7\frac{\rho\delta_l^4c_s^4}{2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_6^2\delta_t\omega_{16}}\frac{\partial^4v_3}{\partial x_1^2\partial x_2^2} + \\
&(v_2^2\omega_{15}+3\omega_{15}c_s^2-\omega_{15}\omega_{10}-3v_2^2\omega_{10}+v_2^2\omega_{15}\omega_{10}-\omega_{15}+3\omega_{15}c_s^2\omega_{10}-9c_s^2\omega_{10}+3\omega_{10})\frac{v_2v_3\rho\delta_l^4}{12\omega_{15}\delta_t\omega_{10}}\frac{\partial^4v_1}{\partial x_1\partial x_2^3} + \\
&(-12v_2^2c_s^2\omega_{10}-3v_2^4\omega_{10}-c_s^4\omega_{10}-2c_s^2-6v_2^2+2c_s^4+3v_2^2\omega_{10}+6v_2^4+c_s^2\omega_{10}+24v_2^2c_s^2)\frac{v_3\delta_l^4}{24\delta_t\omega_{10}}\frac{\partial^4\rho}{\partial x_2^4} + \\
&(-4+6c_s^2+10v_2^2-5v_2^2\omega_{10}-3c_s^2\omega_{10}+2\omega_{10})\frac{v_2v_3\rho\delta_l^4}{12\delta_t\omega_{10}}\frac{\partial^4v_2}{\partial x_2^4} + C_8\frac{\rho\delta_l^4}{24\omega_7^3\delta_t\omega_{16}^2}\frac{\partial^4v_3}{\partial x_2^4} + C_9\frac{\delta_l^4v_1c_s^2}{12\omega_{13}^2\omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{22}\delta_t}\frac{\partial^4\rho}{\partial x_1^3\partial x_3} + \\
&C_{10}\frac{\rho\delta_l^4c_s^2}{12\omega_{13}\omega_{11}\omega_{18}\omega_9\omega_6^3\omega_{22}\delta_t}\frac{\partial^4v_1}{\partial x_1^3\partial x_3} + \\
&(-\omega_{13}-9\omega_9c_s^2+3\omega_{13}\omega_9c_s^2-\omega_{13}\omega_9+\omega_{13}v_1^2+3\omega_{13}c_s^2+3\omega_9+\omega_{13}v_1^2\omega_9-3v_1^2\omega_9)\frac{v_3\rho\delta_l^4v_1}{12\omega_{13}\omega_9\delta_t}\frac{\partial^4v_3}{\partial x_1^3\partial x_3} + \\
&C_{11}\frac{\delta_l^4}{2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\delta_t}\frac{\partial^4\rho}{\partial x_1^2\partial x_2\partial x_3} + C_{12}\frac{\rho\delta_l^4}{2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\delta_t}\frac{\partial^4v_1}{\partial x_1^2\partial x_2\partial x_3} + \\
&C_{13}\frac{\rho\delta_l^4}{12\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}\delta_t}\frac{\partial^4v_2}{\partial x_1^2\partial x_2\partial x_3} + C_{14}\frac{v_3\rho\delta_l^4}{\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}\delta_t}\frac{\partial^4v_3}{\partial x_1^2\partial x_2\partial x_3} + \\
&C_{15}\frac{\delta_l^4}{2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\delta_t\omega_{16}}\frac{\partial^4\rho}{\partial x_1\partial x_2^2\partial x_3} + C_{16}\frac{\rho\delta_l^4}{12\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}\delta_t\omega_{16}}\frac{\partial^4v_1}{\partial x_1\partial x_2^2\partial x_3} + \\
&C_{17}\frac{v_2\rho\delta_l^4}{\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\delta_t\omega_{16}}\frac{\partial^4v_2}{\partial x_1\partial x_2^2\partial x_3} + C_{18}\frac{\rho\delta_l^4}{2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6\omega_{19}\delta_t\omega_{16}}\frac{\partial^4v_3}{\partial x_1\partial x_2^2\partial x_3} + \\
&C_{19}\frac{v_2\delta_l^4c_s^2}{12\omega_7^2\omega_{23}\omega_{11}\omega_{19}\delta_t\omega_{16}^2\omega_{10}}\frac{\partial^4\rho}{\partial x_2^3\partial x_3} + C_{20}\frac{\rho\delta_l^4c_s^2}{12\omega_7^3\omega_{23}\omega_{11}\omega_{19}\delta_t\omega_{16}\omega_{10}}\frac{\partial^4v_2}{\partial x_2^3\partial x_3} + \\
&(-\omega_{16}\omega_{10}+3c_s^2\omega_{16}\omega_{10}+v_2^2\omega_{16}-3v_2^2\omega_{10}+v_2^2\omega_{16}\omega_{10}-9c_s^2\omega_{10}+3c_s^2\omega_{16}-\omega_{16}+3\omega_{10})\frac{v_2v_3\rho\delta_l^4}{12\delta_t\omega_{16}\omega_{10}}\frac{\partial^4v_3}{\partial x_2^3\partial x_3} + \\
&C_{21}\frac{v_3\delta_l^4c_s^2}{12\omega_{13}\omega_{11}^3\omega_{18}^2\omega_6^2\omega_{22}\delta_t}\frac{\partial^4\rho}{\partial x_1^2\partial x_3^2} + C_{22}\frac{\rho\delta_l^4c_s^2}{12\omega_{13}\omega_{11}^2\omega_{18}\omega_6^3\omega_{22}\delta_t}\frac{\partial^4v_3}{\partial x_1^2\partial x_3^2} + C_{23}\frac{v_3\delta_l^4c_s^2}{12\omega_7^2\omega_{23}\omega_{11}^3\omega_{19}^2\delta_t\omega_{16}}\frac{\partial^4\rho}{\partial x_2^2\partial x_3^2} + \\
&C_{24}\frac{\rho\delta_l^4c_s^2}{12\omega_7^3\omega_{23}\omega_{11}^2\omega_{19}\delta_t\omega_{16}}\frac{\partial^4v_3}{\partial x_2^2\partial x_3^2} + C_{25}\frac{\rho\delta_l^4}{12\omega_{11}^3\omega_{18}^2\omega_6^3\delta_t}\frac{\partial^4v_1}{\partial x_1\partial x_3^3} + C_{26}\frac{\rho\delta_l^4}{12\omega_7^3\omega_{11}^3\omega_{19}^2\delta_t}\frac{\partial^4v_2}{\partial x_2\partial x_3^3} + C_{27}\frac{v_3\delta_l^4}{12\omega_{11}^3\delta_t}\frac{\partial^4\rho}{\partial x_3^4} + \\
&C_{28}\frac{\rho\delta_l^4}{12\omega_{11}^3\delta_t}\frac{\partial^4v_3}{\partial x_3^4} = 0,
\end{aligned}
$$

where:

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

$$C_2 = 6-3\omega_7-3\omega_7c_s^2\omega_{16}-18c_s^2-\omega_7v_2^2\omega_{16}-6v_2^2+3v_2^2\omega_{16}+\omega_7\omega_{16}+3\omega_7v_2^2+9\omega_7c_s^2+9c_s^2\omega_{16}-3\omega_{16}$$

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

$$C_4 = 6\omega_{11}^2v_3^2\omega_{19}-6\omega_7\omega_{11}v_3^2\omega_{19}-11\omega_7\omega_{11}^2\omega_{19}c_s^2+12\omega_{11}^2+6\omega_7\omega_{11}\omega_{19}-6\omega_{11}^2\omega_{19}+12\omega_7v_3^2\omega_{19}-12\omega_{11}^2v_3^2-12\omega_7\omega_{11}v_3^2-36\omega_{11}^2c_s^2-36\omega_7\omega_{11}c_s^2-12\omega_7\omega_{11}^2+36\omega_7\omega_{11}^2c_s^2+12\omega_7\omega_{11}^2v_3^2-12\omega_7\omega_{19}+36\omega_7\omega_{19}c_s^2+3\omega_7\omega_{11}^2\omega_{19}-3\omega_7\omega_{11}^2v_3^2\omega_{19}+12\omega_7\omega_{11}+18\omega_{11}^2\omega_{19}c_s^2-18\omega_7\omega_{11}\omega_{19}c_s^2$$

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

$C_6 = -72\omega_{13}v_1^2\omega_6^3c_s^2 - 12\omega_{13}^2v_1^4\omega_6^2 - 216v_1^2\omega_6^2c_s^2 - 3\omega_{13}^2\omega_6^3c_s^4 - 36\omega_{13}^2v_1^2\omega_6c_s^2 - 6\omega_{13}\omega_6^3c_s^2 + 3\omega_{13}^2v_1^4\omega_6^3 + 12\omega_{13}^2\omega_6c_s^2 + 144\omega_{13}v_1^2\omega_6^2c_s^2 + 108v_1^2\omega_6^3c_s^2 + 72v_1^2\omega_6^2 + 30\omega_{13}v_1^2\omega_6^3 + 24\omega_{13}\omega_6c_s^4 + 24\omega_{13}\omega_6^2c_s^2 + 24\omega_{13}^2\omega_6^2c_s^4 - 36v_1^2\omega_6^3 - 72\omega_{13}v_1^2\omega_6^2 + 6\omega_{13}^2v_1^2\omega_6^3c_s^2 - 24\omega_{13}\omega_6c_s^2 - 48\omega_{13}^2\omega_6c_s^4 - 3\omega_{13}^2v_1^2\omega_6^3 - 8\omega_{13}^2\omega_6^2c_s^2 + 72\omega_{13}v_1^2\omega_6c_s^2 + 12\omega_{13}^2v_1^2\omega_6^2 + 24\omega_{13}^2c_s^4 - 24\omega_{13}\omega_6^2c_s^4 - 12\omega_{13}^2v_1^2\omega_6^2c_s^2 + 72\omega_{13}v_1^4\omega_6^2 + 36v_1^4\omega_6^3 + 6\omega_{13}\omega_6^3c_s^4 - 30\omega_{13}v_1^4\omega_6^3 - 72v_1^4\omega_6^2 + \omega_{13}^2\omega_6^3c_s^2$

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

$C_8 =$
$72\omega_7^2v_2^4\omega_{16} + 24\omega_7^2c_s^4\omega_{16}^2 - 72\omega_7^3v_2^2c_s^2\omega_{16} - 12\omega_7^2v_2^2c_s^2\omega_{16}^2 - 24\omega_7c_s^2\omega_{16} + 30\omega_7^3v_2^2\omega_{16} + \omega_7^3c_s^2\omega_{16}^2 + 24c_s^4\omega_{16}^2 + 72\omega_7^2v_2^2 + 144\omega_7^2v_2^2c_s^2\omega_{16} + 108\omega_7^3v_2^2c_s^2 + 12\omega_7c_s^2\omega_{16}^2 - 36\omega_7^3v_2^2 - 6\omega_7^3c_s^2\omega_{16} - 3\omega_7^3v_2^2\omega_{16}^2 - 24\omega_7^2c_s^4\omega_{16} - 12\omega_7^2v_2^4\omega_{16}^2 + 6\omega_7^3v_2^2c_s^2\omega_{16}^2 - 36\omega_7v_2^2c_s^2\omega_{16}^2 - 8\omega_7^2c_s^2\omega_{16}^2 - 72\omega_7^2v_2^2\omega_{16} + 24\omega_7c_s^4\omega_{16} - 3\omega_7^3c_s^4\omega_{16}^2 + 36\omega_7^3v_2^4 - 30\omega_7^3v_2^4\omega_{16} - 48\omega_7c_s^4\omega_{16}^2 + 3\omega_7^3v_2^4\omega_{16}^2 + 6\omega_7^3c_s^4\omega_{16} - 216\omega_7^2v_2^2c_s^2 + 12\omega_7^2v_2^2\omega_{16}^2 + 24\omega_7^2c_s^2\omega_{16} - 72\omega_7^2v_2^4 + 72\omega_7v_2^2c_s^2\omega_{16}$

$C_9 = 6\omega_{11}\omega_{18}v_1^2\omega_9\omega_6^2\omega_{22} + 18\omega_{13}\omega_{11}\omega_{18}v_1^2\omega_9\omega_6\omega_{22} + 5\omega_{13}^2\omega_{11}\omega_{18}\omega_6^2\omega_{22} + 36\omega_{13}^2\omega_{11}\omega_{18}\omega_9\omega_{22}c_s^2 - 6\omega_{13}^2\omega_{11}\omega_{18}\omega_9\omega_6^2 + 12\omega_{13}^2\omega_{11}\omega_{18}\omega_{22} - 18\omega_{13}\omega_{11}\omega_{18}\omega_9\omega_6\omega_{22} - 36\omega_{13}^2\omega_{11}\omega_6\omega_{22}c_s^2 + 36\omega_{13}\omega_{11}\omega_{18}\omega_9\omega_6c_s^2 + \omega_{13}^2\omega_{11}\omega_{18}v_1^2\omega_9\omega_6^2\omega_{22} + 18\omega_{13}^2\omega_{18}\omega_6^2\omega_{22}c_s^2 + 18\omega_{13}^2\omega_{11}\omega_{18}v_1^2\omega_6\omega_{22} + 36\omega_{13}^2\omega_{11}\omega_9\omega_6c_s^2 - 18\omega_{13}^2\omega_{18}\omega_9\omega_6^2c_s^2 + 6\omega_{13}\omega_{11}\omega_{18}\omega_9\omega_6^2 - 36\omega_{13}^2\omega_{11}\omega_{18}\omega_9\omega_6c_s^2 + 6\omega_{13}^2\omega_{18}\omega_9\omega_6^2 - 6\omega_{13}^2\omega_{18}\omega_6^2\omega_{22} - 12\omega_{13}^2\omega_{11}v_1^2\omega_6\omega_{22} + 6\omega_{13}^2\omega_{18}v_1^2\omega_6^2\omega_{22} - 12\omega_{13}\omega_{11}\omega_{18}\omega_9\omega_6 - 6\omega_{13}^2\omega_{18}v_1^2\omega_9\omega_6^2 + 12\omega_{13}^2\omega_{11}\omega_6\omega_{22} - 9\omega_{13}\omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{22}c_s^2 - 12\omega_{13}^2\omega_{11}\omega_{18}\omega_9\omega_{22} - 36\omega_{13}^2\omega_{11}\omega_{18}\omega_9\omega_6\omega_{22}c_s^2 + 54\omega_{13}^2\omega_{11}\omega_{18}\omega_6\omega_{22}c_s^2 + 12\omega_{11}\omega_{18}\omega_9\omega_6\omega_{22} + 12\omega_{13}\omega_{11}\omega_{18}\omega_9\omega_{22} - 36\omega_{13}\omega_{11}\omega_{18}\omega_9\omega_{22}c_s^2 + 12\omega_{13}^2\omega_{11}\omega_{18}\omega_9\omega_6\omega_{22} - 36\omega_{11}\omega_{18}\omega_9\omega_6\omega_{22}c_s^2 - 12\omega_{13}^2\omega_{11}\omega_{18}v_1^2\omega_{22} + 12\omega_{13}^2\omega_{11}\omega_{18}\omega_9\omega_6 - 6\omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{22} + 12\omega_{13}^2\omega_{11}\omega_{18}v_1^2\omega_9\omega_{22} + 36\omega_{13}^2\omega_9\omega_6^2c_s^2 + 3\omega_{13}^2\omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{22}c_s^2 + 12\omega_{13}^2\omega_6^2\omega_{22} - 36\omega_{13}^2\omega_{11}\omega_{18}\omega_{22}c_s^2 + 54\omega_{13}\omega_{11}\omega_{18}\omega_9\omega_6\omega_{22}c_s^2 - \omega_{13}^2\omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{22} - 12\omega_{13}^2\omega_9\omega_6^2 - 36\omega_{13}^2\omega_6^2\omega_{22}c_s^2 - 12\omega_{13}^2\omega_{11}\omega_{18}v_1^2\omega_9\omega_6 + 18\omega_{13}^2\omega_{11}\omega_{18}\omega_9\omega_6^2c_s^2 - 12\omega_{13}^2\omega_{11}v_1^2\omega_9\omega_6^2 - 15\omega_{13}^2\omega_{11}\omega_{18}\omega_6^2\omega_{22}c_s^2 + 12\omega_{13}^2\omega_{11}v_1^2\omega_6^2\omega_{22} + 12\omega_{13}^2\omega_{11}\omega_9\omega_6^2 - 12\omega_{13}^2\omega_{11}\omega_6^2\omega_{22} - 6\omega_{13}\omega_{11}\omega_{18}v_1^2\omega_9\omega_6^2 + 18\omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{22}c_s^2 - 18\omega_{13}\omega_{11}\omega_{18}\omega_9\omega_6^2c_s^2 - 12\omega_{13}^2\omega_{11}\omega_9\omega_6 + 12\omega_{13}\omega_{11}\omega_{18}v_1^2\omega_9\omega_6 - 12\omega_{13}^2\omega_{11}\omega_{18}v_1^2\omega_9\omega_6\omega_{22} + 6\omega_{13}^2\omega_{11}\omega_{18}v_1^2\omega_9\omega_6^2 - 5\omega_{13}^2\omega_{11}\omega_{18}v_1^2\omega_6^2\omega_{22} + 36\omega_{13}^2\omega_{11}\omega_6^2\omega_{22}c_s^2 + 12\omega_{13}^2\omega_{11}v_1^2\omega_9\omega_6 - 36\omega_{13}^2\omega_{11}\omega_9\omega_6^2c_s^2 - 12\omega_{13}^2v_1^2\omega_6^2\omega_{22} - 12\omega_{13}\omega_{11}\omega_{18}v_1^2\omega_9\omega_{22} + 12\omega_{13}^2v_1^2\omega_9\omega_6^2 - 3\omega_{13}\omega_{11}\omega_{18}v_1^2\omega_9\omega_6^2\omega_{22} - 12\omega_{11}\omega_{18}v_1^2\omega_9\omega_6\omega_{22} - 18\omega_{13}^2\omega_{11}\omega_{18}\omega_6\omega_{22} + 3\omega_{13}\omega_{11}\omega_{18}\omega_9\omega_6^2\omega_{22}$

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

$C_{11} = -2\omega_{13}\omega_7\omega_{14}\omega_8v_2^2v_1\omega_6\omega_{22}\omega_{19}c_s^2 + \omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_8v_2v_3^2\omega_{18}\omega_6\omega_{22}\omega_{19}c_s^2 - 2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2v_3^2\omega_{18}\omega_{19}c_s^2 - 2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2\omega_{18}v_1^2\omega_{22}\omega_{19}c_s^2 + \omega_{13}\omega_{20}\omega_{11}\omega_8v_2^2v_3^2\omega_{18}v_1\omega_6\omega_{22}\omega_{19} + \omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_2\omega_{18}v_1^2\omega_6\omega_{22}\omega_{19}c_s^2 + \omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8v_2v_3^2\omega_{18}v_1^2\omega_6\omega_{22}\omega_{19} - \omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8v_3^2\omega_{18}v_1\omega_6\omega_{22}\omega_{19}c_s^2 - \omega_{13}\omega_{20}\omega_{11}\omega_8v_2v_3^2\omega_{18}\omega_6\omega_{22}\omega_{19}c_s^2 - 2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8v_2v_3^2\omega_6\omega_{22}\omega_{19}c_s^2 - 2\omega_{13}\omega_{11}\omega_{14}v_3^2\omega_{18}v_1\omega_6\omega_{22}\omega_{19}c_s^2 - \omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_2\omega_{18}v_1^2\omega_6\omega_{22}c_s^2 + 2\omega_{13}\omega_{11}\omega_{14}v_2v_3^2\omega_{18}v_1^2\omega_6\omega_{22}\omega_{19} - 2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8v_2^2v_3^2v_1\omega_{22}\omega_{19} + 2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_2^2v_1^2\omega_6\omega_{19}c_s^2 + 2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2v_3^2\omega_{18}\omega_6\omega_{22}\omega_{19}c_s^2 - 2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_2v_3^2\omega_6\omega_{22}\omega_{19}c_s^2 - \omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_8v_2^2v_3^2\omega_{18}v_1\omega_6\omega_{22}\omega_{19} - 2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8v_2\omega_{18}v_1^2\omega_6\omega_{22}c_s^2 - 2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2^2v_3^2\omega_{18}v_1\omega_{22}\omega_{19} + 2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8v_2\omega_{18}v_1^2\omega_6\omega_{22}\omega_{19}c_s^2 - 2\omega_{13}\omega_7\omega_{11}\omega_{14}v_2^2\omega_{18}v_1\omega_{22}\omega_{19}c_s^2 - 2\omega_7\omega_{20}\omega_{11}\omega_8v_2^2v_3^2\omega_{18}v_1\omega_{22}\omega_{19} + \omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2v_3^2\omega_{18}\omega_6\omega_{19}c_s^2 + 2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_3^2v_1\omega_{19}c_s^2 - 2\omega_{13}\omega_7\omega_{20}\omega_{11}v_2v_3^2\omega_{18}\omega_6\omega_{22}\omega_{19}c_s^2 - 2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2^2\omega_{18}v_1\omega_6\omega_{22}\omega_{19}c_s^2 - 2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8v_2v_3^2\omega_{18}v_1^2\omega_{22}\omega_{19} + 2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2^2v_3^2\omega_{18}v_1\omega_6\omega_{22}\omega_{19} - \omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2v_3^2\omega_{18}v_1^2\omega_6\omega_{22} - \omega_7\omega_{20}\omega_{11}\omega_8v_2\omega_{18}v_1^2\omega_6\omega_{22}\omega_{19}c_s^2 + 2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8v_2v_1^2\omega_{22}\omega_{19}c_s^2 - 2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2v_3^2\omega_{22}\omega_{19}c_s^2 - 2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8v_2v_3^2\omega_{18}v_1^2\omega_6\omega_{22} - 2\omega_{13}\omega_{11}\omega_{14}\omega_8v_2^2v_3^2\omega_{18}v_1\omega_6\omega_{22}\omega_{19}c_s^2 - 2\omega_7\omega_{20}\omega_{11}\omega_8v_2^2v_3^2\omega_{18}v_1\omega_{19} - 2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2\omega_{18}v_1^2\omega_{19}c_s^2 - \omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2^2v_3^2\omega_{18}v_1\omega_6\omega_{22} - \omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8v_2^2\omega_{18}v_1\omega_6\omega_{22}\omega_{19}c_s^2 + 2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_3^2v_1\omega_6\omega_{19}c_s^2 - \omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2\omega_{18}v_1^2\omega_6\omega_{22}\omega_{19}c_s^2 - 2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_{18}v_1^2\omega_{22}\omega_{19}c_s^2 - \omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2v_3^2\omega_{18}v_1^2\omega_6\omega_{19} - 2\omega_{13}\omega_{11}\omega_{14}v_2^2\omega_{18}v_1\omega_6\omega_{22}\omega_{19}c_s^2 + \omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2v_3^2\omega_{18}\omega_6\omega_{22}\omega_{19}c_s^2 - 2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8v_2v_3^2\omega_{18}v_1^2\omega_{22}\omega_{19} + 2\omega_{13}\omega_{20}\omega_{11}\omega_{14}v_2^2v_3^2\omega_{18}v_1\omega_6\omega_{22}\omega_{19} + 2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2v_3^2\omega_{18}v_1^2\omega_6\omega_{22}\omega_{19} + \omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_8v_2^2\omega_{18}v_1\omega_6\omega_{22}c_s^2 - 2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_3^2\omega_{18}v_1\omega_6\omega_{22}\omega_{19}c_s^2 + 2\omega_{13}\omega_{20}\omega_{11}v_2\omega_{18}v_1^2\omega_6\omega_{22}\omega_{19}c_s^2 - 2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2v_3^2v_1^2\omega_{22}\omega_{19} + 2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_2v_3^2v_1^2\omega_6\omega_{19} - 2\omega_{13}\omega_{20}\omega_{11}\omega_{14}v_2v_3^2\omega_{18}\omega_6\omega_{22}\omega_{19}c_s^2 + 2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8v_3^2\omega_{18}v_1\omega_{22}\omega_{19}c_s^2 - 2\omega_{13}\omega_7\omega_{14}\omega_8v_2^2\omega_{18}v_1\omega_6\omega_{22}c_s^2 + \omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_2^2\omega_{18}v_1\omega_6\omega_{19}c_s^2 - 2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_3^2\omega_{18}v_1\omega_6\omega_{19}c_s^2 - \omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2^2\omega_{18}v_1\omega_{22}\omega_{19}c_s^2 + 2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2v_3^2\omega_{18}v_1^2\omega_{19}c_s^2 - 2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2\omega_{18}v_1^2\omega_{19}c_s^2 + \omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2^2\omega_{18}v_1\omega_6\omega_{19}c_s^2 - \omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2v_3^2\omega_{18}v_1^2\omega_6\omega_{22}\omega_{19} - 2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2v_3^2\omega_{18}v_1^2\omega_6\omega_{19}c_s^2 + 2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2v_3^2\omega_{18}v_1\omega_{22}\omega_{19}c_s^2 - 2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2v_3^2\omega_{18}v_1^2\omega_6\omega_{19}c_s^2 - \omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2v_3^2\omega_{18}v_1^2\omega_{22}\omega_{19} + 2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2^2v_3^2\omega_{18}v_1\omega_{22}\omega_{19}c_s^2 + 2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2^2v_3^2\omega_{18}v_1^2\omega_{19}c_s^2 - 2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2\omega_{18}v_1^2\omega_{19}c_s^2 + 2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8v_2^2\omega_{18}v_1\omega_{22}\omega_{19}c_s^2 - 2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2v_1^2\omega_6\omega_{19}c_s^2 - \omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_3^2\omega_{18}v_1\omega_6\omega_{19} - 2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2\omega_{18}v_1^2\omega_{19}c_s^2 + 2\omega_{13}\omega_7\omega_{14}\omega_8v_3^2\omega_{18}v_1\omega_6\omega_{22}\omega_{19}c_s^2 - 2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2v_3^2\omega_{18}v_1^2\omega_6\omega_{22}\omega_{19} + 2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2v_3^2\omega_{18}v_1\omega_6\omega_{22}\omega_{19}c_s^2 - 2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8v_2v_3^2\omega_{18}\omega_6\omega_{22}c_s^2 + \omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2\omega_{18}v_1^2\omega_6\omega_{19}c_s^2 - 2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_2v_3^2v_1^2\omega_6\omega_{22}\omega_{19} -$

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

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

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

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

$$12\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}v_1^2\omega_6^3\omega_{22}\omega_{19}c_s^2 - 12\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8v_2\omega_5\omega_{18}v_1\omega_6^3\omega_{22}\omega_{19}c_s^2 + 24\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_2\omega_5v_1\omega_6^3\omega_{19}c_s^2 -$$
$$12\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8v_3^2\omega_5\omega_{18}v_1^2\omega_6^3\omega_{22} - 12\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2v_3^2\omega_5\omega_{18}v_1\omega_6^3\omega_{22}\omega_{19} - 6\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8v_3^2\omega_5\omega_{18}v_1^2\omega_6^3\omega_{22} +$$
$$12\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5v_1^2\omega_6^3\omega_{22}\omega_{19}c_s^2 + 12\omega_7^2\omega_{20}\omega_{11}\omega_8v_2\omega_5\omega_{18}v_1\omega_6^3\omega_{22}\omega_{19}c_s^2 - 12\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_3^2\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}c_s^2 +$$
$$24\omega_{13}\omega_7^2\omega_{11}\omega_{14}v_2v_3^2\omega_5\omega_{18}v_1\omega_6^3\omega_{22}\omega_{19} + 12\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_2\omega_5\omega_{18}v_1\omega_6^3\omega_{19}c_s^2 + 6\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_3^2\omega_5\omega_{18}v_1^2\omega_6^3\omega_{22}\omega_{19} -$$
$$12\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19}c_s^4 + 12\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_5\omega_{18}v_1^2\omega_6^3\omega_{22}\omega_{19}c_s^2 + 24\omega_{13}\omega_7^2\omega_{11}\omega_{14}v_2\omega_5\omega_{18}v_1\omega_6^3\omega_{22}\omega_{19}c_s^2 +$$
$$6\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}v_1^2\omega_6^3\omega_{19}c_s^2 - 12\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}c_s^4 + 24\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8v_2\omega_5v_1\omega_6^3\omega_{22}\omega_{19}c_s^2 -$$
$$12\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}c_s^4 - 24\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_2v_3^2\omega_5\omega_{18}v_1\omega_6^2\omega_{19} - 12\omega_{13}\omega_7^2\omega_{11}\omega_{14}v_3^2\omega_5\omega_{18}v_1^2\omega_6^3\omega_{22}\omega_{19} -$$
$$12\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19}c_s^4 + 6\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_3^2\omega_5\omega_{18}v_1^2\omega_6^3\omega_{19} - 6\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}c_s^4 +$$
$$12\omega_7^2\omega_{20}\omega_{11}\omega_8v_2v_3^2\omega_5\omega_{18}v_1\omega_6^3\omega_{22}\omega_{19} + 12\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5\omega_{18}v_1^2\omega_6^3\omega_{22}c_s^2 + 24\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8v_2\omega_5v_1\omega_6^3\omega_{22}\omega_{19}c_s^2 -$$
$$12\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2\omega_5\omega_{18}v_1\omega_6^3\omega_{22}\omega_{19}c_s^2 + 24\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_2v_3^2\omega_5v_1\omega_6^3\omega_{19} - 24\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8v_2\omega_5\omega_{18}v_1\omega_6^3\omega_{22}c_s^2 +$$
$$12\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}v_1^2\omega_6^2\omega_{19}c_s^2 - 6\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8v_3^2\omega_5\omega_{18}v_1^2\omega_6^3\omega_{19} - 24\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8v_2v_3^2\omega_5v_1\omega_6^3\omega_{19} -$$
$$6\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}v_1^2\omega_6^3\omega_{19}c_s^2 - 24\omega_{13}\omega_7^2\omega_{20}\omega_{11}v_2v_3^2\omega_5\omega_{18}v_1\omega_6^2\omega_{22}\omega_{19} - 24\omega_{13}\omega_7^2\omega_{14}\omega_8v_2\omega_5v_1\omega_6^3\omega_{22}\omega_{19}c_s^2 -$$
$$24\omega_7^2\omega_{20}\omega_{11}\omega_8v_2\omega_5\omega_{18}v_1\omega_6^2\omega_{22}\omega_{19}c_s^2 + 12\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}v_3^2\omega_5\omega_{18}v_1^2\omega_6^3\omega_{22}\omega_{19} - 6\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}v_1^2\omega_6^3\omega_{22}c_s^2 -$$
$$6\omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}c_s^4 - 12\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_5\omega_{18}v_1^2\omega_6^3\omega_{22}\omega_{19}c_s^2 + 12\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8v_2\omega_5\omega_{18}v_1\omega_6^3\omega_{19}c_s^2 +$$
$$24\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_2v_3^2\omega_5\omega_{18}v_1\omega_6^2\omega_{22}\omega_{19} - 12\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5\omega_6^3\omega_{22}\omega_{19}c_s^4 - 24\omega_{13}\omega_7\omega_{20}\omega_{11}v_2v_3^2\omega_5\omega_{18}v_1\omega_6^3\omega_{22}\omega_{19} -$$
$$24\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_2v_3^2\omega_5\omega_{18}v_1\omega_6^2\omega_{22}\omega_{19} - 24\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8v_2\omega_5v_1\omega_6^2\omega_{22}\omega_{19}c_s^2 - 6\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_3^2\omega_5\omega_{18}v_1^2\omega_6^3\omega_{22}\omega_{19} -$$
$$24\omega_{13}\omega_7\omega_{20}\omega_{11}v_2\omega_5\omega_{18}v_1\omega_6^3\omega_{22}\omega_{19}c_s^2 + 12\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19}c_s^4 - 18\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19}c_s^4 +$$
$$12\omega_{13}\omega_7\omega_{20}\omega_{11}v_3^2\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}c_s^2 + 12\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}c_s^4 + 24\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6\omega_{22}\omega_{19}c_s^4 -$$
$$24\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8v_2\omega_5v_1\omega_6^3\omega_{19}c_s^2 + 6\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}c_s^4 - 24\omega_{13}\omega_7^2\omega_{11}\omega_{14}v_2\omega_5\omega_{18}v_1\omega_6^2\omega_{22}\omega_{19}c_s^2 +$$
$$6\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_3^2\omega_5\omega_{18}v_1^2\omega_6^3\omega_{22} - 24\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_2v_3^2\omega_5v_1\omega_6^3\omega_{22}\omega_{19} - 12\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_3^2\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19}c_s^2 +$$
$$12\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_6^3\omega_{22}\omega_{19}c_s^4 + 6\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}c_s^4 + 24\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}v_2v_3^2\omega_5\omega_{18}v_1\omega_6^2\omega_{22}\omega_{19} -$$
$$18\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^2\omega_{22}\omega_{19}c_s^4 + 24\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8v_2\omega_5\omega_{18}v_1\omega_6^2\omega_{22}\omega_{19}c_s^2 + 12\omega_{13}\omega_7^2\omega_{20}\omega_{11}v_3^2\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19}c_s^2 -$$
$$12\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_3^2\omega_5\omega_{18}v_1^2\omega_6^2\omega_{19} - 24\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_2v_3^2\omega_5v_1\omega_6^2\omega_{19} + 12\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}v_1^2\omega_6^2\omega_{22}\omega_{19}c_s^2 -$$
$$12\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_3^2\omega_5v_1^2\omega_6^2\omega_{22}\omega_{19} + 12\omega_{13}\omega_7^2\omega_{20}\omega_{11}v_3^2\omega_5\omega_{18}v_1^2\omega_6^2\omega_{22}\omega_{19} - 12\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_5\omega_{18}v_1^2\omega_6^3\omega_{22}\omega_{19}c_s^2 +$$
$$12\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}c_s^4 - 12\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5\omega_{18}v_1^2\omega_6^3\omega_{22}\omega_{19}c_s^2 - 12\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_3^2\omega_5\omega_{18}v_1^2\omega_6^2\omega_{22}\omega_{19} +$$
$$6\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}v_1^2\omega_6^3\omega_{22}\omega_{19}c_s^2 + 12\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_2v_3^2\omega_5\omega_{18}v_1\omega_6^3\omega_{19} - 12\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_3^2\omega_5\omega_6^2\omega_{22}\omega_{19}c_s^2 +$$
$$24\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8v_2\omega_5\omega_{18}v_1\omega_6^3\omega_{22}\omega_{19}c_s^2 - 6\omega_7^2\omega_{20}\omega_{11}\omega_8v_3^2\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}c_s^2 + 12\omega_{13}\omega_7\omega_{11}\omega_{14}v_3^2\omega_5\omega_{18}v_1^2\omega_6^3\omega_{22}\omega_{19} -$$
$$18\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19}c_s^4 + 6\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8v_3^2\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}c_s^2 + 24\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8v_2v_3^2\omega_5\omega_{18}v_1\omega_6^3\omega_{22}\omega_{19} -$$
$$12\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19}c_s^4 - 12\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}v_1^2\omega_6^2\omega_{22}\omega_{19}c_s^2 + 12\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_3^2\omega_5\omega_{18}\omega_6^2\omega_{19}c_s^2 -$$
$$12\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_2\omega_5\omega_{18}v_1\omega_6^3\omega_{22}c_s^2 - 12\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}c_s^4 + 12\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_3^2\omega_5\omega_6^2\omega_{19}c_s^2 +$$
$$12\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8v_2v_3^2\omega_5\omega_{18}v_1\omega_6^3\omega_{22} + 12\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8v_3^2\omega_5\omega_{18}v_1^2\omega_6^3\omega_{22} - 6\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_3^2\omega_5\omega_{18}\omega_6^3\omega_{22}c_s^2 -$$
$$12\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8v_3^2\omega_5\omega_6^3\omega_{22}\omega_{19}c_s^2 + 12\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8v_3^2\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}c_s^2 + 6\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8v_3^2\omega_5\omega_{18}v_1^2\omega_6^3\omega_{22}\omega_{19} -$$
$$6\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8v_3^2\omega_5\omega_{18}\omega_6^3\omega_{19}c_s^2 + 24\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8v_2v_3^2\omega_5\omega_{18}v_1\omega_6^3\omega_{22} - 6\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}v_1^2\omega_6^3\omega_{22}\omega_{19}c_s^2 -$$
$$12\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8v_3^2\omega_5\omega_6^3\omega_{22}\omega_{19}c_s^2 - 12\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_5\omega_{18}v_1^2\omega_6^3\omega_{22}\omega_{19}c_s^2 - 24\omega_{13}\omega_7\omega_{11}\omega_{14}v_2\omega_5\omega_{18}v_1\omega_6^3\omega_{22}\omega_{19}c_s^2 +$$
$$12\omega_{13}\omega_7^2\omega_{11}\omega_{14}v_3^2\omega_5\omega_{18}v_1^2\omega_6^2\omega_{22}\omega_{19} - 6\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}v_1^2\omega_6^3\omega_{22}c_s^2 - 6\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_3^2\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}c_s^2 -$$
$$12\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}c_s^4 - 12\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19}c_s^4 + 12\omega_{13}\omega_7\omega_{20}\omega_{11}v_3^2\omega_5\omega_{18}v_1^2\omega_6^3\omega_{22}\omega_{19} -$$
$$12\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}v_1^2\omega_6^3\omega_{22}c_s^2 - 24\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_2\omega_5\omega_{18}v_1\omega_6^2\omega_{19}c_s^2 + 12\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8v_2\omega_5\omega_{18}v_1\omega_6^3\omega_{22}c_s^2 -$$
$$12\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}v_1^2\omega_6^2\omega_{19}c_s^2 - 12\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_2v_3^2\omega_5\omega_{18}v_1\omega_6^3\omega_{22} + 6\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}v_1^2\omega_6^3\omega_{22}\omega_{19}c_s^2 +$$
$$12\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}c_s^4 + 12\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}v_1^2\omega_6^2\omega_{22}\omega_{19}c_s^2 + 24\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_2\omega_5\omega_{18}v_1\omega_6^2\omega_{22}\omega_{19}c_s^2 +$$
$$12\omega_{13}\omega_7^2\omega_{11}\omega_{14}v_3^2\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19}c_s^2 - 24\omega_7^2\omega_{20}\omega_{11}\omega_8v_2v_3^2\omega_5\omega_{18}v_1\omega_6^2\omega_{22}\omega_{19} + 12\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5v_1^2\omega_6^3\omega_{19}c_s^2 +$$
$$24\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8v_2\omega_5\omega_{18}v_1\omega_6^3\omega_{22}c_s^2 - 12\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5v_1^2\omega_6^2\omega_{22}\omega_{19}c_s^2 - 24\omega_{13}\omega_7^2\omega_{20}\omega_{11}v_2\omega_5\omega_{18}v_1\omega_6^2\omega_{22}\omega_{19}c_s^2 -$$
$$12\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_5\omega_{18}v_1^2\omega_6^2\omega_{22}\omega_{19}c_s^2 + 12\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{22}c_s^4 + 12\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_3^2\omega_5\omega_{18}v_1^2\omega_6^3\omega_{22}\omega_{19} -$$
$$24\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8v_2v_3^2\omega_5v_1\omega_6^3\omega_{22}\omega_{19} + 12\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_3^2\omega_5\omega_{18}v_1^2\omega_6^2\omega_{19} + 24\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8v_2v_3^2\omega_5v_1\omega_6^3\omega_{22}\omega_{19} +$$
$$24\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}v_2\omega_5\omega_{18}v_1\omega_6^2\omega_{22}\omega_{19}c_s^2 + 12\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8v_3^2\omega_5\omega_{18}v_1^2\omega_6^3\omega_{22}\omega_{19} - 12\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8v_3^2\omega_5v_1^2\omega_6^3\omega_{22}\omega_{19} +$$
$$12\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}c_s^4 - 12\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8v_2\omega_5\omega_{18}v_1\omega_6^3\omega_{22}\omega_{19}c_s^2 + 24\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_5\omega_{18}v_1\omega_6^3\omega_{22}\omega_{19}c_s^2 +$$
$$6\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8v_3^2\omega_5\omega_{18}\omega_6^3\omega_{22}c_s^2 + 24\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_2\omega_5v_1\omega_6^2\omega_{22}\omega_{19}c_s^2 + 24\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8v_2v_3^2\omega_5v_1\omega_6^3\omega_{22}\omega_{19} -$$
$$12\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8v_3^2\omega_5v_1^2\omega_6^3\omega_{22}\omega_{19} - \omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}c_s^4 - 12\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}v_1^2\omega_6^3\omega_{22}\omega_{19}c_s^2 -$$
$$6\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8v_3^2\omega_5\omega_{18}\omega_6^3\omega_{22}c_s^2 - 12\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5v_1^2\omega_6^3\omega_{19}c_s^2 - 12\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_3^2\omega_5\omega_{18}\omega_6^2\omega_{19}c_s^2 +$$
$$24\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2v_3^2\omega_5\omega_{18}v_1\omega_6^3\omega_{22}\omega_{19} - 12\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8v_2v_3^2\omega_5\omega_{18}v_1\omega_6^3\omega_{22}\omega_{19} - 12\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8v_3^2\omega_5\omega_{18}\omega_6^3\omega_{22}c_s^2 +$$
$$12\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19}c_s^4 + 24\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_2v_3^2\omega_5\omega_{18}v_1\omega_6^2\omega_{19} - 6\omega_7^2\omega_{20}\omega_{11}\omega_8v_3^2\omega_5\omega_{18}v_1^2\omega_6^3\omega_{22}\omega_{19} +$$
$$12\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19}c_s^4 + 12\omega_{13}\omega_7\omega_{11}\omega_{14}v_3^2\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}c_s^2 - 12\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_2\omega_5\omega_{18}v_1\omega_6^3\omega_{19}c_s^2 -$$
$$2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19}c_s^4 - 12\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_3^2\omega_5\omega_6^3\omega_{19}c_s^2 - 24\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_{22}\omega_{19}c_s^4 +$$
$$24\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8v_2\omega_5\omega_{18}v_1\omega_6^2\omega_{22}\omega_{19}c_s^2 - 6\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_3^2\omega_5\omega_{18}\omega_6^3\omega_{19}c_s^2 + 12\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8v_3^2\omega_5v_1^2\omega_6^3\omega_{19} -$$
$$24\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_2\omega_5v_1\omega_6^3\omega_{22}\omega_{19}c_s^2 + 12\omega_{13}\omega_7^2\omega_{14}\omega_8v_3^2\omega_5\omega_6^3\omega_{22}\omega_{19}c_s^2 - 12\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8v_3^2\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19}c_s^2 -$$
$$12\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}c_s^4 + 6\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_3^2\omega_5\omega_{18}\omega_6^3\omega_{22}c_s^2 - 12\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8v_3^2\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}c_s^2 -$$
$$6\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8v_3^2\omega_5\omega_{18}v_1^2\omega_6^3\omega_{22}\omega_{19} + 12\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8v_2\omega_5\omega_{18}v_1\omega_6^2\omega_{22}\omega_{19}c_s^2 - 24\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_3^2\omega_5\omega_6^2\omega_{22}\omega_{19}c_s^2 +$$
$$6\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8v_3^2\omega_5\omega_{18}v_1^2\omega_6^3\omega_{22} - 24\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8v_2v_3^2\omega_5\omega_{18}v_1\omega_6^3\omega_{22} + 12\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19}c_s^4 -$$
$$12\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8v_3^2\omega_5\omega_{18}v_1^2\omega_6^2\omega_{22}\omega_{19} - 12\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}c_s^4 + 12\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_3^2\omega_5v_1^2\omega_6^3\omega_{22}\omega_{19} -$$
$$24\omega_{13}\omega_7^2\omega_{14}\omega_8v_2v_3^2\omega_5v_1\omega_6^3\omega_{22}\omega_{19} - 24\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}v_2v_3^2\omega_5\omega_{18}v_1\omega_6^3\omega_{22}\omega_{19} + 12\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8v_2v_3^2\omega_5\omega_{18}v_1\omega_6^3\omega_{22}\omega_{19} +$$

$12\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_5\omega_{18}v_1^2\omega_6^3\omega_{22}\omega_{19}c_s^2 - 6\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}c_s^4 + 6\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_3^2\omega_5\omega_{18}v_1^2\omega_6^3\omega_{22}\omega_{19} -$
$12\omega_{13}\omega_7^2\omega_{14}\omega_8v_3^2\omega_5\omega_{18}v_1^2\omega_6^3\omega_{22}\omega_{19} + 12\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}v_1^2\omega_6^3\omega_{22}c_s^2 - 12\omega_{13}\omega_7^2\omega_{20}\omega_{11}v_3^2\omega_5\omega_{18}v_1^2\omega_6^3\omega_{22}\omega_{19} +$
$6\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_3^2\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}c_s^2 + 24\omega_{13}\omega_7^2\omega_{20}\omega_{11}v_2\omega_5\omega_{18}v_1\omega_6^3\omega_{22}\omega_{19}c_s^2 + 12\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5v_1^2\omega_6^3\omega_{22}\omega_{19}c_s^2 -$
$12\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_2v_3^2\omega_5\omega_{18}v_1\omega_6^3\omega_{19} + 12\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_3^2\omega_5\omega_{18}v_1^2\omega_6^2\omega_{22}\omega_{19} + 24\omega_{13}\omega_7^2\omega_{14}\omega_8v_2\omega_5\omega_{18}v_1\omega_6^3\omega_{22}\omega_{19}c_s^2 -$
$6\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}v_1^2\omega_6^3\omega_{22}\omega_{19}c_s^2 + 12\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2v_3^2\omega_5\omega_{18}v_1\omega_6^3\omega_{22} + 12\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_2v_3^2\omega_5\omega_{18}v_1\omega_6^3\omega_{22}\omega_{19} -$
$12\omega_{13}\omega_7^2\omega_{11}\omega_{14}v_3^2\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}c_s^2 - 12\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_2\omega_5\omega_{18}v_1\omega_6^3\omega_{22}\omega_{19}c_s^2 + 12\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_6\omega_{22}\omega_{19}c_s^4 +$
$24\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_2v_3^2\omega_5v_1\omega_6^2\omega_{22}\omega_{19} + 12\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}c_s^4 - 6\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_3^2\omega_5\omega_{18}v_1^2\omega_6^3\omega_{22} +$
$12\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8v_3^2\omega_5\omega_{18}\omega_6^3\omega_{22}c_s^2 + 12\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_5\omega_{18}v_1^2\omega_6^2\omega_{22}\omega_{19}c_s^2 + 12\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_3^2\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19}c_s^2 +$
$12\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8\omega_5v_1^2\omega_6^2\omega_{22}\omega_{19}c_s^2 - 6\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}v_1^2\omega_6^3\omega_{19}c_s^2 - 12\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}v_3^2\omega_5\omega_{18}\omega_6^2\omega_{22}\omega_{19}c_s^2 +$
$12\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6\omega_{22}\omega_{19}c_s^4 + 12\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_5\omega_{18}\omega_6^3\omega_{22}\omega_{19}c_s^4 - 12\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_3^2\omega_5v_1^2\omega_6^3\omega_{19} +$
$24\omega_{13}\omega_7^2\omega_{14}\omega_8v_2v_3^2\omega_5\omega_{18}v_1\omega_6^3\omega_{22}\omega_{19} + 12\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_2\omega_5\omega_{18}v_1\omega_6^3\omega_{22}\omega_{19}c_s^2 - 12\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_3^2\omega_5\omega_{18}v_1^2\omega_6^3\omega_{22}\omega_{19} -$
$24\omega_{13}\omega_7^2\omega_{14}\omega_8v_2\omega_5\omega_{18}v_1\omega_6^3\omega_{22}c_s^2 - 12\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_2v_3^2\omega_5\omega_{18}v_1\omega_6^3\omega_{22}\omega_{19} + 6\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}v_1^2\omega_6^3\omega_{22}c_s^2 +$
$12\omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_6^3\omega_{22}\omega_{19}c_s^4 - 12\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}v_3^2\omega_5\omega_{18}v_1^2\omega_6^2\omega_{22}\omega_{19} - 12\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8\omega_5\omega_6^2\omega_{22}\omega_{19}c_s^4 +$
$12\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_5\omega_{18}v_1^2\omega_6^3\omega_{22}\omega_{19}c_s^2 + 24\omega_{13}\omega_7^2\omega_{20}\omega_{11}v_2v_3^2\omega_5\omega_{18}v_1\omega_6^3\omega_{22}\omega_{19} - 12\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_6^3\omega_{22}\omega_{19}c_s^4 +$
$12\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8v_3^2\omega_5\omega_6^3\omega_{19}c_s^2 - 6\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8v_3^2\omega_5\omega_{18}v_1^2\omega_6^3\omega_{19}$

$C_{14} =$
$-2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2^2\omega_{18}v_1\omega_{19} + \omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_2\omega_{18}\omega_6\omega_{22}\omega_{19}c_s^2 + \omega_{13}\omega_{20}\omega_{11}\omega_8\omega_{18}v_1\omega_6\omega_{22}\omega_{19}c_s^2 + 2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8v_2\omega_{18}\omega_6\omega_{22}\omega_{19}c_s^2 -$
$\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2^2\omega_{18}v_1\omega_6\omega_{19} + \omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2\omega_{18}\omega_6\omega_{19}c_s^2 - 2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8v_2\omega_{18}\omega_6\omega_{22}c_s^2 + 2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{18}v_1\omega_6\omega_{22}\omega_{19}c_s^2 +$
$\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2\omega_{18}v_1^2\omega_6\omega_{22}\omega_{19} + 2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2v_1^2\omega_{19} + 2\omega_{13}\omega_{11}\omega_{14}\omega_8v_2^2\omega_{18}v_1\omega_6\omega_{22}\omega_{19} - 2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_2^2v_1\omega_6\omega_{19} -$
$2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2\omega_{18}\omega_{19}c_s^2 - 2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2\omega_{22}\omega_{19}c_s^2 - 2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8v_2v_1^2\omega_6\omega_{22}\omega_{19} - \omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}v_1\omega_6\omega_{22}\omega_{19}c_s^2 +$
$2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8v_1\omega_6\omega_{22}\omega_{19}c_s^2 - 2\omega_{13}\omega_7\omega_{20}\omega_{11}v_2\omega_{18}v_1^2\omega_6\omega_{22}\omega_{19} - \omega_{13}\omega_{20}\omega_{11}\omega_8v_2\omega_{18}v_1^2\omega_6\omega_{22}\omega_{19} + 2\omega_{13}\omega_7\omega_{11}\omega_{14}v_2^2\omega_{18}v_1\omega_6\omega_{22}\omega_{19} -$
$2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2^2v_1\omega_{19} + 2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2^2\omega_{18}v_1\omega_{22}\omega_{19} + \omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_2^2\omega_{18}v_1\omega_6\omega_{22} + 2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2^2v_1\omega_6\omega_{19} +$
$2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_{18}v_1^2\omega_6\omega_{22}\omega_{19} - 2\omega_{13}\omega_{11}\omega_{14}\omega_{18}v_1\omega_6\omega_{22}\omega_{19}c_s^2 + 2\omega_{13}\omega_7\omega_{14}\omega_8v_2\omega_6\omega_{22}\omega_{19}c_s^2 - \omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8v_2\omega_{18}v_1\omega_6\omega_{19}c_s^2 +$
$2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8\omega_{18}v_1\omega_6\omega_{22}c_s^2 - 2\omega_{13}\omega_7\omega_{20}\omega_{11}v_2^2\omega_{18}v_1\omega_{22}\omega_{19} + \omega_7\omega_{20}\omega_{11}\omega_8v_2^2\omega_{18}v_1\omega_6\omega_{22}\omega_{19} + \omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2^2\omega_{18}v_1\omega_6\omega_{22}\omega_{19} +$
$2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2^2\omega_{18}v_1\omega_{19} - 2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_{18}v_1\omega_6\omega_{22}\omega_{19}c_s^2 - 2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2v_1^2\omega_{22}\omega_{19} + 2\omega_{13}\omega_{11}\omega_{14}v_2\omega_{18}v_1^2\omega_6\omega_{22}\omega_{19} +$
$2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_2^2v_1\omega_6\omega_{22}\omega_{19} - \omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_8v_2\omega_{18}v_1^2\omega_6\omega_{22} + 2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2\omega_{18}\omega_{19}c_s^2 - 2\omega_{13}\omega_{20}\omega_{11}v_2^2\omega_{18}v_1\omega_6\omega_{22}\omega_{19} +$
$2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1\omega_{22}\omega_{19}c_s^2 + 2\omega_{13}\omega_7\omega_{14}\omega_8v_2\omega_{18}v_1^2\omega_6\omega_{22} - 2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2^2\omega_{18}v_1\omega_{22}\omega_{19} - \omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_2^2\omega_{18}v_1\omega_6\omega_{19} +$
$\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_2^2\omega_{18}v_1\omega_6\omega_{19} - \omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_2\omega_{18}\omega_6\omega_{19}c_s^2 - 2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8\omega_{18}v_1\omega_6\omega_{22}\omega_{19}c_s^2 - \omega_{13}\omega_{20}\omega_{11}\omega_8v_2\omega_{18}\omega_6\omega_{22}\omega_{19}c_s^2 -$
$2\omega_{13}\omega_7\omega_{20}\omega_{11}v_2\omega_{18}\omega_6\omega_{22}\omega_{19}c_s^2 + \omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}v_1\omega_6\omega_{19}c_s^2 + \omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}v_1\omega_6\omega_{22}c_s^2 + 2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2\omega_{19}c_s^2 +$
$2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_{18}v_1\omega_{22}\omega_{19}c_s^2 - 2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8v_2\omega_6\omega_{22}\omega_{19}c_s^2 - 2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_{18}v_1^2\omega_{22}\omega_{19} - 2\omega_{13}\omega_7\omega_{14}\omega_8\omega_{18}v_1\omega_6\omega_{22}c_s^2 -$
$\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8v_2^2\omega_{18}v_1\omega_6\omega_{22}\omega_{19} - 2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2\omega_{18}v_1^2\omega_{19} + 2\omega_7\omega_{20}\omega_{11}\omega_8v_2^2\omega_{18}v_1\omega_{22}\omega_{19} - 2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8\omega_{18}v_1\omega_6\omega_{22}\omega_{19}c_s^2 +$
$\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2\omega_{18}\omega_6\omega_{22}\omega_{19}c_s^2 - 2\omega_{13}\omega_7\omega_{11}\omega_{14}v_2^2\omega_{18}v_1\omega_{22}\omega_{19} + 2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8v_2\omega_{18}v_1^2\omega_6\omega_{22}\omega_{19} - 2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8v_2\omega_{18}v_1^2\omega_6\omega_{22} +$
$2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_2v_1^2\omega_6\omega_{19} + \omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_2\omega_{18}v_1^2\omega_6\omega_{22}\omega_{19} - \omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_8v_2^2\omega_{18}v_1\omega_6\omega_{22}\omega_{19} + 2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2^2v_1\omega_{22}\omega_{19} +$
$\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_{18}v_1\omega_6\omega_{19}c_s^2 + 2\omega_{13}\omega_{11}\omega_{14}v_2\omega_{18}\omega_6\omega_{22}\omega_{19}c_s^2 - \omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_8v_2\omega_{18}\omega_6\omega_{22}c_s^2 - \omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2\omega_{18}\omega_6\omega_{19}c_s^2 +$
$\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2^2\omega_{18}v_1\omega_6\omega_{19} - 2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_{18}\omega_{22}\omega_{19}c_s^2 + 2\omega_{13}\omega_7\omega_{14}\omega_8v_2^2\omega_{18}v_1\omega_6\omega_{22}\omega_{19} - \omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2^2\omega_{18}v_1\omega_6\omega_{22} +$
$2\omega_{13}\omega_7\omega_{14}\omega_8v_2\omega_{18}\omega_6\omega_{22}c_s^2 - 2\omega_{13}\omega_7\omega_{14}\omega_8v_1\omega_6\omega_{22}\omega_{19}c_s^2 - 2\omega_{13}\omega_{11}\omega_{14}\omega_8v_2^2\omega_{18}v_1\omega_6\omega_{22} - 2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2^2v_1\omega_6\omega_{22}\omega_{19} +$
$2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8\omega_{18}v_1\omega_{22}\omega_{19}c_s^2 + 2\omega_{13}\omega_7\omega_{14}\omega_8v_2v_1^2\omega_6\omega_{22}\omega_{19} - 2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8v_2\omega_{18}v_1^2\omega_{22}\omega_{19} + 2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2\omega_{18}\omega_6\omega_{22}\omega_{19}c_s^2 -$
$2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2v_1^2\omega_6\omega_{19} + 2\omega_{13}\omega_{20}\omega_{11}\omega_{14}v_2^2\omega_{18}v_1\omega_6\omega_{22}\omega_{19} + 2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8v_2^2\omega_{18}v_1\omega_{22}\omega_{19} + 2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2\omega_{18}v_1^2\omega_{19} -$
$2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8v_2\omega_{18}v_1^2\omega_{22}\omega_{19} - 2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2\omega_6\omega_{19}c_s^2 - 2\omega_{13}\omega_{20}\omega_{11}\omega_{14}v_2\omega_{18}v_1^2\omega_6\omega_{22}\omega_{19} - \omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}v_1\omega_6\omega_{22}\omega_{19}c_s^2 -$
$2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8v_2^2v_1\omega_{22}\omega_{19} + 2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2\omega_6\omega_{22}\omega_{19}c_s^2 + 2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18}v_1\omega_{22}\omega_{19}c_s^2 - \omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_2\omega_{18}\omega_6\omega_{22}c_s^2 -$
$2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1\omega_6\omega_{19}c_s^2 + 2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8v_2^2\omega_{18}v_1\omega_{22}\omega_{19} + 2\omega_{13}\omega_7\omega_{14}\omega_8\omega_{18}v_1\omega_6\omega_{22}\omega_{19}c_s^2 + 2\omega_{13}\omega_{11}\omega_{14}\omega_8v_2\omega_{18}v_1^2\omega_6\omega_{22} -$
$\omega_7\omega_{20}\omega_{11}\omega_8v_2\omega_{18}\omega_6\omega_{22}\omega_{19}c_s^2 + 2\omega_{13}\omega_7\omega_{11}\omega_{14}v_2\omega_{18}\omega_{22}\omega_{19}c_s^2 - 2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_2v_1^2\omega_6\omega_{22}\omega_{19} + \omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2\omega_{18}v_1^2\omega_6\omega_{22} -$
$\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2\omega_{18}\omega_6\omega_{22}\omega_{19}c_s^2 - \omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2\omega_{18}v_1^2\omega_6\omega_{19} + 2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_1\omega_6\omega_{22}\omega_{19}c_s^2 - 2\omega_{13}\omega_7\omega_{14}\omega_8v_2\omega_{18}v_1^2\omega_6\omega_{22}\omega_{19} +$
$2\omega_7\omega_{20}\omega_{11}\omega_8v_2\omega_{18}\omega_{22}\omega_{19}c_s^2 + 2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2\omega_{18}\omega_{22}\omega_{19}c_s^2 + 2\omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_{18}v_1\omega_6\omega_{22}\omega_{19}c_s^2 + \omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_8v_2\omega_{18}v_1^2\omega_6\omega_{22}\omega_{19} +$
$2\omega_{13}\omega_{20}\omega_{11}v_2\omega_{18}\omega_6\omega_{22}\omega_{19}c_s^2 + 2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1\omega_{19}c_s^2 - \omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_2^2\omega_{18}v_1\omega_6\omega_{22}\omega_{19} + 2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_2\omega_6\omega_{19}c_s^2 -$
$2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8v_2^2\omega_{18}v_1\omega_6\omega_{22}\omega_{19} - 2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8v_2\omega_{18}\omega_{22}\omega_{19}c_s^2 + 2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8v_2^2\omega_{18}v_1\omega_6\omega_{22} + 2\omega_{13}\omega_7\omega_{11}\omega_{14}v_2\omega_{18}v_1^2\omega_{22}\omega_{19} +$
$\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_{18}v_1\omega_6\omega_{22}c_s^2 - \omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18}v_1\omega_6\omega_{22}\omega_{19}c_s^2 + 2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1\omega_6\omega_{19}c_s^2 - 2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_{18}v_1\omega_{22}\omega_{19}c_s^2 -$
$2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}v_1\omega_{19}c_s^2 - 2\omega_{13}\omega_{11}\omega_{14}\omega_8v_2\omega_{18}\omega_6\omega_{22}\omega_{19}c_s^2 + \omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8v_2\omega_{18}v_1^2\omega_6\omega_{22}\omega_{19} + 2\omega_7\omega_{20}\omega_{11}\omega_8v_2\omega_{18}v_1^2\omega_{22}\omega_{19} +$
$2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2^2\omega_{18}v_1\omega_{22}\omega_{19} - 2\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18}v_1\omega_{22}\omega_{19}c_s^2 + 2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8v_2^2v_1\omega_6\omega_{22}\omega_{19} - 2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}v_1\omega_{22}\omega_{19}c_s^2 -$
$2\omega_{13}\omega_7\omega_{11}\omega_{14}v_2\omega_{18}\omega_6\omega_{22}\omega_{19}c_s^2 + 2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2\omega_{18}v_1^2\omega_{22}\omega_{19} - \omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_2\omega_{18}v_1^2\omega_6\omega_{19} + \omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2\omega_{18}\omega_6\omega_{22}c_s^2 -$
$2\omega_{13}\omega_7\omega_{14}\omega_8v_2^2\omega_{18}v_1\omega_6\omega_{22} + \omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_8v_2\omega_{18}\omega_6\omega_{22}\omega_{19}c_s^2 + 2\omega_{13}\omega_{20}\omega_{11}v_2\omega_{18}v_1^2\omega_6\omega_{22}\omega_{19} + \omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_8v_2^2\omega_{18}v_1\omega_6\omega_{22} -$
$2\omega_{13}\omega_7\omega_{14}\omega_8v_2\omega_{18}\omega_6\omega_{22}\omega_{19}c_s^2 - 2\omega_{13}\omega_{11}\omega_{14}v_2^2\omega_{18}v_1\omega_6\omega_{22}\omega_{19} - \omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2\omega_{18}v_1^2\omega_6\omega_{22}\omega_{19} - 2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_2\omega_6\omega_{22}\omega_{19}c_s^2 +$
$\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}v_1\omega_6\omega_{22}\omega_{19}c_s^2 + 2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8v_2v_1^2\omega_{22}\omega_{19} + \omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2\omega_{18}v_1^2\omega_6\omega_{22}\omega_{19} + 2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2\omega_{18}v_1^2\omega_{22}\omega_{19} +$
$2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2\omega_{18}v_1^2\omega_{22}\omega_{19} - 2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{18}v_1\omega_{22}\omega_{19}c_s^2 - 2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}v_2^2\omega_{18}v_1\omega_6\omega_{22}\omega_{19} + 2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2v_1^2\omega_6\omega_{22}\omega_{19} +$
$2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}v_1\omega_{22}\omega_{19}c_s^2 - 2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8v_1\omega_{22}\omega_{19}c_s^2 - \omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8v_2\omega_{18}v_1^2\omega_6\omega_{22} - 2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1\omega_{19}c_s^2 -$
$2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2\omega_{18}v_1^2\omega_{22}\omega_{19} - 2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_1\omega_6\omega_{22}\omega_{19}c_s^2 - 2\omega_{13}\omega_{20}\omega_{11}\omega_{14}v_2\omega_{18}\omega_6\omega_{22}\omega_{19}c_s^2 + 2\omega_{13}\omega_{11}\omega_{14}\omega_8v_2\omega_{18}\omega_6\omega_{22}c_s^2 -$
$2\omega_{13}\omega_{20}\omega_{11}\omega_{18}v_1\omega_6\omega_{22}\omega_{19}c_s^2 - 2\omega_{13}\omega_7\omega_{14}\omega_8v_2^2v_1\omega_6\omega_{22}\omega_{19} - \omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}v_1\omega_6\omega_{22}c_s^2 - 2\omega_{13}\omega_7\omega_{11}\omega_{14}v_2\omega_{18}v_1^2\omega_6\omega_{22}\omega_{19} +$
$\omega_{13}\omega_{20}\omega_{11}\omega_8v_2^2\omega_{18}v_1\omega_6\omega_{22}\omega_{19} + 2\omega_{13}\omega_7\omega_{20}\omega_{11}v_2^2\omega_{18}v_1\omega_6\omega_{22}\omega_{19} + 2\omega_{13}\omega_{11}\omega_{14}\omega_8\omega_{18}v_1\omega_6\omega_{22}\omega_{19}c_s^2 + \omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8v_2\omega_{18}\omega_6\omega_{22}\omega_{19}c_s^2 -$
$2\omega_{13}\omega_{11}\omega_{14}\omega_8v_2\omega_{18}v_1^2\omega_6\omega_{22}\omega_{19} + 2\omega_{13}\omega_7\omega_{20}\omega_{11}v_2\omega_{18}\omega_{22}\omega_{19}c_s^2 + 2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8v_2\omega_{22}\omega_{19}c_s^2 - \omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2^2\omega_{18}v_1\omega_6\omega_{22}\omega_{19} +$
$\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2\omega_{18}v_1^2\omega_6\omega_{19} - 2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8v_2\omega_{18}\omega_{22}\omega_{19}c_s^2 + 2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_{18}v_1\omega_6\omega_{22}\omega_{19}c_s^2 - 2\omega_{13}\omega_{11}\omega_{14}\omega_8\omega_{18}v_1\omega_6\omega_{22}c_s^2$

$C_{15} = \omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2v_3^2\omega_{18}v_1\omega_6\omega_{19}\omega_{16} + 2\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8v_2^2v_3\omega_{18}v_1^2\omega_6\omega_{16} - \omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_3^2\omega_{18}v_1\omega_6\omega_{19}c_s^2\omega_{16} -$
$\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2v_3\omega_{18}\omega_6\omega_{19}c_s^2\omega_{16} + 2\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8v_2^2v_3\omega_{18}\omega_6c_s^2\omega_{16} + 2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_{18}v_1\omega_6\omega_{19}c_s^2\omega_{16} +$

$$2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_2^2 v_3^2\omega_{18}v_1\omega_6\omega_{16} + \omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 v_2^2 v_3\omega_{18}v_1^2\omega_6\omega_{19}\omega_{16} + 2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 v_2^2 v_3\omega_{18}v_1^2\omega_6\omega_{19} -$$
$$\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 v_3\omega_{18}v_1^2\omega_6\omega_{19}c_s^2\omega_{16} - 2\omega_7\omega_{23}\omega_{20}\omega_{11}v_2^2v_3\omega_{18}\omega_{19}c_s^2\omega_{16} - \omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8 v_2^2v_3^2\omega_{18}v_1\omega_{19}\omega_{16} +$$
$$2\omega_7\omega_{23}\omega_{17}\omega_8 v_3\omega_{18}v_1^2\omega_6\omega_{19}c_s^2\omega_{16} - \omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8 v_3^2\omega_{18}v_1\omega_{19}c_s^2\omega_{16} - 2\omega_7\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_{18}v_1\omega_6\omega_{19}c_s^2\omega_{16} -$$
$$\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 v_2^2v_3\omega_{18}\omega_6\omega_{19}c_s^2 + 2\omega_7\omega_{23}\omega_{17}\omega_8 v_2^2 v_3\omega_{18}\omega_6\omega_{19}c_s^2\omega_{16} - 2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 v_2^2\omega_{18}v_1\omega_6\omega_{19}c_s^2 +$$
$$2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_2^2\omega_{18}v_1\omega_6 c_s^2\omega_{16} + 2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8 v_2^2\omega_{18}v_1\omega_6\omega_{19}c_s^2\omega_{16} + \omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 v_2^2v_3^2\omega_{18}v_1\omega_6\omega_{19} -$$
$$2\omega_7\omega_{23}\omega_{17}\omega_8 v_2^2v_3^2\omega_{18}v_1\omega_6\omega_{19}\omega_{16} - \omega_7\omega_{20}\omega_{17}\omega_8 v_2^2\omega_{18}v_1\omega_6\omega_{19}c_s^2\omega_{16} + 2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 v_2^2v_3^2\omega_{18}v_1\omega_6\omega_{19}\omega_{16} +$$
$$2\omega_{23}\omega_{17}\omega_{11}\omega_8 v_2^2v_3\omega_{18}\omega_6\omega_{19}c_s^2\omega_{16} - 2\omega_{23}\omega_{17}\omega_{11}\omega_8 v_2^2v_3\omega_{18}v_1^2\omega_6\omega_{16} - 2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2v_3\omega_{18}v_1^2\omega_6\omega_{19}\omega_{16} +$$
$$2\omega_7\omega_{23}\omega_{17}\omega_8 v_3^2v_1\omega_6\omega_{19}c_s^2\omega_{16} + 2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 v_2^2v_3\omega_{18}v_1^2\omega_6\omega_{16} - 2\omega_7\omega_{23}\omega_{17}\omega_8 v_2^2v_3\omega_6\omega_{19}c_s^2\omega_{16} + \omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 v_2^2\omega_{18}v_1\omega_{19}c_s^2\omega_{16} -$$
$$\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 v_2^2\omega_{18}v_1\omega_6\omega_{19}c_s^2\omega_{16} + 2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 v_2^2\omega_{18}v_1\omega_6c_s^2\omega_{16} + 2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 v_2^2v_3\omega_{18}\omega_6c_s^2\omega_{16} +$$
$$2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_2^2v_3^2\omega_{18}v_1\omega_6\omega_{19} - 2\omega_{23}\omega_{17}\omega_{11}\omega_8 v_2^2v_3\omega_{18}\omega_6c_s^2\omega_{16} - 2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_2^2v_3\omega_{18}\omega_6\omega_{19}c_s^2 - 2\omega_{23}\omega_{17}\omega_{11}\omega_8 v_2^2v_3^2\omega_{18}v_1\omega_6\omega_{19}\omega_{16} -$$
$$2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 v_2^2v_3\omega_{18}\omega_6\omega_{19}c_s^2\omega_{16} + 2\omega_{23}\omega_{17}\omega_{11}\omega_8 v_3\omega_{18}v_1^2\omega_6\omega_{19}c_s^2\omega_{16} + 2\omega_7\omega_{20}\omega_{17}\omega_8 v_2^2v_3^2\omega_{18}v_1\omega_6\omega_{16} -$$
$$2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8 v_2^2v_3^2\omega_{18}v_1\omega_6\omega_{16} + 2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_3^2\omega_{18}v_1\omega_6\omega_{19}c_s^2\omega_{16} + \omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 v_2^2v_3\omega_6\omega_{19}c_s^2\omega_{16} -$$
$$\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 v_3^2v_1\omega_6\omega_{19}c_s^2\omega_{16} - \omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 v_2^2v_3v_1^2\omega_6\omega_{19}\omega_{16} + \omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8 v_2^2v_3\omega_{18}v_1^2\omega_6\omega_{19} -$$
$$2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 v_3\omega_{18}v_1^2\omega_6\omega_{19}c_s^2\omega_{16} + 2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8 v_2^2v_3v_1^2\omega_6\omega_{19}\omega_{16} - 2\omega_{23}\omega_{17}\omega_{11}v_2^2v_3\omega_{18}\omega_6\omega_{19}c_s^2\omega_{16} +$$
$$2\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2v_3\omega_{18}\omega_6\omega_{19}c_s^2\omega_{16} + 2\omega_{23}\omega_{20}\omega_{11}\omega_8 v_3^2\omega_{18}v_1\omega_6\omega_{19}c_s^2 - 2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8 v_2^2v_3\omega_{18}v_1^2\omega_6\omega_{19}\omega_{16} +$$
$$2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 v_2^2v_3\omega_{18}v_1^2\omega_6\omega_{16} - 2\omega_7\omega_{23}\omega_{17}\omega_{11}v_3^2\omega_{18}v_1\omega_6\omega_{19}c_s^2\omega_{16} + 2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 v_2^2v_3^2\omega_{18}v_1\omega_6\omega_{16} +$$
$$2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 v_2^2v_3\omega_{18}\omega_6c_s^2\omega_{16} - 2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_{18}v_1\omega_{19}c_s^2\omega_{16} - 2\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2v_3^2\omega_{18}v_1\omega_6\omega_{19}\omega_{16} +$$
$$2\omega_{23}\omega_{17}\omega_{11}v_2^2v_3^2\omega_{18}v_1\omega_6\omega_{19}\omega_{16} + \omega_7\omega_{20}\omega_{17}\omega_8 v_2^2v_3\omega_{18}v_1^2\omega_6\omega_{19}\omega_{16} - 2\omega_{23}\omega_{17}\omega_{11}v_3\omega_{18}v_1^2\omega_6\omega_{19}c_s^2\omega_{16} + 2\omega_7\omega_{20}\omega_{17}\omega_8 v_2^2\omega_{18}v_1\omega_6c_s^2\omega_{16} +$$
$$2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8 v_3^2\omega_{18}v_1\omega_6\omega_{19}c_s^2\omega_{16} + 2\omega_7\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_{18}v_1\omega_{19}c_s^2\omega_{16} + \omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8 v_3\omega_{18}v_1^2\omega_6\omega_{19}c_s^2 - 2\omega_7\omega_{23}\omega_{17}\omega_8 v_2^2v_3\omega_{18}\omega_6c_s^2\omega_{16} +$$
$$2\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_3\omega_{18}v_1^2\omega_6\omega_{19}c_s^2\omega_{16} - \omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8 v_2^2\omega_{18}v_1\omega_6\omega_{19}c_s^2 - 2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8 v_2^2\omega_{18}v_1\omega_6c_s^2\omega_{16} - 2\omega_7\omega_{23}\omega_{17}\omega_8 v_2^2v_3\omega_{18}v_1^2\omega_6\omega_{16} -$$
$$2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8 v_2^2\omega_{18}v_1\omega_{19}c_s^2\omega_{16} - \omega_7\omega_{20}\omega_{17}\omega_8 v_3^2\omega_{18}v_1\omega_6\omega_{19}c_s^2\omega_{16} + 2\omega_7\omega_{23}\omega_{17}\omega_{11}v_2^2v_3\omega_{18}v_1^2\omega_6\omega_{19}\omega_{16} -$$
$$\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8 v_2^2v_3\omega_{18}v_1^2\omega_6\omega_{19}\omega_{16} + 2\omega_7\omega_{23}\omega_{17}\omega_8 v_3^2\omega_{18}v_1\omega_6c_s^2\omega_{16} + \omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8 v_2^2v_3\omega_{18}v_1^2\omega_6\omega_{19} +$$
$$\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 v_2^2v_1\omega_6\omega_{19}c_s^2\omega_{16} - \omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 v_2^2v_3\omega_{18}v_1^2\omega_{19}\omega_{16} - 2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 v_3\omega_{18}v_1^2\omega_6c_s^2\omega_{16} +$$
$$2\omega_{23}\omega_{20}\omega_{11}\omega_8 v_2^2v_3^2\omega_{18}v_1\omega_6\omega_{19} - 2\omega_{23}\omega_{20}\omega_{11}\omega_8 v_2^2v_3\omega_{18}\omega_6\omega_{19}c_s^2 + \omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8 v_3^2\omega_{18}v_1\omega_6\omega_{19}c_s^2\omega_{16} - 2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 v_3^2\omega_{18}v_1\omega_6c_s^2\omega_{16} -$$
$$\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 v_3\omega_{18}v_1^2\omega_{19}c_s^2\omega_{16} + 2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8 v_3\omega_{18}v_1^2\omega_{19}c_s^2\omega_{16} - 2\omega_7\omega_{23}\omega_{17}\omega_{11}v_2^2v_3\omega_{18}v_1^2\omega_{19}\omega_{16} +$$
$$2\omega_{23}\omega_{20}\omega_{11}\omega_8 v_2^2v_3\omega_{18}\omega_6\omega_{19}c_s^2\omega_{16} - 2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8 v_2^2v_3\omega_{19}c_s^2\omega_{16} - 2\omega_7\omega_{20}\omega_{17}\omega_8 v_3\omega_{18}v_1^2\omega_6c_s^2\omega_{16} - 2\omega_{23}\omega_{20}\omega_{11}\omega_8 v_2^2v_3^2\omega_{18}v_1\omega_6\omega_{19}\omega_{16} +$$
$$2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8 v_3^2v_1\omega_{19}c_s^2\omega_{16} + \omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8 v_3\omega_{18}v_1^2\omega_6\omega_{19}c_s^2 + 2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8 v_3\omega_{18}v_1^2\omega_6c_s^2\omega_{16} + 2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8 v_2^2v_3\omega_{18}v_1^2\omega_{19}\omega_{16} -$$
$$\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8 v_2^2\omega_{18}v_1\omega_6\omega_{19}c_s^2 - 2\omega_7\omega_{23}\omega_{17}\omega_{11}v_3\omega_{18}v_1^2\omega_{19}c_s^2\omega_{16} + 2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_3\omega_{18}v_1^2\omega_{19}c_s^2\omega_{16} -$$
$$2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8 v_2^2v_1\omega_6\omega_{19}c_s^2\omega_{16} - 2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_2^2\omega_{18}v_1\omega_6\omega_{19}c_s^2\omega_{16} - \omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 v_3^2v_1\omega_{19}c_s^2\omega_{16} +$$
$$\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 v_2^2v_3\omega_{19}c_s^2\omega_{16} + 2\omega_{23}\omega_{20}\omega_{11}v_2^2\omega_{18}v_1\omega_6\omega_{19}c_s^2\omega_{16} + 2\omega_{23}\omega_{20}\omega_{11}\omega_8 v_3\omega_{18}v_1^2\omega_6\omega_{19}c_s^2\omega_{16} -$$
$$2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 v_3^2\omega_{18}v_1\omega_6c_s^2\omega_{16} + 2\omega_{23}\omega_{17}\omega_{11}\omega_8 v_3^2\omega_{18}v_1\omega_6c_s^2\omega_{16} + 2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_3^2\omega_{18}v_1\omega_6\omega_{19}c_s^2 + 2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2v_3\omega_{18}v_1^2\omega_{19}\omega_{16} +$$
$$\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 v_3^2\omega_{18}v_1\omega_6\omega_{19}c_s^2 - \omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8 v_2^2v_3\omega_{18}\omega_6\omega_{19}c_s^2\omega_{16} + \omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8 v_2^2v_3^2\omega_{18}v_1\omega_6\omega_{19}\omega_{16} +$$
$$\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8 v_2^2\omega_{18}v_1\omega_6\omega_{19}c_s^2\omega_{16} - \omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8 v_3\omega_{18}v_1^2\omega_6\omega_{19}c_s^2\omega_{16} + \omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8 v_2^2v_3\omega_{18}\omega_{19}c_s^2\omega_{16} +$$
$$2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_2^2v_3\omega_{18}v_1^2\omega_6\omega_{19}\omega_{16} - 2\omega_{23}\omega_{20}\omega_{11}v_2^2v_3\omega_{18}v_1^2\omega_6\omega_{19}\omega_{16} + 2\omega_7\omega_{23}\omega_{20}\omega_{11}v_2^2v_3^2\omega_{18}v_1\omega_{19}\omega_{16} + 2\omega_7\omega_{23}\omega_{17}\omega_8 v_2^2v_3^2v_1\omega_6\omega_{19}\omega_{16} +$$
$$2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 v_3\omega_{18}v_1^2\omega_6\omega_{19}c_s^2 + 2\omega_7\omega_{23}\omega_{20}\omega_{11}v_3\omega_{18}v_1^2\omega_6\omega_{19}c_s^2\omega_{16} - 2\omega_7\omega_{23}\omega_{17}\omega_8 v_3v_1^2\omega_6\omega_{19}c_s^2\omega_{16} - 2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_3\omega_{18}v_1^2\omega_6c_s^2\omega_{16} +$$
$$2\omega_7\omega_{23}\omega_{20}\omega_{11}v_3^2\omega_{18}v_1\omega_{19}c_s^2\omega_{16} + 2\omega_{23}\omega_{20}\omega_{11}v_3^2\omega_{18}v_1\omega_6\omega_{19}c_s^2\omega_{16} + \omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 v_3v_1^2\omega_6\omega_{19}c_s^2\omega_{16} - 2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_3^2\omega_{18}v_1\omega_6\omega_{19}c_s^2\omega_{16} -$$
$$2\omega_7\omega_{23}\omega_{20}\omega_{11}v_2^2v_3^2\omega_{18}v_1\omega_6\omega_{19}\omega_{16} + 2\omega_7\omega_{23}\omega_{20}\omega_{11}v_2^2v_3\omega_{18}\omega_6\omega_{19}c_s^2\omega_{16} - \omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 v_2^2v_3^2v_1\omega_6\omega_{19}\omega_{16} -$$
$$2\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8 v_3^2\omega_{18}v_1\omega_6c_s^2\omega_{16} - 2\omega_{23}\omega_{20}\omega_{11}\omega_8 v_2^2\omega_{18}v_1\omega_6\omega_{19}c_s^2\omega_{16} - 2\omega_{23}\omega_{20}\omega_{11}v_3\omega_{18}v_1^2\omega_6\omega_{19}c_s^2\omega_{16} -$$
$$\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 v_3v_1^2\omega_6\omega_{19}c_s^2\omega_{16} + 2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_3\omega_{18}v_1^2\omega_6\omega_{19}c_s^2\omega_{16} + 2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8 v_2^2v_3^2v_1\omega_{19}\omega_{16} +$$
$$2\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8 v_3\omega_{18}v_1^2\omega_6c_s^2\omega_{16} + \omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 v_2^2v_3^2v_1\omega_6\omega_{19}\omega_{16} - \omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8 v_2^2\omega_{18}v_1\omega_{19}c_s^2\omega_{16} +$$
$$2\omega_7\omega_{23}\omega_{20}\omega_{11}v_2^2v_3\omega_{18}v_1^2\omega_6\omega_{19}\omega_{16} - 2\omega_{23}\omega_{20}\omega_{11}v_2^2v_3\omega_{18}\omega_6\omega_{19}c_s^2\omega_{16} - 2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 v_3^2\omega_{18}v_1\omega_6\omega_{19}c_s^2 +$$
$$2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_2^2v_3\omega_{18}\omega_6\omega_{19}c_s^2\omega_{16} - 2\omega_7\omega_{23}\omega_{20}\omega_{11}v_3\omega_{18}v_1^2\omega_{19}c_s^2\omega_{16} + 2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_3^2\omega_{18}v_1\omega_6c_s^2\omega_{16} - \omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 v_2^2v_3^2v_1\omega_{19}\omega_{16} -$$
$$2\omega_7\omega_{23}\omega_{20}\omega_{11}v_3^2\omega_{18}v_1\omega_6\omega_{19}c_s^2\omega_{16} - 2\omega_7\omega_{23}\omega_{20}\omega_{11}v_2^2v_3\omega_{18}v_1^2\omega_{19}\omega_{16} - 2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_2^2v_3^2\omega_{18}v_1\omega_6\omega_{19}\omega_{16} +$$
$$2\omega_{23}\omega_{20}\omega_{11}v_2^2v_3^2\omega_{18}v_1\omega_6\omega_{19}\omega_{16} - \omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 v_2^2v_1\omega_{19}c_s^2\omega_{16} + \omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8 v_3^2\omega_{18}v_1\omega_6\omega_{19}c_s^2\omega_{16} -$$
$$\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8 v_2^2v_3\omega_{18}v_1^2\omega_6\omega_{19}\omega_{16} - 2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8 v_2^2v_3^2v_1\omega_6\omega_{19}\omega_{16} - \omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 v_3\omega_{18}v_1^2\omega_6\omega_{19}c_s^2 +$$
$$2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8 v_2^2v_1\omega_{19}c_s^2\omega_{16} + 2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8 v_3v_1^2\omega_6\omega_{19}c_s^2\omega_{16} - 2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2v_3^2\omega_{18}v_1\omega_{19}\omega_{16} +$$
$$2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 v_3\omega_{18}v_1^2\omega_6c_s^2\omega_{16} - 2\omega_{23}\omega_{20}\omega_{11}\omega_8 v_3^2\omega_{18}v_1\omega_6\omega_{19}c_s^2\omega_{16} - 2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_3\omega_{18}v_1^2\omega_6\omega_{19}c_s^2 - 2\omega_{23}\omega_{17}\omega_{11}\omega_8 v_3\omega_{18}v_1^2\omega_6c_s^2\omega_{16} +$$
$$2\omega_{23}\omega_{20}\omega_{11}\omega_8 v_2^2\omega_{18}v_1\omega_6\omega_{19}c_s^2 - 2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_3^2\omega_{18}v_1\omega_{19}c_s^2\omega_{16} + 2\omega_{23}\omega_{20}\omega_{11}\omega_8 v_2^2v_3\omega_{18}v_1^2\omega_6\omega_{19}\omega_{16} + 2\omega_7\omega_{20}\omega_{17}\omega_8 v_3^2\omega_{18}v_1\omega_6c_s^2\omega_{16} -$$
$$2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8 v_2^2v_3^2\omega_{18}v_1\omega_{19}\omega_{16} - 2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8 v_3^2\omega_{18}v_1\omega_6c_s^2\omega_{16} - \omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8 v_3^2\omega_{18}v_1\omega_6\omega_{19}c_s^2 + 2\omega_7\omega_{23}\omega_{17}\omega_{11}v_3^2\omega_{18}v_1\omega_{19}c_s^2\omega_{16} -$$
$$2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8 v_3^2\omega_{18}v_1\omega_{19}c_s^2\omega_{16} - 2\omega_7\omega_{23}\omega_{20}\omega_{11}v_2^2\omega_{18}v_1\omega_6\omega_{19}c_s^2\omega_{16} + 2\omega_7\omega_{23}\omega_{17}\omega_{11}v_2^2v_3^2\omega_{18}v_1\omega_{19}\omega_{16} + 2\omega_7\omega_{23}\omega_{17}\omega_8 v_2^2v_1\omega_6\omega_{19}c_s^2\omega_{16} +$$
$$\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8 v_2^2\omega_{18}v_1\omega_6\omega_{19}c_s^2\omega_{16} + 2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 v_3\omega_{18}v_1^2\omega_6c_s^2\omega_{16} + \omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 v_3^2\omega_{18}v_1\omega_{19}c_s^2\omega_{16} -$$
$$\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8 v_3\omega_{18}v_1^2\omega_6\omega_{19}c_s^2\omega_{16} + 2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 v_3^2\omega_{18}v_1\omega_6c_s^2\omega_{16} + \omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 v_2^2v_3^2\omega_{18}v_1\omega_{19}\omega_{16} -$$
$$2\omega_{23}\omega_{20}\omega_{11}\omega_8 v_2^2v_3\omega_{18}v_1^2\omega_6\omega_{19} - \omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8 v_2^2v_3\omega_{18}\omega_6\omega_{19}c_s^2\omega_{16} + \omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8 v_2^2v_3^2\omega_{18}v_1\omega_6\omega_{19}\omega_{16} -$$
$$\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8 v_2^2v_3^2\omega_{18}v_1\omega_6\omega_{19} - 2\omega_7\omega_{23}\omega_{17}\omega_8 v_3\omega_{18}v_1^2\omega_6c_s^2\omega_{16} + \omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8 v_2^2v_3\omega_{18}\omega_6\omega_{19}c_s^2 - \omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 v_2^2v_1\omega_6\omega_{19}c_s^2\omega_{16} -$$
$$2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8 v_3\omega_{18}v_1^2\omega_6\omega_{19}c_s^2\omega_{16} + 2\omega_{23}\omega_{17}\omega_{11}v_3^2\omega_{18}v_1\omega_6\omega_{19}c_s^2\omega_{16} - 2\omega_7\omega_{23}\omega_{17}\omega_{11}v_2^2v_3^2\omega_{18}v_1\omega_6\omega_{19}\omega_{16} +$$
$$2\omega_7\omega_{23}\omega_{17}\omega_8 v_2^2v_3^2\omega_{18}v_1\omega_6\omega_{16} - 2\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_3^2\omega_{18}v_1\omega_6\omega_{19}c_s^2\omega_{16} + \omega_7\omega_{20}\omega_{17}\omega_8 v_3\omega_{18}v_1^2\omega_6\omega_{19}c_s^2\omega_{16} + 2\omega_7\omega_{23}\omega_{17}\omega_{11}v_2^2v_3\omega_{18}\omega_6\omega_{19}c_s^2\omega_{16} -$$
$$\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8 v_3^2\omega_{18}v_1\omega_6\omega_{19}c_s^2 - 2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8 v_2^2v_3\omega_{18}\omega_6\omega_{19}c_s^2\omega_{16} + 2\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2v_3\omega_{18}v_1^2\omega_6\omega_{19}\omega_{16} -$$
$$2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8 v_3^2v_1\omega_6\omega_{19}c_s^2\omega_{16} - 2\omega_7\omega_{23}\omega_{17}\omega_8 v_2^2\omega_{18}v_1\omega_6\omega_{19}c_s^2\omega_{16} - \omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 v_2^2v_3\omega_{18}\omega_{19}c_s^2\omega_{16} -$$
$$2\omega_{23}\omega_{17}\omega_{11}v_2^2v_3\omega_{18}v_1^2\omega_6\omega_{19}\omega_{16} - 2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 v_2^2v_3\omega_{18}v_1^2\omega_6\omega_{16} - \omega_7\omega_{20}\omega_{17}\omega_8 v_2^2v_3^2\omega_{18}v_1\omega_6\omega_{19}\omega_{16} +$$
$$2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8 v_2^2v_3\omega_6\omega_{19}c_s^2\omega_{16} + \omega_7\omega_{20}\omega_{17}\omega_8 v_2^2v_3\omega_{18}\omega_6\omega_{19}c_s^2\omega_{16} - 2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 v_2^2\omega_{18}v_1\omega_6c_s^2\omega_{16} +$$
$$2\omega_7\omega_{23}\omega_{17}\omega_{11}v_3\omega_{18}v_1^2\omega_6\omega_{19}c_s^2\omega_{16} - 2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 v_2^2v_3\omega_{18}\omega_6c_s^2\omega_{16} - 2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 v_2^2v_3^2\omega_{18}v_1\omega_6\omega_{16} -$$
$$2\omega_{23}\omega_{20}\omega_{11}\omega_8 v_3\omega_{18}v_1^2\omega_6\omega_{19}c_s^2 + 2\omega_{20}\omega_{17}\omega_{11}\omega_8 v_2^2\omega_{18}v_1\omega_6\omega_{19}c_s^2 + 2\omega_{23}\omega_{17}\omega_{11}\omega_8 v_2^2\omega_{18}v_1\omega_6c_s^2\omega_{16} + 2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8 v_2^2v_3^2\omega_{18}v_1\omega_6\omega_{19}\omega_{16} -$$
$$2\omega_7\omega_{20}\omega_{17}\omega_8 v_2^2v_3\omega_{18}\omega_6c_s^2\omega_{16} - \omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8 v_2^2v_3^2\omega_{18}v_1\omega_6\omega_{19} - 2\omega_{23}\omega_{17}\omega_{11}\omega_8 v_3^2\omega_{18}v_1\omega_6\omega_{19}c_s^2\omega_{16} + 2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8 v_2^2v_3\omega_{18}\omega_6c_s^2\omega_{16} +$$

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

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

$12\omega_7^3\omega_{20}\omega_{17}\omega_8v_2^2v_3\omega_5\omega_{18}v_1\omega_6^2\omega_{19}\omega_{16} - 24\omega_7^3\omega_{20}\omega_{17}\omega_8v_2^2v_3\omega_5\omega_{18}v_1\omega_6^2\omega_{16} - 12\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8v_3\omega_5\omega_{18}v_1\omega_6^2\omega_{19}c_s^2\omega_{16} +$
$24\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8v_3\omega_5v_1\omega_6^2\omega_{19}c_s^2\omega_{16} - 12\omega_7^3\omega_{23}\omega_{20}\omega_{11}v_2^2\omega_5\omega_{18}\omega_6^2\omega_{19}c_s^2\omega_{16} - 12\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2v_3^2\omega_5\omega_{18}\omega_6\omega_{19}\omega_{16} -$
$12\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8v_3^2\omega_5\omega_6^2\omega_{19}c_s^2\omega_{16} + 24\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8v_3\omega_5\omega_{18}v_1\omega_6\omega_{19}c_s^2\omega_{16} + 12\omega_7^3\omega_{23}\omega_{17}\omega_{11}v_3^2\omega_5\omega_{18}\omega_6\omega_{19}c_s^2\omega_{16} +$
$12\omega_7^3\omega_{23}\omega_{17}\omega_8v_2^2\omega_5\omega_6^2\omega_{19}c_s^2\omega_{16} + 12\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8v_2^2v_3^2\omega_5\omega_{18}\omega_6^2\omega_{19} + 12\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_2^2\omega_5\omega_{18}\omega_6^2\omega_{19}c_s^2\omega_{16} +$
$24\omega_7^3\omega_{23}\omega_{20}\omega_{11}v_3\omega_5\omega_{18}v_1\omega_6^2\omega_{19}c_s^2\omega_{16} - 12\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8v_2^2v_3^2\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16} + 6\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}c_s^4 +$
$24\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8v_3\omega_5\omega_{18}v_1\omega_6^2\omega_{19}c_s^2\omega_{16} - 24\omega_7^3\omega_{23}\omega_{17}\omega_8v_3\omega_5\omega_{18}v_1\omega_6^2c_s^2\omega_{16} + 24\omega_7^3\omega_{23}\omega_{17}\omega_{11}v_2^2v_3\omega_5\omega_{18}v_1\omega_6^2\omega_{19}\omega_{16} +$
$6\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2v_3^2\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16} - 12\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2c_s^4\omega_{16} + 12\omega_7^3\omega_{20}\omega_{17}\omega_8v_2^2v_3^2\omega_5\omega_{18}\omega_6^2\omega_{16} +$
$6\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8v_3^2\omega_5\omega_{18}\omega_6^2\omega_{19}c_s^2\omega_{16} - 12\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8v_2^2v_3^2\omega_5\omega_{18}\omega_6\omega_{19}\omega_{16} + 12\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5\omega_6^2\omega_{19}c_s^4\omega_{16} -$
$6\omega_7^3\omega_{20}\omega_{17}\omega_8v_2^2v_3^2\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16} - 12\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_2^2\omega_5\omega_{18}\omega_6^2\omega_{19}c_s^2\omega_{16} + 24\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8v_2^2v_3\omega_5\omega_{18}v_1\omega_{6}\omega_{19}\omega_{16} +$
$12\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19}c_s^4\omega_{16} + 6\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_3^2\omega_5\omega_{18}\omega_6\omega_{19}c_s^2\omega_{16} - 12\omega_7^3\omega_{23}\omega_{17}\omega_{11}v_2^2v_3^2\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16} +$
$24\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_3\omega_5\omega_{18}v_1\omega_6\omega_{19}c_s^2\omega_{16} - 24\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_3\omega_5\omega_{18}v_1\omega_6^2\omega_{19}c_s^2\omega_{16} - 24\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_2^2v_3\omega_5\omega_{18}v_1\omega_6^2\omega_{16} -$
$12\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_2^2\omega_5\omega_{18}\omega_6^2c_s^2 - 6\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8v_3^2\omega_5\omega_{18}\omega_6^2\omega_{19}c_s^2 - 24\omega_7^3\omega_{23}\omega_{17}\omega_8v_3\omega_5v_1\omega_6^2\omega_{19}c_s^2\omega_{16} +$
$12\omega_7^3\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_5\omega_{18}\omega_6\omega_{19}c_s^2\omega_{16} - 12\omega_7^3\omega_{23}\omega_{20}\omega_{11}v_3^2\omega_5\omega_{18}\omega_6^2\omega_{19}c_s^2\omega_{16} + 12\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}c_s^4\omega_{16} +$
$12\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8v_2^2\omega_5\omega_{18}\omega_6^2c_s^2\omega_{16} + 12\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_2^2\omega_5\omega_{18}\omega_6^2\omega_{19}c_s^2 + 12\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_3^2\omega_5\omega_{18}\omega_6^2\omega_{19}c_s^2\omega_{16} +$
$24\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2v_3\omega_5\omega_{18}v_1\omega_6^2\omega_{16} + 24\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_2^2v_3\omega_5\omega_{18}v_1\omega_6^2\omega_{19}\omega_{16} + 12\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_3\omega_5\omega_{18}v_1\omega_6^2\omega_{19}c_s^2\omega_{16} -$
$12\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2\omega_5\omega_{18}\omega_6^2c_s^2\omega_{16} - 12\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_5\omega_{18}\omega_6\omega_{19}c_s^4\omega_{16} + 12\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_5\omega_{18}\omega_6^2\omega_{19}c_s^4\omega_{16} -$
$12\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_3\omega_5\omega_{18}v_1\omega_6^2\omega_{19}c_s^2 + 12\omega_7^3\omega_{20}\omega_{17}\omega_8v_3^2\omega_5\omega_{18}\omega_6^2c_s^2\omega_{16} + 12\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_2^2\omega_5\omega_{18}\omega_6^2c_s^2\omega_{16} -$
$\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}c_s^4\omega_{16} + 24\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8v_3\omega_5\omega_{18}v_1\omega_6^2c_s^2\omega_{16} + 6\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8v_2^2\omega_5\omega_{18}\omega_6^2\omega_{19}c_s^2\omega_{16} -$
$24\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8v_2^2v_3\omega_5\omega_{18}v_1\omega_6^2\omega_{16} - 12\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6^2c_s^4\omega_{16} + 24\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_3\omega_5\omega_{18}v_1\omega_6^2\omega_{19}c_s^2\omega_{16} -$
$12\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8v_3^2\omega_5\omega_{18}\omega_6^2c_s^2\omega_{16} - 6\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8v_3^2\omega_5\omega_{18}\omega_6^2\omega_{19}c_s^2 + 12\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}c_s^4\omega_{16} +$
$12\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_5\omega_{18}\omega_6\omega_{19}c_s^4\omega_{16} - 12\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8v_2^2v_3^2\omega_5\omega_6^2\omega_{19}\omega_{16} + 12\omega_7^3\omega_{23}\omega_{17}\omega_8v_2^2\omega_5\omega_{18}\omega_6^2c_s^2\omega_{16} +$
$12\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_3\omega_5v_1\omega_6\omega_{19}c_s^2\omega_{16} + 12\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8v_3\omega_5\omega_{18}v_1\omega_6^2\omega_{19}c_s^2 + 24\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2v_3\omega_5\omega_{18}v_1\omega_6^2\omega_{19}\omega_{16} -$
$24\omega_7^3\omega_{23}\omega_{17}\omega_8v_2^2v_3\omega_5v_1\omega_6^2\omega_{19}\omega_{16} - 12\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_2^2v_3^2\omega_5\omega_{18}\omega_6^2\omega_{16} - 12\omega_7^3\omega_{23}\omega_{17}\omega_8v_3^2\omega_5\omega_{18}\omega_6^2\omega_{19}c_s^2\omega_{16} +$
$12\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6\omega_{19}c_s^4\omega_{16} + 12\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_2^2v_3\omega_5\omega_{18}v_1\omega_6^2\omega_{19}\omega_{16} + 12\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_2^2\omega_5\omega_{18}\omega_6^2c_s^2\omega_{16} +$
$24\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_3\omega_5\omega_{18}v_1\omega_6^2\omega_{19}c_s^2\omega_{16} + 12\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6^2c_s^4\omega_{16} + 24\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8v_2^2v_3\omega_5\omega_{18}v_1\omega_6^2\omega_{16} -$
$24\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_3\omega_5\omega_{18}v_1\omega_6^2c_s^2\omega_{16} + 12\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_2^2v_3^2\omega_5\omega_{18}\omega_6^2\omega_{16} - 24\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_2^2v_3\omega_5\omega_{18}v_1\omega_6^2\omega_{19}\omega_{16} +$
$12\omega_7^2\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_5\omega_{18}\omega_6^2\omega_{19}c_s^2\omega_{16} - 24\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8v_3\omega_5\omega_{18}v_1\omega_6^2\omega_{19}c_s^2 + 12\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_5\omega_{18}\omega_6^2\omega_{19}c_s^2\omega_{16} +$
$12\omega_7^3\omega_{23}\omega_{20}\omega_{11}v_2^2v_3^2\omega_5\omega_{18}\omega_6\omega_{19}\omega_{16} + 12\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8v_2^2\omega_5\omega_{18}\omega_6^2\omega_{19}c_s^2 + 24\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8v_2^2v_3\omega_5\omega_{18}v_1\omega_6^2\omega_{19}\omega_{16} -$
$24\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8v_2^2v_3\omega_5\omega_{18}v_1\omega_6^2\omega_{19} + 24\omega_7^3\omega_{23}\omega_{17}\omega_{11}v_3\omega_5\omega_{18}v_1\omega_6^2\omega_{19}c_s^2\omega_{16} + 24\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8v_2^2v_3\omega_5v_1\omega_6^2\omega_{19}\omega_{16} +$
$24\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_3\omega_5\omega_{18}v_1\omega_6^2c_s^2\omega_{16} - 12\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8v_2^2v_3^2\omega_5\omega_{18}\omega_6^2\omega_{16} - 18\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6\omega_{19}c_s^4\omega_{16} -$
$12\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_2^2v_3^2\omega_5\omega_{18}\omega_6^2\omega_{19} - 6\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_2^2v_3^2\omega_5\omega_6\omega_{19}\omega_{16} - 12\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8v_2^2v_3^2\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16} -$
$12\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}c_s^4 + 24\omega_7^3\omega_{23}\omega_{20}\omega_{11}v_2^2v_3\omega_5\omega_{18}v_1\omega_6^2\omega_{19}\omega_{16} - 12\omega_7^3\omega_{23}\omega_{17}\omega_8v_2^2\omega_5\omega_{18}\omega_6^2\omega_{19}c_s^2\omega_{16} -$
$6\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}c_s^4\omega_{16} + 12\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2c_s^4\omega_{16} - 6\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8v_2^2v_3^2\omega_5\omega_{18}\omega_6\omega_{19}\omega_{16} +$
$12\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8v_3^2\omega_5\omega_{18}\omega_6^2\omega_{19}c_s^2\omega_{16} - 12\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_3^2\omega_5\omega_{18}\omega_6^2c_s^2\omega_{16} - 12\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_{18}\omega_6^2\omega_{19}c_s^4\omega_{16} -$
$12\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8v_3\omega_5\omega_{18}v_1\omega_6^2\omega_{19}c_s^2\omega_{16} + 12\omega_7^2\omega_{23}\omega_{20}\omega_{11}v_2^2v_3^2\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16} - 6\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6\omega_{19}c_s^4 -$
$12\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_6^2\omega_{19}c_s^4\omega_{16} + 12\omega_7^3\omega_{20}\omega_{17}\omega_8v_3\omega_5\omega_{18}v_1\omega_6^2\omega_{19}c_s^2\omega_{16} + 12\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_5\omega_{18}\omega_6^2\omega_{19}c_s^4\omega_{16} -$
$12\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2v_3\omega_5\omega_{18}v_1\omega_6^2\omega_{19}\omega_{16} + 12\omega_7^2\omega_{23}\omega_{17}\omega_{11}v_3^2\omega_5\omega_{18}\omega_6^2\omega_{19}c_s^2\omega_{16} + 6\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_2^2\omega_5\omega_6^2\omega_{19}c_s^2\omega_{16} +$
$10\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_6^2\omega_{19}c_s^4\omega_{16} + 12\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_3^2\omega_5\omega_{18}\omega_6^2c_s^2\omega_{16} - 24\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_6^2\omega_{19}c_s^4\omega_{16} +$
$6\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8v_2^2v_3^2\omega_5\omega_{18}\omega_6^2\omega_{19}\omega_{16} - 6\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2\omega_5\omega_6^2\omega_{19}c_s^2\omega_{16} + 12\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8v_2^2v_3^2\omega_5\omega_{18}\omega_6^2\omega_{19} +$
$12\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_2^2v_3\omega_5v_1\omega_6\omega_{19}\omega_{16} - 6\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_3^2\omega_5\omega_6\omega_{19}c_s^2\omega_{16} + 6\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_3^2\omega_5\omega_{18}\omega_6^2\omega_{19}c_s^2 +$
$12\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8v_2^2v_3\omega_5\omega_{18}v_1\omega_6^2\omega_{19} + 12\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_3^2\omega_5\omega_{18}\omega_6^2\omega_{19}c_s^2\omega_{16}$

$C_{17} = -2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8v_3\omega_{18}\omega_6\omega_{19}c_s^2\omega_{16} - 2\omega_7\omega_{23}\omega_{17}\omega_{11}v_3^2\omega_{18}v_1\omega_6\omega_{19}\omega_{16} + \omega_7\omega_{20}\omega_{17}\omega_8v_3\omega_{18}\omega_6\omega_{19}c_s^2\omega_{16} -$
$\omega_7\omega_{20}\omega_{17}\omega_8v_3^2\omega_{18}v_1\omega_6\omega_{19}\omega_{16} + 2\omega_7\omega_{23}\omega_{17}\omega_{11}v_3\omega_{18}\omega_6\omega_{19}c_s^2\omega_{16} + \omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}v_1\omega_6\omega_{19}c_s^2\omega_{16} + 2\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_3\omega_{18}v_1^2\omega_6\omega_{19}\omega_{16} -$
$2\omega_{23}\omega_{17}\omega_{11}v_3\omega_{18}v_1^2\omega_6\omega_{19}\omega_{16} + 2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8v_3^2\omega_{18}v_1\omega_6\omega_{19}\omega_{16} - 2\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_{18}v_1\omega_6\omega_{19}c_s^2\omega_{16} -$
$2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_3\omega_{18}\omega_6\omega_{19}c_s^2\omega_{16} - 2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_3\omega_{18}v_1^2\omega_6\omega_{19}\omega_{16} + 2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_3^2\omega_{18}v_1\omega_6\omega_{19}\omega_{16} +$
$2\omega_{23}\omega_{17}\omega_{11}\omega_8v_3\omega_{18}v_1^2\omega_6\omega_{19}\omega_{16} - \omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8v_3^2\omega_{18}v_1\omega_{19}\omega_{16} + 2\omega_7\omega_{23}\omega_{17}\omega_8v_3\omega_{18}v_1^2\omega_6\omega_{19}\omega_{16} - \omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_3^2\omega_{18}v_1\omega_6\omega_{19}\omega_{16} -$
$\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_3\omega_{18}v_1^2\omega_6\omega_{19}\omega_{16} + \omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_3\omega_{18}\omega_6\omega_{19}c_s^2\omega_{16} - 2\omega_7\omega_{23}\omega_{17}\omega_8v_3v_1^2\omega_6\omega_{19}\omega_{16} - 2\omega_{23}\omega_{20}\omega_{11}v_3\omega_{18}\omega_6\omega_{19}c_s^2\omega_{16} +$
$2\omega_7\omega_{23}\omega_{20}\omega_{11}v_3\omega_{18}v_1^2\omega_6\omega_{19}\omega_{16} + 2\omega_{20}\omega_{17}\omega_{11}\omega_8v_3\omega_{18}\omega_6\omega_{19}c_s^2\omega_{16} + 2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}v_1\omega_6\omega_{19}c_s^2\omega_{16} - 2\omega_{20}\omega_{17}\omega_{11}\omega_8v_3^2\omega_{18}v_1\omega_6\omega_{19}\omega_{16} +$
$2\omega_{23}\omega_{20}\omega_{11}v_3^2\omega_{18}v_1\omega_6\omega_{19}\omega_{16} + \omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_3v_1^2\omega_6\omega_{19}\omega_{16} - 2\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18}v_1\omega_6\omega_{19}c_s^2\omega_{16} - \omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_{19}c_s^2\omega_{16} +$
$2\omega_7\omega_{23}\omega_{17}\omega_8\omega_{18}v_1\omega_6c_s^2\omega_{16} - 2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_{18}v_1\omega_6c_s^2\omega_{16} - 2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{18}v_1\omega_6\omega_{19}c_s^2\omega_{16} - \omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8v_3\omega_{18}v_1^2\omega_6\omega_{19}\omega_{16} +$
$2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8v_1\omega_{19}c_s^2\omega_{16} + 2\omega_{23}\omega_{17}\omega_{11}\omega_{18}v_1\omega_6\omega_{19}c_s^2\omega_{16} - 2\omega_7\omega_{23}\omega_{17}\omega_{11}v_3\omega_{18}v_1^2\omega_{19}\omega_{16} + 2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8v_3^2v_1\omega_{19}\omega_{16} +$
$\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_1\omega_6\omega_{19}c_s^2\omega_{16} + 2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8v_3\omega_{18}v_1^2\omega_{19}\omega_{16} + \omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_{18}v_1\omega_6\omega_{19}c_s^2\omega_{16} + 2\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_{18}v_1\omega_{19}c_s^2\omega_{16} -$
$\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_3^2v_1\omega_{19}\omega_{16} + 2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_3\omega_{18}v_1^2\omega_{19}\omega_{16} + 2\omega_7\omega_{23}\omega_{17}\omega_8v_3^2\omega_{18}v_1\omega_6\omega_{16} - 2\omega_7\omega_{23}\omega_{17}\omega_8\omega_{18}v_1\omega_6\omega_{19}c_s^2\omega_{16} -$
$2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8v_1\omega_6\omega_{19}c_s^2\omega_{16} - \omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_3\omega_{18}v_1^2\omega_{19}\omega_{16} - 2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_3^2\omega_{18}v_1\omega_6\omega_{16} + 2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_3^2\omega_{18}v_1\omega_6\omega_{16} -$
$\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8v_3\omega_{18}v_1^2\omega_6\omega_{19}\omega_{16} + \omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8v_3\omega_{18}v_1^2\omega_6\omega_{19} - 2\omega_{23}\omega_{20}\omega_{11}\omega_8v_3\omega_{18}\omega_6\omega_{19}c_s^2 + 2\omega_{23}\omega_{20}\omega_{11}\omega_8v_3^2\omega_{18}v_1\omega_6\omega_{19} +$
$2\omega_7\omega_{23}\omega_{17}\omega_8v_1\omega_6\omega_{19}c_s^2\omega_{16} - 2\omega_{23}\omega_{20}\omega_{11}\omega_8v_3^2\omega_{18}v_1\omega_6\omega_{19}\omega_{16} - 2\omega_{23}\omega_{17}\omega_{11}\omega_8v_3\omega_{18}v_1^2\omega_6\omega_{16} + 2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_3\omega_{18}v_1^2\omega_6\omega_{16} -$
$2\omega_{23}\omega_{17}\omega_{11}\omega_8v_3\omega_{18}\omega_6c_s^2\omega_{16} + 2\omega_{23}\omega_{20}\omega_{11}\omega_8v_3\omega_{18}\omega_6\omega_{19}c_s^2\omega_{16} + 2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}v_1\omega_6c_s^2\omega_{16} - 2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8v_3^2\omega_{18}v_1\omega_6\omega_{16} -$
$\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_1\omega_6\omega_{19}c_s^2\omega_{16} + 2\omega_7\omega_{20}\omega_{17}\omega_8v_3^2\omega_{18}v_1\omega_6\omega_{16} + 2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}v_1\omega_6c_s^2\omega_{16} + 2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_3^2\omega_{18}v_1\omega_6c_s^2\omega_{16} +$
$2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8v_3^2v_1^2\omega_6\omega_{19}\omega_{16} - \omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18}v_1\omega_6\omega_{19}c_s^2\omega_{16} - \omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}v_1\omega_{19}c_s^2\omega_{16} - 2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18}v_1\omega_6c_s^2\omega_{16} +$
$2\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8v_3\omega_{18}v_1^2\omega_6\omega_{16} - \omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_3^2v_1^2\omega_6\omega_{19}\omega_{16} + 2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_{18}v_1\omega_{19}c_s^2\omega_{16} + 2\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8v_3\omega_{18}\omega_6c_s^2\omega_{16} -$
$2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{18}v_1\omega_{19}c_s^2\omega_{16} + 2\omega_{20}\omega_{17}\omega_{11}\omega_8v_3^2\omega_{18}v_1\omega_6\omega_{16} - 2\omega_7\omega_{23}\omega_{20}\omega_{11}v_3\omega_{18}v_1^2\omega_{19}\omega_{16} + 2\omega_7\omega_{20}\omega_{17}\omega_8\omega_{18}v_1\omega_6c_s^2\omega_{16} -$
$2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18}v_1\omega_6c_s^2\omega_{16} - \omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}v_1\omega_6\omega_{19}c_s^2 + \omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_3v_1^2\omega_{19}\omega_{16} - 2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8v_3v_1^2\omega_{19}\omega_{16} +$
$2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_3\omega_{18}v_1^2\omega_6\omega_{19} + \omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18}v_1\omega_6\omega_{19}c_s^2\omega_{16} - \omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_3\omega_{18}\omega_6\omega_{19}c_s^2 + \omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8v_3\omega_{18}\omega_{19}c_s^2\omega_{16} +$

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

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

$2\omega_7\omega_{23}\omega_{17}\omega_8\omega_{18}v_1^2\omega_6c_s^2\omega_{16} + 4\omega_{23}\omega_{20}\omega_{11}v_3\omega_{18}v_1\omega_6\omega_{19}c_s^2\omega_{16} + 2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_3v_1\omega_6\omega_{19}c_s^2\omega_{16} + 2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_{18}v_1^2\omega_6c_s^2\omega_{16} +$
$2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_2^2v_3v_1\omega_6\omega_{19}\omega_{16} - 2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8v_1^2\omega_{19}c_s^2\omega_{16} - \omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8v_2^2\omega_{18}v_1^2\omega_6\omega_{19}\omega_{16} - 2\omega_{23}\omega_{17}\omega_{11}\omega_8v_2^2\omega_{18}\omega_6c_s^2\omega_{16} +$
$2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_2^2\omega_{18}\omega_6c_s^2\omega_{16} + 4\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2v_3\omega_{18}v_1\omega_6\omega_{19}\omega_{16} + \omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8v_2^2\omega_{18}v_1^2\omega_6\omega_{19} +$
$2\omega_{23}\omega_{20}\omega_{11}\omega_8v_2^2\omega_{18}\omega_6\omega_{19}c_s^2\omega_{16} - 2\omega_{23}\omega_{20}\omega_{11}\omega_8v_2^2\omega_{18}\omega_6\omega_{19}c_s^2 + 2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}v_1^2\omega_6\omega_{19}c_s^2\omega_{16} - 4\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_2^2v_3\omega_{18}v_1\omega_6\omega_{19} -$
$2\omega_{23}\omega_{20}\omega_{11}\omega_{18}v_1^2\omega_6\omega_{19}c_s^2\omega_{16} - 4\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_3\omega_{18}v_1\omega_{19}c_s^2\omega_{16} + 2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18}v_1^2\omega_{19}c_s^2\omega_{16} - 2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_{18}v_1^2\omega_{19}c_s^2\omega_{16} +$
$2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{18}v_1^2\omega_{19}c_s^2\omega_{16} + 2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18}v_1^2\omega_6c_s^2\omega_{16} - \omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_2^2\omega_{18}v_1^2\omega_{19}\omega_{16} - 2\omega_7\omega_{20}\omega_{17}\omega_8\omega_{18}v_1^2\omega_6c_s^2\omega_{16} -$
$4\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8v_3\omega_{18}v_1\omega_{19}c_s^2\omega_{16} + 2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8v_2^2\omega_{18}v_1^2\omega_{19}\omega_{16} - 2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}v_1^2\omega_6c_s^2\omega_{16} -$
$2\omega_7\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_{18}v_1^2\omega_{19}\omega_{16} - 4\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8v_2^2v_3\omega_{18}v_1\omega_6\omega_{16} - 2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_3\omega_{18}v_1\omega_6\omega_{19}c_s^2\omega_{16} +$
$4\omega_7\omega_{20}\omega_{17}\omega_8v_3\omega_{18}v_1\omega_6c_s^2\omega_{16} + 2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_{18}v_1^2\omega_{19}\omega_{16} - \omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}v_1^2\omega_{19}c_s^2\omega_{16} +$
$4\omega_7\omega_{23}\omega_{17}\omega_{11}v_3\omega_{18}v_1\omega_{19}c_s^2\omega_{16} - 4\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18}v_1\omega_6c_s^2\omega_{16} - 2\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8v_3\omega_{18}v_1\omega_6\omega_{19}c_s^2 + \omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18}v_1^2\omega_6\omega_{19}c_s^2 +$
$4\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_3\omega_{18}v_1\omega_6c_s^2\omega_{16} - 2\omega_{23}\omega_{20}\omega_{11}v_2^2\omega_{18}\omega_6\omega_{19}c_s^2\omega_{16} + 2\omega_7\omega_{23}\omega_{20}\omega_{11}v_2^2\omega_{18}v_1^2\omega_6\omega_{19}\omega_{16} +$
$2\omega_{20}\omega_{17}\omega_{11}\omega_8v_2^2\omega_{18}\omega_6\omega_{19}c_s^2\omega_{16} - 2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}v_1^2\omega_6c_s^2\omega_{16} + 2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_3\omega_{18}v_1\omega_{19}c_s^2\omega_{16} +$
$2\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8v_2^2v_3\omega_{18}v_1\omega_6\omega_{19}\omega_{16} - \omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8v_2^2\omega_{18}v_1^2\omega_6\omega_{19}\omega_{16} - 2\omega_7\omega_{23}\omega_{17}\omega_8v_2^2v_1^2\omega_6\omega_{19}\omega_{16} + \omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2v_1^2\omega_6\omega_{19}\omega_{16} +$
$4\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_3\omega_{18}v_1\omega_6\omega_{19}c_s^2\omega_{16} - 2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18}v_1^2\omega_6\omega_{19}c_s^2\omega_{16} + \omega_7\omega_{20}\omega_{17}\omega_8\omega_{18}v_1^2\omega_6\omega_{19}c_s^2\omega_{16} -$
$2\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8v_2^2v_3\omega_{18}v_1\omega_6\omega_{19} + 2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_{18}v_1^2\omega_6\omega_{19}c_s^2\omega_{16} + 2\omega_7\omega_{23}\omega_{17}\omega_8v_2^2\omega_{18}v_1^2\omega_6\omega_{19}\omega_{16} -$
$\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2\omega_{18}v_1^2\omega_6\omega_{19}\omega_{16} - 2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{18}v_1^2\omega_6\omega_{19}c_s^2\omega_{16} - 4\omega_{20}\omega_{17}\omega_{11}\omega_8v_2^2v_3\omega_{18}v_1\omega_6\omega_{19}\omega_{16} +$
$2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}v_1^2\omega_6\omega_{19}c_s^2 + 4\omega_{23}\omega_{20}\omega_{11}v_2^2v_3\omega_{18}v_1\omega_6\omega_{19}\omega_{16} + \omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_2^2\omega_{18}\omega_6\omega_{19}c_s^2\omega_{16} +$
$4\omega_{23}\omega_{17}\omega_{11}\omega_8v_2^2v_3\omega_{18}v_1\omega_6\omega_{16} - 4\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_3\omega_{18}v_1\omega_6\omega_{19}c_s^2 + 4\omega_{20}\omega_{17}\omega_{11}\omega_8v_3\omega_{18}v_1\omega_6c_s^2\omega_{16} -$
$4\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_2^2v_3\omega_{18}v_1\omega_6\omega_{16} + 4\omega_7\omega_{23}\omega_{17}\omega_8v_2^2v_3\omega_{18}v_1\omega_6\omega_{16} + 2\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_{18}v_1^2\omega_6\omega_{19}\omega_{16} + 2\omega_7\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_{18}\omega_6\omega_{19}c_s^2\omega_{16} +$
$4\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8v_3\omega_{18}v_1\omega_6\omega_{19}c_s^2\omega_{16} - 2\omega_{23}\omega_{17}\omega_{11}v_2^2\omega_{18}v_1^2\omega_6\omega_{19}\omega_{16} - 2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8v_2^2\omega_{18}\omega_6\omega_{19}c_s^2\omega_{16} -$
$2\omega_7\omega_{20}\omega_{17}\omega_8v_3\omega_{18}v_1\omega_6\omega_{19}c_s^2\omega_{16} + \omega_7\omega_{20}\omega_{17}\omega_8v_2^2\omega_{18}\omega_6\omega_{19}c_s^2\omega_{16} - 2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8v_2^2\omega_{18}v_1^2\omega_6\omega_{19}\omega_{16} +$
$\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}v_1^2\omega_6\omega_{19}c_s^2 + 2\omega_{23}\omega_{17}\omega_{11}\omega_8v_2^2\omega_{18}v_1^2\omega_6\omega_{19}\omega_{16} - 2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}v_2^2\omega_{18}\omega_6\omega_{19}c_s^2\omega_{16} +$
$\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}v_1^2\omega_6\omega_{19}c_s^2\omega_{16} - 4\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8v_2^2v_3\omega_{18}v_1\omega_6\omega_{16} - 4\omega_7\omega_{23}\omega_{17}\omega_{11}v_3\omega_{18}v_1\omega_6\omega_{19}c_s^2\omega_{16}$

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

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

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

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

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

$C_{23} = 36\omega_7^2\omega_{23}\omega_{11}^3c_s^2\omega_{16} + 12\omega_7^2\omega_{23}v_3^2\omega_{19}^2\omega_{16} + 12\omega_7\omega_{23}\omega_{11}^3\omega_{16} + 12\omega_7\omega_{23}\omega_{11}^2\omega_{19}^2 - 2\omega_7^2\omega_{23}\omega_{11}^2v_3^2\omega_{19}^2\omega_{16} + 54\omega_7^2\omega_{23}\omega_{11}^2\omega_{19}c_s^2\omega_{16} +$
$12\omega_7\omega_{11}^3\omega_{19}^2\omega_{16} + 12\omega_7^2\omega_{23}\omega_{11}^3v_3^2\omega_{16} + 12\omega_{23}\omega_{11}^3\omega_{19}\omega_{16} + 12\omega_7\omega_{11}^3v_3^2\omega_{19}\omega_{16} - 12\omega_7\omega_{23}\omega_{11}^3v_3^2\omega_{19}^2\omega_{16} + 54\omega_7\omega_{23}\omega_{11}^3\omega_{19}c_s^2\omega_{16} +$
$18\omega_7^2\omega_{11}^3\omega_{19}^2c_s^2\omega_{16} + 12\omega_7\omega_{11}^3v_3^2\omega_{19}^2 - 18\omega_7^2\omega_{23}\omega_{11}^2\omega_{19}\omega_{16} - 36\omega_{23}\omega_{11}^3\omega_{19}c_s^2\omega_{16} + 12\omega_{23}\omega_{11}^3v_3^2\omega_{19}^2\omega_{16} - 36\omega_7\omega_{11}^3\omega_{19}^2c_s^2\omega_{16} + 6\omega_7^2\omega_{11}^2\omega_{19}^2\omega_{16} +$
$6\omega_7^2\omega_{11}^3\omega_{19}^2 - 36\omega_7\omega_{23}\omega_{11}^3c_s^2\omega_{16} + 12\omega_7^2\omega_{23}\omega_{11}\omega_{19}^2\omega_{16} - 12\omega_7\omega_{23}\omega_{11}^3v_3^2\omega_{16} - 12\omega_7^2\omega_{11}^3v_3^2\omega_{19}\omega_{16} - \omega_7^2\omega_{23}\omega_{11}^3\omega_{19}^2\omega_{16} - 12\omega_{23}\omega_{11}^2v_3^2\omega_{19}^2\omega_{16} -$
$36\omega_7^2\omega_{23}\omega_{11}\omega_{19}^2c_s^2\omega_{16} + 12\omega_7^2\omega_{11}^2v_3^2\omega_{19}\omega_{16} + 12\omega_{23}\omega_{11}^2\omega_{19}^2\omega_{16} + 18\omega_7\omega_{23}\omega_{11}^2v_3^2\omega_{19}^2\omega_{16} - 18\omega_7^2\omega_{23}\omega_{11}^3\omega_{19}c_s^2\omega_{16} + \omega_7^2\omega_{23}\omega_{11}^3v_3^2\omega_{19}^2\omega_{16} +$
$36\omega_7\omega_{11}^3\omega_{19}^2c_s^2 + 12\omega_7^2\omega_{11}^3\omega_{19}\omega_{16} - 18\omega_7^2\omega_{11}^2\omega_{19}^2c_s^2\omega_{16} - 12\omega_7^2\omega_{23}\omega_{11}v_3^2\omega_{19}\omega_{16} + 12\omega_7\omega_{23}\omega_{11}^3\omega_{19}^2\omega_{16} - 12\omega_7^2\omega_{23}\omega_{19}^2\omega_{16} - 36\omega_{23}\omega_{11}^2\omega_{19}^2c_s^2\omega_{16} +$
$18\omega_7^2\omega_{23}\omega_{11}^2\omega_{19}^2c_s^2 - 6\omega_7^2\omega_{23}\omega_{11}^3v_3^2\omega_{19}\omega_{16} - 6\omega_7^2\omega_{11}^3v_3^2\omega_{19}^2 - 6\omega_7^2\omega_{11}^3\omega_{19}^2\omega_{16} - 12\omega_7^2\omega_{23}\omega_{11}^3\omega_{16} - 6\omega_7^2\omega_{23}\omega_{11}^2\omega_{19}^2 - 12\omega_7^2\omega_{23}\omega_{11}v_3^2\omega_{19}^2\omega_{16} -$
$36\omega_7^2\omega_{23}\omega_{11}\omega_{19}c_s^2\omega_{16} - 18\omega_7\omega_{23}\omega_{11}^3\omega_{19}\omega_{16} + 5\omega_7^2\omega_{23}\omega_{11}^3\omega_{19}^2c_s^2\omega_{16} + 54\omega_7\omega_{23}\omega_{11}^2\omega_{19}^2c_s^2\omega_{16} + 6\omega_7^2\omega_{23}\omega_{11}^3\omega_{19}\omega_{16} - 36\omega_7^2\omega_{23}\omega_{11}^2c_s^2\omega_{16} -$
$6\omega_7^2\omega_{11}^2v_3^2\omega_{19}^2\omega_{16} + 36\omega_7^2\omega_{11}^2\omega_{19}c_s^2\omega_{16} - 36\omega_7\omega_{23}\omega_{11}^2\omega_{19}^2c_s^2 - 12\omega_7^2\omega_{23}\omega_{11}^2v_3^2\omega_{16} - 40\omega_7\omega_{23}\omega_{11}^3\omega_{19}^2c_s^2\omega_{16} - 12\omega_7^2\omega_{11}^2\omega_{19}\omega_{16} + 12\omega_7^2\omega_{23}\omega_{11}^2\omega_{16} -$
$12\omega_{23}\omega_{11}^3v_3^2\omega_{19}\omega_{16} - 6\omega_7^2\omega_{23}\omega_{11}^2\omega_{19}^2c_s^2\omega_{16} - 18\omega_7\omega_{23}\omega_{11}^2\omega_{19}^2\omega_{16} + 36\omega_7^2\omega_{23}\omega_{19}^2c_s^2\omega_{16} - 12\omega_7\omega_{23}\omega_{11}^2v_3^2\omega_{19}^2 + 12\omega_7^2\omega_{23}\omega_{11}\omega_{19}\omega_{16} -$
$36\omega_7^2\omega_{11}^3\omega_{19}c_s^2\omega_{16} + 6\omega_7^2\omega_{11}^3v_3^2\omega_{19}^2\omega_{16} + 6\omega_7^2\omega_{23}\omega_{11}^2v_3^2\omega_{19}^2 + 18\omega_7^2\omega_{23}\omega_{11}^2v_3^2\omega_{19}\omega_{16} - 12\omega_7\omega_{11}^3\omega_{19}^2 - 18\omega_7^2\omega_{11}^3\omega_{19}^2c_s^2 - 12\omega_7\omega_{11}^3v_3^2\omega_{19}^2\omega_{16} +$
$36\omega_7\omega_{11}^3\omega_{19}c_s^2\omega_{16} + 18\omega_7\omega_{23}\omega_{11}^3v_3^2\omega_{19}\omega_{16} - 12\omega_{23}\omega_{11}^3\omega_{19}^2\omega_{16} + 36\omega_{23}\omega_{11}^3\omega_{19}^2c_s^2\omega_{16} - 12\omega_7\omega_{11}^3\omega_{19}\omega_{16} + 2\omega_7^2\omega_{23}\omega_{11}^2\omega_{19}^2\omega_{16}$

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

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

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

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

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

2.6 CuLBM1

2.6.1 Definitions

Based on [2], collision operator $\boldsymbol{C}$:

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

where

$\mathbf{S} = \mathrm{diag}(0,0,0,0,\omega_1,\omega_2,\omega_3,\omega_4,\omega_5,\omega_6,\omega_7,\omega_8,\omega_9,\omega_{10},\omega_{11},\omega_{12},\omega_{13},\omega_{14},\omega_{15},\omega_{16},\omega_{17},\omega_{18},\omega_{19},\omega_{20},\omega_{21},\omega_{22},\omega_{23}),$

$\omega_1,\omega_2,\cdots,\omega_{10} \in (0,2)\,.$

The nonlinear operator $\boldsymbol{G}$ (with its inverse $\boldsymbol{G}^{-1}$) transforms the raw moment vector $\boldsymbol{\mu}$ defined by matrix $\mathbf{M}$ to the cumulant vector

$$\boldsymbol{\gamma} = \boldsymbol{G}(\boldsymbol{\mu}) = \left(\gamma_{(0,0,0)},\gamma_{(1,0,0)},\gamma_{(0,1,0)},\cdots,\gamma_{(2,2,2)}\right)^T$$

as:

$\gamma_{(0,0,0)} = m_{(0,0,0)}$

$\gamma_{(1,0,0)} = m_{(1,0,0)} - v_1 m_{(0,0,0)}$

$\gamma_{(0,1,0)} = m_{(0,1,0)} - v_2 m_{(0,0,0)}$

$\gamma_{(0,0,1)} = m_{(0,0,1)} - v_3 m_{(0,0,0)}$

$\gamma_{(1,1,0)} = m_{(1,1,0)} - v_1 m_{(0,1,0)} - v_2 m_{(1,0,0)} - v_1 v_2 m_{(0,0,0)}$

$\gamma_{(1,0,1)} = m_{(1,0,1)} - v_1 m_{(0,0,1)} - v_3 m_{(1,0,0)} - v_1 v_3 m_{(0,0,0)}$

$\gamma_{(0,1,1)} = m_{(0,1,1)} - v_3 m_{(0,1,0)} - v_2 m_{(0,0,1)} - v_3 v_2 m_{(0,0,0)}$

$\gamma_{(2,0,0)} = m_{(2,0,0)} - 2v_1 m_{(1,0,0)} + v_1 v_1 m_{(0,0,0)}$

$\gamma_{(0,2,0)} = m_{(0,2,0)} - 2v_2 m_{(0,1,0)} + v_2 v_2 m_{(0,0,0)}$

$\gamma_{(0,0,2)} = m_{(0,0,2)} - 2v_3 m_{(0,0,1)} + v_3 v_3 m_{(0,0,0)}$

$\gamma_{(1,2,0)} = m_{(1,2,0)} - 2v_2 m_{(1,1,0)} + v_2 v_2 m_{(1,0,0)} - v_1 m_{(0,2,0)} + 2v_1 v_2 m_{(0,1,0)} - v_1 v_2 v_2 m_{(0,0,0)}$

$\gamma_{(1,0,2)} = m_{(1,0,2)} - 2v_3 m_{(1,0,1)} + v_3 v_3 m_{(1,0,0)} - v_1 m_{(0,0,2)} + 2v_1 v_3 m_{(0,0,1)} - v_1 v_3 v_3 m_{(0,0,0)}$

$\gamma_{(0,1,2)} = m_{(0,1,2)} - 2v_3 m_{(0,1,1)} + v_3 v_3 m_{(0,1,0)} - v_2 m_{(0,0,2)} + 2v_2 v_3 m_{(0,0,1)} - v_2 v_3 v_3 m_{(0,0,0)}$

$\gamma_{(2,1,0)} = m_{(2,1,0)} - 2v_1 m_{(1,1,0)} + v_1 v_1 m_{(0,1,0)} - v_2 m_{(2,0,0)} + 2v_1 v_2 m_{(1,0,0)} - v_1 v_1 v_2 m_{(0,0,0)}$

$\gamma_{(2,0,1)} = m_{(2,0,1)} - 2v_1 m_{(1,0,1)} + v_1 v_1 m_{(0,0,1)} - v_3 m_{(2,0,0)} + 2v_1 v_3 m_{(1,0,0)} - v_1 v_1 v_3 m_{(0,0,0)}$

$\gamma_{(0,2,1)} = m_{(0,2,1)} - 2v_2 m_{(0,1,1)} + v_2 v_2 m_{(0,0,1)} - v_3 m_{(0,2,0)} + 2v_2 v_3 m_{(0,1,0)} - v_2 v_2 v_3 m_{(0,0,0)}$

$\gamma_{(1,1,1)} = m_{(1,1,1)} - v_3 m_{(1,1,0)} - v_2 m_{(1,0,1)} + v_2 v_3 m_{(1,0,0)} - v_1 m_{(0,1,1)} + v_1 v_3 m_{(0,1,0)} + v_1 v_2 m_{(0,0,1)} - v_1 v_2 v_3 m_{(0,0,0)}$

$\gamma_{(2,2,0)} = -2v_2 m_{(2,1,0)} - 2m_{(0,0,0)} v_1^2 v_2^2 - 4m_{(1,0,0)} v_1 v_2^2 - \frac{2{m_{(1,0,0)}}^2 v_2^2}{m_{(0,0,0)}} - 4m_{(0,1,0)} v_1^2 v_2 + 8m_{(1,1,0)} v_1 v_2 -$

$$\frac{8m_{(0,1,0)}m_{(1,0,0)}v_1v_2}{m_{(0,0,0)}} + \frac{2m_{(0,1,0)}m_{(2,0,0)}v_2}{m_{(0,0,0)}} + \frac{4m_{(1,0,0)}m_{(1,1,0)}v_2}{m_{(0,0,0)}} - \frac{2{m_{(0,1,0)}}^2v_1^2}{m_{(0,0,0)}} - 2m_{(1,2,0)}v_1 + \frac{4m_{(0,1,0)}m_{(1,1,0)}v_1}{m_{(0,0,0)}} + \frac{2m_{(0,2,0)}m_{(1,0,0)}v_1}{m_{(0,0,0)}} + m_{(2,2,0)} - \frac{m_{(0,2,0)}m_{(2,0,0)}}{m_{(0,0,0)}} - \frac{2{m_{(1,1,0)}}^2}{m_{(0,0,0)}}$$

$$\gamma_{(2,0,2)} = -2v_3m_{(2,0,1)} - 2m_{(0,0,0)}v_1^2v_3^2 - 4m_{(1,0,0)}v_1v_3^2 - \frac{2{m_{(1,0,0)}}^2v_3^2}{m_{(0,0,0)}} - 4m_{(0,0,1)}v_1^2v_3 + 8m_{(1,0,1)}v_1v_3 - \frac{8m_{(0,0,1)}m_{(1,0,0)}v_1v_3}{m_{(0,0,0)}} + \frac{2m_{(0,0,1)}m_{(2,0,0)}v_3}{m_{(0,0,0)}} + \frac{4m_{(1,0,0)}m_{(1,0,1)}v_3}{m_{(0,0,0)}} - \frac{2{m_{(0,0,1)}}^2v_1^2}{m_{(0,0,0)}} - 2m_{(1,0,2)}v_1 + \frac{4m_{(0,0,1)}m_{(1,0,1)}v_1}{m_{(0,0,0)}} + \frac{2m_{(0,0,2)}m_{(1,0,0)}v_1}{m_{(0,0,0)}} + m_{(2,0,2)} - \frac{m_{(0,0,2)}m_{(2,0,0)}}{m_{(0,0,0)}} - \frac{2{m_{(1,0,1)}}^2}{m_{(0,0,0)}}$$

$$\gamma_{(0,2,2)} = -2v_3m_{(0,2,1)} - 2m_{(0,0,0)}v_2^2v_3^2 - 4m_{(0,1,0)}v_2v_3^2 - \frac{2{m_{(0,1,0)}}^2v_3^2}{m_{(0,0,0)}} - 4m_{(0,0,1)}v_2^2v_3 + 8m_{(0,1,1)}v_2v_3 - \frac{8m_{(0,0,1)}m_{(0,1,0)}v_2v_3}{m_{(0,0,0)}} + \frac{2m_{(0,0,1)}m_{(0,2,0)}v_3}{m_{(0,0,0)}} + \frac{4m_{(0,1,0)}m_{(0,1,1)}v_3}{m_{(0,0,0)}} - \frac{2{m_{(0,0,1)}}^2v_2^2}{m_{(0,0,0)}} - 2m_{(0,1,2)}v_2 + \frac{4m_{(0,0,1)}m_{(0,1,1)}v_2}{m_{(0,0,0)}} + \frac{2m_{(0,0,2)}m_{(0,1,0)}v_2}{m_{(0,0,0)}} + m_{(0,2,2)} - \frac{m_{(0,0,2)}m_{(0,2,0)}}{m_{(0,0,0)}} - \frac{2{m_{(0,1,1)}}^2}{m_{(0,0,0)}}$$

$$\gamma_{(2,1,1)} = -8m_{(1,0,0)}v_1v_2v_3 + 2m_{(2,0,0)}v_2v_3 - \frac{2{m_{(1,0,0)}}^2v_2v_3}{m_{(0,0,0)}} - 2m_{(0,1,0)}v_1^2v_3 + 4m_{(1,1,0)}v_1v_3 - \frac{4m_{(0,1,0)}m_{(1,0,0)}v_1v_3}{m_{(0,0,0)}} - m_{(2,1,0)}v_3 + \frac{m_{(0,1,0)}m_{(2,0,0)}v_3}{m_{(0,0,0)}} + \frac{2m_{(1,0,0)}m_{(1,1,0)}v_3}{m_{(0,0,0)}} - 2m_{(0,0,1)}v_1^2v_2 + 4m_{(1,0,1)}v_1v_2 - \frac{4m_{(0,0,1)}m_{(1,0,0)}v_1v_2}{m_{(0,0,0)}} - m_{(2,0,1)}v_2 + \frac{m_{(0,0,1)}m_{(2,0,0)}v_2}{m_{(0,0,0)}} + \frac{2m_{(1,0,0)}m_{(1,0,1)}v_2}{m_{(0,0,0)}} - \frac{2m_{(0,0,1)}m_{(0,1,0)}v_1^2}{m_{(0,0,0)}} - 2m_{(1,1,1)}v_1 + \frac{2m_{(0,0,1)}m_{(1,1,0)}v_1}{m_{(0,0,0)}} + \frac{2m_{(0,1,0)}m_{(0,1,1)}v_1}{m_{(0,0,0)}} + \frac{2m_{(0,1,1)}m_{(1,0,0)}v_1}{m_{(0,0,0)}} + m_{(2,1,1)} - \frac{m_{(0,1,1)}m_{(2,0,0)}}{m_{(0,0,0)}} - \frac{2m_{(1,0,1)}m_{(1,1,0)}}{m_{(0,0,0)}}$$

$$\gamma_{(1,2,1)} = -2m_{(1,0,0)}v_2^2v_3 - 8m_{(0,1,0)}v_1v_2v_3 + 4m_{(1,1,0)}v_2v_3 - \frac{4m_{(0,1,0)}m_{(1,0,0)}v_2v_3}{m_{(0,0,0)}} + 2m_{(0,2,0)}v_1v_3 - \frac{2{m_{(0,1,0)}}^2v_1v_3}{m_{(0,0,0)}} - m_{(1,2,0)}v_3 + \frac{2m_{(0,1,0)}m_{(1,1,0)}v_3}{m_{(0,0,0)}} + \frac{m_{(0,2,0)}m_{(1,0,0)}v_3}{m_{(0,0,0)}} - 2m_{(0,0,1)}v_1v_2^2 - \frac{2m_{(0,0,1)}m_{(1,0,0)}v_2^2}{m_{(0,0,0)}} + 4m_{(0,1,1)}v_1v_2 - \frac{4m_{(0,0,1)}m_{(0,1,0)}v_1v_2}{m_{(0,0,0)}} - 2m_{(1,1,1)}v_2 + \frac{2m_{(0,0,1)}m_{(1,1,0)}v_2}{m_{(0,0,0)}} + \frac{2m_{(0,1,0)}m_{(1,0,1)}v_2}{m_{(0,0,0)}} + \frac{2m_{(0,1,1)}m_{(1,0,0)}v_2}{m_{(0,0,0)}} - m_{(0,2,1)}v_1 + \frac{m_{(0,0,1)}m_{(0,2,0)}v_1}{m_{(0,0,0)}} + \frac{2m_{(0,1,0)}m_{(0,1,1)}v_1}{m_{(0,0,0)}} + m_{(1,2,1)} - \frac{2m_{(0,1,1)}m_{(1,1,0)}}{m_{(0,0,0)}} - \frac{m_{(0,2,0)}m_{(1,0,1)}}{m_{(0,0,0)}}$$

$$\gamma_{(1,1,2)} = -2m_{(1,0,0)}v_2v_3^2 - 2m_{(0,1,0)}v_1v_3^2 - \frac{2m_{(0,1,0)}m_{(1,0,0)}v_3^2}{m_{(0,0,0)}} - 8m_{(0,0,1)}v_1v_2v_3 + 4m_{(1,0,1)}v_2v_3 - \frac{4m_{(0,0,1)}m_{(1,0,0)}v_2v_3}{m_{(0,0,0)}} + 4m_{(0,1,1)}v_1v_3 - \frac{4m_{(0,0,1)}m_{(0,1,0)}v_1v_3}{m_{(0,0,0)}} - 2m_{(1,1,1)}v_3 + \frac{2m_{(0,0,1)}m_{(1,1,0)}v_3}{m_{(0,0,0)}} + \frac{2m_{(0,1,0)}m_{(1,0,1)}v_3}{m_{(0,0,0)}} + \frac{2m_{(0,1,1)}m_{(1,0,0)}v_3}{m_{(0,0,0)}} + 2m_{(0,0,2)}v_1v_2 - \frac{2{m_{(0,0,1)}}^2v_1v_2}{m_{(0,0,0)}}$$
$$- m_{(1,0,2)}v_2 + \frac{2m_{(0,0,1)}m_{(1,0,1)}v_2}{m_{(0,0,0)}} + \frac{m_{(0,0,2)}m_{(1,0,0)}v_2}{m_{(0,0,0)}} - m_{(0,1,2)}v_1 + \frac{2m_{(0,0,1)}m_{(0,1,1)}v_1}{m_{(0,0,0)}} + \frac{m_{(0,0,2)}m_{(1,0,0)}v_1}{m_{(0,0,0)}} + m_{(1,1,2)} - \frac{m_{(0,0,2)}m_{(1,1,0)}}{m_{(0,0,0)}} - \frac{2m_{(0,1,1)}m_{(1,0,1)}}{m_{(0,0,0)}}$$

$$\gamma_{(1,2,2)} = -m_{(0,0,0)}v_1^2v_2^2v_3^2 - 6m_{(0,0,0)}v_1v_2^2v_3^2 - m_{(1,0,0)}v_2^2v_3^2 + 2m_{(0,1,0)}v_1v_2v_3^2 - 2m_{(1,1,0)}v_2v_3^2 + \frac{12m_{(0,1,0)}m_{(1,0,0)}v_2v_3^2}{m_{(0,0,0)}} - m_{(0,2,0)}v_1v_3^2 + \frac{6{m_{(0,1,0)}}^2v_1v_3^2}{m_{(0,0,0)}} - \frac{6m_{(0,1,0)}m_{(1,1,0)}v_3^2}{m_{(0,0,0)}} - \frac{3m_{(0,2,0)}m_{(1,0,0)}v_3^2}{m_{(0,0,0)}} + 2m_{(0,0,1)}v_1v_2^2v_3 - 2m_{(1,0,1)}v_2^2v_3 + \frac{12m_{(0,0,1)}m_{(1,0,0)}v_2^2v_3}{m_{(0,0,0)}} - 12m_{(0,1,1)}v_1v_2v_3 + \frac{24m_{(0,0,1)}m_{(0,1,0)}v_1v_2v_3}{m_{(0,0,0)}} + 8m_{(1,1,1)}v_2v_3 - \frac{12m_{(0,0,1)}m_{(1,1,0)}v_2v_3}{m_{(0,0,0)}} - \frac{12m_{(0,1,0)}m_{(1,0,1)}v_2v_3}{m_{(0,0,0)}} - \frac{12m_{(0,1,1)}m_{(1,0,0)}v_2v_3}{m_{(0,0,0)}} + 4m_{(0,2,1)}v_1v_3 - \frac{6m_{(0,0,1)}m_{(0,2,0)}v_1v_3}{m_{(0,0,0)}} - \frac{12m_{(0,1,0)}m_{(0,1,1)}v_1v_3}{m_{(0,0,0)}} - 2m_{(1,2,1)}v_3 + \frac{2m_{(0,0,1)}m_{(1,2,0)}v_3}{m_{(0,0,0)}} + \frac{4m_{(0,1,0)}m_{(1,1,1)}v_3}{m_{(0,0,0)}} + \frac{8m_{(0,1,1)}m_{(1,1,0)}v_3}{m_{(0,0,0)}} + \frac{4m_{(0,2,0)}m_{(1,0,1)}v_3}{m_{(0,0,0)}} + \frac{2m_{(0,2,1)}m_{(1,0,0)}v_3}{m_{(0,0,0)}} - m_{(0,0,2)}v_1v_2^2 + \frac{6{m_{(0,0,1)}}^2v_1v_2^2}{m_{(0,0,0)}} - \frac{6m_{(0,0,1)}m_{(1,0,1)}v_2^2}{m_{(0,0,0)}} - \frac{3m_{(0,0,2)}m_{(1,0,0)}v_2^2}{m_{(0,0,0)}} + 4m_{(0,1,2)}v_1v_2 - \frac{12m_{(0,0,1)}m_{(0,1,1)}v_1v_2}{m_{(0,0,0)}} - \frac{6m_{(0,0,2)}m_{(1,0,0)}v_1v_2}{m_{(0,0,0)}} - 2m_{(1,1,2)}v_2 + \frac{4m_{(0,0,1)}m_{(1,1,1)}v_2}{m_{(0,0,0)}} + \frac{4m_{(0,0,2)}m_{(1,1,0)}v_2}{m_{(0,0,0)}} + \frac{2m_{(1,0,0)}m_{(1,0,2)}v_2}{m_{(0,0,0)}} + \frac{8m_{(0,1,1)}m_{(1,0,1)}v_2}{m_{(0,0,0)}} + \frac{2m_{(0,1,2)}m_{(1,0,0)}v_2}{m_{(0,0,0)}} - m_{(0,2,2)}v_1 + \frac{2m_{(0,0,1)}m_{(0,2,1)}v_1}{m_{(0,0,0)}} + \frac{2m_{(0,0,2)}m_{(0,2,0)}v_1}{m_{(0,0,0)}} + \frac{2m_{(0,1,0)}m_{(0,1,2)}v_1}{m_{(0,0,0)}} + \frac{4{m_{(0,1,1)}}^2v_1}{m_{(0,0,0)}} + m_{(1,2,2)} - \frac{m_{(0,0,2)}m_{(1,2,0)}}{m_{(0,0,0)}} -$$

$\frac{4m_{(0,1,1)}m_{(1,1,1)}}{m_{(0,0,0)}} - \frac{2m_{(0,1,2)}m_{(1,1,0)}}{m_{(0,0,0)}} - \frac{m_{(0,2,0)}m_{(1,0,2)}}{m_{(0,0,0)}} - \frac{2m_{(0,2,1)}m_{(1,0,1)}}{m_{(0,0,0)}}$

$\gamma_{(2,1,2)} = - m_{(0,0,0)}v_1^2v_2^2v_3^2 - 6m_{(0,0,0)}v_1^2v_2v_3^2 + 2m_{(1,0,0)}v_1v_2v_3^2 - m_{(2,0,0)}v_2v_3^2 + \frac{6{m_{(1,0,0)}}^2v_2v_3^2}{m_{(0,0,0)}} - m_{(0,1,0)}v_1^2v_3^2 - 2m_{(1,1,0)}v_1v_3^2 + \frac{12m_{(0,1,0)}m_{(1,0,0)}v_1v_3^2}{m_{(0,0,0)}} - \frac{3m_{(0,1,0)}m_{(2,0,0)}v_3^2}{m_{(0,0,0)}} - \frac{6m_{(1,0,0)}m_{(1,1,0)}v_3^2}{m_{(0,0,0)}} + 2m_{(0,0,1)}v_1^2v_2v_3 - 12m_{(1,0,1)}v_1v_2v_3 + \frac{24m_{(0,0,1)}m_{(1,0,0)}v_1v_2v_3}{m_{(0,0,0)}} + 4m_{(2,0,1)}v_2v_3 - \frac{6m_{(0,0,1)}m_{(2,0,0)}v_2v_3}{m_{(0,0,0)}} - \frac{12m_{(1,0,0)}m_{(1,0,1)}v_2v_3}{m_{(0,0,0)}} - 2m_{(0,1,1)}v_1^2v_3 + \frac{12m_{(0,0,1)}m_{(1,0,0)}v_1^2v_3}{m_{(0,0,0)}} + 8m_{(1,1,1)}v_1v_3 - \frac{12m_{(0,0,1)}m_{(1,1,0)}v_1v_3}{m_{(0,0,0)}} - \frac{12m_{(1,0,0)}m_{(1,0,1)}v_1v_3}{m_{(0,0,0)}} - \frac{12m_{(0,1,1)}m_{(1,0,0)}v_1v_3}{m_{(0,0,0)}} - 2m_{(2,1,1)}v_3 + \frac{2m_{(0,0,1)}m_{(2,1,0)}v_3}{m_{(0,0,0)}} + \frac{2m_{(0,1,0)}m_{(2,0,1)}v_3}{m_{(0,0,0)}} + \frac{4m_{(0,1,1)}m_{(2,0,0)}v_3}{m_{(0,0,0)}} + \frac{4m_{(1,0,0)}m_{(1,1,1)}v_3}{m_{(0,0,0)}} + \frac{8m_{(0,1,1)}m_{(1,1,0)}v_3}{m_{(0,0,0)}} - m_{(0,0,2)}v_1^2v_2 + \frac{6m_{(0,0,1)}{}^2v_1^2v_2}{m_{(0,0,0)}} + 4m_{(1,0,2)}v_1v_2 - \frac{12m_{(0,0,1)}m_{(1,0,1)}v_1v_2}{m_{(0,0,0)}} - \frac{6m_{(0,0,2)}m_{(1,0,0)}v_1v_2}{m_{(0,0,0)}} - m_{(2,0,2)}v_2 + \frac{2m_{(0,0,1)}m_{(2,0,1)}v_2}{m_{(0,0,0)}} + \frac{2m_{(0,0,2)}m_{(2,0,0)}v_2}{m_{(0,0,0)}} + \frac{2m_{(1,0,0)}m_{(1,0,2)}v_2}{m_{(0,0,0)}} + \frac{4m_{(1,0,1)}{}^2v_2}{m_{(0,0,0)}} - \frac{6m_{(0,0,1)}m_{(0,1,1)}v_1^2}{m_{(0,0,0)}} - \frac{3m_{(0,0,2)}m_{(0,1,0)}v_1^2}{m_{(0,0,0)}} - 2m_{(1,1,2)}v_1 + \frac{4m_{(0,0,1)}m_{(1,1,1)}v_1}{m_{(0,0,0)}} + \frac{4m_{(0,0,2)}m_{(1,1,0)}v_1}{m_{(0,0,0)}} + \frac{2m_{(0,1,0)}m_{(1,0,2)}v_1}{m_{(0,0,0)}} + \frac{8m_{(0,1,1)}m_{(1,0,1)}v_1}{m_{(0,0,0)}} + \frac{2m_{(0,1,2)}m_{(1,0,0)}v_1}{m_{(0,0,0)}} + m_{(2,1,2)} - \frac{m_{(0,0,2)}m_{(2,1,0)}}{m_{(0,0,0)}} - \frac{2m_{(0,1,1)}m_{(2,0,1)}}{m_{(0,0,0)}} - \frac{m_{(0,1,2)}m_{(2,0,0)}}{m_{(0,0,0)}} - \frac{4m_{(1,0,1)}m_{(1,1,1)}}{m_{(0,0,0)}} - \frac{2m_{(1,0,2)}m_{(1,1,0)}}{m_{(0,0,0)}}$

$\gamma_{(2,2,1)} = - m_{(0,0,0)}v_1^2v_2^2v_3^2 - 6m_{(0,0,0)}v_1^2v_2^2v_3 + 2m_{(1,0,0)}v_1v_2^2v_3 - m_{(2,0,0)}v_2^2v_3 + \frac{6{m_{(1,0,0)}}^2v_2^2v_3}{m_{(0,0,0)}} + 2m_{(0,1,0)}v_1^2v_2v_3 - 12m_{(1,1,0)}v_1v_2v_3$
$+ \frac{24m_{(0,1,0)}m_{(1,0,0)}v_1v_2v_3}{m_{(0,0,0)}} + 4m_{(2,1,0)}v_2v_3 - \frac{6m_{(0,1,0)}m_{(2,0,0)}v_2v_3}{m_{(0,0,0)}} - \frac{12m_{(1,0,0)}m_{(1,1,0)}v_2v_3}{m_{(0,0,0)}} - m_{(0,2,0)}v_1^2v_3 + \frac{6m_{(0,1,0)}{}^2v_1^2v_3}{m_{(0,0,0)}} + 4m_{(1,2,0)}v_1v_3$
$- \frac{12m_{(0,1,0)}m_{(1,1,0)}v_1v_3}{m_{(0,0,0)}} - \frac{6m_{(0,2,0)}m_{(1,0,0)}v_1v_3}{m_{(0,0,0)}} - m_{(2,2,0)}v_3 + \frac{2m_{(0,1,0)}m_{(2,1,0)}v_3}{m_{(0,0,0)}} + \frac{2m_{(0,2,0)}m_{(2,0,0)}v_3}{m_{(0,0,0)}} + \frac{2m_{(1,0,0)}m_{(1,2,0)}v_3}{m_{(0,0,0)}} + \frac{4m_{(1,1,0)}{}^2v_3}{m_{(0,0,0)}} - m_{(0,0,1)}v_1^2v_2^2 - 2m_{(1,0,1)}v_1v_2^2 + \frac{12m_{(0,0,1)}m_{(1,0,0)}v_1v_2^2}{m_{(0,0,0)}} - \frac{3m_{(0,0,1)}m_{(2,0,0)}v_2^2}{m_{(0,0,0)}} - \frac{6m_{(1,0,0)}m_{(1,0,1)}v_2^2}{m_{(0,0,0)}} - 2m_{(0,1,1)}v_1^2v_2 + \frac{12m_{(0,0,1)}m_{(0,1,0)}v_1^2v_2}{m_{(0,0,0)}} + 8m_{(1,1,1)}v_1v_2 - \frac{12m_{(0,0,1)}m_{(1,1,0)}v_1v_2}{m_{(0,0,0)}} - \frac{12m_{(0,1,0)}m_{(1,0,1)}v_1v_2}{m_{(0,0,0)}} - \frac{12m_{(0,1,1)}m_{(1,0,0)}v_1v_2}{m_{(0,0,0)}} - 2m_{(2,1,1)}v_2 + \frac{2m_{(0,0,1)}m_{(2,1,0)}v_2}{m_{(0,0,0)}} + \frac{2m_{(0,1,0)}m_{(2,0,1)}v_2}{m_{(0,0,0)}} + \frac{4m_{(0,1,1)}m_{(2,0,0)}v_2}{m_{(0,0,0)}} + \frac{4m_{(1,0,0)}m_{(1,1,1)}v_2}{m_{(0,0,0)}} + \frac{8m_{(0,1,0)}m_{(1,1,0)}v_2}{m_{(0,0,0)}} - \frac{3m_{(0,0,1)}m_{(0,2,0)}v_1^2}{m_{(0,0,0)}} - \frac{6m_{(0,1,0)}m_{(0,1,1)}v_1^2}{m_{(0,0,0)}} - 2m_{(1,2,1)}v_1 + \frac{2m_{(0,0,1)}m_{(1,2,0)}v_1}{m_{(0,0,0)}} + \frac{4m_{(0,1,0)}m_{(1,1,1)}v_1}{m_{(0,0,0)}} + \frac{8m_{(0,1,1)}m_{(1,1,0)}v_1}{m_{(0,0,0)}} + \frac{4m_{(0,2,0)}m_{(1,0,1)}v_1}{m_{(0,0,0)}} + \frac{2m_{(0,2,1)}m_{(1,0,0)}v_1}{m_{(0,0,0)}} + m_{(2,2,1)} - \frac{2m_{(0,1,1)}m_{(2,1,0)}}{m_{(0,0,0)}} - \frac{m_{(0,2,0)}m_{(2,0,1)}}{m_{(0,0,0)}} - \frac{m_{(0,2,1)}m_{(2,0,0)}}{m_{(0,0,0)}} - \frac{2m_{(1,0,1)}m_{(1,2,0)}}{m_{(0,0,0)}} - \frac{4m_{(1,1,0)}m_{(1,1,1)}}{m_{(0,0,0)}}$

$\gamma_{(2,2,2)} = 2v_2^2v_3m_{(2,0,1)} - \frac{4m_{(0,1,0)}v_2v_3m_{(2,0,1)}}{m_{(0,0,0)}} + \frac{2m_{(0,2,0)}v_3m_{(2,0,1)}}{m_{(0,0,0)}} + 2v_1^2v_3m_{(0,2,1)} - \frac{4m_{(1,0,0)}v_1v_3m_{(0,2,1)}}{m_{(0,0,0)}} + \frac{2m_{(2,0,0)}v_3m_{(0,2,1)}}{m_{(0,0,0)}} - 4m_{(0,0,0)}v_1v_2v_3^4 - 4m_{(1,0,0)}v_2v_3^4 - 4m_{(0,1,0)}v_1v_3^4 + 4m_{(1,1,0)}v_3^4 + 16m_{(0,0,1)}v_1v_2v_3^3 + \frac{16m_{(0,0,1)}m_{(1,0,0)}v_2v_3^3}{m_{(0,0,0)}} + \frac{16m_{(0,0,1)}m_{(0,1,0)}v_1v_3^3}{m_{(0,0,0)}} - \frac{16m_{(0,0,1)}m_{(1,1,0)}v_3^3}{m_{(0,0,0)}} + 2v_2m_{(2,1,0)}v_3^2 - 7m_{(0,0,0)}v_1^2v_2^2v_3^2 + v_1^2v_2^2v_3^2 - 20m_{(1,0,0)}v_1v_2^2v_3^2 + 4m_{(2,0,0)}v_2^2v_3^2 - \frac{26{m_{(1,0,0)}}^2v_2^2v_3^2}{m_{(0,0,0)}} - 20m_{(0,1,0)}v_1^2v_2v_3^2 + 16m_{(1,1,0)}v_1v_2v_3^2 - \frac{128m_{(0,1,0)}m_{(1,0,0)}v_1v_2v_3^2}{m_{(0,0,0)}} - 8m_{(0,0,2)}v_1v_2v_3^2 - \frac{16{m_{(0,0,1)}}^2v_1v_2v_3^2}{m_{(0,0,0)}} - 4m_{(2,1,0)}v_2v_3^2 + \frac{18m_{(0,1,0)}m_{(2,0,0)}v_2v_3^2}{m_{(0,0,0)}} + \frac{44m_{(1,0,0)}m_{(1,1,0)}v_2v_3^2}{m_{(0,0,0)}} - \frac{24m_{(0,1,0)}m_{(1,0,0)}{}^2v_2v_3^2}{{m_{(0,0,0)}}^2} - \frac{8m_{(0,0,2)}m_{(1,0,0)}v_2v_3^2}{m_{(0,0,0)}} - \frac{16{m_{(0,0,1)}}^2m_{(1,0,0)}v_2v_3^2}{{m_{(0,0,0)}}^2} + 4m_{(0,2,0)}v_1^2v_3^2 - \frac{26{m_{(0,1,0)}}^2v_1^2v_3^2}{m_{(0,0,0)}} - 2m_{(1,2,0)}v_1v_3^2 + \frac{44m_{(0,1,0)}m_{(1,1,0)}v_1v_3^2}{m_{(0,0,0)}} + \frac{18m_{(0,2,0)}m_{(1,0,0)}v_1v_3^2}{m_{(0,0,0)}} - \frac{24m_{(0,1,0)}{}^2m_{(1,0,0)}v_1v_3^2}{{m_{(0,0,0)}}^2} - \frac{8m_{(0,0,2)}m_{(0,1,0)}v_1v_3^2}{m_{(0,0,0)}} - \frac{16{m_{(0,0,1)}}^2m_{(0,1,0)}v_1v_3^2}{{m_{(0,0,0)}}^2} - \frac{6m_{(0,1,0)}m_{(2,1,0)}v_3^2}{m_{(0,0,0)}} - \frac{2m_{(0,2,0)}m_{(2,0,0)}v_3^2}{m_{(0,0,0)}} + \frac{4m_{(0,1,0)}{}^2m_{(2,0,0)}v_3^2}{{m_{(0,0,0)}}^2} - \frac{6m_{(1,0,0)}m_{(1,2,0)}v_3^2}{m_{(0,0,0)}} - \frac{8m_{(1,1,0)}{}^2v_3^2}{m_{(0,0,0)}} + \frac{16m_{(0,1,0)}m_{(1,0,0)}m_{(1,1,0)}v_3^2}{{m_{(0,0,0)}}^2} + \frac{8m_{(0,0,2)}m_{(1,1,0)}v_3^2}{m_{(0,0,0)}} + \frac{16{m_{(0,0,1)}}^2m_{(1,1,0)}v_3^2}{{m_{(0,0,0)}}^2} + \frac{4m_{(0,2,0)}m_{(1,0,0)}{}^2v_3^2}{{m_{(0,0,0)}}^2} - \frac{4m_{(0,0,1)}v_2m_{(2,1,0)}v_3}{m_{(0,0,0)}} - 4m_{(0,0,1)}v_1^2v_2^2v_3 + 8m_{(1,0,1)}v_1v_2^2v_3 - \frac{104m_{(0,0,1)}m_{(1,0,0)}v_1v_2^2v_3}{m_{(0,0,0)}} - 4m_{(2,0,1)}v_2^2v_3 + \frac{18m_{(0,0,1)}m_{(2,0,0)}v_2^2v_3}{m_{(0,0,0)}} + \frac{36m_{(1,0,0)}m_{(1,0,1)}v_2^2v_3}{m_{(0,0,0)}} - \frac{16m_{(0,0,1)}m_{(1,0,0)}{}^2v_2^2v_3}{{m_{(0,0,0)}}^2} +$

$$8m_{(0,1,1)}v_1^2v_2v_3 - \frac{104m_{(0,0,1)}m_{(0,1,0)}v_1^2v_2v_3}{m_{(0,0,0)}} - 24m_{(1,1,1)}v_1v_2v_3 + \frac{88m_{(0,0,1)}m_{(1,1,0)}v_1v_2v_3}{m_{(0,0,0)}} + \frac{104m_{(0,1,0)}m_{(1,0,1)}v_1v_2v_3}{m_{(0,0,0)}} +$$
$$\frac{104m_{(0,1,1)}m_{(1,0,0)}v_1v_2v_3}{m_{(0,0,0)}} - \frac{80m_{(0,0,1)}m_{(0,1,0)}m_{(1,0,0)}v_1v_2v_3}{{m_{(0,0,0)}}^2} + \frac{16m_{(0,0,1)}m_{(0,0,2)}v_1v_2v_3}{m_{(0,0,0)}} + 8m_{(2,1,1)}v_2v_3 - \frac{8m_{(0,0,1)}m_{(2,1,0)}v_2v_3}{m_{(0,0,0)}} -$$
$$\frac{8m_{(0,1,0)}m_{(2,0,1)}v_2v_3}{m_{(0,0,0)}} - \frac{24m_{(0,1,1)}m_{(2,0,0)}v_2v_3}{m_{(0,0,0)}} + \frac{16m_{(0,0,1)}m_{(0,1,0)}m_{(2,0,0)}v_2v_3}{{m_{(0,0,0)}}^2} - \frac{24m_{(1,0,0)}m_{(1,1,1)}v_2v_3}{m_{(0,0,0)}} - \frac{48m_{(1,0,1)}m_{(1,1,0)}v_2v_3}{m_{(0,0,0)}} +$$
$$\frac{16m_{(0,0,1)}m_{(1,0,0)}m_{(1,1,0)}v_2v_3}{{m_{(0,0,0)}}^2} + \frac{32m_{(0,1,0)}m_{(1,0,0)}m_{(1,0,1)}v_2v_3}{{m_{(0,0,0)}}^2} + \frac{16m_{(0,1,1)}{m_{(1,0,0)}}^2v_2v_3}{{m_{(0,0,0)}}^2} + \frac{16m_{(0,0,1)}m_{(0,0,2)}m_{(1,0,0)}v_2v_3}{{m_{(0,0,0)}}^2} -$$
$$4m_{(0,2,1)}v_1^2v_3 + \frac{18m_{(0,0,1)}m_{(0,2,0)}v_1^2v_3}{m_{(0,0,0)}} + \frac{36m_{(0,1,0)}m_{(0,1,1)}v_1^2v_3}{m_{(0,0,0)}} - \frac{16m_{(0,0,1)}{m_{(0,1,0)}}^2v_1^2v_3}{{m_{(0,0,0)}}^2} + 8m_{(1,2,1)}v_1v_3 -$$
$$\frac{12m_{(0,0,1)}m_{(1,2,0)}v_1v_3}{m_{(0,0,0)}} - \frac{24m_{(1,0,0)}m_{(1,1,1)}v_1v_3}{m_{(0,0,0)}} - \frac{48m_{(0,1,1)}m_{(1,1,0)}v_1v_3}{m_{(0,0,0)}} + \frac{16m_{(0,0,1)}m_{(1,0,0)}m_{(1,1,0)}v_1v_3}{{m_{(0,0,0)}}^2} - \frac{24m_{(0,2,0)}m_{(1,0,1)}v_1v_3}{m_{(0,0,0)}} +$$
$$\frac{16m_{(0,1,0)}{m_{(1,0,0)}}^2m_{(1,0,1)}v_1v_3}{{m_{(0,0,0)}}^2} - \frac{8m_{(0,2,1)}m_{(1,0,0)}v_1v_3}{m_{(0,0,0)}} + \frac{16m_{(0,0,1)}m_{(0,2,0)}m_{(1,0,0)}v_1v_3}{{m_{(0,0,0)}}^2} + \frac{32m_{(0,1,0)}m_{(0,1,1)}m_{(1,0,0)}v_1v_3}{{m_{(0,0,0)}}^2} +$$
$$\frac{16m_{(0,0,1)}m_{(0,0,2)}m_{(0,1,0)}v_1v_3}{{m_{(0,0,0)}}^2} - 2m_{(2,2,1)}v_3 + \frac{2m_{(0,0,1)}m_{(2,2,0)}v_3}{m_{(0,0,0)}} + \frac{4m_{(0,1,0)}m_{(2,1,1)}v_3}{m_{(0,0,0)}} + \frac{8m_{(0,1,1)}m_{(2,1,0)}v_3}{m_{(0,0,0)}} + \frac{2m_{(0,2,0)}m_{(2,0,1)}v_3}{m_{(0,0,0)}} +$$
$$\frac{2m_{(0,2,1)}m_{(2,0,0)}v_3}{m_{(0,0,0)}} - \frac{4m_{(0,0,1)}m_{(0,2,0)}m_{(2,0,0)}v_3}{{m_{(0,0,0)}}^2} - \frac{8m_{(0,1,0)}m_{(0,1,1)}m_{(2,0,0)}v_3}{{m_{(0,0,0)}}^2} + \frac{4m_{(1,0,0)}m_{(1,2,1)}v_3}{m_{(0,0,0)}} + \frac{8m_{(1,0,1)}m_{(1,2,0)}v_3}{m_{(0,0,0)}} +$$
$$\frac{16m_{(1,1,0)}m_{(1,1,1)}v_3}{m_{(0,0,0)}} - \frac{16m_{(0,1,0)}m_{(1,0,1)}m_{(1,1,0)}v_3}{{m_{(0,0,0)}}^2} - \frac{16m_{(0,1,1)}m_{(1,0,0)}m_{(1,1,0)}v_3}{{m_{(0,0,0)}}^2} - \frac{16m_{(0,0,1)}m_{(0,0,2)}m_{(1,1,0)}v_3}{{m_{(0,0,0)}}^2} -$$
$$\frac{8m_{(0,2,0)}m_{(1,0,0)}m_{(1,0,1)}v_3}{{m_{(0,0,0)}}^2} + \frac{2m_{(0,0,2)}v_2m_{(2,1,0)}}{m_{(0,0,0)}} - \frac{22{m_{(0,0,1)}}^2v_1^2v_2^2}{m_{(0,0,0)}} - 2m_{(1,0,2)}v_1v_2^2 + \frac{36m_{(0,0,1)}m_{(1,0,1)}v_1v_2^2}{m_{(0,0,0)}} +$$
$$\frac{10m_{(0,0,2)}m_{(1,0,0)}v_1v_2^2}{m_{(0,0,0)}} - \frac{24{m_{(0,0,1)}}^2m_{(1,0,0)}v_1v_2^2}{{m_{(0,0,0)}}^2} - \frac{6m_{(0,0,1)}m_{(2,0,1)}v_2^2}{m_{(0,0,0)}} - \frac{2m_{(0,0,2)}m_{(2,0,0)}v_2^2}{m_{(0,0,0)}} + \frac{4{m_{(0,0,1)}}^2m_{(2,0,0)}v_2^2}{{m_{(0,0,0)}}^2} -$$
$$\frac{6m_{(1,0,0)}m_{(1,0,2)}v_2^2}{m_{(0,0,0)}} - \frac{4{m_{(1,0,1)}}^2v_2^2}{m_{(0,0,0)}} + \frac{16m_{(0,0,1)}m_{(1,0,0)}m_{(1,0,1)}v_2^2}{{m_{(0,0,0)}}^2} - 2m_{(0,1,2)}v_1^2v_2 + \frac{36m_{(0,0,1)}m_{(0,1,1)}v_1^2v_2}{m_{(0,0,0)}} +$$
$$\frac{10m_{(0,0,2)}m_{(0,1,0)}v_1^2v_2}{m_{(0,0,0)}} - \frac{24{m_{(0,0,1)}}^2m_{(0,1,0)}v_1^2v_2}{{m_{(0,0,0)}}^2} + 8m_{(1,1,2)}v_1v_2 - \frac{24m_{(0,0,1)}m_{(1,1,1)}v_1v_2}{m_{(0,0,0)}} - \frac{16m_{(0,0,2)}m_{(1,1,0)}v_1v_2}{m_{(0,0,0)}} +$$
$$\frac{16{m_{(0,0,1)}}^2m_{(1,1,0)}v_1v_2}{{m_{(0,0,0)}}^2} - \frac{12m_{(0,1,0)}m_{(1,0,2)}v_1v_2}{m_{(0,0,0)}} - \frac{48m_{(0,1,1)}m_{(1,0,1)}v_1v_2}{m_{(0,0,0)}} + \frac{32m_{(0,0,1)}m_{(0,1,0)}m_{(1,0,1)}v_1v_2}{{m_{(0,0,0)}}^2} - \frac{12m_{(0,1,2)}m_{(1,0,0)}v_1v_2}{m_{(0,0,0)}} +$$
$$\frac{32m_{(0,0,1)}m_{(0,1,1)}m_{(1,0,0)}v_1v_2}{{m_{(0,0,0)}}^2} + \frac{8m_{(0,0,2)}m_{(0,1,0)}m_{(1,0,0)}v_1v_2}{{m_{(0,0,0)}}^2} - \frac{4{m_{(0,0,2)}}^2v_1v_2}{m_{(0,0,0)}} - 2m_{(2,1,2)}v_2 + \frac{4m_{(0,0,1)}m_{(2,1,1)}v_2}{m_{(0,0,0)}} +$$
$$\frac{2m_{(0,0,2)}m_{(2,1,0)}v_2}{m_{(0,0,0)}} + \frac{2m_{(0,1,0)}m_{(2,0,2)}v_2}{m_{(0,0,0)}} + \frac{8m_{(0,1,1)}m_{(2,0,1)}v_2}{m_{(0,0,0)}} + \frac{4m_{(0,1,2)}m_{(2,0,0)}v_2}{m_{(0,0,0)}} - \frac{8m_{(0,0,1)}m_{(0,1,1)}m_{(2,0,0)}v_2}{{m_{(0,0,0)}}^2} -$$
$$\frac{4m_{(0,0,2)}m_{(0,1,0)}m_{(2,0,0)}v_2}{{m_{(0,0,0)}}^2} + \frac{4m_{(1,0,0)}m_{(1,1,2)}v_2}{m_{(0,0,0)}} + \frac{16m_{(0,1,0)}m_{(1,1,1)}v_2}{m_{(0,0,0)}} + \frac{8m_{(0,1,2)}m_{(1,1,0)}v_2}{m_{(0,0,0)}} - \frac{16m_{(0,0,1)}m_{(0,1,1)}m_{(1,1,0)}v_2}{{m_{(0,0,0)}}^2} -$$
$$\frac{8m_{(0,1,0)}m_{(1,0,1)}{m_{(1,0,0)}}^2v_2}{{m_{(0,0,0)}}^2} - \frac{16m_{(0,1,1)}m_{(1,0,0)}m_{(1,0,1)}v_2}{{m_{(0,0,0)}}^2} - \frac{4{m_{(0,0,2)}}^2m_{(1,0,0)}v_2}{{m_{(0,0,0)}}^2} - \frac{6m_{(0,0,1)}m_{(0,2,1)}v_1^2}{m_{(0,0,0)}} - \frac{2m_{(0,0,2)}m_{(0,2,0)}v_1^2}{m_{(0,0,0)}} +$$
$$\frac{4{m_{(0,0,1)}}^2m_{(0,2,0)}v_1^2}{{m_{(0,0,0)}}^2} - \frac{6m_{(0,1,0)}m_{(0,1,2)}v_1^2}{m_{(0,0,0)}} - \frac{4{m_{(0,1,1)}}^2v_1^2}{m_{(0,0,0)}} + \frac{16m_{(0,0,1)}m_{(0,1,0)}m_{(0,1,1)}v_1^2}{{m_{(0,0,0)}}^2} - 2m_{(1,2,2)}v_1 + \frac{4m_{(0,0,1)}m_{(1,2,1)}v_1}{m_{(0,0,0)}} +$$
$$\frac{4m_{(0,0,2)}m_{(1,2,0)}v_1}{m_{(0,0,0)}} + \frac{4m_{(0,1,0)}m_{(1,1,2)}v_1}{m_{(0,0,0)}} + \frac{16m_{(0,1,1)}m_{(1,1,1)}v_1}{m_{(0,0,0)}} + \frac{8m_{(0,1,2)}m_{(1,1,0)}v_1}{m_{(0,0,0)}} - \frac{16m_{(0,0,1)}m_{(0,1,1)}m_{(1,1,0)}v_1}{{m_{(0,0,0)}}^2} +$$
$$\frac{4m_{(0,2,0)}m_{(1,0,2)}v_1}{m_{(0,0,0)}} + \frac{8m_{(0,2,1)}m_{(1,0,1)}v_1}{m_{(0,0,0)}} - \frac{8m_{(0,0,1)}m_{(0,2,0)}m_{(1,0,1)}v_1}{{m_{(0,0,0)}}^2} - \frac{16m_{(0,1,0)}m_{(0,1,1)}m_{(1,0,1)}v_1}{{m_{(0,0,0)}}^2} + \frac{2m_{(0,2,2)}m_{(1,0,0)}v_1}{m_{(0,0,0)}} -$$
$$\frac{4m_{(0,0,2)}m_{(0,2,0)}m_{(1,0,0)}v_1}{{m_{(0,0,0)}}^2} - \frac{8{m_{(0,1,1)}}^2m_{(1,0,0)}v_1}{{m_{(0,0,0)}}^2} - \frac{4{m_{(0,0,2)}}^2m_{(0,1,0)}v_1}{{m_{(0,0,0)}}^2} + m_{(2,2,2)} - \frac{m_{(0,0,2)}m_{(2,2,0)}}{m_{(0,0,0)}} - \frac{4m_{(0,1,1)}m_{(2,1,1)}}{m_{(0,0,0)}} -$$
$$\frac{2m_{(0,1,2)}m_{(2,1,0)}}{m_{(0,0,0)}} - \frac{m_{(0,2,0)}m_{(2,0,2)}}{m_{(0,0,0)}} - \frac{2m_{(0,2,1)}m_{(2,0,1)}}{m_{(0,0,0)}} - \frac{m_{(0,2,2)}m_{(2,0,0)}}{m_{(0,0,0)}} + \frac{2m_{(0,0,2)}m_{(0,2,0)}m_{(2,0,0)}}{{m_{(0,0,0)}}^2} + \frac{4{m_{(0,1,1)}}^2m_{(2,0,0)}}{{m_{(0,0,0)}}^2} -$$
$$\frac{4m_{(1,0,1)}m_{(1,2,1)}}{m_{(0,0,0)}} - \frac{2m_{(1,0,2)}m_{(1,2,0)}}{m_{(0,0,0)}} - \frac{4m_{(1,1,0)}m_{(1,1,2)}}{m_{(0,0,0)}} - \frac{4{m_{(1,1,1)}}^2}{m_{(0,0,0)}} + \frac{16m_{(0,1,1)}m_{(1,0,1)}m_{(1,1,0)}}{{m_{(0,0,0)}}^2} + \frac{4{m_{(0,0,2)}}^2m_{(1,1,0)}}{{m_{(0,0,0)}}^2} +$$
$$\frac{4{m_{(0,2,0)}m_{(1,0,1)}}^2}{{m_{(0,0,0)}}^2}.$$

The equilibrium cumulant vector $\boldsymbol{\gamma}^{(eq)}$ is defined by

$$\boldsymbol{\gamma}^{(eq)} = \left(\rho, 0, 0, 0, 0, 0, 0, \rho c_s^2, \rho c_s^2, \rho c_s^2, 0, 0, \cdots, 0\right)^T.$$

2.6.2 Conservation of mass: ρ

attached text file: `output_d3q27_nse_culbm1_symbolic_pde_00.txt`

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

$$(-1+3v_1^2+c_s^2)\frac{\delta_l^3\rho}{12\delta_t}\frac{\partial^3 v_1}{\partial x_1^3} - \frac{c_s^2\delta_l^3\rho}{6\delta_t}\frac{\partial^3 v_2}{\partial x_1^2\partial x_2} - \frac{c_s^2\delta_l^3\rho}{6\delta_t}\frac{\partial^3 v_1}{\partial x_1\partial x_2^2} + (-1+v_2^2+3c_s^2)\frac{v_2\delta_l^3}{12\delta_t}\frac{\partial^3\rho}{\partial x_2^3} + (-1+3v_2^2+c_s^2)\frac{\delta_l^3\rho}{12\delta_t}\frac{\partial^3 v_2}{\partial x_2^3} -$$
$$\frac{c_s^2\delta_l^3\rho}{6\delta_t}\frac{\partial^3 v_3}{\partial x_1^2\partial x_3} - \frac{c_s^2\delta_l^3\rho}{6\delta_t}\frac{\partial^3 v_3}{\partial x_2^2\partial x_3} - \frac{c_s^2\delta_l^3\rho}{6\delta_t}\frac{\partial^3 v_1}{\partial x_1\partial x_3^2} - \frac{c_s^2\delta_l^3\rho}{6\delta_t}\frac{\partial^3 v_2}{\partial x_2\partial x_3^2} + (-1+v_3^2+3c_s^2)\frac{v_3\delta_l^3}{12\delta_t}\frac{\partial^3\rho}{\partial x_3^3} + (-1+3v_3^2+c_s^2)\frac{\delta_l^3\rho}{12\delta_t}\frac{\partial^3 v_3}{\partial x_3^3}$$
$$+ (2c_s^4-3v_1^4\omega_4-c_s^4\omega_4-6v_1^2+24v_1^2c_s^2+6v_1^4+3v_1^2\omega_4+c_s^2\omega_4-2c_s^2-12v_1^2c_s^2\omega_4)\frac{\delta_l^4}{24\delta_t\omega_4}\frac{\partial^4\rho}{\partial x_1^4} +$$
$$(-4+10v_1^2+2\omega_4-5v_1^2\omega_4-3c_s^2\omega_4+6c_s^2)\frac{v_1\delta_l^4\rho}{12\delta_t\omega_4}\frac{\partial^4 v_1}{\partial x_1^4} +$$
$$(-\omega_9+3\omega_9c_s^2\omega_4+v_1^2\omega_9\omega_4-\omega_9\omega_4+3\omega_4+v_1^2\omega_9-3v_1^2\omega_4-9c_s^2\omega_4+3\omega_9c_s^2)\frac{v_1\delta_l^4\rho}{12\omega_9\delta_t\omega_4}\frac{\partial^4 v_2}{\partial x_1^3\partial x_2} + (-2+\omega_1)\frac{c_s^4\delta_l^4}{6\delta_t\omega_1}\frac{\partial^4\rho}{\partial x_1^2\partial x_2^2}$$
$$+ (-3v_2^2\omega_5+v_2^2\omega_7\omega_5-\omega_7\omega_5-9c_s^2\omega_5+v_2^2\omega_7+3c_s^2\omega_7\omega_5+3c_s^2\omega_7-\omega_7+3\omega_5)\frac{v_2\delta_l^4\rho}{12\delta_t\omega_7\omega_5}\frac{\partial^4 v_1}{\partial x_1\partial x_2^3} +$$
$$(-12v_2^2c_s^2\omega_5+3v_2^2\omega_5+2c_s^4+c_s^2\omega_5+24v_2^2c_s^2-6v_2^2+6v_2^4-c_s^4\omega_5-3v_2^4\omega_5-2c_s^2)\frac{\delta_l^4}{24\delta_t\omega_5}\frac{\partial^4\rho}{\partial x_2^4} +$$
$$(-4-5v_2^2\omega_5-3c_s^2\omega_5+10v_2^2+2\omega_5+6c_s^2)\frac{v_2\delta_l^4\rho}{12\delta_t\omega_5}\frac{\partial^4 v_2}{\partial x_2^4} +$$
$$(-\omega_{12}-\omega_{12}\omega_4+v_1^2\omega_{12}\omega_4+3\omega_4-3v_1^2\omega_4-9c_s^2\omega_4+3\omega_{12}c_s^2\omega_4+v_1^2\omega_{12}+3\omega_{12}c_s^2)\frac{v_1\delta_l^4\rho}{12\omega_{12}\delta_t\omega_4}\frac{\partial^4 v_3}{\partial x_1^3\partial x_3} +$$
$$(-3v_2^2\omega_5+3c_s^2\omega_{11}\omega_5-9c_s^2\omega_5-\omega_{11}\omega_5+v_2^2\omega_{11}\omega_5-\omega_{11}+3c_s^2\omega_{11}+3\omega_5+v_2^2\omega_{11})\frac{v_2\delta_l^4\rho}{12\delta_t\omega_{11}\omega_5}\frac{\partial^4 v_3}{\partial x_2^3\partial x_3} +$$
$$(-2+\omega_2)\frac{c_s^4\delta_l^4}{6\delta_t\omega_2}\frac{\partial^4\rho}{\partial x_1^2\partial x_3^2} + (-2+\omega_3)\frac{c_s^4\delta_l^4}{6\omega_3\delta_t}\frac{\partial^4\rho}{\partial x_2^2\partial x_3^2} +$$
$$(3\omega_6c_s^2\omega_8+v_3^2\omega_6\omega_8+3\omega_6-9\omega_6c_s^2+v_3^2\omega_8-3v_3^2\omega_6-\omega_6\omega_8-\omega_8+3c_s^2\omega_8)\frac{v_3\delta_l^4\rho}{12\omega_6\delta_t\omega_8}\frac{\partial^4 v_1}{\partial x_1\partial x_3^3} +$$
$$(3\omega_6-9\omega_6c_s^2+3c_s^2\omega_{10}+v_3^2\omega_{10}-\omega_{10}-\omega_6\omega_{10}-3v_3^2\omega_6+3\omega_6c_s^2\omega_{10}+v_3^2\omega_6\omega_{10})\frac{v_3\delta_l^4\rho}{12\omega_6\delta_t\omega_{10}}\frac{\partial^4 v_2}{\partial x_2\partial x_3^3} +$$
$$(-3v_3^4\omega_6+24v_3^2c_s^2+2c_s^4+\omega_6c_s^2-6v_3^2-12v_3^2\omega_6c_s^2+3v_3^2\omega_6+6v_3^4-2c_s^2-\omega_6c_s^4)\frac{\delta_l^4}{24\omega_6\delta_t}\frac{\partial^4\rho}{\partial x_3^4} +$$
$$(-4+2\omega_6-3\omega_6c_s^2+10v_3^2-5v_3^2\omega_6+6c_s^2)\frac{v_3\delta_l^4\rho}{12\omega_6\delta_t}\frac{\partial^4 v_3}{\partial x_3^4} = 0.$$

2.6.3 Conservation of momentum: ρv_1

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$$v_1\frac{\partial\rho}{\partial t} + \rho\frac{\partial v_1}{\partial t} + (v_1^2+c_s^2)\frac{\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_1} + \frac{2v_1\delta_l\rho}{\delta_t}\frac{\partial v_1}{\partial x_1} + \frac{v_2v_1\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_2} + \frac{v_2\delta_l\rho}{\delta_t}\frac{\partial v_1}{\partial x_2} + \frac{v_1\delta_l\rho}{\delta_t}\frac{\partial v_2}{\partial x_2} + \frac{v_1v_3\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_3} + \frac{v_3\delta_l\rho}{\delta_t}\frac{\partial v_1}{\partial x_3} +$$
$$\frac{v_1\delta_l\rho}{\delta_t}\frac{\partial v_3}{\partial x_3} + (-2+6v_1^2+\omega_4-3v_1^2\omega_4-2c_s^2\omega_4+4c_s^2)\frac{\delta_l^2}{\delta_t\omega_4}\frac{\partial\rho}{\partial x_1}\frac{\partial v_1}{\partial x_1} + (2-\omega_4)\frac{3v_1\delta_l^2\rho}{\delta_t\omega_4}\left(\frac{\partial v_1}{\partial x_1}\right)^2 +$$
$$(-2+\omega_1)\frac{c_s^2\delta_l^2}{2\delta_t\omega_1}\frac{\partial\rho}{\partial x_2}\frac{\partial v_2}{\partial x_1} + (-2+\omega_1)\frac{c_s^2\delta_l^2}{2\delta_t\omega_1}\frac{\partial\rho}{\partial x_2}\frac{\partial v_1}{\partial x_2} + (-2+\omega_2)\frac{c_s^2\delta_l^2}{2\delta_t\omega_2}\frac{\partial\rho}{\partial x_3}\frac{\partial v_3}{\partial x_1} + (-2+\omega_2)\frac{c_s^2\delta_l^2}{2\delta_t\omega_2}\frac{\partial\rho}{\partial x_3}\frac{\partial v_1}{\partial x_3} +$$
$$(-2+2v_1^2+\omega_4-v_1^2\omega_4-3c_s^2\omega_4+6c_s^2)\frac{v_1\delta_l^2}{2\delta_t\omega_4}\frac{\partial^2\rho}{\partial x_1^2} + (-2+6v_1^2+\omega_4-3v_1^2\omega_4-c_s^2\omega_4+2c_s^2)\frac{\delta_l^2\rho}{2\delta_t\omega_4}\frac{\partial^2 v_1}{\partial x_1^2} +$$
$$(-2+\omega_1)\frac{c_s^2\delta_l^2\rho}{2\delta_t\omega_1}\frac{\partial^2 v_2}{\partial x_1\partial x_2} + (-2+\omega_1)\frac{c_s^2\delta_l^2\rho}{2\delta_t\omega_1}\frac{\partial^2 v_1}{\partial x_2^2} + (-2+\omega_2)\frac{c_s^2\delta_l^2\rho}{2\delta_t\omega_2}\frac{\partial^2 v_3}{\partial x_1\partial x_3} + (-2+\omega_2)\frac{c_s^2\delta_l^2\rho}{2\delta_t\omega_2}\frac{\partial^2 v_1}{\partial x_3^2} + C_1\frac{\delta_l^3}{12\delta_t\omega_4^2}\frac{\partial^3\rho}{\partial x_1^3} +$$
$$(-24-4\omega_4^2+60v_1^2+24\omega_4-60v_1^2\omega_4-36c_s^2\omega_4+36c_s^2+11v_1^2\omega_4^2+5c_s^2\omega_4^2)\frac{v_1\delta_l^3\rho}{6\delta_t\omega_4^2}\frac{\partial^3 v_1}{\partial x_1^3} + C_2\frac{v_1\delta_l^3\rho}{12\omega_9\delta_t\omega_4^2\omega_1}\frac{\partial^3 v_2}{\partial x_1^2\partial x_2} +$$
$$(-12-\omega_1^2+12\omega_1)\frac{c_s^4\delta_l^3}{6\delta_t\omega_1^2}\frac{\partial^3\rho}{\partial x_1\partial x_2^2} - \frac{v_1c_s^2\delta_l^3\rho}{6\delta_t}\frac{\partial^3 v_1}{\partial x_1\partial x_2^2} + (-1+v_2^2+3c_s^2)\frac{v_2v_1\delta_l^3}{12\delta_t}\frac{\partial^3\rho}{\partial x_2^3} + C_3\frac{v_2\delta_l^3\rho}{6\delta_t\omega_7\omega_1}\frac{\partial^3 v_1}{\partial x_2^3} +$$
$$(-1+3v_2^2+c_s^2)\frac{v_1\delta_l^3\rho}{12\delta_t}\frac{\partial^3 v_2}{\partial x_2^3} + C_4\frac{v_1\delta_l^3\rho}{12\omega_{12}\delta_t\omega_4^2\omega_2}\frac{\partial^3 v_3}{\partial x_1^2\partial x_3} - \frac{v_1c_s^2\delta_l^3\rho}{6\delta_t}\frac{\partial^3 v_3}{\partial x_2^2\partial x_3} + (-12-\omega_2^2+12\omega_2)\frac{c_s^4\delta_l^3}{6\delta_t\omega_2^2}\frac{\partial^3\rho}{\partial x_1\partial x_3^2} -$$
$$\frac{v_1c_s^2\delta_l^3\rho}{6\delta_t}\frac{\partial^3 v_1}{\partial x_1\partial x_3^2} - \frac{v_1c_s^2\delta_l^3\rho}{6\delta_t}\frac{\partial^3 v_2}{\partial x_2\partial x_3^2} + (-1+v_3^2+3c_s^2)\frac{v_1v_3\delta_l^3}{12\delta_t}\frac{\partial^3\rho}{\partial x_3^3} + C_5\frac{v_3\delta_l^3\rho}{6\delta_t\omega_8\omega_2}\frac{\partial^3 v_1}{\partial x_3^3} + (-1+3v_3^2+c_s^2)\frac{v_1\delta_l^3\rho}{12\delta_t}\frac{\partial^3 v_3}{\partial x_3^3} +$$
$$C_6\frac{v_1\delta_l^4}{12\delta_t\omega_4^3}\frac{\partial^4\rho}{\partial x_1^4} + C_7\frac{\delta_l^4\rho}{12\delta_t\omega_4^3}\frac{\partial^4 v_1}{\partial x_1^4} + C_8\frac{\delta_l^4\rho}{12\omega_9^2\delta_t\omega_4^3\omega_1^3}\frac{\partial^4 v_2}{\partial x_1^3\partial x_2} + C_9\frac{v_1c_s^2\delta_l^4}{12\omega_9^2\delta_t\omega_4^3\omega_1^2}\frac{\partial^4\rho}{\partial x_1^2\partial x_2^2} + C_{10}\frac{c_s^2\delta_l^4\rho}{12\omega_9\delta_t\omega_4^2\omega_1^3}\frac{\partial^4 v_1}{\partial x_1^2\partial x_2^2} +$$
$$C_{11}\frac{v_2c_s^2\delta_l^4}{12\delta_t\omega_7^2\omega_1^2\omega_5}\frac{\partial^4\rho}{\partial x_1\partial x_2^3} + (-3v_2^2\omega_5+v_2^2\omega_7\omega_5-\omega_7\omega_5-9c_s^2\omega_5+v_2^2\omega_7+3c_s^2\omega_7\omega_5+3c_s^2\omega_7-\omega_7+3\omega_5)\frac{v_2v_1\delta_l^4\rho}{12\delta_t\omega_7\omega_5}\frac{\partial^4 v_1}{\partial x_1\partial x_2^3}$$
$$+ C_{12}\frac{c_s^2\delta_l^4\rho}{12\delta_t\omega_7\omega_1^3\omega_5}\frac{\partial^4 v_2}{\partial x_1\partial x_2^3} +$$
$$(-12v_2^2c_s^2\omega_5+3v_2^2\omega_5+2c_s^4+c_s^2\omega_5+24v_2^2c_s^2-6v_2^2+6v_2^4-c_s^4\omega_5-3v_2^4\omega_5-2c_s^2)\frac{v_1\delta_l^4}{24\delta_t\omega_5}\frac{\partial^4\rho}{\partial x_2^4} + C_{13}\frac{\delta_l^4\rho}{24\delta_t\omega_7^2\omega_1^3}\frac{\partial^4 v_1}{\partial x_2^4} +$$
$$(-4-5v_2^2\omega_5-3c_s^2\omega_5+10v_2^2+2\omega_5+6c_s^2)\frac{v_2v_1\delta_l^4\rho}{12\delta_t\omega_5}\frac{\partial^4 v_2}{\partial x_2^4} + C_{14}\frac{\delta_l^4\rho}{12\omega_{12}^2\delta_t\omega_4^3\omega_2^3}\frac{\partial^4 v_3}{\partial x_1^3\partial x_3} + C_{15}\frac{c_s^4\delta_l^4\rho}{12\omega_3\delta_t\omega_{13}\omega_1^3\omega_2^2}\frac{\partial^4 v_3}{\partial x_1\partial x_2^2\partial x_3} +$$

$$
\begin{aligned}
&(-3v_2^2\omega_5 + 3c_s^2\omega_{11}\omega_5 - 9c_s^2\omega_5 - \omega_{11}\omega_5 + v_2^2\omega_{11}\omega_5 - \omega_{11} + 3c_s^2\omega_{11} + 3\omega_5 + v_2^2\omega_{11})\frac{v_2 v_1 \delta_l^4 \rho}{12\delta_t\omega_{11}\omega_5}\frac{\partial^4 v_3}{\partial x_2^3 \partial x_3} + \\
&C_{16}\frac{v_1 c_s^2 \delta_l^4}{12\omega_{12}^2\delta_t\omega_4^3\omega_2^2}\frac{\partial^4 \rho}{\partial x_1^2 \partial x_3^2} + C_{17}\frac{c_s^2\delta_l^4\rho}{12\omega_{12}\delta_t\omega_4^2\omega_2^3}\frac{\partial^4 v_1}{\partial x_1^2\partial x_3^2} + C_{18}\frac{c_s^4\delta_l^4\rho}{12\omega_3\delta_t\omega_{13}\omega_1^2\omega_2^3}\frac{\partial^4 v_2}{\partial x_1\partial x_2\partial x_3^2} + (-2+\omega_3)\frac{v_1 c_s^4\delta_l^4}{6\omega_3\delta_t}\frac{\partial^4\rho}{\partial x_2^2\partial x_3^2} + \\
&(-\omega_{13}\omega_1\omega_2 + \omega_{13}\omega_2 + 2\omega_1^2\omega_2 - \omega_1^2\omega_2^2 - \omega_1^2 - \omega_2^2 + 2\omega_1\omega_2^2 - 2\omega_1\omega_2 + \omega_{13}\omega_1)\frac{c_s^4\delta_l^4\rho}{\delta_t\omega_{13}\omega_1^2\omega_2^2}\frac{\partial^4 v_1}{\partial x_2^2\partial x_3^2} + \\
&C_{19}\frac{v_3 c_s^2\delta_l^4}{12\omega_6\delta_t\omega_8^2\omega_2^2}\frac{\partial^4\rho}{\partial x_1\partial x_3^3} + (3\omega_6 c_s^2\omega_8 + v_3^2\omega_6\omega_8 + 3\omega_6 - 9\omega_6 c_s^2 + v_3^2\omega_8 - 3v_3^2\omega_6 - \omega_6\omega_8 - \omega_8 + 3c_s^2\omega_8)\frac{v_1 v_3\delta_l^4\rho}{12\omega_6\delta_t\omega_8}\frac{\partial^4 v_1}{\partial x_1\partial x_3^3} \\
&+ C_{20}\frac{c_s^2\delta_l^4\rho}{12\omega_6\delta_t\omega_8\omega_2^3}\frac{\partial^4 v_3}{\partial x_1\partial x_3^3} + \\
&(3\omega_6 - 9\omega_6 c_s^2 + 3c_s^2\omega_{10} + v_3^2\omega_{10} - \omega_{10} - \omega_6\omega_{10} - 3v_3^2\omega_6 + 3\omega_6 c_s^2\omega_{10} + v_3^2\omega_6\omega_{10})\frac{v_1 v_3\delta_l^4\rho}{12\omega_6\delta_t\omega_{10}}\frac{\partial^4 v_2}{\partial x_2\partial x_3^3} + \\
&(-3v_3^4\omega_6 + 24v_3^2c_s^2 + 2c_s^4 + \omega_6 c_s^2 - 6v_3^2 - 12v_3^2\omega_6 c_s^2 + 3v_3^2\omega_6 + 6v_3^4 - 2c_s^2 - \omega_6 c_s^4)\frac{v_1\delta_l^4}{24\omega_6\delta_t}\frac{\partial^4\rho}{\partial x_3^4} + C_{21}\frac{\delta_l^4\rho}{24\delta_t\omega_8^2\omega_2^3}\frac{\partial^4 v_1}{\partial x_3^4} + \\
&(-4 + 2\omega_6 - 3\omega_6 c_s^2 + 10v_3^2 - 5v_3^2\omega_6 + 6c_s^2)\frac{v_1 v_3\delta_l^4\rho}{12\omega_6\delta_t}\frac{\partial^4 v_3}{\partial x_3^4} = 0,
\end{aligned}
$$

where:

$$
C_1 = 12c_s^4 - 36v_1^4\omega_4 - 12c_s^4\omega_4 + 7v_1^4\omega_4^2 + c_s^4\omega_4^2 - 36v_1^2 + 144v_1^2c_s^2 + 36v_1^4 + 36v_1^2\omega_4 + 12c_s^2\omega_4 + 24v_1^2c_s^2\omega_4^2 - 12c_s^2 - 144v_1^2c_s^2\omega_4 - 7v_1^2\omega_4^2 - c_s^2\omega_4^2
$$

$$
\begin{aligned}
C_2 = {} & -6\omega_9\omega_4^2 + 3\omega_9\omega_4^2\omega_1 + 12v_1^2\omega_9\omega_1 - 12v_1^2\omega_4\omega_1 - 36c_s^2\omega_4\omega_1 + 36\omega_9c_s^2\omega_1 - 18\omega_9c_s^2\omega_4\omega_1 + 12\omega_4^2 + 6v_1^2\omega_9\omega_4^2 - 12\omega_9\omega_1 + 18\omega_9c_s^2\omega_4^2 + \\
& 12\omega_4\omega_1 - 6v_1^2\omega_9\omega_4\omega_1 - 12\omega_4^2\omega_1 - 3v_1^2\omega_9\omega_4^2\omega_1 + 12v_1^2\omega_4^2\omega_1 + 36c_s^2\omega_4^2\omega_1 - 11\omega_9c_s^2\omega_4^2\omega_1 - 12v_1^2\omega_4^2 - 36c_s^2\omega_4^2 + 6\omega_9\omega_4\omega_1
\end{aligned}
$$

$$
C_3 = 6 - 6v_2^2 + 3v_2^2\omega_7 + 9c_s^2\omega_7 - 3\omega_7 + 3v_2^2\omega_1 - 3\omega_1 - v_2^2\omega_7\omega_1 + \omega_7\omega_1 + 9c_s^2\omega_1 - 18c_s^2 - 3c_s^2\omega_7\omega_1
$$

$$
\begin{aligned}
C_4 = {} & 6v_1^2\omega_{12}\omega_4^2 + 12v_1^2\omega_4^2\omega_2 - 6v_1^2\omega_{12}\omega_4\omega_2 + 36c_s^2\omega_4^2\omega_2 + 12\omega_4^2 - 11\omega_{12}c_s^2\omega_4^2\omega_2 + 3\omega_{12}\omega_4^2\omega_2 - 6\omega_{12}\omega_4^2 + 36\omega_{12}c_s^2\omega_2 - 12\omega_4^2\omega_2 + 12\omega_4\omega_2 + \\
& 12v_1^2\omega_{12}\omega_2 - 18\omega_{12}c_s^2\omega_4\omega_2 + 6\omega_{12}\omega_4\omega_2 - 12v_1^2\omega_4\omega_2 - 36c_s^2\omega_4\omega_2 - 3v_1^2\omega_{12}\omega_4^2\omega_2 + 18\omega_{12}c_s^2\omega_4^2 - 12\omega_{12}\omega_2 - 12v_1^2\omega_4^2 - 36c_s^2\omega_4^2
\end{aligned}
$$

$$
C_5 = 6 + 3v_3^2\omega_2 - 3c_s^2\omega_8\omega_2 + 9c_s^2\omega_2 - 6v_3^2 + \omega_8\omega_2 + 3v_3^2\omega_8 - 3\omega_8 - v_3^2\omega_8\omega_2 - 18c_s^2 - 3\omega_2 + 9c_s^2\omega_8
$$

$$
\begin{aligned}
C_6 = {} & 12 + 144c_s^4 - 216v_1^4\omega_4 - 216c_s^4\omega_4 + 90v_1^4\omega_4^2 + 8\omega_4^2 + 82c_s^4\omega_4^2 - 156v_1^2 - \omega_4^3 - 5c_s^4\omega_4^3 - 9v_1^4\omega_4^3 + 672v_1^2c_s^2 - 34v_1^2c_s^2\omega_4^3 - 18\omega_4 + 144v_1^4 + \\
& 234v_1^2\omega_4 + 198c_s^2\omega_4 + 404v_1^2c_s^2\omega_4^2 + 6c_s^2\omega_4^3 + 10v_1^2\omega_4^3 - 132c_s^2 - 1008v_1^2c_s^2\omega_4 - 98v_1^2\omega_4^2 - 78c_s^2\omega_4^2
\end{aligned}
$$

$$
\begin{aligned}
C_7 = {} & 12 + 24c_s^4 - 756v_1^4\omega_4 - 36c_s^4\omega_4 + 310v_1^4\omega_4^2 + 8\omega_4^2 + 14c_s^4\omega_4^2 - 252v_1^2 - \omega_4^3 - c_s^4\omega_4^3 - 29v_1^4\omega_4^3 + 432v_1^2c_s^2 - 18v_1^2c_s^2\omega_4^3 - 18\omega_4 + 504v_1^4 + \\
& 378v_1^2\omega_4 + 54c_s^2\omega_4 + 252v_1^2c_s^2\omega_4^2 + 2c_s^2\omega_4^3 + 14v_1^2\omega_4^3 - 36c_s^2 - 648v_1^2c_s^2\omega_4 - 154v_1^2\omega_4^2 - 22c_s^2\omega_4^2
\end{aligned}
$$

$$
\begin{aligned}
C_8 = {} & -108v_1^2c_s^2\omega_4^2\omega_1^3 + 12\omega_9^2c_s^4\omega_1^3 - 19v_1^2\omega_9^2\omega_4^2\omega_1^3 - \omega_9^2c_s^4\omega_4^3\omega_1^3 + 6\omega_9^2c_s^2\omega_4^3\omega_1 + 18v_1^2\omega_9^2c_s^2\omega_4^2\omega_1^2 - \omega_9^2c_s^2\omega_4^2\omega_1^3 - 39v_1^4\omega_9\omega_4^3\omega_1^3 + 13\omega_9^2c_s^4\omega_4^3\omega_1^2 + \\
& 12\omega_9^2c_s^4\omega_4^3 + 36v_1^2\omega_9\omega_4\omega_1^3 + 252v_1^2\omega_9^2c_s^2\omega_1^3 + 36v_1^4\omega_9\omega_4^3\omega_1^2 + 60v_1^2\omega_9^2c_s^2\omega_4^2\omega_1^3 - 6\omega_9^2c_s^2\omega_4^2\omega_1^2 - 18v_1^2\omega_9^2c_s^2\omega_4^3\omega_1 + 72v_1^4\omega_9\omega_4^2\omega_1^3 - \\
& 108v_1^2\omega_9c_s^2\omega_4\omega_1^3 - 3v_1^2\omega_9^2c_s^2\omega_4^3\omega_1^2 + \omega_9^2c_s^4\omega_4^2\omega_1^3 - 24\omega_9^2c_s^4\omega_4^3\omega_1 + 108v_1^2c_s^2\omega_4^3\omega_1^3 - 4v_1^2\omega_9^2\omega_4^3\omega_1^3 - 5\omega_9^2c_s^2\omega_4^3\omega_1^2 + 12v_1^2\omega_9^2c_s^2\omega_4^3\omega_1^3 - 90v_1^4\omega_9^2\omega_4\omega_1^3 + \\
& 6v_1^2\omega_9^2\omega_4^3\omega_1^2 - 108v_1^2c_s^2\omega_4^3\omega_1^2 + 6\omega_9^2c_s^4\omega_4^2\omega_1^2 + 36v_1^4\omega_4^3\omega_1^3 - 12\omega_9c_s^2\omega_4^3\omega_1 + 36v_1^2\omega_9c_s^2\omega_4^2\omega_1^2 + 19v_1^4\omega_9^2\omega_4^2\omega_1^3 + 6\omega_9c_s^2\omega_4^2\omega_1^3 + 39v_1^2\omega_9\omega_4^3\omega_1^2 + \\
& 6\omega_9c_s^4\omega_4^3\omega_1^3 - 12\omega_9^2c_s^4\omega_4\omega_1^2 + 36v_1^2\omega_4^2\omega_1^3 + 198v_1^2\omega_9c_s^2\omega_4^2\omega_1^3 - 12\omega_9c_s^2\omega_4^2\omega_1^2 - 12\omega_9^2c_s^2\omega_1^3 + 36v_1^2\omega_9c_s^2\omega_4^3\omega_1 - 36v_1^4\omega_9\omega_4\omega_1^3 - 36v_1^4\omega_4^3\omega_1^2 - \\
& 72v_1^2\omega_9^2\omega_1^3 - 12\omega_9^2c_s^4\omega_4\omega_1^3 - 18\omega_9c_s^4\omega_4^3\omega_1^2 - 36v_1^2\omega_9\omega_4^3\omega_1^2 - 36v_1^2\omega_4^3\omega_1^3 - 72v_1^2\omega_9\omega_4^2\omega_1^3 - 6\omega_9c_s^4\omega_4^2\omega_1^3 + 12\omega_9c_s^4\omega_4^3\omega_1 - 6\omega_9c_s^2\omega_4^3\omega_1^3 + \\
& 4v_1^4\omega_9^2\omega_4^3\omega_1^3 + 54v_1^2\omega_9c_s^2\omega_4^3\omega_1^2 + 12\omega_9^2c_s^2\omega_4\omega_1^2 - 306v_1^2\omega_9^2c_s^2\omega_4\omega_1^3 - 36v_1^4\omega_4^2\omega_1^3 + 90v_1^2\omega_9^2\omega_4\omega_1^3 + 12\omega_9c_s^4\omega_4^2\omega_1^2 + 36v_1^2\omega_4^3\omega_1^2 + 72v_1^4\omega_9^2\omega_1^3 + \\
& 12\omega_9^2c_s^2\omega_4\omega_1^3 - 36v_1^2\omega_9^2c_s^2\omega_4\omega_1^2 + 18\omega_9c_s^2\omega_4^3\omega_1^2 - 99v_1^2\omega_9c_s^2\omega_4^3\omega_1^3 - 6v_1^4\omega_9^2\omega_4^3\omega_1^2
\end{aligned}
$$

$$
\begin{aligned}
C_9 = {} & -12v_1^2\omega_9^2\omega_4^3\omega_1 - 12\omega_9\omega_4^2\omega_1 - 40\omega_9^2c_s^2\omega_4^3\omega_1 + 4v_1^2\omega_9^2\omega_4^2\omega_1^2 + 6\omega_9\omega_4^3\omega_1^2 + 12\omega_9\omega_4^3 + 12\omega_9^2c_s^2\omega_4^2\omega_1^2 - 36\omega_9c_s^2\omega_4^3 + 18\omega_9^2c_s^2\omega_4^2\omega_1 + \\
& 6v_1^2\omega_9^2\omega_4^2\omega_1 - 18\omega_9\omega_4^3\omega_1 + 18\omega_9^2\omega_4\omega_1^2 + 5\omega_9^2c_s^2\omega_4^3\omega_1^2 - 12v_1^2\omega_9\omega_4^3 + v_1^2\omega_9^2\omega_4^3\omega_1^2 - 6\omega_9\omega_4^2\omega_1^2 + 12v_1^2\omega_9^2\omega_4^3 + 12v_1^2\omega_9^2\omega_1^2 + 36\omega_9^2c_s^2\omega_4^3 + \\
& 54\omega_9c_s^2\omega_4^3\omega_1 + 36\omega_9^2c_s^2\omega_1^2 - 36c_s^2\omega_4^3\omega_1 + 12\omega_9^2\omega_4^3\omega_1 + 12v_1^2\omega_9\omega_4^2\omega_1 - 12v_1^2\omega_4^3\omega_1 + 18\omega_9c_s^2\omega_4^2\omega_1^2 - 36\omega_9^2c_s^2\omega_4^2 - 12\omega_4^3\omega_1^2 - 12v_1^2\omega_9^2\omega_4^2 - \\
& 12v_1^2\omega_4^2\omega_1^2 - 36c_s^2\omega_4^2\omega_1^2 - 4\omega_9^2\omega_4^2\omega_1^2 - 6v_1^2\omega_9\omega_4^3\omega_1^2 - 12\omega_9^2\omega_4^3 - 12\omega_9^2\omega_1^2 - 18v_1^2\omega_9^2\omega_4\omega_1^2 - 6\omega_9^2\omega_4^2\omega_1 + 18v_1^2\omega_9\omega_4^3\omega_1 + 36\omega_9c_s^2\omega_4^2\omega_1 + 12\omega_4^3\omega_1 - \\
& 54\omega_9^2c_s^2\omega_4\omega_1^2 + 36c_s^2\omega_4^3\omega_1^2 - \omega_9^2\omega_4^3\omega_1^2 + 12\omega_9^2\omega_4^2 + 6v_1^2\omega_9\omega_4^2\omega_1^2 + 12v_1^2\omega_4^3\omega_1^2 - 18\omega_9c_s^2\omega_4^3\omega_1^2 + 12\omega_4^2\omega_1^2
\end{aligned}
$$

$$
\begin{aligned}
C_{10} = {} & 36v_1^2\omega_9\omega_4\omega_1^2 - 24\omega_4\omega_1^2 + 12\omega_9\omega_1^2 + 24\omega_4\omega_1^3 - 12\omega_9c_s^2\omega_4\omega_1 - 12\omega_1^3 - 12\omega_9c_s^2\omega_1^2 + 12\omega_9c_s^2\omega_4\omega_1^2 + 72v_1^2\omega_4\omega_1^2 + 24c_s^2\omega_4\omega_1^2 - 36v_1^2\omega_9\omega_1^2 - \\
& 12\omega_9c_s^2\omega_4^2 - 24c_s^2\omega_4\omega_1^3 - 36v_1^2\omega_9\omega_4\omega_1 - 72v_1^2\omega_4\omega_1^3 - \omega_9c_s^2\omega_4^2\omega_1^3 - 12\omega_4^2\omega_1 - 12\omega_9\omega_4\omega_1^2 + 12c_s^2\omega_4^2\omega_1^3 + 36v_1^2\omega_4^2\omega_1^3 - 4\omega_9c_s^2\omega_4^2\omega_1^2 - 72v_1^2\omega_4^2\omega_1^2 - \\
& 24c_s^2\omega_4^2\omega_1^2 + 36v_1^2\omega_4^2\omega_1 + 12c_s^2\omega_4^2\omega_1 - 12\omega_4^2\omega_1^3 + 18\omega_9c_s^2\omega_4^2\omega_1 + 12c_s^2\omega_1^3 + 36v_1^2\omega_1^3 + 12\omega_9\omega_4\omega_1 + 24\omega_4^2\omega_1^2
\end{aligned}
$$

$$
\begin{aligned}
C_{11} = {} & -36c_s^2\omega_7^2 + 18c_s^2\omega_7^2\omega_1 + 12\omega_7^2\omega_1\omega_5 + v_2^2\omega_7^2\omega_1^2 - 12v_2^2\omega_7\omega_5 + 18c_s^2\omega_1^2\omega_5 + 3\omega_7\omega_1^2\omega_5 + 12\omega_7\omega_5 - \omega_7^2\omega_1^2 - 12v_2^2\omega_7^2 - 6\omega_7^2\omega_1 + \\
& 54c_s^2\omega_7\omega_1\omega_5 - 6\omega_1^2\omega_5 - 3v_2^2\omega_7\omega_1^2\omega_5 + 3c_s^2\omega_7^2\omega_1^2\omega_5 - 36c_s^2\omega_7\omega_5 + 6v_2^2\omega_1^2\omega_5 - 12v_2^2\omega_7^2\omega_1\omega_5 + 3c_s^2\omega_7^2\omega_1^2 + 6v_2^2\omega_7^2\omega_1 - 36c_s^2\omega_7^2\omega_1\omega_5 - \\
& 12v_2^2\omega_1\omega_5 + 36c_s^2\omega_7^2\omega_5 - 18c_s^2\omega_7\omega_1^2 + v_2^2\omega_7^2\omega_1^2\omega_5 + 12v_2^2\omega_7\omega_1 + 12\omega_7^2 - 12\omega_7\omega_1 - 9c_s^2\omega_7\omega_1^2\omega_5 + 12\omega_1\omega_5 + 18v_2^2\omega_7\omega_1\omega_5 - 18\omega_7\omega_1\omega_5 - \\
& 12\omega_7^2\omega_5 + 6\omega_7\omega_1^2 + 36c_s^2\omega_7\omega_1 - 6v_2^2\omega_7\omega_1^2 - \omega_7^2\omega_1^2\omega_5 - 36c_s^2\omega_1\omega_5 + 12v_2^2\omega_7^2\omega_5
\end{aligned}
$$

$$
\begin{aligned}
C_{12} = {} & -6\omega_1^3\omega_5 - 18c_s^2\omega_1^2\omega_5 + \omega_7\omega_1^2\omega_5 + 18v_2^2\omega_1^3\omega_5 + 6\omega_1^3 + 18c_s^2\omega_7\omega_1\omega_5 + 6c_s^2\omega_1^3\omega_5 + 18\omega_1^2\omega_5 - 3v_2^2\omega_7\omega_1^2\omega_5 - 12c_s^2\omega_7\omega_5 - 54v_2^2\omega_1^2\omega_5 - \\
& 12\omega_1^2 + 36v_2^2\omega_1\omega_5 + 6c_s^2\omega_7\omega_1^2 - 36v_2^2\omega_7\omega_1 + 12\omega_7\omega_1 - 5c_s^2\omega_7\omega_1^2\omega_5 - 12\omega_1\omega_5 + c_s^2\omega_7\omega_1^3 + 3v_2^2\omega_7\omega_1^3 + 12c_s^2\omega_1^2 - 6\omega_7\omega_1^2 - 18v_2^2\omega_1^3 - \\
& 12c_s^2\omega_7\omega_1 - 6c_s^2\omega_1^3 + 18v_2^2\omega_7\omega_1^2 + 36v_2^2\omega_1^2 + 12c_s^2\omega_1\omega_5 - c_s^2\omega_7\omega_1^3\omega_5 - \omega_7\omega_1^3
\end{aligned}
$$

$$C_{13} = 12c_s^2\omega_7^2\omega_1 - 12v_2^2c_s^2\omega_7^2\omega_1^2 + 12v_2^2\omega_7^2\omega_1^2 - 3c_s^4\omega_7^2\omega_1^3 - 3v_2^2\omega_7^2\omega_1^3 + 6v_2^2c_s^2\omega_7^2\omega_1^3 + 24c_s^4\omega_7^2\omega_1^2 - 48c_s^4\omega_7^2\omega_1 - 12v_2^4\omega_7^2\omega_1^2 - 72v_2^4\omega_1^2 + c_s^2\omega_7^2\omega_1^3 + 3v_2^4\omega_7^2\omega_1^3 - 8c_s^2\omega_7^2\omega_1^2 + 36v_2^4\omega_1^3 - 36v_2^2c_s^2\omega_7^2\omega_1 - 30v_2^4\omega_7\omega_1^3 + 24c_s^2\omega_7\omega_1^2 + 72v_2^2c_s^2\omega_7\omega_1 + 24c_s^4\omega_7^2 + 24c_s^4\omega_7\omega_1 + 72v_2^4\omega_7\omega_1^2 - 6c_s^2\omega_7\omega_1^3 + 30v_2^2\omega_7\omega_1^3 - 72v_2^2c_s^2\omega_7\omega_1^3 - 24c_s^4\omega_7\omega_1^2 - 36v_2^2\omega_1^3 + 108v_2^2c_s^2\omega_1^3 - 24c_s^2\omega_7\omega_1 + 144v_2^2c_s^2\omega_7\omega_1^2 - 72v_2^2\omega_7\omega_1^2 - 216v_2^2c_s^2\omega_1^2 + 72v_2^2\omega_1^2 + 6c_s^4\omega_7\omega_1^3$$

$$C_{14} = -12\omega_{12}^2c_s^4\omega_4\omega_2^2 - 4v_1^2\omega_{12}^2\omega_4^3\omega_2^3 + 36v_1^2\omega_4^3\omega_2^2 + 6\omega_{12}c_s^4\omega_4^3\omega_2^3 - 12\omega_{12}c_s^2\omega_4^3\omega_2 - 72v_1^2\omega_{12}^2\omega_2^3 + 6\omega_{12}c_s^2\omega_4^2\omega_2^3 + 36v_1^2\omega_{12}c_s^2\omega_4^2\omega_2^2 + 72v_1^4\omega_{12}\omega_4^2\omega_2^3 - 36v_1^2\omega_4^3\omega_2^3 - 18\omega_{12}c_s^4\omega_4^3\omega_2^2 + 6v_1^2\omega_{12}^2\omega_4^3\omega_2^2 - 12\omega_{12}^2c_s^4\omega_4\omega_2^3 - 90v_1^4\omega_{12}^2\omega_4\omega_2^3 - 12\omega_{12}c_s^2\omega_4^2\omega_2^2 - 36v_1^4\omega_4^2\omega_2^3 + 198v_1^2\omega_{12}c_s^2\omega_4^2\omega_2^3 + 36v_1^2\omega_{12}c_s^2\omega_4^3\omega_2 - 39v_1^4\omega_{12}\omega_4^3\omega_2^3 - 306v_1^2\omega_{12}^2c_s^2\omega_4\omega_2^3 + 12\omega_{12}^2c_s^2\omega_4\omega_2^2 + 54v_1^2\omega_{12}c_s^2\omega_4^3\omega_2^2 - 36v_1^4\omega_4^3\omega_2^2 - 6\omega_{12}c_s^2\omega_4^3\omega_2^3 - 6\omega_{12}c_s^4\omega_4^2\omega_2^3 + 12\omega_{12}c_s^4\omega_4^3\omega_2 + 72v_1^4\omega_{12}^2\omega_2^3 + 12\omega_{12}^2c_s^4\omega_2^3 - 19v_1^2\omega_{12}^2\omega_4^2\omega_2^3 - 99v_1^2\omega_{12}c_s^2\omega_4^3\omega_2^3 + 36v_1^4\omega_4^3\omega_2^3 + 18\omega_{12}c_s^2\omega_4^3\omega_2^2 - 36v_1^2\omega_{12}^2c_s^2\omega_4\omega_2^2 + 12\omega_{12}^2c_s^2\omega_4\omega_2^3 + 252v_1^2\omega_{12}^2c_s^2\omega_2^3 + 36v_1^4\omega_{12}\omega_4^3\omega_2^2 + 36v_1^2\omega_{12}\omega_4\omega_2^3 + 12\omega_{12}c_s^4\omega_4^2\omega_2^2 + 36v_1^2\omega_4^2\omega_2^3 + 6\omega_{12}^2c_s^2\omega_4^3\omega_2 - \omega_{12}^2c_s^2\omega_4^2\omega_2^3 + 4v_1^4\omega_{12}^2\omega_4^3\omega_2^3 + 18v_1^2\omega_{12}^2c_s^2\omega_4^2\omega_2^2 - 108v_1^2c_s^2\omega_4^3\omega_2^2 - 72v_1^2\omega_{12}\omega_4^2\omega_2^3 - \omega_{12}^2c_s^4\omega_4^3\omega_2^3 + 12\omega_{12}^2c_s^4\omega_4^3 - 6\omega_{12}^2c_s^2\omega_4^2\omega_2^2 + 60v_1^2\omega_{12}^2c_s^2\omega_4^2\omega_2^3 - 6v_1^4\omega_{12}^2\omega_4^3\omega_2^2 - 18v_1^2\omega_{12}^2c_s^2\omega_4^3\omega_2 + 90v_1^2\omega_{12}^2\omega_4\omega_2^3 + 108v_1^2c_s^2\omega_4^3\omega_2^3 + 13\omega_{12}^2c_s^4\omega_4^3\omega_2^2 + \omega_{12}^2c_s^4\omega_4^2\omega_2^3 + 39v_1^2\omega_{12}\omega_4^3\omega_2^3 - 24\omega_{12}^2c_s^4\omega_4^3\omega_2 + 19v_1^4\omega_{12}^2\omega_4^2\omega_2^3 - 3v_1^2\omega_{12}^2c_s^2\omega_4^3\omega_2^2 - 108v_1^2\omega_{12}c_s^2\omega_4\omega_2^3 - 36v_1^2\omega_{12}\omega_4^3\omega_2^2 + 6\omega_{12}^2c_s^4\omega_4^2\omega_2^2 - 108v_1^2c_s^2\omega_4^2\omega_2^3 + 12v_1^2\omega_{12}^2c_s^2\omega_4^3\omega_2^3 - 5\omega_{12}^2c_s^2\omega_4^3\omega_2^2 - 12\omega_{12}^2c_s^2\omega_2^3 - 36v_1^4\omega_{12}\omega_4\omega_2^3$$

$$C_{15} = 12\omega_1^3\omega_2^2 + 12\omega_3\omega_1^2\omega_2^2 - 2\omega_3\omega_{13}\omega_1^2\omega_2^2 + 24\omega_3\omega_1^3\omega_2 - 24\omega_3\omega_{13}\omega_2^2 - 12\omega_3\omega_1^3\omega_2^2 - 12\omega_1^2\omega_2^2 - 6\omega_3\omega_{13}\omega_1^2\omega_2 + 12\omega_{13}\omega_1\omega_2^2 - 12\omega_1^3\omega_2 - 12\omega_3\omega_1^2\omega_2 - \omega_3\omega_{13}\omega_1^3\omega_2^2 - 6\omega_{13}\omega_1^2\omega_2^2 + 12\omega_{13}\omega_1^3 - 6\omega_{13}\omega_1^3\omega_2 + 12\omega_3\omega_{13}\omega_1\omega_2 + 24\omega_3\omega_{13}\omega_1\omega_2^2 - 2\omega_{13}\omega_1^3\omega_2^2 - 12\omega_3\omega_1^3$$

$$C_{16} = -18\omega_{12}\omega_4^3\omega_2 + 6v_1^2\omega_{12}^2\omega_4^2\omega_2 + 18\omega_{12}^2\omega_4\omega_2^2 + 36c_s^2\omega_4^3\omega_2^2 + 12v_1^2\omega_4^3\omega_2^2 + 54\omega_{12}c_s^2\omega_4^3\omega_2 - 36\omega_{12}^2c_s^2\omega_4^2 + 12\omega_4^2\omega_2^2 - 6\omega_{12}\omega_4^2\omega_2^2 + v_1^2\omega_{12}^2\omega_4^3\omega_2^2 + 12\omega_4^3\omega_2 + 36\omega_{12}^2c_s^2\omega_4^3 - 12v_1^2\omega_{12}\omega_4^3 + 18\omega_{12}c_s^2\omega_4^2\omega_2^2 + 12v_1^2\omega_{12}^2\omega_2^2 - 12\omega_4^3\omega_2^2 - 54\omega_{12}^2c_s^2\omega_4\omega_2^2 + 36\omega_{12}c_s^2\omega_4^2\omega_2 - 12v_1^2\omega_4^2\omega_2^2 - 12\omega_{12}\omega_4^2\omega_2 - 12v_1^2\omega_{12}^2\omega_4^3\omega_2 - 36c_s^2\omega_4^2\omega_2^2 - 18\omega_{12}c_s^2\omega_4^3\omega_2^2 + 12\omega_{12}\omega_4^3 + 6\omega_{12}\omega_4^3\omega_2^2 + 4v_1^2\omega_{12}^2\omega_4^2\omega_2^2 - 12\omega_{12}^2\omega_2^2 - 36c_s^2\omega_4^3\omega_2 - 12v_1^2\omega_4^3\omega_2 - 40\omega_{12}^2c_s^2\omega_4^3\omega_2 - 12\omega_{12}^2\omega_4^3 - 18v_1^2\omega_{12}^2\omega_4\omega_2^2 + 18v_1^2\omega_{12}\omega_4^3\omega_2 - 6\omega_{12}^2\omega_4^2\omega_2 + 12\omega_{12}^2c_s^2\omega_4^2\omega_2^2 + 12\omega_{12}^2\omega_4^2 + 6v_1^2\omega_{12}\omega_4^2\omega_2^2 - \omega_{12}^2\omega_4^3\omega_2^2 + 12v_1^2\omega_{12}\omega_4^2\omega_2 + 12\omega_{12}^2\omega_4^3\omega_2 + 18\omega_{12}^2c_s^2\omega_4^2\omega_2 + 36\omega_{12}^2c_s^2\omega_2^2 + 12v_1^2\omega_{12}^2\omega_4^3 - 6v_1^2\omega_{12}\omega_4^3\omega_2^2 - 4\omega_{12}^2\omega_4^2\omega_2^2 - 12v_1^2\omega_{12}^2\omega_4^2 + 5\omega_{12}^2c_s^2\omega_4^3\omega_2^2 - 36\omega_{12}c_s^2\omega_4^3$$

$$C_{17} = 36v_1^2\omega_2^3 + 12c_s^2\omega_2^3 - \omega_{12}c_s^2\omega_4^2\omega_2^3 - 12\omega_{12}c_s^2\omega_2^2 + 24\omega_4^2\omega_2^2 + 36v_1^2\omega_4^2\omega_2 - 36v_1^2\omega_{12}\omega_4\omega_2 + 12c_s^2\omega_4^2\omega_2 - 12\omega_4^2\omega_2^3 - 4\omega_{12}c_s^2\omega_4^2\omega_2^2 + 18\omega_{12}c_s^2\omega_4^2\omega_2 - 72v_1^2\omega_4^2\omega_2^2 + 36v_1^2\omega_{12}\omega_4\omega_2^2 - 24c_s^2\omega_4^2\omega_2^2 - 12\omega_4^2\omega_2 + 12c_s^2\omega_4^2\omega_2^3 + 36v_1^2\omega_4^2\omega_2^3 + 12\omega_{12}\omega_2^2 - 24c_s^2\omega_4\omega_2^3 - 72v_1^2\omega_4\omega_2^3 - 12\omega_2^3 - 12\omega_{12}c_s^2\omega_4\omega_2 + 72v_1^2\omega_4\omega_2^2 + 24c_s^2\omega_4\omega_2^2 + 12\omega_{12}\omega_4\omega_2 - 12\omega_{12}\omega_4\omega_2^2 + 24\omega_4\omega_2^3 - 12\omega_{12}c_s^2\omega_4^2 - 36v_1^2\omega_{12}\omega_2^2 + 12\omega_{12}c_s^2\omega_4\omega_2^2 - 24\omega_4\omega_2^2$$

$$C_{18} = -\omega_3\omega_{13}\omega_1^2\omega_2^3 - 12\omega_3\omega_2^3 + 12\omega_3\omega_1^2\omega_2^2 - 2\omega_3\omega_{13}\omega_1^2\omega_2^2 - 12\omega_3\omega_1^2\omega_2^3 + 12\omega_{13}\omega_2^3 - 12\omega_1^2\omega_2^2 - 6\omega_{13}\omega_1\omega_2^3 + 24\omega_3\omega_{13}\omega_1^2\omega_2 + 12\omega_1^2\omega_2^3 - 12\omega_1\omega_2^3 - 6\omega_{13}\omega_1^2\omega_2^2 - 2\omega_{13}\omega_1^2\omega_2^3 + 12\omega_3\omega_{13}\omega_1\omega_2 - 6\omega_3\omega_{13}\omega_1\omega_2^2 + 24\omega_3\omega_1\omega_2^3 - 24\omega_3\omega_{13}\omega_1^2 + 12\omega_{13}\omega_1^2\omega_2 - 12\omega_3\omega_1\omega_2^2$$

$$C_{19} = 12\omega_6\omega_2 + 6\omega_8\omega_2^2 - \omega_6\omega_8^2\omega_2^2 - 36\omega_6c_s^2\omega_8 - 12v_3^2\omega_6\omega_8 - 36\omega_6c_s^2\omega_8^2\omega_2 + 6v_3^2\omega_8^2\omega_2 + 36c_s^2\omega_8\omega_2 - 12v_3^2\omega_6\omega_8^2\omega_2 + 12\omega_8^2 + v_3^2\omega_8^2\omega_2^2 - 18c_s^2\omega_8\omega_2^2 + v_3^2\omega_6\omega_8^2\omega_2^2 + 3\omega_6c_s^2\omega_8^2\omega_2^2 + 12\omega_6\omega_8^2\omega_2 + 36\omega_6c_s^2\omega_8^2 + 12v_3^2\omega_6\omega_8^2 - 6\omega_6\omega_2^2 - 12\omega_8\omega_2 - 18\omega_6\omega_8\omega_2 - 6\omega_8^2\omega_2 - 36c_s^2\omega_8^2 - 6v_3^2\omega_8\omega_2^2 - 36\omega_6c_s^2\omega_2 - 3v_3^2\omega_6\omega_8\omega_2^2 - 12v_3^2\omega_6\omega_2 + 3c_s^2\omega_8^2\omega_2^2 + 12\omega_6\omega_8 - 9\omega_6c_s^2\omega_8\omega_2^2 - 12\omega_6\omega_8^2 + 54\omega_6c_s^2\omega_8\omega_2 + 18\omega_6c_s^2\omega_2^2 + 12v_3^2\omega_8\omega_2 + 6v_3^2\omega_6\omega_2^2 + 18v_3^2\omega_6\omega_8\omega_2 + 18c_s^2\omega_8^2\omega_2 - \omega_8^2\omega_2^2 - 12v_3^2\omega_8^2 + 3\omega_6\omega_8\omega_2^2$$

$$C_{20} = -12\omega_6\omega_2 - 6c_s^2\omega_2^3 - 6\omega_8\omega_2^2 - 12\omega_6c_s^2\omega_8 - \omega_8\omega_2^3 + 12c_s^2\omega_2^2 - 12c_s^2\omega_8\omega_2 + 6c_s^2\omega_8\omega_2^2 - 6\omega_6\omega_2^3 + 36v_3^2\omega_2^2 + c_s^2\omega_8\omega_2^3 - 18v_3^2\omega_2^3 + 18\omega_6\omega_2^2 + 12\omega_8\omega_2 - 12\omega_2^2 + 3v_3^2\omega_8\omega_2^3 - \omega_6c_s^2\omega_8\omega_2^3 + 18v_3^2\omega_8\omega_2^2 + 12\omega_6c_s^2\omega_2 + 6\omega_2^3 - 3v_3^2\omega_6\omega_8\omega_2^2 + 36v_3^2\omega_6\omega_2 - 5\omega_6c_s^2\omega_8\omega_2^2 + 18\omega_6c_s^2\omega_8\omega_2 - 18\omega_6c_s^2\omega_2^2 - 36v_3^2\omega_8\omega_2 - 54v_3^2\omega_6\omega_2^2 + 18v_3^2\omega_6\omega_2^3 + \omega_6\omega_8\omega_2^2 + 6\omega_6c_s^2\omega_2^3$$

$$C_{21} = -12v_3^4\omega_8^2\omega_2^2 - 24c_s^4\omega_8\omega_2^2 + 144v_3^2c_s^2\omega_8\omega_2^2 + 6c_s^4\omega_8\omega_2^3 + 3v_3^4\omega_8^2\omega_2^3 - 24c_s^2\omega_8\omega_2 - 72v_3^2c_s^2\omega_8\omega_2^3 + 24c_s^4\omega_8^2 + 12v_3^2\omega_8^2\omega_2^2 + 24c_s^2\omega_8\omega_2^2 + 72v_3^2\omega_2^2 - 6c_s^2\omega_8\omega_2^3 + 72v_3^2c_s^2\omega_8\omega_2 - 3v_3^2\omega_8^2\omega_2^3 - 36v_3^2\omega_2^3 + 24c_s^4\omega_8\omega_2 - 36v_3^2c_s^2\omega_8^2\omega_2 + c_s^2\omega_8^2\omega_2^3 - 216v_3^2c_s^2\omega_2^2 + 30v_3^2\omega_8\omega_2^3 - 48c_s^4\omega_8^2\omega_2 - 72v_3^2\omega_8\omega_2^2 + 108v_3^2c_s^2\omega_2^3 - 8c_s^2\omega_8^2\omega_2^2 - 3c_s^4\omega_8^2\omega_2^3 - 30v_3^4\omega_8\omega_2^3 + 36v_3^4\omega_2^3 + 6v_3^2c_s^2\omega_8^2\omega_2^3 + 12c_s^2\omega_8^2\omega_2 + 72v_3^4\omega_8\omega_2^2 + 24c_s^4\omega_8^2\omega_2^2 - 12v_3^2c_s^2\omega_8^2\omega_2^2 - 72v_3^4\omega_2^2$$

2.6.4 Conservation of momentum: ρv_2

attached text file: `output_d3q27_nse_culbm1_symbolic_pde_02.txt`

$$v_2\frac{\partial\rho}{\partial t} + \rho\frac{\partial v_2}{\partial t} + \frac{v_2v_1\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_1} + \frac{v_2\delta_l\rho}{\delta_t}\frac{\partial v_1}{\partial x_1} + \frac{v_1\delta_l\rho}{\delta_t}\frac{\partial v_2}{\partial x_1} + (v_2^2+c_s^2)\frac{\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_2} + \frac{2v_2\delta_l\rho}{\delta_t}\frac{\partial v_2}{\partial x_2} + \frac{v_2v_3\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_3} + \frac{v_3\delta_l\rho}{\delta_t}\frac{\partial v_2}{\partial x_3} +$$
$$\frac{v_2\delta_l\rho}{\delta_t}\frac{\partial v_3}{\partial x_3} + (-2+\omega_1)\frac{c_s^2\delta_l^2}{2\delta_t\omega_1}\frac{\partial\rho}{\partial x_1}\frac{\partial v_2}{\partial x_1} + (-2+\omega_1)\frac{c_s^2\delta_l^2}{2\delta_t\omega_1}\frac{\partial\rho}{\partial x_1}\frac{\partial v_1}{\partial x_2} +$$
$$(-2-3v_2^2\omega_5-2c_s^2\omega_5+6v_2^2+\omega_5+4c_s^2)\frac{\delta_l^2}{\delta_t\omega_5}\frac{\partial\rho}{\partial x_2}\frac{\partial v_2}{\partial x_2} + (2-\omega_5)\frac{3v_2\delta_l^2\rho}{\delta_t\omega_5}\left(\frac{\partial v_2}{\partial x_2}\right)^2 + (-2+\omega_3)\frac{c_s^2\delta_l^2}{2\omega_3\delta_t}\frac{\partial\rho}{\partial x_3}\frac{\partial v_3}{\partial x_2} +$$
$$(-2+\omega_3)\frac{c_s^2\delta_l^2}{2\omega_3\delta_t}\frac{\partial\rho}{\partial x_3}\frac{\partial v_2}{\partial x_3} + (-2+\omega_1)\frac{c_s^2\delta_l^2\rho}{2\delta_t\omega_1}\frac{\partial^2 v_2}{\partial x_1^2} + (-2+\omega_1)\frac{c_s^2\delta_l^2\rho}{2\delta_t\omega_1}\frac{\partial^2 v_1}{\partial x_1\partial x_2} +$$
$$(-2-v_2^2\omega_5-3c_s^2\omega_5+2v_2^2+\omega_5+6c_s^2)\frac{v_2\delta_l^2}{2\delta_t\omega_5}\frac{\partial^2\rho}{\partial x_2^2} + (-2-3v_2^2\omega_5-c_s^2\omega_5+6v_2^2+\omega_5+2c_s^2)\frac{\delta_l^2\rho}{2\delta_t\omega_5}\frac{\partial^2 v_2}{\partial x_2^2} +$$
$$(-2+\omega_3)\frac{c_s^2\delta_l^2\rho}{2\omega_3\delta_t}\frac{\partial^2 v_3}{\partial x_2\partial x_3} + (-2+\omega_3)\frac{c_s^2\delta_l^2\rho}{2\omega_3\delta_t}\frac{\partial^2 v_2}{\partial x_3^2} + (-1+v_1^2+3c_s^2)\frac{v_2v_1\delta_l^3}{12\delta_t}\frac{\partial^3\rho}{\partial x_1^3} + (-1+3v_1^2+c_s^2)\frac{v_2\delta_l^3\rho}{12\delta_t}\frac{\partial^3 v_1}{\partial x_1^3} +$$
$$C_1\frac{v_1\delta_l^3\rho}{6\omega_9\delta_t\omega_1}\frac{\partial^3 v_2}{\partial x_1^3} + (-12-\omega_1^2+12\omega_1)\frac{c_s^4\delta_l^3}{6\delta_t\omega_1^2}\frac{\partial^3\rho}{\partial x_1^2\partial x_2} - \frac{v_2c_s^2\delta_l^3\rho}{6\delta_t}\frac{\partial^3 v_2}{\partial x_1^2\partial x_2} + C_2\frac{v_2\delta_l^3\rho}{12\delta_t\omega_7\omega_1\omega_5^2}\frac{\partial^3 v_1}{\partial x_1\partial x_2^2} + C_3\frac{\delta_l^3}{12\delta_t\omega_5^2}\frac{\partial^3\rho}{\partial x_2^3} +$$
$$(-24-60v_2^2\omega_5-36c_s^2\omega_5+60v_2^2+5c_s^2\omega_5^2+11v_2^2\omega_5^2+24\omega_5+36c_s^2-4\omega_5^2)\frac{v_2\delta_l^3\rho}{6\delta_t\omega_5^2}\frac{\partial^3 v_2}{\partial x_2^3} - \frac{v_2c_s^2\delta_l^3\rho}{6\delta_t}\frac{\partial^3 v_3}{\partial x_1^2\partial x_3} +$$
$$C_4\frac{v_2\delta_l^3\rho}{12\omega_3\delta_t\omega_{11}\omega_5^2}\frac{\partial^3 v_3}{\partial x_2^2\partial x_3} - \frac{v_2c_s^2\delta_l^3\rho}{6\delta_t}\frac{\partial^3 v_1}{\partial x_1\partial x_3^2} + (-12-\omega_3^2+12\omega_3)\frac{c_s^4\delta_l^3}{6\omega_3^2\delta_t}\frac{\partial^3\rho}{\partial x_2\partial x_3^2} - \frac{v_2c_s^2\delta_l^3\rho}{6\delta_t}\frac{\partial^3 v_2}{\partial x_2\partial x_3^2} +$$

$$
\begin{aligned}
&(-1+v_3^2+3c_s^2)\frac{v_2v_3\delta_l^3}{12\delta_t}\frac{\partial^3\rho}{\partial x_3^3} + C_5\frac{v_3\delta_l^3\rho}{6\omega_3\delta_t\omega_{10}}\frac{\partial^3 v_2}{\partial x_3^3} + (-1+3v_3^2+c_s^2)\frac{v_2\delta_l^3\rho}{12\delta_t}\frac{\partial^3 v_3}{\partial x_3^3} + \\
&(2c_s^4-3v_1^4\omega_4-c_s^4\omega_4-6v_1^2+24v_1^2c_s^2+6v_1^4+3v_1^2\omega_4+c_s^2\omega_4-2c_s^2-12v_1^2c_s^2\omega_4)\frac{v_2\delta_l^4}{24\delta_t\omega_4}\frac{\partial^4\rho}{\partial x_1^4} + \\
&(-4+10v_1^2+2\omega_4-5v_1^2\omega_4-3c_s^2\omega_4+6c_s^2)\frac{v_2v_1\delta_l^4\rho}{12\delta_t\omega_4}\frac{\partial^4 v_1}{\partial x_1^4} + C_6\frac{\delta_l^4\rho}{24\omega_9^2\delta_t\omega_1^3}\frac{\partial^4 v_2}{\partial x_1^4} + C_7\frac{v_1c_s^2\delta_l^4}{12\omega_9^2\delta_t\omega_4\omega_1^2}\frac{\partial^4\rho}{\partial x_1^3\partial x_2} + \\
&C_8\frac{c_s^2\delta_l^4\rho}{12\omega_9\delta_t\omega_4\omega_1^3}\frac{\partial^4 v_1}{\partial x_1^3\partial x_2} + (-\omega_9+3\omega_9c_s^2\omega_4+v_1^2\omega_9\omega_4-\omega_9\omega_4+3\omega_4+v_1^2\omega_9-3v_1^2\omega_4-9c_s^2\omega_4+3\omega_9c_s^2)\frac{v_2v_1\delta_l^4\rho}{12\omega_9\delta_t\omega_4}\frac{\partial^4 v_2}{\partial x_1^3\partial x_2} \\
&+ C_9\frac{v_2c_s^2\delta_l^4}{12\delta_t\omega_7^2\omega_1^2\omega_5^3}\frac{\partial^4\rho}{\partial x_1^2\partial x_2^2} + C_{10}\frac{c_s^2\delta_l^4\rho}{12\delta_t\omega_7\omega_1^3\omega_5^2}\frac{\partial^4 v_2}{\partial x_1^2\partial x_2^2} + C_{11}\frac{\delta_l^4\rho}{12\delta_t\omega_7^2\omega_1^3\omega_5^3}\frac{\partial^4 v_1}{\partial x_1\partial x_2^3} + C_{12}\frac{v_2\delta_l^4}{12\delta_t\omega_5^3}\frac{\partial^4\rho}{\partial x_2^4} + C_{13}\frac{\delta_l^4\rho}{12\delta_t\omega_5^3}\frac{\partial^4 v_2}{\partial x_2^4} + \\
&(-\omega_{12}-\omega_{12}\omega_4+v_1^2\omega_{12}\omega_4+3\omega_4-3v_1^2\omega_4-9c_s^2\omega_4+3\omega_{12}c_s^2\omega_4+v_1^2\omega_{12}+3\omega_{12}c_s^2)\frac{v_2v_1\delta_l^4\rho}{12\omega_{12}\delta_t\omega_4}\frac{\partial^4 v_3}{\partial x_1^3\partial x_3} + \\
&C_{14}\frac{c_s^4\delta_l^4\rho}{12\omega_3^2\delta_t\omega_{13}\omega_1^3\omega_2}\frac{\partial^4 v_3}{\partial x_1^2\partial x_2\partial x_3} + C_{15}\frac{\delta_l^4\rho}{12\omega_3^3\delta_t\omega_{11}^2\omega_5^3}\frac{\partial^4 v_3}{\partial x_2^3\partial x_3} + (-2+\omega_2)\frac{v_2c_s^4\delta_l^4}{6\delta_t\omega_2}\frac{\partial^4\rho}{\partial x_1^2\partial x_2^2} + \\
&(-\omega_3^2\omega_1^2-\omega_3^2+2\omega_3^2\omega_1+\omega_3\omega_{13}-\omega_1^2-\omega_3\omega_{13}\omega_1-2\omega_3\omega_1+2\omega_3\omega_1^2+\omega_{13}\omega_1)\frac{c_s^4\delta_l^4\rho}{\omega_3^2\delta_t\omega_{13}\omega_1^2}\frac{\partial^4 v_2}{\partial x_1^2\partial x_3^2} + \\
&C_{16}\frac{c_s^4\delta_l^4\rho}{12\omega_3^3\delta_t\omega_{13}\omega_1^2\omega_2}\frac{\partial^4 v_1}{\partial x_1\partial x_2\partial x_3^2} + C_{17}\frac{v_2c_s^2\delta_l^4}{12\omega_3^2\delta_t\omega_{11}^2\omega_5^3}\frac{\partial^4\rho}{\partial x_2^2\partial x_3^2} + C_{18}\frac{c_s^2\delta_l^4\rho}{12\omega_3^3\delta_t\omega_{11}\omega_5^2}\frac{\partial^4 v_2}{\partial x_2^2\partial x_3^2} + \\
&(3\omega_6c_s^2\omega_8+v_3^2\omega_6\omega_8+3\omega_6-9\omega_6c_s^2+v_3^2\omega_8-3v_3^2\omega_6-\omega_6\omega_8-\omega_8+3c_s^2\omega_8)\frac{v_2v_3\delta_l^4\rho}{12\omega_6\delta_t\omega_8}\frac{\partial^4 v_1}{\partial x_1\partial x_3^3} + C_{19}\frac{v_3c_s^2\delta_l^4}{12\omega_6\omega_3^2\delta_t\omega_{10}^2}\frac{\partial^4\rho}{\partial x_2\partial x_3^3} \\
&+ (3\omega_6-9\omega_6c_s^2+3c_s^2\omega_{10}+v_3^2\omega_{10}-\omega_{10}-\omega_6\omega_{10}-3v_3^2\omega_6+3\omega_6c_s^2\omega_{10}+v_3^2\omega_6\omega_{10})\frac{v_2v_3\delta_l^4\rho}{12\omega_6\delta_t\omega_{10}}\frac{\partial^4 v_2}{\partial x_2\partial x_3^3} + \\
&C_{20}\frac{c_s^2\delta_l^4\rho}{12\omega_6\omega_3^3\delta_t\omega_{10}}\frac{\partial^4 v_3}{\partial x_2\partial x_3^3} + (-3v_3^4\omega_6+24v_3^2c_s^2+2c_s^4+\omega_6c_s^2-6v_3^2-12v_3^2\omega_6c_s^2+3v_3^2\omega_6+6v_3^4-2c_s^2-\omega_6c_s^4)\frac{v_2\delta_l^4}{24\omega_6\delta_t}\frac{\partial^4\rho}{\partial x_3^4} \\
&+ C_{21}\frac{\delta_l^4\rho}{24\omega_3^3\delta_t\omega_{10}^2}\frac{\partial^4 v_2}{\partial x_3^4} + (-4+2\omega_6-3\omega_6c_s^2+10v_3^2-5v_3^2\omega_6+6c_s^2)\frac{v_2v_3\delta_l^4\rho}{12\omega_6\delta_t}\frac{\partial^4 v_3}{\partial x_3^4} = 0,
\end{aligned}
$$

where:

$$C_1 = 6-3\omega_9-v_1^2\omega_9\omega_1-3\omega_9c_s^2\omega_1+\omega_9\omega_1-6v_1^2+3v_1^2\omega_9-3\omega_1+9\omega_9c_s^2+3v_1^2\omega_1+9c_s^2\omega_1-18c_s^2$$

$$C_2 = 18c_s^2\omega_7\omega_5^2-11c_s^2\omega_7\omega_1\omega_5^2-36c_s^2\omega_5^2-18c_s^2\omega_7\omega_1\omega_5-6\omega_7\omega_5^2+6v_2^2\omega_7\omega_5^2-12v_2^2\omega_5^2+36c_s^2\omega_1\omega_5^2-12v_2^2\omega_1\omega_5+12v_2^2\omega_7\omega_1-12\omega_7\omega_1+3\omega_7\omega_1\omega_5^2+12\omega_1\omega_5-6v_2^2\omega_7\omega_1\omega_5-12\omega_1\omega_5^2+6\omega_7\omega_1\omega_5-3v_2^2\omega_7\omega_1\omega_5^2+36c_s^2\omega_7\omega_1+12\omega_5^2-36c_s^2\omega_1\omega_5+12v_2^2\omega_1\omega_5^2$$

$$C_3 = -144v_2^2c_s^2\omega_5+36v_2^2\omega_5+12c_s^4+12c_s^2\omega_5+144v_2^2c_s^2-36v_2^2-c_s^2\omega_5^2+24v_2^2c_s^2\omega_5^2-7v_2^2\omega_5^2+36v_2^4-12c_s^4\omega_5-36v_2^4\omega_5+7v_2^4\omega_5^2-12c_s^2+c_s^4\omega_5^2$$

$$C_4 = -12v_2^2\omega_3\omega_5-3v_2^2\omega_3\omega_{11}\omega_5^2+6\omega_3\omega_{11}\omega_5+36\omega_3c_s^2\omega_5^2+6v_2^2\omega_{11}\omega_5^2-6\omega_{11}\omega_5^2+12\omega_3\omega_5-36c_s^2\omega_5^2-12\omega_3\omega_5^2-36\omega_3c_s^2\omega_5+18c_s^2\omega_{11}\omega_5^2+12v_2^2\omega_3\omega_5^2-6v_2^2\omega_3\omega_{11}\omega_5-12v_2^2\omega_5^2+3\omega_3\omega_{11}\omega_5^2+36\omega_3c_s^2\omega_{11}-18\omega_3c_s^2\omega_{11}\omega_5-11\omega_3c_s^2\omega_{11}\omega_5^2-12\omega_3\omega_{11}+12\omega_5^2+12v_2^2\omega_3\omega_{11}$$

$$C_5 = 6+\omega_3\omega_{10}+9c_s^2\omega_{10}-3\omega_3+3v_3^2\omega_{10}-3\omega_{10}-6v_3^2+9\omega_3c_s^2-3\omega_3c_s^2\omega_{10}-v_3^2\omega_3\omega_{10}+3v_3^2\omega_3-18c_s^2$$

$$C_6 = -3\omega_9^2c_s^4\omega_1^3-30v_1^4\omega_9\omega_1^3-12v_1^2\omega_9^2c_s^2\omega_1^2+72v_1^4\omega_9\omega_1^2+24\omega_9^2c_s^4\omega_1^2-24\omega_9c_s^2\omega_1+6v_1^2\omega_9^2c_s^2\omega_1^3+24\omega_9c_s^2\omega_1^2+36v_1^4\omega_1^3+30v_1^2\omega_9\omega_1^3-48\omega_9^2c_s^4\omega_1-72v_1^2\omega_9\omega_1^2-72v_1^4\omega_1^2-36v_1^2\omega_9^2c_s^2\omega_1-6\omega_9c_s^2\omega_1^3-216v_1^2c_s^2\omega_1^2+12v_1^2\omega_9^2\omega_1^2-8\omega_9^2c_s^2\omega_1^2+24\omega_9c_s^4\omega_1+\omega_9^2c_s^2\omega_1^3+72v_1^2\omega_9c_s^2\omega_1+108v_1^2c_s^2\omega_1^3-3v_1^2\omega_9^2\omega_1^3+24\omega_9^2c_s^4-12v_1^4\omega_9^2\omega_1^2+72v_1^2\omega_1^2+6\omega_9c_s^4\omega_1^3+144v_1^2\omega_9c_s^2\omega_1^2-24\omega_9c_s^4\omega_1^2-36v_1^2\omega_1^3+3v_1^4\omega_9^2\omega_1^3-72v_1^2\omega_9c_s^2\omega_1^3+12\omega_9^2c_s^2\omega_1$$

$$C_7 = -3v_1^2\omega_9\omega_4\omega_1^2+12v_1^2\omega_9\omega_1-6\omega_4\omega_1^2-36\omega_9c_s^2\omega_4-12v_1^2\omega_4\omega_1+12\omega_9^2\omega_4\omega_1+6\omega_9\omega_1^2-36c_s^2\omega_4\omega_1+36\omega_9c_s^2\omega_1+54\omega_9c_s^2\omega_4\omega_1-12v_1^2\omega_9\omega_4-18\omega_9c_s^2\omega_1^2-9\omega_9c_s^2\omega_4\omega_1^2+6v_1^2\omega_4\omega_1^2-12\omega_9\omega_1-\omega_9^2\omega_4\omega_1^2+18c_s^2\omega_4\omega_1^2+12\omega_9^2-6v_1^2\omega_9\omega_1^2+12\omega_4\omega_1+18v_1^2\omega_9\omega_4\omega_1+12\omega_9\omega_4-36\omega_9^2c_s^2+v_1^2\omega_9^2\omega_1^2+3\omega_9^2c_s^2\omega_1^2-12\omega_9^2\omega_4+3\omega_9\omega_4\omega_1^2-36\omega_9^2c_s^2\omega_4\omega_1-6\omega_9^2\omega_1-12v_1^2\omega_9^2\omega_4\omega_1-\omega_9^2\omega_1^2+v_1^2\omega_9^2\omega_4\omega_1^2+36\omega_9^2c_s^2\omega_4+3\omega_9^2c_s^2\omega_4\omega_1^2+12v_1^2\omega_9^2\omega_4-18\omega_9\omega_4\omega_1+6v_1^2\omega_9^2\omega_1-12v_1^2\omega_9^2+18\omega_9^2c_s^2\omega_1$$

$$C_8 = -3v_1^2\omega_9\omega_4\omega_1^2-\omega_9\omega_1^3-36v_1^2\omega_9\omega_1+18\omega_4\omega_1^2-12\omega_9c_s^2\omega_4+36v_1^2\omega_4\omega_1-6\omega_9\omega_1^2+12c_s^2\omega_4\omega_1-12\omega_9c_s^2\omega_1-6\omega_4\omega_1^3+18\omega_9c_s^2\omega_4\omega_1+6\omega_1^3+6\omega_9c_s^2\omega_1^2-5\omega_9c_s^2\omega_4\omega_1^2+3v_1^2\omega_9\omega_1^3-54v_1^2\omega_4\omega_1^2+12\omega_9\omega_1-18c_s^2\omega_4\omega_1^2+18v_1^2\omega_9\omega_1^2-\omega_9c_s^2\omega_4\omega_1^3-12\omega_4\omega_1-12\omega_1^2+\omega_9c_s^2\omega_1^3+6c_s^2\omega_4\omega_1^3+18v_1^2\omega_4\omega_1^3+\omega_9\omega_4\omega_1^2+36v_1^2\omega_1^2+12c_s^2\omega_1^2-6c_s^2\omega_1^3-18v_1^2\omega_1^3$$

$$C_9 = 6v_2^2\omega_7^2\omega_1\omega_5^2-6v_2^2\omega_7\omega_1^2\omega_5^3-12\omega_1^2\omega_5^3+12v_2^2\omega_7^2\omega_1^2+12c_s^2\omega_7^2\omega_1^2\omega_5^2+54c_s^2\omega_7\omega_1\omega_5^3-12v_2^2\omega_1^2\omega_5^2+12\omega_1^2\omega_5^2+6v_2^2\omega_7\omega_1^2\omega_5^2-12v_2^2\omega_7^2\omega_1\omega_5^3+12v_2^2\omega_1^2\omega_5^3-12\omega_7^2\omega_1^2-36c_s^2\omega_7\omega_5^3+36c_s^2\omega_7\omega_1\omega_5^2+5c_s^2\omega_7^2\omega_1^2\omega_5^3+36c_s^2\omega_1^2\omega_5^3-12v_2^2\omega_7\omega_5^3-6\omega_7\omega_1^2\omega_5^2+12\omega_7^2\omega_1\omega_5^3-54c_s^2\omega_7^2\omega_1^2\omega_5-36c_s^2\omega_1^2\omega_5^2+12\omega_7\omega_5^3+36c_s^2\omega_7^2\omega_1^2-6\omega_7^2\omega_1\omega_5^2+6\omega_7\omega_1^2\omega_5^3-12v_2^2\omega_7^2\omega_5^2-12\omega_7^2\omega_5^3-18v_2^2\omega_7^2\omega_1^2\omega_5-18\omega_7\omega_1\omega_5^3-4\omega_7^2\omega_1^2\omega_5^2+12v_2^2\omega_7^2\omega_5^3-36c_s^2\omega_1\omega_5^3-\omega_7^2\omega_1^2\omega_5^3-12\omega_7\omega_1\omega_5^2+12\omega_7^2\omega_5^2+v_2^2\omega_7^2\omega_1^2\omega_5^3+12v_2^2\omega_7\omega_1\omega_5^2+36c_s^2\omega_7^2\omega_5^3-12v_2^2\omega_1\omega_5^3-40c_s^2\omega_7^2\omega_1\omega_5^3+18c_s^2\omega_7\omega_1^2\omega_5^2+18v_2^2\omega_7\omega_1\omega_5^3+4v_2^2\omega_7^2\omega_1^2\omega_5^2+12\omega_1\omega_5^3+18\omega_7^2\omega_1^2\omega_5-18c_s^2\omega_7\omega_1^2\omega_5^3+18c_s^2\omega_7^2\omega_1\omega_5^2-36c_s^2\omega_7^2\omega_5^2$$

$$C_{10} = 24\omega_1^3\omega_5+24c_s^2\omega_1^2\omega_5-12c_s^2\omega_7\omega_5^2-72v_2^2\omega_1^2\omega_5^2+24\omega_1^2\omega_5^2-12\omega_7\omega_1^2\omega_5-72v_2^2\omega_1^3\omega_5+18c_s^2\omega_7\omega_1\omega_5^2+12c_s^2\omega_1^3\omega_5^2-12\omega_1^3+36v_2^2\omega_1^3\omega_5^2-12c_s^2\omega_7\omega_1\omega_5-24c_s^2\omega_1^3\omega_5-24\omega_1^2\omega_5+36v_2^2\omega_7\omega_1^2\omega_5-24c_s^2\omega_1^2\omega_5^2+72v_2^2\omega_1^2\omega_5-12\omega_1^3\omega_5^2+12c_s^2\omega_1\omega_5^2-c_s^2\omega_7\omega_1^3\omega_5^2-12c_s^2\omega_7\omega_1^2+12c_s^2\omega_7\omega_1^2\omega_5-36v_2^2\omega_7\omega_1\omega_5-12\omega_1\omega_5^2+12\omega_7\omega_1\omega_5+12\omega_7\omega_1^2-4c_s^2\omega_7\omega_1^2\omega_5^2+36v_2^2\omega_1^3+12c_s^2\omega_1^3-36v_2^2\omega_7\omega_1^2+36v_2^2\omega_1\omega_5^2$$

$$C_{11} = 36v_2^2\omega_7\omega_1^3\omega_5-108v_2^2c_s^2\omega_7\omega_1^3\omega_5-36v_2^4\omega_1^3\omega_5^2-36v_2^2\omega_7\omega_1^2\omega_5^3+54v_2^2c_s^2\omega_7\omega_1^2\omega_5^3-6c_s^4\omega_7\omega_1^3\omega_5^2-6c_s^2\omega_7^2\omega_1^2\omega_5^2-12c_s^2\omega_7\omega_1\omega_5^3+4v_2^4\omega_7^2\omega_1^3\omega_5^3+12c_s^4\omega_7^2\omega_1^3-72v_2^2\omega_7^2\omega_1^3+252v_2^2c_s^2\omega_7^2\omega_1^3+6c_s^4\omega_7\omega_1^3\omega_5^3+36v_2^2c_s^2\omega_7\omega_1^2\omega_5^2-18v_2^2c_s^2\omega_7^2\omega_1\omega_5^3+36v_2^4\omega_1^3\omega_5^3+36v_2^2\omega_1^2\omega_5^3-$$

$108v_2^2c_s^2\omega_1^2\omega_5^3 + 19v_2^4\omega_7^2\omega_1^3\omega_5^2 + 12c_s^2\omega_7^2\omega_1^3\omega_5 - 5c_s^2\omega_7^2\omega_1^2\omega_5^3 - 6v_2^4\omega_7^2\omega_1^2\omega_5^3 + 36v_2^2\omega_1^3\omega_5^2 - 108v_2^2c_s^2\omega_1^3\omega_5^2 - 90v_2^4\omega_7^2\omega_1^3\omega_5 - c_s^2\omega_7^2\omega_1^3\omega_5^2 - 24c_s^4\omega_7^2\omega_1\omega_5^3 + 12c_s^4\omega_7\omega_1^2\omega_5^2 - 12c_s^2\omega_7^2\omega_1^3 - 99v_2^2c_s^2\omega_7\omega_1^3\omega_5^3 + 39v_2^2\omega_7\omega_1^3\omega_5^3 + 12c_s^2\omega_7^2\omega_1^2\omega_5 + 72v_2^4\omega_7^2\omega_1^3 + 108v_2^2c_s^2\omega_1^3\omega_5^3 - 36v_2^2\omega_1^3\omega_5^3 + 198v_2^2c_s^2\omega_7\omega_1^3\omega_5^2 - 72v_2^2\omega_7\omega_1^3\omega_5^2 - 36v_2^4\omega_1^2\omega_5^3 - 18c_s^4\omega_7\omega_1^2\omega_5^3 + 6c_s^2\omega_7\omega_1^3\omega_5^2 - 36v_2^4\omega_7\omega_1^3\omega_5 + 36v_2^4\omega_7\omega_1^2\omega_5^3 + 12v_2^2c_s^2\omega_7^2\omega_1^3\omega_5^3 - 4v_2^2\omega_7^2\omega_1^3\omega_5^3 - 36v_2^2c_s^2\omega_7^2\omega_1^2\omega_5 + 12c_s^4\omega_7^2\omega_5^3 + 6c_s^4\omega_7^2\omega_1^2\omega_5^2 + 12c_s^4\omega_7\omega_1\omega_5^3 - 6c_s^2\omega_7\omega_1^3\omega_5^3 - 12c_s^4\omega_7^2\omega_1^3\omega_5 + 13c_s^4\omega_7^2\omega_1^2\omega_5^3 + 60v_2^2c_s^2\omega_7^2\omega_1^3\omega_5^2 - 19v_2^2\omega_7^2\omega_1^3\omega_5^2 + c_s^4\omega_7^2\omega_1^3\omega_5^2 + 6v_2^2\omega_7^2\omega_1^2\omega_5^3 - 3v_2^2c_s^2\omega_7^2\omega_1^2\omega_5^3 + 90v_2^2\omega_7^2\omega_1^3\omega_5 - 306v_2^2c_s^2\omega_7^2\omega_1^3\omega_5 - 39v_2^4\omega_7\omega_1^3\omega_5^3 + 6c_s^2\omega_7^2\omega_1\omega_5^3 - 12c_s^2\omega_7\omega_1^2\omega_5^2 + 36v_2^2c_s^2\omega_7\omega_1\omega_5^3 + 18v_2^2c_s^2\omega_7^2\omega_1^2\omega_5^2 - 12c_s^4\omega_7^2\omega_1^2\omega_5 - c_s^4\omega_7^2\omega_1^3\omega_5^3 + 18c_s^2\omega_7\omega_1^2\omega_5^3 + 72v_2^4\omega_7\omega_1^3\omega_5^2$

$C_{12} = 12 - 1008v_2^2c_s^2\omega_5 + 234v_2^2\omega_5 + 144c_s^4 + 198c_s^2\omega_5 + 672v_2^2c_s^2 - 156v_2^2 - 78c_s^2\omega_5^2 + 10v_2^2\omega_5^3 - 34v_2^2c_s^2\omega_5^3 + 6c_s^2\omega_5^3 + 404v_2^2c_s^2\omega_5^2 - 98v_2^2\omega_5^2 + 144v_2^4 - 216c_s^4\omega_5 - 216v_2^4\omega_5 - 5c_s^4\omega_5^3 - \omega_5^3 - 18\omega_5 + 90v_2^4\omega_5^2 - 132c_s^2 + 82c_s^4\omega_5^2 + 8\omega_5^2 - 9v_2^4\omega_5^3$

$C_{13} = 12 - 648v_2^2c_s^2\omega_5 + 378v_2^2\omega_5 + 24c_s^4 + 54c_s^2\omega_5 + 432v_2^2c_s^2 - 252v_2^2 - 22c_s^2\omega_5^2 + 14v_2^2\omega_5^3 - 18v_2^2c_s^2\omega_5^3 + 2c_s^2\omega_5^3 + 252v_2^2c_s^2\omega_5^2 - 154v_2^2\omega_5^2 + 504v_2^4 - 36c_s^4\omega_5 - 756v_2^4\omega_5 - c_s^4\omega_5^3 - \omega_5^3 - 18\omega_5 + 310v_2^4\omega_5^2 - 36c_s^2 + 14c_s^4\omega_5^2 + 8\omega_5^2 - 29v_2^4\omega_5^3$

$C_{14} = 12\omega_3^2\omega_1^3 - 6\omega_3^2\omega_{13}\omega_1^2 - 12\omega_3^2\omega_1^2 + 24\omega_3^2\omega_{13}\omega_1\omega_2 + 24\omega_3\omega_1^3\omega_2 - 2\omega_3^2\omega_{13}\omega_1^3 - 6\omega_3\omega_{13}\omega_1^2\omega_2 + 12\omega_3^2\omega_{13}\omega_1 - 12\omega_1^3\omega_2 - 12\omega_3\omega_1^2\omega_2 - 24\omega_3^2\omega_{13}\omega_2 - \omega_3^2\omega_{13}\omega_1^3\omega_2 + 12\omega_{13}\omega_1^3 + 12\omega_3^2\omega_1^2\omega_2 + 12\omega_3\omega_{13}\omega_1\omega_2 - 2\omega_3^2\omega_{13}\omega_1^2\omega_2 - 12\omega_3\omega_1^3 - 6\omega_3\omega_{13}\omega_1^3 - 12\omega_3^2\omega_1^3\omega_2$

$C_{15} = 6v_2^2\omega_3^2\omega_{11}^2\omega_5^3 + 6\omega_3c_s^2\omega_{11}^2\omega_5^3 + 12v_2^2\omega_3^3c_s^2\omega_{11}^2\omega_5^3 + 36v_2^2\omega_3^3\omega_{11}\omega_5 - 108v_2^2\omega_3^3c_s^2\omega_5^2 + 19v_2^4\omega_3^3\omega_{11}^2\omega_5^2 - 6\omega_3^3c_s^2\omega_{11}\omega_5^3 + 36v_2^2\omega_3c_s^2\omega_{11}\omega_5^3 + 12\omega_3^2c_s^4\omega_{11}\omega_5^2 + 60v_2^2\omega_3^3c_s^2\omega_{11}^2\omega_5^2 - 18\omega_3^2c_s^4\omega_{11}\omega_5^3 - 72v_2^2\omega_3^3\omega_{11}^2 + 6\omega_3^3c_s^2\omega_{11}\omega_5^2 + 12\omega_3^3c_s^4\omega_{11}^2 - 36v_2^2\omega_3^2c_s^2\omega_{11}^2\omega_5 + 4v_2^4\omega_3^3\omega_{11}^2\omega_5^3 + 108v_2^2\omega_3^3c_s^2\omega_5^3 + 18v_2^2\omega_3^2c_s^2\omega_{11}^2\omega_5^2 - 24\omega_3c_s^4\omega_{11}^2\omega_5^3 + 39v_2^2\omega_3^3\omega_{11}\omega_5^3 - 306v_2^2\omega_3^3c_s^2\omega_{11}^2\omega_5 - 12\omega_3^2c_s^2\omega_{11}\omega_5^2 + 6\omega_3^3c_s^4\omega_{11}\omega_5^3 - 90v_2^4\omega_3^3\omega_{11}^2\omega_5 - 3v_2^2\omega_3^2c_s^2\omega_{11}^2\omega_5^3 + 36v_2^4\omega_3^2\omega_{11}\omega_5^3 - 6\omega_3^3c_s^4\omega_{11}\omega_5^2 + 18\omega_3^2c_s^2\omega_{11}\omega_5^3 + 72v_2^4\omega_3^3\omega_{11}^2 - 72v_2^2\omega_3^3\omega_{11}\omega_5^2 + 54v_2^2\omega_3^2c_s^2\omega_{11}\omega_5^3 - 36v_2^4\omega_3^3\omega_{11}\omega_5 - 12\omega_3^2c_s^4\omega_{11}^2\omega_5 - 108v_2^2\omega_3^2c_s^2\omega_5^3 - 36v_2^4\omega_3^3\omega_5^2 - 6v_2^4\omega_3^2\omega_{11}^2\omega_5^3 - 5\omega_3^2c_s^2\omega_{11}^2\omega_5^3 - 12\omega_3^3c_s^2\omega_{11}^2 + \omega_3^3c_s^4\omega_{11}^2\omega_5^2 - 19v_2^2\omega_3^3\omega_{11}^2\omega_5^2 + 12\omega_3^3c_s^2\omega_{11}^2\omega_5 + 36v_2^4\omega_3^3\omega_5^3 + 12\omega_3c_s^4\omega_{11}\omega_5^3 + 36v_2^2\omega_3^2c_s^2\omega_{11}\omega_5^2 - 108v_2^2\omega_3^3c_s^2\omega_{11}\omega_5 - 4v_2^2\omega_3^3\omega_{11}^2\omega_5^3 + 36v_2^2\omega_3^2\omega_5^3 - \omega_3^3c_s^4\omega_{11}^2\omega_5^3 - 6\omega_3^2c_s^2\omega_{11}^2\omega_5^2 + 198v_2^2\omega_3^3c_s^2\omega_{11}\omega_5^2 + 12\omega_3^2c_s^2\omega_{11}^2\omega_5 + 36v_2^2\omega_3^3\omega_5^2 - \omega_3^3c_s^2\omega_{11}^2\omega_5^2 + 13\omega_3^2c_s^4\omega_{11}^2\omega_5^3 - 39v_2^4\omega_3^3\omega_{11}\omega_5^3 - 36v_2^2\omega_3^3\omega_5^3 + 12c_s^4\omega_{11}^2\omega_5^3 - 12\omega_3^3c_s^4\omega_{11}^2\omega_5 - 36v_2^2\omega_3^2\omega_{11}\omega_5^3 + 90v_2^2\omega_3^3\omega_{11}^2\omega_5 - 12\omega_3c_s^2\omega_{11}\omega_5^3 - 99v_2^2\omega_3^3c_s^2\omega_{11}\omega_5^3 + 252v_2^2\omega_3^3c_s^2\omega_{11}^2 + 72v_2^4\omega_3^3\omega_{11}\omega_5^2 + 6\omega_3^2c_s^4\omega_{11}^2\omega_5^2 - 36v_2^4\omega_3^2\omega_5^3 - 18v_2^2\omega_3c_s^2\omega_{11}^2\omega_5^3$

$C_{16} = -12\omega_3^3\omega_1 - 12\omega_3^3\omega_1^2\omega_2 - 6\omega_3^2\omega_{13}\omega_1^2 - 12\omega_3^2\omega_1^2 - 6\omega_3^2\omega_{13}\omega_1\omega_2 - 12\omega_3^2\omega_1\omega_2 + 24\omega_3\omega_{13}\omega_1^2\omega_2 + 12\omega_3^3\omega_1^2 - 2\omega_3^3\omega_{13}\omega_1^2 + 12\omega_3^2\omega_1^2\omega_2 - \omega_3^3\omega_{13}\omega_1^2\omega_2 + 12\omega_3\omega_{13}\omega_1\omega_2 - 2\omega_3^2\omega_{13}\omega_1^2\omega_2 - 6\omega_3^3\omega_{13}\omega_1 + 12\omega_3\omega_{13}\omega_1^2 + 12\omega_3^3\omega_{13} - 12\omega_3^3\omega_2 + 24\omega_3^3\omega_1\omega_2 - 24\omega_{13}\omega_1^2\omega_2$

$C_{17} = v_2^2\omega_3^2\omega_{11}^2\omega_5^3 + 12v_2^2\omega_3\omega_{11}\omega_5^2 + 12\omega_{11}\omega_5^3 - 40\omega_3c_s^2\omega_{11}^2\omega_5^3 + 36\omega_3^2c_s^2\omega_{11}^2 + 18\omega_3^2\omega_{11}^2\omega_5 + 18\omega_3c_s^2\omega_{11}^2\omega_5^2 + 18v_2^2\omega_3\omega_{11}\omega_5^3 + 4v_2^2\omega_3^2\omega_{11}^2\omega_5^2 - 12v_2^2\omega_{11}\omega_5^3 - 36\omega_3c_s^2\omega_5^3 - 36c_s^2\omega_{11}\omega_5^3 - 18\omega_3\omega_{11}\omega_5^3 - 12\omega_3^2\omega_{11}^2 - 4\omega_3^2\omega_{11}^2\omega_5^2 + 18\omega_3^2c_s^2\omega_{11}\omega_5^2 - 18v_2^2\omega_3^2\omega_{11}^2\omega_5 - 12v_2^2\omega_3\omega_5^3 + 12\omega_3\omega_5^3 + 12v_2^2\omega_3^2\omega_{11}^2 - 18\omega_3^2c_s^2\omega_{11}\omega_5^3 - \omega_3^2\omega_{11}^2\omega_5^3 - 12\omega_3\omega_{11}\omega_5^2 - 12\omega_3^2\omega_5^3 - 36c_s^2\omega_{11}^2\omega_5^2 + 5\omega_3^2c_s^2\omega_{11}^2\omega_5^3 - 12v_2^2\omega_3^2\omega_5^2 - 6\omega_3\omega_{11}^2\omega_5^2 + 6\omega_3^2\omega_{11}\omega_5^3 + 36c_s^2\omega_{11}^2\omega_5^3 + 12\omega_3^2\omega_5^2 - 6\omega_3^2\omega_{11}\omega_5^2 + 12\omega_3\omega_{11}^2\omega_5^3 + 12v_2^2\omega_3^2\omega_5^3 + 12\omega_3^2c_s^2\omega_{11}^2\omega_5^2 + 36\omega_3c_s^2\omega_{11}\omega_5^2 + 6v_2^2\omega_3^2\omega_{11}\omega_5^2 + 12\omega_{11}^2\omega_5^2 - 54\omega_3^2c_s^2\omega_{11}^2\omega_5 - 12v_2^2\omega_3\omega_{11}^2\omega_5^3 + 12v_2^2\omega_{11}^2\omega_5^3 - 36\omega_3^2c_s^2\omega_5^2 + 6v_2^2\omega_3\omega_{11}^2\omega_5^2 - 12\omega_{11}^2\omega_5^3 - 6v_2^2\omega_3^2\omega_{11}\omega_5^3 + 54\omega_3c_s^2\omega_{11}\omega_5^3 + 36\omega_3^2c_s^2\omega_5^3 - 12v_2^2\omega_{11}^2\omega_5^2$

$C_{18} = -12\omega_3^3 + 12\omega_3\omega_{11}\omega_5 + 12\omega_3c_s^2\omega_5^2 - 36v_2^2\omega_3^2\omega_{11} - 24\omega_3^3c_s^2\omega_5 + 12\omega_3^2\omega_{11} + 12\omega_3^2c_s^2\omega_{11}\omega_5 - \omega_3^3c_s^2\omega_{11}\omega_5^2 - 12\omega_3\omega_5^2 - 12\omega_3^2c_s^2\omega_{11} - 4\omega_3^2c_s^2\omega_{11}\omega_5^2 + 12\omega_3^3c_s^2\omega_5^2 - 12c_s^2\omega_{11}\omega_5^2 + 36v_2^2\omega_3\omega_5^2 - 36v_2^2\omega_3\omega_{11}\omega_5 + 24\omega_3^3\omega_5 - 72v_2^2\omega_3^2\omega_5^2 + 36v_2^2\omega_3^3 + 24\omega_3^2\omega_5^2 + 24\omega_3^2c_s^2\omega_5 - 12\omega_3c_s^2\omega_{11}\omega_5 + 36v_2^2\omega_3^2\omega_{11}\omega_5 - 72v_2^2\omega_3^3\omega_5 + 18\omega_3c_s^2\omega_{11}\omega_5^2 - 12\omega_3^2\omega_{11}\omega_5 + 12\omega_3^3c_s^2 + 36v_2^2\omega_3^3\omega_5^2 - 24\omega_3^2\omega_5 - 24\omega_3^2c_s^2\omega_5^2 + 72v_2^2\omega_3^2\omega_5 - 12\omega_3^3\omega_5^2$

$C_{19} = -12\omega_6\omega_{10}^2 + 18\omega_3c_s^2\omega_{10}^2 - 12v_3^2\omega_6\omega_3 + v_3^2\omega_6\omega_3^2\omega_{10}^2 + v_3^2\omega_3^2\omega_{10}^2 - 12\omega_3\omega_{10} - 12v_3^2\omega_{10}^2 + 3\omega_6\omega_3^2c_s^2\omega_{10}^2 + 3\omega_6\omega_3^2\omega_{10} - 9\omega_6\omega_3^2c_s^2\omega_{10} - \omega_6\omega_3^2\omega_{10}^2 - 6\omega_3\omega_{10}^2 - 36c_s^2\omega_{10}^2 - 3v_3^2\omega_6\omega_3^2\omega_{10} + 18\omega_6\omega_3^2c_s^2 - 6v_3^2\omega_3^2\omega_{10} + 12\omega_6\omega_{10} + 6v_3^2\omega_6\omega_3^2 + 36\omega_3c_s^2\omega_{10} + 18v_3^2\omega_6\omega_3\omega_{10} + 54\omega_6\omega_3c_s^2\omega_{10} + 12v_3^2\omega_3\omega_{10} - 36\omega_6\omega_3c_s^2 + 12\omega_6\omega_3 + 36\omega_6c_s^2\omega_{10}^2 + 12v_3^2\omega_6\omega_{10}^2 + 12\omega_6\omega_3\omega_{10}^2 - \omega_3^2\omega_{10}^2 - 18\omega_3^2c_s^2\omega_{10} + 6\omega_3^2\omega_{10} + 3\omega_3^2c_s^2\omega_{10}^2 - 36\omega_6c_s^2\omega_{10} - 6\omega_6\omega_3^2 - 18\omega_6\omega_3\omega_{10} - 12v_3^2\omega_6\omega_{10} - 12v_3^2\omega_6\omega_3\omega_{10}^2 + 6v_3^2\omega_3\omega_{10}^2 - 36\omega_6\omega_3c_s^2\omega_{10}^2 + 12\omega_{10}^2$

$C_{20} = \omega_3^3c_s^2\omega_{10} + 6\omega_3^3 + 36v_3^2\omega_6\omega_3 + 12\omega_3\omega_{10} - 12\omega_3^2 + 6\omega_6\omega_3^3c_s^2 + 3v_3^2\omega_3^3\omega_{10} + \omega_6\omega_3^2\omega_{10} - 5\omega_6\omega_3^2c_s^2\omega_{10} + 18v_3^2\omega_6\omega_3^3 - 3v_3^2\omega_6\omega_3^2\omega_{10} - 18\omega_6\omega_3^2c_s^2 + 18v_3^2\omega_3^2\omega_{10} - 54v_3^2\omega_6\omega_3^2 - 12\omega_3c_s^2\omega_{10} + 18\omega_6\omega_3c_s^2\omega_{10} - 36v_3^2\omega_3\omega_{10} + 12\omega_6\omega_3c_s^2 + 12\omega_3^2c_s^2 - \omega_3^3\omega_{10} - 12\omega_6\omega_3 + 6\omega_3^2c_s^2\omega_{10} - 6\omega_3^2\omega_{10} - 6\omega_3^3c_s^2 - 18v_3^2\omega_3^3 - 12\omega_6c_s^2\omega_{10} + 18\omega_6\omega_3^2 - \omega_6\omega_3^3c_s^2\omega_{10} - 6\omega_6\omega_3^3 + 36v_3^2\omega_3^2$

$C_{21} =$
$3v_3^4\omega_3^3\omega_{10}^2 - 6\omega_3^3c_s^2\omega_{10} + 12\omega_3c_s^2\omega_{10}^2 - 24\omega_3^2c_s^4\omega_{10} + 12v_3^2\omega_3^2\omega_{10}^2 + 72v_3^2\omega_3c_s^2\omega_{10} + 72v_3^4\omega_3^2\omega_{10} + 6v_3^2\omega_3^3c_s^2\omega_{10}^2 + 30v_3^2\omega_3^3\omega_{10} - 216v_3^2\omega_3^2c_s^2 - 3v_3^2\omega_3^3\omega_{10}^2 - 36v_3^2\omega_3c_s^2\omega_{10}^2 - 12v_3^4\omega_3^2\omega_{10}^2 - 72v_3^4\omega_3^2 - 72v_3^2\omega_3^3c_s^2\omega_{10} + 24\omega_3^2c_s^4\omega_{10}^2 + 108v_3^2\omega_3^3c_s^2 - 72v_3^2\omega_3^2\omega_{10} + 36v_3^4\omega_3^3 - 30v_3^4\omega_3^3\omega_{10} + \omega_3^3c_s^2\omega_{10}^2 - 24\omega_3c_s^2\omega_{10} - 12v_3^2\omega_3^2c_s^2\omega_{10}^2 + 6\omega_3^3c_s^4\omega_{10} - 48\omega_3c_s^4\omega_{10}^2 + 24\omega_3^2c_s^2\omega_{10} - 8\omega_3^2c_s^2\omega_{10}^2 - 3\omega_3^3c_s^4\omega_{10}^2 - 36v_3^2\omega_3^3 + 24\omega_3c_s^4\omega_{10} + 144v_3^2\omega_3^2c_s^2\omega_{10} + 24c_s^4\omega_{10}^2 + 72v_3^2\omega_3^2$

2.6.5 Conservation of momentum: ρv_3

attached text file: `output_d3q27_nse_culbm1_symbolic_pde_03.txt`

$v_3\frac{\partial\rho}{\partial t} + \rho\frac{\partial v_3}{\partial t} + \frac{v_1v_3\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_1} + \frac{v_3\delta_l\rho}{\delta_t}\frac{\partial v_1}{\partial x_1} + \frac{v_1\delta_l\rho}{\delta_t}\frac{\partial v_3}{\partial x_1} + \frac{v_2v_3\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_2} + \frac{v_3\delta_l\rho}{\delta_t}\frac{\partial v_2}{\partial x_2} + \frac{v_2\delta_l\rho}{\delta_t}\frac{\partial v_3}{\partial x_2} + (v_3^2 + c_s^2)\frac{\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_3} + \frac{2v_3\delta_l\rho}{\delta_t}\frac{\partial v_3}{\partial x_3} + (-2+\omega_2)\frac{c_s^2\delta_l^2}{2\delta_t\omega_2}\frac{\partial\rho}{\partial x_1}\frac{\partial v_3}{\partial x_1} + (-2+\omega_2)\frac{c_s^2\delta_l^2}{2\delta_t\omega_2}\frac{\partial\rho}{\partial x_1}\frac{\partial v_1}{\partial x_3} + (-2+\omega_3)\frac{c_s^2\delta_l^2}{2\omega_3\delta_t}\frac{\partial\rho}{\partial x_2}\frac{\partial v_3}{\partial x_2} + (-2+\omega_3)\frac{c_s^2\delta_l^2}{2\omega_3\delta_t}\frac{\partial\rho}{\partial x_2}\frac{\partial v_2}{\partial x_3} + (-2+\omega_6-2\omega_6c_s^2+6v_3^2-3v_3^2\omega_6+4c_s^2)\frac{\delta_l^2}{\omega_6\delta_t}\frac{\partial\rho}{\partial x_3}\frac{\partial v_3}{\partial x_3} + (2-\omega_6)\frac{3v_3\delta_l^2\rho}{\omega_6\delta_t}\left(\frac{\partial v_3}{\partial x_3}\right)^2 + (-2+\omega_2)\frac{c_s^2\delta_l^2\rho}{2\delta_t\omega_2}\frac{\partial^2 v_3}{\partial x_1^2} + (-2+\omega_3)\frac{c_s^2\delta_l^2\rho}{2\omega_3\delta_t}\frac{\partial^2 v_3}{\partial x_2^2} + (-2+\omega_2)\frac{c_s^2\delta_l^2\rho}{2\delta_t\omega_2}\frac{\partial^2 v_1}{\partial x_1\partial x_3} + (-2+\omega_3)\frac{c_s^2\delta_l^2\rho}{2\omega_3\delta_t}\frac{\partial^2 v_2}{\partial x_2\partial x_3} +$

$$
\begin{aligned}
&(-2+\omega_6-3\omega_6c_s^2+2v_3^2-v_3^2\omega_6+6c_s^2)\frac{v_3\delta_l^2}{2\omega_6\delta_t}\frac{\partial^2\rho}{\partial x_3^2}+(-2+\omega_6-\omega_6c_s^2+6v_3^2-3v_3^2\omega_6+2c_s^2)\frac{\delta_l^2\rho}{2\omega_6\delta_t}\frac{\partial^2 v_3}{\partial x_3^2}+\\
&(-1+v_1^2+3c_s^2)\frac{v_1v_3\delta_l^3}{12\delta_t}\frac{\partial^3\rho}{\partial x_1^3}+(-1+3v_1^2+c_s^2)\frac{v_3\delta_l^3\rho}{12\delta_t}\frac{\partial^3 v_1}{\partial x_1^3}+C_1\frac{v_1\delta_l^3\rho}{6\omega_{12}\delta_t\omega_2}\frac{\partial^3 v_3}{\partial x_1^3}-\frac{v_3c_s^2\delta_l^3\rho}{6\delta_t}\frac{\partial^3 v_2}{\partial x_1^2\partial x_2}-\frac{v_3c_s^2\delta_l^3\rho}{6\delta_t}\frac{\partial^3 v_1}{\partial x_1\partial x_2^2}+\\
&(-1+v_2^2+3c_s^2)\frac{v_2v_3\delta_l^3}{12\delta_t}\frac{\partial^3\rho}{\partial x_2^3}+(-1+3v_2^2+c_s^2)\frac{v_3\delta_l^3\rho}{12\delta_t}\frac{\partial^3 v_2}{\partial x_2^3}+C_2\frac{v_2\delta_l^3\rho}{6\omega_3\delta_t\omega_{11}}\frac{\partial^3 v_3}{\partial x_2^3}+(-12-\omega_2^2+12\omega_2)\frac{c_s^4\delta_l^3}{6\delta_t\omega_2^2}\frac{\partial^3\rho}{\partial x_1^2\partial x_3}-\\
&\frac{v_3c_s^2\delta_l^3\rho}{6\delta_t}\frac{\partial^3 v_3}{\partial x_1^2\partial x_3}+(-12-\omega_3^2+12\omega_3)\frac{c_s^4\delta_l^3}{6\omega_3^2\delta_t}\frac{\partial^3\rho}{\partial x_2^2\partial x_3}-\frac{v_3c_s^2\delta_l^3\rho}{6\delta_t}\frac{\partial^3 v_3}{\partial x_2^2\partial x_3}+C_3\frac{v_3\delta_l^3\rho}{12\omega_6^2\delta_t\omega_8\omega_2}\frac{\partial^3 v_1}{\partial x_1\partial x_3^2}+C_4\frac{v_3\delta_l^3\rho}{12\omega_6^2\omega_3\delta_t\omega_{10}}\frac{\partial^3 v_2}{\partial x_2\partial x_3^2}\\
&+C_5\frac{\delta_l^3}{12\omega_6^2\delta_t}\frac{\partial^3\rho}{\partial x_3^3}+(-24-4\omega_6^2+24\omega_6-36\omega_6c_s^2+60v_3^2-60v_3^2\omega_6+5\omega_6^2c_s^2+11v_3^2\omega_6^2+36c_s^2)\frac{v_3\delta_l^3\rho}{6\omega_6^2\delta_t}\frac{\partial^3 v_3}{\partial x_3^3}+\\
&(2c_s^4-3v_1^4\omega_4-c_s^4\omega_4-6v_1^2+24v_1^2c_s^2+6v_1^4+3v_1^2\omega_4+c_s^2\omega_4-2c_s^2-12v_1^2c_s^2\omega_4)\frac{v_3\delta_l^4}{24\delta_t\omega_4}\frac{\partial^4\rho}{\partial x_1^4}+\\
&(-4+10v_1^2+2\omega_4-5v_1^2\omega_4-3c_s^2\omega_4+6c_s^2)\frac{v_1v_3\delta_l^4\rho}{12\delta_t\omega_4}\frac{\partial^4 v_1}{\partial x_1^4}+C_6\frac{\delta_l^4\rho}{24\omega_{12}^2\delta_t\omega_3^2}\frac{\partial^4 v_3}{\partial x_1^4}+\\
&(-\omega_9+3\omega_9c_s^2\omega_4+v_1^2\omega_9\omega_4-\omega_9\omega_4+3\omega_4+v_1^2\omega_9-3v_1^2\omega_4-9c_s^2\omega_4+3\omega_9c_s^2)\frac{v_1v_3\delta_l^4\rho}{12\omega_9\delta_t\omega_4}\frac{\partial^4 v_2}{\partial x_1^3\partial x_2}+(-2+\omega_1)\frac{v_3c_s^4\delta_l^4}{6\delta_t\omega_1}\frac{\partial^4\rho}{\partial x_1^2\partial x_2^2}\\
&+(\omega_{13}\omega_2+2\omega_3\omega_2^2-\omega_3^2-\omega_3\omega_{13}\omega_2-2\omega_3\omega_2+\omega_3\omega_{13}-\omega_2^2+2\omega_3^2\omega_2-\omega_3^2\omega_2^2)\frac{c_s^4\delta_l^4\rho}{\omega_3^2\delta_t\omega_{13}\omega_2^2}\frac{\partial^4 v_3}{\partial x_1^2\partial x_2^2}+\\
&(-3v_2^2\omega_5+v_2^2\omega_7\omega_5-\omega_7\omega_5-9c_s^2\omega_5+v_2^2\omega_7+3c_s^2\omega_7\omega_5+3c_s^2\omega_7-\omega_7+3\omega_5)\frac{v_2v_3\delta_l^4\rho}{12\delta_t\omega_7\omega_5}\frac{\partial^4 v_1}{\partial x_1\partial x_2^3}+\\
&(-12v_2^2c_s^2\omega_5+3v_2^2\omega_5+2c_s^4+c_s^2\omega_5+24v_2^2c_s^2-6v_2^2+6v_2^4-c_s^4\omega_5-3v_2^4\omega_5-2c_s^2)\frac{v_3\delta_l^4}{24\delta_t\omega_5}\frac{\partial^4\rho}{\partial x_2^4}+\\
&(-4-5v_2^2\omega_5-3c_s^2\omega_5+10v_2^2+2\omega_5+6c_s^2)\frac{v_2v_3\delta_l^4\rho}{12\delta_t\omega_5}\frac{\partial^4 v_2}{\partial x_2^4}+C_7\frac{\delta_l^4\rho}{24\omega_3^3\delta_t\omega_{11}^2}\frac{\partial^4 v_3}{\partial x_2^4}+C_8\frac{v_1c_s^2\delta_l^4}{12\omega_{12}^2\delta_t\omega_4\omega_2^2}\frac{\partial^4\rho}{\partial x_1^3\partial x_3}+\\
&C_9\frac{c_s^2\delta_l^4\rho}{12\omega_{12}\delta_t\omega_4\omega_2^3}\frac{\partial^4 v_1}{\partial x_1^3\partial x_3}+\\
&(-\omega_{12}-\omega_{12}\omega_4+v_1^2\omega_{12}\omega_4+3\omega_4-3v_1^2\omega_4-9c_s^2\omega_4+3\omega_{12}c_s^2\omega_4+v_1^2\omega_{12}+3\omega_{12}c_s^2)\frac{v_1v_3\delta_l^4\rho}{12\omega_{12}\delta_t\omega_4}\frac{\partial^4 v_3}{\partial x_1^3\partial x_3}+\\
&C_{10}\frac{c_s^4\delta_l^4\rho}{12\omega_3^2\delta_t\omega_{13}\omega_1\omega_2^3}\frac{\partial^4 v_2}{\partial x_1^2\partial x_2\partial x_3}+C_{11}\frac{c_s^4\delta_l^4\rho}{12\omega_3^3\delta_t\omega_{13}\omega_1\omega_2^2}\frac{\partial^4 v_1}{\partial x_1\partial x_2^2\partial x_3}+C_{12}\frac{v_2c_s^2\delta_l^4}{12\omega_3^2\delta_t\omega_{11}^2\omega_5}\frac{\partial^4\rho}{\partial x_2^3\partial x_3}+C_{13}\frac{c_s^2\delta_l^4\rho}{12\omega_3^3\delta_t\omega_{11}\omega_5}\frac{\partial^4 v_2}{\partial x_2^3\partial x_3}+\\
&(-3v_2^2\omega_5+3c_s^2\omega_{11}\omega_5-9c_s^2\omega_5-\omega_{11}\omega_5+v_2^2\omega_{11}\omega_5-\omega_{11}+3c_s^2\omega_{11}+3\omega_5+v_2^2\omega_{11})\frac{v_2v_3\delta_l^4\rho}{12\delta_t\omega_{11}\omega_5}\frac{\partial^4 v_3}{\partial x_2^3\partial x_3}+\\
&C_{14}\frac{v_3c_s^2\delta_l^4}{12\omega_6^3\delta_t\omega_8^2\omega_2^2}\frac{\partial^4\rho}{\partial x_1^2\partial x_3^2}+C_{15}\frac{c_s^2\delta_l^4\rho}{12\omega_6^2\delta_t\omega_8\omega_2^3}\frac{\partial^4 v_3}{\partial x_1^2\partial x_3^2}+C_{16}\frac{v_3c_s^2\delta_l^4}{12\omega_6^3\omega_3^2\delta_t\omega_{10}^2}\frac{\partial^4\rho}{\partial x_2^2\partial x_3^2}+C_{17}\frac{c_s^2\delta_l^4\rho}{12\omega_6^2\omega_3^3\delta_t\omega_{10}}\frac{\partial^4 v_3}{\partial x_2^2\partial x_3^2}+\\
&C_{18}\frac{\delta_l^4\rho}{12\omega_6^3\delta_t\omega_8^2\omega_2^3}\frac{\partial^4 v_1}{\partial x_1\partial x_3^3}+C_{19}\frac{\delta_l^4\rho}{12\omega_6^3\omega_3^3\delta_t\omega_{10}^2}\frac{\partial^4 v_2}{\partial x_2\partial x_3^3}+C_{20}\frac{v_3\delta_l^4}{12\omega_6^3\delta_t}\frac{\partial^4\rho}{\partial x_3^4}+C_{21}\frac{\delta_l^4\rho}{12\omega_6^3\delta_t}\frac{\partial^4 v_3}{\partial x_3^4}=0,
\end{aligned}
$$

where:

$$
C_1=6-3\omega_{12}+9c_s^2\omega_2+3v_1^2\omega_2-6v_1^2-3\omega_{12}c_s^2\omega_2+3v_1^2\omega_{12}-v_1^2\omega_{12}\omega_2+9\omega_{12}c_s^2-18c_s^2+\omega_{12}\omega_2-3\omega_2
$$

$$
C_2=6-3\omega_3-6v_2^2+9\omega_3c_s^2-3\omega_3c_s^2\omega_{11}-3\omega_{11}+\omega_3\omega_{11}+3v_2^2\omega_3+9c_s^2\omega_{11}-18c_s^2+3v_2^2\omega_{11}-v_2^2\omega_3\omega_{11}
$$

$$
\begin{aligned}
C_3=&\,12\omega_6^2+12\omega_6\omega_2-3v_3^2\omega_6^2\omega_8\omega_2+36c_s^2\omega_8\omega_2+3\omega_6^2\omega_8\omega_2+12v_3^2\omega_6^2\omega_2-11\omega_6^2c_s^2\omega_8\omega_2-6\omega_6^2\omega_8+36\omega_6^2c_s^2\omega_2-12\omega_8\omega_2+6\omega_6\omega_8\omega_2-\\
&36\omega_6c_s^2\omega_2-12v_3^2\omega_6\omega_2-36\omega_6^2c_s^2-18\omega_6c_s^2\omega_8\omega_2+12v_3^2\omega_8\omega_2-12v_3^2\omega_6^2-6v_3^2\omega_6\omega_8\omega_2+18\omega_6^2c_s^2\omega_8-12\omega_6^2\omega_2+6v_3^2\omega_6^2\omega_8
\end{aligned}
$$

$$
\begin{aligned}
C_4=&\,12\omega_6^2-12v_3^2\omega_6\omega_3-11\omega_6^2\omega_3c_s^2\omega_{10}+3\omega_6^2\omega_3\omega_{10}+18\omega_6^2c_s^2\omega_{10}-12\omega_3\omega_{10}+6v_3^2\omega_6^2\omega_{10}+36\omega_6^2\omega_3c_s^2-12\omega_6^2\omega_3-3v_3^2\omega_6^2\omega_3\omega_{10}+\\
&36\omega_3c_s^2\omega_{10}-6v_3^2\omega_6\omega_3\omega_{10}-18\omega_6\omega_3c_s^2\omega_{10}+12v_3^2\omega_3\omega_{10}-36\omega_6\omega_3c_s^2-6\omega_6^2\omega_{10}+12\omega_6\omega_3-36\omega_6^2c_s^2-12v_3^2\omega_6^2+6\omega_6\omega_3\omega_{10}+12v_3^2\omega_6^2\omega_3
\end{aligned}
$$

$$
C_5=-36v_3^4\omega_6+144v_3^2c_s^2+12c_s^4+\omega_6^2c_s^4+12\omega_6c_s^2-36v_3^2+24v_3^2\omega_6^2c_s^2+7v_3^4\omega_6^2-144v_3^2\omega_6c_s^2+36v_3^2\omega_6+36v_3^4-\omega_6^2c_s^2-7v_3^2\omega_6^2-12c_s^2-12\omega_6c_s^4
$$

$$
\begin{aligned}
C_6=&\\
&-36v_1^2\omega_2^3-48\omega_{12}^2c_s^4\omega_2-3v_1^2\omega_{12}^2\omega_2^3+24\omega_{12}c_s^2\omega_2^2+72v_1^2\omega_2^2-36v_1^2\omega_{12}^2c_s^2\omega_2-6\omega_{12}c_s^2\omega_2^3+12v_1^2\omega_{12}^2\omega_2^2-12v_1^2\omega_{12}^2c_s^2\omega_2^2+108v_1^2c_s^2\omega_2^3+3v_1^4\omega_{12}^2\omega_2^3-\\
&3\omega_{12}^2c_s^4\omega_2^3-216v_1^2c_s^2\omega_2^2-24\omega_{12}c_s^2\omega_2+6v_1^2\omega_{12}^2c_s^2\omega_2^3+24\omega_{12}^2c_s^4\omega_2^2-12v_1^4\omega_{12}^2\omega_2^2-72v_1^4\omega_2^2+144v_1^2\omega_{12}c_s^2\omega_2^2+6\omega_{12}c_s^4\omega_2^3+72v_1^4\omega_{12}\omega_2^2-72v_1^2\omega_{12}c_s^2\omega_2^3+\\
&36v_1^4\omega_2^3+12\omega_{12}^2c_s^2\omega_2-30v_1^4\omega_{12}\omega_2^3-24\omega_{12}c_s^4\omega_2^2+24\omega_{12}c_s^4\omega_2-8\omega_{12}^2c_s^2\omega_2^2-72v_1^2\omega_{12}\omega_2^2+24\omega_{12}^2c_s^4+30v_1^2\omega_{12}\omega_2^3+\omega_{12}^2c_s^2\omega_2^3+72v_1^2\omega_{12}c_s^2\omega_2
\end{aligned}
$$

$$
\begin{aligned}
C_7=&\,-30v_2^4\omega_3^3\omega_{11}-72v_2^4\omega_3^2-72v_2^2\omega_3^2\omega_{11}+24c_s^4\omega_{11}^2-8\omega_3^2c_s^2\omega_{11}^2+144v_2^2\omega_3^2c_s^2\omega_{11}-12v_2^4\omega_3^2\omega_{11}^2-3v_2^2\omega_3^3\omega_{11}^2-3\omega_3^3c_s^4\omega_{11}^2+36v_2^4\omega_3^3+24\omega_3c_s^4\omega_{11}+\\
&30v_2^2\omega_3^3\omega_{11}+6\omega_3^3c_s^4\omega_{11}-48\omega_3c_s^4\omega_{11}^2+24\omega_3^2c_s^2\omega_{11}-12v_2^2\omega_3^2c_s^2\omega_{11}^2+72v_2^4\omega_3^2\omega_{11}+12v_2^2\omega_3^2\omega_{11}^2+3v_2^4\omega_3^3\omega_{11}^2+24\omega_3^2c_s^4\omega_{11}^2-36v_2^2\omega_3c_s^2\omega_{11}^2+\omega_3^3c_s^2\omega_{11}^2-\\
&36v_2^2\omega_3^3-72v_2^2\omega_3^3c_s^2\omega_{11}-24\omega_3c_s^2\omega_{11}-216v_2^2\omega_3^2c_s^2+72v_2^2\omega_3^2+72v_2^2\omega_3c_s^2\omega_{11}-6\omega_3^3c_s^2\omega_{11}+6v_2^2\omega_3^3c_s^2\omega_{11}^2+12\omega_3c_s^2\omega_{11}^2-24\omega_3^2c_s^4\omega_{11}+108v_2^2\omega_3^3c_s^2
\end{aligned}
$$

$$
\begin{aligned}
C_8=&\,-\omega_{12}^2\omega_4\omega_2^2-6\omega_{12}^2\omega_2-18\omega_{12}c_s^2\omega_2^2-36\omega_{12}^2c_s^2+18v_1^2\omega_{12}\omega_4\omega_2+12\omega_{12}\omega_4-36\omega_{12}^2c_s^2\omega_4\omega_2+v_1^2\omega_{12}^2\omega_2^2+3\omega_{12}^2c_s^2\omega_4\omega_2^2+6v_1^2\omega_{12}^2\omega_2-\\
&3v_1^2\omega_{12}\omega_4\omega_2^2-12v_1^2\omega_{12}\omega_4+36\omega_{12}c_s^2\omega_2+36\omega_{12}^2c_s^2\omega_4+12\omega_{12}^2\omega_4\omega_2+12\omega_{12}^2-\omega_{12}^2\omega_2^2+12v_1^2\omega_{12}^2\omega_4+12\omega_4\omega_2+6\omega_{12}\omega_2^2+v_1^2\omega_{12}^2\omega_4\omega_2^2-\\
&36\omega_{12}c_s^2\omega_4+18\omega_{12}^2c_s^2\omega_2+12v_1^2\omega_{12}\omega_2+54\omega_{12}c_s^2\omega_4\omega_2+6v_1^2\omega_4\omega_2^2+18c_s^2\omega_4\omega_2^2-18\omega_{12}\omega_4\omega_2-12v_1^2\omega_4\omega_2-36c_s^2\omega_4\omega_2-12\omega_{12}^2\omega_4+\\
&3\omega_{12}\omega_4\omega_2^2-12v_1^2\omega_{12}^2+3\omega_{12}^2c_s^2\omega_2^2-6v_1^2\omega_{12}\omega_2^2-9\omega_{12}c_s^2\omega_4\omega_2^2-12\omega_{12}\omega_2-12v_1^2\omega_{12}^2\omega_4\omega_2-6\omega_4\omega_2^2
\end{aligned}
$$

$C_9 = -18v_1^2\omega_2^3 - 6c_s^2\omega_2^3 + 6\omega_{12}c_s^2\omega_2^2 + 12c_s^2\omega_2^2 + 36v_1^2\omega_2^2 + \omega_{12}c_s^2\omega_2^3 - 3v_1^2\omega_{12}\omega_4\omega_2^2 - 12\omega_{12}c_s^2\omega_2 - 12\omega_2^2 - 12\omega_4\omega_2 - 6\omega_{12}\omega_2^2 + 6c_s^2\omega_4\omega_2^3 + 18v_1^2\omega_4\omega_2^3 + 6\omega_2^3 - 12\omega_{12}c_s^2\omega_4 - 36v_1^2\omega_{12}\omega_2 + 18\omega_{12}c_s^2\omega_4\omega_2 - 54v_1^2\omega_4\omega_2^2 - 18c_s^2\omega_4\omega_2^2 - \omega_{12}\omega_2^3 + 36v_1^2\omega_4\omega_2 + 12c_s^2\omega_4\omega_2 + \omega_{12}\omega_4\omega_2^2 - 6\omega_4\omega_2^3 + 18v_1^2\omega_{12}\omega_2^2 - 5\omega_{12}c_s^2\omega_4\omega_2^2 + 12\omega_{12}\omega_2 - \omega_{12}c_s^2\omega_4\omega_2^3 + 3v_1^2\omega_{12}\omega_2^3 + 18\omega_4\omega_2^2$

$C_{10} = -12\omega_3\omega_2^3 - 6\omega_3\omega_{13}\omega_2^3 - 12\omega_3^2\omega_1\omega_2^3 + 24\omega_3^2\omega_{13}\omega_1\omega_2 + 12\omega_3^2\omega_1\omega_2^2 + 12\omega_{13}\omega_2^3 - 2\omega_3^2\omega_{13}\omega_1\omega_2^2 - 24\omega_3^2\omega_{13}\omega_1 - \omega_3^2\omega_{13}\omega_1\omega_2^3 - 12\omega_1\omega_2^3 + 12\omega_3^2\omega_{13}\omega_2 + 12\omega_3\omega_{13}\omega_1\omega_2 - 12\omega_3^2\omega_2^2 - 6\omega_3\omega_{13}\omega_1\omega_2^2 + 24\omega_3\omega_1\omega_2^3 - 2\omega_3^2\omega_{13}\omega_2^3 + 12\omega_3^2\omega_2^3 - 6\omega_3^2\omega_{13}\omega_2^2 - 12\omega_3\omega_1\omega_2^2$

$C_{11} = -12\omega_3^3\omega_1 - 6\omega_3^2\omega_{13}\omega_1\omega_2 - 6\omega_3^3\omega_{13}\omega_2 + 12\omega_3^2\omega_1\omega_2^2 + 12\omega_3\omega_{13}\omega_2^2 - \omega_3^3\omega_{13}\omega_1\omega_2^2 - 12\omega_3^2\omega_1\omega_2 - 2\omega_3^3\omega_{13}\omega_2^2 - 2\omega_3^2\omega_{13}\omega_1\omega_2^2 - 24\omega_{13}\omega_1\omega_2^2 - 12\omega_3^3\omega_1\omega_2^2 + 12\omega_3^3\omega_2^2 + 12\omega_3\omega_{13}\omega_1\omega_2 - 12\omega_3^2\omega_2^2 + 24\omega_3\omega_{13}\omega_1\omega_2^2 + 12\omega_3^3\omega_{13} - 12\omega_3^3\omega_2 - 6\omega_3^2\omega_{13}\omega_2^2 + 24\omega_3^3\omega_1\omega_2$

$C_{12} = -12v_2^2\omega_3\omega_5 - 18\omega_3\omega_{11}\omega_5 - 6v_2^2\omega_3^2\omega_{11} + 12\omega_{11}^2 - 36c_s^2\omega_{11}\omega_5 + 3\omega_3^2c_s^2\omega_{11}^2 + 6\omega_3^2\omega_{11} - \omega_3^2\omega_{11}^2\omega_5 - 9\omega_3^2c_s^2\omega_{11}\omega_5 + 12\omega_3\omega_5 - 18\omega_3^2c_s^2\omega_{11} - 36\omega_3c_s^2\omega_{11}^2\omega_5 - \omega_3^2\omega_{11}^2 + 12\omega_{11}\omega_5 + v_2^2\omega_3^2\omega_{11}^2\omega_5 - 36\omega_3c_s^2\omega_5 - 12v_2^2\omega_{11}\omega_5 + v_2^2\omega_3^2\omega_{11}^2 + 18v_2^2\omega_3\omega_{11}\omega_5 + 12v_2^2\omega_{11}^2\omega_5 - 12v_2^2\omega_{11}^2 + 6v_2^2\omega_3\omega_{11}^2 - 12v_2^2\omega_3\omega_{11}^2\omega_5 + 36\omega_3c_s^2\omega_{11} + 18\omega_3^2c_s^2\omega_5 - 6\omega_3\omega_{11}^2 + 54\omega_3c_s^2\omega_{11}\omega_5 - 36c_s^2\omega_{11}^2 - 3v_2^2\omega_3^2\omega_{11}\omega_5 - 12\omega_{11}^2\omega_5 - 12\omega_3\omega_{11} + 3\omega_3^2\omega_{11}\omega_5 + 3\omega_3^2c_s^2\omega_{11}^2\omega_5 - 6\omega_3^2\omega_5 + 6v_2^2\omega_3^2\omega_5 + 12\omega_3\omega_{11}^2\omega_5 + 18\omega_3c_s^2\omega_{11}^2 + 36c_s^2\omega_{11}^2\omega_5 + 12v_2^2\omega_3\omega_{11}$

$C_{13} = 36v_2^2\omega_3\omega_5 + 6\omega_3^3 + 18v_2^2\omega_3^2\omega_{11} + 6\omega_3^3c_s^2\omega_5 - 12c_s^2\omega_{11}\omega_5 - 6\omega_3^2\omega_{11} - 5\omega_3^2c_s^2\omega_{11}\omega_5 - 12\omega_3^2 - 12\omega_3\omega_5 + 3v_2^2\omega_3^3\omega_{11} - \omega_3^3c_s^2\omega_{11}\omega_5 + 6\omega_3^2c_s^2\omega_{11} + 12\omega_3c_s^2\omega_5 - \omega_3^3\omega_{11} - 6\omega_3^3\omega_5 + 12\omega_3^2c_s^2 - 18v_2^2\omega_3^3 - 12\omega_3c_s^2\omega_{11} - 18\omega_3^2c_s^2\omega_5 + 18\omega_3c_s^2\omega_{11}\omega_5 + 36v_2^2\omega_3^2 - 3v_2^2\omega_3^2\omega_{11}\omega_5 + 18v_2^2\omega_3^3\omega_5 + 12\omega_3\omega_{11} + \omega_3^2\omega_{11}\omega_5 - 6\omega_3^3c_s^2 + 18\omega_3^2\omega_5 - 54v_2^2\omega_3^2\omega_5 + \omega_3^3c_s^2\omega_{11} - 36v_2^2\omega_3\omega_{11}$

$C_{14} = 12\omega_6^3\omega_8 + 18\omega_6\omega_8^2\omega_2^2 - 12v_3^2\omega_6^3\omega_2 + 12v_3^2\omega_6^2\omega_8\omega_2 + 12\omega_6^3\omega_8^2\omega_2 - 36\omega_6^2c_s^2\omega_2^2 + 36\omega_6^3c_s^2\omega_8^2 + 18\omega_6^2c_s^2\omega_8\omega_2^2 + 12\omega_6^2\omega_8^2 + v_3^2\omega_6^3\omega_8^2\omega_2^2 - 6\omega_6^2\omega_8\omega_2^2 + 54\omega_6^3c_s^2\omega_8\omega_2 - 12v_3^2\omega_6^2\omega_2^2 - 12v_3^2\omega_6^3\omega_8^2\omega_2 + 12v_3^2\omega_8^2\omega_2^2 - 12\omega_6^2\omega_8\omega_2 - 18\omega_6^3c_s^2\omega_8\omega_2^2 - 18v_3^2\omega_6\omega_8^2\omega_2^2 + 36\omega_6^2c_s^2\omega_8\omega_2 - 54\omega_6c_s^2\omega_8^2\omega_2^2 + 12v_3^2\omega_6^3\omega_2^2 + 6v_3^2\omega_6^2\omega_8\omega_2^2 - \omega_6^3\omega_8^2\omega_2^2 - 36\omega_6^3c_s^2\omega_8 - 12\omega_6^3\omega_8^2 + 4v_3^2\omega_6^2\omega_8^2\omega_2^2 - 12v_3^2\omega_6^2\omega_8^2 + 6\omega_6^3\omega_8\omega_2^2 + 12\omega_6^2\omega_2^2 + 18v_3^2\omega_6^3\omega_8\omega_2 - 12v_3^2\omega_6^3\omega_8 - 36\omega_6^2c_s^2\omega_8^2 + 5\omega_6^3c_s^2\omega_8^2\omega_2^2 + 36\omega_6^3c_s^2\omega_2^2 - 6\omega_6^2\omega_8^2\omega_2 + 36c_s^2\omega_8^2\omega_2^2 + 18\omega_6^2c_s^2\omega_8^2\omega_2 + 12\omega_6^3\omega_2 + 12\omega_6^2c_s^2\omega_8^2\omega_2^2 - 12\omega_6^3\omega_2^2 + 12v_3^2\omega_6^3\omega_8^2 - 6v_3^2\omega_6^3\omega_8\omega_2^2 - 36\omega_6^3c_s^2\omega_2 - 40\omega_6^3c_s^2\omega_8^2\omega_2 - 4\omega_6^2\omega_8^2\omega_2^2 - 12\omega_8^2\omega_2^2 + 6v_3^2\omega_6^2\omega_8^2\omega_2 - 18\omega_6^3\omega_8\omega_2$

$C_{15} = 12c_s^2\omega_2^3 + 12\omega_8\omega_2^2 - \omega_6^2c_s^2\omega_8\omega_2^3 + 36v_3^2\omega_6^2\omega_2^3 - 24\omega_6^2c_s^2\omega_2^2 - 4\omega_6^2c_s^2\omega_8\omega_2^2 + 12\omega_6^2c_s^2\omega_2^3 - 72v_3^2\omega_6^2\omega_2^2 - 12c_s^2\omega_8\omega_2^2 + 36v_3^2\omega_6^2\omega_2 + 18\omega_6^2c_s^2\omega_8\omega_2 + 24\omega_6\omega_2^3 + 12\omega_6^2c_s^2\omega_2 + 36v_3^2\omega_2^3 - 24\omega_6\omega_2^2 + 12\omega_6\omega_8\omega_2 + 24\omega_6^2\omega_2^2 - 36v_3^2\omega_8\omega_2^2 - 12\omega_2^3 + 36v_3^2\omega_6\omega_8\omega_2^2 + 12\omega_6c_s^2\omega_8\omega_2^2 - 12\omega_6^2\omega_2^3 - 12\omega_6c_s^2\omega_8\omega_2 + 24\omega_6c_s^2\omega_2^2 + 72v_3^2\omega_6\omega_2^2 - 36v_3^2\omega_6\omega_8\omega_2 - 12\omega_6^2c_s^2\omega_8 - 12\omega_6^2\omega_2 - 72v_3^2\omega_6\omega_2^3 - 12\omega_6\omega_8\omega_2^2 - 24\omega_6c_s^2\omega_2^3$

$C_{16} = -40\omega_6^3\omega_3c_s^2\omega_{10}^2 + 36\omega_6^2\omega_3c_s^2\omega_{10} - 12\omega_6^2\omega_3\omega_{10} + 36\omega_6^3\omega_3^2c_s^2 + 12v_3^2\omega_6^3\omega_{10}^2 - 18v_3^2\omega_6\omega_3^2\omega_{10}^2 + 12\omega_6^3\omega_3 - 6v_3^2\omega_6^3\omega_3^2\omega_{10} + 12v_3^2\omega_3^2\omega_{10}^2 - \omega_6^3\omega_3^2\omega_{10}^2 + 12\omega_6^2\omega_3^2 - 54\omega_6\omega_3^2c_s^2\omega_{10}^2 + 6v_3^2\omega_6^2\omega_3\omega_{10}^2 + 6\omega_6^3\omega_3^2\omega_{10} - 12v_3^2\omega_6^2\omega_{10}^2 + 18\omega_6\omega_3^2\omega_{10}^2 + 12v_3^2\omega_6^2\omega_3\omega_{10} - 12v_3^2\omega_6^3\omega_{10} + 18\omega_6^2\omega_3c_s^2\omega_{10}^2 - 6\omega_6^2\omega_3\omega_{10}^2 - 12\omega_6^3\omega_3^2 - 36\omega_6^2c_s^2\omega_{10}^2 + v_3^2\omega_6^3\omega_3^2\omega_{10}^2 + 54\omega_6^3\omega_3c_s^2\omega_{10} - 4\omega_6^2\omega_3^2\omega_{10}^2 - 12v_3^2\omega_6^3\omega_3\omega_{10}^2 - 12v_3^2\omega_6^2\omega_3^2 - 18\omega_6^3\omega_3\omega_{10} - 36\omega_6^2\omega_3^2c_s^2 + 6v_3^2\omega_6^2\omega_3^2\omega_{10} - 36\omega_6^3c_s^2\omega_{10} + 12\omega_6^2\omega_3^2c_s^2\omega_{10}^2 - 12\omega_3^2\omega_{10}^2 - 18\omega_6^3\omega_3^2c_s^2\omega_{10} - 12v_3^2\omega_6^3\omega_3 - 12\omega_6^3\omega_{10}^2 + 5\omega_6^3\omega_3^2c_s^2\omega_{10}^2 + 36\omega_3^2c_s^2\omega_{10}^2 + 12v_3^2\omega_6^3\omega_3^2 + 12\omega_6^3\omega_{10} + 12\omega_6^3\omega_3\omega_{10}^2 + 4v_3^2\omega_6^2\omega_3^2\omega_{10}^2 + 18\omega_6^2\omega_3^2c_s^2\omega_{10} + 36\omega_6^3c_s^2\omega_{10}^2 + 12\omega_6^2\omega_{10}^2 - 36\omega_6^3\omega_3c_s^2 - 6\omega_6^2\omega_3^2\omega_{10} + 18v_3^2\omega_6^3\omega_3\omega_{10}$

$C_{17} = -12\omega_3^3 + 18\omega_6^2\omega_3c_s^2\omega_{10} - 12\omega_6^2c_s^2\omega_{10} - 12\omega_6^2\omega_3^3 - 24\omega_6\omega_3^3c_s^2 + 24\omega_6^2\omega_3^2 - 12\omega_6\omega_3^2\omega_{10} + 12\omega_6^2\omega_3c_s^2 - 12\omega_6^2\omega_3 + 12\omega_6\omega_3^2c_s^2\omega_{10} - 72v_3^2\omega_6\omega_3^3 + 36v_3^2\omega_6\omega_3^2\omega_{10} - \omega_6^2\omega_3^3c_s^2\omega_{10} + 24\omega_6\omega_3^2c_s^2 - 36v_3^2\omega_3^2\omega_{10} + 72v_3^2\omega_6\omega_3^2 - 36v_3^2\omega_6\omega_3\omega_{10} - 12\omega_6\omega_3c_s^2\omega_{10} - 72v_3^2\omega_6^2\omega_3^2 - 24\omega_6^2\omega_3^2c_s^2 + 36v_3^2\omega_6^2\omega_3^3 - 12\omega_3^2c_s^2\omega_{10} + 12\omega_3^2\omega_{10} + 12\omega_3^3c_s^2 + 36v_3^2\omega_3^3 - 24\omega_6\omega_3^2 + 12\omega_6\omega_3\omega_{10} - 4\omega_6^2\omega_3^2c_s^2\omega_{10} + 36v_3^2\omega_6^2\omega_3 + 24\omega_6\omega_3^3 + 12\omega_6^2\omega_3^3c_s^2$

$C_{18} = -18\omega_6^3c_s^4\omega_8\omega_2^2 + 36v_3^4\omega_6^3\omega_3^2 + 6\omega_6^2c_s^2\omega_8\omega_3^2 - 36v_3^4\omega_6\omega_8\omega_3^2 + 36v_3^2\omega_6^2\omega_2^3 - 3v_3^2\omega_6^3c_s^2\omega_8^2\omega_2^2 - 4v_3^2\omega_6^3\omega_8^2\omega_3^2 - 12\omega_6c_s^4\omega_8^2\omega_2^2 - 36v_3^4\omega_6^3\omega_2^2 - 12\omega_6^2c_s^2\omega_8\omega_2^2 + 19v_3^4\omega_6^2\omega_8^2\omega_3^2 + 6\omega_6^3c_s^4\omega_8\omega_3^2 - 108v_3^2\omega_6c_s^2\omega_8\omega_3^2 + 72v_3^4\omega_8^2\omega_3^2 - 12\omega_6c_s^4\omega_8^2\omega_3^2 + 6v_3^2\omega_6^3\omega_8^2\omega_2^2 + 12v_3^2\omega_6^3c_s^2\omega_8^2\omega_3^2 - 12\omega_6^3c_s^2\omega_8\omega_2 - 36v_3^2\omega_6^3\omega_3^2 - 72v_3^2\omega_6^2\omega_8\omega_3^2 - 6\omega_6^2c_s^4\omega_8\omega_3^2 + 18\omega_6^3c_s^2\omega_8\omega_2^2 + 60v_3^2\omega_6^2c_s^2\omega_8^2\omega_3^2 - 36v_3^4\omega_6^2\omega_2^2 + 36v_3^4\omega_6^3\omega_8\omega_2^2 + 12\omega_6c_s^2\omega_8^2\omega_2^2 + 90v_3^2\omega_6\omega_8^2\omega_3^2 - 6\omega_6^3c_s^2\omega_8\omega_3^2 + 36v_3^2\omega_6^3\omega_2^2 - 18v_3^2\omega_6^3c_s^2\omega_8^2\omega_2 + 12\omega_6^2c_s^4\omega_8\omega_2^2 - 72v_3^2\omega_8^2\omega_3^2 - 108v_3^2\omega_6^2c_s^2\omega_3^2 + 12\omega_6c_s^2\omega_8^2\omega_3^2 - 39v_3^4\omega_6^3\omega_8\omega_3^2 + 12\omega_6^3c_s^4\omega_8\omega_2 + 18v_3^2\omega_6^2c_s^2\omega_8^2\omega_2^2 + 36v_3^2\omega_6^3c_s^2\omega_8\omega_2 + 6\omega_6^2c_s^4\omega_8^2\omega_2 - 12c_s^2\omega_8^2\omega_3^2 + 36v_3^2\omega_6\omega_8\omega_3^2 + 4v_3^4\omega_6^3\omega_8^2\omega_3^2 - 24\omega_6^3c_s^4\omega_8^2\omega_2 + 36v_3^2\omega_6^2c_s^2\omega_8\omega_2^2 - 5\omega_6^3c_s^2\omega_8^2\omega_2^2 + \omega_6^2c_s^4\omega_8^2\omega_3^2 - 19v_3^2\omega_6^2\omega_8^2\omega_3^2 + 198v_3^2\omega_6^2c_s^2\omega_8\omega_3^2 + 12\omega_6^3c_s^4\omega_8^2 - 6v_3^4\omega_6^3\omega_8^2\omega_2^2 - \omega_6^3c_s^4\omega_8^2\omega_3^2 + 72v_3^4\omega_6^2\omega_8\omega_3^2 - 6\omega_6^2c_s^2\omega_8^2\omega_2^2 + 12c_s^4\omega_8^2\omega_3^2 - 306v_3^2\omega_6c_s^2\omega_8^2\omega_3^2 - 36v_3^2\omega_6^3\omega_8\omega_2^2 + 108v_3^2\omega_6^3c_s^2\omega_3^2 + 6\omega_6^3c_s^2\omega_8^2\omega_2 + 252v_3^2c_s^2\omega_8^2\omega_3^2 - 99v_3^2\omega_6^3c_s^2\omega_8\omega_3^2 - 36v_3^2\omega_6c_s^2\omega_8^2\omega_2^2 - \omega_6^2c_s^2\omega_8^2\omega_3^2 - 90v_3^4\omega_6\omega_8^2\omega_3^2 + 13\omega_6^3c_s^4\omega_8^2\omega_2^2 + 54v_3^2\omega_6^3c_s^2\omega_8\omega_2^2 - 108v_3^2\omega_6^3c_s^2\omega_2^2 + 39v_3^2\omega_6^3\omega_8\omega_3^2$

$C_{19} = 72v_3^4\omega_3^3\omega_{10}^2 - 6\omega_6^3\omega_3^3c_s^2\omega_{10} + 19v_3^4\omega_6^2\omega_3^3\omega_{10}^2 + 54v_3^2\omega_6^3\omega_3^2c_s^2\omega_{10} + 6\omega_6^2\omega_3^2c_s^4\omega_{10}^2 + 6\omega_6^3\omega_3c_s^2\omega_{10}^2 + 18v_3^2\omega_6^2\omega_3^2c_s^2\omega_{10}^2 - 18\omega_6^3\omega_3^2c_s^4\omega_{10} + 108v_3^2\omega_6^3\omega_3^3c_s^2 - \omega_6^2\omega_3^3c_s^2\omega_{10}^2 - 36v_3^2\omega_6^3\omega_3^3\omega_{10} - 12\omega_6\omega_3^3c_s^4\omega_{10}^2 + 252v_3^2\omega_3^3c_s^2\omega_{10}^2 - 4v_3^2\omega_6^3\omega_3^3\omega_{10}^2 + 12\omega_6\omega_3^2c_s^2\omega_{10}^2 - 306v_3^2\omega_6\omega_3^3c_s^2\omega_{10}^2 + 36v_3^2\omega_6\omega_3^3\omega_{10} - 72v_3^2\omega_3^3\omega_{10}^2 + 39v_3^2\omega_6^3\omega_3^3\omega_{10} + 90v_3^2\omega_6\omega_3^3\omega_{10}^2 - 108v_3^2\omega_6^3\omega_3^2c_s^2 - 108v_3^2\omega_6\omega_3^3c_s^2\omega_{10} + 13\omega_6^3\omega_3^2c_s^4\omega_{10}^2 + 36v_3^2\omega_6^2\omega_3^2c_s^2\omega_{10} + 6\omega_6^2\omega_3^3c_s^2\omega_{10} + 6v_3^2\omega_6^3\omega_3^2\omega_{10}^2 - 12\omega_3^3c_s^2\omega_{10}^2 + 72v_3^4\omega_6^2\omega_3^3\omega_{10} - 12\omega_6^3\omega_3c_s^2\omega_{10} + 12\omega_6^2\omega_3^2c_s^4\omega_{10} - 3v_3^2\omega_6^3\omega_3^2c_s^2\omega_{10}^2 + 12\omega_6^3c_s^4\omega_{10}^2 + 12\omega_6\omega_3^3c_s^2\omega_{10}^2 - 19v_3^2\omega_6^2\omega_3^3\omega_{10}^2 - 36v_3^4\omega_6^3\omega_3^2 - 36v_3^2\omega_6\omega_3^2c_s^2\omega_{10}^2 - 12\omega_6\omega_3^2c_s^4\omega_{10}^2 + 36v_3^4\omega_6^3\omega_3^2\omega_{10} - 108v_3^2\omega_6^2\omega_3^3c_s^2 + 60v_3^2\omega_6^2\omega_3^3c_s^2\omega_{10}^2 + 6\omega_6^3\omega_3^3c_s^4\omega_{10} - 24\omega_6^3\omega_3c_s^4\omega_{10}^2 + 36v_3^4\omega_6^3\omega_3^3 - 6\omega_6^2\omega_3^2c_s^2\omega_{10}^2 + 18\omega_6^3\omega_3^2c_s^2\omega_{10} + 36v_3^2\omega_6^2\omega_3^3 - 18v_3^2\omega_6^3\omega_3c_s^2\omega_{10}^2 - 36v_3^4\omega_6\omega_3^3\omega_{10} - 99v_3^2\omega_6^3\omega_3^3c_s^2\omega_{10} + \omega_6^2\omega_3^3c_s^4\omega_{10}^2 + 4v_3^4\omega_6^3\omega_3^3\omega_{10}^2 + 36v_3^2\omega_6^3\omega_3c_s^2\omega_{10} - 5\omega_6^3\omega_3^2c_s^2\omega_{10}^2 + 36v_3^2\omega_6^3\omega_3^3 - 90v_3^4\omega_6\omega_3^3\omega_{10}^2 - 6\omega_6^2\omega_3^3c_s^4\omega_{10} + 12v_3^2\omega_6^3\omega_3^3c_s^2\omega_{10}^2 - 39v_3^4\omega_6^3\omega_3^3\omega_{10} + 12\omega_3^3c_s^4\omega_{10}^2 - \omega_6^3\omega_3^3c_s^4\omega_{10}^2 + 198v_3^2\omega_6^2\omega_3^3c_s^2\omega_{10} - 12\omega_6^2\omega_3^2c_s^2\omega_{10} + 12\omega_6^3\omega_3c_s^4\omega_{10} - 6v_3^4\omega_6^3\omega_3^2\omega_{10}^2 - 36v_3^2\omega_6^3\omega_3^3 - 72v_3^2\omega_6^2\omega_3^3\omega_{10} - 36v_3^4\omega_6^2\omega_3^3$

$C_{20} = 12 + 8\omega_6^2 - 216v_3^4\omega_6 + 672v_3^2c_s^2 + 144c_s^4 + 82\omega_6^2c_s^4 - 18\omega_6 + 198\omega_6c_s^2 - \omega_6^3 - 34v_3^2\omega_6^3c_s^2 - 5\omega_6^3c_s^4 - 9v_3^4\omega_6^3 - 156v_3^2 + 404v_3^2\omega_6^2c_s^2 + 90v_3^4\omega_6^2 - 1008v_3^2\omega_6c_s^2 + 6\omega_6^3c_s^2 + 234v_3^2\omega_6 + 144v_3^4 - 78\omega_6^2c_s^2 - 98v_3^2\omega_6^2 - 132c_s^2 - 216\omega_6c_s^4 + 10v_3^2\omega_6^3$

$C_{21} = 12 + 8\omega_6^2 - 756v_3^4\omega_6 + 432v_3^2c_s^2 + 24c_s^4 + 14\omega_6^2c_s^4 - 18\omega_6 + 54\omega_6c_s^2 - \omega_6^3 - 18v_3^2\omega_6^3c_s^2 - \omega_6^3c_s^4 - 29v_3^4\omega_6^3 - 252v_3^2 + 252v_3^2\omega_6^2c_s^2 + 310v_3^4\omega_6^2 - 648v_3^2\omega_6c_s^2 + 2\omega_6^3c_s^2 + 378v_3^2\omega_6 + 504v_3^4 - 22\omega_6^2c_s^2 - 154v_3^2\omega_6^2 - 36c_s^2 - 36\omega_6c_s^4 + 14v_3^2\omega_6^3$

2.7 CuLBM2

2.7.1 Definitions

Based on [2], collision operator $\boldsymbol{C}$:

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

where

$$\mathbf{S} = \mathrm{diag}(0,0,0,0,\omega_1,\omega_1,\omega_1,\omega_1,\omega_1,\omega_2,\omega_3,\omega_3,\omega_3,\omega_4,\omega_4,\omega_4,\omega_5,\omega_6,\omega_6,\omega_7,\omega_8,\omega_8,\omega_8,\omega_9,\omega_9,\omega_9,\omega_{10}),$$

$\omega_1,\omega_2,\cdots,\omega_{10} \in (0,2)$ and matrix $\mathbf{N}$ defines combination of cumulants for the collision by

$$\mathbf{N} = \begin{pmatrix}
1&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0\\
0&1&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0\\
0&0&1&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0\\
0&0&0&1&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0\\
0&0&0&0&1&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0\\
0&0&0&0&0&1&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0\\
0&0&0&0&0&0&1&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0\\
0&0&0&0&0&0&0&1&-1&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0\\
0&0&0&0&0&0&0&1&0&-1&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0\\
0&0&0&0&0&0&0&1&1&1&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0\\
0&0&0&0&0&0&0&0&0&0&1&1&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0\\
0&0&0&0&0&0&0&0&0&0&0&0&1&1&0&0&0&0&0&0&0&0&0&0&0&0&0\\
0&0&0&0&0&0&0&0&0&0&0&0&0&0&1&1&0&0&0&0&0&0&0&0&0&0&0\\
0&0&0&0&0&0&0&0&0&0&1&-1&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0\\
0&0&0&0&0&0&0&0&0&0&0&0&-1&1&0&0&0&0&0&0&0&0&0&0&0&0&0\\
0&0&0&0&0&0&0&0&0&0&0&0&0&0&1&-1&0&0&0&0&0&0&0&0&0&0&0\\
0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&1&0&0&0&0&0&0&0&0&0&0\\
0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&1&-2&1&0&0&0&0&0&0&0\\
0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&1&1&-2&0&0&0&0&0&0&0\\
0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&1&1&1&0&0&0&0&0&0&0\\
0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&1&0&0&0&0&0&0\\
0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&1&0&0&0&0&0\\
0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&1&0&0&0&0\\
0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&1&0&0&0\\
0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&1&0&0\\
0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&1&0\\
0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&0&1
\end{pmatrix},$$

The nonlinear operator $\boldsymbol{G}$ is the same as in CuLBM1 in Section **??** and, again, the equilibrium cumulant vector $\boldsymbol{\gamma}^{(eq)}$ is defined by

$$\boldsymbol{\gamma}^{(eq)} = \left(\rho,0,0,0,0,0,0,0,0,3\rho c_s^2,0,0,\cdots,0\right)^T.$$

2.7.2 Conservation of mass: ρ

attached text file: `output_d3q27_nse_culbm2_symbolic_pde_00.txt`

$$\frac{\partial\rho}{\partial t} + \frac{v_1\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_1} + \frac{\rho\delta_l}{\delta_t}\frac{\partial v_1}{\partial x_1} + \frac{v_2\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_2} + \frac{\rho\delta_l}{\delta_t}\frac{\partial v_2}{\partial x_2} + \frac{v_3\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_3} + \frac{\rho\delta_l}{\delta_t}\frac{\partial v_3}{\partial x_3} + \left(-1+3c_s^2+v_1^2\right)\frac{v_1\delta_l^3}{12\delta_t}\frac{\partial^3\rho}{\partial x_1^3} +$$
$$\left(-1+c_s^2+3v_1^2\right)\frac{\rho\delta_l^3}{12\delta_t}\frac{\partial^3 v_1}{\partial x_1^3} - \frac{c_s^2\rho\delta_l^3}{6\delta_t}\frac{\partial^3 v_2}{\partial x_1^2\partial x_2} - \frac{c_s^2\rho\delta_l^3}{6\delta_t}\frac{\partial^3 v_1}{\partial x_1\partial x_2^2} + \left(-1+3c_s^2+v_2^2\right)\frac{v_2\delta_l^3}{12\delta_t}\frac{\partial^3\rho}{\partial x_2^3} + \left(-1+c_s^2+3v_2^2\right)\frac{\rho\delta_l^3}{12\delta_t}\frac{\partial^3 v_2}{\partial x_2^3} -$$
$$\frac{c_s^2\rho\delta_l^3}{6\delta_t}\frac{\partial^3 v_3}{\partial x_1^2\partial x_3} - \frac{c_s^2\rho\delta_l^3}{6\delta_t}\frac{\partial^3 v_3}{\partial x_2^2\partial x_3} - \frac{c_s^2\rho\delta_l^3}{6\delta_t}\frac{\partial^3 v_1}{\partial x_1\partial x_3^2} - \frac{c_s^2\rho\delta_l^3}{6\delta_t}\frac{\partial^3 v_2}{\partial x_2\partial x_3^2} + \left(-1+3c_s^2+v_3^2\right)\frac{v_3\delta_l^3}{12\delta_t}\frac{\partial^3\rho}{\partial x_3^3} + \left(-1+c_s^2+3v_3^2\right)\frac{\rho\delta_l^3}{12\delta_t}\frac{\partial^3 v_3}{\partial x_3^3} +$$
$$C_1\frac{\delta_l^4}{72\delta_t\omega_1\omega_2}\frac{\partial^4\rho}{\partial x_1^4} + \left(10\omega_1 v_1^2 + 12c_s^2\omega_2 - 9c_s^2\omega_1\omega_2 - 4\omega_1 + 20v_1^2\omega_2 - 15\omega_1 v_1^2\omega_2 + 6\omega_1\omega_2 - 8\omega_2 + 6c_s^2\omega_1\right)\frac{\rho v_1\delta_l^4}{36\delta_t\omega_1\omega_2}\frac{\partial^4 v_1}{\partial x_1^4}$$
$$+ \left(\omega_1 v_2^2 - 3c_s^2\omega_2 - \omega_1 + \omega_2 + 3c_s^2\omega_1 - v_2^2\omega_2\right)\frac{v_2 v_1\delta_l^4}{12\delta_t\omega_1\omega_2}\frac{\partial^4\rho}{\partial x_1^3\partial x_2} +$$
$$\left(\omega_1 v_2^2 - 3c_s^2\omega_2 - \omega_1 + \omega_2 + 3c_s^2\omega_1 - v_2^2\omega_2\right)\frac{\rho v_2\delta_l^4}{36\delta_t\omega_1\omega_2}\frac{\partial^4 v_1}{\partial x_1^3\partial x_2} + C_2\frac{\rho v_1\delta_l^4}{72\omega_3\delta_t\omega_4\omega_1\omega_2}\frac{\partial^4 v_2}{\partial x_1^3\partial x_2} +$$
$$\left(3\omega_1 v_1^2 + 3\omega_1 v_2^2 - 14c_s^2\omega_2 + 6c_s^2\omega_1\omega_2 - 2\omega_1 - 3v_1^2\omega_2 + 2\omega_2 + 2c_s^2\omega_1 - 3v_2^2\omega_2\right)\frac{c_s^2\delta_l^4}{36\delta_t\omega_1\omega_2}\frac{\partial^4\rho}{\partial x_1^2\partial x_2^2} +$$
$$\left(\omega_1 v_1^2 - 3c_s^2\omega_2 - \omega_1 - v_1^2\omega_2 + \omega_2 + 3c_s^2\omega_1\right)\frac{\rho v_1\delta_l^4}{36\delta_t\omega_1\omega_2}\frac{\partial^4 v_1}{\partial x_1^2\partial x_2^2} +$$
$$\left(\omega_1 v_2^2 - 3c_s^2\omega_2 - \omega_1 + \omega_2 + 3c_s^2\omega_1 - v_2^2\omega_2\right)\frac{\rho v_2\delta_l^4}{36\delta_t\omega_1\omega_2}\frac{\partial^4 v_2}{\partial x_1^2\partial x_2^2} +$$

$$
\begin{aligned}
&(\omega_1 v_1^2 - 3c_s^2\omega_2 - \omega_1 - v_1^2\omega_2 + \omega_2 + 3c_s^2\omega_1)\frac{v_2 v_1 \delta_l^4}{12\delta_t\omega_1\omega_2}\frac{\partial^4\rho}{\partial x_1\partial x_2^3} + C_3\frac{\rho v_2\delta_l^4}{72\omega_3\delta_t\omega_4\omega_1\omega_2}\frac{\partial^4 v_1}{\partial x_1\partial x_2^3} + \\
&(\omega_1 v_1^2 - 3c_s^2\omega_2 - \omega_1 - v_1^2\omega_2 + \omega_2 + 3c_s^2\omega_1)\frac{\rho v_1\delta_l^4}{36\delta_t\omega_1\omega_2}\frac{\partial^4 v_2}{\partial x_1\partial x_2^3} + C_4\frac{\delta_l^4}{72\delta_t\omega_1\omega_2}\frac{\partial^4\rho}{\partial x_2^4} + \\
&(10\omega_1 v_2^2 + 12c_s^2\omega_2 - 9c_s^2\omega_1\omega_2 - 4\omega_1 + 6\omega_1\omega_2 - 8\omega_2 - 15\omega_1 v_2^2\omega_2 + 6c_s^2\omega_1 + 20v_2^2\omega_2)\frac{\rho v_2\delta_l^4}{36\delta_t\omega_1\omega_2}\frac{\partial^4 v_2}{\partial x_2^4} + \\
&(-v_3^2\omega_2 - 3c_s^2\omega_2 - \omega_1 + v_3^2\omega_1 + \omega_2 + 3c_s^2\omega_1)\frac{v_3 v_1\delta_l^4}{12\delta_t\omega_1\omega_2}\frac{\partial^4\rho}{\partial x_1^3\partial x_3} + \\
&(-v_3^2\omega_2 - 3c_s^2\omega_2 - \omega_1 + v_3^2\omega_1 + \omega_2 + 3c_s^2\omega_1)\frac{v_3\rho\delta_l^4}{36\delta_t\omega_1\omega_2}\frac{\partial^4 v_1}{\partial x_1^3\partial x_3} + C_5\frac{\rho v_1\delta_l^4}{72\omega_3\delta_t\omega_4\omega_1\omega_2}\frac{\partial^4 v_3}{\partial x_1^3\partial x_3} + C_6\frac{v_3\rho\delta_l^4}{72\omega_3\delta_t\omega_4\omega_1\omega_2}\frac{\partial^4 v_2}{\partial x_1^2\partial x_2\partial x_3} \\
&+ C_7\frac{\rho v_2\delta_l^4}{72\omega_3\delta_t\omega_4\omega_1\omega_2}\frac{\partial^4 v_3}{\partial x_1^2\partial x_2\partial x_3} + C_8\frac{v_3\rho\delta_l^4}{72\omega_3\delta_t\omega_4\omega_1\omega_2}\frac{\partial^4 v_1}{\partial x_1\partial x_2^2\partial x_3} + C_9\frac{\rho v_1\delta_l^4}{72\omega_3\delta_t\omega_4\omega_1\omega_2}\frac{\partial^4 v_3}{\partial x_1\partial x_2^2\partial x_3} + \\
&(-v_3^2\omega_2 - 3c_s^2\omega_2 - \omega_1 + v_3^2\omega_1 + \omega_2 + 3c_s^2\omega_1)\frac{v_3 v_2\delta_l^4}{12\delta_t\omega_1\omega_2}\frac{\partial^4\rho}{\partial x_2^3\partial x_3} + \\
&(-v_3^2\omega_2 - 3c_s^2\omega_2 - \omega_1 + v_3^2\omega_1 + \omega_2 + 3c_s^2\omega_1)\frac{v_3\rho\delta_l^4}{36\delta_t\omega_1\omega_2}\frac{\partial^4 v_2}{\partial x_2^3\partial x_3} + C_{10}\frac{\rho v_2\delta_l^4}{72\omega_3\delta_t\omega_4\omega_1\omega_2}\frac{\partial^4 v_3}{\partial x_2^3\partial x_3} + \\
&(-3v_3^2\omega_2 + 3\omega_1 v_1^2 - 14c_s^2\omega_2 + 6c_s^2\omega_1\omega_2 - 2\omega_1 - 3v_1^2\omega_2 + 3v_3^2\omega_1 + 2\omega_2 + 2c_s^2\omega_1)\frac{c_s^2\delta_l^4}{36\delta_t\omega_1\omega_2}\frac{\partial^4\rho}{\partial x_1^2\partial x_3^2} + \\
&(\omega_1 v_1^2 - 3c_s^2\omega_2 - \omega_1 - v_1^2\omega_2 + \omega_2 + 3c_s^2\omega_1)\frac{\rho v_1\delta_l^4}{36\delta_t\omega_1\omega_2}\frac{\partial^4 v_1}{\partial x_1^2\partial x_3^2} + \\
&(-v_3^2\omega_2 - 3c_s^2\omega_2 - \omega_1 + v_3^2\omega_1 + \omega_2 + 3c_s^2\omega_1)\frac{v_3\rho\delta_l^4}{36\delta_t\omega_1\omega_2}\frac{\partial^4 v_3}{\partial x_1^2\partial x_3^2} + C_{11}\frac{\rho v_2\delta_l^4}{72\omega_3\delta_t\omega_4\omega_1\omega_2}\frac{\partial^4 v_1}{\partial x_1\partial x_2\partial x_3^2} + \\
&C_{12}\frac{\rho v_1\delta_l^4}{72\omega_3\delta_t\omega_4\omega_1\omega_2}\frac{\partial^4 v_2}{\partial x_1\partial x_2\partial x_3^2} + \\
&(-3v_3^2\omega_2 + 3\omega_1 v_2^2 - 14c_s^2\omega_2 + 6c_s^2\omega_1\omega_2 - 2\omega_1 + 3v_3^2\omega_1 + 2\omega_2 + 2c_s^2\omega_1 - 3v_2^2\omega_2)\frac{c_s^2\delta_l^4}{36\delta_t\omega_1\omega_2}\frac{\partial^4\rho}{\partial x_2^2\partial x_3^2} + \\
&(\omega_1 v_2^2 - 3c_s^2\omega_2 - \omega_1 + \omega_2 + 3c_s^2\omega_1 - v_2^2\omega_2)\frac{\rho v_2\delta_l^4}{36\delta_t\omega_1\omega_2}\frac{\partial^4 v_2}{\partial x_2^2\partial x_3^2} + \\
&(-v_3^2\omega_2 - 3c_s^2\omega_2 - \omega_1 + v_3^2\omega_1 + \omega_2 + 3c_s^2\omega_1)\frac{v_3\rho\delta_l^4}{36\delta_t\omega_1\omega_2}\frac{\partial^4 v_3}{\partial x_2^2\partial x_3^2} + \\
&(\omega_1 v_1^2 - 3c_s^2\omega_2 - \omega_1 - v_1^2\omega_2 + \omega_2 + 3c_s^2\omega_1)\frac{v_3 v_1\delta_l^4}{12\delta_t\omega_1\omega_2}\frac{\partial^4\rho}{\partial x_1\partial x_3^3} + C_{13}\frac{v_3\rho\delta_l^4}{72\omega_3\delta_t\omega_4\omega_1\omega_2}\frac{\partial^4 v_1}{\partial x_1\partial x_3^3} + \\
&(\omega_1 v_1^2 - 3c_s^2\omega_2 - \omega_1 - v_1^2\omega_2 + \omega_2 + 3c_s^2\omega_1)\frac{\rho v_1\delta_l^4}{36\delta_t\omega_1\omega_2}\frac{\partial^4 v_3}{\partial x_1\partial x_3^3} + \\
&(\omega_1 v_2^2 - 3c_s^2\omega_2 - \omega_1 + \omega_2 + 3c_s^2\omega_1 - v_2^2\omega_2)\frac{v_3 v_2\delta_l^4}{12\delta_t\omega_1\omega_2}\frac{\partial^4\rho}{\partial x_2\partial x_3^3} + C_{14}\frac{v_3\rho\delta_l^4}{72\omega_3\delta_t\omega_4\omega_1\omega_2}\frac{\partial^4 v_2}{\partial x_2\partial x_3^3} + \\
&(\omega_1 v_2^2 - 3c_s^2\omega_2 - \omega_1 + \omega_2 + 3c_s^2\omega_1 - v_2^2\omega_2)\frac{\rho v_2\delta_l^4}{36\delta_t\omega_1\omega_2}\frac{\partial^4 v_3}{\partial x_2\partial x_3^3} + C_{15}\frac{\delta_l^4}{72\delta_t\omega_1\omega_2}\frac{\partial^4\rho}{\partial x_3^4} + \\
&(20v_3^2\omega_2 + 12c_s^2\omega_2 - 9c_s^2\omega_1\omega_2 - 4\omega_1 + 10v_3^2\omega_1 + 6\omega_1\omega_2 - 8\omega_2 + 6c_s^2\omega_1 - 15v_3^2\omega_1\omega_2)\frac{v_3\rho\delta_l^4}{36\delta_t\omega_1\omega_2}\frac{\partial^4 v_3}{\partial x_3^4} = 0,
\end{aligned}
$$

where:

$C_1 = 12v_1^4\omega_2 - 9\omega_1 v_1^4\omega_2 - 3c_s^4\omega_1\omega_2 - 6\omega_1 v_1^2 - 36c_s^2\omega_1 v_1^2\omega_2 - 4c_s^2\omega_2 + 2c_s^4\omega_1 + 3c_s^2\omega_1\omega_2 + 48c_s^2 v_1^2\omega_2 - 12v_1^2\omega_2 + 9\omega_1 v_1^2\omega_2 + 6\omega_1 v_1^4 + 24c_s^2\omega_1 v_1^2 - 2c_s^2\omega_1 + 4c_s^4\omega_2$

$C_2 = 4\omega_3\omega_4 v_1^2\omega_2 - 6\omega_3\omega_4\omega_1\omega_2 + 12\omega_3 c_s^2\omega_4\omega_1 + 9\omega_4\omega_1\omega_2 - 18\omega_3\omega_4 v_2^2\omega_2 + 2\omega_3\omega_4\omega_2 - 27\omega_3 c_s^2\omega_1\omega_2 - 9\omega_4\omega_1 v_1^2\omega_2 - 9\omega_3\omega_1 v_1^2\omega_2 + 18\omega_3\omega_4\omega_1 v_2^2 + 9\omega_3\omega_1\omega_2 + 18\omega_3 c_s^2\omega_4\omega_1\omega_2 + 2\omega_3\omega_4\omega_1 v_1^2 + 6\omega_3 c_s^2\omega_4\omega_2 - 27c_s^2\omega_4\omega_1\omega_2 - 8\omega_3\omega_4\omega_1 + 6\omega_3\omega_4\omega_1 v_1^2\omega_2$

$C_3 = -18\omega_3\omega_4 v_1^2\omega_2 - 6\omega_3\omega_4\omega_1\omega_2 + 12\omega_3 c_s^2\omega_4\omega_1 + 9\omega_4\omega_1\omega_2 + 4\omega_3\omega_4 v_2^2\omega_2 + 2\omega_3\omega_4\omega_2 - 27\omega_3 c_s^2\omega_1\omega_2 + 2\omega_3\omega_4\omega_1 v_2^2 + 9\omega_3\omega_1\omega_2 + 18\omega_3 c_s^2\omega_4\omega_1\omega_2 + 6\omega_3\omega_4\omega_1 v_2^2\omega_2 + 18\omega_3\omega_4\omega_1 v_1^2 + 6\omega_3 c_s^2\omega_4\omega_2 - 27c_s^2\omega_4\omega_1\omega_2 - 8\omega_3\omega_4\omega_1 - 9\omega_4\omega_1 v_2^2\omega_2 - 9\omega_3\omega_1 v_2^2\omega_2$

$C_4 = -3c_s^4\omega_1\omega_2 - 36c_s^2\omega_1 v_2^2\omega_2 + 48c_s^2 v_2^2\omega_2 - 6\omega_1 v_2^2 - 9\omega_1 v_2^4\omega_2 - 4c_s^2\omega_2 + 2c_s^4\omega_1 + 3c_s^2\omega_1\omega_2 + 12v_2^4\omega_2 + 24c_s^2\omega_1 v_2^2 + 9\omega_1 v_2^2\omega_2 + 6\omega_1 v_2^4 - 2c_s^2\omega_1 + 4c_s^4\omega_2 - 12v_2^2\omega_2$

$C_5 = 4\omega_3\omega_4 v_1^2\omega_2 - 6\omega_3\omega_4\omega_1\omega_2 + 12\omega_3 c_s^2\omega_4\omega_1 - 18\omega_3 v_3^2\omega_4\omega_2 + 9\omega_4\omega_1\omega_2 + 2\omega_3\omega_4\omega_2 - 27\omega_3 c_s^2\omega_1\omega_2 - 9\omega_4\omega_1 v_1^2\omega_2 - 9\omega_3\omega_1 v_1^2\omega_2 + 9\omega_3\omega_1\omega_2 + 18\omega_3 c_s^2\omega_4\omega_1\omega_2 + 2\omega_3\omega_4\omega_1 v_1^2 + 18\omega_3 v_3^2\omega_4\omega_1 + 6\omega_3 c_s^2\omega_4\omega_2 - 27c_s^2\omega_4\omega_1\omega_2 - 8\omega_3\omega_4\omega_1 + 6\omega_3\omega_4\omega_1 v_1^2\omega_2$

$C_6 = 6\omega_3 c_s^2\omega_4\omega_1 - 2\omega_3 v_3^2\omega_4\omega_2 + 9\omega_4\omega_1\omega_2 + 2\omega_3\omega_4\omega_2 + 27\omega_3 c_s^2\omega_1\omega_2 - 9v_3^2\omega_4\omega_1\omega_2 - 9\omega_3\omega_1\omega_2 + 2\omega_3 v_3^2\omega_4\omega_1 - 6\omega_3 c_s^2\omega_4\omega_2 - 27c_s^2\omega_4\omega_1\omega_2 - 2\omega_3\omega_4\omega_1 + 9\omega_3 v_3^2\omega_1\omega_2$

$C_7 = 6\omega_3 c_s^2\omega_4\omega_1 + 9\omega_4\omega_1\omega_2 - 2\omega_3\omega_4 v_2^2\omega_2 + 2\omega_3\omega_4\omega_2 + 27\omega_3 c_s^2\omega_1\omega_2 + 2\omega_3\omega_4\omega_1 v_2^2 - 9\omega_3\omega_1\omega_2 - 6\omega_3 c_s^2\omega_4\omega_2 - 27c_s^2\omega_4\omega_1\omega_2 - 2\omega_3\omega_4\omega_1 - 9\omega_4\omega_1 v_2^2\omega_2 + 9\omega_3\omega_1 v_2^2\omega_2$

$C_8 = 6\omega_3 c_s^2\omega_4\omega_1 - 2\omega_3 v_3^2\omega_4\omega_2 + 9\omega_4\omega_1\omega_2 + 2\omega_3\omega_4\omega_2 + 27\omega_3 c_s^2\omega_1\omega_2 - 9v_3^2\omega_4\omega_1\omega_2 - 9\omega_3\omega_1\omega_2 + 2\omega_3 v_3^2\omega_4\omega_1 - 6\omega_3 c_s^2\omega_4\omega_2 - 27c_s^2\omega_4\omega_1\omega_2 - 2\omega_3\omega_4\omega_1 + 9\omega_3 v_3^2\omega_1\omega_2$

$C_9 = -2\omega_3\omega_4 v_1^2\omega_2 + 6\omega_3 c_s^2\omega_4\omega_1 + 9\omega_4\omega_1\omega_2 + 2\omega_3\omega_4\omega_2 + 27\omega_3 c_s^2\omega_1\omega_2 - 9\omega_4\omega_1 v_1^2\omega_2 + 9\omega_3\omega_1 v_1^2\omega_2 - 9\omega_3\omega_1\omega_2 + 2\omega_3\omega_4\omega_1 v_1^2 - 6\omega_3 c_s^2\omega_4\omega_2 - 27c_s^2\omega_4\omega_1\omega_2 - 2\omega_3\omega_4\omega_1$

$C_{10} = -6\omega_3\omega_4\omega_1\omega_2 + 12\omega_3 c_s^2\omega_4\omega_1 - 18\omega_3 v_3^2\omega_4\omega_2 + 9\omega_4\omega_1\omega_2 + 4\omega_3\omega_4 v_2^2\omega_2 + 2\omega_3\omega_4\omega_2 - 27\omega_3 c_s^2\omega_1\omega_2 + 2\omega_3\omega_4\omega_1 v_2^2 + 9\omega_3\omega_1\omega_2 + 18\omega_3 c_s^2\omega_4\omega_1\omega_2 + 6\omega_3\omega_4\omega_1 v_2^2\omega_2 + 18\omega_3 v_3^2\omega_4\omega_1 + 6\omega_3 c_s^2\omega_4\omega_2 - 27c_s^2\omega_4\omega_1\omega_2 - 8\omega_3\omega_4\omega_1 - 9\omega_4\omega_1 v_2^2\omega_2 - 9\omega_3\omega_1 v_2^2\omega_2$

$C_{11} = 6\omega_3 c_s^2\omega_4\omega_1 + 9\omega_4\omega_1\omega_2 - 2\omega_3\omega_4 v_2^2\omega_2 + 2\omega_3\omega_4\omega_2 + 27\omega_3 c_s^2\omega_1\omega_2 + 2\omega_3\omega_4\omega_1 v_2^2 - 9\omega_3\omega_1\omega_2 - 6\omega_3 c_s^2\omega_4\omega_2 - 27c_s^2\omega_4\omega_1\omega_2 - 2\omega_3\omega_4\omega_1 - 9\omega_4\omega_1 v_2^2\omega_2 + 9\omega_3\omega_1 v_2^2\omega_2$

$C_{12} = -2\omega_3\omega_4 v_1^2\omega_2 + 6\omega_3 c_s^2\omega_4\omega_1 + 9\omega_4\omega_1\omega_2 + 2\omega_3\omega_4\omega_2 + 27\omega_3 c_s^2\omega_1\omega_2 - 9\omega_4\omega_1 v_1^2\omega_2 + 9\omega_3\omega_1 v_1^2\omega_2 - 9\omega_3\omega_1\omega_2 + 2\omega_3\omega_4\omega_1 v_1^2 - 6\omega_3 c_s^2\omega_4\omega_2 - 27c_s^2\omega_4\omega_1\omega_2 - 2\omega_3\omega_4\omega_1$

$C_{13} = -18\omega_3\omega_4 v_1^2\omega_2 - 6\omega_3\omega_4\omega_1\omega_2 + 12\omega_3 c_s^2\omega_4\omega_1 + 4\omega_3 v_3^2\omega_4\omega_2 + 9\omega_4\omega_1\omega_2 + 2\omega_3\omega_4\omega_2 - 27\omega_3 c_s^2\omega_1\omega_2 - 9v_3^2\omega_4\omega_1\omega_2 + 9\omega_3\omega_1\omega_2 + 18\omega_3 c_s^2\omega_4\omega_1\omega_2 + 18\omega_3\omega_4\omega_1 v_1^2 + 2\omega_3 v_3^2\omega_4\omega_1 + 6\omega_3 c_s^2\omega_4\omega_2 - 27c_s^2\omega_4\omega_1\omega_2 - 8\omega_3\omega_4\omega_1 - 9\omega_3 v_3^2\omega_1\omega_2 + 6\omega_3 v_3^2\omega_4\omega_1\omega_2$

$C_{14} = -6\omega_3\omega_4\omega_1\omega_2 + 12\omega_3 c_s^2\omega_4\omega_1 + 4\omega_3 v_3^2\omega_4\omega_2 + 9\omega_4\omega_1\omega_2 - 18\omega_3\omega_4 v_2^2\omega_2 + 2\omega_3\omega_4\omega_2 - 27\omega_3 c_s^2\omega_1\omega_2 - 9v_3^2\omega_4\omega_1\omega_2 + 18\omega_3\omega_4\omega_1 v_2^2 + 9\omega_3\omega_1\omega_2 + 18\omega_3 c_s^2\omega_4\omega_1\omega_2 + 2\omega_3 v_3^2\omega_4\omega_1 + 6\omega_3 c_s^2\omega_4\omega_2 - 27c_s^2\omega_4\omega_1\omega_2 - 8\omega_3\omega_4\omega_1 - 9\omega_3 v_3^2\omega_1\omega_2 + 6\omega_3 v_3^2\omega_4\omega_1\omega_2$

$C_{15} = -36c_s^2 v_3^2\omega_1\omega_2 - 3c_s^4\omega_1\omega_2 + 6v_3^4\omega_1 - 12v_3^2\omega_2 + 24c_s^2 v_3^2\omega_1 - 4c_s^2\omega_2 + 2c_s^4\omega_1 + 3c_s^2\omega_1\omega_2 - 9v_3^4\omega_1\omega_2 + 12v_3^4\omega_2 - 6v_3^2\omega_1 + 48c_s^2 v_3^2\omega_2 - 2c_s^2\omega_1 + 4c_s^4\omega_2 + 9v_3^2\omega_1\omega_2$

2.7.3 Conservation of momentum: ρv_1

attached text file: `output_d3q27_nse_culbm2_symbolic_pde_01.txt`

$$
\begin{aligned}
& v_1\frac{\partial\rho}{\partial t} + \rho\frac{\partial v_1}{\partial t} + (c_s^2+v_1^2)\frac{\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_1} + \frac{2\rho v_1\delta_l}{\delta_t}\frac{\partial v_1}{\partial x_1} + \frac{v_2 v_1\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_2} + \frac{\rho v_2\delta_l}{\delta_t}\frac{\partial v_1}{\partial x_2} + \frac{\rho v_1\delta_l}{\delta_t}\frac{\partial v_2}{\partial x_2} + \frac{v_3 v_1\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_3} + \frac{v_3\rho\delta_l}{\delta_t}\frac{\partial v_1}{\partial x_3} + \\
& \frac{\rho v_1\delta_l}{\delta_t}\frac{\partial v_3}{\partial x_3} + (6\omega_1 v_1^2 + 8c_s^2\omega_2 - 6c_s^2\omega_1\omega_2 - 2\omega_1 + 12v_1^2\omega_2 - 9\omega_1 v_1^2\omega_2 + 3\omega_1\omega_2 - 4\omega_2 + 4c_s^2\omega_1)\frac{\delta_l^2}{3\delta_t\omega_1\omega_2}\frac{\partial\rho}{\partial x_1}\frac{\partial v_1}{\partial x_1} + \\
& (2\omega_1 - 3\omega_1\omega_2 + 4\omega_2)\frac{\rho v_1\delta_l^2}{\delta_t\omega_1\omega_2}\left(\frac{\partial v_1}{\partial x_1}\right)^2 + (3\omega_1 v_2^2 - c_s^2\omega_2 - \omega_1 + \omega_2 + c_s^2\omega_1 - 3v_2^2\omega_2)\frac{\delta_l^2}{3\delta_t\omega_1\omega_2}\frac{\partial\rho}{\partial x_1}\frac{\partial v_2}{\partial x_2} + \\
& (\omega_1 - \omega_2)\frac{2\rho v_2\delta_l^2}{\delta_t\omega_1\omega_2}\frac{\partial v_2}{\partial x_1}\frac{\partial v_2}{\partial x_2} + (-3v_3^2\omega_2 - c_s^2\omega_2 - \omega_1 + 3v_3^2\omega_1 + \omega_2 + c_s^2\omega_1)\frac{\delta_l^2}{3\delta_t\omega_1\omega_2}\frac{\partial\rho}{\partial x_1}\frac{\partial v_3}{\partial x_3} + (\omega_1 - \omega_2)\frac{2v_3\rho\delta_l^2}{\delta_t\omega_1\omega_2}\frac{\partial v_3}{\partial x_1}\frac{\partial v_3}{\partial x_3} + \\
& (6\omega_1 v_2^2 - 12c_s^2\omega_2 + 3c_s^2\omega_1\omega_2 - 2\omega_1 + 2\omega_2 + 6c_s^2\omega_1 - 6v_2^2\omega_2)\frac{\delta_l^2}{6\delta_t\omega_1\omega_2}\frac{\partial\rho}{\partial x_2}\frac{\partial v_2}{\partial x_1} + (-2+\omega_1)\frac{c_s^2\delta_l^2}{2\delta_t\omega_1}\frac{\partial\rho}{\partial x_2}\frac{\partial v_1}{\partial x_2} + \\
& (-6v_3^2\omega_2 - 12c_s^2\omega_2 + 3c_s^2\omega_1\omega_2 - 2\omega_1 + 6v_3^2\omega_1 + 2\omega_2 + 6c_s^2\omega_1)\frac{\delta_l^2}{6\delta_t\omega_1\omega_2}\frac{\partial\rho}{\partial x_3}\frac{\partial v_3}{\partial x_1} + (-2+\omega_1)\frac{c_s^2\delta_l^2}{2\delta_t\omega_1}\frac{\partial\rho}{\partial x_3}\frac{\partial v_1}{\partial x_3} + \\
& (2\omega_1 v_1^2 + 12c_s^2\omega_2 - 9c_s^2\omega_1\omega_2 - 2\omega_1 + 4v_1^2\omega_2 - 3\omega_1 v_1^2\omega_2 + 3\omega_1\omega_2 - 4\omega_2 + 6c_s^2\omega_1)\frac{v_1\delta_l^2}{6\delta_t\omega_1\omega_2}\frac{\partial^2\rho}{\partial x_1^2} + \\
& (6\omega_1 v_1^2 + 4c_s^2\omega_2 - 3c_s^2\omega_1\omega_2 - 2\omega_1 + 12v_1^2\omega_2 - 9\omega_1 v_1^2\omega_2 + 3\omega_1\omega_2 - 4\omega_2 + 2c_s^2\omega_1)\frac{\rho\delta_l^2}{6\delta_t\omega_1\omega_2}\frac{\partial^2 v_1}{\partial x_1^2} + \\
& (\omega_1 v_2^2 - 3c_s^2\omega_2 - \omega_1 + \omega_2 + 3c_s^2\omega_1 - v_2^2\omega_2)\frac{v_2\delta_l^2}{3\delta_t\omega_1\omega_2}\frac{\partial^2\rho}{\partial x_1\partial x_2} + \\
& (6\omega_1 v_2^2 - 8c_s^2\omega_2 + 3c_s^2\omega_1\omega_2 - 2\omega_1 + 2\omega_2 + 2c_s^2\omega_1 - 6v_2^2\omega_2)\frac{\rho\delta_l^2}{6\delta_t\omega_1\omega_2}\frac{\partial^2 v_2}{\partial x_1\partial x_2} + (-2+\omega_1)\frac{c_s^2\rho\delta_l^2}{2\delta_t\omega_1}\frac{\partial^2 v_1}{\partial x_2^2} + \\
& (-v_3^2\omega_2 - 3c_s^2\omega_2 - \omega_1 + v_3^2\omega_1 + \omega_2 + 3c_s^2\omega_1)\frac{v_3\delta_l^2}{3\delta_t\omega_1\omega_2}\frac{\partial^2\rho}{\partial x_1\partial x_3} + \\
& (-6v_3^2\omega_2 - 8c_s^2\omega_2 + 3c_s^2\omega_1\omega_2 - 2\omega_1 + 6v_3^2\omega_1 + 2\omega_2 + 2c_s^2\omega_1)\frac{\rho\delta_l^2}{6\delta_t\omega_1\omega_2}\frac{\partial^2 v_3}{\partial x_1\partial x_3} + (-2+\omega_1)\frac{c_s^2\rho\delta_l^2}{2\delta_t\omega_1}\frac{\partial^2 v_1}{\partial x_3^2} + C_1\frac{\delta_l^3}{12\delta_t\omega_1^2\omega_2^2}\frac{\partial^3\rho}{\partial x_1^3} \\
& + C_2\frac{\rho v_1\delta_l^3}{6\delta_t\omega_1^2\omega_2^2}\frac{\partial^3 v_1}{\partial x_1^3} + C_3\frac{v_2 v_1\delta_l^3}{6\delta_t\omega_1^2\omega_2^2}\frac{\partial^3\rho}{\partial x_1^2\partial x_2} + C_4\frac{\rho v_2\delta_l^3}{6\omega_3\delta_t\omega_1^2\omega_2^2}\frac{\partial^3 v_1}{\partial x_1^2\partial x_2} + C_5\frac{\rho v_1\delta_l^3}{12\omega_3\delta_t\omega_4\omega_1^2\omega_2^2}\frac{\partial^3 v_2}{\partial x_1^2\partial x_2} + C_6\frac{\delta_l^3}{6\delta_t\omega_1^2\omega_2^2}\frac{\partial^3\rho}{\partial x_1\partial x_2^2} - \\
& \frac{c_s^2\rho v_1\delta_l^3}{6\delta_t}\frac{\partial^3 v_1}{\partial x_1\partial x_2^2} + C_7\frac{\rho v_2\delta_l^3}{6\delta_t\omega_1^2\omega_2^2}\frac{\partial^3 v_2}{\partial x_1\partial x_2^2} + (-1+3c_s^2+v_2^2)\frac{v_2 v_1\delta_l^3}{12\delta_t}\frac{\partial^3\rho}{\partial x_2^3} + C_8\frac{\rho v_2\delta_l^3}{12\omega_3\delta_t\omega_4\omega_1}\frac{\partial^3 v_1}{\partial x_2^3} + (-1+c_s^2+3v_2^2)\frac{\rho v_1\delta_l^3}{12\delta_t}\frac{\partial^3 v_2}{\partial x_2^3} \\
& + C_9\frac{v_3 v_1\delta_l^3}{6\delta_t\omega_1^2\omega_2^2}\frac{\partial^3\rho}{\partial x_1^2\partial x_3} + C_{10}\frac{v_3\rho\delta_l^3}{6\omega_3\delta_t\omega_1^2\omega_2^2}\frac{\partial^3 v_1}{\partial x_1^2\partial x_3} + C_{11}\frac{\rho v_1\delta_l^3}{12\omega_3\delta_t\omega_4\omega_1^2\omega_2^2}\frac{\partial^3 v_3}{\partial x_1^2\partial x_3} + C_{12}\frac{v_3 v_2\delta_l^3}{3\delta_t\omega_1^2\omega_2^2}\frac{\partial^3\rho}{\partial x_1\partial x_2\partial x_3} + \\
& C_{13}\frac{v_3\rho\delta_l^3}{6\omega_3\delta_t\omega_4\omega_1^2\omega_2^2}\frac{\partial^3 v_2}{\partial x_1\partial x_2\partial x_3} + C_{14}\frac{\rho v_2\delta_l^3}{6\omega_3\delta_t\omega_4\omega_1^2\omega_2^2}\frac{\partial^3 v_3}{\partial x_1\partial x_2\partial x_3} + C_{15}\frac{v_3\rho\delta_l^3}{4\omega_3\delta_t\omega_4\omega_1}\frac{\partial^3 v_1}{\partial x_2^2\partial x_3} - \frac{c_s^2\rho v_1\delta_l^3}{6\delta_t}\frac{\partial^3 v_3}{\partial x_2^2\partial x_3} + \\
& C_{16}\frac{\delta_l^3}{6\delta_t\omega_1^2\omega_2^2}\frac{\partial^3\rho}{\partial x_1\partial x_3^2} - \frac{c_s^2\rho v_1\delta_l^3}{6\delta_t}\frac{\partial^3 v_1}{\partial x_1\partial x_3^2} + C_{17}\frac{v_3\rho\delta_l^3}{6\delta_t\omega_1^2\omega_2^2}\frac{\partial^3 v_3}{\partial x_1\partial x_3^2} + C_{18}\frac{\rho v_2\delta_l^3}{4\omega_3\delta_t\omega_4\omega_1}\frac{\partial^3 v_1}{\partial x_2\partial x_3^2} - \frac{c_s^2\rho v_1\delta_l^3}{6\delta_t}\frac{\partial^3 v_2}{\partial x_2\partial x_3^2} + \\
& (-1+3c_s^2+v_3^2)\frac{v_3 v_1\delta_l^3}{12\delta_t}\frac{\partial^3\rho}{\partial x_3^3} + C_{19}\frac{v_3\rho\delta_l^3}{12\omega_3\delta_t\omega_4\omega_1}\frac{\partial^3 v_1}{\partial x_3^3} + (-1+c_s^2+3v_3^2)\frac{\rho v_1\delta_l^3}{12\delta_t}\frac{\partial^3 v_3}{\partial x_3^3} + C_{20}\frac{v_1\delta_l^4}{36\omega_3\delta_t\omega_1^3\omega_2^3}\frac{\partial^4\rho}{\partial x_1^4} + \\
& C_{21}\frac{\rho\delta_l^4}{36\omega_3\delta_t\omega_1^3\omega_2^3}\frac{\partial^4 v_1}{\partial x_1^4} + C_{22}\frac{v_2\delta_l^4}{36\omega_3^2\delta_t\omega_1^3\omega_2^3}\frac{\partial^4\rho}{\partial x_1^3\partial x_2} + C_{23}\frac{\rho v_2 v_1\delta_l^4}{18\omega_3\delta_t\omega_1^3\omega_2^3}\frac{\partial^4 v_1}{\partial x_1^3\partial x_2} + C_{24}\frac{\rho\delta_l^4}{72\omega_3^2\delta_t\omega_4^2\omega_1^3\omega_2^3}\frac{\partial^4 v_2}{\partial x_1^3\partial x_2} + \\
& C_{25}\frac{v_1\delta_l^4}{36\omega_3^2\delta_t\omega_4^2\omega_1^3\omega_2^3}\frac{\partial^4\rho}{\partial x_1^2\partial x_2^2} + C_{26}\frac{\rho\delta_l^4}{36\omega_3^2\delta_t\omega_4\omega_1^3\omega_2^3}\frac{\partial^4 v_1}{\partial x_1^2\partial x_2^2} + C_{27}\frac{\rho v_2 v_1\delta_l^4}{18\omega_3\delta_t\omega_1^3\omega_2^3}\frac{\partial^4 v_2}{\partial x_1^2\partial x_2^2} + C_{28}\frac{v_2\delta_l^4}{72\omega_3^2\delta_t\omega_4^2\omega_1^3\omega_2^3}\frac{\partial^4\rho}{\partial x_1\partial x_2^3} +
\end{aligned}
$$

$$C_{29}\frac{\rho v_2 v_1 \delta_l^4}{72\omega_3\delta_t\omega_4\omega_1\omega_2}\frac{\partial^4 v_1}{\partial x_1\partial x_2^3} + C_{30}\frac{\rho\delta_l^4}{36\omega_3\delta_t\omega_4\omega_1^3\omega_2^3}\frac{\partial^4 v_2}{\partial x_1\partial x_2^3} + C_{31}\frac{v_1\delta_l^4}{72\delta_t\omega_1\omega_2}\frac{\partial^4\rho}{\partial x_2^4} + C_{32}\frac{\rho\delta_l^4}{24\omega_3^2\delta_t\omega_4^2\omega_1^3}\frac{\partial^4 v_1}{\partial x_2^4} +$$
$$(10\omega_1 v_2^2 + 12c_s^2\omega_2 - 9c_s^2\omega_1\omega_2 - 4\omega_1 + 6\omega_1\omega_2 - 8\omega_2 - 15\omega_1 v_2^2\omega_2 + 6c_s^2\omega_1 + 20v_2^2\omega_2)\frac{\rho v_2 v_1\delta_l^4}{36\delta_t\omega_1\omega_2}\frac{\partial^4 v_2}{\partial x_2^4} +$$
$$C_{33}\frac{v_3\delta_l^4}{36\omega_3^2\delta_t\omega_1^3\omega_2^3}\frac{\partial^4\rho}{\partial x_1^3\partial x_3} + C_{34}\frac{v_3\rho v_1\delta_l^4}{18\omega_3\delta_t\omega_1^3\omega_2^3}\frac{\partial^4 v_1}{\partial x_1^3\partial x_3} + C_{35}\frac{\rho\delta_l^4}{72\omega_3^2\delta_t\omega_4^2\omega_1^3\omega_2^3}\frac{\partial^4 v_3}{\partial x_1^3\partial x_3} + C_{36}\frac{v_3 v_2 v_1\delta_l^4}{6\delta_t\omega_1^3\omega_2^3}\frac{\partial^4\rho}{\partial x_1^2\partial x_2\partial x_3} +$$
$$C_{37}\frac{v_3\rho v_2\delta_l^4}{6\omega_3^2\delta_t\omega_4\omega_1^3\omega_2^3}\frac{\partial^4 v_1}{\partial x_1^2\partial x_2\partial x_3} + C_{38}\frac{v_3\rho v_1\delta_l^4}{72\omega_3^2\delta_t\omega_4^2\omega_1^3\omega_2^3}\frac{\partial^4 v_2}{\partial x_1^2\partial x_2\partial x_3} + C_{39}\frac{\rho v_2 v_1\delta_l^4}{72\omega_3^2\delta_t\omega_4^2\omega_1^3\omega_2^3}\frac{\partial^4 v_3}{\partial x_1^2\partial x_2\partial x_3} +$$
$$C_{40}\frac{v_3\delta_l^4}{72\omega_3^2\delta_t\omega_4^2\omega_1^3\omega_2^3}\frac{\partial^4\rho}{\partial x_1\partial x_2^2\partial x_3} + C_{41}\frac{v_3\rho v_1\delta_l^4}{72\omega_3\delta_t\omega_4\omega_1\omega_2}\frac{\partial^4 v_1}{\partial x_1\partial x_2^2\partial x_3} + C_{42}\frac{v_3\rho v_2\delta_l^4}{6\omega_3\delta_t\omega_1^3\omega_2^3}\frac{\partial^4 v_2}{\partial x_1\partial x_2^2\partial x_3} +$$
$$C_{43}\frac{\rho\delta_l^4}{72\omega_3^2\delta_t\omega_4^2\omega_1^3\omega_5\omega_2^3}\frac{\partial^4 v_3}{\partial x_1\partial x_2^2\partial x_3} + (-v_3^2\omega_2 - 3c_s^2\omega_2 - \omega_1 + v_3^2\omega_1 + \omega_2 + 3c_s^2\omega_1)\frac{v_3 v_2 v_1\delta_l^4}{12\delta_t\omega_1\omega_2}\frac{\partial^4\rho}{\partial x_2^3\partial x_3} +$$
$$C_{44}\frac{v_3\rho v_2\delta_l^4}{8\omega_3^2\delta_t\omega_4^2\omega_1}\frac{\partial^4 v_1}{\partial x_2^3\partial x_3} + (-v_3^2\omega_2 - 3c_s^2\omega_2 - \omega_1 + v_3^2\omega_1 + \omega_2 + 3c_s^2\omega_1)\frac{v_3\rho v_1\delta_l^4}{36\delta_t\omega_1\omega_2}\frac{\partial^4 v_2}{\partial x_2^3\partial x_3} + C_{45}\frac{\rho v_2 v_1\delta_l^4}{72\omega_3\delta_t\omega_4\omega_1\omega_2}\frac{\partial^4 v_3}{\partial x_2^3\partial x_3} +$$
$$C_{46}\frac{v_1\delta_l^4}{36\omega_3^2\delta_t\omega_4^2\omega_1^3\omega_2^3}\frac{\partial^4\rho}{\partial x_1^2\partial x_3^2} + C_{47}\frac{\rho\delta_l^4}{36\omega_3^2\delta_t\omega_4\omega_1^3\omega_2^3}\frac{\partial^4 v_1}{\partial x_1^2\partial x_3^2} + C_{48}\frac{v_3\rho v_1\delta_l^4}{18\omega_3\delta_t\omega_1^3\omega_2^3}\frac{\partial^4 v_3}{\partial x_1^2\partial x_3^2} + C_{49}\frac{v_2\delta_l^4}{72\omega_3^2\delta_t\omega_4^2\omega_1^3\omega_2^3}\frac{\partial^4\rho}{\partial x_1\partial x_2\partial x_3^2} +$$
$$C_{50}\frac{\rho v_2 v_1\delta_l^4}{72\omega_3\delta_t\omega_4\omega_1\omega_2}\frac{\partial^4 v_1}{\partial x_1\partial x_2\partial x_3^2} + C_{51}\frac{\rho\delta_l^4}{72\omega_3^2\delta_t\omega_4^2\omega_1^3\omega_5\omega_2^3}\frac{\partial^4 v_2}{\partial x_1\partial x_2\partial x_3^2} + C_{52}\frac{v_3\rho v_2\delta_l^4}{6\omega_3\delta_t\omega_1^3\omega_2^3}\frac{\partial^4 v_3}{\partial x_1\partial x_2\partial x_3^2} +$$
$$(-3v_3^2\omega_2 + 3\omega_1 v_2^2 - 14c_s^2\omega_2 + 6c_s^2\omega_1\omega_2 - 2\omega_1 + 3v_3^2\omega_1 + 2\omega_2 + 2c_s^2\omega_1 - 3v_2^2\omega_2)\frac{c_s^2 v_1\delta_l^4}{36\delta_t\omega_1\omega_2}\frac{\partial^4\rho}{\partial x_2^2\partial x_3^2} +$$
$$C_{53}\frac{\rho\delta_l^4}{8\omega_3^2\delta_t\omega_4^2\omega_1^3\omega_5}\frac{\partial^4 v_1}{\partial x_2^2\partial x_3^2} + (\omega_1 v_2^2 - 3c_s^2\omega_2 - \omega_1 + \omega_2 + 3c_s^2\omega_1 - v_2^2\omega_2)\frac{\rho v_2 v_1\delta_l^4}{36\delta_t\omega_1\omega_2}\frac{\partial^4 v_2}{\partial x_2^2\partial x_3^2} +$$
$$(-v_3^2\omega_2 - 3c_s^2\omega_2 - \omega_1 + v_3^2\omega_1 + \omega_2 + 3c_s^2\omega_1)\frac{v_3\rho v_1\delta_l^4}{36\delta_t\omega_1\omega_2}\frac{\partial^4 v_3}{\partial x_2^2\partial x_3^2} + C_{54}\frac{v_3\delta_l^4}{72\omega_3^2\delta_t\omega_4^2\omega_1^3\omega_2^3}\frac{\partial^4\rho}{\partial x_1\partial x_3^3} + C_{55}\frac{v_3\rho v_1\delta_l^4}{72\omega_3\delta_t\omega_4\omega_1\omega_2}\frac{\partial^4 v_1}{\partial x_1\partial x_3^3}$$
$$+ C_{56}\frac{\rho\delta_l^4}{36\omega_3\delta_t\omega_4\omega_1^3\omega_2^3}\frac{\partial^4 v_3}{\partial x_1\partial x_3^3} + (\omega_1 v_2^2 - 3c_s^2\omega_2 - \omega_1 + \omega_2 + 3c_s^2\omega_1 - v_2^2\omega_2)\frac{v_3 v_2 v_1\delta_l^4}{12\delta_t\omega_1\omega_2}\frac{\partial^4\rho}{\partial x_2\partial x_3^3} + C_{57}\frac{v_3\rho v_2\delta_l^4}{8\omega_3^2\delta_t\omega_4^2\omega_1}\frac{\partial^4 v_1}{\partial x_2\partial x_3^3} +$$
$$C_{58}\frac{v_3\rho v_1\delta_l^4}{72\omega_3\delta_t\omega_4\omega_1\omega_2}\frac{\partial^4 v_2}{\partial x_2\partial x_3^3} + (\omega_1 v_2^2 - 3c_s^2\omega_2 - \omega_1 + \omega_2 + 3c_s^2\omega_1 - v_2^2\omega_2)\frac{\rho v_2 v_1\delta_l^4}{36\delta_t\omega_1\omega_2}\frac{\partial^4 v_3}{\partial x_2\partial x_3^3} + C_{59}\frac{v_1\delta_l^4}{72\delta_t\omega_1\omega_2}\frac{\partial^4\rho}{\partial x_3^4} +$$
$$C_{60}\frac{\rho\delta_l^4}{24\omega_3^2\delta_t\omega_4^2\omega_1^3}\frac{\partial^4 v_1}{\partial x_3^4} +$$
$$(20v_3^2\omega_2 + 12c_s^2\omega_2 - 9c_s^2\omega_1\omega_2 - 4\omega_1 + 10v_3^2\omega_1 + 6\omega_1\omega_2 - 8\omega_2 + 6c_s^2\omega_1 - 15v_3^2\omega_1\omega_2)\frac{v_3\rho v_1\delta_l^4}{36\delta_t\omega_1\omega_2}\frac{\partial^4 v_3}{\partial x_3^4} = 0,$$

where:

$C_1 = 24c_s^2\omega_1^2 v_1^2 + 16\omega_1 v_1^4\omega_2 - 7\omega_1^2 v_1^2\omega_2^2 + 72c_s^2 v_1^2\omega_2^2 + 4\omega_1^2 v_1^4 - 96c_s^2\omega_1 v_1^2\omega_2^2 - 8c_s^2\omega_2^2 + 4c_s^4\omega_1^2 + 8c_s^2\omega_1\omega_2^2 + 48c_s^2\omega_1 v_1^2\omega_2 + 12\omega_1^2 v_1^2\omega_2 + 16v_1^4\omega_2^2 - 24\omega_1 v_1^4\omega_2^2 - 8c_s^4\omega_1\omega_2^2 - 48c_s^2\omega_1^2 v_1^2\omega_2 - 4c_s^2\omega_1^2 + 8c_s^4\omega_2^2 + c_s^4\omega_1^2\omega_2^2 - 16\omega_1 v_1^2\omega_2 + 4c_s^2\omega_1^2\omega_2 + 7\omega_1^2 v_1^4\omega_2^2 - 12\omega_1^2 v_1^4\omega_2 - 16v_1^2\omega_2^2 - c_s^2\omega_1^2\omega_2^2 + 24\omega_1 v_1^2\omega_2^2 - 4c_s^4\omega_1^2\omega_2 - 4\omega_1^2 v_1^2 + 24c_s^2\omega_1^2 v_1^2\omega_2^2$

$C_2 = 11\omega_1^2 v_1^2\omega_2^2 - 12\omega_2^2 - 4\omega_1^2\omega_2^2 + 20c_s^2\omega_2^2 - 24c_s^2\omega_1\omega_2^2 + 8c_s^2\omega_1\omega_2 + 8\omega_1^2\omega_2 - 20\omega_1^2 v_1^2\omega_2 - 4\omega_1^2 + 8c_s^2\omega_1^2 + 24\omega_1 v_1^2\omega_2 - 12c_s^2\omega_1^2\omega_2 - 8\omega_1\omega_2 + 16\omega_1\omega_2^2 + 28v_1^2\omega_2^2 + 5c_s^2\omega_1^2\omega_2^2 - 40\omega_1 v_1^2\omega_2^2 + 8\omega_1^2 v_1^2$

$C_3 = 2\omega_2^2 - 3\omega_1^2 v_2^2\omega_2 - 6c_s^2\omega_2^2 + 9c_s^2\omega_1\omega_2^2 - 6c_s^2\omega_1\omega_2 + 3\omega_1^2\omega_2 - 4\omega_1^2 + 3\omega_1 v_2^2\omega_2^2 + 12c_s^2\omega_1^2 - 4v_2^2\omega_2^2 - 4\omega_1 v_1^2\omega_2 - 9c_s^2\omega_1^2\omega_2 + 2\omega_1\omega_2 - 3\omega_1\omega_2^2 + 2v_1^2\omega_2^2 + 2\omega_1^2 v_2^2 + 2\omega_1 v_2^2\omega_2 + 2\omega_1^2 v_1^2$

$C_4 = 3\omega_3 c_s^2\omega_1\omega_2^2 - \omega_3\omega_1^2 v_2^2\omega_2 - 4\omega_3 c_s^2\omega_2^2 - 2\omega_1^2 v_2^2\omega_2 + 6c_s^2\omega_1\omega_2^2 + \omega_3\omega_1^2\omega_2 + 2\omega_1^2\omega_2 - 4\omega_3 c_s^2\omega_1\omega_2 - 2\omega_3 v_2^2\omega_2^2 + 8\omega_3 c_s^2\omega_1^2 - 12\omega_3\omega_1 v_1^2\omega_2 - 3\omega_3 c_s^2\omega_1^2\omega_2 + 2\omega_1 v_2^2\omega_2^2 + 4\omega_3\omega_1\omega_2 + \omega_3\omega_1 v_2^2\omega_2^2 - 6c_s^2\omega_1^2\omega_2 + 6\omega_3 v_1^2\omega_2^2 + 2\omega_3\omega_1^2 v_2^2 - 2\omega_1\omega_2^2 - \omega_3\omega_1\omega_2^2 - 4\omega_3\omega_1^2 + 6\omega_3\omega_1^2 v_1^2$

$C_5 = -36\omega_3 c_s^2\omega_1\omega_2^2 - 4\omega_3\omega_4\omega_1\omega_2 - 12c_s^2\omega_4\omega_1^2\omega_2 - 11\omega_3 c_s^2\omega_4\omega_1^2\omega_2^2 + 6\omega_3\omega_1^2 v_1^2\omega_2^2 - 6\omega_3\omega_1^2\omega_2^2 - 24\omega_3\omega_4 v_2^2\omega_2^2 + 6\omega_4\omega_1^2 v_1^2\omega_2^2 - 2\omega_3\omega_4\omega_1^2 v_1^2\omega_2 - 4\omega_4\omega_1^2 v_1^2\omega_2 - 3\omega_3\omega_4\omega_1^2 v_1^2\omega_2^2 + 18c_s^2\omega_4\omega_1^2\omega_2^2 - 12\omega_3 c_s^2\omega_4\omega_1^2\omega_2 + 8\omega_4\omega_1\omega_2^2 + 4\omega_3\omega_4\omega_1^2 v_1^2 - 8\omega_3\omega_4\omega_1\omega_2^2 + 16\omega_3 c_s^2\omega_4\omega_1^2 - 18\omega_3\omega_4\omega_1^2 v_2^2\omega_2 + 8\omega_3\omega_4 v_1^2\omega_2^2 + 12\omega_3\omega_4\omega_1^2 v_2^2 + 2\omega_3\omega_4\omega_1 v_1^2\omega_2^2 + 3\omega_3\omega_4\omega_1^2\omega_2^2 + 4\omega_3 c_s^2\omega_4\omega_1\omega_2 - 24c_s^2\omega_4\omega_1\omega_2^2 + 12\omega_3\omega_4\omega_1 v_2^2\omega_2 - 8\omega_3\omega_4\omega_1^2 - 6\omega_4\omega_1^2\omega_2^2 + 12\omega_3 c_s^2\omega_4\omega_1\omega_2^2 + 4\omega_4\omega_1^2\omega_2 + 16\omega_3 c_s^2\omega_4\omega_2^2 + 18\omega_3\omega_4\omega_1 v_2^2\omega_2^2 + 12\omega_3\omega_1\omega_2^2 + 18\omega_3 c_s^2\omega_1^2\omega_2^2 - 12\omega_3\omega_1 v_1^2\omega_2^2 + 8\omega_3\omega_4\omega_1^2\omega_2 - 8\omega_4\omega_1 v_1^2\omega_2^2$

$C_6 = 2\omega_1^2 v_2^4 + 6c_s^2\omega_1 v_2^2\omega_2 + 12c_s^2\omega_1^2 v_2^2 + 3\omega_1^2 v_2^2\omega_2 + 3\omega_1 v_2^4\omega_2^2 + 2c_s^2\omega_2^2 + 2c_s^4\omega_1^2 - 4v_2^4\omega_2^2 - 2c_s^2\omega_1\omega_2^2 + 2\omega_1 v_2^4\omega_2 - 18c_s^2 v_2^2\omega_2^2 + 15c_s^2\omega_1 v_2^2\omega_2^2 + 14c_s^4\omega_1\omega_2^2 - 3\omega_1^2 v_2^4\omega_2 - 3\omega_1 v_2^2\omega_2^2 - 2c_s^2\omega_1^2 - 14c_s^4\omega_2^2 - c_s^4\omega_1^2\omega_2^2 + 4v_2^2\omega_2^2 + 2c_s^2\omega_1^2\omega_2 - 15c_s^2\omega_1^2 v_2^2\omega_2 - 2\omega_1^2 v_2^2 - 2\omega_1 v_2^2\omega_2 - 2c_s^4\omega_1^2\omega_2$

$C_7 = 6\omega_2^2 - 11\omega_1^2 v_2^2\omega_2 - 10c_s^2\omega_2^2 + 9c_s^2\omega_1\omega_2^2 + 2c_s^2\omega_1\omega_2 + 5\omega_1^2\omega_2 - 4\omega_1^2 + 11\omega_1 v_2^2\omega_2^2 + 8c_s^2\omega_1^2 - 14v_2^2\omega_2^2 - 9c_s^2\omega_1^2\omega_2 - 2\omega_1\omega_2 - 5\omega_1\omega_2^2 + 8\omega_1^2 v_2^2 + 6\omega_1 v_2^2\omega_2$

$C_8 = -18c_s^2\omega_4 - 6\omega_3 c_s^2\omega_4\omega_1 + 18\omega_3 c_s^2\omega_4 + 9c_s^2\omega_4\omega_1 + 6\omega_3 + 3\omega_3\omega_1 v_2^2 - 18\omega_3 c_s^2 - 6\omega_3\omega_4 + 6\omega_4 - 3\omega_3\omega_1 - 2\omega_3\omega_4\omega_1 v_2^2 + 3\omega_4\omega_1 v_2^2 - 6\omega_3 v_2^2 + 2\omega_3\omega_4\omega_1 - 3\omega_4\omega_1 + 6\omega_3\omega_4 v_2^2 + 9\omega_3 c_s^2\omega_1 - 6\omega_4 v_2^2$

$C_9 = -3v_3^2\omega_1^2\omega_2 + 2\omega_2^2 - 6c_s^2\omega_2^2 + 9c_s^2\omega_1\omega_2^2 - 6c_s^2\omega_1\omega_2 + 3\omega_1^2\omega_2 - 4v_3^2\omega_2^2 - 4\omega_1^2 + 12c_s^2\omega_1^2 + 3v_3^2\omega_1\omega_2^2 - 4\omega_1 v_1^2\omega_2 - 9c_s^2\omega_1^2\omega_2 + 2\omega_1\omega_2 + 2v_3^2\omega_1^2 - 3\omega_1\omega_2^2 + 2v_1^2\omega_2^2 + 2v_3^2\omega_1\omega_2 + 2\omega_1^2 v_1^2$

$C_{10} = 3\omega_3 c_s^2\omega_1\omega_2^2 - 2v_3^2\omega_1^2\omega_2 - 4\omega_3 c_s^2\omega_2^2 - \omega_3 v_3^2\omega_1^2\omega_2 + 6c_s^2\omega_1\omega_2^2 + \omega_3\omega_1^2\omega_2 + 2\omega_1^2\omega_2 - 4\omega_3 c_s^2\omega_1\omega_2 - 2\omega_3 v_3^2\omega_2^2 + 8\omega_3 c_s^2\omega_1^2 - 12\omega_3\omega_1 v_1^2\omega_2 - 3\omega_3 c_s^2\omega_1^2\omega_2 + 2v_3^2\omega_1\omega_2^2 + \omega_3 v_3^2\omega_1\omega_2^2 + 4\omega_3\omega_1\omega_2 - 6c_s^2\omega_1^2\omega_2 + 6\omega_3 v_1^2\omega_2^2 - 2\omega_1\omega_2^2 - \omega_3\omega_1\omega_2^2 + 2\omega_3 v_3^2\omega_1^2 - 4\omega_3\omega_1^2 + 6\omega_3\omega_1^2 v_1^2$

$C_{11} = -36\omega_3 c_s^2\omega_1\omega_2^2 - 4\omega_3\omega_4\omega_1\omega_2 - 18\omega_3 v_3^2\omega_4\omega_1^2\omega_2 - 12c_s^2\omega_4\omega_1^2\omega_2 - 11\omega_3 c_s^2\omega_4\omega_1^2\omega_2^2 + 6\omega_3\omega_1^2 v_1^2\omega_2^2 - 6\omega_3\omega_1^2\omega_2^2 + 6\omega_4\omega_1^2 v_1^2\omega_2^2 - 2\omega_3\omega_4\omega_1^2 v_1^2\omega_2 - 4\omega_4\omega_1^2 v_1^2\omega_2 - 3\omega_3\omega_4\omega_1^2 v_1^2\omega_2^2 + 18c_s^2\omega_4\omega_1^2\omega_2^2 - 12\omega_3 c_s^2\omega_4\omega_1^2\omega_2 + 8\omega_4\omega_1\omega_2^2 + 4\omega_3\omega_4\omega_1^2 v_1^2 - 8\omega_3\omega_4\omega_1\omega_2^2 - 24\omega_3 v_3^2\omega_4\omega_2^2 + 16\omega_3 c_s^2\omega_4\omega_1^2 + 8\omega_3\omega_4 v_1^2\omega_2^2 + 2\omega_3\omega_4\omega_1 v_1^2\omega_2^2 + 3\omega_3\omega_4\omega_1^2\omega_2^2 + 18\omega_3 v_3^2\omega_4\omega_1\omega_2^2 + 4\omega_3 c_s^2\omega_4\omega_1\omega_2 - 24c_s^2\omega_4\omega_1\omega_2^2 - 8\omega_3\omega_4\omega_1^2 - 6\omega_4\omega_1^2\omega_2^2 + 12\omega_3 c_s^2\omega_4\omega_1\omega_2^2 + 4\omega_4\omega_1^2\omega_2 + 16\omega_3 c_s^2\omega_4\omega_2^2 + 12\omega_3 v_3^2\omega_4\omega_1^2 + 12\omega_3\omega_1\omega_2^2 + 18\omega_3 c_s^2\omega_1^2\omega_2^2 - 12\omega_3\omega_1 v_1^2\omega_2^2 + 8\omega_3\omega_4\omega_1^2\omega_2 + 12\omega_3 v_3^2\omega_4\omega_1\omega_2 - 8\omega_4\omega_1 v_1^2\omega_2^2$

$C_{12} = -2\omega_2^2 + 6c_s^2\omega_2^2 - 12c_s^2\omega_1\omega_2 + v_3^2\omega_2^2 - 2\omega_1^2 + 6c_s^2\omega_1^2 + v_2^2\omega_2^2 + 4\omega_1\omega_2 + v_3^2\omega_1^2 + \omega_1^2 v_2^2 - 2\omega_1 v_2^2\omega_2 - 2v_3^2\omega_1\omega_2$

$C_{13} =$
$18\omega_3 c_s^2\omega_1\omega_2^2 + 3v_3^2\omega_4\omega_1^2\omega_2^2 + 4\omega_3\omega_4\omega_1\omega_2 - \omega_3 v_3^2\omega_4\omega_1^2\omega_2 - 6c_s^2\omega_4\omega_1^2\omega_2 + 3\omega_3\omega_1^2\omega_2^2 + 6\omega_3\omega_4 v_2^2\omega_2^2 - 3\omega_3 v_3^2\omega_1^2\omega_2^2 + 9c_s^2\omega_4\omega_1^2\omega_2^2 - 3\omega_3 c_s^2\omega_4\omega_1^2\omega_2 + 4\omega_4\omega_1\omega_2^2 - 2v_3^2\omega_4\omega_1^2\omega_2 - \omega_3\omega_4\omega_1\omega_2^2 - 2\omega_3 v_3^2\omega_4\omega_2^2 + 8\omega_3 c_s^2\omega_4\omega_1^2 + 6\omega_3\omega_4\omega_1^2 v_2^2 + \omega_3 v_3^2\omega_4\omega_1\omega_2^2 + 6\omega_3 v_3^2\omega_1\omega_2^2 - 4\omega_3 c_s^2\omega_4\omega_1\omega_2 - 12c_s^2\omega_4\omega_1\omega_2^2 - 12\omega_3\omega_4\omega_1 v_2^2\omega_2 - 4\omega_3\omega_4\omega_1^2 - 3\omega_4\omega_1^2\omega_2^2 + 3\omega_3 c_s^2\omega_4\omega_1\omega_2^2 + 2\omega_4\omega_1^2\omega_2 - 4\omega_3 c_s^2\omega_4\omega_2^2 + 2\omega_3 v_3^2\omega_4\omega_1^2 - 6\omega_3\omega_1\omega_2^2 - 9\omega_3 c_s^2\omega_1^2\omega_2^2 + \omega_3\omega_4\omega_1^2\omega_2 - 4v_3^2\omega_4\omega_1\omega_2^2$

$C_{14} = -2\omega_4\omega_1^2 v_2^2\omega_2 + 18\omega_3 c_s^2\omega_1\omega_2^2 + 4\omega_3\omega_4\omega_1\omega_2 - 6c_s^2\omega_4\omega_1^2\omega_2 + 3\omega_3\omega_1^2\omega_2^2 - 2\omega_3\omega_4 v_2^2\omega_2^2 + 9c_s^2\omega_4\omega_1^2\omega_2^2 - 3\omega_3 c_s^2\omega_4\omega_1^2\omega_2 + 4\omega_4\omega_1\omega_2^2 - 3\omega_3\omega_1^2 v_2^2\omega_2^2 - \omega_3\omega_4\omega_1\omega_2^2 + 6\omega_3 v_3^2\omega_4\omega_2^2 + 8\omega_3 c_s^2\omega_4\omega_1^2 + 3\omega_4\omega_1^2 v_2^2\omega_2^2 - \omega_3\omega_4\omega_1^2 v_2^2\omega_2 + 2\omega_3\omega_4\omega_1^2 v_2^2 + 6\omega_3\omega_1 v_2^2\omega_2^2 - 4\omega_3 c_s^2\omega_4\omega_1\omega_2 - 12c_s^2\omega_4\omega_1\omega_2^2 - 4\omega_3\omega_4\omega_1^2 - 3\omega_4\omega_1^2\omega_2^2 - 4\omega_4\omega_1 v_2^2\omega_2^2 + 3\omega_3 c_s^2\omega_4\omega_1\omega_2^2 + 2\omega_4\omega_1^2\omega_2 - 4\omega_3 c_s^2\omega_4\omega_2^2 + 6\omega_3 v_3^2\omega_4\omega_1^2 + \omega_3\omega_4\omega_1 v_2^2\omega_2^2 - 6\omega_3\omega_1\omega_2^2 - 9\omega_3 c_s^2\omega_1^2\omega_2^2 + \omega_3\omega_4\omega_1^2\omega_2 - 12\omega_3 v_3^2\omega_4\omega_1\omega_2$

$C_{15} = -6c_s^2\omega_4 + 3c_s^2\omega_4\omega_1 - 2\omega_3 + 2\omega_3 v_3^2 - 2v_3^2\omega_4 + 6\omega_3 c_s^2 + 2\omega_4 + v_3^2\omega_4\omega_1 + \omega_3\omega_1 - \omega_3 v_3^2\omega_1 - \omega_4\omega_1 - 3\omega_3 c_s^2\omega_1$

$C_{16} = 6c_s^2 v_3^2\omega_1\omega_2 + 3v_3^2\omega_1^2\omega_2 + 12c_s^2 v_3^2\omega_1^2 + 2c_s^2\omega_2^2 + 2c_s^4\omega_1^2 - 2c_s^2\omega_1\omega_2^2 - 3v_3^4\omega_1^2\omega_2 + 2v_3^4\omega_1^2 + 4v_3^2\omega_2^2 + 15c_s^2 v_3^2\omega_1\omega_2^2 + 14c_s^4\omega_1\omega_2^2 - 18c_s^2 v_3^2\omega_2^2 - 2c_s^2\omega_1^2 - 14c_s^4\omega_2^2 - c_s^4\omega_1^2\omega_2^2 - 3v_3^2\omega_1\omega_2^2 + 2v_3^2\omega_1\omega_2 + 2c_s^2\omega_1^2\omega_2 - 4v_3^4\omega_2^2 - 2v_3^2\omega_1^2 + 3v_3^4\omega_1\omega_2^2 - 15c_s^2 v_3^2\omega_1^2\omega_2 - 2v_3^2\omega_1\omega_2 - 2c_s^4\omega_1^2\omega_2$

$C_{17} =$
$-11v_3^2\omega_1^2\omega_2 + 6\omega_2^2 - 10c_s^2\omega_2^2 + 9c_s^2\omega_1\omega_2^2 + 2c_s^2\omega_1\omega_2 + 5\omega_1^2\omega_2 - 14v_3^2\omega_2^2 - 4\omega_1^2 + 8c_s^2\omega_1^2 + 11v_3^2\omega_1\omega_2^2 - 9c_s^2\omega_1^2\omega_2 - 2\omega_1\omega_2 + 8v_3^2\omega_1^2 - 5\omega_1\omega_2^2 + 6v_3^2\omega_1\omega_2$

$C_{18} = -6c_s^2\omega_4 + 3c_s^2\omega_4\omega_1 - 2\omega_3 - \omega_3\omega_1 v_2^2 + 6\omega_3 c_s^2 + 2\omega_4 + \omega_3\omega_1 + \omega_4\omega_1 v_2^2 + 2\omega_3 v_2^2 - \omega_4\omega_1 - 3\omega_3 c_s^2\omega_1 - 2\omega_4 v_2^2$

$C_{19} = -18c_s^2\omega_4 - 6\omega_3 c_s^2\omega_4\omega_1 + 18\omega_3 c_s^2\omega_4 + 9c_s^2\omega_4\omega_1 + 6\omega_3 - 6\omega_3 v_3^2 + 6\omega_3 v_3^2\omega_4 - 6v_3^2\omega_4 - 18\omega_3 c_s^2 - 6\omega_3\omega_4 + 6\omega_4 + 3v_3^2\omega_4\omega_1 - 3\omega_3\omega_1 + 3\omega_3 v_3^2\omega_1 - 2\omega_3 v_3^2\omega_4\omega_1 + 2\omega_3\omega_4\omega_1 - 3\omega_4\omega_1 + 9\omega_3 c_s^2\omega_1$

$C_{20} = -196\omega_3\omega_1^2 v_1^2\omega_2^3 - 80\omega_3 c_s^2\omega_1\omega_2^2 + 72\omega_3 c_s^4\omega_1^3 - 184\omega_3 c_s^2\omega_2^3 - 102\omega_3 c_s^2\omega_1^3 v_1^2\omega_2^3 - 8c_s^2\omega_1\omega_2^3 - 27\omega_3\omega_1^3 v_1^4\omega_2^3 - 10\omega_3\omega_1^3\omega_2 + 16\omega_3\omega_1^2\omega_2^3 + 8c_s^2\omega_1 v_1^2\omega_2^3 + 320\omega_3 c_s^2\omega_1\omega_2^3 + 280\omega_3\omega_1^2 v_1^2\omega_2^2 - 16\omega_3\omega_1^2\omega_2^2 + 760\omega_3 c_s^2 v_1^2\omega_2^3 + 90\omega_3\omega_1^3 v_1^4\omega_2^2 + 8c_s^2\omega_1^3 v_1^2\omega_2 + 404\omega_3 c_s^2\omega_1^3 v_1^2\omega_2^2 + 72\omega_3 c_s^4\omega_1\omega_2^2 + 168\omega_3\omega_1 v_1^4\omega_2^2 + 8\omega_3\omega_1^2\omega_2 - 3\omega_3\omega_1^3\omega_2^3 + 656\omega_3 c_s^2\omega_1 v_1^2\omega_2^2 + 144\omega_3 v_1^4\omega_2^3 - 84\omega_3\omega_1^3 v_1^4\omega_2 - 464\omega_3 c_s^2\omega_1^3 v_1^2\omega_2 + 24c_s^4\omega_1\omega_2^3 - 104\omega_3\omega_1^2 v_1^2\omega_2 + 24\omega_3\omega_1^3 v_1^4 + 160\omega_3 c_s^2\omega_1^3 v_1^2 - 1472\omega_3 c_s^2\omega_1 v_1^2\omega_2^2 + 8\omega_3\omega_1^3\omega_2^2 - 372\omega_3 c_s^4\omega_1\omega_2^3 - 300\omega_3\omega_1 v_1^4\omega_2^3 + 16\omega_3\omega_2^3 + 164\omega_3 c_s^4\omega_1^2\omega_2^3 - 1088\omega_3 c_s^2\omega_1^2 v_1^2\omega_2^2 - 264\omega_3\omega_1^2 v_1^4\omega_2^2 - 156\omega_3 c_s^4\omega_1^3\omega_2 - 80\omega_3 c_s^2\omega_1^2\omega_2 + 18\omega_3 c_s^2\omega_1^3\omega_2^3 - 98\omega_3\omega_1^3 v_1^2\omega_2^2 - 48c_s^4\omega_1^2\omega_2^2 + 180\omega_3\omega_1^2 v_1^4\omega_2^3 + 216\omega_3 c_s^4\omega_2^3 - 52\omega_3 c_s^2\omega_1^3 + 808\omega_3 c_s^2\omega_1^2 v_1^2\omega_2^3 - 120\omega_3 c_s^4\omega_1^2\omega_2^2 + 30\omega_3\omega_1^3 v_1^2\omega_2^3 + 24c_s^4\omega_1^3\omega_2 - 28\omega_3\omega_1^3 v_1^2 - 78\omega_3 c_s^2\omega_1^3\omega_2^2 + 122\omega_3 c_s^2\omega_1^3\omega_2 + 4\omega_3\omega_1^3 + 328\omega_3\omega_1 v_1^2\omega_2^3 - 156\omega_3 c_s^2\omega_1^2\omega_2^3 - 15\omega_3 c_s^4\omega_1^3\omega_2^3 + 72\omega_3 c_s^4\omega_1^2\omega_2 + 8\omega_3\omega_1\omega_2^2 + 16c_s^2\omega_1^2\omega_2^2 + 152\omega_3 c_s^2\omega_1^2\omega_2^2 - 176\omega_3\omega_1 v_1^2\omega_2^2 - 160\omega_3 v_1^2\omega_2^3 + 94\omega_3\omega_1^3 v_1^2\omega_2 - 8c_s^2\omega_1^3\omega_2 + 440\omega_3 c_s^2\omega_1^2 v_1^2\omega_2 - 28\omega_3\omega_1\omega_2^3 + 82\omega_3 c_s^4\omega_1^3\omega_2^2 - 16c_s^2\omega_1^2 v_1^2\omega_2^2 + 96\omega_3\omega_1^2 v_1^4\omega_2$

$C_{21} =$
$-308\omega_3\omega_1^2 v_1^2\omega_2^3 - 16\omega_3 c_s^2\omega_1\omega_2^2 + 16\omega_3 c_s^4\omega_1^3 - 56\omega_3 c_s^2\omega_2^3 - 54\omega_3 c_s^2\omega_1^3 v_1^2\omega_2^3 - 8c_s^2\omega_1\omega_2^3 - 87\omega_3\omega_1^3 v_1^4\omega_2^3 - 10\omega_3\omega_1^3\omega_2 + 16\omega_3\omega_1^2\omega_2^3 + 24c_s^2\omega_1 v_1^2\omega_2^3 + 96\omega_3 c_s^2\omega_1\omega_2^3 + 408\omega_3\omega_1^2 v_1^2\omega_2^2 - 16\omega_3\omega_1^2\omega_2^2 + 552\omega_3 c_s^2 v_1^2\omega_2^3 + 310\omega_3\omega_1^3 v_1^4\omega_2^2 + 24c_s^2\omega_1^3 v_1^2\omega_2 + 252\omega_3 c_s^2\omega_1^3 v_1^2\omega_2^2 + 8\omega_3 c_s^4\omega_1\omega_2^2 + 552\omega_3\omega_1 v_1^4\omega_2^2 + 8\omega_3\omega_1^2\omega_2 - 3\omega_3\omega_1^3\omega_2^3 + 336\omega_3 c_s^2\omega_1 v_1^2\omega_2^2 + 528\omega_3 v_1^4\omega_2^3 - 312\omega_3\omega_1^3 v_1^4\omega_2 - 360\omega_3 c_s^2\omega_1^3 v_1^2\omega_2 + 8c_s^4\omega_1\omega_2^3 - 168\omega_3\omega_1^2 v_1^2\omega_2 + 96\omega_3\omega_1^3 v_1^4 + 144\omega_3 c_s^2\omega_1^3 v_1^2 - 1008\omega_3 c_s^2\omega_1 v_1^2\omega_2^3 + 8\omega_3\omega_1^3\omega_2^2 - 68\omega_3 c_s^4\omega_1\omega_2^3 - 1068\omega_3\omega_1 v_1^4\omega_2^3 + 16\omega_3\omega_2^3 + 28\omega_3 c_s^4\omega_1^2\omega_2^3 - 576\omega_3 c_s^2\omega_1^2 v_1^2\omega_2^2 - 888\omega_3\omega_1^2 v_1^4\omega_2^2 - 32\omega_3 c_s^4\omega_1^3\omega_2 - 16\omega_3 c_s^2\omega_1^2\omega_2 + 6\omega_3 c_s^2\omega_1^3\omega_2^3 - 154\omega_3\omega_1^3 v_1^2\omega_2^2 - 16c_s^4\omega_1^2\omega_2^2 + 620\omega_3\omega_1^2 v_1^4\omega_2^3 + 40\omega_3 c_s^4\omega_2^3 - 20\omega_3 c_s^2\omega_1^3 + 504\omega_3 c_s^2\omega_1^2 v_1^2\omega_2^3 - 8\omega_3 c_s^4\omega_1^2\omega_2^2 + 42\omega_3\omega_1^3 v_1^2\omega_2^3 + 8c_s^4\omega_1^3\omega_2 - 60\omega_3\omega_1^3 v_1^2 - 22\omega_3 c_s^2\omega_1^3\omega_2^2 + 42\omega_3 c_s^2\omega_1^3\omega_2 + 4\omega_3\omega_1^3 + 552\omega_3\omega_1 v_1^2\omega_2^3 - 44\omega_3 c_s^2\omega_1^2\omega_2^3 - 3\omega_3 c_s^4\omega_1^3\omega_2^3 + 8\omega_3 c_s^4\omega_1^2\omega_2 + 8\omega_3\omega_1\omega_2^2 + 16c_s^2\omega_1^2\omega_2^2 + 24\omega_3 c_s^2\omega_1^2\omega_2^2 - 240\omega_3\omega_1 v_1^2\omega_2^2 - 288\omega_3 v_1^2\omega_2^3 + 174\omega_3\omega_1^3 v_1^2\omega_2 - 8c_s^2\omega_1^3\omega_2 + 264\omega_3 c_s^2\omega_1^2 v_1^2\omega_2 - 28\omega_3\omega_1\omega_2^3 + 14\omega_3 c_s^4\omega_1^3\omega_2^2 - 48c_s^2\omega_1^2 v_1^2\omega_2^2 + 336\omega_3\omega_1^2 v_1^4\omega_2$

$C_{22} =$
$-24\omega_3^2\omega_1^3 v_1^2\omega_2^2 + 96\omega_3^2\omega_1 v_2^2 v_1^2\omega_2^3 - 12c_s^2\omega_1^3 v_2^2\omega_2^2 - 4\omega_3 c_s^2\omega_1^3 v_2^2\omega_2 + 40\omega_3^2 c_s^2\omega_1^2\omega_2 + 72\omega_3^2 c_s^2\omega_1^3 v_1^2\omega_2^2 + 22\omega_3^2 c_s^2\omega_1 v_2^2\omega_2^3 - 6\omega_3^2 c_s^4\omega_1^2\omega_2^3 + 72\omega_3^2\omega_1^2 v_1^4\omega_2^2 - 84\omega_3^2 c_s^4\omega_1^3\omega_2 + 8\omega_3^2\omega_1\omega_2^2 - 8\omega_3^2\omega_1 v_2^2\omega_2^3 - 5\omega_3^2 c_s^2\omega_1^3\omega_2^2 + 8\omega_3 c_s^2\omega_1 v_2^2\omega_2^3 - 8\omega_3 c_s^2\omega_1\omega_2^3 + 24\omega_3^2 v_1^2\omega_2^3 + 4\omega_3^2\omega_1^3 + 24\omega_3^2\omega_1 v_2^2 v_1^2\omega_2^2 - 8\omega_3^2\omega_1 v_2^2\omega_2^2 - 20\omega_3^2 c_s^2\omega_1^3 v_2^2\omega_2 + 8\omega_3^2\omega_1\omega_2^3 + 4\omega_3^2\omega_1^3 v_2^2\omega_2 + 42\omega_3^2 c_s^4\omega_1^2\omega_2^2 + 8\omega_3^2 c_s^2\omega_1 v_2^2\omega_2^2 + 2\omega_3^2 c_s^2\omega_1^3 v_2^2\omega_2^2 - \omega_3^2\omega_1^3 v_2^2\omega_2^2 - 36\omega_3^2 c_s^4\omega_1^2\omega_2 + 56\omega_3^2 c_s^2\omega_1^3\omega_2 + 5\omega_3^2 c_s^2\omega_1^2\omega_2^3 - 60\omega_3^2\omega_1 v_1^2\omega_2^3 + 108\omega_3^2 c_s^2\omega_1 v_1^2\omega_2^2 - 4\omega_3^2\omega_1^3 v_2^2 + 8\omega_3^2 v_2^2\omega_2^3 + 6\omega_3^2 c_s^4\omega_1^3\omega_2^2 - 52\omega_3^2 c_s^2\omega_1^3 - 36\omega_3^2 c_s^4\omega_2^3 + 24\omega_3 c_s^4\omega_1\omega_2^3 + 84\omega_3^2\omega_1^3 v_1^2\omega_2 - 216\omega_3^2 c_s^2\omega_1 v_1^2\omega_2^2 + 18\omega_3 c_s^2\omega_1^3 v_2^2\omega_2^2 - 48\omega_3^2\omega_1^3 v_1^2 + 48\omega_3^2\omega_1 v_1^2\omega_2^2 - 34\omega_3^2 c_s^2\omega_1^2\omega_2^2 - 324\omega_3^2 c_s^2\omega_1^3 v_1^2\omega_2 - 4\omega_3^2 c_s^2\omega_1^2 v_2^2\omega_2 + 12c_s^2\omega_1^3\omega_2^2 - 8\omega_3^2\omega_2^3 - 54\omega_3 c_s^4\omega_1^2\omega_2^3 + 48\omega_3^2 v_1^4\omega_2^3 + 4\omega_3^2\omega_1^2 v_2^2\omega_2 - 4\omega_3^2\omega_1^2\omega_2 - 12\omega_3 c_s^4\omega_1^3\omega_2 - 72\omega_3^2 c_s^2\omega_1^2 v_1^2\omega_2^3 + 24\omega_3^2\omega_1^3 v_2^2 v_1^2 + 12c_s^2\omega_1^2 v_2^2\omega_2^3 - 24\omega_3^2\omega_1^2 v_2^2 v_1^2\omega_2^3 + 24\omega_3^2\omega_1^2 v_1^2\omega_2^3 - 8\omega_3^2 c_s^2\omega_1\omega_2^2 - 12\omega_3 c_s^4\omega_1^2\omega_2^2 + \omega_3^2\omega_1^3\omega_2^2 + 24\omega_3^2\omega_1^3 v_1^4 - 48\omega_3^2\omega_1^3 v_2^2 v_1^2\omega_2 + 36c_s^4\omega_1^2\omega_2^3 - 22\omega_3^2 c_s^2\omega_1\omega_2^3 - 48\omega_3^2\omega_1^2 v_2^2 v_1^2\omega_2^2 - 24\omega_3^2\omega_1^2 v_1^2\omega_2^2 + 216\omega_3^2 c_s^2\omega_1^2 v_1^2\omega_2^2 - 18\omega_3 c_s^2\omega_1^3\omega_2^2 - 4\omega_3 c_s^2\omega_1^2 v_2^2\omega_2^2 - 24\omega_3^2\omega_1^2 v_1^2\omega_2 - 36c_s^4\omega_1^3\omega_2^2 + 24\omega_3^2\omega_1^2 v_2^2 v_1^2\omega_2 + 4\omega_3 c_s^2\omega_1^3\omega_2 + 20\omega_3^2 c_s^2\omega_2^3 + 72\omega_3^2 c_s^4\omega_1^3 + 18\omega_3 c_s^2\omega_1^2\omega_2^3 + \omega_3^2\omega_1^2 v_2^2\omega_2^3 - 36\omega_3^2\omega_1^3 v_1^4\omega_2 - \omega_3^2\omega_1^2\omega_2^3 - 4\omega_3^2\omega_1^3\omega_2 - 72\omega_3^2\omega_1 v_1^4\omega_2^2 + 24\omega_3^2\omega_1^3 v_2^2 v_1^2\omega_2^2 + 16\omega_3^2 c_s^2\omega_1^3 v_2^2 - 2\omega_3^2 c_s^2\omega_1^2 v_2^2\omega_2^3 + 4\omega_3 c_s^2\omega_1^2\omega_2^2 - 20\omega_3^2 c_s^2 v_2^2\omega_2^3 - 18\omega_3 c_s^2\omega_1^2 v_2^2\omega_2^3 - 2\omega_3^2 c_s^2\omega_1^2 v_2^2\omega_2^2 - 36\omega_3^2\omega_1 v_1^4\omega_2^3 - 12c_s^2\omega_1^2\omega_2^3 + 42\omega_3^2 c_s^4\omega_1\omega_2^3 + 54\omega_3 c_s^4\omega_1^3\omega_2^2 - 4\omega_3^2\omega_1^2\omega_2^2 + 4\omega_3^2\omega_1^2 v_2^2\omega_2^2 - 72\omega_3^2 v_2^2 v_1^2\omega_2^3 + 216\omega_3^2 c_s^2\omega_1^3 v_1^2$

$C_{23} = 9\omega_1^2\omega_2^3 - 54\omega_3 c_s^2\omega_1\omega_2^2 + 6\omega_1^3\omega_2 - 12\omega_3 c_s^2\omega_2^3 + 36c_s^2\omega_1\omega_2^3 + 6\omega_3\omega_1^2 v_2^2\omega_2 + 48\omega_3\omega_1^3\omega_2 + 5\omega_3\omega_1^2\omega_2^3 + 27\omega_3 c_s^2\omega_1\omega_2^3 + 6\omega_1^2\omega_2^2 + 132\omega_3\omega_1^2 v_1^2\omega_2^2 - 51\omega_3\omega_1^2\omega_2^2 + 6\omega_3\omega_1^2\omega_2 - 5\omega_3\omega_1^2 v_2^2\omega_2^3 - 12\omega_3\omega_1^2 v_1^2\omega_2 - 6\omega_1^2 v_2^2\omega_2^2 - 9\omega_3\omega_1^2 v_2^2\omega_2^2 - 5\omega_3\omega_1^3\omega_2^2 - 12\omega_3\omega_2^3 - 9\omega_1^2 v_2^2\omega_2^3 - 9\omega_1^3\omega_2^2 + 27c_s^2\omega_1^3\omega_2^2 + 27\omega_3\omega_1 v_2^2\omega_2^3 + 12\omega_3\omega_1^3 v_2^2 - 18\omega_3 c_s^2\omega_1^2\omega_2 - 6\omega_1^3 v_2^2\omega_2 - 18\omega_3\omega_1^3 v_2^2\omega_2 + 84\omega_3 c_s^2\omega_1^3 + 6\omega_3\omega_1 v_2^2\omega_2^2 - 24\omega_3 v_2^2\omega_2^3 + 48\omega_3\omega_1^3 v_1^2 + 15\omega_3 c_s^2\omega_1^3\omega_2^2 + 12\omega_1 v_2^2\omega_2^3 - 108\omega_3 c_s^2\omega_1^3\omega_2 - 36\omega_3\omega_1^3 - 66\omega_3\omega_1 v_1^2\omega_2^3 - 15\omega_3 c_s^2\omega_1^2\omega_2^3 + 5\omega_3\omega_1^3 v_2^2\omega_2^2 + 42\omega_3\omega_1\omega_2^2 - 18c_s^2\omega_1^2\omega_2^2 + 81\omega_3 c_s^2\omega_1^2\omega_2^2 - 120\omega_3\omega_1 v_1^2\omega_2^2 + 84\omega_3 v_1^2\omega_2^3 - 12\omega_1\omega_2^3 + 9\omega_1^3 v_2^2\omega_2^2 - 66\omega_3\omega_1^3 v_1^2\omega_2 - 18c_s^2\omega_1^3\omega_2 - 27c_s^2\omega_1^2\omega_2^3 + 3\omega_3\omega_1\omega_2^3$

$$C_{24} = -48\omega_3^2\omega_4^2v_1^2\omega_2^3 - 12\omega_3^2c_s^2\omega_4^2\omega_1^3v_2^2\omega_2^2 + 96\omega_3^2\omega_4^2\omega_1v_1^2\omega_2^3 - 297\omega_3c_s^2\omega_4^2\omega_1^3v_1^2\omega_2^3 - 288\omega_3^2\omega_4^2\omega_1^3v_2^2v_1^2\omega_2 - 2\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^2 + 432\omega_3^2c_s^2\omega_4^2v_1^2\omega_2^3 +
48\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^3 + 24\omega_3\omega_4^2\omega_1^3v_1^2\omega_2 + 48\omega_3c_s^2\omega_4^2\omega_1^3v_2^2\omega_2 + 18\omega_3c_s^4\omega_4^2\omega_1^3\omega_2^3 + 36\omega_4^2\omega_1^3v_1^2\omega_2^2 - 288\omega_3^2\omega_4^2\omega_1^2v_2^2v_1^2\omega_2^2 - 852\omega_3^2c_s^2\omega_4^2\omega_1v_1^2\omega_2^3 -
6\omega_3^2\omega_4^2\omega_1^3v_2^2\omega_2^2 - 16\omega_3^2\omega_4^2\omega_2^3 + 16\omega_3^2\omega_4^2\omega_1\omega_2^3 + 162\omega_3^2c_s^2\omega_1^3v_1^2\omega_2^3 + 204\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_2 - 16\omega_3c_s^2\omega_4^2\omega_1\omega_2^3 - 56\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2 - 6\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^3 -
540\omega_3c_s^2\omega_4\omega_1^2v_1^2\omega_2^3 + 288\omega_3c_s^2\omega_4^2\omega_1^3v_1^2\omega_2^2 - 144\omega_3^2\omega_4^2\omega_1v_1^2\omega_2^2 - 54\omega_3^2\omega_1^3v_1^2\omega_2^3 - 72\omega_4^2\omega_1^2v_1^4\omega_2^3 + 16\omega_3^2\omega_4^2\omega_1\omega_2^2 + 24\omega_3\omega_4^2\omega_1v_1^2\omega_2^3 +
336\omega_3^2c_s^2\omega_4^2\omega_1v_1^2\omega_2^2 + 96\omega_3^2\omega_4^2\omega_1^2v_1^4\omega_2 - 96\omega_3c_s^2\omega_4^2\omega_1v_2^2\omega_2^3 - 108\omega_3^2\omega_1^2v_1^4\omega_2^3 - 40\omega_3^2c_s^2\omega_4^2\omega_1^3 - 36\omega_3c_s^4\omega_4^2\omega_1^3\omega_2^2 - 144\omega_3^2\omega_4^2\omega_1^2v_2^2v_1^2\omega_2^3 +
72\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^3 - 54\omega_4^2\omega_1^3v_1^2\omega_2^3 - 492\omega_3^2c_s^2\omega_4^2\omega_1^3v_1^2\omega_2 - 72\omega_3^2\omega_4\omega_1v_1^4\omega_2^3 - 32\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^2 + 24\omega_3^2c_s^2\omega_4^2v_2^2\omega_2^3 - 144\omega_3^2\omega_4^2\omega_1^2v_1^4\omega_2^2 - 117\omega_3^2\omega_4\omega_1^3v_1^4\omega_2^3 +
48\omega_3^2\omega_4^2v_2^2\omega_2^3 + 16\omega_3c_s^4\omega_4^2\omega_1^3\omega_2 + 648\omega_3^2c_s^2\omega_4\omega_1^2v_1^2\omega_2^3 - 48\omega_3^2\omega_4^2\omega_1v_2^2\omega_2^3 + 117\omega_3\omega_4^2\omega_1^3v_1^2\omega_2^3 + 168\omega_3^2c_s^2\omega_4^2\omega_1^3v_1^2\omega_2^2 - 36\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^3 +
20\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^2 - 86\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_2^2 - 96\omega_3^2\omega_4^2\omega_1^3v_1^2 - 288\omega_3^2\omega_4\omega_1^2v_1^2\omega_2^3 - 12\omega_3^2c_s^2\omega_4^2\omega_1v_2^2\omega_2^3 + 72\omega_3^2c_s^4\omega_4\omega_1\omega_2^3 - 36\omega_3\omega_4\omega_1^3v_1^4\omega_2^2 - 72\omega_3c_s^2\omega_4^2\omega_1^3v_1^2\omega_2 +
216\omega_3\omega_4^2\omega_1^2v_1^4\omega_2^3 - 216c_s^2\omega_4^2\omega_1^2v_1^2\omega_2^3 + 264\omega_3^2c_s^2\omega_4^2\omega_1^3v_1^2 - 48\omega_3^2\omega_4^2\omega_1v_2^2\omega_2^2 - 108\omega_3^2c_s^2\omega_4\omega_1^2v_1^2\omega_2^2 - 18\omega_3^2c_s^2\omega_4\omega_1^3\omega_2^3 - 72\omega_3c_s^2\omega_4^2\omega_1^3v_2^2\omega_2^2 +
180\omega_3\omega_4\omega_1^2v_1^2\omega_2^3 + 40\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^2 + 72\omega_3^2c_s^2\omega_4^2\omega_1^3v_1^2\omega_2^3 - 108\omega_3\omega_4^2\omega_1^3v_1^2\omega_2^2 + 144\omega_3^2\omega_4^2\omega_1^2v_2^2v_1^2\omega_2 + 40\omega_3^2\omega_4^2\omega_1^2v_1^4\omega_2^3 + 24\omega_3^2\omega_4^2\omega_1^3v_2^2\omega_2 +
36\omega_3^2\omega_4\omega_1^3v_1^4\omega_2^2 - 24\omega_3^2\omega_4^2\omega_1^3v_2^2 + 108\omega_3\omega_4\omega_1^3v_1^4\omega_2^3 - 12\omega_3^2c_s^2\omega_4^2\omega_1^3v_2^2\omega_2 - 60\omega_3\omega_4^2\omega_1^2v_1^4\omega_2^2 - 28\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2 + 144\omega_3^2\omega_4^2\omega_1^3v_2^2v_1^2\omega_2^2 +
24\omega_3^2c_s^2\omega_4^2\omega_1^3v_2^2 + 32\omega_3^2c_s^4\omega_4^2\omega_1^3 - 24\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_2^3 + 72\omega_3c_s^2\omega_4^2\omega_1v_1^2\omega_2^3 + 86\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^3 + 48\omega_3^2c_s^2\omega_4^2\omega_1v_2^2\omega_2^2 + 36\omega_3^2\omega_4\omega_1^2v_1^2\omega_2^2 -
108\omega_3^2\omega_4^2\omega_1^3v_1^4\omega_2 + 48\omega_3^2\omega_4^2\omega_1^3v_1^4 + 6\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2^3 + 96\omega_3^2\omega_4^2\omega_1v_1^4\omega_2^2 + 264\omega_3^2c_s^2\omega_4^2\omega_1^2v_1^2\omega_2 + 72\omega_4^2\omega_1^2v_1^2\omega_2^3 + 144\omega_3^2\omega_4^2\omega_1v_2^2v_1^2\omega_2^2 + 2\omega_3^2\omega_4^2\omega_1^3\omega_2^2 +
54\omega_3^2\omega_1^3v_1^4\omega_2^3 - 144\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2 - 324\omega_3^2c_s^2\omega_1^2v_1^2\omega_2^3 - 24\omega_3\omega_4^2\omega_1v_1^4\omega_2^3 + 54\omega_4^2\omega_1^3v_1^4\omega_2^3 - 172\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^3 + 8\omega_3^2c_s^2\omega_4^2\omega_2^3 + 108\omega_3^2\omega_1^2v_1^2\omega_2^3 -
108\omega_3c_s^2\omega_4^2\omega_1^2v_1^2\omega_2^2 + 324\omega_3c_s^2\omega_4\omega_1^3v_1^2\omega_2^3 + 12\omega_3^2c_s^2\omega_4^2\omega_1^2v_2^2\omega_2^3 + 72\omega_3^2\omega_4\omega_1v_1^2\omega_2^3 - 18\omega_3c_s^2\omega_4^2\omega_1^3\omega_2^3 + 576\omega_3^2\omega_4^2\omega_1v_2^2v_1^2\omega_2^3 + 192\omega_3^2\omega_4^2v_1^4\omega_2^3 -
288\omega_3^2\omega_4^2\omega_1v_1^4\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^2\omega_2 + 64\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2 + 16\omega_3c_s^4\omega_4^2\omega_1\omega_2^3 + 24\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2^2 - 432\omega_3^2\omega_4^2v_2^2v_1^2\omega_2^3 + 468\omega_3c_s^2\omega_4^2\omega_1^2v_1^2\omega_2^3 - 72\omega_3^2c_s^4\omega_4\omega_1^2\omega_2^3 +
36\omega_3c_s^2\omega_4^2\omega_1^3\omega_2^2 - 24\omega_3\omega_4^2\omega_1^3v_1^4\omega_2 + 24\omega_3^2c_s^2\omega_4^2\omega_1^2v_2^2\omega_2^2 - 108\omega_3c_s^2\omega_4\omega_1^3v_1^2\omega_2^2 - 36\omega_4^2\omega_1^3v_1^4\omega_2^2 + 16\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^2 + 8\omega_3^2\omega_4^2\omega_1^3 - 108c_s^2\omega_4^2\omega_1^3v_1^2\omega_2^2 +
108\omega_3\omega_4^2\omega_1^3v_1^4\omega_2^2 - 16\omega_3c_s^2\omega_4^2\omega_1^3\omega_2 - 96\omega_3^2c_s^2\omega_4^2\omega_1^2v_2^2\omega_2 - 180\omega_3\omega_4\omega_1^2v_1^4\omega_2^3 + 144\omega_3^2\omega_4^2\omega_1^3v_2^2v_1^2 + 36\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^3 - 36\omega_3^2\omega_4\omega_1^3v_1^2\omega_2^2 +
8\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2^3 + 174\omega_3^2c_s^2\omega_4^2\omega_1^2v_1^2\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^2\omega_2^2 + 60\omega_3\omega_4^2\omega_1^2v_1^2\omega_2^2 + 108\omega_3^2c_s^2\omega_4\omega_1^3v_1^2\omega_2^2 - 108\omega_3\omega_4\omega_1^3v_1^2\omega_2^3 + 48\omega_3c_s^2\omega_4^2\omega_1^2v_2^2\omega_2^2 -
12\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^2 - 36\omega_3^2\omega_4\omega_1^2v_1^4\omega_2^2 - 72\omega_3^2c_s^2\omega_4\omega_1\omega_2^3 + 24\omega_3^2\omega_4^2\omega_1^3v_1^4\omega_2^3 + 80\omega_3^2c_s^4\omega_4^2\omega_2^3 + 24\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2 + 117\omega_3^2\omega_4\omega_1^3v_1^2\omega_2^3 + 240\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2^2 -
40\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^2 + 18\omega_3^2c_s^4\omega_4\omega_1^3\omega_2^3 + 162c_s^2\omega_4^2\omega_1^3v_1^2\omega_2^3 - 117\omega_3\omega_4^2\omega_1^3v_1^4\omega_2^3 + 288\omega_3^2\omega_4\omega_1^2v_1^4\omega_2^3 + 38\omega_3^2\omega_4^2\omega_1^3v_1^4\omega_2^2 + 36\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2 -
36\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^3 - 216\omega_3\omega_4^2\omega_1^2v_1^2\omega_2^3 - 2\omega_3^2\omega_4^2\omega_1^2\omega_2^3 - 492\omega_3^2c_s^2\omega_4^2\omega_1^2v_1^2\omega_2^2 + 72\omega_3c_s^2\omega_4^2\omega_1^2v_2^2\omega_2^3 + 36\omega_3\omega_4\omega_1^3v_1^2\omega_2^2 - 297\omega_3^2c_s^2\omega_4\omega_1^3v_1^2\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^3\omega_2$$

$$C_{25} = -4\omega_3^2\omega_4^2v_1^2\omega_2^3 + 138\omega_3^2c_s^2\omega_4^2\omega_1^3v_2^2\omega_2^2 + 4\omega_3^2\omega_4^2\omega_1v_1^2\omega_2^3 - 9\omega_3c_s^2\omega_4^2\omega_1^3v_1^2\omega_2^3 - 30\omega_3^2\omega_4^2\omega_1^3v_2^2v_1^2\omega_2 + 35\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^2 - 18\omega_3^2c_s^2\omega_1^3\omega_2^3 -
36\omega_3^2\omega_4^2\omega_1^2v_2^4\omega_2^2 + 16\omega_3^2c_s^2\omega_4^2v_1^2\omega_2^3 - 58\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^3 - 108\omega_3^2c_s^4\omega_1^2\omega_2^3 - 27\omega_3c_s^4\omega_4^2\omega_1^3\omega_2^3 + 60\omega_3^2\omega_4^2\omega_1^2v_2^2v_1^2\omega_2^2 + 4\omega_3^2c_s^2\omega_4^2\omega_1v_1^2\omega_2^3 -
27\omega_3^2\omega_4^2\omega_1^3v_2^2\omega_2^2 + 4\omega_3^2\omega_4^2\omega_2^3 - 4\omega_3^2\omega_4^2\omega_1\omega_2^3 + 18\omega_3^2c_s^2\omega_1^3v_1^2\omega_2^3 + 4\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_2 + 28\omega_3c_s^2\omega_4^2\omega_1\omega_2^3 - 27\omega_3^2\omega_4^2\omega_1^2v_2^4\omega_2^3 + 15\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^3 +
4\omega_3^2\omega_4^2\omega_1v_1^2\omega_2^2 - 4\omega_3^2\omega_4^2\omega_1\omega_2^2 - 28\omega_3^2c_s^2\omega_4^2\omega_1v_1^2\omega_2^2 - 52\omega_3^2c_s^2\omega_4^2\omega_1^3 - 72c_s^4\omega_4^2\omega_1^2\omega_2^3 - 36\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^3 - 20\omega_3^2c_s^2\omega_4^2\omega_1^3v_1^2\omega_2 + 28\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^2 -
216\omega_3^2c_s^2\omega_4^2v_2^2\omega_2^3 + 54\omega_3^2c_s^4\omega_1^3\omega_2^3 + 24\omega_3^2\omega_4^2v_2^2\omega_2^3 - 12\omega_3c_s^4\omega_4^2\omega_1^3\omega_2 - 36c_s^4\omega_4^2\omega_1^3\omega_2^2 + 36\omega_3^2c_s^2\omega_4\omega_1^2v_1^2\omega_2^3 - 42\omega_3^2\omega_4^2\omega_1v_2^2\omega_2^3 + 8\omega_3^2c_s^2\omega_4^2\omega_1^3v_1^2\omega_2^2 +
108\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^3 + 24\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^2 - 4\omega_3^2\omega_4^2\omega_1^3v_1^2 + 324\omega_3^2c_s^2\omega_4^2\omega_1v_2^2\omega_2^3 + 36\omega_3^2c_s^2\omega_1^2\omega_2^3 - 4\omega_3c_s^2\omega_4^2\omega_1^3v_1^2\omega_2 - 24c_s^2\omega_4^2\omega_1^2v_1^2\omega_2^3 + 16\omega_3^2c_s^2\omega_4^2\omega_1^3v_1^2 +
12\omega_3^2\omega_4^2\omega_1v_2^2\omega_2^2 + 54c_s^4\omega_4^2\omega_1^3\omega_2^3 + 9\omega_3^2c_s^2\omega_4\omega_1^3\omega_2^3 + 96\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^2 + 3\omega_3^2c_s^2\omega_4^2\omega_1^3v_1^2\omega_2^3 - 12\omega_3^2\omega_4^2\omega_1^2v_2^2v_1^2\omega_2 + 66\omega_3^2\omega_4^2\omega_1^3v_2^2\omega_2 - 48\omega_3^2\omega_4^2\omega_1^3v_2^2 -
324\omega_3^2c_s^2\omega_4^2\omega_1^3v_2^2\omega_2 - 102\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2 + 216\omega_3^2c_s^2\omega_4^2\omega_1^3v_2^2 + 72\omega_3^2c_s^4\omega_4^2\omega_1^3 - 28\omega_3c_s^2\omega_4^2\omega_1v_1^2\omega_2^3 - 119\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^3 - 25\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2^2 +
27\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2^3 - 4\omega_3^2c_s^2\omega_4^2\omega_1^2v_1^2\omega_2 - 48\omega_3^2\omega_4^2\omega_1v_2^2v_1^2\omega_2^2 + 4\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2 - 36\omega_3^2c_s^2\omega_1^2v_1^2\omega_2^3 + 78\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^3 + 20\omega_3^2c_s^2\omega_4^2\omega_2^3 +
32\omega_3c_s^2\omega_4^2\omega_1^2v_1^2\omega_2^2 - 138\omega_3^2c_s^2\omega_4^2\omega_1^2v_2^2\omega_2^3 + 9\omega_3c_s^2\omega_4^2\omega_1^3\omega_2^3 - 30\omega_3^2\omega_4^2\omega_1v_2^2v_1^2\omega_2^3 + 24\omega_3^2\omega_4^2\omega_1^3v_2^4 - 4\omega_3^2\omega_4^2\omega_1^2\omega_2 + 4\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2 - 84\omega_3c_s^4\omega_4^2\omega_1\omega_2^3 -
24\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2^2 + 36\omega_3^2\omega_4^2v_2^2v_1^2\omega_2^3 - 3\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2^3 + 24c_s^2\omega_4^2\omega_1^2\omega_2^3 + 36\omega_3c_s^2\omega_4^2\omega_1^2v_1^2\omega_2^3 + 108\omega_3^2c_s^4\omega_4\omega_1^2\omega_2^3 - 72\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^2 + 27\omega_3^2\omega_4^2\omega_1^3v_2^4\omega_2^2 +
4\omega_3^2\omega_4^2\omega_1^3 - 12c_s^2\omega_4^2\omega_1^3v_1^2\omega_2^2 + 4\omega_3c_s^2\omega_4^2\omega_1^3\omega_2 + 36\omega_3^2\omega_4^2\omega_1v_2^4\omega_2^2 + 24\omega_3^2\omega_4^2\omega_1^3v_2^2v_1^2 - 36\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^3 + 12c_s^2\omega_4^2\omega_1^3\omega_2^2 - 36\omega_3^2\omega_4^2\omega_1^3v_2^4\omega_2 -
32\omega_3^2c_s^2\omega_4^2\omega_1^2v_1^2\omega_2^3 + 8\omega_3^2\omega_4^2\omega_1^2\omega_2^2 - 16\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^2 + 12\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2 - 8\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2^2 - 60\omega_3^2\omega_4^2v_2^4\omega_2^3 - 32\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^2 - 18c_s^2\omega_4^2\omega_1^3\omega_2^3 -
27\omega_3^2c_s^4\omega_4\omega_1^3\omega_2^3 + 18c_s^2\omega_4^2\omega_1^3v_1^2\omega_2^3 + 72\omega_3^2\omega_4^2\omega_1v_2^4\omega_2^3 + 74\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2 + 49\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^3 + 16\omega_3^2c_s^2\omega_4^2\omega_1^2v_1^2\omega_2^2 - 9\omega_3^2c_s^2\omega_4\omega_1^3v_1^2\omega_2^3 - 4\omega_3^2\omega_4^2\omega_1^3\omega_2$$

$$C_{26} = 132\omega_3c_s^2\omega_4\omega_1^2v_1^2\omega_2^2 - 30\omega_3^2c_s^2\omega_4\omega_1^2v_2^2\omega_2^3 - 6\omega_3\omega_4\omega_1^2v_2^2\omega_2^2 + 36\omega_3c_s^2\omega_4\omega_1^2\omega_2^3 - 18\omega_3^2c_s^2\omega_1^3\omega_2^3 - 8\omega_3c_s^2\omega_4\omega_1^3\omega_2 + 12\omega_3^2\omega_4\omega_1^2v_1^2\omega_2 -
54c_s^2\omega_4\omega_1^3v_2^2\omega_2^2 + 54\omega_3^2c_s^2\omega_1v_2^2\omega_2^3 + 36\omega_3\omega_4\omega_1^3v_2^4\omega_2^2 - 72\omega_3^2c_s^4\omega_1^2\omega_2^3 - 48\omega_3^2c_s^2\omega_4\omega_1^2v_1^2\omega_2 - 36\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^2 + 9\omega_3^2\omega_4\omega_1^2v_2^2\omega_2^3 + 8\omega_3^2\omega_4\omega_1^2\omega_2^2 -
18\omega_3^2\omega_1v_2^2\omega_2^3 + 9\omega_3^2\omega_4\omega_1^3v_2^4\omega_2^2 + 54\omega_3^2c_s^2\omega_1^3v_1^2\omega_2^3 - 48\omega_3^2\omega_4v_2^4\omega_2^3 + 180\omega_3^2\omega_4\omega_1^2v_2^2v_1^2\omega_2^2 - 56\omega_3c_s^2\omega_4\omega_1^2\omega_2^2 - 126\omega_3c_s^2\omega_4\omega_1^2v_1^2\omega_2^3 + 36\omega_3\omega_4\omega_1^2v_2^2\omega_2^3 +
24\omega_3^2c_s^2\omega_4\omega_1^2v_2^2\omega_2^2 - 4\omega_3^2\omega_4\omega_1^3\omega_2 - 42\omega_3^2\omega_4\omega_1^2v_2^2\omega_2^2 + 108\omega_3^2\omega_4v_2^2v_1^2\omega_2^3 - 68\omega_3^2c_s^4\omega_4\omega_2^3 + 2\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^3 - 90\omega_3^2\omega_4\omega_1^3v_2^2v_1^2\omega_2 + 18\omega_3^2c_s^2\omega_4\omega_1^3\omega_2 +
6\omega_3\omega_4\omega_1v_2^4\omega_2^3 + 54\omega_3^2c_s^2\omega_1^3v_2^2\omega_2^2 + 18\omega_3^2c_s^4\omega_1^3\omega_2^3 - 18\omega_3\omega_1^2v_2^2\omega_2^3 - 18\omega_3^2\omega_1^3v_2^2\omega_2^2 - 2\omega_3^2c_s^2\omega_4\omega_1^3\omega_2^2 - 6\omega_3^2c_s^2\omega_4\omega_1^2v_1^2\omega_2^3 + 54\omega_3c_s^2\omega_4\omega_1^2v_2^2\omega_2^2 -
36\omega_3^2\omega_4\omega_1^3v_2^4\omega_2 - 18\omega_3c_s^2\omega_4\omega_1^3\omega_2^3 + \omega_3^2\omega_4\omega_1^2v_1^2\omega_2^3 - 36\omega_3^2\omega_4\omega_1^2v_2^2v_1^2\omega_2 + 72\omega_3^2c_s^2\omega_1^2\omega_2^3 + 76\omega_3^2c_s^4\omega_4\omega_1\omega_2^3 + 216\omega_3^2c_s^2\omega_1v_1^2\omega_2^3 + 4\omega_3^2\omega_4\omega_1^3 -
12\omega_3^2c_s^2\omega_4\omega_1^2v_2^2\omega_2 + 12\omega_3^2\omega_4\omega_1v_2^4\omega_2^2 + 72\omega_3^2\omega_4\omega_1^3v_2^2v_1^2 - 18\omega_4\omega_1^2v_2^2\omega_2^3 - 18\omega_3^2\omega_1^2v_2^4\omega_2^2 - 12\omega_3\omega_4\omega_1^3v_2^4\omega_2 + 66\omega_3^2c_s^2\omega_4\omega_1^2v_1^2\omega_2^2 - 90\omega_3c_s^2\omega_4\omega_1^2v_2^2\omega_2^3 +
32\omega_3^2c_s^2\omega_4\omega_1^2\omega_2 + 8\omega_3c_s^4\omega_4\omega_1\omega_2^3 - 18\omega_4\omega_1^3v_2^4\omega_2^2 + 24\omega_3^2\omega_4\omega_1^3v_2^4 + \omega_3^2\omega_4\omega_1^3v_1^4\omega_2^2 - 4\omega_3^2\omega_4\omega_1^2\omega_2 - 18\omega_3\omega_1^3v_2^4\omega_2^2 - 18\omega_3^2\omega_1^2v_2^4\omega_2^3 - 54\omega_3c_s^2\omega_1^3v_2^2\omega_2^2 +
54\omega_3^2\omega_4\omega_1v_2^4\omega_2^3 - 28\omega_3^2c_s^4\omega_4\omega_1\omega_2^2 + 28\omega_3^2c_s^2\omega_4\omega_2^3 - 24\omega_3^2\omega_4\omega_1^2v_1^2\omega_2^2 + 36\omega_3c_s^2\omega_4\omega_1^3\omega_2^2 + 48\omega_3^2c_s^2\omega_4\omega_1v_1^2\omega_2^3 - 36\omega_3c_s^4\omega_4\omega_1^2\omega_2^3 - 9\omega_3^2\omega_4\omega_1^3v_2^2\omega_2^2 +
12\omega_3^2\omega_4v_2^2\omega_2^3 + 8\omega_3c_s^4\omega_4\omega_1^3\omega_2 - 36\omega_3\omega_4\omega_1^2v_2^4\omega_2^3 + 54c_s^2\omega_4\omega_1^2v_2^2\omega_2^3 - 108\omega_3^2c_s^2\omega_4v_2^2\omega_2^3 - 36\omega_3c_s^2\omega_4\omega_1^3v_2^2\omega_2 - 90\omega_3^2\omega_4\omega_1v_2^2v_1^2\omega_2^3 + 12\omega_3^2c_s^2\omega_4\omega_1^3v_1^2 -
216\omega_3^2c_s^2\omega_1^2v_1^2\omega_2^3 - 18\omega_3^2\omega_4\omega_1^2v_2^4\omega_2^2 + 16\omega_3^2c_s^4\omega_4\omega_1^3 + 28\omega_3^2c_s^4\omega_4\omega_1^2\omega_2^2 - 12\omega_3^2\omega_4\omega_1^3v_1^2 + 30\omega_3^2c_s^2\omega_4\omega_1^3v_2^2\omega_2^2 + 54\omega_3c_s^2\omega_4\omega_1^3v_1^2\omega_2^3 + 12\omega_3^2\omega_4\omega_1v_1^2\omega_2^3 -
6\omega_3^2c_s^2\omega_4\omega_1^3v_1^2\omega_2 + 6\omega_3\omega_4\omega_1^2v_2^4\omega_2^2 - 84\omega_3^2c_s^2\omega_4\omega_1v_1^2\omega_2^2 + 56\omega_3c_s^4\omega_4\omega_1^2\omega_2^2 - 18\omega_3c_s^2\omega_4\omega_1v_2^2\omega_2^3 - 72\omega_3^2c_s^2\omega_1\omega_2^3 - 36\omega_3\omega_4\omega_1^3v_2^2\omega_2^2 - 14\omega_3^2c_s^4\omega_4\omega_1^2\omega_2^3 +
12\omega_3^2\omega_4\omega_1v_1^2\omega_2^2 - 90\omega_3c_s^2\omega_4\omega_1^3v_1^2\omega_2^2 - 14\omega_3^2c_s^4\omega_4\omega_1^3\omega_2 + 132\omega_3^2c_s^2\omega_4\omega_1^3v_2^2 - 48\omega_3^2\omega_4\omega_1^3v_2^2 - 9\omega_3^2\omega_4\omega_1^2v_2^4\omega_2^3 + 12\omega_3^2\omega_4\omega_1^3v_1^2\omega_2 - 144\omega_3^2\omega_4\omega_1v_2^2v_1^2\omega_2^2 +
18\omega_3^2\omega_1v_2^4\omega_2^3 + 24\omega_3c_s^2\omega_4\omega_1^3v_1^2\omega_2 + 12\omega_3\omega_4\omega_1^3v_2^2\omega_2 - 96\omega_3^2c_s^2\omega_4v_1^2\omega_2^3 + 18\omega_4\omega_1^3v_2^2\omega_2^2 + 2\omega_3^2c_s^4\omega_4\omega_1^3\omega_2^2 - \omega_3^2\omega_4\omega_1^3v_1^2\omega_2^2 + 150\omega_3^2c_s^2\omega_4\omega_1v_2^2\omega_2^3 -
12\omega_3^2\omega_4v_1^2\omega_2^3 + 18\omega_3^2\omega_1^2v_2^2\omega_2^3 + 18\omega_3\omega_1^3v_2^2\omega_2^2 - 4\omega_3^2\omega_4\omega_1\omega_2^3 - 24\omega_3^2\omega_4\omega_1v_2^2\omega_2^3 + 6\omega_3^2c_s^2\omega_4\omega_1^3v_1^2\omega_2^2 + 18\omega_3c_s^4\omega_4\omega_1^3\omega_2^3 - 18\omega_3^2c_s^2\omega_4\omega_1\omega_2^3 -
20\omega_3^2c_s^2\omega_4\omega_1^3 - 54\omega_3^2c_s^2\omega_1^2v_2^2\omega_2^3 + 12\omega_3^2\omega_4\omega_1^2v_2^4\omega_2 + 60\omega_3c_s^2\omega_4\omega_1v_1^2\omega_2^3 - 6\omega_3\omega_4\omega_1v_2^2\omega_2^3 - 12\omega_3^2c_s^2\omega_4\omega_1v_2^2\omega_2^2 + 18\omega_3^2\omega_1^3v_2^4\omega_2^2 - 3\omega_3^2c_s^4\omega_4\omega_1^3\omega_2^3 +
18\omega_3\omega_1^2v_2^4\omega_2^3 + 54\omega_3c_s^2\omega_1^2v_2^2\omega_2^3 - 174\omega_3^2c_s^2\omega_4\omega_1^3v_2^2\omega_2 - 8\omega_3c_s^2\omega_4\omega_1\omega_2^3 - 28\omega_3^2c_s^4\omega_4\omega_1^2\omega_2 + 66\omega_3^2\omega_4\omega_1^3v_2^2\omega_2 + 32\omega_3^2c_s^2\omega_4\omega_1\omega_2^2 - \omega_3^2\omega_4\omega_1^2v_1^4\omega_2^3 -
54\omega_3^2c_s^2\omega_1^2v_2^2\omega_2^2 - 36\omega_3c_s^4\omega_4\omega_1^3\omega_2^2 + 72\omega_3^2c_s^4\omega_1\omega_2^3 + 90\omega_3c_s^2\omega_4\omega_1^3v_2^2\omega_2^2 + 36\omega_3^2\omega_4\omega_1v_2^2\omega_2^2 + 4\omega_3^2\omega_4\omega_2^3 + 18\omega_3^2\omega_1^2v_2^2\omega_2^2 + 18\omega_4\omega_1^2v_2^4\omega_2^3 - 4\omega_3^2\omega_4\omega_1\omega_2^2$$

$$C_{27} = 6\omega_1^3\omega_2 - 66\omega_3c_s^2\omega_2^3 - 18c_s^2\omega_1\omega_2^3 + 12\omega_1^2v_1^2\omega_2^2 + 6\omega_3\omega_1^2v_2^2\omega_2 + 48\omega_3\omega_1^3\omega_2 + 23\omega_3\omega_1^2\omega_2^3 + 108\omega_3c_s^2\omega_1\omega_2^3 - 12\omega_1^2\omega_2^2 + 18\omega_3\omega_1^2v_1^2\omega_2^2 +
12\omega_3\omega_1^2\omega_2^2 + 6\omega_3\omega_1^2\omega_2 - 50\omega_3\omega_1^2v_2^2\omega_2^3 - 12\omega_3\omega_1^2v_1^2\omega_2 - 66\omega_3\omega_1^2v_2^2\omega_2^2 - 23\omega_3\omega_1^3\omega_2^2 + 42\omega_3\omega_2^3 + 141\omega_3\omega_1v_2^2\omega_2^3 + 48\omega_3\omega_1^3v_2^2 - 18\omega_3c_s^2\omega_1^2\omega_2 -
75\omega_3\omega_1^3v_2^2\omega_2 + 84\omega_3c_s^2\omega_1^3 + 60\omega_3\omega_1v_2^2\omega_2^2 - 114\omega_3v_2^2\omega_2^3 + 12\omega_3\omega_1^3v_1^2 + 42\omega_3c_s^2\omega_1^3\omega_2^2 - 108\omega_3c_s^2\omega_1^3\omega_2 - 36\omega_3\omega_1^3 - 9\omega_3\omega_1v_1^2\omega_2^3 - 42\omega_3c_s^2\omega_1^2\omega_2^3 -
6\omega_1^3v_1^2\omega_2 + 50\omega_3\omega_1^3v_2^2\omega_2^2 - 12\omega_3\omega_1\omega_2^2 + 36c_s^2\omega_1^2\omega_2^2 - 12\omega_3\omega_1v_1^2\omega_2^2 + 12\omega_3v_1^2\omega_2^3 + 6\omega_1\omega_2^3 - 9\omega_3\omega_1^3v_1^2\omega_2 - 18c_s^2\omega_1^3\omega_2 - 6\omega_1v_1^2\omega_2^3 - 60\omega_3\omega_1\omega_2^3$$

$$C_{28} = 394\omega_3^2c_s^2\omega_4^2\omega_1^3v_2^2\omega_2^2 + 36\omega_3^2c_s^2\omega_4\omega_1^2v_2^2\omega_2^3 + 144\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^2 - 18\omega_3^2c_s^2\omega_1^3\omega_2^3 - 96\omega_3^2\omega_4^2\omega_1^2v_2^4\omega_2^2 - 368\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^3 - 36c_s^2\omega_4^2\omega_1^2v_2^2\omega_2^3 +
16\omega_3c_s^2\omega_4^2\omega_1^3v_2^2\omega_2 - 108\omega_3^2c_s^4\omega_1^2\omega_2^3 - 27\omega_3c_s^4\omega_4^2\omega_1^3\omega_2^3 - 92\omega_3^2\omega_4^2\omega_1^3v_2^2\omega_2^2 - 16\omega_3^2\omega_4^2\omega_2^3 + 28\omega_3^2\omega_4^2\omega_1\omega_2^3 + 56\omega_3c_s^2\omega_4^2\omega_1\omega_2^3 - 78\omega_3^2\omega_4^2\omega_1^2v_2^4\omega_2^3 +$$

$72\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2 + 18\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^3 + 6\omega_3^2c_s^2\omega_4^2\omega_1^3v_2^2\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1\omega_2^2 - 56\omega_3c_s^2\omega_4^2\omega_1v_2^2\omega_2^3 - 104\omega_3^2c_s^2\omega_4^2\omega_1^3 - 108\omega_3c_s^4\omega_4^2\omega_1^3\omega_2^2 - 108c_s^4\omega_4^2\omega_1^2\omega_2^3 -$
$36\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^3 + 56\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^2 - 784\omega_3^2c_s^2\omega_4^2v_2^2\omega_2^3 + 54\omega_3^2c_s^4\omega_1^3\omega_2^3 + 160\omega_3^2\omega_4^2v_2^2\omega_2^3 + 48\omega_3c_s^4\omega_4^2\omega_1^3\omega_2 - 9\omega_3c_s^2\omega_4^2\omega_1^3v_2^2\omega_2^3 - 256\omega_3^2\omega_4^2\omega_1v_2^2\omega_2^3 +$
$18\omega_3^2c_s^2\omega_4^2\omega_1^3v_1^2\omega_2^2 + 216\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^3 + 12\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^2 - 6\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_2^2 + 1232\omega_3^2c_s^2\omega_4^2\omega_1v_2^2\omega_2^3 + 36\omega_3^2c_s^2\omega_1^3\omega_2^3 + 32\omega_3^2\omega_4^2\omega_1v_2^2\omega_2^2 +$
$54c_s^4\omega_4^2\omega_1^3\omega_2^3 + 9\omega_3^2c_s\omega_4\omega_1^3\omega_2^3 - 36\omega_3c_s^2\omega_4^2\omega_1^3v_2^2\omega_2^2 + 120\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^2 - 6\omega_3^2\omega_4^2\omega_1^2v_1^4\omega_2^3 + 152\omega_3^2\omega_4^2\omega_1^3v_2^2\omega_2 + 18\omega_3^2c_s^2\omega_1^3v_2^2\omega_2^3 - 56\omega_3^2\omega_4^2\omega_1^3v_2^2 -$
$712\omega_3^2c_s^2\omega_4^2\omega_1^3v_2^2\omega_2 - 276\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2 + 320\omega_3^2c_s^2\omega_4^2\omega_1^3v_2^2 + 144\omega_3^2c_s^4\omega_4^2\omega_1^3 + 120\omega_3^2\omega_4^2\omega_1^2v_2^4\omega_2 - 342\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^3 - 56\omega_3^2c_s^2\omega_4^2\omega_1v_2^2\omega_2^2 -$
$118\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2^2 + 92\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2^3 + 14\omega_3^2\omega_4^2\omega_1^3\omega_2^2 + 588\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^3 + 208\omega_3^2c_s^2\omega_4^2\omega_2^3 - 460\omega_3^2c_s^2\omega_4^2\omega_1^2v_2^2\omega_2^3 + 9\omega_3c_s^2\omega_4^2\omega_1^3\omega_2^3 +$
$48\omega_3^2\omega_4^2\omega_1^3v_2^4 + 16\omega_3^2\omega_4^2\omega_1^2\omega_2 + 18c_s^2\omega_4^2\omega_1^3v_2^2\omega_2^3 - 88\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2 - 168\omega_3c_s^4\omega_4^2\omega_1\omega_2^2 + 104\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2^2 - 6\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2^3 - 9\omega_3^2c_s^2\omega_4\omega_1^3v_2^2\omega_2^3 +$
$36c_s^2\omega_4^2\omega_1^2\omega_2^3 + 108\omega_3^2c_s^4\omega_4\omega_1^2\omega_2^3 + 36\omega_3c_s^2\omega_4^2\omega_1^3\omega_2^2 - 412\omega_3^2c_s^2\omega_4^2\omega_1^2v_2^2\omega_2^2 - 144\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^2 + 78\omega_3^2\omega_4^2\omega_1^3v_2^4\omega_2^2 + 8\omega_3^2\omega_4^2\omega_1^3 - 16\omega_3c_s^2\omega_4^2\omega_1^3\omega_2 +$
$448\omega_3^2c_s^2\omega_4^2\omega_1^2v_2^2\omega_2 - 24\omega_3^2\omega_4^2\omega_1v_2^4\omega_2^2 - 72\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^3 + 6\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2^3 - 132\omega_3^2\omega_4^2\omega_1^3v_2^4\omega_2 - 18\omega_3^2c_s^2\omega_4^2\omega_1^2v_1^2\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^2\omega_2^2 +$
$40\omega_3c_s^2\omega_4^2\omega_1^2v_2^2\omega_2^2 + 52\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^2 - 288\omega_3^2c_s^4\omega_4^2\omega_2^3 - 36\omega_3^2c_s^2\omega_1^2v_2^2\omega_2^3 - 136\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2 - 144\omega_3^2\omega_4^2v_2^4\omega_2^3 - 40\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^2 - 18c_s^2\omega_4^2\omega_1^3\omega_2^3 -$
$27\omega_3^2c_s^4\omega_4\omega_1^3\omega_2^3 + 228\omega_3^2\omega_4^2\omega_1v_2^4\omega_2^3 + 6\omega_3^2\omega_4^2\omega_1^3v_1^4\omega_2^2 + 208\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2 + 184\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^3 - 14\omega_3^2\omega_4^2\omega_1^2\omega_2^3 + 72\omega_3c_s^2\omega_4^2\omega_1^2v_2^2\omega_2^3 - 20\omega_3^2\omega_4^2\omega_1^3\omega_2$

$C_{29} = -18\omega_3\omega_4v_1^2\omega_2 - 6\omega_3\omega_4\omega_1\omega_2 + 12\omega_3c_s^2\omega_4\omega_1 + 9\omega_4\omega_1\omega_2 + 4\omega_3\omega_4v_2^2\omega_2 + 2\omega_3\omega_4\omega_2 - 27\omega_3c_s^2\omega_1\omega_2 + 2\omega_3\omega_4\omega_1v_2^2 + 9\omega_3\omega_1\omega_2 +$
$18\omega_3c_s^2\omega_4\omega_1\omega_2 + 6\omega_3\omega_4\omega_1v_2^2\omega_2 + 18\omega_3\omega_4\omega_1v_1^2 + 6\omega_3c_s^2\omega_4\omega_2 - 27c_s^2\omega_4\omega_1\omega_2 - 8\omega_3\omega_4\omega_1 - 9\omega_4\omega_1v_2^2\omega_2 - 9\omega_3\omega_1v_2^2\omega_2$

$C_{30} = 16\omega_3c_s^4\omega_4\omega_1^3 + 84\omega_3\omega_4\omega_1^2v_2^2\omega_2^2 + 24\omega_3c_s^2\omega_4\omega_1^2\omega_2^3 + 18c_s^2\omega_4\omega_1^3\omega_2^2 + 42\omega_3c_s^2\omega_4\omega_1^3\omega_2 + 8c_s^4\omega_4\omega_1\omega_2^3 - 54c_s^2\omega_4\omega_1^3v_2^2\omega_2^2 + 138\omega_3\omega_4\omega_1^3v_2^4\omega_2^2 +$
$144\omega_3\omega_4v_2^2\omega_2^3 - 60\omega_3\omega_4\omega_1^3v_2^2 + 108\omega_3c_s^2\omega_1v_2^2\omega_2^3 - 6\omega_3c_s^2\omega_4\omega_1^2\omega_2^2 - 9c_s^2\omega_4\omega_1^3\omega_2^3 - 3\omega_3c_s^2\omega_4\omega_1^2v_1^2\omega_2^3 - 36\omega_3c_s^2\omega_1\omega_2^3 + 81\omega_3\omega_4\omega_1^2v_2^2\omega_2^3 -$
$8\omega_3\omega_4\omega_2^3 + 120\omega_3c_s^2\omega_4\omega_1^2v_2^2\omega_2 + 27c_s^2\omega_4\omega_1^3v_2^2\omega_2^3 + 408\omega_3\omega_4\omega_1v_2^4\omega_2^3 + 24c_s^2\omega_4\omega_1v_2^2\omega_2^3 - 20\omega_3c_s^2\omega_4\omega_1^3 - 28\omega_3c_s^4\omega_4\omega_1\omega_2^2 + 14\omega_3\omega_4\omega_1\omega_2^3 -$
$90\omega_3c_s^2\omega_4\omega_1^2v_2^2\omega_2^2 - 20c_s^2\omega_4\omega_1^2\omega_2^2 - 16\omega_3c_s^2\omega_4\omega_1^2\omega_2 + \omega_3\omega_4\omega_1^3v_1^4\omega_2^2 + 27\omega_3c_s^2\omega_1^3v_2^2\omega_2^3 + 24c_s^2\omega_4\omega_1^3v_2^2\omega_2 - 240\omega_3\omega_4\omega_1^3v_2^4\omega_2 + \omega_3\omega_4\omega_1^2v_1^2\omega_2^3 -$
$153\omega_3c_s^2\omega_4\omega_1^2v_2^2\omega_2^3 + 94\omega_3c_s^4\omega_4\omega_1\omega_2^3 - 4\omega_3\omega_4\omega_1\omega_2^2 - 24\omega_3\omega_4\omega_1v_2^4\omega_2^2 + 36\omega_3c_s^4\omega_1\omega_2^3 - 96\omega_3\omega_4\omega_1^2v_2^2\omega_2 - 8c_s^2\omega_4\omega_1^3\omega_2 + 18c_s^2\omega_4\omega_1^2\omega_2^3 -$
$24\omega_3c_s^2\omega_4\omega_1^3\omega_2^2 - 18c_s^4\omega_4\omega_1^3\omega_2^2 - 4\omega_3\omega_4\omega_1^2\omega_2^2 - 60\omega_3c_s^2\omega_4\omega_1v_2^2\omega_2^2 - 29\omega_3c_s^4\omega_4\omega_1^2\omega_2^3 + 144\omega_3c_s^2\omega_4\omega_1^3v_2^2 - 32\omega_3c_s^4\omega_4\omega_1^3\omega_2 - 138\omega_3\omega_4\omega_1^2v_2^4\omega_2^3 -$
$54c_s^2\omega_4\omega_1^2v_2^2\omega_2^3 - 36\omega_3c_s^4\omega_1^2\omega_2^3 - 288\omega_3c_s^2\omega_4\omega_1^3v_2^2\omega_2 + 4\omega_3\omega_4\omega_1^3 - 9\omega_3c_s^2\omega_1^3\omega_2^3 - 8c_s^2\omega_4\omega_1\omega_2^3 - 68\omega_3c_s^4\omega_4\omega_2^3 - 168\omega_3\omega_4\omega_1^2v_2^4\omega_2^2 +$
$60c_s^2\omega_4\omega_1^2v_2^2\omega_2^2 - 10\omega_3\omega_4\omega_1^3\omega_2 - 7\omega_3\omega_4\omega_1^2\omega_2^3 + 9c_s^4\omega_4\omega_1^3\omega_2^3 + 10\omega_3c_s^4\omega_4\omega_1^2\omega_2^2 + 432\omega_3c_s^2\omega_4\omega_1v_2^2\omega_2^3 - 81\omega_3\omega_4\omega_1^3v_2^2\omega_2^2 + 3\omega_3c_s^2\omega_4\omega_1^3v_1^2\omega_2^2 -$
$312\omega_3c_s^2\omega_4v_2^2\omega_2^3 - 264\omega_3\omega_4v_2^4\omega_2^3 + 138\omega_3\omega_4\omega_1^3v_2^2\omega_2 - \omega_3\omega_4\omega_1^2v_1^4\omega_2^3 + 32\omega_3c_s^2\omega_4\omega_1\omega_2^2 + 12\omega_3\omega_4\omega_1v_2^2\omega_2^2 + 36\omega_3c_s^2\omega_1^2\omega_2^3 + 9\omega_3c_s^4\omega_1^3\omega_2^3 +$
$192\omega_3\omega_4\omega_1^2v_2^4\omega_2 - 3\omega_3c_s^4\omega_4\omega_1^3\omega_2^3 + 7\omega_3\omega_4\omega_1^3\omega_2^2 + 20c_s^4\omega_4\omega_1^2\omega_2^2 + 8\omega_3c_s^4\omega_4\omega_1^2\omega_2 + 40\omega_3c_s^2\omega_4\omega_2^3 - 222\omega_3\omega_4\omega_1v_2^2\omega_2^3 - 108\omega_3c_s^2\omega_1^2v_2^2\omega_2^3 -$
$54\omega_3c_s^2\omega_4\omega_1\omega_2^3 + 96\omega_3\omega_4\omega_1^3v_2^4 + 8\omega_3\omega_4\omega_1^2\omega_2 + 8c_s^4\omega_4\omega_1^3\omega_2 + 17\omega_3c_s^4\omega_4\omega_1^3\omega_2^2 - 18c_s^4\omega_4\omega_1^2\omega_2^3 + 153\omega_3c_s^2\omega_4\omega_1^3v_2^2\omega_2^2 - \omega_3\omega_4\omega_1^3v_1^2\omega_2^2$

$C_{31} = -3c_s^4\omega_1\omega_2 - 36c_s^2\omega_1v_2^2\omega_2 + 48c_s^2v_2^2\omega_2 - 6\omega_1v_2^2 - 9\omega_1v_2^4\omega_2 - 4c_s^2\omega_2 + 2c_s^4\omega_1 + 3c_s^2\omega_1\omega_2 + 12v_2^4\omega_2 + 24c_s^2\omega_1v_2^2 + 9\omega_1v_2^2\omega_2 + 6\omega_1v_2^4 -$
$2c_s^2\omega_1 + 4c_s^4\omega_2 - 12v_2^2\omega_2$

$C_{32} = 24\omega_3^2c_s^4\omega_4^2 + 9\omega_4^2\omega_1^3v_2^4 + 18\omega_3^2\omega_1^2v_2^2 + 36\omega_3^2c_s^2\omega_4\omega_1v_2^2 + 72\omega_3c_s^2\omega_4^2\omega_1^2v_2^2 - 8\omega_3^2c_s^2\omega_4^2\omega_1^2 - 12\omega_3^2c_s^2\omega_4^2\omega_1^2v_2^2 - 18\omega_3\omega_4\omega_1^3v_2^2 - 48\omega_3^2c_s^4\omega_4^2\omega_1 +$
$12\omega_3^2\omega_4^2\omega_1^2v_2^2 + 36\omega_3^2\omega_4\omega_1^2v_2^4 + \omega_3^2c_s^2\omega_4^2\omega_1^3 - 15\omega_3\omega_4^2\omega_1^3v_2^4 + 27c_s^2\omega_4^2\omega_1^3v_2^2 - 36\omega_3c_s^2\omega_4^2\omega_1^3v_2^2 + 24\omega_3^2c_s^4\omega_4^2\omega_1^2 - 9\omega_3^2\omega_1^3v_2^2 - 18\omega_4^2\omega_1^2v_2^4 -$
$54c_s^2\omega_4^2\omega_1^2v_2^2 + 36\omega_3\omega_4^2\omega_1^2v_2^4 + 12\omega_3^2c_s^2\omega_4^2\omega_1 - 15\omega_3^2\omega_4\omega_1^3v_2^4 - 3\omega_3^2\omega_4^2\omega_1^3v_2^2 + 36\omega_3\omega_4\omega_1^2v_2^2 + 6\omega_3^2c_s^2\omega_4^2\omega_1^3v_2^2 - 3\omega_3^2c_s^4\omega_4^2\omega_1^3 - 54\omega_3^2c_s^2\omega_1^2v_2^2 -$
$12\omega_3^2c_s^2\omega_4\omega_1 + 54\omega_3c_s^2\omega_4\omega_1^3v_2^2 + 18\omega_4^2\omega_1^2v_2^2 + 9\omega_3^2\omega_1^3v_2^4 + 12\omega_3c_s^2\omega_4^2\omega_1^2 + 3\omega_3^2c_s^4\omega_4\omega_1^3 - 3\omega_3c_s^2\omega_4^2\omega_1^3 + 3\omega_3^2\omega_4^2\omega_1^3v_2^4 - 36\omega_3\omega_4\omega_1^2v_2^4 -$
$36\omega_3\omega_4^2\omega_1^2v_2^2 - 12\omega_3^2c_s^4\omega_4\omega_1^2 - 36\omega_3^2c_s^2\omega_4\omega_1^3v_2^2 + 15\omega_3^2\omega_4\omega_1^3v_2^2 + 12\omega_3c_s^4\omega_4^2\omega_1 + 12\omega_3^2c_s^4\omega_4\omega_1 - 36\omega_3^2c_s^2\omega_4^2\omega_1v_2^2 - 12\omega_3c_s^4\omega_4^2\omega_1^2 - 18\omega_3^2\omega_1^2v_2^4 -$
$9\omega_4^2\omega_1^3v_2^2 + 27\omega_3^2c_s^2\omega_1^3v_2^2 - 108\omega_3c_s^2\omega_4\omega_1^2v_2^2 - 3\omega_3^2c_s^2\omega_4\omega_1^3 - 36\omega_3^2\omega_4\omega_1^2v_2^2 + 3\omega_3c_s^4\omega_4^2\omega_1^3 + 72\omega_3^2c_s^2\omega_4\omega_1^2v_2^2 + 15\omega_3\omega_4^2\omega_1^3v_2^2 + 18\omega_3\omega_4\omega_1^3v_2^4 +$
$12\omega_3^2c_s^2\omega_4\omega_1^2 + 36\omega_3c_s^2\omega_4^2\omega_1v_2^2 - 12\omega_3^2\omega_4^2\omega_1^2v_2^4 - 12\omega_3c_s^2\omega_4^2\omega_1$

$C_{33} = -24\omega_3^2\omega_1^3v_1^2\omega_2^2 + 40\omega_3^2c_s^2\omega_1^2\omega_2 - 72\omega_3^2v_3^2v_1^2\omega_2^3 + 72\omega_3^2c_s^2\omega_1^3v_1^2\omega_2^2 - 8\omega_3^2v_3^2\omega_1\omega_2^3 - 6\omega_3^2c_s^4\omega_1^2\omega_2^3 + 72\omega_3^2\omega_1^2v_1^4\omega_2^2 - 84\omega_3^2c_s^4\omega_1^3\omega_2 + 96\omega_3^2v_3^2\omega_1v_1^2\omega_2^3 +$
$8\omega_3^2\omega_1\omega_2^2 - 20\omega_3^2c_s^2v_3^2\omega_2^3 + 22\omega_3^2c_s^2v_3^2\omega_1\omega_2^3 - 5\omega_3^2c_s^2\omega_1^3\omega_2^2 - 8\omega_3c_s^2\omega_1\omega_2^3 + 24\omega_3^2v_1^2\omega_2^3 + 4\omega_3^2\omega_1^3 + 8\omega_3c_s^2v_3^2\omega_1\omega_2^3 + 8\omega_3^2c_s^2v_3^2\omega_1\omega_2^2 + 24\omega_3^2v_3^2\omega_1v_1^2\omega_2^2 +$
$8\omega_3^2\omega_1\omega_2^3 - 4\omega_3^2v_3^2\omega_1^3 - 8\omega_3^2v_3^2\omega_1\omega_2^2 + 42\omega_3^2c_s^4\omega_1^2\omega_2^2 - 48\omega_3^2v_3^2\omega_1^3v_1^2\omega_2 - 36\omega_3^2c_s^4\omega_1^2\omega_2 + 24\omega_3^2v_3^2\omega_1^3v_1^2\omega_2^2 + 56\omega_3^2c_s^2\omega_1^3\omega_2 + 5\omega_3^2c_s^2\omega_1^2\omega_2^3 - 60\omega_3^2\omega_1v_1^2\omega_2^3 +$
$108\omega_3^2c_s^2\omega_1v_1^2\omega_2^3 + 24\omega_3^2v_3^2\omega_1^3v_1^2 + 6\omega_3^2c_s^4\omega_1^3\omega_2^2 - 52\omega_3^2c_s^2\omega_1^3 - 36\omega_3^2c_s^4\omega_2^3 + 24\omega_3c_s^4\omega_1\omega_2^3 + 84\omega_3^2\omega_1^3v_1^2\omega_2 - 216\omega_3^2c_s^2\omega_1v_1^2\omega_2^2 - 48\omega_3^2\omega_1^3v_1^2 +$
$48\omega_3^2\omega_1v_1^2\omega_2^2 - 34\omega_3^2c_s^2\omega_1^2\omega_2^2 - 324\omega_3^2c_s^2\omega_1^3v_1^2\omega_2 - \omega_3^2v_3^2\omega_1^3\omega_2^2 + 12c_s^2\omega_1^3\omega_2^2 + 24\omega_3^2v_3^2\omega_1^2v_1^2\omega_2 - 8\omega_3^2\omega_2^3 - 54\omega_3c_s^4\omega_1^2\omega_2^3 + 48\omega_3^2v_1^4\omega_2^2 + 2\omega_3^2c_s^2v_3^2\omega_1^3\omega_2^2 -$
$4\omega_3^2\omega_1^2\omega_2 - 12\omega_3c_s^4\omega_1^3\omega_2 - 72\omega_3^2c_s^2\omega_1^2v_1^2\omega_2^3 + 8\omega_3^2v_3^2\omega_2^3 + 24\omega_3^2\omega_1^2v_1^2\omega_2^3 - 8\omega_3^2c_s^2\omega_1\omega_2^2 - 4\omega_3^2c_s^2v_3^2\omega_1^2\omega_2 - 12\omega_3c_s^4\omega_1^2\omega_2^2 + \omega_3^2\omega_1^3\omega_2^2 + 24\omega_3^2\omega_1^3v_1^4 +$
$4\omega_3^2v_3^2\omega_1^2\omega_2 + 36c_s^4\omega_1^2\omega_2^2 - 22\omega_3^2c_s^2\omega_1\omega_2^3 - 24\omega_3^2\omega_1^2v_1^2\omega_2^2 + 216\omega_3^2c_s^2\omega_1^2v_1^2\omega_2^2 - 18\omega_3c_s^2\omega_1^3\omega_2^2 + 18\omega_3c_s^2v_3^2\omega_1^3\omega_2^2 + 16\omega_3^2c_s^2v_3^2\omega_1^3 + 12c_s^2v_3^2\omega_1^2\omega_2^2 -$
$24\omega_3^2\omega_1^2v_1^2\omega_2 - 36c_s^4\omega_1^3\omega_2^2 - 12c_s^2v_3^2\omega_1^3\omega_2^2 + 4\omega_3c_s^2\omega_1^3\omega_2 - 18\omega_3c_s^2v_3^2\omega_1^2\omega_2^3 + 20\omega_3^2c_s^2\omega_2^3 + 72\omega_3^2c_s^4\omega_1^3 - 4\omega_3c_s^2v_3^2\omega_1^3\omega_2 + 18\omega_3c_s^2\omega_1^2\omega_2^3 - 36\omega_3^2\omega_1^3v_1^4\omega_2 -$
$\omega_3^2\omega_1^2\omega_2^3 - 4\omega_3^2\omega_1^3\omega_2 - 2\omega_3^2c_s^2v_3^2\omega_1^2\omega_2 - 24\omega_3^2v_3^2\omega_1^2v_1^2\omega_2^3 - 72\omega_3^2\omega_1v_1^4\omega_2^2 + 4\omega_3^2v_3^2\omega_1^2\omega_2^2 + 4\omega_3c_s^2\omega_1^2\omega_2^2 - 4\omega_3c_s^2v_3^2\omega_1^2\omega_2^2 + 4\omega_3^2v_3^2\omega_1^3\omega_2 - 36\omega_3^2\omega_1v_1^4\omega_2^3 -$
$12c_s^2\omega_1^2\omega_2^3 + 42\omega_3^2c_s^4\omega_1\omega_2^3 + \omega_3^2v_3^2\omega_1^2\omega_2^3 - 2\omega_3^2c_s^2v_3^2\omega_1^2\omega_2^3 - 48\omega_3^2v_3^2\omega_1^2v_1^2\omega_2^2 + 54\omega_3c_s^4\omega_1^3\omega_2^2 - 4\omega_3^2\omega_1^2\omega_2^2 - 20\omega_3^2c_s^2v_3^2\omega_1^3\omega_2 + 216\omega_3^2c_s^2\omega_1^3v_1^2$

$C_{34} = 9\omega_1^2\omega_2^3 - 54\omega_3c_s^2\omega_1\omega_2^2 + 6\omega_1^3\omega_2 - 12\omega_3c_s^2\omega_2^3 + 36c_s^2\omega_1\omega_2^3 + 5\omega_3v_3^2\omega_1^3\omega_2^2 + 48\omega_3\omega_1^3\omega_2 + 5\omega_3\omega_1^2\omega_2^3 + 9v_3^2\omega_1^3\omega_2^2 + 27\omega_3c_s^2\omega_1\omega_2^3 + 6\omega_1^2\omega_2^2 +$
$132\omega_3\omega_1^2v_1^2\omega_2^2 - 51\omega_3\omega_1^2\omega_2^2 + 6\omega_3v_3^2\omega_1^2\omega_2 + 6\omega_3\omega_1^2\omega_2 - 9\omega_3v_3^2\omega_1^2\omega_2^2 - 6v_3^2\omega_1^3\omega_2 - 9v_3^2\omega_1^2\omega_2^3 - 24\omega_3v_3^2\omega_2^3 - 12\omega_3\omega_1^2v_1^2\omega_2 - 18\omega_3v_3^2\omega_1^3\omega_2 -$
$5\omega_3\omega_1^3\omega_2^2 - 5\omega_3v_3^2\omega_1^2\omega_2^3 - 12\omega_3\omega_2^3 - 9\omega_1^3\omega_2^2 - 6v_3^2\omega_1^2\omega_2^2 + 27c_s^2\omega_1^3\omega_2^2 + 27\omega_3v_3^2\omega_1\omega_2^3 - 18\omega_3c_s^2\omega_1^2\omega_2 + 6\omega_3v_3^2\omega_1\omega_2^2 + 84\omega_3c_s^2\omega_1^3 + 12v_3^2\omega_1\omega_2^3 +$
$48\omega_3\omega_1^3v_1^2 + 15\omega_3c_s^2\omega_1^3\omega_2^2 - 108\omega_3c_s^2\omega_1^3\omega_2 - 36\omega_3\omega_1^3 - 66\omega_3\omega_1v_1^2\omega_2^3 - 15\omega_3c_s^2\omega_1^2\omega_2^3 + 42\omega_3\omega_1\omega_2^2 - 18c_s^2\omega_1^2\omega_2^2 + 81\omega_3c_s^2\omega_1^2\omega_2^2 -$
$120\omega_3\omega_1v_1^2\omega_2^2 + 84\omega_3v_1^2\omega_2^3 - 12\omega_1\omega_2^3 - 66\omega_3\omega_1^3v_1^2\omega_2 - 18c_s^2\omega_1^3\omega_2 + 12\omega_3v_3^2\omega_1^3 - 27c_s^2\omega_1^2\omega_2^3 + 3\omega_3\omega_1\omega_2^2$

$C_{35} = -48\omega_3^2\omega_4^2v_1^2\omega_2^3 + 96\omega_3^2\omega_4^2\omega_1v_1^2\omega_2^3 - 297\omega_3c_s^2\omega_4^2\omega_1^3v_1^2\omega_2^3 - 2\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^2 + 144\omega_3^2v_3^2\omega_4^2\omega_1^2v_1^2\omega_2 + 432\omega_3^2c_s^2\omega_4^2v_1^2\omega_2^3 + 48\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^3 +$
$24\omega_3\omega_4^2\omega_1^3v_1^2\omega_2 + 18\omega_3c_s^4\omega_4^2\omega_1^3\omega_2^3 + 36\omega_4^2\omega_1^3v_1^2\omega_2^2 - 852\omega_3^2c_s^2\omega_4^2\omega_1v_1^2\omega_2^3 - 16\omega_3^2\omega_4^2\omega_2^3 + 144\omega_3^2v_3^2\omega_4^2\omega_1^3v_1^2 + 16\omega_3^2\omega_4^2\omega_1\omega_2^3 + 162\omega_3^2c_s^2\omega_1^3v_1^2\omega_2^3 +$
$204\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_2 - 16\omega_3c_s^2\omega_4^2\omega_1\omega_2^3 - 56\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2 - 6\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^3 - 540\omega_3c_s^2\omega_4\omega_1^2v_1^2\omega_2^3 - 96\omega_3c_s^2v_3^2\omega_4^2\omega_1\omega_2^3 + 288\omega_3c_s^2\omega_4^2\omega_1^3v_1^2\omega_2^2 -$
$144\omega_3^2\omega_4^2\omega_1v_1^2\omega_2^2 - 54\omega_3^2\omega_1^3v_1^2\omega_2^3 - 72\omega_4^2\omega_1^2v_1^4\omega_2^3 + 16\omega_3^2\omega_4^2\omega_1\omega_2^2 + 24\omega_3\omega_4^2\omega_1v_1^2\omega_2^3 + 336\omega_3^2c_s^2\omega_4^2\omega_1v_1^2\omega_2^2 + 24\omega_3^2c_s^2v_3^2\omega_4^2\omega_2^3 + 96\omega_3^2\omega_4^2\omega_1^2v_1^4\omega_2 -$
$108\omega_3^2\omega_4^2v_1^4\omega_2^3 - 40\omega_3^2c_s^2\omega_4^2\omega_1^3 - 36\omega_3c_s^4\omega_4^2\omega_1^3\omega_2^2 + 48\omega_3^2v_3^2\omega_4^2\omega_2^3 + 72\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^3 - 54\omega_4^2\omega_1^3v_1^2\omega_2^3 - 492\omega_3^2c_s^2\omega_4^2\omega_1^3v_1^2\omega_2 - 72\omega_3^2\omega_4\omega_1v_1^4\omega_2^3 -$
$32\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^2 - 144\omega_3^2\omega_4^2\omega_1^2v_1^4\omega_2^2 - 117\omega_3^2\omega_4\omega_1^3v_1^4\omega_2^3 + 16\omega_3c_s^4\omega_4^2\omega_1^3\omega_2 - 432\omega_3^2v_3^2\omega_4^2v_1^2\omega_2^3 - 12\omega_3^2c_s^2v_3^2\omega_4^2\omega_1\omega_2^3 + 648\omega_3^2c_s^2\omega_4\omega_1^2v_1^2\omega_2^2 +$
$117\omega_3\omega_4^2\omega_1^3v_1^2\omega_2^3 + 168\omega_3^2c_s^2\omega_4^2\omega_1^3v_1^2\omega_2^2 - 36\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^3 - 144\omega_3^2v_3^2\omega_4^2\omega_1^2v_1^2\omega_2^3 + 20\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^2 - 86\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_2^2 - 96\omega_3^2\omega_4^2\omega_1^3v_1^2 -$
$48\omega_3^2v_3^2\omega_4^2\omega_1\omega_2^3 - 288\omega_3^2\omega_4\omega_1^2v_1^2\omega_2^3 + 72\omega_3^2c_s^4\omega_4\omega_1\omega_2^3 - 36\omega_3\omega_4\omega_1^3v_1^4\omega_2^2 - 72\omega_3c_s^2\omega_4^2\omega_1^3v_1^2\omega_2 + 216\omega_3\omega_4^2\omega_1^2v_1^4\omega_2^3 - 216c_s^2\omega_4^2\omega_1^2v_1^2\omega_2^3 +$
$264\omega_3^2c_s^2\omega_4^2\omega_1^3v_1^2 - 108\omega_3^2c_s^2\omega_4\omega_1^2v_1^2\omega_2^2 - 18\omega_3^2c_s^2\omega_4\omega_1^3\omega_2^3 + 180\omega_3\omega_4\omega_1^2v_1^2\omega_2^3 + 48\omega_3^2c_s^2v_3^2\omega_4^2\omega_1\omega_2^2 + 40\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^2 + 72\omega_3^2c_s^2\omega_4^2\omega_1^3v_1^2\omega_2^3 -$

$108\omega_3\omega_4^2\omega_1^3v_1^2\omega_2^2+40\omega_3^2\omega_4^2\omega_1^2v_1^4\omega_2^3+36\omega_3^2\omega_4\omega_1^3v_1^4\omega_2^2+108\omega_3\omega_4\omega_1^3v_1^4\omega_2^3-60\omega_3\omega_4^2\omega_1^2v_1^4\omega_2^2-28\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2+32\omega_3^2c_s^4\omega_4^2\omega_1^3-24\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_2^3-$
$288\omega_3^2v_3^2\omega_4^2\omega_1^2v_1^2\omega_2^2+72\omega_3c_s^2\omega_4^2\omega_1v_1^2\omega_2^3+86\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^3+36\omega_3^2\omega_4\omega_1^2v_1^2\omega_2^2-48\omega_3^2v_3^2\omega_4^2\omega_1\omega_2^2-108\omega_3^2\omega_4^2\omega_1^3v_1^4\omega_2+48\omega_3^2\omega_4^2\omega_1^3v_1^4+$
$24\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^2\omega_2^2+96\omega_3^2\omega_4^2\omega_1v_1^4\omega_2^2+264\omega_3^2c_s^2\omega_4^2\omega_1^2v_1^2\omega_2+72\omega_4^2\omega_1^2v_1^2\omega_2^3+2\omega_3^2\omega_4^2\omega_1^3\omega_2^2+54\omega_3^2\omega_1^3v_1^4\omega_2^3-144\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2-324\omega_3^2c_s^2\omega_1^2v_1^2\omega_2^3-$
$24\omega_3\omega_4^2\omega_1v_1^4\omega_2^3+24\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^3-24\omega_3^2v_3^2\omega_4^2\omega_1^3+54\omega_4^2\omega_1^3v_1^4\omega_2^3+24\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2^2-172\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^3+8\omega_3^2c_s^2\omega_4^2\omega_2^3+108\omega_3^2\omega_1^2v_1^2\omega_2^3+$
$576\omega_3^2v_3^2\omega_4^2\omega_1v_1^2\omega_2^3-108\omega_3^2c_s^2\omega_4^2\omega_1^2v_1^2\omega_2^2+324\omega_3^2c_s^2\omega_4\omega_1^3v_1^2\omega_2^3+72\omega_3^2\omega_4\omega_1v_1^2\omega_2^3-18\omega_3c_s^2\omega_4^2\omega_1^3\omega_2^3+192\omega_3^2\omega_4^2v_1^4\omega_2^3-288\omega_3^2\omega_4^2\omega_1v_1^4\omega_2^3-$
$8\omega_3^2\omega_4^2\omega_1^2\omega_2+64\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2+16\omega_3c_s^4\omega_4^2\omega_1\omega_2^3+12\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^2\omega_2^3-12\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^3\omega_2+468\omega_3c_s^2\omega_4^2\omega_1^2v_1^2\omega_2^3+144\omega_3^2v_3^2\omega_4^2\omega_1v_1^2\omega_2^2-$
$72\omega_3^2c_s^4\omega_4\omega_1^2\omega_2^3+24\omega_3^2v_3^2\omega_4^2\omega_1^3\omega_2+36\omega_3c_s^2\omega_4^2\omega_1^3\omega_2^2-24\omega_3\omega_4^2\omega_1^3v_1^4\omega_2-108\omega_3c_s^2\omega_4\omega_1^3v_1^2\omega_2^2+6\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2^3-36\omega_4^2\omega_1^3v_1^4\omega_2^2+16\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^2-$
$288\omega_3^2v_3^2\omega_4^2\omega_1^3v_1^2\omega_2-72\omega_3c_s^2v_3^2\omega_4^2\omega_1^3\omega_2^2+8\omega_3^2\omega_4^2\omega_1^3-108c_s^2\omega_4^2\omega_1^3v_1^2\omega_2^2+108\omega_3\omega_4^2\omega_1^3v_1^4\omega_2^2-16\omega_3c_s^2\omega_4^2\omega_1^3\omega_2-6\omega_3^2v_3^2\omega_4^2\omega_1^3\omega_2^2-180\omega_3\omega_4\omega_1^2v_1^4\omega_2^3+$
$36\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^3-36\omega_3^2\omega_4\omega_1^3v_1^2\omega_2^2+8\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2^3+48\omega_3c_s^2v_3^2\omega_4^2\omega_1^3\omega_2+144\omega_3^2v_3^2\omega_4^2\omega_1^3v_1^2\omega_2^2+72\omega_3c_s^2v_3^2\omega_4^2\omega_1^2\omega_2^3+174\omega_3^2c_s^2\omega_4^2\omega_1^2v_1^2\omega_2^3-$
$8\omega_3^2\omega_4^2\omega_1^2\omega_2^2+60\omega_3\omega_4^2\omega_1^2v_1^2\omega_2^2+108\omega_3^2c_s^2\omega_4\omega_1^3v_1^2\omega_2^2-108\omega_3\omega_4\omega_1^3v_1^2\omega_2^3-12\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^2-36\omega_3^2\omega_4\omega_1^2v_1^4\omega_2^2-72\omega_3^2c_s^2\omega_4\omega_1\omega_2^3-$
$12\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^3\omega_2^2+24\omega_3^2\omega_4^2\omega_1^3v_1^4\omega_2^3+80\omega_3^2c_s^4\omega_4^2\omega_2^3+48\omega_3c_s^2v_3^2\omega_4^2\omega_1^2\omega_2^2+117\omega_3^2\omega_4\omega_1^3v_1^2\omega_2^3+240\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2^2-40\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^2+$
$24\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2+18\omega_3^2c_s^4\omega_4\omega_1^3\omega_2^3+162c_s^2\omega_4^2\omega_1^3v_1^2\omega_2^3-117\omega_3\omega_4^2\omega_1^3v_1^4\omega_2^3+288\omega_3^2\omega_4\omega_1^2v_1^4\omega_2^3+38\omega_3^2\omega_4^2\omega_1^3v_1^4\omega_2^2+36\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2-$
$96\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^2\omega_2-36\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^3-216\omega_3\omega_4^2\omega_1^2v_1^2\omega_2^3-2\omega_3^2\omega_4^2\omega_1^2\omega_2^3-492\omega_3^2c_s^2\omega_4^2\omega_1^2v_1^2\omega_2^2+36\omega_3\omega_4\omega_1^3v_1^2\omega_2^2-297\omega_3^2c_s^2\omega_4\omega_1^3v_1^2\omega_2^3-8\omega_3^2\omega_4^2\omega_1^3\omega_2$

$C_{36}=6\omega_1^3\omega_2-6v_3^2\omega_1^2\omega_2-18c_s^2\omega_1\omega_2^3-6\omega_1^2v_2^2\omega_2-12\omega_1^2\omega_2^2+36c_s^2\omega_1\omega_2^2+2v_3^2\omega_2^3-3v_3^2\omega_1^3\omega_2+6\omega_1^2v_2^2\omega_2^2+24\omega_1^2\omega_2-12\omega_1^2v_1^2\omega_2+6v_3^2\omega_1^2\omega_2^2+$
$4\omega_1^3v_2^2-3\omega_1^3v_2^2\omega_2+4\omega_1^3v_1^2-72c_s^2\omega_1^2\omega_2-12\omega_1^3-3v_3^2\omega_1\omega_2^3+2v_2^2\omega_2^3+36c_s^2\omega_1^3-3\omega_1v_2^2\omega_2^3-12\omega_1\omega_2^2+36c_s^2\omega_1^2\omega_2^2+12\omega_1v_1^2\omega_2^2+6\omega_1\omega_2^3+$
$4v_3^2\omega_1^3-18c_s^2\omega_1^3\omega_2-4v_1^2\omega_2^3$

$C_{37}=\omega_3\omega_4\omega_1^2v_2^2\omega_2^2-18\omega_3c_s^2\omega_4\omega_1^2\omega_2^3-18c_s^2\omega_4\omega_1^3\omega_2^2-12\omega_3c_s^2\omega_4\omega_1^3\omega_2-36\omega_3^2\omega_4\omega_1^2v_1^2\omega_2-3\omega_3^2v_3^2\omega_1\omega_2^3+36\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^2-12\omega_3^2\omega_4\omega_1^2\omega_2^2+$
$3\omega_3v_3^2\omega_1^3\omega_2^2-3\omega_3^2\omega_1v_2^2\omega_2^3+6\omega_3\omega_1^2\omega_2^3-18\omega_3^2c_s^2\omega_1^3\omega_2^2+6\omega_3c_s^2\omega_4\omega_1^2\omega_2^2-4\omega_3^2v_3^2\omega_4\omega_1^2\omega_2-3\omega_3\omega_4\omega_1^2v_2^2\omega_2^3+6\omega_3^2\omega_4\omega_1^3\omega_2+6\omega_3^2\omega_4\omega_1^2v_2^2\omega_2^2+6\omega_3^2\omega_1\omega_2^3+$
$3\omega_3v_3^2\omega_4\omega_1^3\omega_2^2-18\omega_3^2c_s^2\omega_4\omega_1^3\omega_2+3v_3^2\omega_4\omega_1^2\omega_2^3-4\omega_3^2\omega_4\omega_1^2v_2^2\omega_2-3v_3^2\omega_4\omega_1^3\omega_2^2-3\omega_3\omega_1^2v_2^2\omega_2^3-3\omega_3v_3^2\omega_4\omega_1^2\omega_2^3-2\omega_3\omega_4\omega_1\omega_2^3-3\omega_3^2\omega_1^3v_2^2\omega_2^2-$
$2\omega_3v_3^2\omega_4\omega_1^3\omega_2+6\omega_3^2v_3^2\omega_4\omega_1^2\omega_2^2+18\omega_3^2c_s^2\omega_1^2\omega_2^3-12\omega_3^2\omega_4\omega_1^3+3\omega_4\omega_1^2v_2^2\omega_2^3-36\omega_3^2c_s^2\omega_4\omega_1^2\omega_2+\omega_3v_3^2\omega_4\omega_1^2\omega_2^2+20\omega_3^2\omega_4\omega_1^2\omega_2-6\omega_3\omega_1^3\omega_2^2-$
$3\omega_3v_3^2\omega_1^2\omega_2^3+18\omega_3^2c_s^2\omega_1^2\omega_2^2+20\omega_3^2c_s^2\omega_4\omega_2^3-3\omega_3^2v_3^2\omega_4\omega_1^3\omega_2+18c_s^2\omega_4\omega_1^2\omega_2^3+4\omega_3^2v_3^2\omega_4\omega_1^3+18\omega_3c_s^2\omega_4\omega_1^3\omega_2^2-2\omega_3\omega_4\omega_1^2\omega_2^2-3\omega_3^2v_3^2\omega_1^3\omega_2^2+$
$4\omega_3^2\omega_4v_2^2\omega_2^3-6\omega_4\omega_1^2\omega_2^3+12\omega_3^2\omega_4\omega_1^3v_1^2-3\omega_3^2v_3^2\omega_4\omega_1\omega_2^3+6\omega_3^2\omega_1^3\omega_2^2+4\omega_3\omega_4\omega_1^3\omega_2+\omega_3v_3^2\omega_4\omega_1\omega_2^3+6\omega_3\omega_4\omega_1^2\omega_2^3-18\omega_3^2c_s^2\omega_1\omega_2^3+3\omega_3\omega_4\omega_1^3v_2^2\omega_2^2+$
$36\omega_3^2\omega_4\omega_1v_1^2\omega_2^2-4\omega_3^2v_3^2\omega_4\omega_1\omega_2^2+4\omega_3^2\omega_4\omega_1^3v_2^2+18\omega_3c_s^2\omega_1^3\omega_2^2-2\omega_3\omega_4\omega_1^3v_2^2\omega_2-3\omega_4\omega_1^3v_2^2\omega_2^2-12\omega_3^2\omega_4v_1^2\omega_2^3-18\omega_3c_s^2\omega_1^2\omega_2^3+3\omega_3^2\omega_1^2v_2^2\omega_2^3-$
$6\omega_3^2\omega_1^2\omega_2^3+3\omega_3\omega_1^3v_2^2\omega_2^2+6\omega_3^2\omega_4\omega_1\omega_2^3-3\omega_3^2\omega_4\omega_1v_2^2\omega_2^3-6\omega_3\omega_4\omega_1^3\omega_2^2+3\omega_3^2v_3^2\omega_1^2\omega_2^2+4\omega_3^2v_3^2\omega_4\omega_2^3-18\omega_3^2c_s^2\omega_4\omega_1\omega_2^3+28\omega_3^2c_s^2\omega_4\omega_1^3+6\omega_4\omega_1^3\omega_2^2+$
$\omega_3\omega_4\omega_1v_2^2\omega_2^3+6\omega_3c_s^2\omega_4\omega_1\omega_2^3-3\omega_3^2\omega_4\omega_1^3v_2^2\omega_2-12\omega_3^2c_s^2\omega_4\omega_1\omega_2^2+3\omega_3^2v_3^2\omega_1^2\omega_2^3-4\omega_3^2\omega_4\omega_1v_2^2\omega_2^2-4\omega_3^2\omega_4\omega_2^3-6\omega_3^2\omega_1^2\omega_2^2+3\omega_3^2\omega_1^2v_2^2\omega_2^2-4\omega_3^2\omega_4\omega_1\omega_2^2$

$C_{38}=48\omega_3^2\omega_4^2v_1^2\omega_2^3-108\omega_4^2\omega_1^3\omega_2^3-36\omega_3^2\omega_4^2\omega_1v_1^2\omega_2^2+432\omega_3c_s^2\omega_4\omega_1^2\omega_2^3-36\omega_3^2v_3^2\omega_4\omega_1^3\omega_2^2+180\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^3-24\omega_3\omega_4^2\omega_1^3v_1^2\omega_2-$
$36\omega_4^2\omega_1^3v_1^2\omega_2^2-108\omega_3\omega_4^2\omega_1^3\omega_2^2+216\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^2-72\omega_3^2\omega_4\omega_1^2\omega_2^2+24\omega_3^2\omega_4^2\omega_2^3-36\omega_3^2\omega_4^2\omega_1^3\omega_2-36\omega_3c_s^2\omega_4^2\omega_1^3\omega_2+$
$63\omega_3^2v_3^2\omega_4\omega_1^3\omega_2^3-48\omega_3^2\omega_4^2\omega_1v_1^2\omega_2^2+72\omega_4^2\omega_1^3\omega_2^2+54\omega_3^2\omega_1^3v_1^2\omega_2^3+24\omega_3^2\omega_4^2\omega_1\omega_2^2+12\omega_3\omega_4^2\omega_1v_1^2\omega_2^3+144\omega_3^2\omega_4\omega_1^2\omega_2^3+336\omega_3^2c_s^2\omega_4^2\omega_1^3-$
$96\omega_3^2v_3^2\omega_4^2\omega_2^3-432\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^3+63\omega_3\omega_4^2\omega_1^3\omega_2^3+54\omega_4^2\omega_1^3v_1^2\omega_2^3+36\omega_3v_3^2\omega_4\omega_1^3\omega_2^2-72\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^2+72\omega_3^2\omega_4\omega_1^3\omega_2^2+72\omega_3^2\omega_4^2v_2^2\omega_2^3-$
$36\omega_3v_3^2\omega_4\omega_1^2\omega_2^3-216\omega_3^2c_s^2\omega_4\omega_1^3\omega_2^2+48\omega_3\omega_4^2\omega_1^2\omega_2^2-108\omega_3^2\omega_4^2\omega_1v_2^2\omega_2^3+48\omega_3^2\omega_4^2\omega_1^3v_1^2+108\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2^2+324\omega_3c_s^2\omega_4\omega_1^3\omega_2^2+$
$36\omega_3^2\omega_4\omega_1^2v_1^2\omega_2^3+36\omega_3^2v_3^2\omega_4\omega_1^2\omega_2^2+144\omega_4^2\omega_1^2\omega_2^3-108\omega_3\omega_4^2\omega_1^2\omega_2^3-24\omega_3v_3^2\omega_4^2\omega_1\omega_2^3+189\omega_3^2c_s^2\omega_4\omega_1^3\omega_2^3+180\omega_3\omega_4\omega_1^2v_1^2\omega_2^3+36\omega_3\omega_4^2\omega_1^3v_1^2\omega_2^2+$
$48\omega_3\omega_4^2\omega_1^3\omega_2-108\omega_3^2\omega_4^2\omega_1^3v_2^2\omega_2-63\omega_3^2\omega_4\omega_1^3\omega_2^3+144\omega_3^2\omega_4^2\omega_1^3v_2^2-180\omega_3^2v_3^2\omega_4\omega_1^2\omega_2^3+36\omega_3^2\omega_4\omega_1^2v_1^2\omega_2^2+216\omega_3c_s^2\omega_4\omega_1^3\omega_2^2+24\omega_3^2v_3^2\omega_4^2\omega_1\omega_2^2+$
$60\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2^2-24\omega_3v_3^2\omega_4^2\omega_1^3\omega_2-36v_3^2\omega_4^2\omega_1^3\omega_2^2+12\omega_3\omega_4^2\omega_1\omega_2^3+144\omega_3v_3^2\omega_4^2\omega_1^2\omega_2^3-72\omega_4^2\omega_1^2v_1^2\omega_2^3-20\omega_3^2\omega_4^2\omega_1^3\omega_2^2-48\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2+$
$48\omega_3^2v_3^2\omega_4^2\omega_1^3-36\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2^2-120\omega_3^2c_s^2\omega_4^2\omega_2^3-108\omega_3^2\omega_1^2v_1^2\omega_2^3+72\omega_3^2v_3^2\omega_4\omega_1\omega_2^3-36\omega_3^2\omega_4\omega_1v_1^2\omega_2^3-189\omega_3c_s^2\omega_4^2\omega_1^3\omega_2^3+96\omega_3^2\omega_4^2\omega_1^2\omega_2+$
$54v_3^2\omega_4^2\omega_1^3\omega_2^3-144\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2-60\omega_3v_3^2\omega_4^2\omega_1^2\omega_2^2-54\omega_3^2v_3^2\omega_1^3\omega_2^3-144\omega_3\omega_4\omega_1^2\omega_2^3+216\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2^2-432c_s^2\omega_4^2\omega_1^2\omega_2^3-72\omega_3^2v_3^2\omega_4^2\omega_1^3\omega_2+$
$324\omega_3c_s^2\omega_4^2\omega_1^3\omega_2^2-20\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2^3-144\omega_3^2\omega_4^2\omega_1^3-144\omega_3c_s^2\omega_4^2\omega_1^3\omega_2+20\omega_3^2v_3^2\omega_4^2\omega_1^3\omega_2^2+324\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^3-216c_s^2\omega_4^2\omega_1^3\omega_2^2-36\omega_3^2\omega_4\omega_1^3v_1^2\omega_2^2-$
$36\omega_3^2\omega_4\omega_1\omega_2^3-108\omega_3^2\omega_4^2\omega_1^2\omega_2^2+12\omega_3\omega_4^2\omega_1^2v_1^2\omega_2^2-108\omega_3\omega_4\omega_1^3v_1^2\omega_2^3-72\omega_3\omega_4\omega_1^3\omega_2^2+180\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^2+108\omega_3^2c_s^2\omega_4\omega_1\omega_2^3-63\omega_3v_3^2\omega_4^2\omega_1^3\omega_2^2-$
$216\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2+72\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2^2-144\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^2+324c_s^2\omega_4^2\omega_1^3\omega_2^2+24\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2+72\omega_3v_3^2\omega_4^2\omega_1^3\omega_2^2-72v_3^2\omega_4^2\omega_1^2\omega_2^3-$
$360\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2-60\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^3+108\omega_3^2v_3^2\omega_1^2\omega_2^3+108\omega_3\omega_4^2\omega_1^3\omega_2^3-36\omega_3\omega_4^2\omega_1^2v_1^2\omega_2^3+20\omega_3^2\omega_4^2\omega_1^2\omega_2^3+36\omega_3\omega_4\omega_1^3v_1^2\omega_2^2+144\omega_3^2\omega_4^2\omega_1^3\omega_2$

$C_{39}=48\omega_3^2\omega_4^2v_1^2\omega_2^3-108\omega_4^2\omega_1^3\omega_2^3-63\omega_3\omega_4^2\omega_1^3v_2^2\omega_2^3-36\omega_3^2\omega_4^2\omega_1v_1^2\omega_2^2+432\omega_3c_s^2\omega_4\omega_1^2\omega_2^3+180\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^3-24\omega_3\omega_4^2\omega_1^3v_1^2\omega_2-$
$36\omega_4^2\omega_1^3v_1^2\omega_2^2-108\omega_3\omega_4^2\omega_1^3\omega_2^2+216\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^2-180\omega_3^2\omega_4\omega_1^2v_2^2\omega_2^3-72\omega_3^2\omega_4\omega_1^2\omega_2^2+20\omega_3^2\omega_4^2\omega_1^3v_2^2\omega_2^2+24\omega_3^2\omega_4^2\omega_2^3-36\omega_3^2\omega_4^2\omega_1\omega_2^3-$
$36\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_2-36\omega_3c_s^2\omega_4^2\omega_1\omega_2^3+72\omega_3\omega_4^2\omega_1^3v_2^2\omega_2^2-36\omega_3\omega_4\omega_1^2v_2^2\omega_2^3-48\omega_3^2\omega_4^2\omega_1v_1^2\omega_2^2+72\omega_4^2\omega_1^3\omega_2^2+54\omega_3^2\omega_1^3v_1^2\omega_2^3+24\omega_3^2\omega_4^2\omega_1\omega_2^2+$
$12\omega_3\omega_4^2\omega_1v_1^2\omega_2^3+36\omega_3^2\omega_4\omega_1^2v_2^2\omega_2^2+144\omega_3^2\omega_4\omega_1^2\omega_2^3+336\omega_3^2c_s^2\omega_4^2\omega_1^3+72\omega_3^2v_3^2\omega_4^2\omega_2^3-432\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^3+63\omega_3\omega_4^2\omega_1^3\omega_2^3+54\omega_4^2\omega_1^3v_1^2\omega_2^3-$
$72\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^2+72\omega_3^2\omega_4\omega_1^3\omega_2^2-96\omega_3^2\omega_4^2v_2^2\omega_2^3-216\omega_3^2c_s^2\omega_4\omega_1^3\omega_2^2+48\omega_3\omega_4^2\omega_1^2\omega_2^2+108\omega_3^2\omega_4^2\omega_1v_2^2\omega_2^2+48\omega_3^2\omega_4^2\omega_1^3v_1^2-108\omega_3^2v_3^2\omega_4^2\omega_1\omega_2^3-$
$324\omega_3c_s^2\omega_4\omega_1^3\omega_2^3+36\omega_3^2\omega_4\omega_1^2v_1^2\omega_2^3+144\omega_4^2\omega_1^2\omega_2^3-24\omega_3\omega_4^2\omega_1^3v_2^2\omega_2-36\omega_4^2\omega_1^3v_2^2\omega_2^2-108\omega_3\omega_4^2\omega_1^2\omega_2^3+24\omega_3^2\omega_4^2\omega_1v_2^2\omega_2^2+189\omega_3^2c_s^2\omega_4\omega_1^3\omega_2^3+$
$180\omega_3\omega_4\omega_1^2v_1^2\omega_2^3+36\omega_3\omega_4^2\omega_1^3v_1^2\omega_2^2+48\omega_3\omega_4^2\omega_1^3\omega_2-54\omega_3^2\omega_1^3v_2^2\omega_2^3-72\omega_3^2\omega_4^2\omega_1^3v_2^2\omega_2-63\omega_3^2\omega_4\omega_1^3\omega_2^3+54\omega_4^2\omega_1^3v_2^2\omega_2^3+48\omega_3^2\omega_4^2\omega_1^3v_2^2+$
$36\omega_3^2\omega_4\omega_1^2v_1^2\omega_2^2+216\omega_3c_s^2\omega_4\omega_1^3\omega_2^2-24\omega_3\omega_4^2\omega_1v_2^2\omega_2^3+60\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2^2-20\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2^2-36\omega_3^2\omega_4\omega_1^3v_2^2\omega_2^2+12\omega_3\omega_4^2\omega_1\omega_2^3-72\omega_4^2\omega_1^2v_1^2\omega_2^3-$
$20\omega_3^2\omega_4^2\omega_1^3\omega_2^2-48\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2+144\omega_3^2v_3^2\omega_4^2\omega_1^3+216\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2^2-120\omega_3^2c_s^2\omega_4^2\omega_2^3-108\omega_3^2\omega_1^2v_1^2\omega_2^3-60\omega_3\omega_4^2\omega_1^2v_2^2\omega_2^2-36\omega_3^2\omega_4\omega_1v_1^2\omega_2^3-$
$189\omega_3c_s^2\omega_4^2\omega_1^3\omega_2^3+96\omega_3^2\omega_4^2\omega_1^2\omega_2-144\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2-144\omega_3\omega_4\omega_1^2\omega_2^3-36\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2^2+63\omega_3^2\omega_4\omega_1^3v_2^2\omega_2^3-432c_s^2\omega_4^2\omega_1^2\omega_2^3+36\omega_3\omega_4\omega_1^3v_2^2\omega_2^2-$
$108\omega_3^2v_3^2\omega_4^2\omega_1^3\omega_2+324\omega_3c_s^2\omega_4^2\omega_1^3\omega_2^2+144\omega_3\omega_4^2\omega_1^2v_2^2\omega_2^3-144\omega_3^2\omega_4^2\omega_1^3-144\omega_3c_s^2\omega_4^2\omega_1^3\omega_2+324\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^3-72\omega_4^2\omega_1^2v_2^2\omega_2^3-216c_s^2\omega_4^2\omega_1^3\omega_2^2-$
$36\omega_3^2\omega_4\omega_1^3v_1^2\omega_2^2+108\omega_3^2\omega_1^2v_2^2\omega_2^3-36\omega_3^2\omega_4\omega_1\omega_2^3+72\omega_3^2\omega_4\omega_1v_2^2\omega_2^3-108\omega_3^2\omega_4^2\omega_1^2\omega_2^2+12\omega_3\omega_4^2\omega_1^2v_1^2\omega_2^2-108\omega_3\omega_4\omega_1^3v_2^2\omega_2^3-72\omega_3\omega_4\omega_1^3\omega_2^2+$
$180\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^2+108\omega_3^2c_s^2\omega_4\omega_1\omega_2^3+24\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2+72\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2^2-144\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^2+324c_s^2\omega_4^2\omega_1^3\omega_2^2-216\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2-$
$360\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2-60\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^3+108\omega_3\omega_4\omega_1^3\omega_2^3-36\omega_3\omega_4^2\omega_1^2v_1^2\omega_2^3+20\omega_3^2\omega_4^2\omega_1^2\omega_2^3+36\omega_3\omega_4\omega_1^3v_1^2\omega_2^2+144\omega_3^2\omega_4^2\omega_1^3\omega_2$

$C_{40}=72\omega_3^2v_3^2\omega_4^2v_2^2\omega_2^3+30\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^2+54\omega_3^2c_s^2\omega_1^3\omega_2^2+72\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2^2+64\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^3+324\omega_3^2c_s^4\omega_1^2\omega_2^3-81\omega_3c_s^4\omega_4^2\omega_1^3\omega_2^3+8\omega_3^2\omega_4^2\omega_2^3-$
$8\omega_3^2\omega_4^2\omega_1\omega_2^3+56\omega_3c_s^2\omega_4^2\omega_1\omega_2^3-72\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2-84c_s^2v_3^2\omega_4^2\omega_1^2\omega_2^3-56\omega_3c_s^2v_3^2\omega_4^2\omega_1\omega_2^3-8\omega_3^2\omega_4^2\omega_1\omega_2^2+32\omega_3^2c_s^2v_3^2\omega_4^2\omega_2^3+120\omega_3^2v_3^2\omega_4^2\omega_1^2v_2^2\omega_2^2-$
$104\omega_3^2c_s^2\omega_4^2\omega_1^3+48\omega_3^2v_3^2\omega_4^2\omega_1^3v_2^2-252c_s^4\omega_4^2\omega_1^2\omega_2^3-8\omega_3^2v_3^2\omega_4^2\omega_2^3+108\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^3+128\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^2+27\omega_3^2c_s^2v_3^2\omega_4\omega_1^3\omega_2^3+432\omega_3^2c_s^2\omega_4^2v_2^2\omega_2^3-$
$24\omega_3^2v_3^2\omega_4^2\omega_1^2v_2^2\omega_2-162\omega_3^2c_s^4\omega_1^3\omega_2^3-96\omega_3^2\omega_4^2v_2^2\omega_2^2-24\omega_3c_s^4\omega_4^2\omega_1^3\omega_2+8\omega_3^2c_s^2v_3^2\omega_4^2\omega_1\omega_2^3-72c_s^4\omega_4^2\omega_1^2\omega_2^2+96\omega_3^2\omega_4^2\omega_1v_2^2\omega_2^2+324\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^3+$
$192\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^2+8\omega_3^2v_3^2\omega_4^2\omega_1\omega_2^2-24c_s^2v_3^2\omega_4^2\omega_1^3\omega_2^2-432\omega_3^2c_s^2\omega_4^2\omega_1v_2^2\omega_2^3-108\omega_3^2c_s^2\omega_1^2\omega_2^3+96\omega_3^2\omega_4^2\omega_1v_2^2\omega_2^2+162c_s^4\omega_4^2\omega_1^3\omega_2^2-$
$27\omega_3^2c_s^2\omega_4\omega_1^3\omega_2^3-56\omega_3^2c_s^2v_3^2\omega_4^2\omega_1\omega_2^2+192\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^2-108\omega_3^2c_s^2v_3^2\omega_4\omega_1^2\omega_2^3+96\omega_3^2\omega_4^2\omega_1^3v_2^2\omega_2-96\omega_3^2\omega_4^2\omega_1^3v_2^2-432\omega_3^2c_s^2\omega_4^2\omega_1^3v_2^2\omega_2-$

$168\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2 + 432\omega_3^2c_s^2\omega_4^2\omega_1^3v_2^2 + 144\omega_3^2c_s^4\omega_4^2\omega_1^3 - 72\omega_3^2\omega_4^2\omega_1^2v_2^4\omega_2 - 30\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^3 - 432\omega_3^2c_s^2\omega_4^2\omega_1v_2^2\omega_2^2 + 54c_s^2v_3^2\omega_4^2\omega_1^3\omega_2^3 +$
$8\omega_3^2v_3^2\omega_4^2\omega_1\omega_2^2 - 10\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2^2 + 32\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^2\omega_2^2 - 27\omega_3c_s^2v_3^2\omega_4^2\omega_1^3\omega_2^3 + 32\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^3 - 8\omega_3^2v_3^2\omega_4^2\omega_1^3 - 16\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2^2 -$
$24\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^3 - 104\omega_3^2c_s^2\omega_4^2\omega_2^3 + 27\omega_3c_s^2\omega_4^2\omega_1^3\omega_2^3 - 54\omega_3^2c_s^2v_3^2\omega_1^3\omega_2^3 + 48\omega_3^2\omega_4^2\omega_1^3v_2^4 - 8\omega_3^2\omega_4^2\omega_1^2\omega_2 + 80\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2 - 168\omega_3c_s^4\omega_4^2\omega_1\omega_2^3 -$
$10\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^2\omega_2^3 - 192\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2^2 - 40\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^3\omega_2 + 84c_s^2\omega_4^2\omega_1^2\omega_2^3 - 324\omega_3^2c_s^4\omega_4\omega_1^2\omega_2^3 + 8\omega_3^2v_3^2\omega_4^2\omega_1^3\omega_2 + 864\omega_3^2c_s^2\omega_4^2\omega_1^2v_2^2\omega_2^2 -$
$216\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^2 + 8\omega_3^2\omega_4^2\omega_1^3 + 8\omega_3c_s^2\omega_4^2\omega_1^3\omega_2 - 432\omega_3^2c_s^2\omega_4^2\omega_1^2v_2^2\omega_2 - 108\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^3 + 24c_s^2\omega_4^2\omega_1^3\omega_2^2 - 8\omega_3c_s^2v_3^2\omega_4^2\omega_1^3\omega_2 - 36\omega_3^2\omega_4^2\omega_1^3v_2^4\omega_2 +$
$108\omega_3c_s^2v_3^2\omega_4^2\omega_1^2\omega_2^3 + 16\omega_3^2\omega_4^2\omega_1^2\omega_2^2 - 60\omega_3^2v_3^2\omega_4^2\omega_1v_2^2\omega_2^2 - 176\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^2 + 10\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^3\omega_2^2 + 144\omega_3^2c_s^4\omega_2^2\omega_2^3 + 96\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2 +$
$64\omega_3c_s^2v_3^2\omega_4^2\omega_1^2\omega_2^2 + 24\omega_3^2\omega_4^2v_2^4\omega_2^3 - 64\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^2 - 54c_s^2\omega_4^2\omega_1^3\omega_2^3 + 8\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2 + 81\omega_3^2c_s^4\omega_4\omega_1^3\omega_2^3 - 36\omega_3^2\omega_4^2\omega_1v_2^4\omega_2^3 + 112\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2 -$
$60\omega_3^2v_3^2\omega_4^2\omega_1^3v_2^2\omega_2 - 8\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^2\omega_2 + 10\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^3 + 108\omega_3^2c_s^2v_3^2\omega_1^2\omega_2^3 - 96\omega_3^2v_3^2\omega_4^2\omega_1v_2^2\omega_2^2 - 8\omega_3^2\omega_4^2\omega_1^3\omega_2$

$C_{41} = 6\omega_3c_s^2\omega_4\omega_1 - 2\omega_3v_3^2\omega_4\omega_2 + 9\omega_4\omega_1\omega_2 + 2\omega_3\omega_4\omega_2 + 27\omega_3c_s^2\omega_1\omega_2 - 9v_3^2\omega_4\omega_1\omega_2 - 9\omega_3\omega_1\omega_2 + 2\omega_3v_3^2\omega_4\omega_1 - 6\omega_3c_s^2\omega_4\omega_2 -$
$27c_s^2\omega_4\omega_1\omega_2 - 2\omega_3\omega_4\omega_1 + 9\omega_3v_3^2\omega_1\omega_2$

$C_{42} = -24\omega_3c_s^2\omega_1\omega_2^2 + 2\omega_1^3\omega_2 + 26\omega_3c_s^2\omega_2^3 - 6c_s^2\omega_1\omega_2^3 - 22\omega_3\omega_1^2v_2^2\omega_2 + 10\omega_3\omega_1^3\omega_2 - 24\omega_3c_s^2\omega_1\omega_2^3 - 4\omega_1^2\omega_2^2 - 20\omega_3\omega_1^2\omega_2^2 - 4\omega_3v_3^2\omega_1^2\omega_2 +$
$14\omega_3\omega_1^2\omega_2 + 6\omega_3v_3^2\omega_1^2\omega_2^2 - 2v_3^2\omega_1^3\omega_2 + 4\omega_3v_3^2\omega_2^3 + 26\omega_3\omega_1^2v_2^2\omega_2^2 - 3\omega_3v_3^2\omega_1^3\omega_2 - 10\omega_3\omega_2^3 + 4v_3^2\omega_1^2\omega_2^2 - 13\omega_3\omega_1v_2^2\omega_2^3 - 3\omega_3v_3^2\omega_1\omega_2^3 +$
$16\omega_3\omega_1^3v_2^2 - 30\omega_3c_s^2\omega_1^2\omega_2 - 13\omega_3\omega_1^3v_2^2\omega_2 - 4\omega_3v_3^2\omega_1\omega_2^2 + 28\omega_3c_s^2\omega_1^3 - 4\omega_3\omega_1v_2^2\omega_2^2 + 10\omega_3v_2^2\omega_2^3 - 2v_3^2\omega_1\omega_2^3 - 24\omega_3c_s^2\omega_1^3\omega_2 - 12\omega_3\omega_1^3 +$
$8\omega_3\omega_1\omega_2^2 + 12c_s^2\omega_1^2\omega_2^2 + 48\omega_3c_s^2\omega_1^2\omega_2^2 + 2\omega_1\omega_2^3 - 6c_s^2\omega_1^3\omega_2 + 4\omega_3v_3^2\omega_1^3 + 10\omega_3\omega_1\omega_2^3$

$C_{43} = 8\omega_3^2c_s^4\omega_4^2\omega_1\omega_5\omega_2^3 + 24\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_5\omega_2 - 88\omega_3^2c_s^2\omega_4^2\omega_5\omega_2^3 + 36\omega_3^2\omega_4\omega_1^3v_2^4\omega_5\omega_2^2 + 132\omega_3^2\omega_4^2\omega_1^3v_2^2\omega_5\omega_2 + 144\omega_3^2\omega_4\omega_1^2v_2^2\omega_5\omega_2^2 -$
$72\omega_3c_s^2\omega_4^2\omega_1^3\omega_5\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1\omega_5\omega_2^3 - 60\omega_3^2c_s^2\omega_4^2\omega_1^2v_2^2\omega_5\omega_2^3 + 8\omega_3^2\omega_4^2\omega_5\omega_2^3 - 72\omega_3\omega_4^2\omega_1^3v_2^2\omega_5\omega_2^2 - 216c_s^2\omega_4^2\omega_1^2v_2^2\omega_5\omega_2^3 + 36\omega_3\omega_4^2\omega_1^2v_2^4\omega_5\omega_2^3 -$
$108\omega_3^2c_s^2\omega_4\omega_1^2v_2^2\omega_5\omega_2^2 + 36\omega_3^2c_s^2\omega_4^2\omega_1\omega_5\omega_2^3 - 84\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_5\omega_2^2 + 162\omega_3c_s^2v_3^2\omega_4^2\omega_1^3\omega_5\omega_2^3 + 72\omega_3c_s^4\omega_4^2\omega_1^3\omega_5\omega_2^3 + 36\omega_3\omega_4\omega_1^3v_2^2\omega_5\omega_2^2 +$
$48\omega_3^2c_s^2\omega_4^2\omega_1^2v_2^2\omega_5\omega_2^2 - 8\omega_3^2\omega_4^2\omega_1\omega_5\omega_2^2 + 72\omega_3c_s^2\omega_4^2\omega_1^3\omega_5\omega_2^2 - 28\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_5\omega_2 - 72\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^3 - 24\omega_3\omega_4^2\omega_1^3v_2^4\omega_5\omega_2 + 36\omega_3\omega_4\omega_1^2v_2^4\omega_5\omega_2^3 +$
$36\omega_3^2\omega_4\omega_1^2v_2^2\omega_5\omega_2^2 - 56\omega_3^2c_s^4\omega_4^2\omega_1\omega_5\omega_2^2 + 360\omega_3^2v_3^2\omega_4^2\omega_1^2v_2^2\omega_5\omega_2^2 - 8\omega_3^2\omega_4^2\omega_1^3\omega_5\omega_2 + 24\omega_3^2\omega_4^2\omega_1^2v_2^4\omega_5\omega_2 + 54\omega_3^2\omega_4\omega_1^3v_2^4\omega_5\omega_2^3 + 18\omega_3^2\omega_4^2\omega_1^3v_2^4\omega_5\omega_2^2 -$
$72\omega_3c_s^4\omega_4^2\omega_1^3\omega_5\omega_2^2 - 180\omega_3c_s^2v_3^2\omega_4^2\omega_1^3\omega_5\omega_2^2 + 36\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_5\omega_2 - 180\omega_3^2v_3^2\omega_4^2\omega_1^3v_2^2\omega_5\omega_2 + 18\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_5\omega_2^3 - 648\omega_3^2c_s^2v_3^2\omega_4\omega_1\omega_5\omega_2^3 +$
$12\omega_3\omega_4^2\omega_1^2v_2^4\omega_5\omega_2^2 - 27\omega_3c_s^2\omega_4^2\omega_1^3v_1^2\omega_5\omega_2^2 + 216\omega_3^2v_3^2\omega_4^2v_2^2\omega_5\omega_2^3 + 64\omega_3^2c_s^2\omega_4^2\omega_1\omega_5\omega_2^2 - 348\omega_3^2c_s^2\omega_4^2\omega_1^3v_2^2\omega_5\omega_2 - 216\omega_3^2c_s^2\omega_4\omega_1^2v_2^2\omega_5\omega_2^3 +$
$54\omega_3\omega_4^2\omega_1^3v_2^2\omega_5\omega_2^3 - 96\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^2\omega_5\omega_2 + 48\omega_3c_s^2v_3^2\omega_4^2\omega_1^3\omega_5\omega_2 + 16\omega_3c_s^4\omega_4^2\omega_1^3\omega_5\omega_2 - 4\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_5\omega_2^2 - 144\omega_3^2\omega_4\omega_1^2v_2^4\omega_5\omega_2^3 -$
$288\omega_3^2c_s^2\omega_4\omega_1^2\omega_5\omega_2^3 - 72\omega_3^2\omega_4^2\omega_1^3v_2^4\omega_5\omega_2 - 24\omega_3^2v_3^2\omega_4^2\omega_5\omega_2^3 - 96\omega_3^2\omega_4^2\omega_1^3v_2^2\omega_5 - 36\omega_3^2\omega_4\omega_1^3v_2^2\omega_5\omega_2^2 + 60\omega_3^2c_s^2\omega_4^2\omega_1^3v_2^2\omega_5\omega_2^2 - 162\omega_3^2c_s^2v_3^2\omega_4\omega_1^3\omega_5\omega_2^3 +$
$132\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^2\omega_5\omega_2^2 - 36\omega_3\omega_4^2\omega_1^2v_2^2\omega_5\omega_2^3 + 32\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_5 + 288\omega_3^2c_s^4\omega_4\omega_1^2\omega_5\omega_2^3 - 108c_s^2\omega_4^2\omega_1^3v_2^2\omega_5\omega_2^2 + 72\omega_3\omega_4^2\omega_1^3v_2^4\omega_5\omega_2^2 - 16\omega_3c_s^2\omega_4^2\omega_1^3\omega_5\omega_2 +$
$108\omega_3^2c_s^2\omega_4\omega_1^3v_2^2\omega_5\omega_2^2 + 4\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_5\omega_2^2 - 24\omega_3^2c_s^2\omega_4^2\omega_1^2v_2^2\omega_5\omega_2 + 180\omega_3c_s^2\omega_4^2\omega_1v_2^2\omega_5\omega_2^3 + 240\omega_3^2c_s^2v_3^2\omega_4^2\omega_5\omega_2^3 + 264\omega_3^2c_s^2\omega_4^2\omega_1^3v_2^2\omega_5 -$
$36\omega_3^2\omega_4^2\omega_1^2v_2^4\omega_5\omega_2^2 - 72\omega_3^2v_3^2\omega_4^2\omega_1^2v_2^2\omega_5\omega_2 - 36\omega_3\omega_4\omega_1^2v_2^2\omega_5\omega_2^3 + 24\omega_3\omega_4^2\omega_1^3v_2^2\omega_5\omega_2 - 6\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^2\omega_5\omega_2^3 + 336\omega_3c_s^2v_3^2\omega_4^2\omega_1\omega_5\omega_2^3 +$
$160\omega_3c_s^4\omega_4^2\omega_1\omega_5\omega_2^3 - 36\omega_3\omega_4\omega_1^3v_2^4\omega_5\omega_2^2 - 54\omega_3^2\omega_4\omega_1^3v_2^2\omega_5\omega_2^3 - 36\omega_3^2\omega_4\omega_1^2v_2^4\omega_5\omega_2^2 - 18\omega_3^2\omega_4^2\omega_1^2v_2^4\omega_5\omega_2^3 - 48\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_5\omega_2^2 - 160\omega_3c_s^2\omega_4^2\omega_1\omega_5\omega_2^3 -$
$18\omega_3^2\omega_4^2\omega_1^3v_2^2\omega_5\omega_2^2 - 54\omega_3\omega_4^2\omega_1^3v_2^4\omega_5\omega_2^3 + 162c_s^2\omega_4^2\omega_1^3v_2^2\omega_5\omega_2^3 - 6\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_5\omega_2^3 + 108\omega_3^2c_s^2\omega_4\omega_1^3v_2^2\omega_5\omega_2^2 + 288\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^3 - 12\omega_3\omega_4^2\omega_1^2v_2^2\omega_5\omega_2^2 +$
$72\omega_3^2\omega_4^2\omega_1v_2^2\omega_5\omega_2^2 - 168\omega_3^2c_s^2v_3^2\omega_4^2\omega_1\omega_5\omega_2^2 + 180\omega_3c_s^2\omega_4^2\omega_1^3v_2^2\omega_5\omega_2^2 + 24\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^3\omega_5 + 64\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_5\omega_2 + 112\omega_3c_s^4\omega_4^2\omega_1^2\omega_5\omega_2^2 +$
$264\omega_3c_s^2v_3^2\omega_4^2\omega_1^2\omega_5\omega_2^2 + 324\omega_3^2c_s^2\omega_1^2v_2^2\omega_5\omega_2^3 + 152\omega_3^2c_s^4\omega_4^2\omega_5\omega_2^3 - 12\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^3\omega_5\omega_2 + 12\omega_3\omega_4^2\omega_1v_2^4\omega_5\omega_2^3 + 288\omega_3^2c_s^2\omega_4\omega_1\omega_5\omega_2^3 +$
$300\omega_3^2c_s^2\omega_4^2\omega_1v_2^2\omega_5\omega_2^3 - 56\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_5\omega_2 + 24\omega_3^2v_3^2\omega_4^2\omega_1\omega_5\omega_2^3 - 112\omega_3c_s^2\omega_4^2\omega_1^2\omega_5\omega_2^2 + 54\omega_4^2\omega_1^3v_2^4\omega_5\omega_2^3 - 108\omega_3^2\omega_1^2v_2^2\omega_5\omega_2^3 - 288\omega_3^2c_s^4\omega_4\omega_1\omega_5\omega_2^3 -$
$180\omega_3^2v_3^2\omega_4^2\omega_1v_2^2\omega_5\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^2\omega_5\omega_2 - 24\omega_3^2v_3^2\omega_4^2\omega_1^3\omega_5 - 288\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^3 - 36\omega_3^2\omega_4\omega_1v_2^2\omega_5\omega_2^3 - 6\omega_3^2c_s^2\omega_4^2\omega_1^2v_2^2\omega_5\omega_2^3 - 108\omega_3^2c_s^2\omega_4\omega_1v_2^2\omega_5\omega_2^3 +$
$2\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_5\omega_2^3 + 24\omega_3^2\omega_4^2v_2^2\omega_5\omega_2^3 + 2\omega_3^2\omega_4^2\omega_1^3v_1^4\omega_5\omega_2^2 - 468\omega_3c_s^2v_3^2\omega_4^2\omega_1^2\omega_5\omega_2^3 - 216\omega_3c_s^4\omega_4^2\omega_1^2\omega_5\omega_2^3 + 9\omega_3\omega_4^2\omega_1^3v_1^2\omega_5\omega_2^3 - 48\omega_3^2\omega_4^2\omega_1v_2^2\omega_5\omega_2^3 -$
$108\omega_3c_s^2\omega_4^2\omega_1^3v_2^2\omega_5\omega_2^3 - 120\omega_3^2c_s^2v_3^2\omega_4^2\omega_1\omega_5\omega_2^3 - 108\omega_3c_s^2\omega_4\omega_1^3v_2^2\omega_5\omega_2^2 - 288\omega_3^2v_3^2\omega_4^2\omega_1v_2^2\omega_5\omega_2^2 + 24\omega_3^2v_3^2\omega_4^2\omega_1^3\omega_5\omega_2 + 9\omega_3^2\omega_4\omega_1^3v_1^4\omega_5\omega_2^3 +$
$72\omega_4^2\omega_1^2v_2^2\omega_5\omega_2^3 - 24\omega_3^2c_s^2\omega_4^2\omega_1v_2^2\omega_5\omega_2^2 - 216\omega_3^2c_s^2\omega_4^2v_2^2\omega_5\omega_2^3 + 216\omega_3c_s^2\omega_4^2\omega_1^2\omega_5\omega_2^3 + 24\omega_3^2v_3^2\omega_4^2\omega_1\omega_5\omega_2^2 - 54\omega_3^2\omega_1^3v_2^4\omega_5\omega_2^3 - 36\omega_4^2\omega_1^3v_2^4\omega_5\omega_2^2 +$
$27\omega_3^2c_s^2\omega_4\omega_1^3v_1^2\omega_5\omega_2^3 - 72\omega_3c_s^2\omega_4^2\omega_1^2v_2^2\omega_5\omega_2^3 + 24\omega_3^2\omega_4^2\omega_1v_2^4\omega_5\omega_2^2 - 12\omega_3\omega_4^2\omega_1v_2^2\omega_5\omega_2^3 - 28\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_5\omega_2^3 + 108\omega_3^2\omega_1^3v_2^4\omega_5\omega_2^3 + 8\omega_3^2\omega_4^2\omega_1^3\omega_5 -$
$54\omega_4^2\omega_1^3v_2^2\omega_5\omega_2^3 + 144\omega_3^2v_3^2\omega_4^2\omega_1^3v_2^2\omega_5 - 40\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_5 + 4\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_5\omega_2^3 + 36\omega_3^2\omega_4\omega_1v_2^4\omega_5\omega_2^3 + 6\omega_3^2c_s^2\omega_4^2\omega_1^3v_1^2\omega_5\omega_2^2 + 56\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_5\omega_2^2 +$
$48\omega_3^2\omega_4^2\omega_1^3v_2^4\omega_5 - 72\omega_3^2c_s^4\omega_4\omega_1^3\omega_5\omega_2^3 - 2\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_5\omega_2^2 - 162\omega_3^2c_s^2\omega_1^3v_2^2\omega_5\omega_2^3 - 2\omega_3^2\omega_4^2\omega_1^2v_1^4\omega_5\omega_2^3 - 96\omega_3^2\omega_4^2v_2^4\omega_5\omega_2^3 + 16\omega_3^2\omega_4^2\omega_1^2\omega_5\omega_2^2 +$
$108\omega_3^2\omega_4^2\omega_1v_2^4\omega_5\omega_2^3 - 9\omega_3\omega_4^2\omega_1^3v_1^4\omega_5\omega_2^3 + 108\omega_3c_s^2\omega_4^2\omega_1^2v_2^2\omega_5\omega_2^2 + 108\omega_3c_s^2\omega_4\omega_1^2v_2^2\omega_5\omega_2^3 - 72\omega_3c_s^2\omega_4^2\omega_1^3v_2^2\omega_5\omega_2 + 72\omega_3^2c_s^2\omega_4\omega_1^3\omega_5\omega_2^3 -$
$72\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_5\omega_2^2 + 6\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^3\omega_5\omega_2^2 + 648\omega_3^2c_s^2v_3^2\omega_4\omega_1^2\omega_5\omega_2^3 + 54\omega_3^2\omega_1^3v_2^2\omega_5\omega_2^3 + 36\omega_4^2\omega_1^3v_2^2\omega_5\omega_2^2 - 9\omega_3^2\omega_4\omega_1^3v_1^2\omega_5\omega_2^3 - 72\omega_4^2\omega_1^2v_2^4\omega_5\omega_2^3$

$C_{44} = -2\omega_3^2\omega_4\omega_1 - 6\omega_3\omega_4^2 - 18\omega_3c_s^2\omega_4\omega_1 - 6\omega_4^2v_2^2 + 36\omega_3c_s^2\omega_4 + 2\omega_3^2v_3^2\omega_4\omega_1 - 6v_3^2\omega_4^2 + 2\omega_3\omega_4^2\omega_1 - 6\omega_4^2\omega_1 + 6\omega_3v_3^2\omega_4^2 - 6\omega_3^2v_2^2 -$
$2\omega_3v_3^2\omega_4^2\omega_1 + 3v_3^2\omega_4^2\omega_1 + 12\omega_4^2 - 3\omega_3^2v_3^2\omega_1 + 3\omega_4^2\omega_1v_2^2 + 18\omega_3c_s^2\omega_4^2 - 36c_s^2\omega_4^2 - 12\omega_3\omega_4 + 6\omega_3^2c_s^2\omega_4\omega_1 - 6\omega_3^2v_3^2\omega_4 + 6\omega_3^2\omega_4 - 6\omega_3\omega_4\omega_1v_2^2 +$
$6\omega_3^2v_3^2 + 18c_s^2\omega_4^2\omega_1 + 6\omega_3\omega_4\omega_1 - 18\omega_3^2c_s^2\omega_4 + 12\omega_3\omega_4v_2^2 + 3\omega_3^2\omega_1v_2^2 - 6\omega_3c_s^2\omega_4^2\omega_1$

$C_{45} = -6\omega_3\omega_4\omega_1\omega_2 + 12\omega_3c_s^2\omega_4\omega_1 - 18\omega_3v_3^2\omega_4\omega_2 + 9\omega_4\omega_1\omega_2 + 4\omega_3\omega_4v_2^2\omega_2 + 2\omega_3\omega_4\omega_2 - 27\omega_3c_s^2\omega_1\omega_2 + 2\omega_3\omega_4\omega_1v_2^2 + 9\omega_3\omega_1\omega_2 +$
$18\omega_3c_s^2\omega_4\omega_1\omega_2 + 6\omega_3\omega_4\omega_1v_2^2\omega_2 + 18\omega_3v_3^2\omega_4\omega_1 + 6\omega_3c_s^2\omega_4\omega_2 - 27c_s^2\omega_4\omega_1\omega_2 - 8\omega_3\omega_4\omega_1 - 9\omega_4\omega_1v_2^2\omega_2 - 9\omega_3\omega_1v_2^2\omega_2$

$C_{46} = -4\omega_3^2\omega_4^2v_1^2\omega_2^3 + 4\omega_3^2\omega_4^2\omega_1v_1^2\omega_2^3 - 9\omega_3c_s^2\omega_4^2\omega_1^3v_1^2\omega_2^3 + 35\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^2 - 18\omega_3^2c_s^2\omega_1^3\omega_2^3 - 12\omega_3^2v_3^2\omega_4^2\omega_1^2v_1^2\omega_2 + 16\omega_3^2c_s^2\omega_4^2v_1^2\omega_2^3 -$
$58\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^3 - 36\omega_3^2v_3^4\omega_4^2\omega_1^2\omega_2^2 - 108\omega_3^2c_s^4\omega_1^2\omega_2^3 - 27\omega_3c_s^4\omega_4^2\omega_1^3\omega_2^3 + 4\omega_3^2c_s^2\omega_4^2\omega_1v_1^2\omega_2^3 + 4\omega_3^2\omega_4^2\omega_1^3 + 24\omega_3^2v_3^2\omega_4^2\omega_1^3v_1^2 - 4\omega_3^2\omega_4^2\omega_1\omega_2^3 +$
$18\omega_3^2c_s^2\omega_1^3v_1^2\omega_2^3 + 4\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_2 + 28\omega_3c_s^2\omega_4^2\omega_1\omega_2^3 + 15\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^3 + 4\omega_3^2\omega_4^2\omega_1v_1^2\omega_2^2 - 4\omega_3^2\omega_4^2\omega_1\omega_2^2 - 28\omega_3^2c_s^2\omega_4^2\omega_1v_1^2\omega_2^2 - 216\omega_3^2c_s^2v_3^2\omega_4^2\omega_2^3 -$
$52\omega_3^2c_s^2\omega_4^2\omega_1^3 - 72c_s^4\omega_4^2\omega_1^2\omega_2^3 + 24\omega_3^2v_3^2\omega_4^2\omega_2^3 - 36\omega_3^2v_3^4\omega_4^2\omega_1^3\omega_2 - 36\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^3 - 20\omega_3^2c_s^2\omega_4^2\omega_1^3v_1^2\omega_2 + 28\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^2 - 27\omega_3^2v_3^4\omega_4^2\omega_1^2\omega_2^3 +$
$54\omega_3^2c_s^4\omega_1^3\omega_2^3 + 27\omega_3^2v_3^4\omega_4^2\omega_1^3\omega_2^2 - 12\omega_3c_s^4\omega_4^2\omega_1^3\omega_2 + 36\omega_3^2v_3^2\omega_4^2v_1^2\omega_2^3 + 324\omega_3^2c_s^2v_3^2\omega_4^2\omega_1\omega_2^3 - 36c_s^4\omega_4^2\omega_1^3\omega_2^2 + 36\omega_3^2c_s^2\omega_4\omega_1^2v_1^2\omega_2^3 +$
$8\omega_3^2c_s^2\omega_4^2\omega_1^3v_1^2\omega_2^2 + 108\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^3 + 24\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^2 - 4\omega_3^2\omega_4^2\omega_1^3v_1^2 - 42\omega_3^2v_3^2\omega_4^2\omega_1\omega_2^3 + 36\omega_3^2c_s^2\omega_1^2\omega_2^3 - 4\omega_3c_s^2\omega_4^2\omega_1^3v_1^2\omega_2 - 24c_s^2\omega_4^2\omega_1^2v_1^2\omega_2^3 +$
$16\omega_3^2c_s^2\omega_4^2\omega_1^3v_1^2 + 54c_s^4\omega_4^2\omega_1^3\omega_2^3 + 9\omega_3^2c_s^2\omega_4\omega_1^3\omega_2^3 + 96\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^2 + 3\omega_3^2c_s^2\omega_4^2\omega_1^3v_1^2\omega_2^3 - 102\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2 + 72\omega_3^2c_s^4\omega_4^2\omega_1^3 + 60\omega_3^2v_3^2\omega_4^2\omega_1^2v_1^2\omega_2^2 -$
$28\omega_3c_s^2\omega_4^2\omega_1v_1^2\omega_2^3 - 119\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^2 - 60\omega_3^2v_3^4\omega_4^2\omega_2^3 + 12\omega_3^2v_3^2\omega_4^2\omega_1\omega_2^2 - 25\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2^2 - 4\omega_3^2c_s^2\omega_4^2\omega_1^2v_1^2\omega_2 + 4\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2 -$
$36\omega_3^2c_s^2\omega_1^2v_1^2\omega_2^3 + 216\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^3 - 48\omega_3^2v_3^2\omega_4^2\omega_1^3 - 24\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2^2 + 78\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^3 + 20\omega_3^2c_s^2\omega_4^2\omega_2^3 - 30\omega_3^2v_3^2\omega_4^2\omega_1v_1^2\omega_2^3 + 32\omega_3c_s^2\omega_4^2\omega_1^2v_1^2\omega_2^2 +$
$9\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^3 - 4\omega_3^2\omega_4^2\omega_1^2\omega_2 + 4\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2 - 84\omega_3c_s^4\omega_4^2\omega_1\omega_2^3 - 138\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^2\omega_2^3 - 3\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2^2 - 324\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^3\omega_2 + 24c_s^2\omega_4^2\omega_1^2\omega_2^3 +$
$36\omega_3c_s^2\omega_4^2\omega_1^2v_1^2\omega_2^3 - 48\omega_3^2v_3^2\omega_4^2\omega_1v_1^2\omega_2^2 + 108\omega_3^2c_s^4\omega_4\omega_1^2\omega_2^3 + 66\omega_3^2v_3^2\omega_4^2\omega_1^3\omega_2 + 27\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2^2 - 72\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^2 - 30\omega_3^2v_3^2\omega_4^2\omega_1^3v_1^2\omega_2 +$
$4\omega_3^2\omega_4^2\omega_1^3 - 12c_s^2\omega_4^2\omega_1^3v_1^2\omega_2^2 + 4\omega_3c_s^2\omega_4^2\omega_1^3\omega_2 - 27\omega_3^2v_3^2\omega_4^2\omega_1^3\omega_2^2 - 36\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^3 + 12c_s^2\omega_4^2\omega_1^3\omega_2^2 - 32\omega_3^2c_s^2\omega_4^2\omega_1^2v_1^2\omega_2^3 + 8\omega_3^2\omega_4^2\omega_1^2\omega_2^2 +$
$72\omega_3^2v_3^4\omega_4^2\omega_1\omega_2^3 - 16\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^2 + 138\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^3\omega_2^2 + 24\omega_3^2v_3^4\omega_4^2\omega_1^3 - 8\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2^2 - 32\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^2 - 18c_s^2\omega_4^2\omega_1^3\omega_2^3 + 12\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2 -$

$27\omega_3^2c_s^4\omega_4\omega_1^3\omega_2^3 + 18c_s^2\omega_4^2\omega_1^3v_1^2\omega_2^3 + 74\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2 + 36\omega_3^2v_3^4\omega_4^2\omega_1\omega_2^2 + 49\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^3 + 16\omega_3^2c_s^2\omega_4^2\omega_1^2v_1^2\omega_2^2 - 9\omega_3^2c_s^2\omega_4\omega_1^3v_1^2\omega_2^3 - 4\omega_3^2\omega_4^2\omega_1^3\omega_2$

$C_{47} = -90\omega_3c_s^2v_3^2\omega_4\omega_1^2\omega_2^3 - 90\omega_3^2v_3^2\omega_4\omega_1v_1^2\omega_2^3 + 132\omega_3c_s^2\omega_4\omega_1^2v_1^2\omega_2^2 - 36\omega_3c_s^2v_3^2\omega_4\omega_1^3\omega_2 + 36\omega_3c_s^2\omega_4\omega_1^2\omega_2^3 - 18\omega_3^2c_s^2\omega_1^3\omega_2^3 - 8\omega_3c_s^2\omega_4\omega_1^3\omega_2 + 12\omega_3^2\omega_4\omega_1^2v_1^2\omega_2 - 9\omega_3^2v_3^2\omega_4\omega_1^3\omega_2^2 + 30\omega_3^2c_s^2v_3^2\omega_4\omega_1^3\omega_2^2 - 18\omega_3^2v_3^2\omega_1\omega_2^3 - 72\omega_3^2c_s^4\omega_1^2\omega_2^3 - 48\omega_3^2c_s^2\omega_4\omega_1^2v_1^2\omega_2 + 54\omega_3^2v_3^4\omega_4\omega_1\omega_2^3 - 36\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^2 + 8\omega_3^2\omega_4\omega_1^2\omega_2^2 + 18\omega_3v_3^2\omega_1^3\omega_2^2 + 54\omega_3^2c_s^2v_3^2\omega_1\omega_2^3 - 90\omega_3^2v_3^2\omega_4\omega_1^3v_1^2\omega_2 + 54\omega_3^2c_s^2\omega_1^3v_1^2\omega_2^2 - 56\omega_3c_s^2\omega_4\omega_1^2\omega_2^2 + 6\omega_3v_3^4\omega_4\omega_1\omega_2^3 - 126\omega_3c_s^2\omega_4\omega_1^2v_1^2\omega_2^3 - 144\omega_3^2v_3^2\omega_4\omega_1v_1^2\omega_2^2 + 18\omega_3v_3^4\omega_1^2\omega_2^3 + 54\omega_3c_s^2v_3^2\omega_4\omega_1^2\omega_2^2 - 4\omega_3^2\omega_4\omega_1^3\omega_2 - 12\omega_3^2c_s^2v_3^2\omega_4\omega_1^2\omega_2 + 12\omega_3^2v_3^4\omega_4\omega_1\omega_2^2 - 68\omega_3^2c_s^4\omega_4\omega_2^3 + 2\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^3 + 24\omega_3^2v_3^4\omega_4\omega_1^3 - 36\omega_3v_3^2\omega_4\omega_1^3\omega_2^2 + 18\omega_3^2c_s^2\omega_4\omega_1^3\omega_2 - 18v_3^2\omega_4\omega_1^2\omega_2^3 + 18\omega_3^2c_s^4\omega_1^3\omega_2^3 + 18v_3^2\omega_4\omega_1^3\omega_2^2 + 36\omega_3v_3^2\omega_4\omega_1^2\omega_2^3 + 24\omega_3^2c_s^2v_3^2\omega_4\omega_1^2\omega_2^2 - 2\omega_3^2c_s^2\omega_4\omega_1^3\omega_2^2 - 6\omega_3^2c_s^2\omega_4\omega_1^2v_1^2\omega_2^3 + 12\omega_3v_3^2\omega_4\omega_1^3\omega_2 - 18\omega_3c_s^2\omega_4\omega_1^3\omega_2^3 + \omega_3^2\omega_4\omega_1^2v_1^2\omega_2^3 + 18\omega_3^2v_3^4\omega_1\omega_2^3 - 42\omega_3^2v_3^2\omega_4\omega_1^2\omega_2^2 + 72\omega_3^2c_s^2\omega_1^2\omega_2^3 + 76\omega_3^2c_s^4\omega_4\omega_1\omega_2^3 + 216\omega_3^2c_s^2\omega_1v_1^2\omega_2^3 + 4\omega_3^2\omega_4\omega_1^3 - 18\omega_3v_3^4\omega_1^3\omega_2^2 + 66\omega_3^2c_s^2\omega_4\omega_1^2v_1^2\omega_2^2 - 174\omega_3^2c_s^2v_3^2\omega_4\omega_1^3\omega_2 + 32\omega_3^2c_s^2\omega_4\omega_1^2\omega_2 + 8\omega_3c_s^4\omega_4\omega_1\omega_2^3 - 30\omega_3^2c_s^2v_3^2\omega_4\omega_1^2\omega_2^3 - 6\omega_3v_3^2\omega_4\omega_1^2\omega_2^2 + \omega_3^2\omega_4\omega_1^3v_1^4\omega_2^2 - 4\omega_3^2\omega_4\omega_1^2\omega_2 - 18\omega_3v_3^2\omega_1^2\omega_2^3 + 132\omega_3^2c_s^2v_3^2\omega_4\omega_1^3 + 90\omega_3c_s^2v_3^2\omega_4\omega_1^3\omega_2^2 + 9\omega_3^2v_3^2\omega_4\omega_1^2\omega_2^3 - 28\omega_3^2c_s^4\omega_4\omega_1\omega_2^2 + 28\omega_3^2c_s^2\omega_4\omega_2^3 + 66\omega_3^2v_3^2\omega_4\omega_1^3\omega_2 - 48\omega_3^2v_3^2\omega_4\omega_1^3 - 24\omega_3^2\omega_4\omega_1^2v_1^2\omega_2^2 + 36\omega_3c_s^2\omega_4\omega_1^3\omega_2^2 + 108\omega_3^2v_3^2\omega_4v_1^2\omega_2^3 + 150\omega_3^2c_s^2v_3^2\omega_4\omega_1\omega_2^3 - 18\omega_3^2v_3^2\omega_1^3\omega_2^2 + 48\omega_3^2c_s^2\omega_4\omega_1v_1^2\omega_2^3 - 36\omega_3c_s^4\omega_4\omega_1^2\omega_2^3 + 9\omega_3^2v_3^4\omega_4\omega_1^3\omega_2^2 + 8\omega_3c_s^4\omega_4\omega_1^3\omega_2 + 54\omega_3^2c_s^2v_3^2\omega_1^3\omega_2^3 + 12\omega_3^2c_s^2\omega_4\omega_1^3v_1^2 - 216\omega_3^2c_s^2\omega_1^2v_1^2\omega_2^3 - 36\omega_3^2v_3^2\omega_4\omega_1^2v_1^2\omega_2 - 48\omega_3^2v_3^4\omega_4\omega_2^3 + 16\omega_3^2c_s^4\omega_4\omega_1^3 + 28\omega_3^2c_s^4\omega_4\omega_1^2\omega_2^2 - 12\omega_3^2\omega_4\omega_1^3v_1^2 + 54\omega_3c_s^2\omega_4\omega_1^3v_1^2\omega_2^3 - 54c_s^2v_3^2\omega_4\omega_1^3\omega_2^2 - 24\omega_3^2v_3^2\omega_4\omega_1\omega_2^3 - 18\omega_3^2v_3^4\omega_1^2\omega_2^2 + 12\omega_3^2\omega_4\omega_1v_1^2\omega_2^3 - 6\omega_3^2c_s^2\omega_4\omega_1^3v_1^2\omega_2 - 6\omega_3v_3^2\omega_4\omega_1\omega_2^3 - 84\omega_3^2c_s^2\omega_4\omega_1v_1^2\omega_2^2 + 12\omega_3^2v_3^4\omega_4\omega_1^2\omega_2 - 12\omega_3^2c_s^2v_3^2\omega_4\omega_1\omega_2^2 + 56\omega_3c_s^4\omega_4\omega_1^2\omega_2^2 - 72\omega_3^2c_s^2\omega_1\omega_2^3 - 14\omega_3^2c_s^4\omega_4\omega_1^2\omega_2^3 + 12\omega_3^2\omega_4\omega_1v_1^2\omega_2^2 - 18\omega_3^2v_3^4\omega_1^2\omega_2^3 + 36\omega_3^2v_3^2\omega_4\omega_1\omega_2^2 - 90\omega_3c_s^2\omega_4\omega_1^3v_1^2\omega_2^2 - 14\omega_3^2c_s^4\omega_4\omega_1^3\omega_2 + 18v_3^4\omega_4\omega_1^2\omega_2^3 + 36\omega_3v_3^4\omega_4\omega_1^3\omega_2^2 + 12\omega_3^2\omega_4\omega_1^3v_1^2\omega_2 - 54\omega_3c_s^2v_3^2\omega_1^3\omega_2^2 + 24\omega_3c_s^2\omega_4\omega_1^3v_1^2\omega_2 - 36\omega_3v_3^4\omega_4\omega_1^2\omega_2^3 - 18v_3^4\omega_4\omega_1^3\omega_2^2 - 96\omega_3^2c_s^2\omega_4v_1^2\omega_2^3 + 18\omega_3^2v_3^4\omega_1^3\omega_2^2 - 12\omega_3v_3^4\omega_4\omega_1^3\omega_2 + 2\omega_3^2c_s^4\omega_4\omega_1^3\omega_2^2 - \omega_3^2\omega_4\omega_1^3v_1^2\omega_2^2 + 54\omega_3c_s^2v_3^2\omega_1^2\omega_2^3 - 12\omega_3^2\omega_4v_1^2\omega_2^3 + 72\omega_3^2v_3^2\omega_4\omega_1^3v_1^2 - 108\omega_3^2c_s^2v_3^2\omega_4\omega_2^3 - 4\omega_3^2\omega_4\omega_1\omega_2^3 - 54\omega_3^2c_s^2v_3^2\omega_1^2\omega_2^2 + 6\omega_3^2c_s^2\omega_4\omega_1^3v_1^2\omega_2^2 + 18\omega_3c_s^4\omega_4\omega_1^3\omega_2^3 + 18\omega_3^2v_3^2\omega_1^2\omega_2^2 + 12\omega_3^2v_3^2\omega_4\omega_2^3 - 18\omega_3^2c_s^2\omega_4\omega_1\omega_2^3 - 18\omega_3^2v_3^4\omega_4\omega_1^2\omega_2^2 - 20\omega_3^2c_s^2\omega_4\omega_1^3 + 180\omega_3^2v_3^2\omega_4\omega_1^2v_1^2\omega_2^2 + 60\omega_3c_s^2\omega_4\omega_1v_1^2\omega_2^3 - 18\omega_3c_s^2v_3^2\omega_4\omega_1\omega_2^3 + 54c_s^2v_3^2\omega_4\omega_1^2\omega_2^3 - 3\omega_3^2c_s^4\omega_4\omega_1^3\omega_2^3 + 6\omega_3v_3^4\omega_4\omega_1^2\omega_2^2 - 8\omega_3c_s^2\omega_4\omega_1\omega_2^3 - 28\omega_3^2c_s^4\omega_4\omega_1^2\omega_2 + 32\omega_3^2c_s^2\omega_4\omega_1\omega_2^2 - \omega_3^2\omega_4\omega_1^2v_1^4\omega_2^3 - 9\omega_3^2v_3^4\omega_4\omega_1^2\omega_2^3 - 36\omega_3c_s^4\omega_4\omega_1^3\omega_2^2 + 72\omega_3^2c_s^4\omega_1\omega_2^3 - 36\omega_3^2v_3^4\omega_4\omega_1^3\omega_2 + 18\omega_3^2v_3^2\omega_1^2\omega_2^3 - 54\omega_3^2c_s^2v_3^2\omega_1^2\omega_2^3 + 4\omega_3^2\omega_4\omega_2^3 - 4\omega_3^2\omega_4\omega_1\omega_2^2$

$C_{48} = 6\omega_1^3\omega_2 - 66\omega_3c_s^2\omega_2^3 - 18c_s^2\omega_1\omega_2^3 + 12\omega_1^2v_1^2\omega_2^2 + 50\omega_3v_3^2\omega_1^3\omega_2^2 + 48\omega_3\omega_1^3\omega_2 + 23\omega_3\omega_1^2\omega_2^3 + 108\omega_3c_s^2\omega_1\omega_2^3 - 12\omega_1^2\omega_2^2 + 18\omega_3\omega_1^2v_1^2\omega_2^2 + 12\omega_3\omega_1^2\omega_2^2 + 6\omega_3v_3^2\omega_1^2\omega_2 + 6\omega_3\omega_1^2\omega_2 - 66\omega_3v_3^2\omega_1^2\omega_2^2 - 114\omega_3v_3^2\omega_2^3 - 12\omega_3\omega_1^2v_1^2\omega_2 - 75\omega_3v_3^2\omega_1^3\omega_2 - 23\omega_3\omega_1^3\omega_2^2 - 50\omega_3v_3^2\omega_1^2\omega_2^3 + 42\omega_3\omega_2^3 + 141\omega_3v_3^2\omega_1\omega_2^3 - 18\omega_3c_s^2\omega_1^2\omega_2 + 60\omega_3v_3^2\omega_1\omega_2^2 + 84\omega_3c_s^2\omega_1^3 + 12\omega_3\omega_1^3v_1^2 + 42\omega_3c_s^2\omega_1^3\omega_2^2 - 108\omega_3c_s^2\omega_1^3\omega_2 - 36\omega_3\omega_1^3 - 9\omega_3\omega_1v_1^2\omega_2^3 - 42\omega_3c_s^2\omega_1^2\omega_2^3 - 6\omega_1^3v_1^2\omega_2 - 12\omega_3\omega_1\omega_2^2 + 36c_s^2\omega_1^2\omega_2^2 - 12\omega_3\omega_1v_1^2\omega_2^2 + 12\omega_3v_1^2\omega_2^3 + 6\omega_1\omega_2^3 - 9\omega_3\omega_1^3v_1^2\omega_2 - 18c_s^2\omega_1^3\omega_2 - 6\omega_1v_1^2\omega_2^3 + 48\omega_3v_3^2\omega_1^3 - 60\omega_3\omega_1\omega_2^3$

$C_{49} =$
$10\omega_3^2c_s^2\omega_4^2\omega_1^3v_2^2\omega_2^2 - 108\omega_3^2c_s^2\omega_4\omega_1^2v_2^2\omega_2^3 + 72\omega_3^2v_3^2\omega_4^2v_2^2\omega_2^3 + 30\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^2 + 54\omega_3^2c_s^2\omega_1^3\omega_2^3 + 64\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^3 - 84c_s^2\omega_4^2\omega_1^2v_2^2\omega_2^3 + 72\omega_3^2v_3^4\omega_4^2\omega_1^2\omega_2^2 - 8\omega_3c_s^2\omega_4^2\omega_1^3v_2^2\omega_2 + 324\omega_3^2c_s^4\omega_1^2\omega_2^3 - 81\omega_3c_s^4\omega_4^2\omega_1^3\omega_2^3 + 8\omega_3^2\omega_4^2\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1\omega_2^3 + 56\omega_3c_s^2\omega_4^2\omega_1\omega_2^3 - 72\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2 - 8\omega_3^2\omega_4^2\omega_1\omega_2^2 + 432\omega_3^2c_s^2v_3^2\omega_1^2\omega_2^3 - 56\omega_3c_s^2\omega_4^2\omega_1v_2^2\omega_2^3 + 120\omega_3^2v_3^2\omega_4^2\omega_1^2v_2^2\omega_2^2 - 104\omega_3^2c_s^2\omega_4^2\omega_1^3 + 48\omega_3^2v_3^2\omega_4^2\omega_1^3v_2 - 252c_s^4\omega_4^2\omega_1^2\omega_2^3 - 96\omega_3^2v_3^2\omega_4^2\omega_2^3 - 36\omega_3^2v_3^4\omega_4^2\omega_1^3\omega_2 + 108\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^3 + 128\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^2 + 32\omega_3^2c_s^2\omega_4^2v_2^2\omega_2^3 - 24\omega_3^2v_3^2\omega_4^2\omega_1^2v_2^2\omega_2 - 162\omega_3^2c_s^4\omega_1^3\omega_2^3 - 8\omega_3^2\omega_4^2v_2^2\omega_2^3 - 24\omega_3c_s^4\omega_4^2\omega_1^3\omega_2 - 27\omega_3c_s^2\omega_4^2\omega_1^3v_2^2\omega_2^3 - 432\omega_3^2c_s^2v_3^2\omega_4^2\omega_1\omega_2^3 - 72c_s^4\omega_4^2\omega_1^3\omega_2^2 + 8\omega_3^2\omega_4^2\omega_1v_2^2\omega_2^3 + 324\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^3 + 192\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^2 + 96\omega_3^2v_3^2\omega_4^2\omega_1\omega_2^3 + 8\omega_3^2c_s^2\omega_4^2\omega_1v_2^2\omega_2^3 - 108\omega_3^2c_s^2\omega_1^2\omega_2^3 + 8\omega_3^2\omega_4^2\omega_1v_2^2\omega_2^2 + 162c_s^4\omega_4^2\omega_1^3\omega_2^3 - 27\omega_3^2c_s^2\omega_4\omega_1^3\omega_2^3 - 72\omega_3^2v_3^4\omega_4^2\omega_1^2\omega_2 - 432\omega_3^2c_s^2v_3^2\omega_4^2\omega_1\omega_2^2 + 192\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^2 + 8\omega_3^2\omega_4^2\omega_1^3v_2^2\omega_2 - 54\omega_3^2c_s^2\omega_1^3v_2^2\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^3v_2^2 - 40\omega_3^2c_s^2\omega_4^2\omega_1^3v_2^2\omega_2 - 168\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2 + 32\omega_3^2c_s^2\omega_4^2\omega_1^3v_2^2 + 144\omega_3^2c_s^4\omega_4^2\omega_1^3 - 30\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^3 - 56\omega_3^2c_s^2\omega_4^2\omega_1v_2^2\omega_2^2 + 24\omega_3^2v_3^4\omega_4^2\omega_2^3 + 96\omega_3^2v_3^2\omega_4^2\omega_1\omega_2^2 - 10\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2^2 + 864\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^2\omega_2^2 - 24c_s^2\omega_4^2\omega_1^3v_2^2\omega_2^2 + 432\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^3 - 96\omega_3^2v_3^2\omega_4^2\omega_1^3 - 192\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2^2 - 24\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^3 - 104\omega_3^2c_s^2\omega_4^2\omega_2^3 - 10\omega_3^2c_s^2\omega_4^2\omega_1^2v_2^2\omega_2^3 + 27\omega_3c_s^2\omega_4^2\omega_1^3\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^2\omega_2 + 54c_s^2\omega_4^2\omega_1^3v_2^2\omega_2^3 + 80\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2 - 168\omega_3c_s^4\omega_4^2\omega_1\omega_2^3 - 16\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2^2 - 432\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^3\omega_2 + 27\omega_3^2c_s^2\omega_4\omega_1^3v_2^2\omega_2^3 + 84c_s^2\omega_4^2\omega_1^2\omega_2^3 - 324\omega_3^2c_s^4\omega_4\omega_1^2\omega_2^3 + 96\omega_3^2v_3^2\omega_4^2\omega_1^3\omega_2 + 32\omega_3^2c_s^2\omega_4^2\omega_1^2v_2^2\omega_2^2 - 216\omega_3^2c_s^4\omega_4\omega_1\omega_2^2 + 8\omega_3^2\omega_4^2\omega_1^3 + 8\omega_3c_s^2\omega_4^2\omega_1^3\omega_2 - 8\omega_3^2c_s^2\omega_4^2\omega_1^2v_2\omega_2 - 108\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^3 + 24c_s^2\omega_4^2\omega_1^3\omega_2^2 + 16\omega_3^2\omega_4^2\omega_1^2\omega_2^2 + 64\omega_3c_s^2\omega_4^2\omega_1^2v_2^2\omega_2^2 - 60\omega_3^2v_3^2\omega_4^2\omega_1v_2^2\omega_2^3 - 36\omega_3^2v_3^4\omega_4^2\omega_1\omega_2^3 - 176\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^2 + 48\omega_3^2v_3^4\omega_4^2\omega_1^3 + 144\omega_3^2c_s^4\omega_4^2\omega_2^3 + 108\omega_3^2c_s^2\omega_1^2v_2^2\omega_2^3 + 8\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2 - 64\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^2 - 54c_s^2\omega_4^2\omega_1^3\omega_2^3 + 96\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2 + 81\omega_3^2c_s^4\omega_4\omega_1^3\omega_2^3 + 112\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2 - 60\omega_3^2v_3^2\omega_4^2\omega_1^3v_2^2\omega_2 - 432\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^2\omega_2 + 10\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^3 - 96\omega_3^2v_3^2\omega_4^2\omega_1v_2^2\omega_2^2 + 108\omega_3c_s^2\omega_4^2\omega_1^2v_2^2\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^3\omega_2$

$C_{50} = 6\omega_3c_s^2\omega_4\omega_1 + 9\omega_4\omega_1\omega_2 - 2\omega_3\omega_4v_2^2\omega_2 + 2\omega_3\omega_4\omega_2 + 27\omega_3c_s^2\omega_1\omega_2 + 2\omega_3\omega_4\omega_1v_2^2 - 9\omega_3\omega_1\omega_2 - 6\omega_3c_s^2\omega_4\omega_2 - 27c_s^2\omega_4\omega_1\omega_2 - 2\omega_3\omega_4\omega_1 - 9\omega_4\omega_1v_2^2\omega_2 + 9\omega_3\omega_1v_2^2\omega_2$

$C_{51} = 12\omega_3v_3^4\omega_4^2\omega_1^2\omega_5\omega_2^2 + 8\omega_3^2c_s^4\omega_4^2\omega_1\omega_5\omega_2^3 - 88\omega_3^2c_s^2\omega_4^2\omega_5\omega_2^3 + 24\omega_3^2\omega_4^2\omega_1^3v_2^2\omega_5\omega_2 - 72\omega_3c_s^2\omega_4^2\omega_1^3\omega_5\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1\omega_5\omega_2^3 - 6\omega_3^2c_s^2\omega_4^2\omega_1^2v_2^2\omega_5\omega_2^3 - 36\omega_3^2v_3^2\omega_4\omega_1\omega_5\omega_2^3 + 8\omega_3^2\omega_4^2\omega_5\omega_2^3 + 48\omega_3^2v_3^4\omega_4^2\omega_1^3\omega_5 - 12\omega_3v_3^2\omega_4^2\omega_1^2\omega_5\omega_2^2 + 36\omega_3^2c_s^2\omega_4^2\omega_1\omega_5\omega_2^3 + 24\omega_3^2v_3^4\omega_4^2\omega_1^2\omega_5\omega_2 - 48\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_5\omega_2^2 + 36\omega_3^2v_3^4\omega_4\omega_1\omega_5\omega_2^3 - 108\omega_3c_s^2v_3^2\omega_4^2\omega_1^3\omega_5\omega_2^3 + 72\omega_3c_s^4\omega_4^2\omega_1^3\omega_5\omega_2^3 + 132\omega_3^2c_s^2\omega_4^2\omega_1^2v_2^2\omega_5\omega_2^2 - 8\omega_3^2\omega_4^2\omega_1\omega_5\omega_2^2 + 72\omega_3c_s^2\omega_4^2\omega_1^3\omega_5\omega_2^2 - 28\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_5\omega_2 - 72\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^3 - 56\omega_3^2c_s^4\omega_4^2\omega_1\omega_5\omega_2^2 + 36\omega_3v_3^4\omega_4^2\omega_1^2\omega_5\omega_2^3 + 360\omega_3^2v_3^2\omega_4^2\omega_1^2v_2^2\omega_5\omega_2^2 - 8\omega_3^2\omega_4^2\omega_1^3\omega_5\omega_2 - 36\omega_3v_3^4\omega_4\omega_1^3\omega_5\omega_2^2 + 108\omega_3c_s^2v_3^2\omega_4\omega_1^2\omega_5\omega_2^3 - 72\omega_3c_s^4\omega_4^2\omega_1^3\omega_5\omega_2^2 + 180\omega_3c_s^2v_3^2\omega_4^2\omega_1^3\omega_5\omega_2^2 + 36\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_5\omega_2 - 180\omega_3^2v_3^2\omega_4^2\omega_1^3v_2^2\omega_5\omega_2 - 108\omega_3^2c_s^2v_3^2\omega_4\omega_1\omega_5\omega_2^3 + 36\omega_3v_3^2\omega_4\omega_1^3\omega_5\omega_2^2 - 27\omega_3c_s^2\omega_4^2\omega_1^3v_1^2\omega_5\omega_2^3 + 216\omega_3^2v_3^2\omega_4^2v_2^2\omega_5\omega_2^3 + 64\omega_3^2c_s^2\omega_4^2\omega_1\omega_5\omega_2^2 - 36\omega_3v_3^2\omega_4^2\omega_1^2\omega_5\omega_2^3 - 12\omega_3^2c_s^2\omega_4^2\omega_1^3v_2^2\omega_5\omega_2 + 648\omega_3^2c_s^2\omega_4\omega_1^2v_2^2\omega_5\omega_2^3 - 24\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^2\omega_5\omega_2 - 72\omega_3c_s^2v_3^2\omega_4^2\omega_1^3\omega_5\omega_2 + 16\omega_3c_s^4\omega_4^2\omega_1^3\omega_5\omega_2 - 4\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_5\omega_2^2 - 288\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_5\omega_2^3 + 24\omega_3^2v_3^2\omega_4^2\omega_5\omega_2^3 - 24\omega_3^2\omega_4^2\omega_1^3v_2^2\omega_5 - 18\omega_3^2v_3^4\omega_4^2\omega_1^2\omega_5\omega_2^3 + 6\omega_3^2c_s^2\omega_4^2\omega_1^3v_2^2\omega_5\omega_2^2 + 36v_3^2\omega_4^2\omega_1^3\omega_5\omega_2^2 + 36\omega_3^2v_3^4\omega_4\omega_1^3\omega_5\omega_2^2 + 108\omega_3^2c_s^2v_3^2\omega_4\omega_1^3\omega_5\omega_2^3 + 48\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^2\omega_5\omega_2^2 + 108\omega_3^2v_3^4\omega_1^2\omega_5\omega_2^3 + 32\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_5 + 288\omega_3^2c_s^4\omega_4\omega_1^2\omega_5\omega_2^3 - 16\omega_3c_s^2\omega_4^2\omega_1^3\omega_5\omega_2 - 162\omega_3^2c_s^2\omega_4\omega_1^3v_2^2\omega_5\omega_2^3 + 4\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_5\omega_2^2 - 96\omega_3^2c_s^2\omega_4^2\omega_1^2v_2^2\omega_5\omega_2 + 336\omega_3c_s^2\omega_4^2\omega_1v_2^2\omega_5\omega_2^3 - 36v_3^4\omega_4^2\omega_1^3\omega_5\omega_2^2 - 36\omega_3^2v_3^2\omega_4\omega_1^3\omega_5\omega_2^2 - 216\omega_3^2c_s^2v_3^2\omega_4^2\omega_5\omega_2^3 + 24\omega_3^2c_s^2\omega_4^2\omega_1^3v_2^2\omega_5 - 72\omega_3^2v_3^2\omega_4^2\omega_1^2v_2^2\omega_5\omega_2 + 18\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_5\omega_2^3 + 108\omega_3^2c_s^2v_3^2\omega_4\omega_1^3\omega_5\omega_2^2 - 60\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^2\omega_5\omega_2^3 - 36\omega_3^2v_3^4\omega_4^2\omega_1^2\omega_5\omega_2^2 + 180\omega_3c_s^2v_3^2\omega_4^2\omega_1\omega_5\omega_2^3 + 160\omega_3c_s^4\omega_4^2\omega_1\omega_5\omega_2^3 + 54\omega_3^2v_3^2\omega_4\omega_1^3\omega_5\omega_2^3 - 54v_3^2\omega_4^2\omega_1^3\omega_5\omega_2^3 + 24\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_5\omega_2 + 54\omega_3^2v_3^2\omega_1^3\omega_5\omega_2^3 - 54\omega_3^2v_3^2\omega_4\omega_1^3\omega_5\omega_2^3 + 54v_3^4\omega_4^2\omega_1^3\omega_5\omega_2^3 - 162\omega_3^2c_s^2v_3^2\omega_1^3\omega_5\omega_2^3 - 84\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_5\omega_2^2 - 160\omega_3c_s^2\omega_4^2\omega_1\omega_5\omega_2^3 - 6\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_5\omega_2^3 + 288\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^3 - 216c_s^2v_3^2\omega_4^2\omega_1^2\omega_5\omega_2^3 + 24\omega_3^2\omega_4^2\omega_1v_2^2\omega_5\omega_2^2 - 24\omega_3^2c_s^2v_3^2\omega_4^2\omega_1\omega_5\omega_2^2 - 180\omega_3c_s^2\omega_4^2\omega_1^3v_2^2\omega_5\omega_2^2 + 264\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^3\omega_5 + 64\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_5\omega_2 + 108\omega_3^2v_3^4\omega_4^2\omega_1\omega_5\omega_2^3 + 112\omega_3c_s^4\omega_4^2\omega_1^2\omega_5\omega_2^2 + 108\omega_3c_s^2v_3^2\omega_4^2\omega_1^2\omega_5\omega_2^2 + 152\omega_3^2c_s^4\omega_4^2\omega_5\omega_2^3 - 348\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^3\omega_5\omega_2 + 54\omega_3v_3^2\omega_4^2\omega_1^3\omega_5\omega_2^3 + 288\omega_3^2c_s^2\omega_4\omega_1\omega_5\omega_2^3 - 120\omega_3^2c_s^2\omega_4^2\omega_1v_2^2\omega_5\omega_2^3 - 56\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_5\omega_2 - 48\omega_3^2v_3^2\omega_4^2\omega_1\omega_5\omega_2^3 - 112\omega_3c_s^2\omega_4^2\omega_1^2\omega_5\omega_2^2 - 288\omega_3^2c_s^4\omega_4\omega_1\omega_5\omega_2^3 - 180\omega_3^2v_3^2\omega_4^2\omega_1v_2^2\omega_5\omega_2^3 - 54\omega_3v_3^4\omega_4^2\omega_1^3\omega_5\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^2\omega_5\omega_2 - 96\omega_3^2v_3^2\omega_4^2\omega_1^3\omega_5 - 288\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^3 - 6\omega_3^2c_s^2\omega_4^2\omega_1^2v_1^2\omega_5\omega_2^3 - 72\omega_3^2v_3^4\omega_4^2\omega_1^3\omega_5\omega_2 - 72\omega_3v_3^2\omega_4^2\omega_1^3\omega_5\omega_2^2 - 648\omega_3^2c_s^2\omega_4\omega_1v_2^2\omega_5\omega_2^3 + 2\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_5\omega_2^3 - 24\omega_3^2\omega_4^2v_2^2\omega_5\omega_2^3 - 36\omega_3v_3^2\omega_4\omega_1^2\omega_5\omega_2^3 + 2\omega_3^2\omega_4^2\omega_1^3v_1^4\omega_5\omega_2^2 - 72\omega_3c_s^2v_3^2\omega_4^2\omega_1^2\omega_5\omega_2^3 - 216\omega_3c_s^4\omega_4^2\omega_1^2\omega_5\omega_2^3 + 24\omega_3^2v_3^4\omega_4^2\omega_1\omega_5\omega_2^2 - 108\omega_3c_s^2v_3^2\omega_4\omega_1^3\omega_5\omega_2^2 + 9\omega_3\omega_4^2\omega_1^3v_1^2\omega_5\omega_2^3 + 24\omega_3^2\omega_4^2\omega_1v_2^2\omega_5\omega_2^3 + 162\omega_3c_s^2\omega_4^2\omega_1^3v_2^2\omega_5\omega_2^3 + 300\omega_3^2c_s^2v_3^2\omega_4^2\omega_1\omega_5\omega_2^3 - 288\omega_3^2v_3^2\omega_4^2\omega_1v_2^2\omega_5\omega_2^2 + 36\omega_3v_3^4\omega_4\omega_1^2\omega_5\omega_2^3 +$

$132\omega_3^2v_3^2\omega_4^2\omega_1^3\omega_5\omega_2 + 72\omega_3v_3^4\omega_4^2\omega_1^3\omega_5\omega_2^2 + 9\omega_3^2\omega_4\omega_1^3v_1^4\omega_5\omega_2^3 - 168\omega_3^2c_s^2\omega_4^2\omega_1v_2^2\omega_5\omega_2^2 + 240\omega_3^2c_s^2\omega_4^2v_2^2\omega_5\omega_2^3 + 216\omega_3c_s^2\omega_4^2\omega_1^2\omega_5\omega_2^3 +$
$72\omega_3^2v_3^2\omega_4^2\omega_1\omega_5\omega_2^2 + 27\omega_3^2c_s^2\omega_4\omega_1^3v_1^2\omega_5\omega_2^3 - 468\omega_3c_s^2\omega_4^2\omega_1^2v_2^2\omega_5\omega_2^3 - 18\omega_3^2v_3^2\omega_4^2\omega_1^3\omega_5\omega_2^2 - 24\omega_3v_3^4\omega_4^2\omega_1^3\omega_5\omega_2 + 144\omega_3^2v_3^2\omega_4\omega_1^2\omega_5\omega_2^3 -$
$72v_3^4\omega_4^2\omega_1^2\omega_5\omega_2^3 + 324\omega_3^2c_s^2v_3^2\omega_1^2\omega_5\omega_2^3 - 96\omega_3^2v_3^4\omega_4^2\omega_5\omega_2^3 + 162c_s^2v_3^2\omega_4^2\omega_1^3\omega_5\omega_2^3 - 28\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_5\omega_2^3 - 144\omega_3^2v_3^4\omega_4\omega_1^2\omega_5\omega_2^3 + 72v_3^2\omega_4^2\omega_1^2\omega_5\omega_2^3 +$
$18\omega_3^2v_3^4\omega_4^2\omega_1^3\omega_5\omega_2^2 + 24\omega_3v_3^2\omega_4^2\omega_1^3\omega_5\omega_2 + 8\omega_3^2\omega_4^2\omega_1^3\omega_5 - 108\omega_3^2c_s^2v_3^2\omega_4\omega_1^2\omega_5\omega_2^2 - 108\omega_3^2v_3^2\omega_1^2\omega_5\omega_2^3 + 144\omega_3^2v_3^2\omega_4^2\omega_1^3v_1^2\omega_5 - 40\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_5 +$
$4\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_5\omega_2^3 + 6\omega_3^2c_s^2\omega_4^2\omega_1^3v_1^2\omega_5\omega_2^2 + 12\omega_3v_3^4\omega_4^2\omega_1\omega_5\omega_2^3 + 56\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_5\omega_2^2 - 72\omega_3^2c_s^4\omega_4\omega_1^3\omega_5\omega_2^3 - 2\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_5\omega_2^2 - 108c_s^2v_3^2\omega_4^2\omega_1^3\omega_5\omega_2^2 -$
$54\omega_3^2v_3^4\omega_1^3\omega_5\omega_2^3 - 2\omega_3^2\omega_4^2\omega_1^2v_1^4\omega_5\omega_2^3 + 16\omega_3^2\omega_4^2\omega_1^2\omega_5\omega_2^2 + 36\omega_3^2v_3^2\omega_4\omega_1^2\omega_5\omega_2^2 - 9\omega_3\omega_4^2\omega_1^3v_1^4\omega_5\omega_2^3 + 264\omega_3c_s^2\omega_4^2\omega_1^2v_2^2\omega_5\omega_2^2 + 48\omega_3c_s^2\omega_4^2\omega_1^3v_2^2\omega_5\omega_2 +$
$72\omega_3^2c_s^2\omega_4\omega_1^3\omega_5\omega_2^3 - 12\omega_3v_3^2\omega_4^2\omega_1\omega_5\omega_2^3 - 72\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_5\omega_2^2 + 60\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^3\omega_5\omega_2^2 - 216\omega_3^2c_s^2v_3^2\omega_4\omega_1^2\omega_5\omega_2^3 - 9\omega_3^2\omega_4\omega_1^3v_1^2\omega_5\omega_2^3 - 36\omega_3^2v_3^4\omega_4\omega_1^2\omega_5\omega_2^2$

$C_{52} = -24\omega_3c_s^2\omega_1\omega_2^2 + 2\omega_1^3\omega_2 + 26\omega_3c_s^2\omega_2^3 - 6c_s^2\omega_1\omega_2^3 - 4\omega_3\omega_1^2v_2^2\omega_2 + 10\omega_3\omega_1^3\omega_2 - 24\omega_3c_s^2\omega_1\omega_2^3 - 4\omega_1^2\omega_2^2 - 20\omega_3\omega_1^2\omega_2^2 - 22\omega_3v_3^2\omega_1^2\omega_2 +$
$14\omega_3\omega_1^2\omega_2 + 26\omega_3v_3^2\omega_1^2\omega_2^2 + 10\omega_3v_3^2\omega_2^3 + 4\omega_1^2v_2^2\omega_2^2 + 6\omega_3\omega_1^2v_2^2\omega_2^2 - 13\omega_3v_3^2\omega_1^3\omega_2 - 10\omega_3\omega_2^3 - 3\omega_3\omega_1v_2^2\omega_2^3 - 13\omega_3v_3^2\omega_1\omega_2^3 + 4\omega_3\omega_1^3v_2^2 -$
$30\omega_3c_s^2\omega_1^2\omega_2 - 2\omega_1^3v_2^2\omega_2 - 3\omega_3\omega_1^3v_2^2\omega_2 - 4\omega_3v_3^2\omega_1\omega_2^2 + 28\omega_3c_s^2\omega_1^3 - 4\omega_3\omega_1v_2^2\omega_2^2 + 4\omega_3v_2^2\omega_2^3 - 2\omega_1v_2^2\omega_2^3 - 24\omega_3c_s^2\omega_1^3\omega_2 - 12\omega_3\omega_1^3 +$
$8\omega_3\omega_1\omega_2^2 + 12c_s^2\omega_1^2\omega_2^2 + 48\omega_3c_s^2\omega_1^2\omega_2^2 + 2\omega_1\omega_2^3 - 6c_s^2\omega_1^3\omega_2 + 16\omega_3v_3^2\omega_1^3 + 10\omega_3\omega_1\omega_2^3$

$C_{53} = -3\omega_4^2\omega_1^3v_2^2\omega_5 + 6\omega_3^2\omega_1^2v_2^4\omega_5 + 9c_s^2v_3^2\omega_4^2\omega_1^3\omega_5 - 6v_3^4\omega_4^2\omega_1^2\omega_5 + 6\omega_3^2v_3^2\omega_4\omega_1^2\omega_5 - 6\omega_4^2\omega_1^2v_2^4\omega_5 + 3\omega_3^2\omega_1^3v_2^2\omega_5 - 6\omega_3^2c_s^2v_3^2\omega_4\omega_1^2\omega_5 +$
$2\omega_3^2c_s^2\omega_4\omega_1^3\omega_5 - 9\omega_3^2c_s^2\omega_1^3v_2^2\omega_5 - 32\omega_3^2c_s^4\omega_4^2\omega_1 - 3\omega_3v_3^4\omega_4^2\omega_1^3\omega_5 - 8\omega_3^2c_s^4\omega_4\omega_1\omega_5 - 6\omega_3c_s^2\omega_4^2\omega_1^3v_2^2\omega_5 - 8\omega_3c_s^4\omega_4^2\omega_1^2\omega_5 + 12\omega_3c_s^2\omega_4^2\omega_1v_2^2\omega_5 +$
$6\omega_3^2c_s^2v_3^2\omega_4\omega_1^3\omega_5 - 8\omega_3^2c_s^2\omega_4\omega_1^2\omega_5 - 18c_s^2v_3^2\omega_4^2\omega_1^2\omega_5 + 32\omega_3^2c_s^4\omega_4^2\omega_1^2 - 8\omega_3c_s^2\omega_4^2\omega_1\omega_5 + 3v_3^4\omega_4^2\omega_1^3\omega_5 - 3\omega_3^2v_3^2\omega_4\omega_1^3\omega_5 + 12\omega_3c_s^2v_3^2\omega_4^2\omega_1\omega_5 +$
$2\omega_3c_s^4\omega_4^2\omega_1^3\omega_5 + 6\omega_3\omega_4^2\omega_1^2v_2^4\omega_5 - 18c_s^2\omega_4^2\omega_1^2v_2^2\omega_5 + 6\omega_3^2\omega_4\omega_1^2v_2^2\omega_5 + 3\omega_3\omega_4^2\omega_1^3v_2^2\omega_5 - 6\omega_3^2c_s^2\omega_4\omega_1^2v_2^2\omega_5 + 3\omega_3^2\omega_4\omega_1^3v_2^4\omega_5 + 6\omega_3v_3^4\omega_4^2\omega_1^2\omega_5 -$
$8\omega_3^2c_s^4\omega_4^2\omega_1^3 - 6\omega_3^2v_3^2\omega_1^2\omega_5 + 6v_3^2\omega_4^2\omega_1^2\omega_5 - 6\omega_3^2v_3^4\omega_4\omega_1^2\omega_5 + 18\omega_3^2c_s^2v_3^2\omega_1^2\omega_5 + 6\omega_3c_s^2\omega_4^2\omega_1^2v_2^2\omega_5 - 3\omega_3^2v_3^4\omega_1^3\omega_5 - 2\omega_3^2c_s^4\omega_4\omega_1^3\omega_5 - 6\omega_3^2\omega_1^2v_2^2\omega_5 +$
$3\omega_4^2\omega_1^3v_2^4\omega_5 + 8\omega_3^2c_s^2\omega_4\omega_1\omega_5 + 3\omega_3v_3^2\omega_4^2\omega_1^3\omega_5 + 16\omega_3^2c_s^4\omega_4^2\omega_5 + 18\omega_3^2c_s^2\omega_1^2v_2^2\omega_5 + 8\omega_3c_s^2\omega_4^2\omega_1^2\omega_5 - 3\omega_3^2\omega_1^3v_2^4\omega_5 + 6\omega_4^2\omega_1^2v_2^2\omega_5 +$
$6\omega_3c_s^2v_3^2\omega_4^2\omega_1^2\omega_5 - 12\omega_3^2c_s^2\omega_4\omega_1v_2^2\omega_5 + 6\omega_3^2c_s^2\omega_4\omega_1^3v_2^2\omega_5 + 8\omega_3^2c_s^4\omega_4\omega_1^2\omega_5 + 6\omega_3^2v_3^4\omega_1^2\omega_5 - 6\omega_3\omega_4^2\omega_1^2v_2^2\omega_5 - 6\omega_3^2\omega_4\omega_1^2v_2^4\omega_5 + 9c_s^2\omega_4^2\omega_1^3v_2^2\omega_5 -$
$3\omega_3\omega_4^2\omega_1^3v_2^4\omega_5 - 9\omega_3^2c_s^2v_3^2\omega_1^3\omega_5 + 3\omega_3^2v_3^2\omega_1^3\omega_5 - 3\omega_3^2\omega_4\omega_1^3v_2^2\omega_5 - 3v_3^2\omega_4^2\omega_1^3\omega_5 + 3\omega_3^2v_3^4\omega_4\omega_1^3\omega_5 + 8\omega_3c_s^4\omega_4^2\omega_1\omega_5 - 6\omega_3c_s^2v_3^2\omega_4^2\omega_1^3\omega_5 -$
$2\omega_3c_s^2\omega_4^2\omega_1^3\omega_5 - 8\omega_3^2c_s^4\omega_4^2\omega_1\omega_5 - 6\omega_3v_3^2\omega_4^2\omega_1^2\omega_5 - 12\omega_3^2c_s^2v_3^2\omega_4\omega_1\omega_5$

$C_{54} = 144\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^2 - 18\omega_3^2c_s^2\omega_1^3\omega_2^3 - 368\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^3 - 96\omega_3^2v_3^4\omega_4^2\omega_1^2\omega_2^2 - 108\omega_3^2c_s^4\omega_1^2\omega_2^3 - 27\omega_3c_s^4\omega_4^2\omega_1^3\omega_2^3 - 16\omega_3^2\omega_4^2\omega_2^3 + 28\omega_3^2\omega_4^2\omega_1\omega_2^3 +$
$56\omega_3c_s^2\omega_4^2\omega_1\omega_2^3 + 72\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2 - 36c_s^2v_3^2\omega_4^2\omega_1^2\omega_2^3 + 18\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^3 - 56\omega_3c_s^2v_3^2\omega_4^2\omega_1\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1\omega_2^2 - 784\omega_3^2c_s^2v_3^2\omega_4^2\omega_2^3 - 104\omega_3^2c_s^2\omega_4^2\omega_1^3 -$
$108\omega_3c_s^4\omega_4^2\omega_1^3\omega_2^2 - 108c_s^4\omega_4^2\omega_1^2\omega_2^3 + 160\omega_3^2v_3^2\omega_4^2\omega_2^3 - 132\omega_3^2v_3^4\omega_4^2\omega_1^3\omega_2 - 36\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^3 + 56\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^2 - 9\omega_3^2c_s^2v_3^2\omega_4\omega_1^3\omega_2^3 - 78\omega_3^2v_3^4\omega_4^2\omega_1^2\omega_2^3 +$
$54\omega_3^2c_s^4\omega_1^3\omega_2^3 + 78\omega_3^2v_3^4\omega_4^2\omega_1^3\omega_2^2 + 48\omega_3c_s^4\omega_4^2\omega_1^3\omega_2 + 1232\omega_3^2c_s^2v_3^2\omega_4^2\omega_1\omega_2^3 + 18\omega_3^2c_s^2\omega_4^2\omega_1^3v_1^2\omega_2^2 + 216\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^3 + 12\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^2 -$
$6\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_2^2 - 256\omega_3^2v_3^2\omega_4^2\omega_1\omega_2^3 + 36\omega_3^2c_s^2\omega_1^2\omega_2^3 + 54c_s^4\omega_4^2\omega_1^3\omega_2^3 + 9\omega_3^2c_s^2\omega_4\omega_1^3\omega_2^3 + 120\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2 - 56\omega_3^2c_s^2v_3^2\omega_4^2\omega_1\omega_2^2 + 120\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^2 +$
$36\omega_3^2c_s^2v_3^2\omega_4\omega_1^2\omega_2^3 - 6\omega_3^2\omega_4^2\omega_1^2v_1^4\omega_2^3 - 276\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2 + 144\omega_3^2c_s^4\omega_4^2\omega_1^3 - 342\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^3 + 18c_s^2v_3^2\omega_4^2\omega_1^3\omega_2^3 - 144\omega_3^2v_3^4\omega_4^2\omega_2^3 +$
$32\omega_3^2v_3^2\omega_4^2\omega_1\omega_2^2 - 118\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2^2 - 412\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^2\omega_2^2 + 14\omega_3^2\omega_4^2\omega_1^3\omega_2^2 - 9\omega_3c_s^2v_3^2\omega_4^2\omega_1^3\omega_2^3 + 320\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^3 - 56\omega_3^2v_3^2\omega_4^2\omega_1^3 +$
$104\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2^2 + 588\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^3 + 208\omega_3^2c_s^2\omega_4^2\omega_2^3 + 9\omega_3c_s^2\omega_4^2\omega_1^3\omega_2^3 + 18\omega_3^2c_s^2v_3^2\omega_1^3\omega_2^3 + 16\omega_3^2\omega_4^2\omega_1^2\omega_2 - 88\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2 - 168\omega_3c_s^4\omega_4^2\omega_1\omega_2^3 -$
$460\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^2\omega_2^3 - 6\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2^3 - 712\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^3\omega_2 + 36c_s^2\omega_4^2\omega_1^2\omega_2^3 + 108\omega_3^2c_s^4\omega_4\omega_1^2\omega_2^3 + 152\omega_3^2v_3^2\omega_4^2\omega_1^3\omega_2 + 36\omega_3c_s^2\omega_4^2\omega_1^3\omega_2^2 +$
$92\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2^3 - 144\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^2 - 36\omega_3c_s^2v_3^2\omega_4^2\omega_1^3\omega_2^2 + 8\omega_3^2\omega_4^2\omega_1^3 - 16\omega_3c_s^2\omega_4^2\omega_1^3\omega_2 - 92\omega_3^2v_3^2\omega_4^2\omega_1^3\omega_2^2 - 72\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^3 + 6\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2^3 +$
$16\omega_3c_s^2v_3^2\omega_4^2\omega_1^3\omega_2 + 72\omega_3c_s^2v_3^2\omega_4^2\omega_1^2\omega_2^3 - 18\omega_3^2c_s^2\omega_4^2\omega_1^2v_1^2\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^2\omega_2^2 + 228\omega_3^2v_3^4\omega_4^2\omega_1\omega_2^3 + 52\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^2 + 394\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^3\omega_2^2 +$
$48\omega_3^2v_3^4\omega_4^2\omega_1^3 - 288\omega_3^2c_s^4\omega_4^2\omega_2^3 + 40\omega_3c_s^2v_3^2\omega_4^2\omega_1^2\omega_2^2 - 40\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^2 - 18c_s^2\omega_4^2\omega_1^3\omega_2^3 - 136\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2 - 27\omega_3^2c_s^4\omega_4\omega_1^3\omega_2^3 + 6\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^3\omega_2^3 +$
$6\omega_3^2\omega_4^2\omega_1^3v_1^4\omega_2^2 + 208\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2 + 448\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^2\omega_2 - 24\omega_3^2v_3^4\omega_4^2\omega_1\omega_2^2 + 184\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^3 - 36\omega_3^2c_s^2v_3^2\omega_1^2\omega_2^3 - 14\omega_3^2\omega_4^2\omega_1^2\omega_2^3 - 20\omega_3^2\omega_4^2\omega_1^3\omega_2$

$C_{55} = -18\omega_3\omega_4v_1^2\omega_2 - 6\omega_3\omega_4\omega_1\omega_2 + 12\omega_3c_s^2\omega_4\omega_1 + 4\omega_3v_3^2\omega_4\omega_2 + 9\omega_4\omega_1\omega_2 + 2\omega_3\omega_4\omega_2 - 27\omega_3c_s^2\omega_1\omega_2 - 9v_3^2\omega_4\omega_1\omega_2 + 9\omega_3\omega_1\omega_2 +$
$18\omega_3c_s^2\omega_4\omega_1\omega_2 + 18\omega_3\omega_4\omega_1v_1^2 + 2\omega_3v_3^2\omega_4\omega_1 + 6\omega_3c_s^2\omega_4\omega_2 - 27c_s^2\omega_4\omega_1\omega_2 - 8\omega_3\omega_4\omega_1 - 9\omega_3v_3^2\omega_1\omega_2 + 6\omega_3v_3^2\omega_4\omega_1\omega_2$

$C_{56} = -264\omega_3v_3^4\omega_4\omega_2^3 - 153\omega_3c_s^2v_3^2\omega_4\omega_1^2\omega_2^3 + 16\omega_3c_s^4\omega_4\omega_1^3 - 288\omega_3c_s^2v_3^2\omega_4\omega_1^3\omega_2 + 24\omega_3c_s^2\omega_4\omega_1^2\omega_2^3 - 24\omega_3v_3^4\omega_4\omega_1\omega_2^2 + 18c_s^2\omega_4\omega_1^3\omega_2^2 +$
$42\omega_3c_s^2\omega_4\omega_1^3\omega_2 + 24c_s^2v_3^2\omega_4\omega_1\omega_2^3 + 8c_s^4\omega_4\omega_1\omega_2^3 - 96\omega_3v_3^2\omega_4\omega_1^2\omega_2 - 6\omega_3c_s^2\omega_4\omega_1^2\omega_2^2 - 9c_s^2\omega_4\omega_1^3\omega_2^3 + 408\omega_3v_3^4\omega_4\omega_1\omega_2^3 - 3\omega_3c_s^2\omega_4\omega_1^2v_1^2\omega_2^3 -$
$36\omega_3c_s^2\omega_1\omega_2^3 + 108\omega_3c_s^2v_3^2\omega_1\omega_2^3 - 90\omega_3c_s^2v_3^2\omega_4\omega_1^2\omega_2^2 - 8\omega_3\omega_4\omega_2^3 - 81\omega_3v_3^2\omega_4\omega_1^3\omega_2^2 + 144\omega_3c_s^2v_3^2\omega_4\omega_1^3 + 144\omega_3v_3^2\omega_4\omega_2^3 - 20\omega_3c_s^2\omega_4\omega_1^3 -$
$28\omega_3c_s^4\omega_4\omega_1\omega_2^2 + 81\omega_3v_3^2\omega_4\omega_1^2\omega_2^3 + 14\omega_3\omega_4\omega_1\omega_2^3 + 138\omega_3v_3^2\omega_4\omega_1^3\omega_2 - 20c_s^2\omega_4\omega_1^2\omega_2^2 - 16\omega_3c_s^2\omega_4\omega_1^2\omega_2 + \omega_3\omega_4\omega_1^3v_1^4\omega_2^2 + 120\omega_3c_s^2v_3^2\omega_4\omega_1^2\omega_2 +$
$\omega_3\omega_4\omega_1^2v_1^2\omega_2^3 + 94\omega_3c_s^4\omega_4\omega_1\omega_2^3 - 4\omega_3\omega_4\omega_1\omega_2^2 + 84\omega_3v_3^2\omega_4\omega_1^2\omega_2^2 + 36\omega_3c_s^4\omega_1\omega_2^3 + 153\omega_3c_s^2v_3^2\omega_4\omega_1^3\omega_2^2 - 8c_s^2\omega_4\omega_1^3\omega_2 + 18c_s^2\omega_4\omega_1^2\omega_2^3 -$
$24\omega_3c_s^2\omega_4\omega_1^3\omega_2^2 - 18c_s^4\omega_4\omega_1^3\omega_2^2 - 4\omega_3\omega_4\omega_1^2\omega_2^2 + 12\omega_3v_3^2\omega_4\omega_1\omega_2^2 - 29\omega_3c_s^4\omega_4\omega_1^2\omega_2^3 - 32\omega_3c_s^4\omega_4\omega_1^3\omega_2 - 36\omega_3c_s^4\omega_1^2\omega_2^3 + 27\omega_3c_s^2v_3^2\omega_1^3\omega_2^2 +$
$4\omega_3\omega_4\omega_1^3 - 9\omega_3c_s^2\omega_1^3\omega_2^2 - 8c_s^2\omega_4\omega_1\omega_2^3 - 54c_s^2v_3^2\omega_4\omega_1^3\omega_2^2 + 192\omega_3v_3^4\omega_4\omega_1^2\omega_2 - 68\omega_3c_s^4\omega_4\omega_2^2 + 96\omega_3v_3^4\omega_4\omega_1^3 - 10\omega_3\omega_4\omega_1^3\omega_2 - 222\omega_3v_3^2\omega_4\omega_1\omega_2^3 -$
$7\omega_3\omega_4\omega_1^2\omega_2^3 + 9c_s^4\omega_4\omega_1^3\omega_2^3 + 10\omega_3c_s^4\omega_4\omega_1^2\omega_2^2 + 27c_s^2v_3^2\omega_4\omega_1^3\omega_2^3 + 3\omega_3c_s^2\omega_4\omega_1^3v_1^2\omega_2^2 + 138\omega_3v_3^4\omega_4\omega_1^3\omega_2^2 - 138\omega_3v_3^4\omega_4\omega_1^2\omega_2^3 - \omega_3\omega_4\omega_1^2v_1^4\omega_2^3 +$
$32\omega_3c_s^2\omega_4\omega_1\omega_2^2 - 240\omega_3v_3^4\omega_4\omega_1^3\omega_2 + 60c_s^2v_3^2\omega_4\omega_1^2\omega_2^2 - 60\omega_3c_s^2v_3^2\omega_4\omega_1\omega_2^2 - 108\omega_3c_s^2v_3^2\omega_1^2\omega_2^3 + 36\omega_3c_s^2\omega_1^2\omega_2^3 + 9\omega_3c_s^4\omega_1^3\omega_2^3 - 3\omega_3c_s^4\omega_4\omega_1^3\omega_2^3 +$
$7\omega_3\omega_4\omega_1^3\omega_2^2 + 20c_s^4\omega_4\omega_1^2\omega_2^2 + 8\omega_3c_s^4\omega_4\omega_1^2\omega_2 - 312\omega_3c_s^2v_3^2\omega_4\omega_2^3 + 40\omega_3c_s^2\omega_4\omega_2^3 + 432\omega_3c_s^2v_3^2\omega_4\omega_1\omega_2^3 - 60\omega_3v_3^2\omega_4\omega_1^3 - 54c_s^2v_3^2\omega_4\omega_1^2\omega_2^3 -$
$168\omega_3v_3^4\omega_4\omega_1^2\omega_2^2 + 24c_s^2v_3^2\omega_4\omega_1^3\omega_2 - 54\omega_3c_s^2\omega_4\omega_1\omega_2^3 + 8\omega_3\omega_4\omega_1^2\omega_2 + 8c_s^4\omega_4\omega_1^3\omega_2 + 17\omega_3c_s^4\omega_4\omega_1^3\omega_2^2 - 18c_s^4\omega_4\omega_1^2\omega_2^3 - \omega_3\omega_4\omega_1^3v_1^2\omega_2^2$

$C_{57} = 2\omega_3^2\omega_4\omega_1v_2^2 - 2\omega_3^2\omega_4\omega_1 + 6\omega_3\omega_4^2v_2^2 - 6\omega_3\omega_4^2 - 18\omega_3c_s^2\omega_4\omega_1 - 6\omega_4^2v_2^2 + 36\omega_3c_s^2\omega_4 - 6v_3^2\omega_4^2 - 6\omega_3^2\omega_4v_2^2 + 2\omega_3\omega_4^2\omega_1 - 6\omega_4^2\omega_1 +$
$12\omega_3v_3^2\omega_4 - 2\omega_3\omega_4^2\omega_1v_2^2 + 6\omega_3^2v_2^2 + 3v_3^2\omega_4^2\omega_1 + 12\omega_4^2 + 3\omega_3^2v_3^2\omega_1 + 3\omega_4^2\omega_1v_2^2 + 18\omega_3c_s^2\omega_4^2 - 36c_s^2\omega_4^2 - 12\omega_3\omega_4 + 6\omega_3^2c_s^2\omega_4\omega_1 + 6\omega_3^2\omega_4 -$
$6\omega_3^2v_3^2 - 6\omega_3v_3^2\omega_4\omega_1 + 18c_s^2\omega_4^2\omega_1 + 6\omega_3\omega_4\omega_1 - 18\omega_3^2c_s^2\omega_4 - 3\omega_3^2\omega_1v_2^2 - 6\omega_3c_s^2\omega_4^2\omega_1$

$C_{58} = -6\omega_3\omega_4\omega_1\omega_2 + 12\omega_3c_s^2\omega_4\omega_1 + 4\omega_3v_3^2\omega_4\omega_2 + 9\omega_4\omega_1\omega_2 - 18\omega_3\omega_4v_2^2\omega_2 + 2\omega_3\omega_4\omega_2 - 27\omega_3c_s^2\omega_1\omega_2 - 9v_3^2\omega_4\omega_1\omega_2 + 18\omega_3\omega_4\omega_1v_2^2 +$
$9\omega_3\omega_1\omega_2 + 18\omega_3c_s^2\omega_4\omega_1\omega_2 + 2\omega_3v_3^2\omega_4\omega_1 + 6\omega_3c_s^2\omega_4\omega_2 - 27c_s^2\omega_4\omega_1\omega_2 - 8\omega_3\omega_4\omega_1 - 9\omega_3v_3^2\omega_1\omega_2 + 6\omega_3v_3^2\omega_4\omega_1\omega_2$

$C_{59} = -36c_s^2v_3^2\omega_1\omega_2 - 3c_s^4\omega_1\omega_2 + 6v_3^4\omega_1 - 12v_3^2\omega_2 + 24c_s^2v_3^2\omega_1 - 4c_s^2\omega_2 + 2c_s^4\omega_1 + 3c_s^2\omega_1\omega_2 - 9v_3^4\omega_1\omega_2 + 12v_3^4\omega_2 - 6v_3^2\omega_1 + 48c_s^2v_3^2\omega_2 -$
$2c_s^2\omega_1 + 4c_s^4\omega_2 + 9v_3^2\omega_1\omega_2$

$C_{60} =$
$24\omega_3^2c_s^4\omega_4^2 + 15\omega_3v_3^2\omega_4^2\omega_1^3 + 18\omega_3^2v_3^2\omega_1^2 - 8\omega_3^2c_s^2\omega_4^2\omega_1^2 + 36\omega_3^2v_3^4\omega_4\omega_1^2 + 18v_3^2\omega_4^2\omega_1^2 - 48\omega_3^2c_s^4\omega_4^2\omega_1 - 36\omega_3v_3^2\omega_4^2\omega_1^2 + 36\omega_3^2c_s^2v_3^2\omega_4\omega_1 + \omega_3^2c_s^2\omega_4^2\omega_1^3 -$
$9\omega_3^2v_3^2\omega_1^3 - 15\omega_3^2v_3^4\omega_4\omega_1^3 - 9v_3^2\omega_4^2\omega_1^3 + 54\omega_3c_s^2v_3^2\omega_4\omega_1^3 - 15\omega_3v_3^4\omega_4^2\omega_1^3 + 24\omega_3^2c_s^4\omega_4^2\omega_1^2 - 36\omega_3^2v_3^2\omega_4\omega_1^2 - 18v_3^4\omega_4^2\omega_1^2 + 72\omega_3^2c_s^2v_3^2\omega_4\omega_1^2 + 12\omega_3^2c_s^2\omega_4^2\omega_1 +$

$$36\omega_3 v_3^4\omega_4^2\omega_1^2 - 108\omega_3 c_s^2 v_3^2\omega_4\omega_1^2 - 36\omega_3^2 c_s^2 v_3^2\omega_4\omega_1^3 - 3\omega_3^2 c_s^4\omega_4^2\omega_1^3 + 15\omega_3^2 v_3^2\omega_4\omega_1^3 + 9v_3^4\omega_4^2\omega_1^3 - 12\omega_3^2 c_s^2\omega_4\omega_1 + 72\omega_3 c_s^2 v_3^2\omega_4^2\omega_1^2 + 12\omega_3 c_s^2\omega_4^2\omega_1^2 -$$
$$36\omega_3 v_3^4\omega_4\omega_1^2 - 54\omega_3^2 c_s^2 v_3^2\omega_1^2 + 6\omega_3^2 c_s^2 v_3^2\omega_4^2\omega_1^3 - 3\omega_3^2 v_3^2\omega_4^2\omega_1^3 + 3\omega_3^2 c_s^4\omega_4\omega_1^3 + 9\omega_3^2 v_3^4\omega_1^3 - 3\omega_3 c_s^2\omega_4^2\omega_1^3 + 18\omega_3 v_3^4\omega_4\omega_1^3 - 36\omega_3 c_s^2 v_3^2\omega_4^2\omega_1^3 + 12\omega_3^2 v_3^2\omega_4^2\omega_1^2 -$$
$$18\omega_3^2 v_3^4\omega_1^2 - 12\omega_3^2 c_s^4\omega_4\omega_1^2 - 12\omega_3^2 c_s^2 v_3^2\omega_4^2\omega_1^2 + 12\omega_3 c_s^4\omega_4^2\omega_1 + 27\omega_3^2 c_s^2 v_3^2\omega_1^3 + 12\omega_3^2 c_s^4\omega_4\omega_1 - 12\omega_3 c_s^4\omega_4^2\omega_1^2 - 36\omega_3^2 c_s^2 v_3^2\omega_4^2\omega_1 + 36\omega_3 v_3^2\omega_4\omega_1^2 +$$
$$27c_s^2 v_3^2\omega_4^2\omega_1^3 + 3\omega_3^2 v_3^4\omega_4^2\omega_1^3 - 3\omega_3^2 c_s^2\omega_4\omega_1^3 + 3\omega_3 c_s^4\omega_4^2\omega_1^3 - 18\omega_3 v_3^2\omega_4\omega_1^3 - 12\omega_3^2 v_3^4\omega_4^2\omega_1^2 + 12\omega_3^2 c_s^2\omega_4\omega_1^2 + 36\omega_3 c_s^2 v_3^2\omega_4^2\omega_1 - 54c_s^2 v_3^2\omega_4^2\omega_1^2 - 12\omega_3 c_s^2\omega_4^2\omega_1$$

2.7.4 Conservation of momentum: ρv_2

attached text file: `output_d3q27_nse_culbm2_symbolic_pde_02.txt`

$$v_2\frac{\partial\rho}{\partial t} + \rho\frac{\partial v_2}{\partial t} + \frac{v_2 v_1\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_1} + \frac{\rho v_2\delta_l}{\delta_t}\frac{\partial v_1}{\partial x_1} + \frac{\rho v_1\delta_l}{\delta_t}\frac{\partial v_2}{\partial x_1} + (c_s^2+v_2^2)\frac{\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_2} + \frac{2\rho v_2\delta_l}{\delta_t}\frac{\partial v_2}{\partial x_2} + \frac{v_3 v_2\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_3} + \frac{v_3\rho\delta_l}{\delta_t}\frac{\partial v_2}{\partial x_3} +$$
$$\frac{\rho v_2\delta_l}{\delta_t}\frac{\partial v_3}{\partial x_3} + (-2+\omega_1)\frac{c_s^2\delta_l^2}{2\delta_t\omega_1}\frac{\partial\rho}{\partial x_1}\frac{\partial v_2}{\partial x_1} + (6\omega_1 v_1^2 - 12c_s^2\omega_2 + 3c_s^2\omega_1\omega_2 - 2\omega_1 - 6v_1^2\omega_2 + 2\omega_2 + 6c_s^2\omega_1)\frac{\delta_l^2}{6\delta_t\omega_1\omega_2}\frac{\partial\rho}{\partial x_1}\frac{\partial v_1}{\partial x_2} +$$
$$(\omega_1-\omega_2)\frac{2\rho v_1\delta_l^2}{\delta_t\omega_1\omega_2}\frac{\partial v_1}{\partial x_1}\frac{\partial v_1}{\partial x_2} + (3\omega_1 v_1^2 - c_s^2\omega_2 - \omega_1 - 3v_1^2\omega_2 + \omega_2 + c_s^2\omega_1)\frac{\delta_l^2}{3\delta_t\omega_1\omega_2}\frac{\partial\rho}{\partial x_2}\frac{\partial v_1}{\partial x_1} +$$
$$(6\omega_1 v_2^2 + 8c_s^2\omega_2 - 6c_s^2\omega_1\omega_2 - 2\omega_1 + 3\omega_1\omega_2 - 4\omega_2 - 9\omega_1 v_2^2\omega_2 + 4c_s^2\omega_1 + 12v_2^2\omega_2)\frac{\delta_l^2}{3\delta_t\omega_1\omega_2}\frac{\partial\rho}{\partial x_2}\frac{\partial v_2}{\partial x_2} +$$
$$(2\omega_1 - 3\omega_1\omega_2 + 4\omega_2)\frac{\rho v_2\delta_l^2}{\delta_t\omega_1\omega_2}\left(\frac{\partial v_2}{\partial x_2}\right)^2 + (-3v_3^2\omega_2 - c_s^2\omega_2 - \omega_1 + 3v_3^2\omega_1 + \omega_2 + c_s^2\omega_1)\frac{\delta_l^2}{3\delta_t\omega_1\omega_2}\frac{\partial\rho}{\partial x_2}\frac{\partial v_3}{\partial x_3} +$$
$$(\omega_1-\omega_2)\frac{2v_3\rho\delta_l^2}{\delta_t\omega_1\omega_2}\frac{\partial v_3}{\partial x_2}\frac{\partial v_3}{\partial x_3} + (-6v_3^2\omega_2 - 12c_s^2\omega_2 + 3c_s^2\omega_1\omega_2 - 2\omega_1 + 6v_3^2\omega_1 + 2\omega_2 + 6c_s^2\omega_1)\frac{\delta_l^2}{6\delta_t\omega_1\omega_2}\frac{\partial\rho}{\partial x_3}\frac{\partial v_3}{\partial x_2} +$$
$$(-2+\omega_1)\frac{c_s^2\delta_l^2}{2\delta_t\omega_1}\frac{\partial\rho}{\partial x_3}\frac{\partial v_2}{\partial x_3} + (-2+\omega_1)\frac{c_s^2\rho\delta_l^2}{2\delta_t\omega_1}\frac{\partial^2 v_2}{\partial x_1^2} + (\omega_1 v_1^2 - 3c_s^2\omega_2 - \omega_1 - v_1^2\omega_2 + \omega_2 + 3c_s^2\omega_1)\frac{v_1\delta_l^2}{3\delta_t\omega_1\omega_2}\frac{\partial^2\rho}{\partial x_1\partial x_2} +$$
$$(6\omega_1 v_1^2 - 8c_s^2\omega_2 + 3c_s^2\omega_1\omega_2 - 2\omega_1 - 6v_1^2\omega_2 + 2\omega_2 + 2c_s^2\omega_1)\frac{\rho\delta_l^2}{6\delta_t\omega_1\omega_2}\frac{\partial^2 v_1}{\partial x_1\partial x_2} +$$
$$(2\omega_1 v_2^2 + 12c_s^2\omega_2 - 9c_s^2\omega_1\omega_2 - 2\omega_1 + 3\omega_1\omega_2 - 4\omega_2 - 3\omega_1 v_2^2\omega_2 + 6c_s^2\omega_1 + 4v_2^2\omega_2)\frac{v_2\delta_l^2}{6\delta_t\omega_1\omega_2}\frac{\partial^2\rho}{\partial x_2^2} +$$
$$(6\omega_1 v_2^2 + 4c_s^2\omega_2 - 3c_s^2\omega_1\omega_2 - 2\omega_1 + 3\omega_1\omega_2 - 4\omega_2 - 9\omega_1 v_2^2\omega_2 + 2c_s^2\omega_1 + 12v_2^2\omega_2)\frac{\rho\delta_l^2}{6\delta_t\omega_1\omega_2}\frac{\partial^2 v_2}{\partial x_2^2} +$$
$$(-v_3^2\omega_2 - 3c_s^2\omega_2 - \omega_1 + v_3^2\omega_1 + \omega_2 + 3c_s^2\omega_1)\frac{v_3\delta_l^2}{3\delta_t\omega_1\omega_2}\frac{\partial^2\rho}{\partial x_2\partial x_3} +$$
$$(-6v_3^2\omega_2 - 8c_s^2\omega_2 + 3c_s^2\omega_1\omega_2 - 2\omega_1 + 6v_3^2\omega_1 + 2\omega_2 + 2c_s^2\omega_1)\frac{\rho\delta_l^2}{6\delta_t\omega_1\omega_2}\frac{\partial^2 v_3}{\partial x_2\partial x_3} + (-2+\omega_1)\frac{c_s^2\rho\delta_l^2}{2\delta_t\omega_1}\frac{\partial^2 v_2}{\partial x_3^2} +$$
$$(-1+3c_s^2+v_1^2)\frac{v_2 v_1\delta_l^3}{12\delta_t}\frac{\partial^3\rho}{\partial x_1^3} + (-1+c_s^2+3v_1^2)\frac{\rho v_2\delta_l^3}{12\delta_t}\frac{\partial^3 v_1}{\partial x_1^3} + C_1\frac{\rho v_1\delta_l^3}{12\omega_3\delta_t\omega_4\omega_1}\frac{\partial^3 v_2}{\partial x_1^3} + C_2\frac{\delta_l^3}{6\delta_t\omega_1^2\omega_2^2}\frac{\partial^3\rho}{\partial x_1^2\partial x_2} +$$
$$C_3\frac{\rho v_1\delta_l^3}{6\delta_t\omega_1^2\omega_2^2}\frac{\partial^3 v_1}{\partial x_1^2\partial x_2} - \frac{c_s^2\rho v_2\delta_l^3}{6\delta_t}\frac{\partial^3 v_2}{\partial x_1^2\partial x_2} + C_4\frac{v_2 v_1\delta_l^3}{6\delta_t\omega_1^2\omega_2^2}\frac{\partial^3\rho}{\partial x_1\partial x_2^2} + C_5\frac{\rho v_2\delta_l^3}{12\omega_3\delta_t\omega_4\omega_1^2\omega_2^2}\frac{\partial^3 v_1}{\partial x_1\partial x_2^2} + C_6\frac{\rho v_1\delta_l^3}{6\omega_3\delta_t\omega_1^2\omega_2^2}\frac{\partial^3 v_2}{\partial x_1\partial x_2^2} +$$
$$C_7\frac{\delta_l^3}{12\delta_t\omega_1^2\omega_2^2}\frac{\partial^3\rho}{\partial x_2^3} + C_8\frac{\rho v_2\delta_l^3}{6\delta_t\omega_1^2\omega_2^2}\frac{\partial^3 v_2}{\partial x_2^3} + C_9\frac{v_3\rho\delta_l^3}{4\omega_3\delta_t\omega_4\omega_1}\frac{\partial^3 v_2}{\partial x_1^2\partial x_3} - \frac{c_s^2\rho v_2\delta_l^3}{6\delta_t}\frac{\partial^3 v_3}{\partial x_1^2\partial x_3} + C_{10}\frac{v_3 v_1\delta_l^3}{3\delta_t\omega_1^2\omega_2^2}\frac{\partial^3\rho}{\partial x_1\partial x_2\partial x_3} +$$
$$C_{11}\frac{v_3\rho\delta_l^3}{6\omega_3\delta_t\omega_4\omega_1^2\omega_2^2}\frac{\partial^3 v_1}{\partial x_1\partial x_2\partial x_3} + C_{12}\frac{\rho v_1\delta_l^3}{6\omega_3\delta_t\omega_4\omega_1^2\omega_2^2}\frac{\partial^3 v_3}{\partial x_1\partial x_2\partial x_3} + C_{13}\frac{v_3 v_2\delta_l^3}{6\delta_t\omega_1^2\omega_2^2}\frac{\partial^3\rho}{\partial x_2^2\partial x_3} + C_{14}\frac{v_3\rho\delta_l^3}{6\omega_3\delta_t\omega_1^2\omega_2^2}\frac{\partial^3 v_2}{\partial x_2^2\partial x_3} +$$
$$C_{15}\frac{\rho v_2\delta_l^3}{12\omega_3\delta_t\omega_4\omega_1^2\omega_2^2}\frac{\partial^3 v_3}{\partial x_2^2\partial x_3} - \frac{c_s^2\rho v_2\delta_l^3}{6\delta_t}\frac{\partial^3 v_1}{\partial x_1\partial x_3^2} + C_{16}\frac{\rho v_1\delta_l^3}{4\omega_3\delta_t\omega_4\omega_1}\frac{\partial^3 v_2}{\partial x_1\partial x_3^2} + C_{17}\frac{\delta_l^3}{6\delta_t\omega_1^2\omega_2^2}\frac{\partial^3\rho}{\partial x_2\partial x_3^2} - \frac{c_s^2\rho v_2\delta_l^3}{6\delta_t}\frac{\partial^3 v_2}{\partial x_2\partial x_3^2} +$$
$$C_{18}\frac{v_3\rho\delta_l^3}{6\delta_t\omega_1^2\omega_2^2}\frac{\partial^3 v_3}{\partial x_2\partial x_3^2} + (-1+3c_s^2+v_3^2)\frac{v_3 v_2\delta_l^3}{12\delta_t}\frac{\partial^3\rho}{\partial x_3^3} + C_{19}\frac{v_3\rho\delta_l^3}{12\omega_3\delta_t\omega_4\omega_1}\frac{\partial^3 v_2}{\partial x_3^3} + (-1+c_s^2+3v_3^2)\frac{\rho v_2\delta_l^3}{12\delta_t}\frac{\partial^3 v_3}{\partial x_3^3} +$$
$$C_{20}\frac{v_2\delta_l^4}{72\delta_t\omega_1\omega_2}\frac{\partial^4\rho}{\partial x_1^4} + (10\omega_1 v_1^2 + 12c_s^2\omega_2 - 9c_s^2\omega_1\omega_2 - 4\omega_1 + 20v_1^2\omega_2 - 15\omega_1 v_1^2\omega_2 + 6\omega_1\omega_2 - 8\omega_2 + 6c_s^2\omega_1)\frac{\rho v_2 v_1\delta_l^4}{36\delta_t\omega_1\omega_2}\frac{\partial^4 v_1}{\partial x_1^4}$$
$$+ C_{21}\frac{\rho\delta_l^4}{24\omega_3^2\delta_t\omega_4^2\omega_1^3}\frac{\partial^4 v_2}{\partial x_1^4} + C_{22}\frac{v_1\delta_l^4}{72\omega_3^2\delta_t\omega_4^2\omega_1^3\omega_2^3}\frac{\partial^4\rho}{\partial x_1^3\partial x_2} + C_{23}\frac{\rho\delta_l^4}{36\omega_3\delta_t\omega_4\omega_1^3\omega_2^3}\frac{\partial^4 v_1}{\partial x_1^3\partial x_2} + C_{24}\frac{\rho v_2 v_1\delta_l^4}{72\omega_3\delta_t\omega_4\omega_1\omega_2}\frac{\partial^4 v_2}{\partial x_1^3\partial x_2} +$$
$$C_{25}\frac{v_2\delta_l^4}{36\omega_3^2\delta_t\omega_4^2\omega_1^3\omega_2^3}\frac{\partial^4\rho}{\partial x_1^2\partial x_2^2} + C_{26}\frac{\rho v_2 v_1\delta_l^4}{18\omega_3\delta_t\omega_1^3\omega_2^3}\frac{\partial^4 v_1}{\partial x_1^2\partial x_2^2} + C_{27}\frac{\rho\delta_l^4}{36\omega_3^2\delta_t\omega_4\omega_1^3\omega_2^3}\frac{\partial^4 v_2}{\partial x_1^2\partial x_2^2} + C_{28}\frac{v_1\delta_l^4}{36\omega_3^2\delta_t\omega_1^3\omega_2^3}\frac{\partial^4\rho}{\partial x_1\partial x_2^3} +$$
$$C_{29}\frac{\rho\delta_l^4}{72\omega_3^2\delta_t\omega_4^2\omega_1^3\omega_2^3}\frac{\partial^4 v_1}{\partial x_1\partial x_2^3} + C_{30}\frac{\rho v_2 v_1\delta_l^4}{18\omega_3\delta_t\omega_1^3\omega_2^3}\frac{\partial^4 v_2}{\partial x_1\partial x_2^3} + C_{31}\frac{v_2\delta_l^4}{36\omega_3\delta_t\omega_1^3\omega_2^3}\frac{\partial^4\rho}{\partial x_2^4} + C_{32}\frac{\rho\delta_l^4}{36\omega_3\delta_t\omega_1^3\omega_2^3}\frac{\partial^4 v_2}{\partial x_2^4} +$$
$$(-v_3^2\omega_2 - 3c_s^2\omega_2 - \omega_1 + v_3^2\omega_1 + \omega_2 + 3c_s^2\omega_1)\frac{v_3 v_2 v_1\delta_l^4}{12\delta_t\omega_1\omega_2}\frac{\partial^4\rho}{\partial x_1^3\partial x_3} +$$
$$(-v_3^2\omega_2 - 3c_s^2\omega_2 - \omega_1 + v_3^2\omega_1 + \omega_2 + 3c_s^2\omega_1)\frac{v_3\rho v_2\delta_l^4}{36\delta_t\omega_1\omega_2}\frac{\partial^4 v_1}{\partial x_1^3\partial x_3} + C_{33}\frac{v_3\rho v_1\delta_l^4}{8\omega_3^2\delta_t\omega_4^2\omega_1}\frac{\partial^4 v_2}{\partial x_1^3\partial x_3} + C_{34}\frac{\rho v_2 v_1\delta_l^4}{72\omega_3\delta_t\omega_4\omega_1\omega_2}\frac{\partial^4 v_3}{\partial x_1^3\partial x_3} +$$
$$C_{35}\frac{v_3\delta_l^4}{72\omega_3^2\delta_t\omega_4^2\omega_1^3\omega_2^3}\frac{\partial^4\rho}{\partial x_1^2\partial x_2\partial x_3} + C_{36}\frac{v_3\rho v_1\delta_l^4}{6\omega_3\delta_t\omega_1^3\omega_2^3}\frac{\partial^4 v_1}{\partial x_1^2\partial x_2\partial x_3} + C_{37}\frac{v_3\rho v_2\delta_l^4}{72\omega_3\delta_t\omega_4\omega_1\omega_2}\frac{\partial^4 v_2}{\partial x_1^2\partial x_2\partial x_3} +$$
$$C_{38}\frac{\rho\delta_l^4}{72\omega_3^2\delta_t\omega_4^2\omega_1^3\omega_5\omega_2^3}\frac{\partial^4 v_3}{\partial x_1^2\partial x_2\partial x_3} + C_{39}\frac{v_3 v_2 v_1\delta_l^4}{6\delta_t\omega_1^3\omega_2^3}\frac{\partial^4\rho}{\partial x_1\partial x_2^2\partial x_3} + C_{40}\frac{v_3\rho v_2\delta_l^4}{72\omega_3^2\delta_t\omega_4^2\omega_1^3\omega_2^3}\frac{\partial^4 v_1}{\partial x_1\partial x_2^2\partial x_3} + C_{41}\frac{v_3\rho v_1\delta_l^4}{6\omega_3^2\delta_t\omega_4\omega_1^3\omega_2^3}\frac{\partial^4 v_2}{\partial x_1\partial x_2^2\partial x_3}$$
$$+ C_{42}\frac{\rho v_2 v_1\delta_l^4}{72\omega_3^2\delta_t\omega_4^2\omega_1^3\omega_2^3}\frac{\partial^4 v_3}{\partial x_1\partial x_2^2\partial x_3} + C_{43}\frac{v_3\delta_l^4}{36\omega_3^2\delta_t\omega_1^3\omega_2^3}\frac{\partial^4\rho}{\partial x_2^3\partial x_3} + C_{44}\frac{v_3\rho v_2\delta_l^4}{18\omega_3\delta_t\omega_1^3\omega_2^3}\frac{\partial^4 v_2}{\partial x_2^3\partial x_3} + C_{45}\frac{\rho\delta_l^4}{72\omega_3^2\delta_t\omega_4^2\omega_1^3\omega_2^3}\frac{\partial^4 v_3}{\partial x_2^3\partial x_3} +$$

$$
\begin{aligned}
&(-3v_3^2\omega_2 + 3\omega_1 v_1^2 - 14c_s^2\omega_2 + 6c_s^2\omega_1\omega_2 - 2\omega_1 - 3v_1^2\omega_2 + 3v_3^2\omega_1 + 2\omega_2 + 2c_s^2\omega_1)\frac{c_s^2 v_2 \delta_l^4}{36\delta_t\omega_1\omega_2}\frac{\partial^4\rho}{\partial x_1^2\partial x_3^2} + \\
&(\omega_1 v_1^2 - 3c_s^2\omega_2 - \omega_1 - v_1^2\omega_2 + \omega_2 + 3c_s^2\omega_1)\frac{\rho v_2 v_1 \delta_l^4}{36\delta_t\omega_1\omega_2}\frac{\partial^4 v_1}{\partial x_1^2\partial x_3^2} + C_{46}\frac{\rho\delta_l^4}{8\omega_3^2\delta_t\omega_4^2\omega_1^3\omega_5}\frac{\partial^4 v_2}{\partial x_1^2\partial x_3^2} + \\
&(-v_3^2\omega_2 - 3c_s^2\omega_2 - \omega_1 + v_3^2\omega_1 + \omega_2 + 3c_s^2\omega_1)\frac{v_3\rho v_2\delta_l^4}{36\delta_t\omega_1\omega_2}\frac{\partial^4 v_3}{\partial x_1^2\partial x_3^2} + C_{47}\frac{v_1\delta_l^4}{72\omega_3^2\delta_t\omega_4^2\omega_1^3\omega_2^3}\frac{\partial^4\rho}{\partial x_1\partial x_2\partial x_3^2} + \\
&C_{48}\frac{\rho\delta_l^4}{72\omega_3^2\delta_t\omega_4^2\omega_1^3\omega_5\omega_2^3}\frac{\partial^4 v_1}{\partial x_1\partial x_2\partial x_3^2} + C_{49}\frac{\rho v_2 v_1\delta_l^4}{72\omega_3\delta_t\omega_4\omega_1\omega_2}\frac{\partial^4 v_2}{\partial x_1\partial x_2\partial x_3^2} + C_{50}\frac{v_3\rho v_1\delta_l^4}{6\omega_3\delta_t\omega_1^3\omega_2^3}\frac{\partial^4 v_3}{\partial x_1\partial x_2\partial x_3^2} + C_{51}\frac{v_2\delta_l^4}{36\omega_3^2\delta_t\omega_4^2\omega_1^3\omega_2^3}\frac{\partial^4\rho}{\partial x_2^2\partial x_3^2} \\
&+ C_{52}\frac{\rho\delta_l^4}{36\omega_3^2\delta_t\omega_4\omega_1^3\omega_2^3}\frac{\partial^4 v_2}{\partial x_2^2\partial x_3^2} + C_{53}\frac{v_3\rho v_2\delta_l^4}{18\omega_3\delta_t\omega_1^3\omega_2^3}\frac{\partial^4 v_3}{\partial x_2^2\partial x_3^2} + (\omega_1 v_1^2 - 3c_s^2\omega_2 - \omega_1 - v_1^2\omega_2 + \omega_2 + 3c_s^2\omega_1)\frac{v_3 v_2 v_1\delta_l^4}{12\delta_t\omega_1\omega_2}\frac{\partial^4\rho}{\partial x_1\partial x_3^3} + \\
&C_{54}\frac{v_3\rho v_2\delta_l^4}{72\omega_3\delta_t\omega_4\omega_1\omega_2}\frac{\partial^4 v_1}{\partial x_1\partial x_3^3} + C_{55}\frac{v_3\rho v_1\delta_l^4}{8\omega_3^2\delta_t\omega_4^2\omega_1}\frac{\partial^4 v_2}{\partial x_1\partial x_3^3} + (\omega_1 v_1^2 - 3c_s^2\omega_2 - \omega_1 - v_1^2\omega_2 + \omega_2 + 3c_s^2\omega_1)\frac{\rho v_2 v_1\delta_l^4}{36\delta_t\omega_1\omega_2}\frac{\partial^4 v_3}{\partial x_1\partial x_3^3} + \\
&C_{56}\frac{v_3\delta_l^4}{72\omega_3^2\delta_t\omega_4^2\omega_1^3\omega_2^3}\frac{\partial^4\rho}{\partial x_2\partial x_3^3} + C_{57}\frac{v_3\rho v_2\delta_l^4}{72\omega_3\delta_t\omega_4\omega_1\omega_2}\frac{\partial^4 v_2}{\partial x_2\partial x_3^3} + C_{58}\frac{\rho\delta_l^4}{36\omega_3\delta_t\omega_4\omega_1^3\omega_2^3}\frac{\partial^4 v_3}{\partial x_2\partial x_3^3} + C_{59}\frac{v_2\delta_l^4}{72\delta_t\omega_1\omega_2}\frac{\partial^4\rho}{\partial x_3^4} + \\
&C_{60}\frac{\rho\delta_l^4}{24\omega_3^2\delta_t\omega_4^2\omega_1^3}\frac{\partial^4 v_2}{\partial x_3^4} + \\
&(20v_3^2\omega_2 + 12c_s^2\omega_2 - 9c_s^2\omega_1\omega_2 - 4\omega_1 + 10v_3^2\omega_1 + 6\omega_1\omega_2 - 8\omega_2 + 6c_s^2\omega_1 - 15v_3^2\omega_1\omega_2)\frac{v_3\rho v_2\delta_l^4}{36\delta_t\omega_1\omega_2}\frac{\partial^4 v_3}{\partial x_3^4} = 0,
\end{aligned}
$$

where:

$$
\begin{aligned}
C_1 &= -18c_s^2\omega_4 + 3\omega_3\omega_1 v_1^2 - 6\omega_3 c_s^2\omega_4\omega_1 + 18\omega_3 c_s^2\omega_4 + 9c_s^2\omega_4\omega_1 + 6\omega_3 - 18\omega_3 c_s^2 - 6\omega_3\omega_4 + 6\omega_4 + 3\omega_4\omega_1 v_1^2 - 3\omega_3\omega_1 - 6\omega_3 v_1^2 - \\
&2\omega_3\omega_4\omega_1 v_1^2 + 6\omega_3\omega_4 v_1^2 + 2\omega_3\omega_4\omega_1 - 3\omega_4\omega_1 - 6\omega_4 v_1^2 + 9\omega_3 c_s^2\omega_1
\end{aligned}
$$

$$
\begin{aligned}
C_2 &= 12c_s^2\omega_1^2 v_1^2 + 2\omega_1 v_1^4\omega_2 - 18c_s^2 v_1^2\omega_2^2 + 2\omega_1^2 v_1^4 + 15c_s^2\omega_1 v_1^2\omega_2^2 + 2c_s^2\omega_2^2 + 2c_s^4\omega_1^2 - 2c_s^2\omega_1\omega_2^2 + 6c_s^2\omega_1 v_1^2\omega_2 + 3\omega_1^2 v_1^2\omega_2 - 4v_1^4\omega_2^2 + 3\omega_1 v_1^4\omega_2^2 + \\
&14c_s^4\omega_1\omega_2^2 - 15c_s^2\omega_1^2 v_1^2\omega_2 - 2c_s^2\omega_1^2 - 14c_s^4\omega_2^2 - c_s^4\omega_1^2\omega_2^2 - 2\omega_1 v_1^2\omega_2 + 2c_s^2\omega_1^2\omega_2 - 3\omega_1^2 v_1^4\omega_2 + 4v_1^2\omega_2^2 - 3\omega_1 v_1^2\omega_2^2 - 2c_s^4\omega_1^2\omega_2 - 2\omega_1^2 v_1^2
\end{aligned}
$$

$$
C_3 = 6\omega_2^2 - 10c_s^2\omega_2^2 + 9c_s^2\omega_1\omega_2^2 + 2c_s^2\omega_1\omega_2 + 5\omega_1^2\omega_2 - 11\omega_1^2 v_1^2\omega_2 - 4\omega_1^2 + 8c_s^2\omega_1^2 + 6\omega_1 v_1^2\omega_2 - 9c_s^2\omega_1^2\omega_2 - 2\omega_1\omega_2 - 5\omega_1\omega_2^2 - 14v_1^2\omega_2^2 + 11\omega_1 v_1^2\omega_2^2 + 8\omega_1^2 v_1^2
$$

$$
\begin{aligned}
C_4 &= 2\omega_2^2 - 6c_s^2\omega_2^2 + 9c_s^2\omega_1\omega_2^2 - 6c_s^2\omega_1\omega_2 + 3\omega_1^2\omega_2 - 3\omega_1^2 v_1^2\omega_2 - 4\omega_1^2 + 12c_s^2\omega_1^2 + 2v_2^2\omega_2^2 + 2\omega_1 v_1^2\omega_2 - 9c_s^2\omega_1^2\omega_2 + 2\omega_1\omega_2 - 3\omega_1\omega_2^2 - 4v_1^2\omega_2^2 + \\
&2\omega_1^2 v_2^2 + 3\omega_1 v_1^2\omega_2^2 - 4\omega_1 v_2^2\omega_2 + 2\omega_1^2 v_1^2
\end{aligned}
$$

$$
\begin{aligned}
C_5 &= -4\omega_4\omega_1^2 v_2^2\omega_2 - 36\omega_3 c_s^2\omega_1\omega_2^2 - 3\omega_3\omega_4\omega_1^2 v_2^2\omega_2^2 - 4\omega_3\omega_4\omega_1\omega_2 - 12c_s^2\omega_4\omega_1^2\omega_2 - 11\omega_3 c_s^2\omega_4\omega_1^2\omega_2^2 - 6\omega_3\omega_1^2\omega_2^2 + 8\omega_3\omega_4 v_2^2\omega_2^2 - 18\omega_3\omega_4\omega_1^2 v_1^2\omega_2 + \\
&18c_s^2\omega_4\omega_1^2\omega_2^2 - 12\omega_3 c_s^2\omega_4\omega_1^2\omega_2 + 8\omega_4\omega_1\omega_2^2 + 12\omega_3\omega_4\omega_1^2 v_1^2 + 6\omega_3\omega_1^2 v_2^2\omega_2^2 - 8\omega_3\omega_4\omega_1\omega_2^2 + 16\omega_3 c_s^2\omega_4\omega_1^2 + 6\omega_4\omega_1^2 v_2^2\omega_2^2 - 2\omega_3\omega_4\omega_1^2 v_2^2\omega_2 - \\
&24\omega_3\omega_4 v_1^2\omega_2^2 + 4\omega_3\omega_4\omega_1^2 v_2^2 + 18\omega_3\omega_4\omega_1 v_1^2\omega_2^2 + 3\omega_3\omega_4\omega_1^2\omega_2^2 - 12\omega_3\omega_1 v_2^2\omega_2^2 + 4\omega_3 c_s^2\omega_4\omega_1\omega_2 - 24c_s^2\omega_4\omega_1\omega_2^2 - 8\omega_3\omega_4\omega_1^2 - 6\omega_4\omega_1^2\omega_2^2 - \\
&8\omega_4\omega_1 v_2^2\omega_2^2 + 12\omega_3 c_s^2\omega_4\omega_1\omega_2^2 + 4\omega_4\omega_1^2\omega_2 + 16\omega_3 c_s^2\omega_4\omega_2^2 + 2\omega_3\omega_4\omega_1 v_2^2\omega_2^2 + 12\omega_3\omega_1\omega_2^2 + 18\omega_3 c_s^2\omega_1^2\omega_2^2 + 8\omega_3\omega_4\omega_1^2\omega_2 + 12\omega_3\omega_4\omega_1 v_1^2\omega_2
\end{aligned}
$$

$$
\begin{aligned}
C_6 &= 3\omega_3 c_s^2\omega_1\omega_2^2 - 4\omega_3 c_s^2\omega_2^2 + 6c_s^2\omega_1\omega_2^2 + \omega_3\omega_1^2\omega_2 - \omega_3\omega_1^2 v_1^2\omega_2 + 2\omega_1^2\omega_2 - 2\omega_1^2 v_1^2\omega_2 - 4\omega_3 c_s^2\omega_1\omega_2 + 6\omega_3 v_2^2\omega_2^2 + 8\omega_3 c_s^2\omega_1^2 - 3\omega_3 c_s^2\omega_1^2\omega_2 + \\
&4\omega_3\omega_1\omega_2 - 6c_s^2\omega_1^2\omega_2 - 2\omega_3 v_1^2\omega_2^2 + 6\omega_3\omega_1^2 v_2^2 - 2\omega_1\omega_2^2 - \omega_3\omega_1\omega_2^2 + 2\omega_1 v_1^2\omega_2^2 - 12\omega_3\omega_1 v_2^2\omega_2 - 4\omega_3\omega_1^2 + \omega_3\omega_1 v_1^2\omega_2^2 + 2\omega_3\omega_1^2 v_1^2
\end{aligned}
$$

$$
\begin{aligned}
C_7 &= 4\omega_1^2 v_2^4 + 48c_s^2\omega_1 v_2^2\omega_2 + 24c_s^2\omega_1^2 v_2^2 + 12\omega_1^2 v_2^2\omega_2 - 24\omega_1 v_2^4\omega_2^2 - 8c_s^2\omega_2^2 + 4c_s^4\omega_1^2 + 16v_2^4\omega_2^2 + 8c_s^2\omega_1\omega_2^2 + 16\omega_1 v_2^4\omega_2 - 7\omega_1^2 v_2^2\omega_2^2 + \\
&72c_s^2 v_2^2\omega_2^2 - 96c_s^2\omega_1 v_2^2\omega_2^2 - 8c_s^4\omega_1\omega_2^2 - 12\omega_1^2 v_2^4\omega_2 + 24\omega_1 v_2^2\omega_2^2 - 4c_s^2\omega_1^2 + 8c_s^4\omega_2^2 + c_s^4\omega_1^2\omega_2^2 - 16v_2^2\omega_2^2 + 4c_s^2\omega_1^2\omega_2 + 24c_s^2\omega_1^2 v_2^2\omega_2^2 - \\
&48c_s^2\omega_1^2 v_2^2\omega_2 - 4\omega_1^2 v_2^2 - c_s^2\omega_1^2\omega_2^2 - 16\omega_1 v_2^2\omega_2 - 4c_s^4\omega_1^2\omega_2 + 7\omega_1^2 v_2^4\omega_2^2
\end{aligned}
$$

$$
\begin{aligned}
C_8 &= -12\omega_2^2 - 20\omega_1^2 v_2^2\omega_2 - 4\omega_1^2\omega_2^2 + 20c_s^2\omega_2^2 - 24c_s^2\omega_1\omega_2^2 + 8c_s^2\omega_1\omega_2 + 11\omega_1^2 v_2^2\omega_2^2 + 8\omega_1^2\omega_2 - 4\omega_1^2 - 40\omega_1 v_2^2\omega_2^2 + 8c_s^2\omega_1^2 + 28v_2^2\omega_2^2 - \\
&12c_s^2\omega_1^2\omega_2 - 8\omega_1\omega_2 + 16\omega_1\omega_2^2 + 8\omega_1^2 v_2^2 + 5c_s^2\omega_1^2\omega_2^2 + 24\omega_1 v_2^2\omega_2
\end{aligned}
$$

$$
C_9 = -6c_s^2\omega_4 + 3c_s^2\omega_4\omega_1 - 2\omega_3 + 2\omega_3 v_3^2 - 2v_3^2\omega_4 + 6\omega_3 c_s^2 + 2\omega_4 + v_3^2\omega_4\omega_1 + \omega_3\omega_1 - \omega_3 v_3^2\omega_1 - \omega_4\omega_1 - 3\omega_3 c_s^2\omega_1
$$

$$
C_{10} = -2\omega_2^2 + 6c_s^2\omega_2^2 - 12c_s^2\omega_1\omega_2 + v_3^2\omega_2^2 - 2\omega_1^2 + 6c_s^2\omega_1^2 - 2\omega_1 v_1^2\omega_2 + 4\omega_1\omega_2 + v_3^2\omega_1^2 + v_1^2\omega_2^2 - 2v_3^2\omega_1\omega_2 + \omega_1^2 v_1^2
$$

$$
\begin{aligned}
C_{11} &= 18\omega_3 c_s^2\omega_1\omega_2^2 + 3v_3^2\omega_4\omega_1^2\omega_2^2 + 4\omega_3\omega_4\omega_1\omega_2 - \omega_3 v_3^2\omega_4\omega_1^2\omega_2 - 6c_s^2\omega_4\omega_1^2\omega_2 + 3\omega_3\omega_1^2\omega_2^2 - 3\omega_3 v_3^2\omega_1^2\omega_2^2 + 9c_s^2\omega_4\omega_1^2\omega_2^2 - 3\omega_3 c_s^2\omega_4\omega_1^2\omega_2 + 4\omega_4\omega_1\omega_2^2 + \\
&6\omega_3\omega_4\omega_1^2 v_1^2 - 2v_3^2\omega_4\omega_1^2\omega_2 - \omega_3\omega_4\omega_1\omega_2^2 - 2\omega_3 v_3^2\omega_4\omega_2^2 + 8\omega_3 c_s^2\omega_4\omega_1^2 + 6\omega_3\omega_4 v_1^2\omega_2^2 + \omega_3 v_3^2\omega_4\omega_1\omega_2^2 + 6\omega_3 v_3^2\omega_1\omega_2^2 - 4\omega_3 c_s^2\omega_4\omega_1\omega_2 - 12c_s^2\omega_4\omega_1\omega_2^2 - \\
&4\omega_3\omega_4\omega_1^2 - 3\omega_4\omega_1^2\omega_2^2 + 3\omega_3 c_s^2\omega_4\omega_1\omega_2^2 + 2\omega_4\omega_1^2\omega_2 - 4\omega_3 c_s^2\omega_4\omega_2^2 + 2\omega_3 v_3^2\omega_4\omega_1^2 - 6\omega_3\omega_1\omega_2^2 - 9\omega_3 c_s^2\omega_1^2\omega_2^2 + \omega_3\omega_4\omega_1^2\omega_2 - 12\omega_3\omega_4\omega_1 v_1^2\omega_2 - 4v_3^2\omega_4\omega_1\omega_2^2
\end{aligned}
$$

$$
\begin{aligned}
C_{12} &= 18\omega_3 c_s^2\omega_1\omega_2^2 + 4\omega_3\omega_4\omega_1\omega_2 - 6c_s^2\omega_4\omega_1^2\omega_2 - 3\omega_3\omega_1^2 v_1^2\omega_2^2 + 3\omega_3\omega_1^2\omega_2^2 + 3\omega_4\omega_1^2 v_1^2\omega_2^2 - \omega_3\omega_4\omega_1^2 v_1^2\omega_2 - 2\omega_4\omega_1^2 v_1^2\omega_2 + 9c_s^2\omega_4\omega_1^2\omega_2^2 - \\
&3\omega_3 c_s^2\omega_4\omega_1^2\omega_2 + 4\omega_4\omega_1\omega_2^2 + 2\omega_3\omega_4\omega_1^2 v_1^2 - \omega_3\omega_4\omega_1\omega_2^2 + 6\omega_3 v_3^2\omega_4\omega_2^2 + 8\omega_3 c_s^2\omega_4\omega_1^2 - 2\omega_3\omega_4 v_1^2\omega_2^2 + \omega_3\omega_4\omega_1 v_1^2\omega_2^2 - 4\omega_3 c_s^2\omega_4\omega_1\omega_2 - \\
&12c_s^2\omega_4\omega_1\omega_2^2 - 4\omega_3\omega_4\omega_1^2 - 3\omega_4\omega_1^2\omega_2^2 + 3\omega_3 c_s^2\omega_4\omega_1\omega_2^2 + 2\omega_4\omega_1^2\omega_2 - 4\omega_3 c_s^2\omega_4\omega_2^2 + 6\omega_3 v_3^2\omega_4\omega_1^2 - 6\omega_3\omega_1\omega_2^2 - 9\omega_3 c_s^2\omega_1^2\omega_2^2 + 6\omega_3\omega_1 v_1^2\omega_2^2 + \\
&\omega_3\omega_4\omega_1^2\omega_2 - 12\omega_3 v_3^2\omega_4\omega_1\omega_2 - 4\omega_4\omega_1 v_1^2\omega_2^2
\end{aligned}
$$

$$
\begin{aligned}
C_{13} &= -3v_3^2\omega_1^2\omega_2 + 2\omega_2^2 - 6c_s^2\omega_2^2 + 9c_s^2\omega_1\omega_2^2 - 6c_s^2\omega_1\omega_2 + 3\omega_1^2\omega_2 - 4v_3^2\omega_2^2 - 4\omega_1^2 + 12c_s^2\omega_1^2 + 2v_2^2\omega_2^2 + 3v_3^2\omega_1\omega_2^2 - 9c_s^2\omega_1^2\omega_2 + 2\omega_1\omega_2 + \\
&2v_3^2\omega_1^2 - 3\omega_1\omega_2^2 + 2\omega_1^2 v_2^2 - 4\omega_1 v_2^2\omega_2 + 2v_3^2\omega_1\omega_2
\end{aligned}
$$

$$
\begin{aligned}
C_{14} &= 3\omega_3 c_s^2\omega_1\omega_2^2 - 2v_3^2\omega_1^2\omega_2 - 4\omega_3 c_s^2\omega_2^2 - \omega_3 v_3^2\omega_1^2\omega_2 + 6c_s^2\omega_1\omega_2^2 + \omega_3\omega_1^2\omega_2 + 2\omega_1^2\omega_2 - 4\omega_3 c_s^2\omega_1\omega_2 - 2\omega_3 v_3^2\omega_2^2 + 6\omega_3 v_2^2\omega_2^2 + 8\omega_3 c_s^2\omega_1^2 - \\
&3\omega_3 c_s^2\omega_1^2\omega_2 + 2v_3^2\omega_1\omega_2^2 + \omega_3 v_3^2\omega_1\omega_2^2 + 4\omega_3\omega_1\omega_2 - 6c_s^2\omega_1^2\omega_2 + 6\omega_3\omega_1^2 v_2^2 - 2\omega_1\omega_2^2 - \omega_3\omega_1\omega_2^2 + 2\omega_3 v_3^2\omega_1^2 - 12\omega_3\omega_1 v_2^2\omega_2 - 4\omega_3\omega_1^2
\end{aligned}
$$

$C_{15} = -4\omega_4\omega_1^2v_2^2\omega_2 - 36\omega_3c_s^2\omega_1\omega_2^2 - 3\omega_3\omega_4\omega_1^2v_2^2\omega_2^2 - 4\omega_3\omega_4\omega_1\omega_2 - 18\omega_3v_3^2\omega_4\omega_1^2\omega_2 - 12c_s^2\omega_4\omega_1^2\omega_2 - 11\omega_3c_s^2\omega_4\omega_1^2\omega_2^2 - 6\omega_3\omega_1^2\omega_2^2 + 8\omega_3\omega_4v_2^2\omega_2^2 + 18c_s^2\omega_4\omega_1^2\omega_2^2 - 12\omega_3c_s^2\omega_4\omega_1^2\omega_2 + 8\omega_4\omega_1\omega_2^2 + 6\omega_3\omega_1^2v_2^2\omega_2^2 - 8\omega_3\omega_4\omega_1\omega_2^2 - 24\omega_3v_3^2\omega_4\omega_2^2 + 16\omega_3c_s^2\omega_4\omega_1^2 + 6\omega_4\omega_1^2v_2^2\omega_2^2 - 2\omega_3\omega_4\omega_1^2v_2^2\omega_2 + 4\omega_3\omega_4\omega_1^2v_2^2 + 3\omega_3\omega_4\omega_1^2\omega_2^2 + 18\omega_3v_3^2\omega_4\omega_1\omega_2^2 - 12\omega_3\omega_1v_2^2\omega_2^2 + 4\omega_3c_s^2\omega_4\omega_1\omega_2 - 24c_s^2\omega_4\omega_1\omega_2^2 - 8\omega_3\omega_4\omega_1^2 - 6\omega_4\omega_1^2\omega_2^2 - 8\omega_4\omega_1v_2^2\omega_2^2 + 12\omega_3c_s^2\omega_4\omega_1\omega_2^2 + 4\omega_4\omega_1^2\omega_2 + 16\omega_3c_s^2\omega_4\omega_2^2 + 12\omega_3v_3^2\omega_4\omega_1^2 + 2\omega_3\omega_4\omega_1v_2^2\omega_2^2 + 12\omega_3\omega_1\omega_2^2 + 18\omega_3c_s^2\omega_1^2\omega_2^2 + 8\omega_3\omega_4\omega_1^2\omega_2 + 12\omega_3v_3^2\omega_4\omega_1\omega_2$

$C_{16} = -6c_s^2\omega_4 - \omega_3\omega_1v_1^2 + 3c_s^2\omega_4\omega_1 - 2\omega_3 + 6\omega_3c_s^2 + 2\omega_4 + \omega_4\omega_1v_1^2 + \omega_3\omega_1 + 2\omega_3v_1^2 - \omega_4\omega_1 - 2\omega_4v_1^2 - 3\omega_3c_s^2\omega_1$

$C_{17} = 6c_s^2v_3^2\omega_1\omega_2 + 3v_3^2\omega_1^2\omega_2 + 12c_s^2v_3^2\omega_1^2 + 2c_s^2\omega_2^2 + 2c_s^4\omega_1^2 - 2c_s^2\omega_1\omega_2^2 - 3v_3^4\omega_1^2\omega_2 + 2v_3^4\omega_1^2 + 4v_3^2\omega_2^2 + 15c_s^2v_3^2\omega_1\omega_2^2 + 14c_s^4\omega_1\omega_2^2 - 18c_s^2v_3^2\omega_2^2 - 2c_s^2\omega_1^2 - 14c_s^4\omega_2^2 - c_s^4\omega_1^2\omega_2^2 - 3v_3^2\omega_1\omega_2^2 + 2v_3^4\omega_1\omega_2 + 2c_s^2\omega_1^2\omega_2 - 4v_3^4\omega_2^2 - 2v_3^2\omega_1^2 + 3v_3^4\omega_1\omega_2^2 - 15c_s^2v_3^2\omega_1^2\omega_2 - 2v_3^2\omega_1\omega_2 - 2c_s^4\omega_1^2\omega_2$

$C_{18} =$
$-11v_3^2\omega_1^2\omega_2 + 6\omega_2^2 - 10c_s^2\omega_2^2 + 9c_s^2\omega_1\omega_2^2 + 2c_s^2\omega_1\omega_2 + 5\omega_1^2\omega_2 - 14v_3^2\omega_2^2 - 4\omega_1^2 + 8c_s^2\omega_1^2 + 11v_3^2\omega_1\omega_2^2 - 9c_s^2\omega_1^2\omega_2 - 2\omega_1\omega_2 + 8v_3^2\omega_1^2 - 5\omega_1\omega_2^2 + 6v_3^2\omega_1\omega_2$

$C_{19} = -18c_s^2\omega_4 - 6\omega_3c_s^2\omega_4\omega_1 + 18\omega_3c_s^2\omega_4 + 9c_s^2\omega_4\omega_1 + 6\omega_3 - 6\omega_3v_3^2 + 6\omega_3v_3^2\omega_4 - 6v_3^2\omega_4 - 18\omega_3c_s^2 - 6\omega_3\omega_4 + 6\omega_4 + 3v_3^2\omega_4\omega_1 - 3\omega_3\omega_1 + 3\omega_3v_3^2\omega_1 - 2\omega_3v_3^2\omega_4\omega_1 + 2\omega_3\omega_4\omega_1 - 3\omega_4\omega_1 + 9\omega_3c_s^2\omega_1$

$C_{20} = 12v_1^4\omega_2 - 9\omega_1v_1^4\omega_2 - 3c_s^4\omega_1\omega_2 - 6\omega_1v_1^2 - 36c_s^2\omega_1v_1^2\omega_2 - 4c_s^2\omega_2 + 2c_s^4\omega_1 + 3c_s^2\omega_1\omega_2 + 48c_s^2v_1^2\omega_2 - 12v_1^2\omega_2 + 9\omega_1v_1^2\omega_2 + 6\omega_1v_1^4 + 24c_s^2\omega_1v_1^2 - 2c_s^2\omega_1 + 4c_s^4\omega_2$

$C_{21} = 24\omega_3^2c_s^4\omega_4^2 - 18\omega_3\omega_4\omega_1^3v_1^2 - 12\omega_3^2c_s^2\omega_4^2\omega_1^2v_1^2 + 12\omega_3^2\omega_4^2\omega_1^2v_1^2 - 8\omega_3^2c_s^2\omega_4^2\omega_1^2 + 36\omega_3^2\omega_4\omega_1^2v_1^4 + 27c_s^2\omega_4^2\omega_1^3v_1^2 - 15\omega_3\omega_4^2\omega_1^3v_1^4 + 18\omega_3^2\omega_1^2v_1^2 - 48\omega_3^2c_s^4\omega_4^2\omega_1 + 9\omega_4^2\omega_1^3v_1^4 + 36\omega_3^2c_s^2\omega_4\omega_1v_1^2 + 72\omega_3c_s^2\omega_4^2\omega_1^2v_1^2 + \omega_3^2c_s^2\omega_4^2\omega_1^3 + 36\omega_3\omega_4^2\omega_1^2v_1^4 - 54c_s^2\omega_4^2\omega_1^2v_1^2 - 15\omega_3^2\omega_4\omega_1^3v_1^4 + 24\omega_3^2c_s^4\omega_4^2\omega_1^2 - 3\omega_3^2\omega_4^2\omega_1^3v_1^2 + 6\omega_3^2c_s^2\omega_4^2\omega_1^3v_1^2 + 36\omega_3\omega_4\omega_1^2v_1^2 + 12\omega_3^2c_s^2\omega_4^2\omega_1 - 36\omega_3c_s^2\omega_4^2\omega_1^3v_1^2 - 18\omega_4^2\omega_1^2v_1^4 - 9\omega_3^2\omega_1^3v_1^2 - 3\omega_3^2c_s^4\omega_4^2\omega_1^3 + 3\omega_3^2\omega_4^2\omega_1^3v_1^4 - 12\omega_3^2c_s^2\omega_4\omega_1 + 12\omega_3c_s^2\omega_4^2\omega_1^2 - 36\omega_3\omega_4\omega_1^2v_1^4 - 36\omega_3^2c_s^2\omega_4\omega_1^3v_1^2 - 36\omega_3\omega_4^2\omega_1^2v_1^2 + 3\omega_3^2c_s^4\omega_4\omega_1^3 + 15\omega_3^2\omega_4\omega_1^3v_1^2 - 3\omega_3c_s^2\omega_4^2\omega_1^3 + 54\omega_3c_s^2\omega_4\omega_1^3v_1^2 - 54\omega_3^2c_s^2\omega_1^2v_1^2 + 9\omega_3^2\omega_1^3v_1^4 + 18\omega_4^2\omega_1^2v_1^2 - 12\omega_3^2c_s^4\omega_4\omega_1^2 + 12\omega_3c_s^4\omega_4^2\omega_1 + 12\omega_3^2c_s^4\omega_4\omega_1 - 36\omega_3^2\omega_4\omega_1^2v_1^2 - 12\omega_3c_s^4\omega_4^2\omega_1^2 + 15\omega_3\omega_4^2\omega_1^3v_1^2 + 72\omega_3^2c_s^2\omega_4\omega_1^2v_1^2 + 36\omega_3c_s^2\omega_4^2\omega_1v_1^2 + 18\omega_3\omega_4\omega_1^3v_1^4 - 12\omega_3^2\omega_4^2\omega_1^2v_1^4 - 3\omega_3^2c_s^2\omega_4\omega_1^3 - 36\omega_3^2c_s^2\omega_4^2\omega_1v_1^2 + 3\omega_3c_s^4\omega_4^2\omega_1^3 - 9\omega_4^2\omega_1^3v_1^2 + 12\omega_3^2c_s^2\omega_4\omega_1^2 - 18\omega_3^2\omega_1^2v_1^4 - 108\omega_3c_s^2\omega_4\omega_1^2v_1^2 - 12\omega_3c_s^2\omega_4^2\omega_1 + 27\omega_3^2c_s^2\omega_1^3v_1^2$

$C_{22} = 160\omega_3^2\omega_4^2v_1^2\omega_2^3 + 18\omega_3^2c_s^2\omega_4^2\omega_1^3v_2^2\omega_2^2 - 256\omega_3^2\omega_4^2\omega_1v_1^2\omega_2^3 - 9\omega_3c_s^2\omega_4^2\omega_1^3v_1^2\omega_2^3 + 144\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^2 - 18\omega_3^2c_s^2\omega_1^3\omega_2^3 - 784\omega_3^2c_s^2\omega_4^2v_1^2\omega_2^3 - 368\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^3 - 108\omega_3^2c_s^4\omega_1^2\omega_2^3 - 27\omega_3c_s^4\omega_4^2\omega_1^3\omega_2^3 + 1232\omega_3^2c_s^2\omega_4^2\omega_1v_1^2\omega_2^3 - 6\omega_3^2\omega_4^2\omega_1^3v_2^2\omega_2^2 - 16\omega_3^2\omega_4^2\omega_2^3 + 28\omega_3^2\omega_4^2\omega_1\omega_2^3 + 18\omega_3^2c_s^2\omega_1^3v_1^2\omega_2^3 + 152\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_2 + 56\omega_3c_s^2\omega_4^2\omega_1\omega_2^3 - 6\omega_3^2\omega_4^2\omega_1^2v_1^4\omega_2^3 + 72\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2 + 18\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^3 - 36\omega_3c_s^2\omega_4^2\omega_1^3v_1^2\omega_2^2 + 32\omega_3^2\omega_4^2\omega_1v_1^2\omega_2^2 - 8\omega_3^2\omega_4^2\omega_1\omega_2^2 - 56\omega_3^2c_s^2\omega_4^2\omega_1v_1^2\omega_2^2 + 120\omega_3^2\omega_4^2\omega_1^2v_1^4\omega_2 - 104\omega_3^2c_s^2\omega_4^2\omega_1^3 - 108\omega_3c_s^4\omega_4^2\omega_1^3\omega_2^2 - 108c_s^4\omega_4^2\omega_1^2\omega_2^3 - 36\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^3 - 712\omega_3^2c_s^2\omega_4^2\omega_1^3v_1^2\omega_2 + 56\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^2 - 96\omega_3^2\omega_4^2\omega_1^2v_1^4\omega_2^2 + 54\omega_3^2c_s^4\omega_1^3\omega_2^3 + 48\omega_3c_s^4\omega_4^2\omega_1^3\omega_2 + 36\omega_3^2c_s^2\omega_4\omega_1^2v_1^2\omega_2^3 + 394\omega_3^2c_s^2\omega_4^2\omega_1^3v_1^2\omega_2^2 + 216\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^3 + 12\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^2 - 92\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_2^2 - 56\omega_3^2\omega_4^2\omega_1^3v_1^2 + 36\omega_3^2c_s^2\omega_1^2\omega_2^3 + 16\omega_3c_s^2\omega_4^2\omega_1^3v_1^2\omega_2 - 36c_s^2\omega_4^2\omega_1^2v_1^2\omega_2^3 + 320\omega_3^2c_s^2\omega_4^2\omega_1^3v_1^2 + 54c_s^4\omega_4^2\omega_1^3\omega_2^3 + 9\omega_3^2c_s^2\omega_4\omega_1^3\omega_2^3 + 120\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^2 + 6\omega_3^2c_s^2\omega_4^2\omega_1^3v_1^2\omega_2^3 - 78\omega_3^2\omega_4^2\omega_1^2v_1^4\omega_2^3 - 276\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2 + 144\omega_3^2c_s^4\omega_4^2\omega_1^3 - 56\omega_3c_s^2\omega_4^2\omega_1v_1^2\omega_2^3 - 342\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^3 - 118\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2^3 - 132\omega_3^2\omega_4^2\omega_1^3v_1^4\omega_2 + 48\omega_3^2\omega_4^2\omega_1^3v_1^4 + 6\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2^3 - 24\omega_3^2\omega_4^2\omega_1v_1^4\omega_2^2 + 448\omega_3^2c_s^2\omega_4^2\omega_1^2v_1^2\omega_2 + 14\omega_3^2\omega_4^2\omega_1^3\omega_2^2 - 136\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2 - 36\omega_3^2c_s^2\omega_1^2v_1^2\omega_2^3 + 588\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^3 + 208\omega_3^2c_s^2\omega_4^2\omega_2^3 + 40\omega_3c_s^2\omega_4^2\omega_1^2v_1^2\omega_2^2 - 18\omega_3^2c_s^2\omega_4^2\omega_1^2v_2^2\omega_2^3 + 9\omega_3c_s^2\omega_4^2\omega_1^3\omega_2^3 - 144\omega_3^2\omega_4^2v_1^4\omega_2^3 + 228\omega_3^2\omega_4^2\omega_1v_1^4\omega_2^3 + 16\omega_3^2\omega_4^2\omega_1^2\omega_2 - 88\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2 - 168\omega_3c_s^4\omega_4^2\omega_1\omega_2^3 - 6\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2^3 + 36c_s^2\omega_4^2\omega_1^2\omega_2^3 + 72\omega_3c_s^2\omega_4^2\omega_1^2v_1^2\omega_2^3 + 108\omega_3^2c_s^4\omega_4\omega_1^2\omega_2^3 + 36\omega_3c_s^2\omega_4^2\omega_1^3\omega_2^2 - 144\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^2 + 6\omega_3^2\omega_4^2\omega_1^3v_2^4\omega_2^2 + 8\omega_3^2\omega_4^2\omega_1^3 - 16\omega_3c_s^2\omega_4^2\omega_1^3\omega_2 - 72\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^3 + 92\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2^3 - 460\omega_3^2c_s^2\omega_4^2\omega_1^2v_1^2\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^2\omega_2^2 + 52\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^2 - 288\omega_3^2c_s^4\omega_4^2\omega_2^3 + 104\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2^2 - 40\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^2 - 18c_s^2\omega_4^2\omega_1^3\omega_2^3 - 27\omega_3^2c_s^4\omega_4\omega_1^3\omega_2^3 + 18c_s^2\omega_4^2\omega_1^3v_1^2\omega_2^3 + 78\omega_3^2\omega_4^2\omega_1^3v_1^4\omega_2^2 + 208\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2 + 184\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^3 - 14\omega_3^2\omega_4^2\omega_1^2\omega_2^3 - 412\omega_3^2c_s^2\omega_4^2\omega_1^2v_1^2\omega_2^2 - 9\omega_3^2c_s^2\omega_4\omega_1^3v_1^2\omega_2^3 - 20\omega_3^2\omega_4^2\omega_1^3\omega_2$

$C_{23} = 16\omega_3c_s^4\omega_4\omega_1^3 - 60\omega_3\omega_4\omega_1^3v_1^2 - 90\omega_3c_s^2\omega_4\omega_1^2v_1^2\omega_2^2 + 24\omega_3c_s^2\omega_4\omega_1^2\omega_2^3 + 18c_s^2\omega_4\omega_1^3\omega_2^2 + 42\omega_3c_s^2\omega_4\omega_1^3\omega_2 + 24c_s^2\omega_4\omega_1v_1^2\omega_2^3 + 408\omega_3\omega_4\omega_1v_1^4\omega_2^3 + 8c_s^4\omega_4\omega_1\omega_2^3 + 27\omega_3c_s^2\omega_1^3v_1^2\omega_2^3 + \omega_3\omega_4\omega_1^3v_2^4\omega_2^2 - 24\omega_3\omega_4\omega_1v_1^4\omega_2^2 - 6\omega_3c_s^2\omega_4\omega_1^2\omega_2^2 - 9c_s^2\omega_4\omega_1^3\omega_2^3 - 153\omega_3c_s^2\omega_4\omega_1^2v_1^2\omega_2^3 - 36\omega_3c_s^2\omega_1\omega_2^3 + \omega_3\omega_4\omega_1^2v_2^2\omega_2^3 - 240\omega_3\omega_4\omega_1^3v_1^4\omega_2 + 24c_s^2\omega_4\omega_1^3v_1^2\omega_2 - 8\omega_3\omega_4\omega_2^3 - 96\omega_3\omega_4\omega_1^2v_1^2\omega_2 - 20\omega_3c_s^2\omega_4\omega_1^3 - 28\omega_3c_s^4\omega_4\omega_1\omega_2^2 + 14\omega_3\omega_4\omega_1\omega_2^3 + 84\omega_3\omega_4\omega_1^2v_1^2\omega_2^2 - 20c_s^2\omega_4\omega_1^2\omega_2^2 + 144\omega_3\omega_4v_1^2\omega_2^3 - 16\omega_3c_s^2\omega_4\omega_1^2\omega_2 + 138\omega_3\omega_4\omega_1^3v_1^4\omega_2^2 - 54c_s^2\omega_4\omega_1^3v_1^2\omega_2^2 + 81\omega_3\omega_4\omega_1^2v_1^2\omega_2^3 - 3\omega_3c_s^2\omega_4\omega_1^2v_2^2\omega_2^3 + 94\omega_3c_s^4\omega_4\omega_1\omega_2^3 - 4\omega_3\omega_4\omega_1\omega_2^2 + 108\omega_3c_s^2\omega_1v_1^2\omega_2^3 + 36\omega_3c_s^4\omega_1\omega_2^3 + 27c_s^2\omega_4\omega_1^3v_1^2\omega_2^3 + 120\omega_3c_s^2\omega_4\omega_1^2v_1^2\omega_2 - 8c_s^2\omega_4\omega_1^3\omega_2 + 18c_s^2\omega_4\omega_1^2\omega_2^2 - 24\omega_3c_s^2\omega_4\omega_1^3\omega_2^2 - 18c_s^4\omega_4\omega_1^3\omega_2^2 + 12\omega_3\omega_4\omega_1v_1^2\omega_2^2 - 4\omega_3\omega_4\omega_1^2\omega_2^2 - 29\omega_3c_s^4\omega_4\omega_1^2\omega_2^3 - 32\omega_3c_s^4\omega_4\omega_1^3\omega_2 - \omega_3\omega_4\omega_1^2v_2^4\omega_2^3 + 138\omega_3\omega_4\omega_1^3v_1^2\omega_2 - 36\omega_3c_s^4\omega_1^2\omega_2^3 + 4\omega_3\omega_4\omega_1^3 - 9\omega_3c_s^2\omega_1^3\omega_2^3 - 8c_s^2\omega_4\omega_1\omega_2^3 + 192\omega_3\omega_4\omega_1^2v_1^4\omega_2 + 144\omega_3c_s^2\omega_4\omega_1^3v_1^2 - 68\omega_3c_s^4\omega_4\omega_2^3 - 108\omega_3c_s^2\omega_1^2v_1^2\omega_2^3 - 10\omega_3\omega_4\omega_1^3\omega_2 - 7\omega_3\omega_4\omega_1^2\omega_2^3 - 222\omega_3\omega_4\omega_1v_1^2\omega_2^3 + 9c_s^4\omega_4\omega_1^3\omega_2^3 + 10\omega_3c_s^4\omega_4\omega_1^2\omega_2^2 - \omega_3\omega_4\omega_1^3v_2^2\omega_2^2 + 153\omega_3c_s^2\omega_4\omega_1^3v_1^2\omega_2^2 - 288\omega_3c_s^2\omega_4\omega_1^3v_1^2\omega_2 - 54c_s^2\omega_4\omega_1^2v_1^2\omega_2^3 - 138\omega_3\omega_4\omega_1^2v_1^4\omega_2^3 + 32\omega_3c_s^2\omega_4\omega_1\omega_2^2 - 60\omega_3c_s^2\omega_4\omega_1v_1^2\omega_2^2 + 36\omega_3c_s^2\omega_1^2\omega_2^3 + 9\omega_3c_s^4\omega_1^3\omega_2^3 + 96\omega_3\omega_4\omega_1^3v_1^4 - 3\omega_3c_s^4\omega_4\omega_1^3\omega_2^3 + 7\omega_3\omega_4\omega_1^3\omega_2^2 + 20c_s^4\omega_4\omega_1^2\omega_2^2 + 8\omega_3c_s^4\omega_4\omega_1^2\omega_2 + 40\omega_3c_s^2\omega_4\omega_2^3 + 432\omega_3c_s^2\omega_4\omega_1v_1^2\omega_2^3 - 54\omega_3c_s^2\omega_4\omega_1\omega_2^3 + 60c_s^2\omega_4\omega_1^2v_1^2\omega_2^2 - 168\omega_3\omega_4\omega_1^2v_1^4\omega_2^2 - 312\omega_3c_s^2\omega_4v_1^2\omega_2^3 + 8\omega_3\omega_4\omega_1^2\omega_2 + 8c_s^4\omega_4\omega_1^3\omega_2 + 17\omega_3c_s^4\omega_4\omega_1^3\omega_2^2 - 264\omega_3\omega_4v_1^4\omega_2^3 - 18c_s^4\omega_4\omega_1^2\omega_2^3 + 3\omega_3c_s^2\omega_4\omega_1^3v_2^2\omega_2^2 - 81\omega_3\omega_4\omega_1^3v_1^2\omega_2^2$

$C_{24} = 4\omega_3\omega_4v_1^2\omega_2 - 6\omega_3\omega_4\omega_1\omega_2 + 12\omega_3c_s^2\omega_4\omega_1 + 9\omega_4\omega_1\omega_2 - 18\omega_3\omega_4v_2^2\omega_2 + 2\omega_3\omega_4\omega_2 - 27\omega_3c_s^2\omega_1\omega_2 - 9\omega_4\omega_1v_1^2\omega_2 - 9\omega_3\omega_1v_1^2\omega_2 + 18\omega_3\omega_4\omega_1v_2^2 + 9\omega_3\omega_1\omega_2 + 18\omega_3c_s^2\omega_4\omega_1\omega_2 + 2\omega_3\omega_4\omega_1v_1^2 + 6\omega_3c_s^2\omega_4\omega_2 - 27c_s^2\omega_4\omega_1\omega_2 - 8\omega_3\omega_4\omega_1 + 6\omega_3\omega_4\omega_1v_1^2\omega_2$

$C_{25} = 24\omega_3^2\omega_4^2v_1^2\omega_2^3 + 8\omega_3^2c_s^2\omega_4^2\omega_1^3v_2^2\omega_2^2 + 36\omega_3^2c_s^2\omega_4\omega_1^2v_2^2\omega_2^3 - 42\omega_3^2\omega_4^2\omega_1v_1^2\omega_2^3 - 30\omega_3^2\omega_4^2\omega_1^3v_2^2v_1^2\omega_2 + 35\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^2 - 18\omega_3^2c_s^2\omega_1^3\omega_2^3 - 216\omega_3^2c_s^2\omega_4^2v_1^2\omega_2^3 - 58\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^3 - 24c_s^2\omega_4^2\omega_1^2v_2^2\omega_2^3 - 4\omega_3c_s^2\omega_4^2\omega_1^3v_2^2\omega_2 - 108\omega_3^2c_s^4\omega_1^2\omega_2^3 - 27\omega_3c_s^4\omega_4^2\omega_1^3\omega_2^3 + 60\omega_3^2\omega_4^2\omega_1^2v_2^2v_1^2\omega_2^2 + 324\omega_3^2c_s^2\omega_4^2\omega_1v_1^2\omega_2^3 + 4\omega_3^2\omega_4^2\omega_2^3 - 4\omega_3^2\omega_4^2\omega_1\omega_2^3 + 66\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_2 + 28\omega_3c_s^2\omega_4^2\omega_1\omega_2^3 + 15\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^3 + 3\omega_3^2c_s^2\omega_4^2\omega_1^3v_2^2\omega_2^3 + 12\omega_3^2\omega_4^2\omega_1v_1^2\omega_2^2 - 4\omega_3^2\omega_4^2\omega_1\omega_2^2 - 28\omega_3c_s^2\omega_4^2\omega_1v_2^2\omega_2^3 - 52\omega_3^2c_s^2\omega_4^2\omega_1^3 - 72c_s^4\omega_4^2\omega_1^2\omega_2^3 - 36\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^3 - 324\omega_3^2c_s^2\omega_4^2\omega_1^3v_1^2\omega_2 + 28\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^2 + 16\omega_3^2c_s^2\omega_4^2v_2^2\omega_2^3 - 36\omega_3^2\omega_4^2\omega_1^2v_1^4\omega_2^2 + 54\omega_3^2c_s^4\omega_1^3\omega_2^3 - 4\omega_3^2\omega_4^2v_2^2\omega_2^3 - 12\omega_3c_s^4\omega_4^2\omega_1^3\omega_2 - 9\omega_3c_s^2\omega_4^2\omega_1^3v_2^2\omega_2^3 - 36c_s^4\omega_4^2\omega_1^3\omega_2^2 + 4\omega_3^2\omega_4^2\omega_1v_2^2\omega_2^3 + 138\omega_3^2c_s^2\omega_4^2\omega_1^3v_1^2\omega_2^2 + 108\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^3 + 24\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^2 - 27\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_2^2 - 48\omega_3^2\omega_4^2\omega_1^3v_1^2 + 4\omega_3^2c_s^2\omega_4^2\omega_1v_2^2\omega_2^3 + 36\omega_3^2c_s^2\omega_1^2\omega_2^3 + 216\omega_3^2c_s^2\omega_4^2\omega_1^3v_1^2 + 4\omega_3^2\omega_4^2\omega_1v_2^2\omega_2^2 + 54c_s^4\omega_4^2\omega_1^3\omega_2^3 + 9\omega_3^2c_s^2\omega_4\omega_1^3\omega_2^3 + 96\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^2 - 12\omega_3^2\omega_4^2\omega_1^2v_2^2v_1^2\omega_2 - 27\omega_3^2\omega_4^2\omega_1^2v_1^4\omega_2^3 + 4\omega_3^2\omega_4^2\omega_1^3v_2^2\omega_2 + 18\omega_3^2c_s^2\omega_1^3v_2^2\omega_2^3 - 4\omega_3^2\omega_4^2\omega_1^3v_2^2 - 20\omega_3^2c_s^2\omega_4^2\omega_1^3v_2^2\omega_2 - 102\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2 + 16\omega_3^2c_s^2\omega_4^2\omega_1^3v_2^2 + 72\omega_3^2c_s^4\omega_4^2\omega_1^3 - 119\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^3 - 28\omega_3^2c_s^2\omega_4^2\omega_1v_2^2\omega_2^2 - 25\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2^2 - 36\omega_3^2\omega_4^2\omega_1^3v_1^4\omega_2 + 24\omega_3^2\omega_4^2\omega_1^3v_1^4 + 36\omega_3^2\omega_4^2\omega_1v_1^4\omega_2^2 - 12c_s^2\omega_4^2\omega_1^3v_2^2\omega_2^2 - 48\omega_3^2\omega_4^2\omega_1v_2^2v_1^2\omega_2^2 + 12\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2 + 78\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^3 + 20\omega_3^2c_s^2\omega_4^2\omega_2^3 - 32\omega_3^2c_s^2\omega_4^2\omega_1^2v_2^2\omega_2^3 + 9\omega_3c_s^2\omega_4^2\omega_1^3\omega_2^3 - 30\omega_3^2\omega_4^2\omega_1v_2^2v_1^2\omega_2^3 - 60\omega_3^2\omega_4^2v_1^4\omega_2^3 + 72\omega_3^2\omega_4^2\omega_1v_1^4\omega_2^3 - 4\omega_3^2\omega_4^2\omega_1^2\omega_2 + 18c_s^2\omega_4^2\omega_1^3v_2^2\omega_2^3 + 4\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2 -$

$84\omega_3c_s^4\omega_4^2\omega_1\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2^2 + 36\omega_3^2\omega_4^2v_2^2v_1^2\omega_2^3 - 3\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2^3 - 9\omega_3^2c_s^2\omega_4\omega_1^3v_2^2\omega_2^3 + 24c_s^2\omega_4^2\omega_1^2\omega_2^3 + 108\omega_3^2c_s^4\omega_4\omega_1^2\omega_2^3 + 16\omega_3^2c_s^2\omega_4^2\omega_1^2v_2^2\omega_2^2 -$
$72\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^2 + 4\omega_3^2\omega_4^2\omega_1^3 + 4\omega_3c_s^2\omega_4^2\omega_1^3\omega_2 - 4\omega_3^2c_s^2\omega_4^2\omega_1^2v_2^2\omega_2 + 24\omega_3^2\omega_4^2\omega_1^3v_2^2v_1^2 - 36\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^3 + 12c_s^2\omega_4^2\omega_1^3\omega_2^2 + 27\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2^3 -$
$138\omega_3^2c_s^2\omega_4^2\omega_1^2v_1^2\omega_2^3 + 8\omega_3^2\omega_4^2\omega_1^2\omega_2^2 + 32\omega_3c_s^2\omega_4^2\omega_1^2v_2^2\omega_2^2 - 16\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^2 - 36\omega_3^2c_s^2\omega_1^2v_2^2\omega_2^3 + 4\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2 - 24\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2^2 -$
$32\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^2 - 18c_s^2\omega_4^2\omega_1^3\omega_2^3 - 27\omega_3^2c_s^4\omega_4\omega_1^3\omega_2^3 + 27\omega_3^2\omega_4^2\omega_1^3v_1^4\omega_2^2 + 74\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2 + 49\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^3 + 36\omega_3c_s^2\omega_4^2\omega_1^2v_2^2\omega_2^3 - 4\omega_3^2\omega_4^2\omega_1^3\omega_2$

$C_{26} = -50\omega_3\omega_1^2v_1^2\omega_2^3 + 6\omega_1^3\omega_2 - 66\omega_3c_s^2\omega_2^3 - 18c_s^2\omega_1\omega_2^3 - 12\omega_3\omega_1^2v_2^2\omega_2 + 48\omega_3\omega_1^3\omega_2 + 23\omega_3\omega_1^2\omega_2^3 + 108\omega_3c_s^2\omega_1\omega_2^3 - 12\omega_1^2\omega_2^2 - 66\omega_3\omega_1^2v_1^2\omega_2^2 +$
$12\omega_3\omega_1^2\omega_2^2 + 6\omega_3\omega_1^2\omega_2 + 6\omega_3\omega_1^2v_1^2\omega_2 + 12\omega_1^2v_2^2\omega_2^2 + 18\omega_3\omega_1^2v_2^2\omega_2^2 - 23\omega_3\omega_1^3\omega_2^2 + 42\omega_3\omega_2^3 - 9\omega_3\omega_1v_2^2\omega_2^3 + 12\omega_3\omega_1^3v_2^2 - 18\omega_3c_s^2\omega_1^2\omega_2 +$
$50\omega_3\omega_1^3v_1^2\omega_2^2 - 6\omega_1^3v_2^2\omega_2 - 9\omega_3\omega_1^3v_2^2\omega_2 + 84\omega_3c_s^2\omega_1^3 - 12\omega_3\omega_1v_2^2\omega_2^2 + 12\omega_3v_2^2\omega_2^3 + 48\omega_3\omega_1^3v_1^2 + 42\omega_3c_s^2\omega_1^3\omega_2^2 - 6\omega_1v_2^2\omega_2^3 - 108\omega_3c_s^2\omega_1^3\omega_2 -$
$36\omega_3\omega_1^3 + 141\omega_3\omega_1v_1^2\omega_2^3 - 42\omega_3c_s^2\omega_1^2\omega_2^3 - 12\omega_3\omega_1\omega_2^2 + 36c_s^2\omega_1^2\omega_2^2 + 60\omega_3\omega_1v_1^2\omega_2^2 - 114\omega_3v_1^2\omega_2^3 + 6\omega_1\omega_2^3 - 75\omega_3\omega_1^3v_1^2\omega_2 - 18c_s^2\omega_1^3\omega_2 - 60\omega_3\omega_1\omega_2^3$

$C_{27} = -18\omega_3^2\omega_1^3v_1^2\omega_2^2 - 18\omega_3\omega_1^2v_1^2\omega_2^3 + 54\omega_3c_s^2\omega_4\omega_1^2v_1^2\omega_2^2 - 6\omega_3^2c_s^2\omega_4\omega_1^2v_2^2\omega_2^3 + 36\omega_3c_s^2\omega_4\omega_1^2\omega_2^3 - 18\omega_3^2c_s^2\omega_1^3\omega_2^3 - 8\omega_3c_s^2\omega_4\omega_1^3\omega_2 + 54\omega_3^2c_s^2\omega_1^3v_1^2\omega_2^2 +$
$6\omega_3\omega_4\omega_1v_1^4\omega_2^3 + 12\omega_3^2\omega_4\omega_1v_1^4\omega_2^2 + 216\omega_3^2c_s^2\omega_1v_2^2\omega_2^3 - 72\omega_3^2c_s^4\omega_1^2\omega_2^3 - 12\omega_3^2c_s^2\omega_4\omega_1^2v_1^2\omega_2 - 18\omega_4\omega_1^2v_1^2\omega_2^3 - 18\omega_3^2\omega_1^2v_1^4\omega_2^2 - 36\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^2 +$
$\omega_3^2\omega_4\omega_1^2v_2^2\omega_2^3 + 8\omega_3^2\omega_4\omega_1^2\omega_2^2 - 36\omega_3^2\omega_4\omega_1^3v_1^4\omega_2 + \omega_3^2\omega_4\omega_1^3v_2^2\omega_2^2 + 180\omega_3^2\omega_4\omega_1^2v_2^2v_1^2\omega_2^2 - 56\omega_3c_s^2\omega_4\omega_1^2\omega_2^2 - 90\omega_3c_s^2\omega_4\omega_1^2v_1^2\omega_2^3 - 12\omega_3\omega_4\omega_1^3v_1^4\omega_2 +$
$66\omega_3^2c_s^2\omega_4\omega_1^2v_2^2\omega_2^2 - 18\omega_4\omega_1^3v_1^4\omega_2^2 - 4\omega_3^2\omega_4\omega_1^3\omega_2 - 24\omega_3^2\omega_4\omega_1^2v_2^2\omega_2^2 + 108\omega_3^2\omega_4v_2^2v_1^2\omega_2^3 - 68\omega_3^2c_s^4\omega_4\omega_2^3 - 18\omega_3^2\omega_1^2v_1^4\omega_2^3 + 2\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^3 -$
$18\omega_3\omega_1^3v_1^4\omega_2^2 - 90\omega_3^2\omega_4\omega_1^3v_2^2v_1^2\omega_2 + 54\omega_3^2\omega_4\omega_1v_1^4\omega_2^3 - 54\omega_3c_s^2\omega_1^3v_1^2\omega_2^2 + 18\omega_3^2c_s^2\omega_4\omega_1^3\omega_2 + 12\omega_3^2\omega_4\omega_1^2v_2^2\omega_2 + 18\omega_3^2c_s^4\omega_1^3\omega_2^3 - 6\omega_3\omega_4\omega_1^2v_1^2\omega_2^2 -$
$2\omega_3^2c_s^2\omega_4\omega_1^3\omega_2^2 + 24\omega_3^2\omega_4\omega_1^3v_1^4 - 30\omega_3^2c_s^2\omega_4\omega_1^2v_1^2\omega_2^3 + 132\omega_3c_s^2\omega_4\omega_1^2v_2^2\omega_2^2 - 18\omega_3c_s^2\omega_4\omega_1^3\omega_2^3 + 9\omega_3^2\omega_4\omega_1^2v_1^2\omega_2^3 - 36\omega_3^2\omega_4\omega_1^2v_2^2v_1^2\omega_2 + 72\omega_3^2c_s^2\omega_1^2\omega_2^3 -$
$18\omega_3^2\omega_1v_1^2\omega_2^3 + 76\omega_3^2c_s^4\omega_4\omega_1\omega_2^3 + 36\omega_3\omega_4\omega_1^3v_1^4\omega_2^2 + 54\omega_3^2c_s^2\omega_1v_1^2\omega_2^3 - 54c_s^2\omega_4\omega_1^3v_1^2\omega_2^2 + 4\omega_3^2\omega_4\omega_1^3 - 48\omega_3^2c_s^2\omega_4\omega_1^2v_2^2\omega_2 + 72\omega_3^2\omega_4\omega_1^3v_2^2v_1^2 +$
$24\omega_3^2c_s^2\omega_4\omega_1^2v_1^2\omega_2^2 + 36\omega_3\omega_4\omega_1^2v_1^2\omega_2^3 - 126\omega_3c_s^2\omega_4\omega_1^2v_2^2\omega_2^3 + 32\omega_3^2c_s^2\omega_4\omega_1^2\omega_2 + 8\omega_3c_s^4\omega_4\omega_1\omega_2^3 + 54\omega_3^2c_s^2\omega_1^3v_2^2\omega_2^3 + 9\omega_3^2\omega_4\omega_1^3v_1^4\omega_2^2 - 4\omega_3^2\omega_4\omega_1^2\omega_2 -$
$48\omega_3^2\omega_4v_1^4\omega_2^3 - 28\omega_3^2c_s^4\omega_4\omega_1\omega_2^2 + 28\omega_3^2c_s^2\omega_4\omega_2^3 - 42\omega_3^2\omega_4\omega_1^2v_1^2\omega_2^2 + 36\omega_3c_s^2\omega_4\omega_1^3\omega_2^2 + 150\omega_3^2c_s^2\omega_4\omega_1v_1^2\omega_2^3 - 36\omega_3c_s^4\omega_4\omega_1^2\omega_2^3 - \omega_3^2\omega_4\omega_1^3v_2^2\omega_2^2 -$
$12\omega_3^2\omega_4v_2^2\omega_2^3 + 8\omega_3c_s^4\omega_4\omega_1^3\omega_2 - 96\omega_3^2c_s^2\omega_4v_2^2\omega_2^3 + 12\omega_3\omega_4\omega_1^3v_1^2\omega_2 + 24\omega_3c_s^2\omega_4\omega_1^3v_2^2\omega_2 + 18\omega_4\omega_1^3v_1^2\omega_2^2 - 90\omega_3^2\omega_4\omega_1v_2^2v_1^2\omega_2^3 + 132\omega_3^2c_s^2\omega_4\omega_1^3v_1^2 -$
$54\omega_3^2c_s^2\omega_1^2v_1^2\omega_2^3 + 18\omega_3\omega_1^3v_1^2\omega_2^2 + 16\omega_3^2c_s^4\omega_4\omega_1^3 + 18\omega_3^2\omega_1^2v_1^2\omega_2^3 + 28\omega_3^2c_s^4\omega_4\omega_1^2\omega_2^2 - 48\omega_3^2\omega_4\omega_1^3v_1^2 + 6\omega_3^2c_s^2\omega_4\omega_1^3v_2^2\omega_2^2 - 24\omega_3^2\omega_4\omega_1v_1^2\omega_2^3 +$
$18\omega_3\omega_1^2v_1^4\omega_2^3 + 18\omega_3^2\omega_1^3v_1^4\omega_2^2 - 174\omega_3^2c_s^2\omega_4\omega_1^3v_1^2\omega_2 + 54\omega_3c_s^2\omega_1^2v_1^2\omega_2^3 - 12\omega_3^2c_s^2\omega_4\omega_1v_1^2\omega_2^2 - 6\omega_3\omega_4\omega_1v_1^2\omega_2^3 + 56\omega_3c_s^4\omega_4\omega_1^2\omega_2^2 + 60\omega_3c_s^2\omega_4\omega_1v_2^2\omega_2^3 +$
$12\omega_3^2\omega_4\omega_1^2v_1^4\omega_2 - 72\omega_3^2c_s^2\omega_1\omega_2^3 - 14\omega_3^2c_s^4\omega_4\omega_1^2\omega_2^3 + 36\omega_3^2\omega_4\omega_1v_1^2\omega_2^2 + 90\omega_3c_s^2\omega_4\omega_1^3v_1^2\omega_2^2 - 14\omega_3^2c_s^4\omega_4\omega_1^3\omega_2 + 18\omega_3^2\omega_1^2v_1^2\omega_2^2 + 18\omega_4\omega_1^2v_1^4\omega_2^3 +$
$12\omega_3^2c_s^2\omega_4\omega_1^3v_1^2 - 12\omega_3^2\omega_4\omega_1^3v_2^2 - 54\omega_3^2c_s^2\omega_1^2v_1^2\omega_2^2 - \omega_3^2\omega_4\omega_1^2v_2^4\omega_2^3 + 66\omega_3^2\omega_4\omega_1^3v_1^2\omega_2 - 144\omega_3^2\omega_4\omega_1v_2^2v_1^2\omega_2^2 - 36\omega_3c_s^2\omega_4\omega_1^3v_1^2\omega_2 - 108\omega_3^2c_s^2\omega_4v_1^2\omega_2^3 +$
$54c_s^2\omega_4\omega_1^2v_1^2\omega_2^3 - 36\omega_3\omega_4\omega_1^2v_1^4\omega_2^3 + 2\omega_3^2c_s^4\omega_4\omega_1^3\omega_2^2 - 9\omega_3^2\omega_4\omega_1^3v_1^2\omega_2^2 + 48\omega_3^2c_s^2\omega_4\omega_1v_2^2\omega_2^2 + 12\omega_3^2\omega_4v_1^2\omega_2^3 - 4\omega_3^2\omega_4\omega_1\omega_2^3 + 12\omega_3^2\omega_4\omega_1v_2^2\omega_2^3 +$
$54\omega_3c_s^2\omega_4\omega_1^3v_2^2\omega_2^3 + 30\omega_3^2c_s^2\omega_4\omega_1^3v_1^2\omega_2^2 + 18\omega_3c_s^4\omega_4\omega_1^3\omega_2^3 - 18\omega_3^2\omega_4\omega_1^2v_1^4\omega_2^2 - 18\omega_3^2c_s^2\omega_4\omega_1\omega_2^3 - 20\omega_3^2c_s^2\omega_4\omega_1^3 - 216\omega_3^2c_s^2\omega_1^2v_2^2\omega_2^3 - 18\omega_3c_s^2\omega_4\omega_1v_1^2\omega_2^3 -$
$84\omega_3^2c_s^2\omega_4\omega_1v_2^2\omega_2^2 - 3\omega_3^2c_s^4\omega_4\omega_1^3\omega_2^3 - 6\omega_3^2c_s^2\omega_4\omega_1^3v_2^2\omega_2 - 8\omega_3c_s^2\omega_4\omega_1\omega_2^3 + 6\omega_3\omega_4\omega_1^2v_1^4\omega_2^2 - 28\omega_3^2c_s^4\omega_4\omega_1^2\omega_2 + 12\omega_3^2\omega_4\omega_1^3v_2^2\omega_2 + 32\omega_3^2c_s^2\omega_4\omega_1\omega_2^2 -$
$9\omega_3^2\omega_4\omega_1^2v_1^4\omega_2^3 + 18\omega_3^2\omega_1v_1^4\omega_2^3 - 36\omega_3c_s^4\omega_4\omega_1^3\omega_2^2 + 72\omega_3^2c_s^4\omega_1\omega_2^3 - 90\omega_3c_s^2\omega_4\omega_1^3v_2^2\omega_2^2 + 12\omega_3^2\omega_4\omega_1v_2^2\omega_2^2 + 4\omega_3^2\omega_4\omega_2^3 - 36\omega_3\omega_4\omega_1^3v_1^2\omega_2^2 - 4\omega_3^2\omega_4\omega_1\omega_2^2$

$C_{28} = -\omega_3^2\omega_1^3v_1^2\omega_2^2 + 96\omega_3^2\omega_1v_2^2v_1^2\omega_2^3 + 40\omega_3^2c_s^2\omega_1^2\omega_2 + 2\omega_3^2c_s^2\omega_1^3v_1^2\omega_2^2 + 108\omega_3^2c_s^2\omega_1v_2^2\omega_2^3 - 6\omega_3^2c_s^4\omega_1^2\omega_2^3 - 84\omega_3^2c_s^4\omega_1^3\omega_2 + 8\omega_3^2\omega_1\omega_2^2 - 60\omega_3^2\omega_1v_2^2\omega_2^3 -$
$5\omega_3^2c_s^2\omega_1^3\omega_2^2 - 8\omega_3c_s^2\omega_1\omega_2^3 + 8\omega_3^2v_1^2\omega_2^3 + 4\omega_3^2\omega_1^3 + 24\omega_3^2\omega_1v_2^2v_1^2\omega_2^2 + 48\omega_3^2\omega_1v_2^2\omega_2^2 - 324\omega_3^2c_s^2\omega_1^3v_2^2\omega_2 + 8\omega_3^2\omega_1\omega_2^3 + 84\omega_3^2\omega_1^3v_2^2\omega_2 + 18\omega_3c_s^2\omega_1^3v_1^2\omega_2^2 +$
$42\omega_3^2c_s^4\omega_1^2\omega_2^2 - 216\omega_3^2c_s^2\omega_1v_2^2\omega_2^2 + 72\omega_3^2c_s^2\omega_1^3v_2^2\omega_2^2 - 12c_s^2\omega_1^3v_1^2\omega_2^2 - 24\omega_3^2\omega_1^3v_2^2\omega_2^2 - 36\omega_3^2c_s^4\omega_1^2\omega_2 - 4\omega_3c_s^2\omega_1^3v_1^2\omega_2 + 56\omega_3^2c_s^2\omega_1^3\omega_2 + 5\omega_3^2c_s^2\omega_1^2\omega_2^3 -$
$8\omega_3^2\omega_1v_1^2\omega_2^3 + 22\omega_3^2c_s^2\omega_1v_1^2\omega_2^3 - 48\omega_3^2\omega_1^3v_2^2 + 72\omega_3^2\omega_1^2v_2^4\omega_2^2 + 24\omega_3^2v_2^2\omega_2^3 + 6\omega_3^2c_s^4\omega_1^3\omega_2^2 - 52\omega_3^2c_s^2\omega_1^3 - 36\omega_3^2c_s^4\omega_2^3 + 8\omega_3c_s^2\omega_1v_1^2\omega_2^3 + 24\omega_3c_s^4\omega_1\omega_2^3 +$
$4\omega_3^2\omega_1^3v_1^2\omega_2 + 8\omega_3^2c_s^2\omega_1v_1^2\omega_2^2 - 4\omega_3^2\omega_1^3v_1^2 - 8\omega_3^2\omega_1v_1^2\omega_2^2 - 34\omega_3^2c_s^2\omega_1^2\omega_2^2 - 20\omega_3^2c_s^2\omega_1^3v_1^2\omega_2 + 12c_s^2\omega_1^3\omega_2^2 - 8\omega_3^2\omega_2^3 - 54\omega_3c_s^4\omega_1^2\omega_2^2 - 4\omega_3c_s^2\omega_1^2v_1^2\omega_2^2 +$
$24\omega_3^2\omega_1^3v_2^4 - 24\omega_3^2\omega_1^2v_2^2\omega_2 - 4\omega_3^2\omega_1^2\omega_2 - 12\omega_3c_s^4\omega_1^3\omega_2 - 72\omega_3^2\omega_1v_2^4\omega_2^2 - 2\omega_3^2c_s^2\omega_1^2v_1^2\omega_2^3 + 24\omega_3^2\omega_1^3v_2^2v_1^2 - 24\omega_3^2\omega_1^2v_2^2v_1^2\omega_2^3 - 36\omega_3^2\omega_1^3v_2^4\omega_2 + \omega_3^2\omega_1^2v_1^2\omega_2^3 -$
$8\omega_3^2c_s^2\omega_1\omega_2^2 - 18\omega_3c_s^2\omega_1^2v_1^2\omega_2^3 - 12\omega_3c_s^4\omega_1^2\omega_2^2 + \omega_3^2\omega_1^3\omega_2^2 - 48\omega_3^2\omega_1^3v_2^2v_1^2\omega_2 - 20\omega_3^2c_s^2v_1^2\omega_2^3 + 36c_s^4\omega_1^2\omega_2^2 - 22\omega_3^2c_s^2\omega_1\omega_2^3 - 48\omega_3^2\omega_1^2v_2^2v_1^2\omega_2^2 +$
$4\omega_3^2\omega_1^2v_1^2\omega_2^2 - 2\omega_3^2c_s^2\omega_1^2v_1^2\omega_2^2 - 18\omega_3c_s^2\omega_1^3\omega_2^2 - 36\omega_3^2\omega_1v_2^4\omega_2^3 + 48\omega_3^2v_2^4\omega_2^3 + 4\omega_3^2\omega_1^2v_1^2\omega_2 - 36c_s^4\omega_1^3\omega_2^2 + 24\omega_3^2\omega_1^2v_2^2v_1^2\omega_2 - 4\omega_3^2c_s^2\omega_1^2v_1^2\omega_2 +$
$4\omega_3c_s^2\omega_1^3\omega_2 + 20\omega_3^2c_s^2\omega_2^3 + 72\omega_3^2c_s^4\omega_1^3 + 18\omega_3c_s^2\omega_1^2\omega_2^3 + 24\omega_3^2\omega_1^2v_2^2\omega_2^3 - \omega_3^2\omega_1^2\omega_2^3 + 12c_s^2\omega_1^2v_1^2\omega_2^3 - 4\omega_3^2\omega_1^3\omega_2 + 24\omega_3^2\omega_1^3v_2^2v_1^2\omega_2^2 + 216\omega_3^2c_s^2\omega_1^3v_2^2 -$
$72\omega_3^2c_s^2\omega_1^2v_1^2\omega_2^3 + 4\omega_3c_s^2\omega_1^2\omega_2^2 + 216\omega_3^2c_s^2\omega_1^2v_2^2\omega_2^2 - 12c_s^2\omega_1^2\omega_2^3 + 42\omega_3^2c_s^4\omega_1\omega_2^3 + 54\omega_3c_s^4\omega_1^3\omega_2^2 - 4\omega_3^2\omega_1^2\omega_2^2 - 24\omega_3^2\omega_1^2v_2^2\omega_2^2 - 72\omega_3^2v_2^2v_1^2\omega_2^3 + 16\omega_3^2c_s^2\omega_1^3v_1^2$

$C_{29} = 48\omega_3^2\omega_4^2v_1^2\omega_2^3 + 168\omega_3^2c_s^2\omega_4^2\omega_1^3v_2^2\omega_2^2 + 117\omega_3\omega_4^2\omega_1^3v_2^2\omega_2^3 + 648\omega_3^2c_s^2\omega_4\omega_1^2v_2^2\omega_2^3 - 48\omega_3^2\omega_4^2\omega_1v_1^2\omega_2^3 - 288\omega_3^2\omega_4^2\omega_1^3v_2^2v_1^2\omega_2 - 2\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^2 -$
$117\omega_3^2\omega_4\omega_1^3v_2^4\omega_2^3 - 144\omega_3^2\omega_4^2\omega_1^2v_2^4\omega_2^2 + 24\omega_3^2c_s^2\omega_4^2v_1^2\omega_2^3 + 48\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^3 - 216c_s^2\omega_4^2\omega_1^2v_2^2\omega_2^3 + 216\omega_3\omega_4^2\omega_1^2v_2^4\omega_2^3 - 72\omega_3c_s^2\omega_4^2\omega_1^3v_2^2\omega_2 -$
$36\omega_3\omega_4\omega_1^3v_2^4\omega_2^2 + 18\omega_3c_s^4\omega_4^2\omega_1^3\omega_2^3 - 288\omega_3^2\omega_4^2\omega_1^2v_2^2v_1^2\omega_2^2 - 288\omega_3^2\omega_4\omega_1^2v_2^2\omega_2^3 - 12\omega_3^2c_s^2\omega_4^2\omega_1v_1^2\omega_2^3 - 86\omega_3^2\omega_4^2\omega_1^3v_2^2\omega_2^2 - 16\omega_3^2\omega_4^2\omega_2^3 +$
$16\omega_3^2\omega_4^2\omega_1\omega_2^3 + 36\omega_3^2\omega_4\omega_1^3v_2^4\omega_2^2 + 24\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_2 - 16\omega_3c_s^2\omega_4^2\omega_1\omega_2^3 + 40\omega_3^2\omega_4^2\omega_1^2v_2^4\omega_2^3 - 56\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2 - 6\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^3 - 108\omega_3\omega_4^2\omega_1^3v_2^2\omega_2^2 +$
$72\omega_3^2c_s^2\omega_4^2\omega_1^3v_2^2\omega_2^3 + 180\omega_3\omega_4\omega_1^2v_2^2\omega_2^3 - 72\omega_3c_s^2\omega_4^2\omega_1^3v_1^2\omega_2^2 - 48\omega_3^2\omega_4^2\omega_1v_1^2\omega_2^2 - 108\omega_3^2c_s^2\omega_4\omega_1^2v_2^2\omega_2^2 + 16\omega_3^2\omega_4^2\omega_1\omega_2^2 + 48\omega_3^2c_s^2\omega_4^2\omega_1v_1^2\omega_2^2 +$
$36\omega_3^2\omega_4\omega_1^2v_2^2\omega_2^2 + 72\omega_3c_s^2\omega_4^2\omega_1v_2^2\omega_2^3 - 24\omega_3^2\omega_4^2\omega_1^3v_2^2\omega_2^3 - 40\omega_3^2c_s^2\omega_4^2\omega_1^3 - 36\omega_3c_s^4\omega_4^2\omega_1^3\omega_2^2 - 144\omega_3^2\omega_4^2\omega_1^2v_2^2v_1^2\omega_2^3 + 72\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^3 -$
$12\omega_3^2c_s^2\omega_4^2\omega_1^3v_1^2\omega_2 - 60\omega_3\omega_4^2\omega_1^2v_2^4\omega_2^2 - 32\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^2 + 108\omega_3\omega_4\omega_1^3v_2^4\omega_2^2 + 432\omega_3^2c_s^2\omega_4^2v_2^2\omega_2^3 - 48\omega_3^2\omega_4^2v_2^2\omega_2^3 + 16\omega_3c_s^4\omega_4^2\omega_1^3\omega_2 -$
$297\omega_3c_s^2\omega_4^2\omega_1^3v_2^2\omega_2^3 + 96\omega_3^2\omega_4^2\omega_1v_2^2\omega_2^3 - 12\omega_3^2c_s^2\omega_4^2\omega_1^3v_2^2\omega_2^2 - 36\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^3 + 20\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2 - 6\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_2^2 - 24\omega_3^2\omega_4^2\omega_1^3v_1^2 -$
$852\omega_3^2c_s^2\omega_4^2\omega_1v_2^2\omega_2^3 + 72\omega_3^2c_s^4\omega_4\omega_1\omega_2^3 + 48\omega_3c_s^2\omega_4^2\omega_1^3v_1^2\omega_2 + 24\omega_3\omega_4^2\omega_1^3v_2^2\omega_2 + 36\omega_4^2\omega_1^3v_2^2\omega_2^2 + 24\omega_3^2c_s^2\omega_4^2\omega_1^3v_1^2 - 144\omega_3^2\omega_4^2\omega_1v_2^2\omega_2^2 -$
$18\omega_3^2c_s^2\omega_4\omega_1^3\omega_2^2 + 288\omega_3c_s^2\omega_4^2\omega_1^3v_2^2\omega_2^2 + 40\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^2 - 540\omega_3c_s^2\omega_4\omega_1^2v_2^2\omega_2^3 - 72\omega_4^2\omega_1^2v_2^4\omega_2^3 + 144\omega_3^2\omega_4^2\omega_1^2v_2^2v_1^2\omega_2 - 54\omega_3^2\omega_1^3v_2^2\omega_2^3 +$
$204\omega_3^2\omega_4^2\omega_1^3v_2^2\omega_2 + 162\omega_3^2c_s^2\omega_1^3v_2^2\omega_2^3 - 54\omega_4^2\omega_1^3v_2^2\omega_2^3 - 108\omega_3^2\omega_1^2v_2^4\omega_2^3 - 96\omega_3^2\omega_4^2\omega_1^3v_2^2 - 72\omega_3^2\omega_4\omega_1v_2^4\omega_2^3 - 492\omega_3^2c_s^2\omega_4^2\omega_1^3v_2^2\omega_2 - 28\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2 +$
$144\omega_3^2\omega_4^2\omega_1^3v_2^2v_1^2\omega_2^2 + 264\omega_3^2c_s^2\omega_4^2\omega_1^3v_2^2 + 32\omega_3^2c_s^4\omega_4^2\omega_1^3 - 96\omega_3c_s^2\omega_4^2\omega_1v_1^2\omega_2^3 + 96\omega_3^2\omega_4^2\omega_1^2v_2^4\omega_2 + 86\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^3 + 336\omega_3^2c_s^2\omega_4^2\omega_1v_2^2\omega_2^2 +$
$24\omega_3\omega_4^2\omega_1v_2^2\omega_2^3 + 8\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2^3 - 36\omega_3^2\omega_4\omega_1^3v_2^2\omega_2^2 - 180\omega_3\omega_4\omega_1^2v_2^4\omega_2^3 + 108\omega_3\omega_4^2\omega_1^3v_2^4\omega_2^2 - 108c_s^2\omega_4^2\omega_1^3v_2^2\omega_2^2 - 96\omega_3^2c_s^2\omega_4^2\omega_1^2v_1^2\omega_2 +$
$144\omega_3^2\omega_4^2\omega_1v_2^2v_1^2\omega_2^2 + 2\omega_3^2\omega_4^2\omega_1^3\omega_2^2 + 24\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2 + 24\omega_3^2\omega_4^2\omega_1^3v_2^4\omega_2^3 - 36\omega_3^2\omega_4\omega_1^2v_2^4\omega_2^2 - 172\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^3 + 8\omega_3^2c_s^2\omega_4^2\omega_2^3 + 48\omega_3c_s^2\omega_4^2\omega_1^2v_1^2\omega_2^2 -$
$108\omega_3\omega_4\omega_1^3v_2^2\omega_2^3 + 108\omega_3^2c_s^2\omega_4\omega_1^3v_2^2\omega_2^2 + 60\omega_3\omega_4^2\omega_1^2v_2^2\omega_2^2 + 174\omega_3^2c_s^2\omega_4^2\omega_1^2v_2^2\omega_2^3 - 18\omega_3c_s^2\omega_4^2\omega_1^3\omega_2^2 + 576\omega_3^2\omega_4^2\omega_1v_2^2v_1^2\omega_2^3 + 48\omega_3^2\omega_4^2\omega_1^3v_2^4 -$
$117\omega_3\omega_4^2\omega_1^3v_2^4\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^2\omega_2 + 162c_s^2\omega_4^2\omega_1^3v_2^2\omega_2^3 + 64\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2 + 16\omega_3c_s^4\omega_4^2\omega_1\omega_2^3 + 240\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2^2 - 432\omega_3^2\omega_4^2v_2^2v_1^2\omega_2^3 + 117\omega_3^2\omega_4\omega_1^3v_2^2\omega_2^3 -$
$297\omega_3^2c_s^2\omega_4\omega_1^3v_2^2\omega_2^3 + 36\omega_3\omega_4\omega_1^3v_2^2\omega_2^2 + 72\omega_3c_s^2\omega_4^2\omega_1^2v_1^2\omega_2^3 - 72\omega_3^2c_s^4\omega_4\omega_1^2\omega_2^3 + 36\omega_3c_s^2\omega_4^2\omega_1^3\omega_2^2 - 492\omega_3^2c_s^2\omega_4^2\omega_1^2v_2^2\omega_2^2 - 216\omega_3\omega_4^2\omega_1^2v_2^2\omega_2^3 +$
$16\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^2 + 38\omega_3^2\omega_4^2\omega_1^3v_2^4\omega_2^2 + 288\omega_3^2\omega_4\omega_1^2v_2^4\omega_2^3 + 8\omega_3^2\omega_4^2\omega_1^3 - 16\omega_3c_s^2\omega_4^2\omega_1^3\omega_2 + 264\omega_3^2c_s^2\omega_4^2\omega_1^2v_2^2\omega_2 + 96\omega_3^2\omega_4^2\omega_1v_2^4\omega_2^2 + 144\omega_3^2\omega_4^2\omega_1^3v_2^2v_1^2 +$
$36\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^3 + 54\omega_3^2\omega_1^3v_2^4\omega_2^3 + 72\omega_4^2\omega_1^2v_2^2\omega_2^3 + 6\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2^3 - 108\omega_3^2\omega_4^2\omega_1^3v_2^4\omega_2 + 108\omega_3^2\omega_1^2v_2^2\omega_2^3 + 54\omega_4^2\omega_1^3v_2^4\omega_2^3 + 12\omega_3^2c_s^2\omega_4^2\omega_1^2v_2^2\omega_2^3 +$
$72\omega_3^2\omega_4\omega_1v_2^2\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^2\omega_2^2 + 324\omega_3c_s^2\omega_4\omega_1^3v_2^2\omega_2^3 - 108\omega_3c_s^2\omega_4^2\omega_1^2v_2^2\omega_2^2 - 12\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^2 - 72\omega_3^2c_s^2\omega_4\omega_1\omega_2^3 - 24\omega_3\omega_4^2\omega_1v_2^4\omega_2^2 + 80\omega_3^2c_s^4\omega_4^2\omega_2^3 -$
$324\omega_3^2c_s^2\omega_1^2v_2^2\omega_2^3 - 144\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2 + 24\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2^2 + 192\omega_3^2\omega_4^2v_2^4\omega_2^3 - 40\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^2 + 18\omega_3^2c_s^4\omega_4\omega_1^3\omega_2^3 - 288\omega_3^2\omega_4^2\omega_1v_2^4\omega_2^3 + 36\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2 -$
$36\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^3 - 108\omega_3c_s^2\omega_4\omega_1^3v_2^2\omega_2^2 - 24\omega_3\omega_4^2\omega_1^3v_2^4\omega_2 - 2\omega_3^2\omega_4^2\omega_1^2\omega_2^3 + 24\omega_3^2c_s^2\omega_4^2\omega_1^2v_1^2\omega_2^2 + 468\omega_3c_s^2\omega_4^2\omega_1^2v_2^2\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^3\omega_2 - 36\omega_4^2\omega_1^3v_2^4\omega_2^2$

$C_{30} = 9\omega_1^2\omega_2^3 - 5\omega_3\omega_1^2v_1^2\omega_2^3 - 54\omega_3c_s^2\omega_1\omega_2^2 + 6\omega_1^3\omega_2 - 12\omega_3c_s^2\omega_2^3 + 36c_s^2\omega_1\omega_2^3 - 6\omega_1^2v_1^2\omega_2^2 - 12\omega_3\omega_1^2v_2^2\omega_2 + 48\omega_3\omega_1^3\omega_2 + 5\omega_3\omega_1^2\omega_2^3 +$

$27\omega_3c_s^2\omega_1\omega_2^3 + 6\omega_1^2\omega_2^2 - 9\omega_3\omega_1^2v_1^2\omega_2^2 - 51\omega_3\omega_1^2\omega_2^2 - 9\omega_1^2v_1^2\omega_2^3 + 6\omega_3\omega_1^2\omega_2 + 6\omega_3\omega_1^2v_1^2\omega_2 + 132\omega_3\omega_1^2v_2^2\omega_2^2 - 5\omega_3\omega_1^3\omega_2^2 - 12\omega_3\omega_2^3 - 9\omega_1^3\omega_2^2 +$
$27c_s^2\omega_1^3\omega_2^2 - 66\omega_3\omega_1v_2^2\omega_2^3 + 48\omega_3\omega_1^3v_2^2 - 18\omega_3c_s^2\omega_1^2\omega_2 + 5\omega_3\omega_1^3v_1^2\omega_2^2 - 66\omega_3\omega_1^3v_2^2\omega_2 + 9\omega_1^3v_1^2\omega_2^2 + 84\omega_3c_s^2\omega_1^3 - 120\omega_3\omega_1v_2^2\omega_2^2 + 84\omega_3v_2^2\omega_2^3 +$
$12\omega_3\omega_1^3v_1^2 + 15\omega_3c_s^2\omega_1^3\omega_2^2 - 108\omega_3c_s^2\omega_1^3\omega_2 - 36\omega_3\omega_1^3 + 27\omega_3\omega_1v_1^2\omega_2^3 - 15\omega_3c_s^2\omega_1^2\omega_2^3 - 6\omega_1^3v_1^2\omega_2 + 42\omega_3\omega_1\omega_2^2 - 18c_s^2\omega_1^2\omega_2^2 + 81\omega_3c_s^2\omega_1^2\omega_2^2 +$
$6\omega_3\omega_1v_1^2\omega_2^2 - 24\omega_3v_1^2\omega_2^3 - 12\omega_1\omega_2^3 - 18\omega_3\omega_1^3v_1^2\omega_2 - 18c_s^2\omega_1^3\omega_2 + 12\omega_1v_1^2\omega_2^3 - 27c_s^2\omega_1^2\omega_2^3 + 3\omega_3\omega_1\omega_2^3$

$C_{31} = -84\omega_3\omega_1^3v_2^4\omega_2 - 80\omega_3c_s^2\omega_1\omega_2^2 - 464\omega_3c_s^2\omega_1^3v_2^2\omega_2 + 72\omega_3c_s^4\omega_1^3 - 184\omega_3c_s^2\omega_2^3 + 168\omega_3\omega_1v_2^4\omega_2^2 + 656\omega_3c_s^2\omega_1v_2^2\omega_2^2 + 144\omega_3v_2^4\omega_2^3 -$
$8c_s^2\omega_1\omega_2^3 - 104\omega_3\omega_1^2v_2^2\omega_2 - 10\omega_3\omega_1^3\omega_2 + 16\omega_3\omega_1^2\omega_2^3 - 1472\omega_3c_s^2\omega_1v_2^2\omega_2^3 - 300\omega_3\omega_1v_2^4\omega_2^3 + 320\omega_3c_s^2\omega_1\omega_2^3 - 16\omega_3\omega_1^2\omega_2^2 + 24\omega_3\omega_1^3v_2^4 +$
$72\omega_3c_s^4\omega_1\omega_2^2 + 160\omega_3c_s^2\omega_1^3v_2^2 + 8\omega_3\omega_1^2\omega_2 - 3\omega_3\omega_1^3\omega_2^3 - 196\omega_3\omega_1^2v_2^2\omega_2^3 + 8c_s^2\omega_1v_2^2\omega_2^3 + 24c_s^4\omega_1\omega_2^3 - 102\omega_3c_s^2\omega_1^3v_2^2\omega_2^3 - 27\omega_3\omega_1^3v_2^4\omega_2^3 +$
$280\omega_3\omega_1^2v_2^2\omega_2^2 + 8\omega_3\omega_1^3\omega_2^2 - 372\omega_3c_s^4\omega_1\omega_2^3 + 16\omega_3\omega_2^3 + 90\omega_3\omega_1^3v_2^4\omega_2^2 + 8c_s^2\omega_1^3v_2^2\omega_2 + 404\omega_3c_s^2\omega_1^3v_2^2\omega_2^2 + 760\omega_3c_s^2v_2^2\omega_2^3 + 328\omega_3\omega_1v_2^2\omega_2^3 +$
$164\omega_3c_s^4\omega_1^2\omega_2^3 - 156\omega_3c_s^4\omega_1^3\omega_2 - 28\omega_3\omega_1^3v_2^2 - 80\omega_3c_s^2\omega_1^2\omega_2 + 18\omega_3c_s^2\omega_1^3\omega_2^3 - 48c_s^4\omega_1^2\omega_2^2 + 94\omega_3\omega_1^3v_2^2\omega_2 + 216\omega_3c_s^4\omega_2^3 - 52\omega_3c_s^2\omega_1^3 -$
$120\omega_3c_s^4\omega_1^2\omega_2^2 - 176\omega_3\omega_1v_2^2\omega_2^2 - 160\omega_3v_2^2\omega_2^3 + 440\omega_3c_s^2\omega_1^2v_2^2\omega_2 - 16c_s^2\omega_1^2v_2^2\omega_2^2 + 96\omega_3\omega_1^2v_2^4\omega_2 + 24c_s^4\omega_1^3\omega_2 - 78\omega_3c_s^2\omega_1^3\omega_2^2 -$
$1088\omega_3c_s^2\omega_1^2v_2^2\omega_2^2 - 264\omega_3\omega_1^2v_2^4\omega_2^2 + 122\omega_3c_s^2\omega_1^3\omega_2 + 4\omega_3\omega_1^3 - 156\omega_3c_s^2\omega_1^2\omega_2^3 - 15\omega_3c_s^4\omega_1^3\omega_2^3 - 98\omega_3\omega_1^3v_2^2\omega_2^2 + 72\omega_3c_s^4\omega_1^2\omega_2 + 8\omega_3\omega_1\omega_2^2 +$
$16c_s^2\omega_1^2\omega_2^2 + 152\omega_3c_s^2\omega_1^2\omega_2^2 + 180\omega_3\omega_1^2v_2^4\omega_2^3 + 808\omega_3c_s^2\omega_1^2v_2^2\omega_2^3 - 8c_s^2\omega_1^3\omega_2 - 28\omega_3\omega_1\omega_2^3 + 82\omega_3c_s^4\omega_1^3\omega_2^2 + 30\omega_3\omega_1^3v_2^2\omega_2^3$

$C_{32} = -312\omega_3\omega_1^3v_2^4\omega_2 - 16\omega_3c_s^2\omega_1\omega_2^2 - 360\omega_3c_s^2\omega_1^3v_2^2\omega_2 + 16\omega_3c_s^4\omega_1^3 - 56\omega_3c_s^2\omega_2^3 + 552\omega_3\omega_1v_2^4\omega_2^2 + 336\omega_3c_s^2\omega_1v_2^2\omega_2^2 + 528\omega_3v_2^4\omega_2^3 -$
$8c_s^2\omega_1\omega_2^3 - 168\omega_3\omega_1^2v_2^2\omega_2 - 10\omega_3\omega_1^3\omega_2 + 16\omega_3\omega_1^2\omega_2^3 - 1008\omega_3c_s^2\omega_1v_2^2\omega_2^3 - 1068\omega_3\omega_1v_2^4\omega_2^3 + 96\omega_3c_s^2\omega_1\omega_2^3 - 16\omega_3\omega_1^2\omega_2^2 + 96\omega_3\omega_1^3v_2^4 +$
$8\omega_3c_s^4\omega_1\omega_2^2 + 144\omega_3c_s^2\omega_1^3v_2^2 + 8\omega_3\omega_1^2\omega_2 - 3\omega_3\omega_1^3\omega_2^3 - 308\omega_3\omega_1^2v_2^2\omega_2^3 + 24c_s^2\omega_1v_2^2\omega_2^3 + 8c_s^4\omega_1\omega_2^3 - 54\omega_3c_s^2\omega_1^3v_2^2\omega_2^3 - 87\omega_3\omega_1^3v_2^4\omega_2^3 +$
$408\omega_3\omega_1^2v_2^2\omega_2^2 + 8\omega_3\omega_1^3\omega_2^2 - 68\omega_3c_s^4\omega_1\omega_2^3 + 16\omega_3\omega_2^3 + 310\omega_3\omega_1^3v_2^4\omega_2^2 + 24c_s^2\omega_1^3v_2^2\omega_2 + 252\omega_3c_s^2\omega_1^3v_2^2\omega_2^2 + 552\omega_3c_s^2v_2^2\omega_2^3 + 552\omega_3\omega_1v_2^2\omega_2^3 +$
$28\omega_3c_s^4\omega_1^2\omega_2^3 - 32\omega_3c_s^4\omega_1^3\omega_2 - 60\omega_3\omega_1^3v_2^2 - 16\omega_3c_s^2\omega_1^2\omega_2 + 6\omega_3c_s^2\omega_1^3\omega_2^3 - 16c_s^4\omega_1^2\omega_2^2 + 174\omega_3\omega_1^3v_2^2\omega_2 + 40\omega_3c_s^4\omega_2^3 - 20\omega_3c_s^2\omega_1^3 - 8\omega_3c_s^4\omega_1^2\omega_2^2 -$
$240\omega_3\omega_1v_2^2\omega_2^2 - 288\omega_3v_2^2\omega_2^3 + 264\omega_3c_s^2\omega_1^2v_2^2\omega_2 - 48c_s^2\omega_1^2v_2^2\omega_2^2 + 336\omega_3\omega_1^2v_2^4\omega_2 + 8c_s^4\omega_1^3\omega_2 - 22\omega_3c_s^2\omega_1^3\omega_2^2 - 576\omega_3c_s^2\omega_1^2v_2^2\omega_2^2 -$
$888\omega_3\omega_1^2v_2^4\omega_2^2 + 42\omega_3c_s^2\omega_1^3\omega_2 + 4\omega_3\omega_1^3 - 44\omega_3c_s^2\omega_1^2\omega_2^3 - 3\omega_3c_s^4\omega_1^3\omega_2^3 - 154\omega_3\omega_1^3v_2^2\omega_2^2 + 8\omega_3c_s^4\omega_1^2\omega_2 + 8\omega_3\omega_1\omega_2^2 + 16c_s^2\omega_1^2\omega_2^2 + 24\omega_3c_s^2\omega_1^2\omega_2^2 +$
$620\omega_3\omega_1^2v_2^4\omega_2^3 + 504\omega_3c_s^2\omega_1^2v_2^2\omega_2^3 - 8c_s^2\omega_1^3\omega_2 - 28\omega_3\omega_1\omega_2^3 + 14\omega_3c_s^4\omega_1^3\omega_2^2 + 42\omega_3\omega_1^3v_2^2\omega_2^3$

$C_{33} = -2\omega_3^2\omega_4\omega_1 - 6\omega_3\omega_4^2 - 18\omega_3c_s^2\omega_4\omega_1 + 36\omega_3c_s^2\omega_4 + 2\omega_3^2v_3^2\omega_4\omega_1 - 6v_3^2\omega_4^2 + 2\omega_3\omega_4^2\omega_1 - 6\omega_4^2\omega_1 + 6\omega_3v_3^2\omega_4^2 - 6\omega_4^2v_1^2 + 3\omega_4^2\omega_1v_1^2 -$
$2\omega_3v_3^2\omega_4^2\omega_1 + 3v_3^2\omega_4^2\omega_1 + 12\omega_4^2 - 3\omega_3^2v_3^2\omega_1 + 18\omega_3c_s^2\omega_4^2 - 36c_s^2\omega_4^2 - 12\omega_3\omega_4 - 6\omega_3^2v_1^2 + 6\omega_3^2c_s^2\omega_4\omega_1 - 6\omega_3^2v_3^2\omega_4 + 6\omega_3^2\omega_4 + 6\omega_3^2v_3^2 -$
$6\omega_3\omega_4\omega_1v_1^2 + 18c_s^2\omega_4^2\omega_1 + 3\omega_3^2\omega_1v_1^2 + 12\omega_3\omega_4v_1^2 + 6\omega_3\omega_4\omega_1 - 18\omega_3^2c_s^2\omega_4 - 6\omega_3c_s^2\omega_4^2\omega_1$

$C_{34} = 4\omega_3\omega_4v_1^2\omega_2 - 6\omega_3\omega_4\omega_1\omega_2 + 12\omega_3c_s^2\omega_4\omega_1 - 18\omega_3v_3^2\omega_4\omega_2 + 9\omega_4\omega_1\omega_2 + 2\omega_3\omega_4\omega_2 - 27\omega_3c_s^2\omega_1\omega_2 - 9\omega_4\omega_1v_1^2\omega_2 - 9\omega_3\omega_1v_1^2\omega_2 +$
$9\omega_3\omega_1\omega_2 + 18\omega_3c_s^2\omega_4\omega_1\omega_2 + 2\omega_3\omega_4\omega_1v_1^2 + 18\omega_3v_3^2\omega_4\omega_1 + 6\omega_3c_s^2\omega_4\omega_2 - 27c_s^2\omega_4\omega_1\omega_2 - 8\omega_3\omega_4\omega_1 + 6\omega_3\omega_4\omega_1v_1^2\omega_2$

$C_{35} = -96\omega_3^2\omega_4^2v_1^2\omega_2^3 + 96\omega_3^2\omega_4^2\omega_1v_1^2\omega_2^3 + 30\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^2 + 54\omega_3^2c_s^2\omega_1^3\omega_2^3 - 24\omega_3^2v_3^2\omega_4^2\omega_1^2v_1^2\omega_2 + 432\omega_3^2c_s^2\omega_4^2v_1^2\omega_2^3 + 64\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^3 +$
$324\omega_3^2c_s^4\omega_1^2\omega_2^3 - 81\omega_3c_s^4\omega_4^2\omega_1^3\omega_2^3 - 432\omega_3^2c_s^2\omega_4^2\omega_1v_1^2\omega_2^3 + 8\omega_3^2\omega_4^2\omega_2^3 + 48\omega_3^2v_3^2\omega_4^2\omega_1^3v_1^2 - 8\omega_3^2\omega_4^2\omega_1\omega_2^3 + 96\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_2 + 56\omega_3c_s^2\omega_4^2\omega_1\omega_2^3 -$
$72\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2 - 84c_s^2v_3^2\omega_4^2\omega_1^2\omega_2^3 - 56\omega_3c_s^2v_3^2\omega_4^2\omega_1\omega_2^3 + 96\omega_3^2\omega_4^2\omega_1v_1^2\omega_2^2 - 8\omega_3^2\omega_4^2\omega_1\omega_2^2 - 432\omega_3^2c_s^2\omega_4^2\omega_1v_1^2\omega_2^2 + 32\omega_3^2c_s^2v_3^2\omega_4^2\omega_2^3 -$
$72\omega_3^2\omega_4^2\omega_1^2v_1^4\omega_2 - 104\omega_3^2c_s^2\omega_4^2\omega_1^3 - 252c_s^4\omega_4^2\omega_1^2\omega_2^3 - 8\omega_3^2v_3^2\omega_4^2\omega_2^3 + 108\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^3 - 432\omega_3^2c_s^2\omega_4^2\omega_1^3v_1^2\omega_2 + 128\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^2 +$
$27\omega_3^2c_s^2v_3^2\omega_4\omega_1^3\omega_2^3 + 72\omega_3^2\omega_4^2\omega_1^2v_1^4\omega_2^2 - 162\omega_3^2c_s^4\omega_1^3\omega_2^3 - 24\omega_3c_s^4\omega_4^2\omega_1^3\omega_2 + 72\omega_3^2v_3^2\omega_4^2v_1^2\omega_2^3 + 8\omega_3^2c_s^2v_3^2\omega_4^2\omega_1\omega_2^3 - 72c_s^4\omega_4^2\omega_1^3\omega_2^2 + 324\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^3 +$
$192\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^2 - 96\omega_3^2\omega_4^2\omega_1^3v_1^2 + 8\omega_3^2v_3^2\omega_4^2\omega_1\omega_2^3 - 24c_s^2v_3^2\omega_4^2\omega_1^3\omega_2^2 - 108\omega_3^2c_s^2\omega_1^2\omega_2^3 + 432\omega_3^2c_s^2\omega_4^2\omega_1^3v_1^2 + 162c_s^4\omega_4^2\omega_1^3\omega_2^3 - 27\omega_3^2c_s^2\omega_4\omega_1^3\omega_2^3 -$
$56\omega_3^2c_s^2v_3^2\omega_4^2\omega_1\omega_2^2 + 192\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^2 - 108\omega_3^2c_s^2v_3^2\omega_4\omega_1^2\omega_2^3 - 168\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2 + 144\omega_3^2c_s^4\omega_4^2\omega_1^3 + 120\omega_3^2v_3^2\omega_4^2\omega_1^2v_1^2\omega_2^2 - 30\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^3 +$
$54c_s^2v_3^2\omega_4^2\omega_1^3\omega_2^3 + 8\omega_3^2v_3^2\omega_4^2\omega_1\omega_2^2 - 10\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2^2 - 36\omega_3^2\omega_4^2\omega_1^3v_1^4\omega_2 + 48\omega_3^2\omega_4^2\omega_1^3v_1^4 + 32\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^2\omega_2^2 - 432\omega_3^2c_s^2\omega_4^2\omega_1^2v_1^2\omega_2 +$
$96\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2 - 27\omega_3c_s^2v_3^2\omega_4^2\omega_1^3\omega_2^3 + 32\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^3 - 8\omega_3^2v_3^2\omega_4^2\omega_1^3 - 16\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2^2 - 24\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^3 - 104\omega_3^2c_s^2\omega_4^2\omega_2^3 - 60\omega_3^2v_3^2\omega_4^2\omega_1v_1^2\omega_2^3 +$
$27\omega_3c_s^2\omega_4^2\omega_1^3\omega_2^3 - 54\omega_3^2c_s^2v_3^2\omega_1^3\omega_2^3 + 24\omega_3^2\omega_4^2v_1^4\omega_2^3 - 36\omega_3^2\omega_4^2\omega_1v_1^4\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^2\omega_2 + 80\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2 - 168\omega_3c_s^4\omega_4^2\omega_1\omega_2^3 - 10\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^2\omega_2^3 -$
$40\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^3\omega_2 + 84c_s^2\omega_4^2\omega_1^2\omega_2^3 - 96\omega_3^2v_3^2\omega_4^2\omega_1v_1^2\omega_2^2 - 324\omega_3^2c_s^4\omega_4\omega_1^2\omega_2^3 + 8\omega_3^2v_3^2\omega_4^2\omega_1^3\omega_2 - 216\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^2 - 60\omega_3^2v_3^2\omega_4^2\omega_1^3v_1^2\omega_2 +$
$8\omega_3^2\omega_4^2\omega_1^3 + 8\omega_3c_s^2\omega_4^2\omega_1^3\omega_2 - 108\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^3 + 24c_s^2\omega_4^2\omega_1^3\omega_2^2 - 8\omega_3c_s^2v_3^2\omega_4^2\omega_1^3\omega_2 + 108\omega_3c_s^2v_3^2\omega_4^2\omega_1^2\omega_2^3 + 16\omega_3^2\omega_4^2\omega_1^2\omega_2^2 - 176\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^2 +$
$10\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^3\omega_2^2 + 144\omega_3^2c_s^4\omega_4^2\omega_2^3 + 64\omega_3c_s^2v_3^2\omega_4^2\omega_1^2\omega_2^2 - 192\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2^2 - 64\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^2 - 54c_s^2\omega_4^2\omega_1^3\omega_2^3 + 8\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2 +$
$81\omega_3^2c_s^4\omega_4\omega_1^3\omega_2^3 + 112\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2 - 8\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^2\omega_2 + 10\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^3 + 108\omega_3^2c_s^2v_3^2\omega_1^2\omega_2^3 + 864\omega_3^2c_s^2\omega_4^2\omega_1^2v_1^2\omega_2^2 - 8\omega_3^2\omega_4^2\omega_1^3\omega_2$

$C_{36} = -24\omega_3c_s^2\omega_1\omega_2^2 + 2\omega_1^3\omega_2 + 26\omega_3c_s^2\omega_2^3 - 6c_s^2\omega_1\omega_2^3 + 10\omega_3\omega_1^3\omega_2 - 24\omega_3c_s^2\omega_1\omega_2^3 - 4\omega_1^2\omega_2^2 + 26\omega_3\omega_1^2v_1^2\omega_2^2 - 20\omega_3\omega_1^2\omega_2^2 - 4\omega_3v_3^2\omega_1^2\omega_2 +$
$14\omega_3\omega_1^2\omega_2 + 6\omega_3v_3^2\omega_1^2\omega_2^2 - 2v_3^2\omega_1^3\omega_2 + 4\omega_3v_3^2\omega_2^3 - 22\omega_3\omega_1^2v_1^2\omega_2 - 3\omega_3v_3^2\omega_1^3\omega_2 - 10\omega_3\omega_2^3 + 4v_3^2\omega_1^2\omega_2^2 - 3\omega_3v_3^2\omega_1\omega_2^3 - 30\omega_3c_s^2\omega_1^2\omega_2 -$
$4\omega_3v_3^2\omega_1\omega_2^2 + 28\omega_3c_s^2\omega_1^3 - 2v_3^2\omega_1\omega_2^3 + 16\omega_3\omega_1^3v_1^2 - 24\omega_3c_s^2\omega_1^3\omega_2 - 12\omega_3\omega_1^3 - 13\omega_3\omega_1v_1^2\omega_2^3 + 8\omega_3\omega_1\omega_2^2 + 12c_s^2\omega_1^2\omega_2^2 + 48\omega_3c_s^2\omega_1^2\omega_2^2 -$
$4\omega_3\omega_1v_1^2\omega_2^2 + 10\omega_3v_1^2\omega_2^3 + 2\omega_1\omega_2^3 - 13\omega_3\omega_1^3v_1^2\omega_2 - 6c_s^2\omega_1^3\omega_2 + 4\omega_3v_3^2\omega_1^3 + 10\omega_3\omega_1\omega_2^3$

$C_{37} = 6\omega_3c_s^2\omega_4\omega_1 - 2\omega_3v_3^2\omega_4\omega_2 + 9\omega_4\omega_1\omega_2 + 2\omega_3\omega_4\omega_2 + 27\omega_3c_s^2\omega_1\omega_2 - 9v_3^2\omega_4\omega_1\omega_2 - 9\omega_3\omega_1\omega_2 + 2\omega_3v_3^2\omega_4\omega_1 - 6\omega_3c_s^2\omega_4\omega_2 -$
$27c_s^2\omega_4\omega_1\omega_2 - 2\omega_3\omega_4\omega_1 + 9\omega_3v_3^2\omega_1\omega_2$

$C_{38} = -108\omega_3^2\omega_1^2v_1^2\omega_5\omega_2^3 + 8\omega_3^2c_s^4\omega_4^2\omega_1\omega_5\omega_2^3 + 24\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_5\omega_2 - 88\omega_3^2c_s^2\omega_4^2\omega_5\omega_2^3 + 54\omega_4^2\omega_1^3v_1^4\omega_5\omega_2^3 + 300\omega_3^2c_s^2\omega_4^2\omega_1v_1^2\omega_5\omega_2^3 -$
$36\omega_3^2\omega_4\omega_1v_1^2\omega_5\omega_2^3 - 96\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_5 - 72\omega_3c_s^2\omega_4^2\omega_1^3\omega_5\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1\omega_5\omega_2^3 - 6\omega_3^2c_s^2\omega_4^2\omega_1^2v_2^2\omega_5\omega_2^3 + 8\omega_3^2\omega_4^2\omega_5\omega_2^3 - 180\omega_3^2v_3^2\omega_4^2\omega_1v_1^2\omega_5\omega_2^3 +$
$180\omega_3c_s^2\omega_4^2\omega_1^3v_1^2\omega_5\omega_2^2 + 264\omega_3^2c_s^2\omega_4^2\omega_1^3v_1^2\omega_5 + 36\omega_3^2c_s^2\omega_4^2\omega_1\omega_5\omega_2^3 + 72\omega_3^2\omega_4^2\omega_1v_1^2\omega_5\omega_2^2 + 12\omega_3\omega_4^2\omega_1v_1^4\omega_5\omega_2^3 + 162\omega_3c_s^2v_3^2\omega_4^2\omega_1^3\omega_5\omega_2^3 +$
$72\omega_3c_s^4\omega_4^2\omega_1^3\omega_5\omega_2^3 + 324\omega_3^2c_s^2\omega_1^2v_1^2\omega_5\omega_2^3 - 288\omega_3^2v_3^2\omega_4^2\omega_1v_1^2\omega_5\omega_2^2 - 8\omega_3^2\omega_4^2\omega_1\omega_5\omega_2^2 + 72\omega_3c_s^2\omega_4^2\omega_1^3\omega_5\omega_2^2 - 28\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_5\omega_2 - 72\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^3 -$
$108\omega_3c_s^2\omega_4\omega_1^3v_1^2\omega_5\omega_2^2 - 36\omega_4^2\omega_1^3v_1^4\omega_5\omega_2^2 - 54\omega_3^2\omega_1^3v_1^4\omega_5\omega_2^3 - 216\omega_3^2c_s^2\omega_4^2v_1^2\omega_5\omega_2^3 - 24\omega_3^2c_s^2\omega_4^2\omega_1v_1^2\omega_5\omega_2^2 - 56\omega_3^2c_s^4\omega_4^2\omega_1\omega_5\omega_2^2 +$
$72\omega_4^2\omega_1^2v_1^2\omega_5\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^3\omega_5\omega_2 + 9\omega_3^2\omega_4\omega_1^3v_2^4\omega_5\omega_2^3 + 2\omega_3^2\omega_4^2\omega_1^3v_2^4\omega_5\omega_2^2 - 72\omega_3c_s^4\omega_4^2\omega_1^3\omega_5\omega_2^2 - 180\omega_3c_s^2v_3^2\omega_4^2\omega_1^3\omega_5\omega_2^2 + 36\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_5\omega_2 -$
$108\omega_3^2c_s^2\omega_4\omega_1v_1^2\omega_5\omega_2^2 + 24\omega_3^2\omega_4^2v_1^2\omega_5\omega_2^3 + 2\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_5\omega_2^3 - 648\omega_3^2c_s^2v_3^2\omega_4\omega_1\omega_5\omega_2^3 - 108\omega_3c_s^2\omega_4^2\omega_1^3v_1^2\omega_5\omega_2^3 - 48\omega_3^2\omega_4^2\omega_1v_1^2\omega_5\omega_2^3 +$
$64\omega_3^2c_s^2\omega_4^2\omega_1\omega_5\omega_2^2 + 9\omega_3\omega_4^2\omega_1^3v_2^2\omega_5\omega_2^3 - 96\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^2\omega_5\omega_2 + 48\omega_3c_s^2v_3^2\omega_4^2\omega_1^3\omega_5\omega_2 + 16\omega_3c_s^4\omega_4^2\omega_1^3\omega_5\omega_2 - 54\omega_4^2\omega_1^3v_1^2\omega_5\omega_2^3 - 4\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_5\omega_2^2 -$
$288\omega_3^2c_s^2\omega_4\omega_1^2\omega_5\omega_2^3 - 24\omega_3^2v_3^2\omega_4^2\omega_5\omega_2^3 + 108\omega_3^2\omega_1^2v_1^4\omega_5\omega_2^3 + 6\omega_3^2c_s^2\omega_4^2\omega_1^3v_2^2\omega_5\omega_2^2 - 162\omega_3^2c_s^2v_3^2\omega_4\omega_1^3\omega_5\omega_2^3 + 36\omega_3^2\omega_4\omega_1v_1^4\omega_5\omega_2^3 +$
$132\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^2\omega_5\omega_2^2 + 32\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_5 + 24\omega_3^2\omega_4^2\omega_1v_1^4\omega_5\omega_2^2 - 72\omega_3c_s^2\omega_4^2\omega_1^2v_1^2\omega_5\omega_2^3 + 288\omega_3^2c_s^4\omega_4\omega_1^2\omega_5\omega_2^3 - 16\omega_3c_s^2\omega_4^2\omega_1^3\omega_5\omega_2 +$
$27\omega_3^2c_s^2\omega_4\omega_1^3v_1^2\omega_5\omega_2^3 + 4\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_5\omega_2^2 + 240\omega_3^2c_s^2v_3^2\omega_4^2\omega_5\omega_2^3 - 12\omega_3\omega_4^2\omega_1v_1^2\omega_5\omega_2^3 - 6\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^2\omega_5\omega_2^3 + 336\omega_3c_s^2v_3^2\omega_4^2\omega_1\omega_5\omega_2^3 +$
$160\omega_3c_s^4\omega_4^2\omega_1\omega_5\omega_2^3 + 108\omega_3c_s^2\omega_4\omega_1^2v_1^2\omega_5\omega_2^3 - 72\omega_3c_s^2\omega_4^2\omega_1^3v_1^2\omega_5\omega_2 - 72\omega_4^2\omega_1^2v_1^4\omega_5\omega_2^3 - 9\omega_3^2\omega_4\omega_1^3v_2^2\omega_5\omega_2^3 + 36\omega_4^2\omega_1^3v_1^2\omega_5\omega_2^2 + 54\omega_3^2\omega_1^3v_1^2\omega_5\omega_2^3 -$

$96\omega_3^2\omega_4^2v_1^4\omega_5\omega_2^3 - 2\omega_3^2\omega_4^2\omega_1^2v_2^4\omega_5\omega_2^3 - 48\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_5\omega_2^2 - 160\omega_3c_s^2\omega_4^2\omega_1\omega_5\omega_2^3 - 162\omega_3^2c_s^2\omega_1^3v_1^2\omega_5\omega_2^3 - 2\omega_3^2\omega_4^2\omega_1^3v_2^2\omega_5\omega_2^2 - 9\omega_3\omega_4^2\omega_1^3v_2^4\omega_5\omega_2^3 +$
$108\omega_3c_s^2\omega_4^2\omega_1^2v_1^2\omega_5\omega_2^2 - 6\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_5\omega_2^3 + 288\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^3 + 108\omega_3^2\omega_4^2\omega_1v_1^4\omega_5\omega_2^3 - 108\omega_3^2c_s^2\omega_{4\omega_1^2v_1^2\omega_5\omega_2^2} - 168\omega_3^2c_s^2v_3^2\omega_4^2\omega_1\omega_5\omega_2^2 +$
$36\omega_3\omega_4^2v_1^4\omega_5\omega_2^3 - 216c_s^2\omega_4^2\omega_1^2v_1^2\omega_5\omega_2^3 + 24\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^3\omega_5 + 64\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_5\omega_2 + 112\omega_3c_s^4\omega_4^2\omega_1^2\omega_5\omega_2^2 + 264\omega_3c_s^2v_3^2\omega_4^2\omega_1^2\omega_5\omega_2^2 -$
$72\omega_3\omega_4^2\omega_1^3v_1^2\omega_5\omega_2^2 + 152\omega_3^2c_s^4\omega_4^2\omega_5\omega_2^3 - 12\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^3\omega_5\omega_2 + 288\omega_3^2c_s^2\omega_{4\omega_1\omega_5\omega_2^3} - 84\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_5\omega_2^2 + 132\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_5\omega_2 +$
$144\omega_3^2\omega_{4\omega_1^2v_1^2\omega_5\omega_2^3} + 144\omega_3^2v_3^2\omega_4^2\omega_1^3v_1^2\omega_5 - 56\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_5\omega_2 + 24\omega_3^2v_3^2\omega_4^2\omega_{1\omega_5\omega_2^3} - 112\omega_3c_s^2\omega_4^2\omega_1^2\omega_5\omega_2^2 + 36\omega_3^2\omega_{4\omega_1^3v_1^4\omega_5\omega_2^2} -$
$288\omega_3^2c_s^4\omega_{4\omega_1\omega_5\omega_2^3} - 8\omega_3^2\omega_4^2\omega_1^2\omega_5\omega_2 - 24\omega_3^2v_3^2\omega_4^2\omega_1^3\omega_5 - 288\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^3 - 60\omega_3^2c_s^2\omega_4^2\omega_1^2v_1^2\omega_5\omega_2^3 + 18\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_5\omega_2^3 - 180\omega_3^2v_3^2\omega_4^2\omega_1^3v_1^2\omega_5\omega_2 +$
$18\omega_3^2\omega_4^2\omega_1^3v_1^4\omega_5\omega_2^2 - 468\omega_3c_s^2v_3^2\omega_4^2\omega_1^2\omega_5\omega_2^3 - 216\omega_3c_s^2\omega_4^2\omega_1^2\omega_5\omega_2^3 + 48\omega_3^2\omega_4^2\omega_1^3v_1^4\omega_5 + 54\omega_{3\omega_4^2\omega_1^3v_1^2\omega_5\omega_2^3} - 348\omega_3^2c_s^2\omega_4^2\omega_1^3v_1^2\omega_5\omega_2 -$
$216\omega_3^2c_s^2\omega_{4\omega_1^2v_1^2\omega_5\omega_2^2} + 12\omega_{3\omega_4^2\omega_1^2v_1^4\omega_5\omega_2^2} + 216\omega_3^2v_3^2\omega_4^2v_1^2\omega_5\omega_2^3 - 27\omega_3c_s^2\omega_4^2\omega_1^3v_2^2\omega_5\omega_2^3 - 120\omega_3^2c_s^2v_3^2\omega_4^2\omega_{1\omega_5\omega_2^3} - 24\omega_{3\omega_4^2\omega_1^3v_1^4\omega_5\omega_2} +$
$36\omega_{3\omega_4\omega_1^2v_1^4\omega_5\omega_2^3} + 48\omega_3^2c_s^2\omega_4^2\omega_1^2v_1^2\omega_5\omega_2^2 + 36\omega_{3\omega_4\omega_1^3v_1^2\omega_5\omega_2^2} + 24\omega_3^2v_3^2\omega_4^2\omega_1^3\omega_5\omega_2 + 24\omega_3^2\omega_4^2\omega_1^2v_1^4\omega_5\omega_2 + 54\omega_3^2\omega_{4\omega_1^3v_1^4\omega_5\omega_2^3} +$
$360\omega_3^2v_3^2\omega_4^2\omega_1^2v_1^2\omega_5\omega_2^2 + 36\omega_3^2\omega_{4\omega_1^2v_1^2\omega_5\omega_2^2} + 216\omega_3c_s^2\omega_4^2\omega_1^2\omega_5\omega_2^3 + 24\omega_3^2v_3^2\omega_4^2\omega_{1\omega_5\omega_2^2} + 108\omega_3^2c_s^2\omega_{4\omega_1^3v_1^2\omega_5\omega_2^3} - 24\omega_3^2c_s^2\omega_4^2\omega_1^2v_1^2\omega_5\omega_2 +$
$72\omega_{3\omega_4^2\omega_1^3v_1^4\omega_5\omega_2^2} - 108c_s^2\omega_4^2\omega_1^3v_1^2\omega_5\omega_2^2 - 36\omega_{3\omega_4^2\omega_1^2v_1^2\omega_5\omega_2^3} - 72\omega_3^2v_3^2\omega_4^2\omega_1^2v_1^2\omega_5\omega_2 - 36\omega_3^2\omega_4^2\omega_1^2v_1^4\omega_5\omega_2^2 + 180\omega_3c_s^2\omega_4^2\omega_{1\omega_5\omega_2^3} -$
$28\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_5\omega_2^3 - 36\omega_3^2\omega_{4\omega_1^3v_1^2\omega_5\omega_2^2} - 144\omega_3^2\omega_{4\omega_1^2v_1^4\omega_5\omega_2^3} - 72\omega_3^2\omega_4^2\omega_1^3v_1^4\omega_5\omega_2 + 8\omega_3^2\omega_4^2\omega_1^3\omega_5 - 40\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_5 + 4\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_5\omega_2^2 +$
$60\omega_3^2c_s^2\omega_4^2\omega_1^3v_1^2\omega_5\omega_2^2 + 56\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_5\omega_2^2 - 72\omega_3^2c_s^4\omega_{4\omega_1^3\omega_5\omega_2^3} - 18\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_5\omega_2^2 - 18\omega_3^2\omega_4^2\omega_1^2v_1^4\omega_5\omega_2^3 + 16\omega_3^2\omega_4^2\omega_1^2\omega_5\omega_2^2 - 12\omega_{3\omega_4^2\omega_1^2v_1^2\omega_5\omega_2^2} +$
$108\omega_3^2c_s^2\omega_{4\omega_1^3v_1^2\omega_5\omega_2^2} + 162c_s^2\omega_4^2\omega_1^3v_1^2\omega_5\omega_2^3 - 54\omega_{3\omega_4^2\omega_1^3v_1^4\omega_5\omega_2^3} - 36\omega_{3\omega_4\omega_1^3v_1^4\omega_5\omega_2^2} + 72\omega_3^2c_s^2\omega_{4\omega_1^3\omega_5\omega_2^3} - 36\omega_{3\omega_4\omega_1^2v_1^2\omega_5\omega_2^3} +$
$24\omega_{3\omega_4^2\omega_1^3v_1^2\omega_5\omega_2} - 72\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_5\omega_2^2 + 6\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^3\omega_5\omega_2^2 - 36\omega_3^2\omega_{4\omega_1^2v_1^4\omega_5\omega_2^2} + 648\omega_3^2c_s^2v_3^2\omega_{4\omega_1^2\omega_5\omega_2^3} - 54\omega_3^2\omega_{4\omega_1^3v_1^2\omega_5\omega_2^3}$

$C_{39} = 6\omega_1^3\omega_2 - 6v_3^2\omega_1^2\omega_2 - 18c_s^2\omega_{1\omega_2^3} + 6\omega_1^2v_1^2\omega_2^2 - 12\omega_1^2v_2^2\omega_2 - 12\omega_1^2\omega_2^2 + 36c_s^2\omega_{1\omega_2^2} + 2v_3^2\omega_2^3 - 3v_3^2\omega_1^3\omega_2 + 24\omega_1^2\omega_2 - 6\omega_1^2v_1^2\omega_2 + 6v_3^2\omega_1^2\omega_2^2 +$
$4\omega_1^3v_2^2 + 12\omega_1v_2^2\omega_2^2 + 4\omega_1^3v_1^2 - 72c_s^2\omega_1^2\omega_2 - 12\omega_1^3 - 3v_3^2\omega_{1\omega_2^3} - 4v_2^2\omega_2^3 + 36c_s^2\omega_1^3 - 12\omega_{1\omega_2^2} - 3\omega_1^3v_1^2\omega_2 + 36c_s^2\omega_1^2\omega_2^2 + 6\omega_{1\omega_2^3} + 4v_3^2\omega_1^3 -$
$18c_s^2\omega_1^3\omega_2 - 3\omega_1v_1^2\omega_2^3 + 2v_1^2\omega_2^3$

$C_{40} = 72\omega_3^2\omega_4^2v_1^2\omega_2^3 - 108\omega_4^2\omega_1^3\omega_2^3 - 108\omega_3^2\omega_4^2\omega_1v_1^2\omega_2^3 + 432\omega_3c_s^2\omega_{4\omega_1^2\omega_2^3} - 36\omega_3^2v_3^2\omega_{4\omega_1^3\omega_2^2} + 180\omega_3^2c_s^2\omega_4^2\omega_{1\omega_2^3} - 108\omega_{3\omega_4^2\omega_1^3\omega_2^2} +$
$216\omega_3^2c_s^2\omega_{4\omega_1^2\omega_2^2} + 36\omega_3^2\omega_{4\omega_1^2v_2^2\omega_2^3} - 72\omega_3^2\omega_{4\omega_1^2\omega_2^2} + 24\omega_3^2\omega_4^2\omega_2^3 - 36\omega_3^2\omega_4^2\omega_{1\omega_2^3} - 108\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_2 - 36\omega_3c_s^2\omega_4^2\omega_{1\omega_2^3} + 63\omega_3^2v_3^2\omega_{4\omega_1^3\omega_2^3} +$
$36\omega_{3\omega_4^2\omega_1^3v_2^2\omega_2^2} + 180\omega_{3\omega_4\omega_1^2v_2^2\omega_2^3} + 72\omega_4^2\omega_1^3\omega_2^2 + 24\omega_3^2\omega_4^2\omega_{1\omega_2^2} + 36\omega_3^2\omega_{4\omega_1^2v_2^2\omega_2^2} + 144\omega_3^2\omega_{4\omega_1^2\omega_2^3} + 336\omega_3^2c_s^2\omega_4^2\omega_1^3 - 96\omega_3^2v_3^2\omega_4^2\omega_2^3 -$
$432\omega_3^2c_s^2\omega_{4\omega_1^2\omega_2^3} + 63\omega_{3\omega_4^2\omega_1^3\omega_2^3} + 36\omega_{3\omega_3^2\omega_{4\omega_1^3\omega_2^2}} - 72\omega_3^2c_s^2\omega_4^2\omega_{1\omega_2^2} + 72\omega_3^2\omega_{4\omega_1^3\omega_2^2} + 48\omega_3^2\omega_4^2v_2^2\omega_2^3 - 36\omega_3v_3^2\omega_{4\omega_1^2\omega_2^3} - 216\omega_3^2c_s^2\omega_{4\omega_1^3\omega_2^2} +$
$48\omega_{3\omega_4^2\omega_1^2\omega_2^2} - 36\omega_3^2\omega_{4\omega_1v_2^2\omega_2^3} + 144\omega_3^2\omega_4^2\omega_1^3v_1^2 + 108\omega_3^2v_3^2\omega_4^2\omega_{1\omega_2^3} - 324\omega_{3c_s^2\omega_{4\omega_1^3\omega_2^3}} + 36\omega_3^2v_3^2\omega_{4\omega_1^2\omega_2^2} + 144\omega_4^2\omega_1^2\omega_2^3 - 24\omega_{3\omega_4^2\omega_1^3v_2^2\omega_2} -$
$36\omega_4^2\omega_1^3v_2^2\omega_2^2 - 108\omega_{3\omega_4^2\omega_1^2\omega_2^2} - 48\omega_3^2\omega_{4\omega_1v_2^2\omega_2^2} - 24\omega_3v_3^2\omega_4^2\omega_{1\omega_2^3} + 189\omega_3^2c_s^2\omega_{4\omega_1^3\omega_2^3} + 48\omega_{3\omega_4^2\omega_1^3\omega_2} + 54\omega_3^2\omega_1^3v_2^2\omega_2^3 - 36\omega_3^2\omega_4^2\omega_1^3v_2^2\omega_2 -$
$63\omega_3^2\omega_{4\omega_2^3\omega_2^3} + 54\omega_4^2\omega_1^3v_2^2\omega_2^3 + 48\omega_3^2\omega_4^2\omega_1^3v_2^2 - 180\omega_3^2v_3^2\omega_{4\omega_1^2\omega_2^3} + 216\omega_3c_s^2\omega_{4\omega_1^3\omega_2^2} + 12\omega_{3\omega_4^2\omega_1v_2^2\omega_2^3} + 24\omega_3^2v_3^2\omega_{4\omega_1^2\omega_2} + 60\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2^2 -$
$24\omega_3v_3^2\omega_4^2\omega_1^3\omega_2 - 36\omega_3^2\omega_{4\omega_1^3v_2^2\omega_2^2} - 36v_3^2\omega_4^2\omega_1^3\omega_2^2 + 12\omega_{3\omega_4^2\omega_1\omega_2^3} + 144\omega_3v_3^2\omega_4^2\omega_1^2\omega_2^3 - 20\omega_3^2\omega_4^2\omega_1^3\omega_2^2 - 216\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2 + 48\omega_3^2v_3^2\omega_4^2\omega_1^3 -$
$36\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2^2 - 120\omega_3^2c_s^2\omega_4^2\omega_2^3 - 108\omega_{3\omega_4\omega_1^3v_2^2\omega_2^3} + 12\omega_{3\omega_4^2\omega_1^2v_2^2\omega_2^2} + 72\omega_3^2v_3^2\omega_{4\omega_1\omega_2^3} - 189\omega_3c_s^2\omega_4^2\omega_1^3\omega_2^3 + 96\omega_3^2\omega_4^2\omega_1^2\omega_2 + 54v_3^2\omega_4^2\omega_1^3\omega_2^3 -$
$144\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2 - 60\omega_3v_3^2\omega_4^2\omega_1^2\omega_2^2 - 54\omega_3^2v_3^2\omega_1^3\omega_2^3 - 144\omega_{3\omega_4\omega_1^2\omega_2^3} + 72\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2^2 - 432c_s^2\omega_4^2\omega_1^2\omega_2^3 + 36\omega_{3\omega_4\omega_1^3v_2^2\omega_2^2} - 72\omega_3^2v_3^2\omega_4^2\omega_1^3\omega_2 +$
$324\omega_3c_s^2\omega_4^2\omega_1^3\omega_2^2 - 36\omega_{3\omega_4^2\omega_1^2v_2^2\omega_2^3} - 20\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2^3 - 144\omega_3^2\omega_4^2\omega_1^3 - 144\omega_3c_s^2\omega_4^2\omega_1^3\omega_2 + 20\omega_3^2v_3^2\omega_4^2\omega_1^3\omega_2^2 + 324\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^3 - 72\omega_4^2\omega_1^2v_2^2\omega_2^3 -$
$216c_s^2\omega_4^2\omega_1^3\omega_2^2 - 108\omega_3^2\omega_1^2v_2^2\omega_2^3 - 36\omega_3^2\omega_{4\omega_1\omega_2^3} - 36\omega_3^2\omega_{4\omega_1v_2^2\omega_2^3} - 108\omega_3^2\omega_4^2\omega_1^2\omega_2^2 - 72\omega_{3\omega_4\omega_1^3\omega_2^2} + 180\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^2 + 108\omega_3^2c_s^2\omega_{4\omega_1\omega_2^3} -$
$63\omega_3v_3^2\omega_4^2\omega_1^3\omega_2^3 - 48\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2 + 216\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2^2 - 144\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^2 + 324c_s^2\omega_4^2\omega_1^3\omega_2^3 + 24\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2 + 72\omega_3v_3^2\omega_4^2\omega_1^3\omega_2^2 -$
$72v_3^2\omega_4^2\omega_1^2\omega_2^3 - 360\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2 - 60\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^3 + 108\omega_3^2v_3^2\omega_1^2\omega_2^3 + 108\omega_{3\omega_4\omega_1^3\omega_2^3} + 20\omega_3^2\omega_4^2\omega_1^2\omega_2^3 + 144\omega_3^2\omega_4^2\omega_1^3\omega_2$

$C_{41} =$
$-3\omega_3^2\omega_1^3v_1^2\omega_2^2 - 3\omega_3\omega_1^2v_1^2\omega_2^3 - 18\omega_3c_s^2\omega_{4\omega_1^2\omega_2^3} - 18c_s^2\omega_{4\omega_1^3\omega_2^2} - 12\omega_3c_s^2\omega_{4\omega_1^3\omega_2} - 4\omega_3^2\omega_4^2v_1^2\omega_2 - 3\omega_3^2v_3^2\omega_{1\omega_2^3} + 3\omega_{4\omega_1^2v_1^2\omega_2^3} + 36\omega_3^2c_s^2\omega_4^2\omega_2^2 -$
$12\omega_3^2\omega_{4\omega_1^2\omega_2^2} + 3\omega_3v_3^2\omega_1^3\omega_2^2 + 6\omega_{3\omega_1^2\omega_2^3} - 18\omega_3^2c_s^2\omega_1^3\omega_2^2 + 6\omega_3c_s^2\omega_4^2\omega_2^2 - 4\omega_3^2v_3^2\omega_{4\omega_1^2\omega_2} + 6\omega_3^2\omega_{4\omega_1^3\omega_2} + 6\omega_{3\omega_1^3\omega_2^3} + 3\omega_3v_3^2\omega_{4\omega_1^3\omega_2^2} -$
$18\omega_3^2c_s^2\omega_{4\omega_1^3\omega_2} + 3v_3^2\omega_{4\omega_1^2\omega_2^3} - 36\omega_3^2\omega_{4\omega_1^2v_2^2\omega_2} - 3v_3^2\omega_{4\omega_1^3\omega_2^2} - 3\omega_3v_3^2\omega_{4\omega_1^2\omega_2^3} - 2\omega_{3\omega_4\omega_1\omega_2^3} + \omega_{3\omega_4\omega_1^2v_1^2\omega_2^2} - 2\omega_3v_3^2\omega_{4\omega_1^3\omega_2} + 6\omega_3^2v_3^2\omega_{4\omega_1^2\omega_2^2} +$
$18\omega_3^2c_s^2\omega_1^2\omega_2^3 - 3\omega_3^2\omega_1v_1^2\omega_2^3 - 12\omega_3^2\omega_{4\omega_1^3} - 3\omega_{3\omega_4\omega_1^2v_1^2\omega_2^3} - 36\omega_3^2c_s^2\omega_{4\omega_1^2\omega_2} + \omega_3v_3^2\omega_{4\omega_1^2\omega_2^2} + 20\omega_3^2\omega_{4\omega_1^2\omega_2} - 6\omega_{3\omega_1^3\omega_2^2} - 3\omega_3v_3^2\omega_1^2\omega_2^3 +$
$18\omega_3^2c_s^2\omega_1^2\omega_2^2 + 20\omega_3^2c_s^2\omega_{4\omega_2^3} - 3\omega_3^2v_3^2\omega_{4\omega_1^3\omega_2} + 18c_s^2\omega_{4\omega_1^2\omega_2^3} + 4\omega_3^2v_3^2\omega_{4\omega_1^3} + 6\omega_3^2\omega_{4\omega_1^2v_1^2\omega_2^2} + 18\omega_3c_s^2\omega_{4\omega_1^3\omega_2^2} - 2\omega_{3\omega_4\omega_1^2\omega_2^2} - 3\omega_3^2v_3^2\omega_1^3\omega_2^2 -$
$12\omega_3^2\omega_{4\omega_2^2\omega_2^3} - 2\omega_{3\omega_4\omega_1^3v_1^2\omega_2} - 3\omega_{4\omega_1^3v_1^2\omega_2^2} - 6\omega_{4\omega_1^2\omega_2^3} + 3\omega_{3\omega_1^3v_1^2\omega_2^2} + 3\omega_3^2\omega_1^2v_1^2\omega_2^3 + 4\omega_3^2\omega_{4\omega_1^3v_1^2} - 3\omega_3^2v_3^2\omega_{4\omega_1\omega_2^3} - 3\omega_3^2\omega_{4\omega_1v_1^2\omega_2^3} + 6\omega_3^2\omega_1^3\omega_2^2 +$
$4\omega_{3\omega_4\omega_1^3\omega_2} + \omega_3v_3^2\omega_{4\omega_1\omega_2^3} + 6\omega_{3\omega_4\omega_1^2\omega_2^3} + \omega_{3\omega_4\omega_1v_1^2\omega_2^3} - 18\omega_3^2c_s^2\omega_{1\omega_2^3} - 4\omega_3^2\omega_{4\omega_1v_1^2\omega_2^2} - 4\omega_3^2v_3^2\omega_{4\omega_1\omega_2^2} + 3\omega_3^2\omega_1^2v_1^2\omega_2^2 + 12\omega_3^2\omega_{4\omega_1^3v_2^2} +$
$18\omega_{3c_s^2\omega_1^3\omega_2^2} - 3\omega_3^2\omega_{4\omega_1^3v_1^2\omega_2} + 4\omega_3^2\omega_{4v_1^2\omega_2^3} - 18\omega_{3c_s^2\omega_1^2\omega_2^3} - 6\omega_3^2\omega_1^2\omega_2^3 + 6\omega_3^2\omega_{4\omega_1\omega_2^3} - 6\omega_{3\omega_4\omega_1^3\omega_2^2} + 3\omega_3^2v_3^2\omega_1^2\omega_2^2 + 4\omega_3^2v_3^2\omega_{4\omega_2^3} - 18\omega_3^2c_s^2\omega_{4\omega_1\omega_2^3} +$
$28\omega_3^2c_s^2\omega_{4\omega_1^3} + 6\omega_{4\omega_1^3\omega_2^2} + 6\omega_3c_s^2\omega_{4\omega_1\omega_2^3} - 12\omega_3^2c_s^2\omega_{4\omega_1\omega_2^2} + 3\omega_3^2v_3^2\omega_1^2\omega_2^3 + 36\omega_3^2\omega_{4\omega_1v_2^2\omega_2^2} - 4\omega_3^2\omega_{4\omega_2^3} + 3\omega_{3\omega_4\omega_1^3v_1^2\omega_2^2} - 6\omega_3^2\omega_1^2\omega_2^2 - 4\omega_3^2\omega_{4\omega_1\omega_2^2}$

$C_{42} = -96\omega_3^2\omega_4^2v_1^2\omega_2^3 - 108\omega_4^2\omega_1^3\omega_2^3 + 108\omega_3^2\omega_4^2\omega_1v_1^2\omega_2^3 + 432\omega_3c_s^2\omega_{4\omega_1^2\omega_2^3} + 180\omega_3^2c_s^2\omega_4^2\omega_{1\omega_2^3} - 24\omega_{3\omega_4^2\omega_1^3v_1^2\omega_2} - 36\omega_4^2\omega_1^3v_1^2\omega_2^2 -$
$108\omega_{3\omega_4^2\omega_1^3\omega_2^2} + 216\omega_3^2c_s^2\omega_{4\omega_1^2\omega_2^2} + 36\omega_3^2\omega_{4\omega_1^2v_2^2\omega_2^3} - 72\omega_3^2\omega_{4\omega_1^2\omega_2^2} + 24\omega_3^2\omega_4^2\omega_2^3 - 36\omega_3^2\omega_4^2\omega_{1\omega_2^3} - 72\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_2 - 36\omega_3c_s^2\omega_4^2\omega_{1\omega_2^3} +$
$36\omega_{3\omega_4^2\omega_1^3v_2^2\omega_2^2} + 180\omega_{3\omega_4\omega_1^2v_2^2\omega_2^3} + 24\omega_3^2\omega_4^2\omega_1v_1^2\omega_2^2 + 72\omega_4^2\omega_1^3\omega_2^2 - 54\omega_3^2\omega_1^3v_1^2\omega_2^3 + 24\omega_3^2\omega_4^2\omega_{1\omega_2^2} - 24\omega_{3\omega_4^2\omega_1v_1^2\omega_2^3} + 36\omega_3^2\omega_{4\omega_1^2v_2^2\omega_2^2} +$
$144\omega_3^2\omega_{4\omega_1^2\omega_2^3} + 336\omega_3^2c_s^2\omega_4^2\omega_1^3 + 72\omega_3^2v_3^2\omega_4^2\omega_2^3 - 432\omega_3^2c_s^2\omega_{4\omega_1^2\omega_2^3} + 63\omega_{3\omega_4^2\omega_1^3\omega_2^3} + 54\omega_4^2\omega_1^3v_1^2\omega_2^3 - 72\omega_3^2c_s^2\omega_4^2\omega_{1\omega_2^2} + 72\omega_3^2\omega_{4\omega_1^3\omega_2^2} +$
$48\omega_3^2\omega_4^2v_2^2\omega_2^3 - 216\omega_3^2c_s^2\omega_{4\omega_1^3\omega_2^2} + 48\omega_{3\omega_4^2\omega_1^2\omega_2^2} - 36\omega_3^2\omega_4^2\omega_{1\omega_2^3} - 63\omega_{3\omega_4^2\omega_1^3v_1^2\omega_2^3} + 20\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_2^2 + 48\omega_3^2\omega_4^2\omega_1^3v_1^2 - 108\omega_3^2v_3^2\omega_4^2\omega_{1\omega_2^3} -$
$324\omega_3c_s^2\omega_{4\omega_1^3\omega_2^3} - 180\omega_3^2\omega_{4\omega_1^2v_1^2\omega_2^3} + 144\omega_4^2\omega_1^2\omega_2^3 - 24\omega_{3\omega_4^2\omega_1^3v_2^2\omega_2} - 36\omega_4^2\omega_1^3v_2^2\omega_2^2 - 108\omega_{3\omega_4^2\omega_1^2\omega_2^3} - 48\omega_3^2\omega_4^2\omega_{1v_2^2\omega_2^2} + 189\omega_3^2c_s^2\omega_{4\omega_1^3\omega_2^3} -$
$36\omega_{3\omega_4\omega_1^2v_1^2\omega_2^3} + 72\omega_{3\omega_4^2\omega_1^3v_1^2\omega_2^2} + 48\omega_{3\omega_4^2\omega_1^3\omega_2} + 54\omega_{4^3\omega_1^3v_2^2\omega_2^3} - 36\omega_3^2\omega_4^2\omega_1^3v_2^2\omega_2 - 63\omega_{3\omega_4\omega_1^3\omega_2^3} + 54\omega_4^2\omega_1^3v_2^2\omega_2^3 + 48\omega_3^2\omega_4^2\omega_1^3v_2^2 +$
$36\omega_{3\omega_4\omega_1^2v_1^2\omega_2^2} + 216\omega_3c_s^2\omega_{4\omega_1^3\omega_2^2} + 12\omega_{3\omega_4^2\omega_1v_2^2\omega_2^3} + 60\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2^2 - 36\omega_3^2\omega_{4\omega_1^3v_2^2\omega_2^2} + 12\omega_{3\omega_4^2\omega_1\omega_2^3} - 72\omega_4^2\omega_1^2v_1^2\omega_2^3 - 20\omega_3^2\omega_4^2\omega_1^3\omega_2^2 +$
$24\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2 + 144\omega_3^2v_3^2\omega_4^2\omega_1^3 + 216\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2^2 - 120\omega_3^2c_s^2\omega_4^2\omega_2^3 + 108\omega_3^2\omega_1^2v_1^2\omega_2^3 - 108\omega_{3\omega_4\omega_1^3v_2^2\omega_2^3} + 12\omega_{3\omega_4^2\omega_1^2v_2^2\omega_2^2} +$
$72\omega_3^2\omega_{4\omega_1v_1^2\omega_2^3} - 189\omega_3c_s^2\omega_4^2\omega_1^3\omega_2^3 + 96\omega_3^2\omega_4^2\omega_1^2\omega_2 - 144\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2 - 144\omega_{3\omega_4\omega_1^2\omega_2^3} + 72\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2^2 - 432c_s^2\omega_4^2\omega_1^2\omega_2^3 + 36\omega_{3\omega_4\omega_1^3v_2^2\omega_2^2} -$
$108\omega_3^2v_3^2\omega_4^2\omega_1^3\omega_2 + 324\omega_3c_s^2\omega_4^2\omega_1^3\omega_2^2 - 36\omega_{3\omega_4^2\omega_1^2v_2^2\omega_2^3} - 144\omega_3^2\omega_4^2\omega_1^3 - 144\omega_3c_s^2\omega_4^2\omega_1^3\omega_2 + 324\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^3 - 72\omega_4^2\omega_1^2v_2^2\omega_2^3 - 216c_s^2\omega_4^2\omega_1^3\omega_2^2 -$
$36\omega_3^2\omega_{4\omega_1^3v_1^2\omega_2^2} - 20\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2^3 - 108\omega_3^2\omega_1^2v_2^2\omega_2^3 - 36\omega_3^2\omega_{4\omega_1\omega_2^3} - 36\omega_3^2\omega_{4\omega_1v_2^2\omega_2^3} - 108\omega_3^2\omega_4^2\omega_1^2\omega_2^2 - 60\omega_{3\omega_4^2\omega_1^2v_1^2\omega_2^2} - 72\omega_{3\omega_4\omega_1^3\omega_2^2} +$
$180\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^2 + 108\omega_3^2c_s^2\omega_{4\omega_1\omega_2^3} - 48\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2 + 63\omega_3^2\omega_{4\omega_1^3v_1^2\omega_2^3} - 36\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2^2 - 144\omega_{3c_s^2\omega_4^2\omega_1^2\omega_2^2} + 324c_s^2\omega_4^2\omega_1^3\omega_2^3 -$
$216\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2 - 360\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2 - 60\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^3 + 108\omega_{3\omega_4\omega_1^3\omega_2^3} + 144\omega_{3\omega_4^2\omega_1^2v_1^2\omega_2^3} + 20\omega_3^2\omega_4^2\omega_1^2\omega_2^3 + 36\omega_{3\omega_4\omega_1^3v_1^2\omega_2^2} + 144\omega_3^2\omega_4^2\omega_1^3\omega_2$

$C_{43} = 24\omega_3^2v_3^2\omega_1^3v_2^2\omega_2^2 + 40\omega_3^2c_s^2\omega_1^2\omega_2 - 8\omega_3^2v_3^2\omega_{1\omega_2^3} + 108\omega_3^2c_s^2\omega_{1v_2^2\omega_2^3} - 6\omega_3^2c_s^4\omega_1^2\omega_2^3 - 84\omega_3^2c_s^4\omega_1^3\omega_2 + 8\omega_3^2\omega_{1\omega_2^2} - 60\omega_3^2\omega_{1v_2^2\omega_2^3} - 20\omega_3^2c_s^2v_3^2\omega_2^3 +$
$22\omega_3^2c_s^2v_3^2\omega_{1\omega_2^3} - 5\omega_3^2c_s^2\omega_1^3\omega_2^2 - 8\omega_3^2c_s^2\omega_{1\omega_2^3} + 4\omega_3^2\omega_1^3 + 8\omega_3^2c_s^2v_3^2\omega_{1\omega_2^3} + 48\omega_3^2\omega_{1v_2^2\omega_2^2} + 8\omega_3^2c_s^2v_3^2\omega_{1\omega_2^2} - 324\omega_3^2c_s^2\omega_1^3v_2^2\omega_2 + 8\omega_3^2\omega_{1\omega_2^3} + 84\omega_3^2\omega_1^3v_2^2\omega_2 -$
$4\omega_3^2v_3^2\omega_1^3 - 8\omega_3^2v_3^2\omega_{1\omega_2^2} + 42\omega_3^2c_s^4\omega_1^2\omega_2^2 - 216\omega_3^2c_s^2\omega_{1v_2^2\omega_2^2} - 72\omega_3^2v_3^2v_2^2\omega_2^3 + 72\omega_3^2c_s^2\omega_1^3v_2^2\omega_2^2 - 24\omega_3^2\omega_1^3v_2^2\omega_2^2 - 36\omega_3^2c_s^4\omega_1^2\omega_2 + 96\omega_3^2v_3^2\omega_{1v_2^2\omega_2^3} +$

$$56\omega_3^2c_s^2\omega_1^3\omega_2 + 5\omega_3^2c_s^2\omega_1^2\omega_2^3 - 48\omega_3^2\omega_1^3v_2^2 + 72\omega_3^2\omega_1^2v_2^4\omega_2^2 + 24\omega_3^2v_2^2\omega_2^3 + 6\omega_3^2c_s^4\omega_1^3\omega_2^2 - 52\omega_3^2c_s^2\omega_1^3 - 36\omega_3^2c_s^4\omega_2^3 + 24\omega_3c_s^4\omega_1\omega_2^3 - 48\omega_3^2v_3^2\omega_1^3v_2^2\omega_2 +$$
$$24\omega_3^2v_3^2\omega_1^3v_2^2 - 34\omega_3^2c_s^2\omega_1^2\omega_2^2 + 24\omega_3^2v_3^2\omega_1v_2^2\omega_2^2 - \omega_3^2v_3^2\omega_1^3\omega_2^2 + 12c_s^2\omega_1^3\omega_2^2 - 8\omega_3^2\omega_2^3 - 54\omega_3c_s^4\omega_1^2\omega_2^3 + 24\omega_3^2\omega_1^3v_2^4 - 24\omega_3^2\omega_1^2v_2^2\omega_2 + 2\omega_3^2c_s^2v_3^2\omega_1^3\omega_2^2 -$$
$$4\omega_3^2\omega_1^2\omega_2 - 12\omega_3c_s^4\omega_1^3\omega_2 - 72\omega_3^2\omega_1v_2^2\omega_2^2 - 36\omega_3^2\omega_1^3v_2^4\omega_2 + 8\omega_3^2v_3^2\omega_2^3 - 8\omega_3^2c_s^2\omega_1\omega_2^2 - 24\omega_3^2v_3^2\omega_1^2v_2^2\omega_2^3 - 4\omega_3^2c_s^2v_3^2\omega_1^2\omega_2 - 12\omega_3c_s^4\omega_1^2\omega_2^2 + \omega_3^2\omega_1^3\omega_2^2 +$$
$$4\omega_3^2v_3^2\omega_1^2\omega_2 + 36c_s^4\omega_1^2\omega_2^3 - 48\omega_3^2v_3^2\omega_1^2v_2^2\omega_2^2 - 22\omega_3^2c_s^2\omega_1\omega_2^3 - 18\omega_3c_s^2\omega_1^3\omega_2^2 + 18\omega_3c_s^2v_3^2\omega_1^3\omega_2^2 + 16\omega_3^2c_s^2v_3^2\omega_1^3 - 36\omega_3^2\omega_1v_2^4\omega_2^3 + 12c_s^2v_3^2\omega_1^2\omega_2^3 +$$
$$48\omega_3^2v_2^4\omega_2^3 + 24\omega_3^2v_3^2\omega_1^2v_2^2\omega_2 - 36c_s^4\omega_1^3\omega_2^2 - 12c_s^2v_3^2\omega_1^3\omega_2^2 + 4\omega_3c_s^2\omega_1^3\omega_2 - 18\omega_3c_s^2v_3^2\omega_1^2\omega_2^3 + 20\omega_3^2c_s^2\omega_2^3 + 72\omega_3^2c_s^4\omega_1^3 - 4\omega_3c_s^2v_3^2\omega_1^3\omega_2 + 18\omega_3c_s^2\omega_1^2\omega_2^3 +$$
$$24\omega_3^2\omega_1^2v_3^2\omega_2^3 - \omega_3^2\omega_1^2\omega_2^3 - 4\omega_3^2\omega_1^3\omega_2 - 2\omega_3^2c_s^2v_3^2\omega_1^2\omega_2^2 + 4\omega_3^2v_3^2\omega_1^2\omega_2^3 + 216\omega_3^2c_s^2\omega_1^3v_2^2 - 72\omega_3^2c_s^2\omega_1^2v_2^2\omega_2^2 + 4\omega_3c_s^2\omega_1^2\omega_2^2 - 4\omega_3c_s^2v_3^2\omega_1^2\omega_2^2 +$$
$$216\omega_3^2c_s^2\omega_1^2v_2^2\omega_2^2 + 4\omega_3^2v_3^2\omega_1^3\omega_2 - 12c_s^2\omega_1^2\omega_2^3 + 42\omega_3^2c_s^4\omega_1\omega_2^3 + \omega_3^2v_3^2\omega_1^2\omega_2^3 - 2\omega_3^2c_s^2v_3^2\omega_1^2\omega_2^3 + 54\omega_3c_s^4\omega_1^3\omega_2^2 - 4\omega_3^2\omega_1^2\omega_2^2 - 24\omega_3^2\omega_1^2v_2^2\omega_2^2 - 20\omega_3^2c_s^2v_3^2\omega_1^3\omega_2$$

$$C_{44} = 9\omega_1^2\omega_2^3 - 54\omega_3c_s^2\omega_1\omega_2^2 + 6\omega_1^3\omega_2 - 12\omega_3c_s^2\omega_2^3 + 36c_s^2\omega_1\omega_2^3 - 12\omega_3\omega_1^2v_2^2\omega_2 + 5\omega_3v_3^2\omega_1^3\omega_2^2 + 48\omega_3\omega_1^3\omega_2 + 5\omega_3\omega_1^2\omega_2^3 + 9v_3^2\omega_1^3\omega_2^2 +$$
$$27\omega_3c_s^2\omega_1\omega_2^3 + 6\omega_1^2\omega_2^2 - 51\omega_3\omega_1^2\omega_2^2 + 6\omega_3v_3^2\omega_1^2\omega_2 + 6\omega_3\omega_1^2\omega_2 - 9\omega_3v_3^2\omega_1^2\omega_2^2 - 6v_3^2\omega_1^3\omega_2 - 9v_3^2\omega_1^2\omega_2^3 - 24\omega_3v_3^2\omega_2^3 + 132\omega_3\omega_1^2v_2^2\omega_2^2 -$$
$$18\omega_3v_3^2\omega_1^3\omega_2 - 5\omega_3\omega_1^3\omega_2^2 - 5\omega_3v_3^2\omega_1^2\omega_2^3 - 12\omega_3\omega_2^3 - 9\omega_1^3\omega_2^2 - 6v_3^2\omega_1^2\omega_2^2 + 27c_s^2\omega_1^3\omega_2^2 - 66\omega_3\omega_1v_2^2\omega_2^3 + 27\omega_3v_3^2\omega_1\omega_2^3 + 48\omega_3\omega_1^3v_2^2 -$$
$$18\omega_3c_s^2\omega_1^2\omega_2 - 66\omega_3\omega_1^3v_2^2\omega_2 + 6\omega_3v_3^2\omega_1\omega_2^2 + 84\omega_3c_s^2\omega_1^3 - 120\omega_3\omega_1v_2^2\omega_2^2 + 84\omega_3v_2^2\omega_2^3 + 12v_3^2\omega_1\omega_2^3 + 15\omega_3c_s^2\omega_1^3\omega_2^2 - 108\omega_3c_s^2\omega_1^3\omega_2 - 36\omega_3\omega_1^3 -$$
$$15\omega_3c_s^2\omega_1^2\omega_2^3 + 42\omega_3\omega_1\omega_2^2 - 18c_s^2\omega_1^2\omega_2^2 + 81\omega_3c_s^2\omega_1^2\omega_2^2 - 12\omega_1\omega_2^3 - 18c_s^2\omega_1^3\omega_2 + 12\omega_3v_3^2\omega_1^3 - 27c_s^2\omega_1^2\omega_2^3 + 3\omega_3\omega_1\omega_2^3$$

$$C_{45} = 168\omega_3^2c_s^2\omega_4^2\omega_1^3v_2^2\omega_2^2 + 117\omega_3\omega_4^2\omega_1^3v_2^2\omega_2^3 + 648\omega_3^2c_s^2\omega_4\omega_1^2v_2^2\omega_2^3 - 432\omega_3^2v_3^2\omega_4^2v_2^2\omega_2^3 - 2\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^2 - 117\omega_3^2\omega_4\omega_1^3v_2^4\omega_2^3 - 144\omega_3^2\omega_4^2\omega_1^2v_2^4\omega_2^2 +$$
$$48\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^3 - 216c_s^2\omega_4^2\omega_1^2v_2^2\omega_2^3 + 216\omega_3\omega_4^2\omega_1^2v_2^4\omega_2^3 - 72\omega_3c_s^2\omega_4^2\omega_1^3v_2^2\omega_2 - 36\omega_3\omega_4\omega_1^3v_2^4\omega_2^2 + 18\omega_3c_s^4\omega_4^2\omega_1^3\omega_2^3 - 288\omega_3^2\omega_4\omega_1^2v_2^2\omega_2^2 -$$
$$86\omega_3^2\omega_4^2\omega_1^3v_2^2\omega_2^2 - 144\omega_3^2v_3^2\omega_4^2\omega_1^2v_2^2\omega_2^3 - 16\omega_3^2\omega_4^2\omega_2^3 + 16\omega_3^2\omega_4^2\omega_1\omega_2^3 + 36\omega_3^2\omega_4\omega_1^3v_2^4\omega_2^2 - 16\omega_3c_s^2\omega_4^2\omega_1\omega_2^3 + 40\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2^3 - 56\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2 -$$
$$6\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^3 - 108\omega_3\omega_4^2\omega_1^3v_2^2\omega_2^2 + 72\omega_3^2c_s^2\omega_4^2\omega_1^3v_2^2\omega_2^3 - 96\omega_3c_s^2v_3^2\omega_4^2\omega_1\omega_2^3 + 180\omega_3\omega_4\omega_1^2v_2^2\omega_2^3 - 108\omega_3^2c_s^2\omega_4\omega_1^2v_2^2\omega_2^2 + 16\omega_3^2\omega_4^2\omega_1\omega_2^2 +$$
$$24\omega_3^2c_s^2v_3^2\omega_4^2\omega_2^3 + 36\omega_3^2\omega_4\omega_1^2v_2^2\omega_2^2 + 72\omega_3c_s^2\omega_4^2\omega_1v_2^2\omega_2^3 - 288\omega_3^2v_3^2\omega_4^2\omega_1^2v_2^2\omega_2^2 - 24\omega_3^2\omega_4^2\omega_1^3v_2^2\omega_2^3 - 40\omega_3^2c_s^2\omega_4^2\omega_1^3 + 144\omega_3^2v_3^2\omega_4^2\omega_1^3v_2^2 -$$
$$36\omega_3c_s^4\omega_4^2\omega_1^3\omega_2^2 + 48\omega_3^2v_3^2\omega_4^2\omega_2^3 + 72\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^3 - 60\omega_3\omega_4^2\omega_1^2v_2^4\omega_2^2 - 32\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^2 + 108\omega_3\omega_4\omega_1^3v_2^4\omega_2^2 + 432\omega_3^2c_s^2\omega_4^2v_2^2\omega_2^3 +$$
$$144\omega_3^2v_3^2\omega_4^2\omega_1^2v_2^2\omega_2 - 48\omega_3^2\omega_4^2v_2^2\omega_2^3 + 16\omega_3c_s^4\omega_4^2\omega_1^3\omega_2 - 297\omega_3c_s^2\omega_4^2\omega_1^3v_2^2\omega_2^3 - 12\omega_3^2c_s^2v_3^2\omega_4^2\omega_1\omega_2^3 + 96\omega_3^2\omega_4^2\omega_1v_2^2\omega_2^3 - 36\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^3 +$$
$$20\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^2 - 48\omega_3^2v_3^2\omega_4^2\omega_1\omega_2^3 - 852\omega_3^2c_s^2\omega_4^2\omega_1v_2^2\omega_2^3 + 72\omega_3^2c_s^4\omega_4\omega_1\omega_2^3 + 24\omega_3\omega_4^2\omega_1^3v_2^2\omega_2 + 36\omega_4^2\omega_1^3v_2^2\omega_2^2 - 144\omega_3^2\omega_4^2\omega_1v_2^2\omega_2^2 - 18\omega_3^2c_s^2\omega_4\omega_1^3\omega_2^3 +$$
$$288\omega_3c_s^2\omega_4^2\omega_1^3v_2^2\omega_2^2 + 48\omega_3^2c_s^2v_3^2\omega_4^2\omega_1\omega_2^2 + 40\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^2 - 540\omega_3c_s^2\omega_4\omega_1^2v_2^2\omega_2^3 - 72\omega_4^2\omega_1^2v_2^4\omega_2^3 - 54\omega_3^2\omega_1^3v_2^2\omega_2^3 + 204\omega_3^2\omega_4^2\omega_1^3v_2^2\omega_2 +$$
$$162\omega_3^2c_s^2\omega_1^3v_2^2\omega_2^3 - 54\omega_4^2\omega_1^3v_2^2\omega_2^3 - 108\omega_3^2\omega_1^2v_2^4\omega_2^3 - 96\omega_3^2\omega_4^2\omega_1^3v_2^2 - 72\omega_3^2\omega_4\omega_1v_2^4\omega_2^3 - 492\omega_3^2c_s^2\omega_4^2\omega_1^3v_2^2\omega_2 - 28\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2 + 264\omega_3^2c_s^2\omega_4^2\omega_1^3v_2^2 +$$
$$32\omega_3^2c_s^4\omega_4^2\omega_1^3 + 96\omega_3^2\omega_4^2\omega_1^2v_2^4\omega_2 + 86\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^3 + 336\omega_3^2c_s^2\omega_4^2\omega_1v_2^2\omega_2^2 + 24\omega_3\omega_4^2\omega_1v_2^2\omega_2^3 - 48\omega_3^2v_3^2\omega_4^2\omega_1\omega_2^2 + 144\omega_3^2v_3^2\omega_4^2\omega_1^3v_2^2\omega_2^2 +$$
$$8\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2^3 - 36\omega_3^2\omega_4\omega_1^3v_2^2\omega_2^2 + 24\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^2\omega_2^2 - 180\omega_3\omega_4\omega_1^2v_2^4\omega_2^3 + 108\omega_3\omega_4^2\omega_1^3v_2^4\omega_2^2 - 108c_s^2\omega_4^2\omega_1^3v_2^2\omega_2^2 + 2\omega_3^2\omega_4^2\omega_1^3\omega_2^2 + 24\omega_3^2\omega_4^2\omega_1^3v_2^4\omega_2^3 -$$
$$36\omega_3^2\omega_4\omega_1^2v_2^4\omega_2^2 + 24\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^3 - 24\omega_3^2v_3^2\omega_4^2\omega_1^3 + 24\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2^2 - 172\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^3 + 8\omega_3^2c_s^2\omega_4^2\omega_2^3 - 108\omega_3\omega_4\omega_1^3v_2^2\omega_2^3 + 108\omega_3^2c_s^2\omega_4\omega_1^3v_2^2\omega_2^2 +$$
$$60\omega_3\omega_4^2\omega_1^2v_2^2\omega_2^2 + 174\omega_3^2c_s^2\omega_4^2\omega_1^2v_2^2\omega_2^3 - 18\omega_3c_s^2\omega_4^2\omega_1^3\omega_2^3 + 48\omega_3^2\omega_4^2\omega_1^3v_2^4 - 117\omega_3\omega_4^2\omega_1^3v_2^4\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^2\omega_2 + 162c_s^2\omega_4^2\omega_1^3v_2^2\omega_2^3 + 64\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2 +$$
$$16\omega_3c_s^4\omega_4^2\omega_1\omega_2^2 + 12\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^2\omega_2^3 + 240\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2^2 + 117\omega_3^2\omega_4\omega_1^3v_2^2\omega_2^3 - 12\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^3\omega_2 - 297\omega_3^2c_s^2\omega_4\omega_1^3v_2^2\omega_2^2 + 36\omega_3\omega_4\omega_1^3v_2^2\omega_2^2 -$$
$$72\omega_3^2c_s^4\omega_4\omega_1^2\omega_2^3 + 24\omega_3^2v_3^2\omega_4^2\omega_1^3\omega_2 + 36\omega_3c_s^2\omega_4^2\omega_1^3\omega_2^2 - 492\omega_3^2c_s^2\omega_4^2\omega_1^2v_2^2\omega_2^2 - 216\omega_3\omega_4^2\omega_1^2v_2^2\omega_2^3 + 6\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2^3 + 16\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^2 +$$
$$38\omega_3^2\omega_4^2\omega_1^3v_2^4\omega_2^2 - 72\omega_3c_s^2v_3^2\omega_4^2\omega_1^3\omega_2^2 + 288\omega_3^2\omega_4\omega_1^2v_2^4\omega_2^3 + 8\omega_3^2\omega_4^2\omega_1^3 - 16\omega_3c_s^2\omega_4^2\omega_1^3\omega_2 + 264\omega_3^2c_s^2\omega_4^2\omega_1^2v_2^2\omega_2 + 96\omega_3^2\omega_4^2\omega_1v_2^4\omega_2^2 - 6\omega_3^2v_3^2\omega_4^2\omega_1^3\omega_2^2 +$$
$$36\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^3 + 54\omega_3^2\omega_1^3v_2^4\omega_2^3 + 72\omega_4^2\omega_1^2v_2^2\omega_2^3 + 48\omega_3c_s^2v_3^2\omega_4^2\omega_1^3\omega_2 - 108\omega_3^2\omega_4^2\omega_1^3v_2^4\omega_2 + 72\omega_3c_s^2v_3^2\omega_4^2\omega_1^2\omega_2^3 + 108\omega_3^2\omega_1^2v_2^2\omega_2^3 + 54\omega_4^2\omega_1^3v_2^4\omega_2^3 +$$
$$72\omega_3^2\omega_4\omega_1v_2^2\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^2\omega_2^2 + 324\omega_3c_s^2\omega_4\omega_1^3v_2^2\omega_2^3 - 108\omega_3c_s^2\omega_4^2\omega_1^2v_2^2\omega_2^2 + 576\omega_3^2v_3^2\omega_4^2\omega_1v_2^2\omega_2^3 - 12\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^2 - 72\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^3 -$$
$$12\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^3\omega_2^2 - 24\omega_3\omega_4^2\omega_1v_2^4\omega_2^3 + 80\omega_3^2c_s^4\omega_4^2\omega_2^3 - 324\omega_3^2c_s^2\omega_1^2v_2^2\omega_2^3 - 144\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2 + 48\omega_3c_s^2v_3^2\omega_4^2\omega_1^2\omega_2^2 + 192\omega_3^2\omega_4^2v_2^4\omega_2^3 -$$
$$40\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^2 + 24\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2 + 18\omega_3^2c_s^4\omega_4\omega_1^3\omega_2^3 - 288\omega_3^2\omega_4^2\omega_1v_2^4\omega_2^3 + 36\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2 - 288\omega_3^2v_3^2\omega_4^2\omega_1^3v_2^2\omega_2 - 96\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^2\omega_2 -$$
$$36\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^3 - 108\omega_3c_s^2\omega_4\omega_1^3v_2^2\omega_2^2 - 24\omega_3\omega_4^2\omega_1^3v_2^4\omega_2 - 2\omega_3^2\omega_4^2\omega_1^2\omega_2^3 + 144\omega_3^2v_3^2\omega_4^2\omega_1v_2^2\omega_2^2 + 468\omega_3c_s^2\omega_4^2\omega_1^2v_2^2\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^3\omega_2 - 36\omega_4^2\omega_1^3v_2^4\omega_2^2$$

$$C_{46} = 12\omega_3c_s^2\omega_4^2\omega_1v_1^2\omega_5 + 9c_s^2v_3^2\omega_4^2\omega_1^3\omega_5 - 6v_3^4\omega_4^2\omega_1^2\omega_5 + 6\omega_3^2v_3^2\omega_4\omega_1^2\omega_5 - 6\omega_3^2c_s^2v_3^2\omega_4\omega_1^2\omega_5 + 2\omega_3^2c_s^2\omega_4\omega_1^3\omega_5 - 32\omega_3^2c_s^4\omega_4^2\omega_1 - 3\omega_3v_3^4\omega_4^2\omega_1^3\omega_5 -$$
$$8\omega_3^2c_s^4\omega_4\omega_1\omega_5 + 6\omega_3^2\omega_4\omega_1^2v_1^2\omega_5 - 18c_s^2\omega_4^2\omega_1^2v_1^2\omega_5 + 6\omega_3\omega_4^2\omega_1^2v_1^4\omega_5 + 3\omega_3^2\omega_4\omega_1^3v_1^4\omega_5 - 6\omega_3^2c_s^2\omega_4\omega_1^2v_1^2\omega_5 + 3\omega_3\omega_4^2\omega_1^3v_1^2\omega_5 - 8\omega_3c_s^4\omega_4^2\omega_1^2\omega_5 +$$
$$6\omega_3^2c_s^2v_3^2\omega_4\omega_1^3\omega_5 + 6\omega_3^2\omega_1^2v_1^4\omega_5 - 8\omega_3^2c_s^2\omega_4\omega_1^2\omega_5 - 3\omega_4^2\omega_1^3v_1^2\omega_5 - 18c_s^2v_3^2\omega_4^2\omega_1^2\omega_5 + 32\omega_3^2c_s^4\omega_4^2\omega_1^2 - 9\omega_3^2c_s^2\omega_1^3v_1^2\omega_5 - 8\omega_3c_s^2\omega_4^2\omega_1\omega_5 + 3v_3^4\omega_4^2\omega_1^3\omega_5 -$$
$$3\omega_3^2v_3^2\omega_4\omega_1^3\omega_5 + 3\omega_3^2\omega_1^3v_1^2\omega_5 - 6\omega_4^2\omega_1^2v_1^4\omega_5 + 12\omega_3c_s^2v_3^2\omega_4^2\omega_1\omega_5 + 2\omega_3c_s^4\omega_4^2\omega_1^3\omega_5 - 6\omega_3c_s^2\omega_4^2\omega_1^3v_1^2\omega_5 + 6\omega_3v_3^4\omega_4^2\omega_1^2\omega_5 - 8\omega_3^2c_s^4\omega_4^2\omega_1^3 - 6\omega_3^2v_3^2\omega_1^2\omega_5 -$$
$$6\omega_3^2\omega_4\omega_1^2v_1^4\omega_5 + 6v_3^2\omega_4^2\omega_1^2\omega_5 - 6\omega_3^2v_3^4\omega_4\omega_1^2\omega_5 + 18\omega_3^2c_s^2v_3^2\omega_1^2\omega_5 - 6\omega_3\omega_4^2\omega_1^2v_1^2\omega_5 + 6\omega_3^2c_s^2\omega_4\omega_1^3v_1^2\omega_5 - 3\omega_3^2\omega_4\omega_1^3v_1^2\omega_5 - 3\omega_3\omega_4^2\omega_1^3v_1^4\omega_5 +$$
$$9c_s^2\omega_4^2\omega_1^3v_1^2\omega_5 - 3\omega_3^2v_3^4\omega_1^3\omega_5 - 2\omega_3^2c_s^4\omega_4\omega_1^3\omega_5 + 8\omega_3^2c_s^2\omega_4\omega_1\omega_5 + 3\omega_3v_3^2\omega_4^2\omega_1^3\omega_5 + 16\omega_3^2c_s^4\omega_4^2\omega_5 + 8\omega_3c_s^2\omega_4^2\omega_1^2\omega_5 + 6\omega_3c_s^2v_3^2\omega_4^2\omega_1^2\omega_5 + 8\omega_3^2c_s^4\omega_4\omega_1^2\omega_5 +$$
$$6\omega_3c_s^2\omega_4^2\omega_1^2v_1^2\omega_5 + 6\omega_3^2v_3^4\omega_1^2\omega_5 - 9\omega_3^2c_s^2v_3^2\omega_1^3\omega_5 + 3\omega_3^2v_3^2\omega_1^3\omega_5 - 3v_3^2\omega_4^2\omega_1^3\omega_5 + 3\omega_3^2v_3^4\omega_4\omega_1^3\omega_5 + 8\omega_3c_s^4\omega_4^2\omega_1\omega_5 - 6\omega_3c_s^2v_3^2\omega_4^2\omega_1^3\omega_5 + 18\omega_3^2c_s^2\omega_1^2v_1^2\omega_5 -$$
$$2\omega_3c_s^2\omega_4^2\omega_1^3\omega_5 + 3\omega_4^2\omega_1^3v_1^4\omega_5 - 8\omega_3^2c_s^4\omega_4^2\omega_1\omega_5 - 6\omega_3^2\omega_1^2v_1^2\omega_5 - 6\omega_3v_3^2\omega_4^2\omega_1^2\omega_5 - 12\omega_3^2c_s^2v_3^2\omega_4\omega_1\omega_5 - 12\omega_3^2c_s^2\omega_4\omega_1v_1^2\omega_5 + 6\omega_4^2\omega_1^2v_1^2\omega_5 - 3\omega_3^2\omega_1^3v_1^4\omega_5$$

$$C_{47} = -8\omega_3^2\omega_4^2v_1^2\omega_2^3 + 8\omega_3^2\omega_4^2\omega_1v_1^2\omega_2^3 - 27\omega_3c_s^2\omega_4^2\omega_1^3v_1^2\omega_2^3 + 30\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^2 + 54\omega_3^2c_s^2\omega_1^3\omega_2^3 - 24\omega_3^2v_3^2\omega_4^2\omega_1^2v_1^2\omega_2 + 32\omega_3^2c_s^2\omega_4^2v_1^2\omega_2^3 +$$
$$64\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^3 + 72\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2^2 + 324\omega_3^2c_s^4\omega_1^2\omega_2^3 - 81\omega_3c_s^4\omega_4^2\omega_1^3\omega_2^2 + 8\omega_3^2c_s^2\omega_4^2\omega_1v_1^2\omega_2^3 + 8\omega_3^2\omega_4^2\omega_2^3 + 48\omega_3^2v_3^2\omega_4^2\omega_1^3v_1^2 - 8\omega_3^2\omega_4^2\omega_1\omega_2^3 -$$
$$54\omega_3^2c_s^2\omega_1^3v_1^2\omega_2^3 + 8\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_2 + 56\omega_3c_s^2\omega_4^2\omega_1\omega_2^3 - 72\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2 + 8\omega_3^2\omega_4^2\omega_1v_1^2\omega_2^2 - 8\omega_3^2\omega_4^2\omega_1\omega_2^2 - 56\omega_3^2c_s^2\omega_4^2\omega_1v_1^2\omega_2^2 + 432\omega_3^2c_s^2v_3^2\omega_4^2\omega_2^3 -$$
$$104\omega_3^2c_s^2\omega_4^2\omega_1^3 - 252c_s^4\omega_4^2\omega_1^2\omega_2^3 - 96\omega_3^2v_3^2\omega_4^2\omega_2^3 - 36\omega_3^2v_3^4\omega_4^2\omega_1^3\omega_2 + 108\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^3 - 40\omega_3^2c_s^2\omega_4^2\omega_1^3v_1^2\omega_2 + 128\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^2 - 162\omega_3^2c_s^4\omega_1^3\omega_2^3 -$$
$$24\omega_3c_s^4\omega_4^2\omega_1^3\omega_2 + 72\omega_3^2v_3^2\omega_4^2v_1^2\omega_2^3 - 432\omega_3^2c_s^2v_3^2\omega_4^2\omega_1\omega_2^3 - 72c_s^4\omega_4^2\omega_1^3\omega_2^2 - 108\omega_3^2c_s^2\omega_4\omega_1^2v_1^2\omega_2^3 + 10\omega_3^2c_s^2\omega_4^2\omega_1^3v_1^2\omega_2^2 + 324\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^3 +$$
$$192\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^2 - 8\omega_3^2\omega_4^2\omega_1^3v_1^2 + 96\omega_3^2v_3^2\omega_4^2\omega_1\omega_2^3 - 108\omega_3^2c_s^2\omega_1^2\omega_2^3 - 8\omega_3c_s^2\omega_4^2\omega_1^3v_1^2\omega_2 - 84c_s^2\omega_4^2\omega_1^2v_1^2\omega_2^3 + 32\omega_3^2c_s^2\omega_4^2\omega_1^3v_1^2 + 162c_s^4\omega_4^2\omega_1^3\omega_2^3 -$$
$$27\omega_3^2c_s^2\omega_4\omega_1^3\omega_2^3 - 72\omega_3^2v_3^4\omega_4^2\omega_1^2\omega_2 - 432\omega_3^2c_s^2v_3^2\omega_4^2\omega_1\omega_2^2 + 192\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^2 - 168\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2 + 144\omega_3^2c_s^4\omega_4^2\omega_1^3 + 120\omega_3^2v_3^2\omega_4^2\omega_1^2v_1^2\omega_2^2 -$$
$$56\omega_3c_s^2\omega_4^2\omega_1v_1^2\omega_2^3 - 30\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^3 + 24\omega_3^2v_3^4\omega_4^2\omega_2^3 + 96\omega_3^2v_3^2\omega_4^2\omega_1\omega_2^2 - 10\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2^2 + 864\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^2\omega_2^2 - 8\omega_3^2c_s^2\omega_4^2\omega_1^2v_1^2\omega_2 +$$
$$8\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2 + 108\omega_3^2c_s^2\omega_1^2v_1^2\omega_2^3 + 432\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^3 - 96\omega_3^2v_3^2\omega_4^2\omega_1^3 - 192\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2^2 - 24\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^3 - 104\omega_3^2c_s^2\omega_4^2\omega_2^3 -$$
$$60\omega_3^2v_3^2\omega_4^2\omega_1v_1^2\omega_2^3 + 64\omega_3c_s^2\omega_4^2\omega_1^2v_1^2\omega_2^2 + 27\omega_3c_s^2\omega_4^2\omega_1^3\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^2\omega_2 + 80\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2 - 168\omega_3c_s^4\omega_4^2\omega_1\omega_2^3 - 432\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^3\omega_2 +$$
$$84c_s^2\omega_4^2\omega_1^2\omega_2^3 + 108\omega_3c_s^2\omega_4^2\omega_1^2v_1^2\omega_2^3 - 96\omega_3^2v_3^2\omega_4^2\omega_1v_1^2\omega_2^2 - 324\omega_3^2c_s^4\omega_4\omega_1^2\omega_2^3 + 96\omega_3^2v_3^2\omega_4^2\omega_1^3\omega_2 - 216\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^2 - 60\omega_3^2v_3^2\omega_4^2\omega_1^3v_1^2\omega_2 +$$
$$8\omega_3^2\omega_4^2\omega_1^3 - 24c_s^2\omega_4^2\omega_1^3v_1^2\omega_2^2 + 8\omega_3c_s^2\omega_4^2\omega_1^3\omega_2 - 108\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^3 + 24c_s^2\omega_4^2\omega_1^3\omega_2^2 - 10\omega_3^2c_s^2\omega_4^2\omega_1^2v_1^2\omega_2^3 + 16\omega_3^2\omega_4^2\omega_1^2\omega_2^2 - 36\omega_3^2v_3^4\omega_4^2\omega_1\omega_2^3 -$$
$$176\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^2 + 48\omega_3^2v_3^4\omega_4^2\omega_2^3 + 144\omega_3^2c_s^4\omega_4^2\omega_2^3 - 16\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2^3 - 64\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^2 - 54c_s^2\omega_4^2\omega_1^3\omega_2^3 + 96\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2 + 81\omega_3^2c_s^4\omega_4\omega_1^3\omega_2^3 +$$
$$54c_s^2\omega_4^2\omega_1^3v_1^2\omega_2^3 + 112\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2 - 432\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^2\omega_2 + 10\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^3 + 32\omega_3^2c_s^2\omega_4^2\omega_1^2v_1^2\omega_2^2 + 27\omega_3^2c_s^2\omega_4\omega_1^3v_1^2\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^3\omega_2$$

$$C_{48} = 12\omega_3v_3^4\omega_4^2\omega_1^2\omega_5\omega_2^2 + 8\omega_3^2c_s^4\omega_4^2\omega_1\omega_5\omega_2^3 - 88\omega_3^2c_s^2\omega_4^2\omega_5\omega_2^3 - 120\omega_3^2c_s^2\omega_4^2\omega_1v_1^2\omega_5\omega_2^3 - 24\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_5 - 72\omega_3c_s^2\omega_4^2\omega_1^3\omega_5\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1\omega_5\omega_2^3 -$$
$$6\omega_3^2c_s^2\omega_4^2\omega_1^2v_1^2\omega_5\omega_2^3 - 36\omega_3^2v_3^2\omega_4\omega_1\omega_5\omega_2^3 + 8\omega_3^2\omega_4^2\omega_5\omega_2^3 - 180\omega_3^2v_3^2\omega_4^2\omega_1v_1^2\omega_5\omega_2^3 + 48\omega_3^2v_3^4\omega_4^2\omega_1^3\omega_5 - 180\omega_3c_s^2\omega_4^2\omega_1^3v_1^2\omega_5\omega_2^2 + 24\omega_3^2c_s^2\omega_4^2\omega_1^3v_1^2\omega_5 -$$
$$12\omega_3v_3^2\omega_4^2\omega_1^2\omega_5\omega_2^2 + 36\omega_3^2c_s^2\omega_4^2\omega_1\omega_5\omega_2^3 + 24\omega_3^2\omega_4^2\omega_1v_1^2\omega_5\omega_2^2 + 24\omega_3^2v_3^4\omega_4^2\omega_1^2\omega_5\omega_2 + 36\omega_3^2v_3^4\omega_4\omega_1\omega_5\omega_2^3 - 108\omega_3c_s^2v_3^2\omega_4^2\omega_1^3\omega_5\omega_2^3 +$$

$72\omega_3c_s^4\omega_4^2\omega_1^3\omega_5\omega_2^3 - 288\omega_3^2v_3^2\omega_4^2\omega_1v_1^2\omega_5\omega_2^2 - 8\omega_3^2\omega_4^2\omega_1\omega_5\omega_2^2 + 72\omega_3c_s^2\omega_4^2\omega_1^3\omega_5\omega_2^2 - 28\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_5\omega_2 - 72\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^3 + 240\omega_3^2c_s^2\omega_4^2v_1^2\omega_5\omega_2^3 - 168\omega_3^2c_s^2\omega_4^2\omega_1v_1^2\omega_5\omega_2^2 - 56\omega_3^2c_s^4\omega_4^2\omega_1\omega_5\omega_2^2 + 36\omega_3v_3^4\omega_4^2\omega_1^2\omega_5\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^3\omega_5\omega_2 - 36\omega_3v_3^4\omega_4\omega_1^3\omega_5\omega_2^2 + 9\omega_3^2\omega_4\omega_1^3v_4^2\omega_5\omega_2^3 + 2\omega_3^2\omega_4^2\omega_1^3v_2^4\omega_5\omega_2^2 + 108\omega_3c_s^2v_3^2\omega_4\omega_1^2\omega_5\omega_2^3 - 72\omega_3c_s^4\omega_4^2\omega_1^3\omega_5\omega_2^2 + 180\omega_3c_s^2v_3^2\omega_4^2\omega_1^3\omega_5\omega_2^2 + 36\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_5\omega_2 - 648\omega_3^2c_s^2\omega_4\omega_1v_1^2\omega_5\omega_2^3 - 24\omega_3^2\omega_4^2v_1^2\omega_5\omega_2^3 + 2\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_5\omega_2^3 - 108\omega_3^2c_s^2v_3^2\omega_4\omega_1\omega_5\omega_2^3 + 36\omega_3v_3^2\omega_4\omega_1^3\omega_5\omega_2^2 + 162\omega_3c_s^2\omega_4^2\omega_1^3v_1^2\omega_5\omega_2^3 + 24\omega_3^2\omega_4^2\omega_1v_1^2\omega_5\omega_2^3 + 64\omega_3^2c_s^2\omega_4^2\omega_1\omega_5\omega_2^2 - 36\omega_3v_3^2\omega_4^2\omega_1^2\omega_5\omega_2^3 + 9\omega_3\omega_4^2\omega_1^3v_2^2\omega_5\omega_2^3 - 24\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^2\omega_5\omega_2 - 72\omega_3c_s^2v_3^2\omega_4^2\omega_1^3\omega_5\omega_2 + 16\omega_3c_s^4\omega_4^2\omega_1^3\omega_5\omega_2 - 4\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_5\omega_2^2 - 288\omega_3^2c_s^2\omega_4\omega_1^2\omega_5\omega_2^3 + 24\omega_3^2v_3^2\omega_4^2\omega_5\omega_2^3 - 18\omega_3^2v_3^4\omega_4^2\omega_1^2\omega_5\omega_2^3 + 6\omega_3^2c_s^2\omega_4^2\omega_1^3v_2^2\omega_5\omega_2^2 + 36v_3^2\omega_4^2\omega_1^3\omega_5\omega_2^2 + 36\omega_3^2v_3^4\omega_4\omega_1^3\omega_5\omega_2^2 + 108\omega_3^2c_s^2v_3^2\omega_4\omega_1^3\omega_5\omega_2^3 + 48\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^2\omega_5\omega_2^2 + 108\omega_3^2v_3^4\omega_1^2\omega_5\omega_2^3 + 32\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_5 - 468\omega_3c_s^2\omega_4^2\omega_1^2v_1^2\omega_5\omega_2^3 + 288\omega_3^2c_s^4\omega_4\omega_1^2\omega_5\omega_2^3 - 16\omega_3c_s^2\omega_4^2\omega_1^3\omega_5\omega_2 + 27\omega_3^2c_s^2\omega_4\omega_1^3v_2^2\omega_5\omega_2^3 + 4\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_5\omega_2^2 - 36v_3^4\omega_4^2\omega_1^3\omega_5\omega_2^2 - 36\omega_3^2v_3^2\omega_4\omega_1^3\omega_5\omega_2^2 - 216\omega_3^2c_s^2v_3^2\omega_4^2\omega_5\omega_2^3 + 18\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_5\omega_2^3 + 108\omega_3^2c_s^2v_3^2\omega_4\omega_1^3\omega_5\omega_2^2 - 60\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^2\omega_5\omega_2^3 - 36\omega_3^2v_3^4\omega_4^2\omega_1^2\omega_5\omega_2^2 + 180\omega_3c_s^2v_3^2\omega_4^2\omega_1\omega_5\omega_2^3 + 160\omega_3c_s^4\omega_4^2\omega_1\omega_5\omega_2^3 + 54\omega_3^2v_3^4\omega_4\omega_1^3\omega_5\omega_2^3 + 48\omega_3c_s^2\omega_4^2\omega_1^3v_1^2\omega_5\omega_2 - 54v_3^2\omega_4^2\omega_1^3\omega_5\omega_2^3 - 9\omega_3^2\omega_4\omega_1^3v_2^2\omega_5\omega_2^3 + 54\omega_3^2v_3^2\omega_4^3\omega_5\omega_2^3 - 2\omega_3^2\omega_4^2\omega_1^2v_2^4\omega_5\omega_2^3 - 54\omega_3^2v_3^2\omega_4\omega_1^3\omega_5\omega_2^3 + 54v_3^4\omega_4^2\omega_1^3\omega_5\omega_2^3 - 162\omega_3^2c_s^2v_3^2\omega_1^3\omega_5\omega_2^3 - 84\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_5\omega_2^2 - 160\omega_3c_s^2\omega_4^2\omega_1\omega_5\omega_2^3 - 2\omega_3^2\omega_4^2\omega_1^3v_2^2\omega_5\omega_2^2 - 9\omega_3\omega_4^2\omega_1^3v_2^4\omega_5\omega_2^3 + 264\omega_3c_s^2\omega_4^2\omega_1^2v_1^2\omega_5\omega_2^2 - 6\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_5\omega_2^3 + 288\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^3 - 216c_s^2v_3^2\omega_4^2\omega_1^2\omega_5\omega_2^3 - 24\omega_3^2c_s^2v_3^2\omega_4^2\omega_1\omega_5\omega_2^2 + 264\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^3\omega_5 + 64\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_5\omega_2 + 108\omega_3^2v_3^4\omega_4^2\omega_1\omega_5\omega_2^3 + 112\omega_3c_s^4\omega_4^2\omega_1^2\omega_5\omega_2^2 + 108\omega_3c_s^2v_3^2\omega_4^2\omega_1^2\omega_5\omega_2^2 + 152\omega_3^2c_s^4\omega_4^2\omega_5\omega_2^3 - 348\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^3\omega_5\omega_2 + 54\omega_3v_3^2\omega_4^2\omega_1^3\omega_5\omega_2^3 + 288\omega_3^2c_s^2\omega_4\omega_1\omega_5\omega_2^3 - 48\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_5\omega_2^2 + 24\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_5\omega_2 + 144\omega_3^2v_3^2\omega_4^2\omega_1^3v_1^2\omega_5 - 56\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_5\omega_2 - 48\omega_3^2v_3^2\omega_4^2\omega_1\omega_5\omega_2^3 - 112\omega_3c_s^2\omega_4^2\omega_1^2\omega_5\omega_2^2 - 288\omega_3^2c_s^4\omega_4\omega_1\omega_5\omega_2^3 - 54\omega_3v_3^4\omega_4^2\omega_1^3\omega_5\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^2\omega_5\omega_2 - 96\omega_3^2v_3^2\omega_4^2\omega_1^3\omega_5 - 288\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^3 - 6\omega_3^2c_s^2\omega_4^2\omega_1^2v_1^2\omega_5\omega_2^3 - 72\omega_3^2v_3^4\omega_4^2\omega_1^3\omega_5\omega_2 - 72\omega_3v_3^2\omega_4^2\omega_1^3\omega_5\omega_2^2 - 36\omega_3v_3^2\omega_4\omega_1^2\omega_5\omega_2^3 - 180\omega_3^2v_3^2\omega_4^2\omega_1^3v_1^2\omega_5\omega_2 - 72\omega_3c_s^2v_3^2\omega_4^2\omega_1^2\omega_5\omega_2^3 - 216\omega_3c_s^4\omega_4^2\omega_1^2\omega_5\omega_2^3 + 24\omega_3^2v_3^4\omega_4^2\omega_1\omega_5\omega_2^2 - 108\omega_3c_s^2v_3^2\omega_4\omega_1^3\omega_5\omega_2^2 - 12\omega_3^2c_s^2\omega_4^2\omega_1^3v_1^2\omega_5\omega_2 + 648\omega_3^2c_s^2\omega_4\omega_1^2v_1^2\omega_5\omega_2^3 + 216\omega_3^2v_3^2\omega_4^2v_1^2\omega_5\omega_2^3 - 27\omega_3c_s^2\omega_4^2\omega_1^3v_2^2\omega_5\omega_2^3 + 300\omega_3^2c_s^2v_3^2\omega_4^2\omega_1\omega_5\omega_2^3 + 132\omega_3^2c_s^2\omega_4^2\omega_1^2v_1^2\omega_5\omega_2^2 + 36\omega_3v_3^4\omega_4\omega_1^2\omega_5\omega_2^3 + 132\omega_3^2v_3^2\omega_4^2\omega_1^3\omega_5\omega_2 + 72\omega_3v_3^4\omega_4^2\omega_1^3\omega_5\omega_2^2 + 360\omega_3^2v_3^2\omega_4^2\omega_1^2v_1^2\omega_5\omega_2^2 + 216\omega_3c_s^2\omega_4^2\omega_1^2\omega_5\omega_2^3 + 72\omega_3^2v_3^2\omega_4^2\omega_1\omega_5\omega_2^2 - 162\omega_3^2c_s^2\omega_4\omega_1^3v_1^2\omega_5\omega_2^3 - 96\omega_3^2c_s^2\omega_4^2\omega_1^2v_1^2\omega_5\omega_2 - 18\omega_3^2v_3^2\omega_4^2\omega_1^3\omega_5\omega_2^2 - 24\omega_3v_3^4\omega_4^2\omega_1^3\omega_5\omega_2 + 144\omega_3^2v_3^2\omega_4\omega_1^2\omega_5\omega_2^3 - 72v_3^4\omega_4^2\omega_1^2\omega_5\omega_2^3 - 96\omega_3^2v_3^4\omega_4^2\omega_5\omega_2^3 - 96\omega_3^2v_3^4\omega_4^2\omega_5\omega_2^2 - 72\omega_3^2v_3^2\omega_4^2\omega_1^2v_1^2\omega_5\omega_2 + 162c_s^2v_3^2\omega_4^2\omega_1^3\omega_5\omega_2^3 + 336\omega_3c_s^2\omega_4^2\omega_1v_1^2\omega_5\omega_2^3 - 28\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_5\omega_2^3 - 144\omega_3^2v_3^4\omega_4\omega_1^2\omega_5\omega_2^3 + 72v_3^2\omega_4^2\omega_1^2\omega_5\omega_2^3 + 18\omega_3^2v_3^4\omega_4^2\omega_1^3\omega_5\omega_2^2 + 24\omega_3v_3^2\omega_4^2\omega_1^3\omega_5\omega_2 + 8\omega_3^2\omega_4^2\omega_1^3\omega_5 - 108\omega_3^2c_s^2v_3^2\omega_4\omega_1^2\omega_5\omega_2^2 - 108\omega_3^2v_3^2\omega_1^2\omega_5\omega_2^3 - 40\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_5 + 4\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_5\omega_2^3 + 6\omega_3^2c_s^2\omega_4^2\omega_1^3v_1^2\omega_5\omega_2^2 + 12\omega_3v_3^4\omega_4^2\omega_1\omega_5\omega_2^3 + 56\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_5\omega_2^2 - 72\omega_3^2c_s^4\omega_4\omega_1^3\omega_5\omega_2^3 - 108c_s^2v_3^2\omega_4^2\omega_1^3\omega_5\omega_2^2 - 54\omega_3^2v_3^4\omega_1^3\omega_5\omega_2^3 + 16\omega_3^2\omega_4^2\omega_1^2\omega_5\omega_2^2 + 36\omega_3^2v_3^2\omega_4\omega_1^2\omega_5\omega_2^2 + 72\omega_3^2c_s^2\omega_4\omega_1^3\omega_5\omega_2^3 - 12\omega_3v_3^2\omega_4^2\omega_1\omega_5\omega_2^3 - 72\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_5\omega_2^2 + 60\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^3\omega_5\omega_2^2 - 216\omega_3^2c_s^2v_3^2\omega_4\omega_1^2\omega_5\omega_2^3 + 24\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_5\omega_2 - 36\omega_3^2v_3^4\omega_4\omega_1^2\omega_5\omega_2^2$

$C_{49} = -2\omega_3\omega_4v_1^2\omega_2 + 6\omega_3c_s^2\omega_4\omega_1 + 9\omega_4\omega_1\omega_2 + 2\omega_3\omega_4\omega_2 + 27\omega_3c_s^2\omega_1\omega_2 - 9\omega_4\omega_1v_1^2\omega_2 + 9\omega_3\omega_1v_1^2\omega_2 - 9\omega_3\omega_1\omega_2 + 2\omega_3\omega_4\omega_1v_1^2 - 6\omega_3c_s^2\omega_4\omega_2 - 27c_s^2\omega_4\omega_1\omega_2 - 2\omega_3\omega_4\omega_1$

$C_{50} = -24\omega_3c_s^2\omega_1\omega_2^2 + 2\omega_1^3\omega_2 + 26\omega_3c_s^2\omega_2^3 - 6c_s^2\omega_1\omega_2^3 + 4\omega_1^2v_1^2\omega_2^2 + 10\omega_3\omega_1^3\omega_2 - 24\omega_3c_s^2\omega_1\omega_2^3 - 4\omega_1^2\omega_2^2 + 6\omega_3\omega_1^2v_1^2\omega_2^2 - 20\omega_3\omega_1^2\omega_2^2 - 22\omega_3v_3^2\omega_1^2\omega_2 + 14\omega_3\omega_1^2\omega_2 + 26\omega_3v_3^2\omega_1^2\omega_2^2 + 10\omega_3v_3^2\omega_2^3 - 4\omega_3\omega_1^2v_1^2\omega_2 - 13\omega_3v_3^2\omega_1^3\omega_2 - 10\omega_3\omega_2^3 - 13\omega_3v_3^2\omega_1\omega_2^3 - 30\omega_3c_s^2\omega_1^2\omega_2 - 4\omega_3v_3^2\omega_1\omega_2^2 + 28\omega_3c_s^2\omega_1^3 + 4\omega_3\omega_1^3v_1^2 - 24\omega_3c_s^2\omega_1^3\omega_2 - 12\omega_3\omega_1^3 - 3\omega_3\omega_1v_1^2\omega_2^3 - 2\omega_1^3v_1^2\omega_2 + 8\omega_3\omega_1\omega_2^2 + 12c_s^2\omega_1^2\omega_2^2 + 48\omega_3c_s^2\omega_1^2\omega_2^2 - 4\omega_3\omega_1v_1^2\omega_2^2 + 4\omega_3v_1^2\omega_2^3 + 2\omega_1\omega_2^3 - 3\omega_3\omega_1^3v_1^2\omega_2 - 6c_s^2\omega_1^3\omega_2 - 2\omega_1v_1^2\omega_2^3 + 16\omega_3v_3^2\omega_1^3 + 10\omega_3\omega_1\omega_2^3$

$C_{51} = 8\omega_3^2c_s^2\omega_4^2\omega_1^3v_2^2\omega_2^2 + 36\omega_3^2c_s^2\omega_4\omega_1^2v_2^2\omega_2^3 + 36\omega_3^2v_3^2\omega_4^2v_2^2\omega_2^3 + 35\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^2 - 18\omega_3^2c_s^2\omega_1^3\omega_2^3 - 58\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^3 - 24c_s^2\omega_4^2\omega_1^2v_2^2\omega_2^3 - 36\omega_3^2v_3^4\omega_4^2\omega_1^2\omega_2^2 - 4\omega_3c_s^2\omega_4^2\omega_1^3v_2^2\omega_2 - 108\omega_3^2c_s^4\omega_1^2\omega_2^3 - 27\omega_3c_s^4\omega_4^2\omega_1^3\omega_2^3 + 4\omega_3^2\omega_4^2\omega_2^3 - 4\omega_3^2\omega_4^2\omega_1\omega_2^3 + 28\omega_3c_s^2\omega_4^2\omega_1\omega_2^3 + 15\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^3 + 3\omega_3^2c_s^2\omega_4^2\omega_1^3v_2^2\omega_2^3 - 4\omega_3^2\omega_4^2\omega_1\omega_2^2 - 216\omega_3^2c_s^2v_3^2\omega_4^2\omega_2^3 - 28\omega_3c_s^2\omega_4^2\omega_1v_2^2\omega_2^3 + 60\omega_3^2v_3^2\omega_4^2\omega_1^2v_2^2\omega_2^2 - 52\omega_3c_s^2\omega_4^2\omega_1^3 + 24\omega_3^2v_3^2\omega_4^2\omega_1^3v_2^2 - 72c_s^4\omega_4^2\omega_1^2\omega_2^3 + 24\omega_3^2v_3^2\omega_4^2\omega_2^3 - 36\omega_3^2v_3^4\omega_4^2\omega_1^3\omega_2 - 36\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^3 + 28\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^2 - 27\omega_3^2v_3^4\omega_4^2\omega_1^2\omega_2^3 + 16\omega_3^2c_s^2\omega_4^2v_2^2\omega_2^3 - 12\omega_3^2v_3^2\omega_4^2\omega_1^2v_2^2\omega_2 + 54\omega_3^2c_s^4\omega_1^3\omega_2^3 + 27\omega_3^2v_3^2\omega_4^2\omega_1^3\omega_2^2 - 4\omega_3^2\omega_4^2v_2^2\omega_2^3 - 12\omega_3c_s^4\omega_4^2\omega_1^3\omega_2 - 9\omega_3c_s^2\omega_4^2\omega_1^3v_2^2\omega_2^3 + 324\omega_3^2c_s^2v_3^2\omega_4^2\omega_1\omega_2^3 - 36c_s^4\omega_4^2\omega_1^3\omega_2^2 + 4\omega_3^2\omega_4^2\omega_1v_2^2\omega_2^3 + 108\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^3 + 24\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^2 - 42\omega_3^2v_3^2\omega_4^2\omega_1\omega_2^3 + 4\omega_3^2c_s^2\omega_4^2\omega_1v_2^2\omega_2^3 + 36\omega_3^2c_s^2\omega_1^2\omega_2^3 + 4\omega_3^2\omega_4^2\omega_1v_2^2\omega_2^2 + 54c_s^4\omega_4^2\omega_1^3\omega_2^3 + 9\omega_3^2c_s^2\omega_4\omega_1^3\omega_2^3 + 96\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^2 + 4\omega_3^2\omega_4^2\omega_1^3v_2^2\omega_2 + 18\omega_3^2c_s^2\omega_1^3v_2^2\omega_2^3 - 4\omega_3^2\omega_4^2\omega_1^3v_2^2 - 20\omega_3^2c_s^2\omega_4^2\omega_1^3v_2^2\omega_2 - 102\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2 + 16\omega_3^2c_s^2\omega_4^2\omega_1^3v_2^2 + 72\omega_3^2c_s^4\omega_4^2\omega_1^3 - 119\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^3 - 28\omega_3^2c_s^2\omega_4^2\omega_1v_2^2\omega_2^2 - 60\omega_3^2v_3^4\omega_4^2\omega_2^3 + 12\omega_3^2v_3^2\omega_4^2\omega_1\omega_2^2 - 25\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2^2 - 12c_s^2\omega_4^2\omega_1^3v_2^2\omega_2^2 + 216\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^3 - 48\omega_3^2v_3^2\omega_4^2\omega_1^3 - 24\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2^2 + 78\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^3 + 20\omega_3^2c_s^2\omega_4^2\omega_2^3 - 32\omega_3^2c_s^2\omega_4^2\omega_1^2v_2^2\omega_2^3 + 9\omega_3c_s^2\omega_4^2\omega_1^3\omega_2^3 - 4\omega_3^2\omega_4^2\omega_1^2\omega_2 + 18c_s^2\omega_4^2\omega_1^3v_2^2\omega_2^3 + 4\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2 - 84\omega_3c_s^4\omega_4^2\omega_1\omega_2^3 - 138\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^2\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2^2 - 3\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2^3 - 324\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^3\omega_2 - 9\omega_3^2c_s^2\omega_4\omega_1^3v_2^2\omega_2^3 + 24c_s^2\omega_4^2\omega_1^2\omega_2^3 + 108\omega_3^2c_s^4\omega_4\omega_1^2\omega_2^3 + 66\omega_3^2v_3^2\omega_4^2\omega_1^3\omega_2 + 16\omega_3^2c_s^2\omega_4^2\omega_1^2v_2^2\omega_2^2 + 27\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2^3 - 72\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^2 + 4\omega_3^2\omega_4^2\omega_1^3 + 4\omega_3c_s^2\omega_4^2\omega_1^3\omega_2 - 4\omega_3^2c_s^2\omega_4^2\omega_1^2v_2^2\omega_2 - 27\omega_3^2v_3^2\omega_4^2\omega_1^3\omega_2^2 - 36\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^3 + 12c_s^2\omega_4^2\omega_1^3\omega_2^2 + 8\omega_3^2\omega_4^2\omega_1^2\omega_2^2 + 32\omega_3c_s^2\omega_4^2\omega_1^2v_2^2\omega_2^2 - 30\omega_3^2v_3^2\omega_4^2\omega_1v_2^2\omega_2^3 + 72\omega_3^2v_3^4\omega_4^2\omega_1\omega_2^3 - 16\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^2 + 138\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^3\omega_2^2 + 24\omega_3^2v_3^4\omega_4^2\omega_1^3 - 36\omega_3^2c_s^2\omega_1^2v_2^2\omega_2^3 + 4\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2 - 32\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^2 - 18c_s^2\omega_4^2\omega_1^3\omega_2^2 + 12\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2 - 27\omega_3^2c_s^4\omega_4\omega_1^3\omega_2^3 + 74\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2 - 30\omega_3^2v_3^2\omega_4^2\omega_1^3v_2^2\omega_2 + 36\omega_3^2v_3^4\omega_4^2\omega_1\omega_2^2 + 49\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^3 - 48\omega_3^2v_3^2\omega_4^2\omega_1v_2^2\omega_2^2 + 36\omega_3c_s^2\omega_4^2\omega_1^2v_2^2\omega_2^3 - 4\omega_3^2\omega_4^2\omega_1^3\omega_2$

$C_{52} =$
$-90\omega_3c_s^2v_3^2\omega_4\omega_1^2\omega_2^3 - 6\omega_3^2c_s^2\omega_4\omega_1^2v_2^2\omega_2^3 - 36\omega_3c_s^2v_3^2\omega_4\omega_1^3\omega_2 + 36\omega_3c_s^2\omega_4\omega_1^2\omega_2^3 - 18\omega_3^2c_s^2\omega_1^3\omega_2^3 - 8\omega_3c_s^2\omega_4\omega_1^3\omega_2 - 9\omega_3^2v_3^2\omega_4\omega_1^3\omega_2^2 + 30\omega_3^2c_s^2v_3^2\omega_4\omega_1^3\omega_2^2 - 18\omega_3^2v_3^2\omega_1\omega_2^3 + 216\omega_3^2c_s^2\omega_1v_2^2\omega_2^3 - 72\omega_3^2c_s^4\omega_1^2\omega_2^3 + 54\omega_3^2v_3^4\omega_4\omega_1\omega_2^3 - 36\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^2 + \omega_3^2\omega_4\omega_1^2v_2^2\omega_2^3 + 8\omega_3^2\omega_4\omega_1^2\omega_2^2 + 18\omega_3v_3^2\omega_1^3\omega_2^2 + 54\omega_3^2c_s^2v_3^2\omega_1\omega_2^3 + \omega_3^2\omega_4\omega_1^3v_2^4\omega_2^2 - 56\omega_3c_s^2\omega_4\omega_1^2\omega_2^2 + 6\omega_3v_3^4\omega_4\omega_1\omega_2^3 + 66\omega_3^2c_s^2\omega_4\omega_1^2v_2^2\omega_2^2 + 18\omega_3v_3^4\omega_1^2\omega_2^3 + 54\omega_3c_s^2v_3^2\omega_4\omega_1^2\omega_2^2 - 4\omega_3^2\omega_4\omega_1^3\omega_2 - 24\omega_3^2\omega_4\omega_1^2v_2^2\omega_2^2 - 12\omega_3^2c_s^2v_3^2\omega_4\omega_1^2\omega_2 + 12\omega_3^2v_3^4\omega_4\omega_1\omega_2^2 - 68\omega_3^2c_s^4\omega_4\omega_2^3 + 2\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^3 + 24\omega_3^2v_3^4\omega_4\omega_1^3 - 36\omega_3v_3^2\omega_4\omega_1^3\omega_2^2 + 18\omega_3^2c_s^2\omega_4\omega_1^3\omega_2 - 18v_3^2\omega_4\omega_1^2\omega_2^3 + 12\omega_3^2\omega_4\omega_1^2v_2^2\omega_2 + 18\omega_3^2c_s^4\omega_1^3\omega_2^3 + 18v_3^2\omega_4\omega_1^3\omega_2^2 + 36\omega_3v_3^2\omega_4\omega_1^2\omega_2^3 + 24\omega_3^2c_s^2v_3^2\omega_4\omega_1^2\omega_2^2 - 2\omega_3^2c_s^2\omega_4\omega_1^3\omega_2^2 + 132\omega_3c_s^2\omega_4\omega_1^2v_2^2\omega_2^2 - 90\omega_3^2v_3^2\omega_4\omega_1v_2^2\omega_2^3 + 12\omega_3v_3^2\omega_4\omega_1^3\omega_2 - 18\omega_3c_s^2\omega_4\omega_1^3\omega_2^3 + 18\omega_3^2v_3^4\omega_1\omega_2^3 - 42\omega_3v_3^2\omega_4\omega_1^2\omega_2^2 + 72\omega_3c_s^2\omega_1^2\omega_2^3 + 76\omega_3^2c_s^4\omega_4\omega_1\omega_2^3 + 4\omega_3^2\omega_4\omega_1^3 - 48\omega_3^2c_s^2\omega_4\omega_1^2v_2^2\omega_2 - 18\omega_3v_3^4\omega_1^3\omega_2^2 - 174\omega_3^2c_s^2v_3^2\omega_4\omega_1^3\omega_2 - 144\omega_3^2v_3^2\omega_4\omega_1v_2^2\omega_2^2 - 126\omega_3c_s^2\omega_4\omega_1^2v_2^2\omega_2^3 + 32\omega_3^2c_s^2\omega_4\omega_1^2\omega_2 + 8\omega_3c_s^4\omega_4\omega_1\omega_2^3 - 30\omega_3^2c_s^2v_3^2\omega_4\omega_1^2\omega_2^3 - 6\omega_3v_3^2\omega_4\omega_1^2\omega_2^2 + 54\omega_3^2c_s^2\omega_1^3v_2^2\omega_2^3 - 90\omega_3^2v_3^2\omega_4\omega_1^3v_2^2\omega_2 - 4\omega_3^2\omega_4\omega_1^2\omega_2 - 18\omega_3v_3^2\omega_1^2\omega_2^3 + 132\omega_3^2c_s^2v_3^2\omega_4\omega_1^3 + 90\omega_3c_s^2v_3^2\omega_4\omega_1^3\omega_2^2 + 9\omega_3^2v_3^2\omega_4\omega_1^2\omega_2^3 - 28\omega_3^2c_s^4\omega_4\omega_1\omega_2^2 + 28\omega_3^2c_s^2\omega_4\omega_2^3 + 66\omega_3^2v_3^2\omega_4\omega_1^3\omega_2 - 48\omega_3^2v_3^2\omega_4\omega_1^3 + 36\omega_3c_s^2\omega_4\omega_1^3\omega_2^2 + 150\omega_3^2c_s^2v_3^2\omega_4\omega_1\omega_2^3 - 18\omega_3^2v_3^2\omega_1^3\omega_2^2 - 36\omega_3c_s^4\omega_4\omega_1^2\omega_2^3 - \omega_3^2\omega_4\omega_1^3v_2^2\omega_2^2 + 9\omega_3^2v_3^4\omega_4\omega_1^3\omega_2^2 - 12\omega_3^2\omega_4v_2^2\omega_2^3 + 8\omega_3c_s^4\omega_4\omega_1^3\omega_2 - 96\omega_3^2c_s^2\omega_4v_2^2\omega_2^3 + 24\omega_3c_s^2\omega_4\omega_1^3v_2^2\omega_2 + 54\omega_3^2c_s^2v_3^2\omega_1^3\omega_2^2 - 48\omega_3^2v_3^4\omega_4\omega_2^3 + 16\omega_3^2c_s^4\omega_4\omega_1^3 + 28\omega_3^2c_s^4\omega_4\omega_1^2\omega_2^2 + 6\omega_3^2c_s^2\omega_4\omega_1^3v_2^2\omega_2^2 - 54c_s^2v_3^2\omega_4\omega_1^3\omega_2^2 - 24\omega_3^2v_3^2\omega_4\omega_1\omega_2^3 - 18\omega_3^2v_3^4\omega_1^2\omega_2^2 - 6\omega_3v_3^2\omega_4\omega_1\omega_2^3 + 12\omega_3^2v_3^4\omega_4\omega_1^2\omega_2 - 12\omega_3^2c_s^2v_3^2\omega_4\omega_1\omega_2^2 + 56\omega_3c_s^4\omega_4\omega_1^2\omega_2^2 + 60\omega_3c_s^2\omega_4\omega_1v_2^2\omega_2^3 + 180\omega_3^2v_3^2\omega_4\omega_1^2v_2^2\omega_2^2 - 72\omega_3^2c_s^2\omega_1\omega_2^3 - 14\omega_3^2c_s^4\omega_4\omega_1^2\omega_2^3 - 18\omega_3^2v_3^4\omega_1^2\omega_2^3 + 36\omega_3^2v_3^2\omega_4\omega_1\omega_2^2 - 14\omega_3^2c_s^4\omega_4\omega_1^3\omega_2 + 18v_3^4\omega_4\omega_1^2\omega_2^3 + 36\omega_3v_3^4\omega_4\omega_1^3\omega_2^2 + 12\omega_3^2c_s^2\omega_4\omega_1^3v_2^2 - 12\omega_3^2\omega_4\omega_1^3v_2^2 - \omega_3^2\omega_4\omega_1^2v_2^4\omega_2^3 - 54\omega_3c_s^2v_3^2\omega_1^3\omega_2^3 - 36\omega_3v_3^4\omega_4\omega_1^2\omega_2^3 - 18v_3^4\omega_4\omega_1^3\omega_2^2 + 18\omega_3^2v_3^4\omega_1^3\omega_2^2 - 12\omega_3v_3^4\omega_4\omega_1^3\omega_2 + 2\omega_3^2c_s^4\omega_4\omega_1^3v_2^2 + 12\omega_3^2c_s^2\omega_4\omega_1^3v_2^2 + 48\omega_3^2c_s^2\omega_4\omega_1v_2^2\omega_2^3 + 54\omega_3c_s^2v_3^2\omega_1^2\omega_2^3 + 108\omega_3^2v_3^2\omega_4\omega_1v_2^2\omega_2^3 - 108\omega_3^2c_s^2v_3^2\omega_4\omega_1^3 - 4\omega_3^2\omega_4\omega_1^3\omega_2^3 + 12\omega_3^2\omega_4\omega_1v_2^2\omega_2^3 + 54\omega_3c_s^2\omega_4\omega_1^3v_2^2\omega_2^3 - 54\omega_3^2c_s^2v_3^2\omega_1^2\omega_2^2 + 18\omega_3c_s^4\omega_4\omega_1^3\omega_2^3 + 18\omega_3^2v_3^2\omega_1^2\omega_2^2 + 12\omega_3^2v_3^2\omega_4\omega_2^3 - 36\omega_3^2v_3^2\omega_4\omega_1v_2^2\omega_2 - 18\omega_3^2c_s^2\omega_4\omega_1\omega_2^3 - 18\omega_3^2v_3^4\omega_4\omega_1^2\omega_2^2 - 20\omega_3^2c_s^2\omega_4\omega_1^3 - 216\omega_3^2c_s^2\omega_1^2v_2^2\omega_2^3 - 18\omega_3c_s^2v_3^2\omega_4\omega_1\omega_2^3 - 84\omega_3^2c_s^2\omega_4\omega_1v_2^2\omega_2^2 + 54c_s^2v_3^2\omega_4\omega_1^2\omega_2^3 - 3\omega_3^2c_s^4\omega_4\omega_1^3\omega_2^3 +$

$6\omega_3 v_3^4\omega_4\omega_1^2\omega_2^2 - 6\omega_3^2 c_s^2\omega_4\omega_1^3 v_2^2\omega_2 - 8\omega_3 c_s^2\omega_4\omega_1\omega_2^3 - 28\omega_3^2 c_s^4\omega_4\omega_1^2\omega_2 + 12\omega_3^2\omega_4\omega_1^3 v_2^2\omega_2 + 32\omega_3^2 c_s^2\omega_4\omega_1\omega_2^2 - 9\omega_3^2 v_3^4\omega_4\omega_1^2\omega_2^3 - 36\omega_3 c_s^4\omega_4\omega_1^3\omega_2^2 + 72\omega_3^2 c_s^4\omega_1\omega_2^3 + 72\omega_3^2 v_3^2\omega_3\omega_4\omega_1^3 v_2^2 - 36\omega_3^2 v_3^4\omega_4\omega_1^3\omega_2 + 18\omega_3^2 v_3^2\omega_1^2\omega_2^3 - 54\omega_3^2 c_s^2 v_3^2\omega_1^2\omega_2^3 - 90\omega_3 c_s^2\omega_4\omega_1^3 v_2^2\omega_2^2 + 12\omega_3^2\omega_4\omega_1 v_2^2\omega_2^2 + 4\omega_3^2\omega_4\omega_2^3 - 4\omega_3^2\omega_4\omega_1\omega_2^2$

$C_{53} = 6\omega_1^3\omega_2 - 66\omega_3 c_s^2\omega_2^3 - 18c_s^2\omega_1\omega_2^3 - 12\omega_3\omega_1^2 v_2^2\omega_2 + 50\omega_3 v_3^2\omega_1^3\omega_2^2 + 48\omega_3\omega_1^3\omega_2 + 23\omega_3\omega_1^2\omega_2^3 + 108\omega_3 c_s^2\omega_1\omega_2^3 - 12\omega_1^2\omega_2^2 + 12\omega_3\omega_1^2\omega_2^2 + 6\omega_3 v_3^2\omega_1^2\omega_2 + 6\omega_3\omega_1^2\omega_2 - 66\omega_3 v_3^2\omega_1^2\omega_2^2 - 114\omega_3 v_3^2\omega_2^3 + 12\omega_1^2 v_2^2\omega_2^2 + 18\omega_3\omega_1^2 v_2^2\omega_2^2 - 75\omega_3 v_3^2\omega_1^3\omega_2 - 23\omega_3\omega_1^3\omega_2^2 - 50\omega_3 v_3^2\omega_1^2\omega_2^2 + 42\omega_3\omega_2^3 - 9\omega_3\omega_1 v_2^2\omega_2^3 + 141\omega_3 v_3^2\omega_1\omega_2^3 + 12\omega_3\omega_1^3 v_2^2 - 18\omega_3 c_s^2\omega_1^2\omega_2 - 6\omega_1^3 v_2^2\omega_2 - 9\omega_3\omega_1^3 v_2^2\omega_2 + 60\omega_3 v_3^2\omega_1\omega_2^2 + 84\omega_3 c_s^2\omega_1^3 - 12\omega_3\omega_1 v_2^2\omega_2^2 + 12\omega_3 v_2^2\omega_2^3 + 42\omega_3 c_s^2\omega_1^3\omega_2^2 - 6\omega_1 v_2^2\omega_2^3 - 108\omega_3 c_s^2\omega_1^3\omega_2 - 36\omega_3\omega_1^3 - 42\omega_3 c_s^2\omega_1^2\omega_2^3 - 12\omega_3\omega_1\omega_2^2 + 36c_s^2\omega_1^2\omega_2^2 + 6\omega_1\omega_2^3 - 18c_s^2\omega_1^3\omega_2 + 48\omega_3 v_3^2\omega_1^3 - 60\omega_3\omega_1\omega_2^3$

$C_{54} = -18\omega_3\omega_4 v_1^2\omega_2 - 6\omega_3\omega_4\omega_1\omega_2 + 12\omega_3 c_s^2\omega_4\omega_1 + 4\omega_3 v_3^2\omega_4\omega_2 + 9\omega_4\omega_1\omega_2 + 2\omega_3\omega_4\omega_2 - 27\omega_3 c_s^2\omega_1\omega_2 - 9v_3^2\omega_4\omega_1\omega_2 + 9\omega_3\omega_1\omega_2 + 18\omega_3 c_s^2\omega_4\omega_1\omega_2 + 18\omega_3\omega_4\omega_1 v_1^2 + 2\omega_3 v_3^2\omega_4\omega_1 + 6\omega_3 c_s^2\omega_4\omega_2 - 27c_s^2\omega_4\omega_1\omega_2 - 8\omega_3\omega_4\omega_1 - 9\omega_3 v_3^2\omega_1\omega_2 + 6\omega_3 v_3^2\omega_4\omega_1\omega_2$

$C_{55} = -2\omega_3^2\omega_4\omega_1 - 6\omega_3\omega_4^2 - 6\omega_3^2\omega_4 v_1^2 - 18\omega_3 c_s^2\omega_4\omega_1 + 36\omega_3 c_s^2\omega_4 + 2\omega_3^2\omega_4\omega_1 v_1^2 - 6v_3^2\omega_4^2 + 6\omega_3\omega_4^2 v_1^2 + 2\omega_3\omega_4^2\omega_1 - 6\omega_4^2\omega_1 - 6\omega_4^2 v_1^2 + 12\omega_3 v_3^2\omega_4 + 3\omega_4^2\omega_1 v_1^2 + 3v_3^2\omega_4^2\omega_1 + 12\omega_4^2 + 3\omega_3^2 v_3^2\omega_1 + 18\omega_3 c_s^2\omega_4^2 - 36c_s^2\omega_4^2 - 12\omega_3\omega_4 - 2\omega_3\omega_4^2\omega_1 v_1^2 + 6\omega_3^2 v_1^2 + 6\omega_3^2 c_s^2\omega_4\omega_1 + 6\omega_3^2\omega_4 - 6\omega_3^2 v_3^2 - 6\omega_3 v_3^2\omega_4\omega_1 + 18c_s^2\omega_4^2\omega_1 - 3\omega_3^2\omega_1 v_1^2 + 6\omega_3\omega_4\omega_1 - 18\omega_3^2 c_s^2\omega_4 - 6\omega_3 c_s^2\omega_4^2\omega_1$

$C_{56} = 18\omega_3^2 c_s^2\omega_4^2\omega_1^3 v_2^2\omega_2^2 + 144\omega_3^2 c_s^4\omega_4^2\omega_1^3\omega_2^2 - 18\omega_3^2 c_s^2\omega_1^3\omega_2^3 - 368\omega_3^2 c_s^2\omega_4^2\omega_1\omega_2^3 - 96\omega_3^2 v_3^4\omega_4^2\omega_1^2\omega_2^2 - 108\omega_3^2 c_s^4\omega_1^2\omega_2^3 - 27\omega_3 c_s^4\omega_4^2\omega_1^3\omega_2^3 - 6\omega_3^2\omega_4^2\omega_1^3 v_2^2\omega_2^2 - 16\omega_3^2\omega_4^2\omega_2^3 + 28\omega_3^2\omega_4^2\omega_1\omega_2^3 + 56\omega_3 c_s^2\omega_4^2\omega_1\omega_2^3 - 6\omega_3^2\omega_4^2\omega_1^2 v_2^4\omega_2^3 + 72\omega_3^2 c_s^4\omega_4^2\omega_1^2\omega_2 - 36c_s^2 v_3^2\omega_4^2\omega_1^2\omega_2^3 + 18\omega_3^2 c_s^4\omega_4^2\omega_1^3\omega_2^3 - 56\omega_3 c_s^2 v_3^2\omega_4^2\omega_1\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1\omega_2^2 - 784\omega_3^2 c_s^2 v_3^2\omega_4^2\omega_2^3 - 104\omega_3^2 c_s^2\omega_4^2\omega_1^3 - 108\omega_3 c_s^4\omega_4^2\omega_1^3\omega_2^2 - 108c_s^4\omega_4^2\omega_1^2\omega_2^3 + 160\omega_3^2 v_3^2\omega_4^2\omega_2^3 - 132\omega_3^2 v_3^4\omega_4^2\omega_1^3\omega_2 - 36\omega_3^2 c_s^2\omega_4\omega_1^2\omega_2^3 + 56\omega_3^2 c_s^2\omega_4^2\omega_1\omega_2^2 - 9\omega_3^2 c_s^2 v_3^2\omega_4\omega_1^3\omega_2^3 - 78\omega_3^2 v_3^4\omega_4^2\omega_1^2\omega_2^3 + 54\omega_3^2 c_s^4\omega_1^3\omega_2^3 + 78\omega_3^2 v_3^4\omega_4^2\omega_1^3\omega_2^2 + 48\omega_3 c_s^4\omega_4^2\omega_1^3\omega_2 + 1232\omega_3^2 c_s^2 v_3^2\omega_4^2\omega_1\omega_2^3 + 216\omega_3 c_s^4\omega_4^2\omega_1^2\omega_2^3 + 12\omega_3^2 c_s^4\omega_4^2\omega_1^2\omega_2^2 - 256\omega_3^2 v_3^2\omega_4^2\omega_1\omega_2^3 + 36\omega_3^2 c_s^2\omega_1^2\omega_2^3 + 54c_s^4\omega_4^2\omega_1^3\omega_2^3 + 9\omega_3^2 c_s^2\omega_4\omega_1^3\omega_2^3 + 120\omega_3^2 v_3^4\omega_4^2\omega_1^2\omega_2 - 56\omega_3^2 c_s^2 v_3^2\omega_4^2\omega_1\omega_2^2 + 120\omega_3 c_s^4\omega_4^2\omega_1^2\omega_2^2 + 36\omega_3^2 c_s^2 v_3^2\omega_4\omega_1^2\omega_2^3 - 276\omega_3^2 c_s^4\omega_4^2\omega_1^3\omega_2 + 144\omega_3^2 c_s^4\omega_4^2\omega_1^3 - 342\omega_3^2 c_s^4\omega_4^2\omega_1^2\omega_2^2 + 18c_s^2 v_3^2\omega_4^2\omega_1^3\omega_2^3 - 144\omega_3^2 v_3^4\omega_4^2\omega_2^3 + 32\omega_3^2 v_3^2\omega_4^2\omega_1\omega_2^2 - 118\omega_3^2 c_s^2\omega_4^2\omega_1^3\omega_2^2 + 6\omega_3^2\omega_4^2\omega_1^2 v_2^2\omega_2^3 - 412\omega_3^2 c_s^2 v_3^2\omega_4^2\omega_1^2\omega_2^2 + 14\omega_3^2\omega_4^2\omega_2^3\omega_2^2 - 9\omega_3 c_s^2 v_3^2\omega_4^2\omega_1^3\omega_2^3 + 320\omega_3^2 c_s^2 v_3^2\omega_4^2\omega_1^3 - 56\omega_3^2 v_3^2\omega_4^2\omega_1^3 + 104\omega_3^2 v_3^2\omega_4^2\omega_1^2\omega_2^2 + 588\omega_3^2 c_s^4\omega_4^2\omega_1\omega_2^3 + 208\omega_3^2 c_s^2\omega_4^2\omega_2^3 - 18\omega_3^2 c_s^2\omega_4^2\omega_1^2 v_2^2\omega_2^3 + 9\omega_3 c_s^2\omega_4^2\omega_1^3\omega_2^3 + 18\omega_3^2 c_s^2 v_3^2\omega_1^3\omega_2^2 + 16\omega_3^2\omega_4^2\omega_1^2\omega_2 - 88\omega_3^2 c_s^2\omega_4^2\omega_1^2\omega_2 - 168\omega_3 c_s^4\omega_4^2\omega_1\omega_2^3 - 460\omega_3^2 c_s^2 v_3^2\omega_4^2\omega_1^2\omega_2^3 - 6\omega_3^2 c_s^2\omega_4^2\omega_1^3\omega_2^3 - 712\omega_3^2 c_s^2 v_3^2\omega_4^2\omega_1^3\omega_2 + 36c_s^2\omega_4^2\omega_1^2\omega_2^3 + 108\omega_3^2 c_s^4\omega_4\omega_1^2\omega_2^2 + 152\omega_3^2 v_3^2\omega_4^2\omega_1^3\omega_2 + 36\omega_3 c_s^2\omega_4^2\omega_1^3\omega_2^2 + 92\omega_3^2 v_3^2\omega_4^2\omega_1^2\omega_2^3 - 144\omega_3^2 c_s^4\omega_4^2\omega_1\omega_2^2 + 6\omega_3^2\omega_4^2\omega_1^3 v_2^4\omega_2^2 - 36\omega_3 c_s^2 v_3^2\omega_4^2\omega_1^3\omega_2^2 + 8\omega_3^2\omega_4^2\omega_1^3 - 16\omega_3 c_s^2\omega_4^2\omega_1^3\omega_2 - 92\omega_3^2 v_3^2\omega_4^2\omega_1^3\omega_2^2 - 72\omega_3 c_s^2\omega_4^2\omega_1^2\omega_2^3 + 16\omega_3 c_s^2 v_3^2\omega_4^2\omega_1^3\omega_2 + 72\omega_3 c_s^2 v_3^2\omega_4^2\omega_1^2\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^2\omega_2^2 + 228\omega_3^2 v_3^4\omega_4^2\omega_1\omega_2^3 + 52\omega_3^2 c_s^2\omega_4^2\omega_1^2\omega_2^2 + 394\omega_3^2 c_s^2 v_3^2\omega_4^2\omega_1^3\omega_2^2 + 48\omega_3^2 v_3^4\omega_4^2\omega_1^3 - 288\omega_3^2 c_s^4\omega_4^2\omega_2^3 + 40\omega_3 c_s^2 v_3^2\omega_4^2\omega_1^2\omega_2^2 - 40\omega_3 c_s^2\omega_4^2\omega_1^2\omega_2^2 - 18c_s^2\omega_4^2\omega_1^3\omega_2^3 - 136\omega_3^2 v_3^2\omega_4^2\omega_1^2\omega_2 - 27\omega_3^2 c_s^4\omega_4\omega_1^3\omega_2^3 + 6\omega_3^2 c_s^2 v_3^2\omega_4^2\omega_1^3\omega_2^3 + 208\omega_3^2 c_s^2\omega_4^2\omega_1^3\omega_2 + 448\omega_3^2 c_s^2 v_3^2\omega_4^2\omega_1^2\omega_2 - 24\omega_3^2 v_3^4\omega_4^2\omega_1\omega_2^2 + 184\omega_3^2 c_s^2\omega_4^2\omega_1^2\omega_2^3 - 36\omega_3^2 c_s^2 v_3^2\omega_1^2\omega_2^3 - 14\omega_3^2\omega_4^2\omega_1^2\omega_2^3 - 20\omega_3^2\omega_4^2\omega_1^3\omega_2$

$C_{57} = -6\omega_3\omega_4\omega_1\omega_2 + 12\omega_3 c_s^2\omega_4\omega_1 + 4\omega_3 v_3^2\omega_4\omega_2 + 9\omega_4\omega_1\omega_2 - 18\omega_3\omega_4 v_2^2\omega_2 + 2\omega_3\omega_4\omega_2 - 27\omega_3 c_s^2\omega_1\omega_2 - 9v_3^2\omega_4\omega_1\omega_2 + 18\omega_3\omega_4\omega_1 v_2^2 + 9\omega_3\omega_1\omega_2 + 18\omega_3 c_s^2\omega_4\omega_1\omega_2 + 2\omega_3 v_3^2\omega_4\omega_1 + 6\omega_3 c_s^2\omega_4\omega_2 - 27c_s^2\omega_4\omega_1\omega_2 - 8\omega_3\omega_4\omega_1 - 9\omega_3 v_3^2\omega_1\omega_2 + 6\omega_3 v_3^2\omega_4\omega_1\omega_2$

$C_{58} = -264\omega_3 v_3^4\omega_4\omega_2^3 - 153\omega_3 c_s^2 v_3^2\omega_4\omega_1^2\omega_2^3 + 16\omega_3 c_s^4\omega_4\omega_1^3 - 288\omega_3 c_s^2 v_3^2\omega_4\omega_1^3\omega_2 + 24\omega_3 c_s^2\omega_4\omega_1^2\omega_2^3 - 24\omega_3 v_3^4\omega_4\omega_1\omega_2^2 + 18c_s^2\omega_4\omega_1^3\omega_2^2 + 42\omega_3 c_s^2\omega_4\omega_1^3\omega_2 + 24c_s^2 v_3^2\omega_4\omega_1\omega_2^3 + 8c_s^4\omega_4\omega_1\omega_2^3 + \omega_3\omega_4\omega_1^3 v_2^4\omega_2^2 - 96\omega_3 v_3^2\omega_4\omega_1^2\omega_2 - 6\omega_3 c_s^2\omega_4\omega_1^2\omega_2^2 - 9c_s^2\omega_4\omega_1^3\omega_2^3 + 408\omega_3 v_3^4\omega_4\omega_1\omega_2^3 - 36\omega_3 c_s^2\omega_1\omega_2^3 + \omega_3\omega_4\omega_1^2 v_2^2\omega_2^3 + 108\omega_3 c_s^2 v_3^2\omega_1\omega_2^3 - 90\omega_3 c_s^2 v_3^2\omega_4\omega_1^2\omega_2^2 - 8\omega_3\omega_4\omega_2^3 - 81\omega_3 v_3^2\omega_4\omega_1^3\omega_2^2 + 144\omega_3 c_s^2 v_3^2\omega_4\omega_1^3 + 144\omega_3 v_3^2\omega_4\omega_2^3 - 20\omega_3 c_s^2\omega_4\omega_1^3 - 28\omega_3 c_s^4\omega_4\omega_1\omega_2^2 + 81\omega_3 v_3^2\omega_4\omega_1^2\omega_2^3 + 14\omega_3\omega_4\omega_1\omega_2^3 + 138\omega_3 v_3^2\omega_4\omega_1^3\omega_2 - 20c_s^2\omega_4\omega_1^2\omega_2^2 - 16\omega_3 c_s^2\omega_4\omega_1^2\omega_2 + 120\omega_3 c_s^2 v_3^2\omega_4\omega_1^2\omega_2 - 3\omega_3 c_s^2\omega_4\omega_1^2 v_2^2\omega_2^3 + 94\omega_3 c_s^4\omega_4\omega_1\omega_2^3 - 4\omega_3\omega_4\omega_1\omega_2^2 + 84\omega_3 v_3^2\omega_4\omega_1^2\omega_2^2 + 36\omega_3 c_s^4\omega_1\omega_2^3 + 153\omega_3 c_s^2 v_3^2\omega_4\omega_1^3\omega_2^2 - 8c_s^2\omega_4\omega_1^3\omega_2 + 18c_s^2\omega_4\omega_1^2\omega_2^3 - 24\omega_3 c_s^2\omega_4\omega_1^3\omega_2^2 - 18c_s^4\omega_4\omega_1^3\omega_2^2 - 4\omega_3\omega_4\omega_1^2\omega_2^2 + 12\omega_3 v_3^2\omega_4\omega_1\omega_2^2 - 29\omega_3 c_s^4\omega_4\omega_1^2\omega_2^3 - 32\omega_3 c_s^4\omega_4\omega_1^3\omega_2 - \omega_3\omega_4\omega_1^2 v_2^4\omega_2^3 - 36\omega_3 c_s^4\omega_1^2\omega_2^3 + 27\omega_3 c_s^2 v_3^2\omega_1^3\omega_2^3 + 4\omega_3\omega_4\omega_1^3 - 9\omega_3 c_s^2\omega_1^3\omega_2^3 - 8c_s^2\omega_4\omega_1\omega_2^3 - 54c_s^2 v_3^2\omega_4\omega_1^3\omega_2^2 + 192\omega_3 v_3^4\omega_4\omega_1^2\omega_2 - 68\omega_3 c_s^4\omega_4\omega_2^3 + 96\omega_3 v_3^4\omega_4\omega_1^3 - 10\omega_3\omega_4\omega_1^3\omega_2 - 222\omega_3 v_3^2\omega_4\omega_1\omega_2^3 - 7\omega_3\omega_4\omega_1^2\omega_2^3 + 9c_s^4\omega_4\omega_1^3\omega_2^3 + 10\omega_3 c_s^4\omega_4\omega_1^2\omega_2^2 - \omega_3\omega_4\omega_1^3 v_2^2\omega_2^2 + 27c_s^2 v_3^2\omega_4\omega_1^3\omega_2^3 + 138\omega_3 v_3^4\omega_4\omega_1^3\omega_2^2 - 138\omega_3 v_3^4\omega_4\omega_1^2\omega_2^3 + 32\omega_3 c_s^2\omega_4\omega_1\omega_2^2 - 240\omega_3 v_3^4\omega_4\omega_1^3\omega_2 + 60c_s^2 v_3^2\omega_4\omega_1^2\omega_2^2 - 60\omega_3 c_s^2 v_3^2\omega_4\omega_1\omega_2^2 - 108\omega_3 c_s^2 v_3^2\omega_1^3\omega_2^2 + 36\omega_3 c_s^2\omega_1^2\omega_2^3 + 9\omega_3 c_s^4\omega_1^3\omega_2^3 - 3\omega_3 c_s^4\omega_4\omega_1^3\omega_2^3 + 7\omega_3\omega_4\omega_1^3\omega_2^2 + 20c_s^4\omega_4\omega_1^2\omega_2^2 + 8\omega_3 c_s^4\omega_4\omega_1^2\omega_2 - 312\omega_3 c_s^2 v_3^2\omega_4\omega_2^3 + 40\omega_3 c_s^2\omega_4\omega_2^3 + 432\omega_3 c_s^2 v_3^2\omega_4\omega_1\omega_2^3 - 60\omega_3 v_3^2\omega_4\omega_1^3 - 54c_s^2 v_3^2\omega_4\omega_1^2\omega_2^3 - 168\omega_3 v_3^4\omega_4\omega_1^2\omega_2^2 + 24c_s^2 v_3^2\omega_4\omega_1^3\omega_2 - 54\omega_3 c_s^2\omega_4\omega_1\omega_2^3 + 8\omega_3\omega_4\omega_1^2\omega_2 + 8c_s^4\omega_4\omega_1^3\omega_2 + 17\omega_3 c_s^4\omega_4\omega_1^3\omega_2^2 - 18c_s^4\omega_4\omega_1^2\omega_2^3 + 3\omega_3 c_s^2\omega_4\omega_1^3 v_2^2\omega_2^2$

$C_{59} = -36c_s^2 v_3^2\omega_1\omega_2 - 3c_s^4\omega_1\omega_2 + 6v_3^4\omega_1 - 12v_3^2\omega_2 + 24c_s^2 v_3^2\omega_1 - 4c_s^2\omega_2 + 2c_s^4\omega_1 + 3c_s^2\omega_1\omega_2 - 9v_3^4\omega_1\omega_2 + 12v_3^4\omega_2 - 6v_3^2\omega_1 + 48c_s^2 v_3^2\omega_2 - 2c_s^2\omega_1 + 4c_s^4\omega_2 + 9v_3^2\omega_1\omega_2$

$C_{60} =$
$24\omega_3^2 c_s^4\omega_4^2 + 15\omega_3 v_3^2\omega_4^2\omega_1^3 + 18\omega_3^2 v_3^2\omega_1^2 - 8\omega_3^2 c_s^2\omega_4^2\omega_1^2 + 36\omega_3^2 v_3^4\omega_4\omega_1^2 + 18v_3^2\omega_4^2\omega_1^2 - 48\omega_3^2 c_s^4\omega_4^2\omega_1 - 36\omega_3 v_3^2\omega_4^2\omega_1^2 + 36\omega_3^2 c_s^2 v_3^2\omega_4\omega_1 + \omega_3^2 c_s^2\omega_4^2\omega_1^3 - 9\omega_3^2 v_3^4\omega_1^3 - 15\omega_3^2 v_3^4\omega_4\omega_1^3 - 9v_3^2\omega_4^2\omega_1^3 + 54\omega_3 c_s^2 v_3^2\omega_4\omega_1^3 - 15\omega_3 v_3^4\omega_4^2\omega_1^3 + 24\omega_3^2 c_s^4\omega_4^2\omega_1^2 - 36\omega_3^2 v_3^2\omega_4\omega_1^2 - 18v_3^4\omega_4^2\omega_1^2 + 72\omega_3^2 c_s^2 v_3^2\omega_4\omega_1^2 + 12\omega_3^2 c_s^2\omega_4^2\omega_1 + 36\omega_3 v_3^4\omega_4^2\omega_1^2 - 108\omega_3 c_s^2 v_3^2\omega_4\omega_1^2 - 36\omega_3^2 c_s^2 v_3^2\omega_4\omega_1^3 - 3\omega_3^2 c_s^4\omega_4^2\omega_1^3 + 15\omega_3^2 v_3^2\omega_4\omega_1^3 + 9v_3^4\omega_4^2\omega_1^3 - 12\omega_3^2 c_s^2\omega_4\omega_1 + 72\omega_3 c_s^2 v_3^2\omega_4^2\omega_1^2 + 12\omega_3 c_s^2\omega_4^2\omega_1^2 - 36\omega_3 v_3^4\omega_4\omega_1^2 - 54\omega_3^2 c_s^2 v_3^2\omega_1^2 + 6\omega_3^2 c_s^2 v_3^2\omega_4^2\omega_1^3 - 3\omega_3^2 v_3^2\omega_4^2\omega_1^3 + 3\omega_3^2 c_s^4\omega_4\omega_1^3 + 9\omega_3^2 v_3^4\omega_1^3 - 3\omega_3 c_s^2\omega_4^2\omega_1^3 + 18\omega_3 v_3^4\omega_4\omega_1^3 - 36\omega_3 c_s^2 v_3^2\omega_4^2\omega_1^3 + 12\omega_3^2 v_3^2\omega_4^2\omega_1^2 - 18\omega_3^2 v_3^4\omega_1^2 - 12\omega_3^2 c_s^4\omega_4\omega_1^2 - 12\omega_3^2 c_s^2 v_3^2\omega_4^2\omega_1^2 + 12\omega_3 c_s^4\omega_4^2\omega_1 + 27\omega_3^2 c_s^2 v_3^2\omega_1^3 + 12\omega_3^2 c_s^4\omega_4\omega_1 - 12\omega_3 c_s^4\omega_4^2\omega_1^2 - 36\omega_3^2 c_s^2 v_3^2\omega_4^2\omega_1 + 36\omega_3 v_3^2\omega_4\omega_1^2 + 27c_s^2 v_3^2\omega_4^2\omega_1^3 + 3\omega_3^2 v_3^4\omega_4^2\omega_1^3 - 3\omega_3^2 c_s^2\omega_4\omega_1^3 + 3\omega_3 c_s^4\omega_4^2\omega_1^3 - 18\omega_3 v_3^2\omega_4\omega_1^3 - 12\omega_3^2 v_3^4\omega_4^2\omega_1^2 + 12\omega_3^2 c_s^2\omega_4\omega_1^2 + 36\omega_3 c_s^2 v_3^2\omega_4^2\omega_1 - 54c_s^2 v_3^2\omega_4^2\omega_1^2 - 12\omega_3 c_s^2\omega_4^2\omega_1$

2.7.5 Conservation of momentum: ρv_3

attached text file: `output_d3q27_nse_culbm2_symbolic_pde_03.txt`

$$v_3\frac{\partial\rho}{\partial t} + \rho\frac{\partial v_3}{\partial t} + \frac{v_3 v_1\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_1} + \frac{v_3\rho\delta_l}{\delta_t}\frac{\partial v_1}{\partial x_1} + \frac{\rho v_1\delta_l}{\delta_t}\frac{\partial v_3}{\partial x_1} + \frac{v_3 v_2\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_2} + \frac{v_3\rho\delta_l}{\delta_t}\frac{\partial v_2}{\partial x_2} + \frac{\rho v_2\delta_l}{\delta_t}\frac{\partial v_3}{\partial x_2} + (c_s^2 + v_3^2)\frac{\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_3} + \frac{2v_3\rho\delta_l}{\delta_t}\frac{\partial v_3}{\partial x_3} + (-2+\omega_1)\frac{c_s^2\delta_l^2}{2\delta_t\omega_1}\frac{\partial\rho}{\partial x_1}\frac{\partial v_3}{\partial x_1} + (6\omega_1 v_1^2 - 12c_s^2\omega_2 + 3c_s^2\omega_1\omega_2 - 2\omega_1 - 6v_1^2\omega_2 + 2\omega_2 + 6c_s^2\omega_1)\frac{\delta_l^2}{6\delta_t\omega_1\omega_2}\frac{\partial\rho}{\partial x_1}\frac{\partial v_1}{\partial x_3}$$

$$+ (\omega_1 - \omega_2)\frac{2\rho v_1\delta_l^2}{\delta_t\omega_1\omega_2}\frac{\partial v_1}{\partial x_1}\frac{\partial v_1}{\partial x_3} + (-2+\omega_1)\frac{c_s^2\delta_l^2}{2\delta_t\omega_1}\frac{\partial \rho}{\partial x_2}\frac{\partial v_3}{\partial x_2} +$$
$$(6\omega_1 v_2^2 - 12c_s^2\omega_2 + 3c_s^2\omega_1\omega_2 - 2\omega_1 + 2\omega_2 + 6c_s^2\omega_1 - 6v_2^2\omega_2)\frac{\delta_l^2}{6\delta_t\omega_1\omega_2}\frac{\partial \rho}{\partial x_2}\frac{\partial v_2}{\partial x_3} + (\omega_1 - \omega_2)\frac{2\rho v_2\delta_l^2}{\delta_t\omega_1\omega_2}\frac{\partial v_2}{\partial x_2}\frac{\partial v_2}{\partial x_3} +$$
$$(3\omega_1 v_1^2 - c_s^2\omega_2 - \omega_1 - 3v_1^2\omega_2 + \omega_2 + c_s^2\omega_1)\frac{\delta_l^2}{3\delta_t\omega_1\omega_2}\frac{\partial \rho}{\partial x_3}\frac{\partial v_1}{\partial x_1} + (3\omega_1 v_2^2 - c_s^2\omega_2 - \omega_1 + \omega_2 + c_s^2\omega_1 - 3v_2^2\omega_2)\frac{\delta_l^2}{3\delta_t\omega_1\omega_2}\frac{\partial \rho}{\partial x_3}\frac{\partial v_2}{\partial x_2}$$
$$+ (12v_3^2\omega_2 + 8c_s^2\omega_2 - 6c_s^2\omega_1\omega_2 - 2\omega_1 + 6v_3^2\omega_1 + 3\omega_1\omega_2 - 4\omega_2 + 4c_s^2\omega_1 - 9v_3^2\omega_1\omega_2)\frac{\delta_l^2}{3\delta_t\omega_1\omega_2}\frac{\partial \rho}{\partial x_3}\frac{\partial v_3}{\partial x_3} +$$
$$(2\omega_1 - 3\omega_1\omega_2 + 4\omega_2)\frac{v_3\rho\delta_l^2}{\delta_t\omega_1\omega_2}\left(\frac{\partial v_3}{\partial x_3}\right)^2 + (-2+\omega_1)\frac{c_s^2\rho\delta_l^2}{2\delta_t\omega_1}\frac{\partial^2 v_3}{\partial x_1^2} + (-2+\omega_1)\frac{c_s^2\rho\delta_l^2}{2\delta_t\omega_1}\frac{\partial^2 v_3}{\partial x_2^2} +$$
$$(\omega_1 v_1^2 - 3c_s^2\omega_2 - \omega_1 - v_1^2\omega_2 + \omega_2 + 3c_s^2\omega_1)\frac{v_1\delta_l^2}{3\delta_t\omega_1\omega_2}\frac{\partial^2 \rho}{\partial x_1\partial x_3} +$$
$$(6\omega_1 v_1^2 - 8c_s^2\omega_2 + 3c_s^2\omega_1\omega_2 - 2\omega_1 - 6v_1^2\omega_2 + 2\omega_2 + 2c_s^2\omega_1)\frac{\rho\delta_l^2}{6\delta_t\omega_1\omega_2}\frac{\partial^2 v_1}{\partial x_1\partial x_3} +$$
$$(\omega_1 v_2^2 - 3c_s^2\omega_2 - \omega_1 + \omega_2 + 3c_s^2\omega_1 - v_2^2\omega_2)\frac{v_2\delta_l^2}{3\delta_t\omega_1\omega_2}\frac{\partial^2 \rho}{\partial x_2\partial x_3} +$$
$$(6\omega_1 v_2^2 - 8c_s^2\omega_2 + 3c_s^2\omega_1\omega_2 - 2\omega_1 + 2\omega_2 + 2c_s^2\omega_1 - 6v_2^2\omega_2)\frac{\rho\delta_l^2}{6\delta_t\omega_1\omega_2}\frac{\partial^2 v_2}{\partial x_2\partial x_3} +$$
$$(4v_3^2\omega_2 + 12c_s^2\omega_2 - 9c_s^2\omega_1\omega_2 - 2\omega_1 + 2v_3^2\omega_1 + 3\omega_1\omega_2 - 4\omega_2 + 6c_s^2\omega_1 - 3v_3^2\omega_1\omega_2)\frac{v_3\delta_l^2}{6\delta_t\omega_1\omega_2}\frac{\partial^2 \rho}{\partial x_3^2} +$$
$$(12v_3^2\omega_2 + 4c_s^2\omega_2 - 3c_s^2\omega_1\omega_2 - 2\omega_1 + 6v_3^2\omega_1 + 3\omega_1\omega_2 - 4\omega_2 + 2c_s^2\omega_1 - 9v_3^2\omega_1\omega_2)\frac{\rho\delta_l^2}{6\delta_t\omega_1\omega_2}\frac{\partial^2 v_3}{\partial x_3^2} +$$
$$(-1 + 3c_s^2 + v_1^2)\frac{v_3 v_1\delta_l^3}{12\delta_t}\frac{\partial^3 \rho}{\partial x_1^3} + (-1 + c_s^2 + 3v_1^2)\frac{v_3\rho\delta_l^3}{12\delta_t}\frac{\partial^3 v_1}{\partial x_1^3} + C_1\frac{\rho v_1\delta_l^3}{12\omega_3\delta_t\omega_4\omega_1}\frac{\partial^3 v_3}{\partial x_1^3} - \frac{c_s^2 v_3\rho\delta_l^3}{6\delta_t}\frac{\partial^3 v_2}{\partial x_1^2\partial x_2} +$$
$$C_2\frac{\rho v_2\delta_l^3}{4\omega_3\delta_t\omega_4\omega_1}\frac{\partial^3 v_3}{\partial x_1^2\partial x_2} - \frac{c_s^2 v_3\rho\delta_l^3}{6\delta_t}\frac{\partial^3 v_1}{\partial x_1\partial x_2^2} + C_3\frac{\rho v_1\delta_l^3}{4\omega_3\delta_t\omega_4\omega_1}\frac{\partial^3 v_3}{\partial x_1\partial x_2^2} + (-1 + 3c_s^2 + v_2^2)\frac{v_3 v_2\delta_l^3}{12\delta_t}\frac{\partial^3 \rho}{\partial x_2^3} +$$
$$(-1 + c_s^2 + 3v_2^2)\frac{v_3\rho\delta_l^3}{12\delta_t}\frac{\partial^3 v_2}{\partial x_2^3} + C_4\frac{\rho v_2\delta_l^3}{12\omega_3\delta_t\omega_4\omega_1}\frac{\partial^3 v_3}{\partial x_2^3} + C_5\frac{\delta_l^3}{6\delta_t\omega_1^2\omega_2^2}\frac{\partial^3 \rho}{\partial x_1^2\partial x_3} + C_6\frac{\rho v_1\delta_l^3}{6\delta_t\omega_1^2\omega_2^2}\frac{\partial^3 v_1}{\partial x_1^2\partial x_3} - \frac{c_s^2 v_3\rho\delta_l^3}{6\delta_t}\frac{\partial^3 v_3}{\partial x_1^2\partial x_3} +$$
$$C_7\frac{v_2 v_1\delta_l^3}{3\delta_t\omega_1^2\omega_2^2}\frac{\partial^3 \rho}{\partial x_1\partial x_2\partial x_3} + C_8\frac{\rho v_2\delta_l^3}{6\omega_3\delta_t\omega_4\omega_1^2\omega_2^2}\frac{\partial^3 v_1}{\partial x_1\partial x_2\partial x_3} + C_9\frac{\rho v_1\delta_l^3}{6\omega_3\delta_t\omega_4\omega_1^2\omega_2^2}\frac{\partial^3 v_2}{\partial x_1\partial x_2\partial x_3} + C_{10}\frac{\delta_l^3}{6\delta_t\omega_1^2\omega_2^2}\frac{\partial^3 \rho}{\partial x_2^2\partial x_3} +$$
$$C_{11}\frac{\rho v_2\delta_l^3}{6\delta_t\omega_1^2\omega_2^2}\frac{\partial^3 v_2}{\partial x_2^2\partial x_3} - \frac{c_s^2 v_3\rho\delta_l^3}{6\delta_t}\frac{\partial^3 v_3}{\partial x_2^2\partial x_3} + C_{12}\frac{v_3 v_1\delta_l^3}{6\delta_t\omega_1^2\omega_2^2}\frac{\partial^3 \rho}{\partial x_1\partial x_3^2} + C_{13}\frac{v_3\rho\delta_l^3}{12\omega_3\delta_t\omega_4\omega_1^2\omega_2^2}\frac{\partial^3 v_1}{\partial x_1\partial x_3^2} + C_{14}\frac{\rho v_1\delta_l^3}{6\omega_3\delta_t\omega_1^2\omega_2^2}\frac{\partial^3 v_3}{\partial x_1\partial x_3^2} +$$
$$C_{15}\frac{v_3 v_2\delta_l^3}{6\delta_t\omega_1^2\omega_2^2}\frac{\partial^3 \rho}{\partial x_2\partial x_3^2} + C_{16}\frac{v_3\rho\delta_l^3}{12\omega_3\delta_t\omega_4\omega_1^2\omega_2^2}\frac{\partial^3 v_2}{\partial x_2\partial x_3^2} + C_{17}\frac{\rho v_2\delta_l^3}{6\omega_3\delta_t\omega_1^2\omega_2^2}\frac{\partial^3 v_3}{\partial x_2\partial x_3^2} + C_{18}\frac{\delta_l^3}{12\delta_t\omega_1^2\omega_2^2}\frac{\partial^3 \rho}{\partial x_3^3} + C_{19}\frac{v_3\rho\delta_l^3}{6\delta_t\omega_1^2\omega_2^2}\frac{\partial^3 v_3}{\partial x_3^3} +$$
$$C_{20}\frac{v_3\delta_l^4}{72\delta_t\omega_1\omega_2}\frac{\partial^4 \rho}{\partial x_1^4} + (10\omega_1 v_1^2 + 12c_s^2\omega_2 - 9c_s^2\omega_1\omega_2 - 4\omega_1 + 20v_1^2\omega_2 - 15\omega_1 v_1^2\omega_2 + 6\omega_1\omega_2 - 8\omega_2 + 6c_s^2\omega_1)\frac{v_3\rho v_1\delta_l^4}{36\delta_t\omega_1\omega_2}\frac{\partial^4 v_1}{\partial x_1^4}$$
$$+ C_{21}\frac{\rho\delta_l^4}{24\omega_3^2\delta_t\omega_4^2\omega_1^3}\frac{\partial^4 v_3}{\partial x_1^4} + (\omega_1 v_2^2 - 3c_s^2\omega_2 - \omega_1 + \omega_2 + 3c_s^2\omega_1 - v_2^2\omega_2)\frac{v_3 v_2 v_1\delta_l^4}{12\delta_t\omega_1\omega_2}\frac{\partial^4 \rho}{\partial x_1^3\partial x_2} +$$
$$(\omega_1 v_2^2 - 3c_s^2\omega_2 - \omega_1 + \omega_2 + 3c_s^2\omega_1 - v_2^2\omega_2)\frac{v_3\rho v_2\delta_l^4}{36\delta_t\omega_1\omega_2}\frac{\partial^4 v_1}{\partial x_1^3\partial x_2} + C_{22}\frac{v_3\rho v_1\delta_l^4}{72\omega_3\delta_t\omega_4\omega_1\omega_2}\frac{\partial^4 v_2}{\partial x_1^3\partial x_2} + C_{23}\frac{\rho v_2 v_1\delta_l^4}{8\omega_3^2\delta_t\omega_4^2\omega_1}\frac{\partial^4 v_3}{\partial x_1^3\partial x_2} +$$
$$(3\omega_1 v_1^2 + 3\omega_1 v_2^2 - 14c_s^2\omega_2 + 6c_s^2\omega_1\omega_2 - 2\omega_1 - 3v_1^2\omega_2 + 2\omega_2 + 2c_s^2\omega_1 - 3v_2^2\omega_2)\frac{c_s^2 v_3\delta_l^4}{36\delta_t\omega_1\omega_2}\frac{\partial^4 \rho}{\partial x_1^2\partial x_2^2} +$$
$$(\omega_1 v_1^2 - 3c_s^2\omega_2 - \omega_1 - v_1^2\omega_2 + \omega_2 + 3c_s^2\omega_1)\frac{v_3\rho v_1\delta_l^4}{36\delta_t\omega_1\omega_2}\frac{\partial^4 v_1}{\partial x_1^2\partial x_2^2} +$$
$$(\omega_1 v_2^2 - 3c_s^2\omega_2 - \omega_1 + \omega_2 + 3c_s^2\omega_1 - v_2^2\omega_2)\frac{v_3\rho v_2\delta_l^4}{36\delta_t\omega_1\omega_2}\frac{\partial^4 v_2}{\partial x_1^2\partial x_2^2} + C_{24}\frac{\rho\delta_l^4}{8\omega_3^2\delta_t\omega_4^2\omega_1^3\omega_5}\frac{\partial^4 v_3}{\partial x_1^2\partial x_2^2} +$$
$$(\omega_1 v_1^2 - 3c_s^2\omega_2 - \omega_1 - v_1^2\omega_2 + \omega_2 + 3c_s^2\omega_1)\frac{v_3 v_2 v_1\delta_l^4}{12\delta_t\omega_1\omega_2}\frac{\partial^4 \rho}{\partial x_1\partial x_2^3} + C_{25}\frac{v_3\rho v_2\delta_l^4}{72\omega_3\delta_t\omega_4\omega_1\omega_2}\frac{\partial^4 v_1}{\partial x_1\partial x_2^3} +$$
$$(\omega_1 v_1^2 - 3c_s^2\omega_2 - \omega_1 - v_1^2\omega_2 + \omega_2 + 3c_s^2\omega_1)\frac{v_3\rho v_1\delta_l^4}{36\delta_t\omega_1\omega_2}\frac{\partial^4 v_2}{\partial x_1\partial x_2^3} + C_{26}\frac{\rho v_2 v_1\delta_l^4}{8\omega_3^2\delta_t\omega_4^2\omega_1}\frac{\partial^4 v_3}{\partial x_1\partial x_2^3} + C_{27}\frac{v_3\delta_l^4}{72\delta_t\omega_1\omega_2}\frac{\partial^4 \rho}{\partial x_2^4} +$$
$$(10\omega_1 v_2^2 + 12c_s^2\omega_2 - 9c_s^2\omega_1\omega_2 - 4\omega_1 + 6\omega_1\omega_2 - 8\omega_2 - 15\omega_1 v_2^2\omega_2 + 6c_s^2\omega_1 + 20v_2^2\omega_2)\frac{v_3\rho v_2\delta_l^4}{36\delta_t\omega_1\omega_2}\frac{\partial^4 v_2}{\partial x_2^4} +$$
$$C_{28}\frac{\rho\delta_l^4}{24\omega_3^2\delta_t\omega_4^2\omega_1^3}\frac{\partial^4 v_3}{\partial x_2^4} + C_{29}\frac{v_1\delta_l^4}{72\omega_3^2\delta_t\omega_4^2\omega_1^3\omega_2^3}\frac{\partial^4 \rho}{\partial x_1^3\partial x_3} + C_{30}\frac{\rho\delta_l^4}{36\omega_3\delta_t\omega_4\omega_1^3\omega_2^3}\frac{\partial^4 v_1}{\partial x_1^3\partial x_3} + C_{31}\frac{v_3\rho v_1\delta_l^4}{72\omega_3\delta_t\omega_4\omega_1\omega_2}\frac{\partial^4 v_3}{\partial x_1^3\partial x_3} +$$
$$C_{32}\frac{v_2\delta_l^4}{72\omega_3^2\delta_t\omega_4^2\omega_1^3\omega_2^3}\frac{\partial^4 \rho}{\partial x_1^2\partial x_2\partial x_3} + C_{33}\frac{\rho v_2 v_1\delta_l^4}{6\omega_3\delta_t\omega_1^3\omega_2^3}\frac{\partial^4 v_1}{\partial x_1^2\partial x_2\partial x_3} + C_{34}\frac{\rho\delta_l^4}{72\omega_3^2\delta_t\omega_4^2\omega_1^3\omega_5\omega_2^3}\frac{\partial^4 v_2}{\partial x_1^2\partial x_2\partial x_3} +$$
$$C_{35}\frac{v_3\rho v_2\delta_l^4}{72\omega_3\delta_t\omega_4\omega_1\omega_2}\frac{\partial^4 v_3}{\partial x_1^2\partial x_2\partial x_3} + C_{36}\frac{v_1\delta_l^4}{72\omega_3^2\delta_t\omega_4^2\omega_1^3\omega_2^3}\frac{\partial^4 \rho}{\partial x_1\partial x_2^2\partial x_3} + C_{37}\frac{\rho\delta_l^4}{72\omega_3^2\delta_t\omega_4^2\omega_1^3\omega_5\omega_2^3}\frac{\partial^4 v_1}{\partial x_1\partial x_2^2\partial x_3} +$$
$$C_{38}\frac{\rho v_2 v_1\delta_l^4}{6\omega_3\delta_t\omega_1^3\omega_2^3}\frac{\partial^4 v_2}{\partial x_1\partial x_2^2\partial x_3} + C_{39}\frac{v_3\rho v_1\delta_l^4}{72\omega_3\delta_t\omega_4\omega_1\omega_2}\frac{\partial^4 v_3}{\partial x_1\partial x_2^2\partial x_3} + C_{40}\frac{v_2\delta_l^4}{72\omega_3^2\delta_t\omega_4^2\omega_1^3\omega_2^3}\frac{\partial^4 \rho}{\partial x_2^3\partial x_3} + C_{41}\frac{\rho\delta_l^4}{36\omega_3\delta_t\omega_4\omega_1^3\omega_2^3}\frac{\partial^4 v_2}{\partial x_2^3\partial x_3} +$$
$$C_{42}\frac{v_3\rho v_2\delta_l^4}{72\omega_3\delta_t\omega_4\omega_1\omega_2}\frac{\partial^4 v_3}{\partial x_2^3\partial x_3} + C_{43}\frac{v_3\delta_l^4}{36\omega_3^2\delta_t\omega_4^2\omega_1^3\omega_2^3}\frac{\partial^4 \rho}{\partial x_1^2\partial x_3^2} + C_{44}\frac{v_3\rho v_1\delta_l^4}{18\omega_3\delta_t\omega_1^3\omega_2^3}\frac{\partial^4 v_1}{\partial x_1^2\partial x_3^2} + C_{45}\frac{\rho\delta_l^4}{36\omega_3^2\delta_t\omega_4\omega_1^3\omega_2^3}\frac{\partial^4 v_3}{\partial x_1^2\partial x_3^2} +$$
$$C_{46}\frac{v_3 v_2 v_1\delta_l^4}{6\delta_t\omega_1^3\omega_2^3}\frac{\partial^4 \rho}{\partial x_1\partial x_2\partial x_3^2} + C_{47}\frac{v_3\rho v_2\delta_l^4}{72\omega_3^2\delta_t\omega_4^2\omega_1^3\omega_2^3}\frac{\partial^4 v_1}{\partial x_1\partial x_2\partial x_3^2} + C_{48}\frac{v_3\rho v_1\delta_l^4}{72\omega_3^2\delta_t\omega_4^2\omega_1^3\omega_2^3}\frac{\partial^4 v_2}{\partial x_1\partial x_2\partial x_3^2} + C_{49}\frac{\rho v_2 v_1\delta_l^4}{6\omega_3^2\delta_t\omega_4\omega_1^3\omega_2^3}\frac{\partial^4 v_3}{\partial x_1\partial x_2\partial x_3^2}$$
$$+ C_{50}\frac{v_3\delta_l^4}{36\omega_3^2\delta_t\omega_4^2\omega_1^3\omega_2^3}\frac{\partial^4 \rho}{\partial x_2^2\partial x_3^2} + C_{51}\frac{v_3\rho v_2\delta_l^4}{18\omega_3\delta_t\omega_1^3\omega_2^3}\frac{\partial^4 v_2}{\partial x_2^2\partial x_3^2} + C_{52}\frac{\rho\delta_l^4}{36\omega_3^2\delta_t\omega_4\omega_1^3\omega_2^3}\frac{\partial^4 v_3}{\partial x_2^2\partial x_3^2} + C_{53}\frac{v_1\delta_l^4}{36\omega_3^2\delta_t\omega_1^3\omega_2^3}\frac{\partial^4 \rho}{\partial x_1\partial x_3^3} +$$

$$C_{54}\frac{\rho\delta_l^4}{72\omega_3^2\delta_t\omega_4^2\omega_1^3\omega_2^3}\frac{\partial^4 v_1}{\partial x_1\partial x_3^3} + C_{55}\frac{v_3\rho v_1\delta_l^4}{18\omega_3\delta_t\omega_1^3\omega_2^3}\frac{\partial^4 v_3}{\partial x_1\partial x_3^3} + C_{56}\frac{v_2\delta_l^4}{36\omega_3^2\delta_t\omega_1^3\omega_2^3}\frac{\partial^4 \rho}{\partial x_2\partial x_3^3} + C_{57}\frac{\rho\delta_l^4}{72\omega_3^2\delta_t\omega_4^2\omega_1^3\omega_2^3}\frac{\partial^4 v_2}{\partial x_2\partial x_3^3} + C_{58}\frac{v_3\rho v_2\delta_l^4}{18\omega_3\delta_t\omega_1^3\omega_2^3}\frac{\partial^4 v_3}{\partial x_2\partial x_3^3} + C_{59}\frac{v_3\delta_l^4}{36\omega_3\delta_t\omega_1^3\omega_2^3}\frac{\partial^4 \rho}{\partial x_3^4} + C_{60}\frac{\rho\delta_l^4}{36\omega_3\delta_t\omega_1^3\omega_2^3}\frac{\partial^4 v_3}{\partial x_3^4} = 0,$$

where:

$$C_1 = -18c_s^2\omega_4 + 3\omega_3\omega_1 v_1^2 - 6\omega_3 c_s^2\omega_4\omega_1 + 18\omega_3 c_s^2\omega_4 + 9c_s^2\omega_4\omega_1 + 6\omega_3 - 18\omega_3 c_s^2 - 6\omega_3\omega_4 + 6\omega_4 + 3\omega_4\omega_1 v_1^2 - 3\omega_3\omega_1 - 6\omega_3 v_1^2 - 2\omega_3\omega_4\omega_1 v_1^2 + 6\omega_3\omega_4 v_1^2 + 2\omega_3\omega_4\omega_1 - 3\omega_4\omega_1 - 6\omega_4 v_1^2 + 9\omega_3 c_s^2\omega_1$$

$$C_2 = -6c_s^2\omega_4 + 3c_s^2\omega_4\omega_1 - 2\omega_3 - \omega_3\omega_1 v_2^2 + 6\omega_3 c_s^2 + 2\omega_4 + \omega_3\omega_1 + \omega_4\omega_1 v_2^2 + 2\omega_3 v_2^2 - \omega_4\omega_1 - 3\omega_3 c_s^2\omega_1 - 2\omega_4 v_2^2$$

$$C_3 = -6c_s^2\omega_4 - \omega_3\omega_1 v_1^2 + 3c_s^2\omega_4\omega_1 - 2\omega_3 + 6\omega_3 c_s^2 + 2\omega_4 + \omega_4\omega_1 v_1^2 + \omega_3\omega_1 + 2\omega_3 v_1^2 - \omega_4\omega_1 - 2\omega_4 v_1^2 - 3\omega_3 c_s^2\omega_1$$

$$C_4 = -18c_s^2\omega_4 - 6\omega_3 c_s^2\omega_4\omega_1 + 18\omega_3 c_s^2\omega_4 + 9c_s^2\omega_4\omega_1 + 6\omega_3 + 3\omega_3\omega_1 v_2^2 - 18\omega_3 c_s^2 - 6\omega_3\omega_4 + 6\omega_4 - 3\omega_3\omega_1 - 2\omega_3\omega_4\omega_1 v_2^2 + 3\omega_4\omega_1 v_2^2 - 6\omega_3 v_2^2 + 2\omega_3\omega_4\omega_1 - 3\omega_4\omega_1 + 6\omega_3\omega_4 v_2^2 + 9\omega_3 c_s^2\omega_1 - 6\omega_4 v_2^2$$

$$C_5 = 12c_s^2\omega_1^2 v_1^2 + 2\omega_1 v_1^4\omega_2 - 18c_s^2 v_1^2\omega_2^2 + 2\omega_1^2 v_1^4 + 15c_s^2\omega_1 v_1^2\omega_2^2 + 2c_s^2\omega_2^2 + 2c_s^4\omega_1^2 - 2c_s^2\omega_1\omega_2^2 + 6c_s^2\omega_1 v_1^2\omega_2 + 3\omega_1^2 v_1^2\omega_2 - 4v_1^4\omega_2^2 + 3\omega_1 v_1^4\omega_2^2 + 14c_s^4\omega_1\omega_2^2 - 15c_s^2\omega_1^2 v_1^2\omega_2 - 2c_s^2\omega_1^2 - 14c_s^4\omega_2^2 - c_s^4\omega_1^2\omega_2^2 - 2\omega_1 v_1^2\omega_2 + 2c_s^2\omega_1^2\omega_2 - 3\omega_1^2 v_1^4\omega_2 + 4v_1^2\omega_2^2 - 3\omega_1 v_1^2\omega_2^2 - 2c_s^4\omega_1^2\omega_2 - 2\omega_1^2 v_1^2$$

$$C_6 = 6\omega_2^2 - 10c_s^2\omega_2^2 + 9c_s^2\omega_1\omega_2^2 + 2c_s^2\omega_1\omega_2 + 5\omega_1^2\omega_2 - 11\omega_1^2 v_1^2\omega_2 - 4\omega_1^2 + 8c_s^2\omega_1^2 + 6\omega_1 v_1^2\omega_2 - 9c_s^2\omega_1^2\omega_2 - 2\omega_1\omega_2 - 5\omega_1\omega_2^2 - 14v_1^2\omega_2^2 + 11\omega_1 v_1^2\omega_2^2 + 8\omega_1^2 v_1^2$$

$$C_7 = -2\omega_2^2 + 6c_s^2\omega_2^2 - 12c_s^2\omega_1\omega_2 - 2\omega_1^2 + 6c_s^2\omega_1^2 + v_2^2\omega_2^2 - 2\omega_1 v_1^2\omega_2 + 4\omega_1\omega_2 + v_1^2\omega_2^2 + \omega_1^2 v_2^2 - 2\omega_1 v_2^2\omega_2 + \omega_1^2 v_1^2$$

$$C_8 = -2\omega_4\omega_1^2 v_2^2\omega_2 + 18\omega_3 c_s^2\omega_1\omega_2^2 + 4\omega_3\omega_4\omega_1\omega_2 - 6c_s^2\omega_4\omega_1^2\omega_2 + 3\omega_3\omega_1^2\omega_2^2 - 2\omega_3\omega_4 v_2^2\omega_2^2 + 9c_s^2\omega_4\omega_1^2\omega_2^2 - 3\omega_3 c_s^2\omega_4\omega_1^2\omega_2 + 4\omega_4\omega_1\omega_2^2 + 6\omega_3\omega_4\omega_1^2 v_1^2 - 3\omega_3\omega_1^2 v_2^2\omega_2^2 - \omega_3\omega_4\omega_1\omega_2^2 + 8\omega_3 c_s^2\omega_4\omega_1^2 + 3\omega_4\omega_1^2 v_2^2\omega_2^2 - \omega_3\omega_4\omega_1^2 v_2^2\omega_2 + 6\omega_3\omega_4 v_1^2\omega_2^2 + 2\omega_3\omega_4\omega_1^2 v_2^2 + 6\omega_3\omega_1 v_2^2\omega_2^2 - 4\omega_3 c_s^2\omega_4\omega_1\omega_2 - 12c_s^2\omega_4\omega_1\omega_2^2 - 4\omega_3\omega_4\omega_1^2 - 3\omega_4\omega_1^2\omega_2^2 - 4\omega_4\omega_1 v_2^2\omega_2^2 + 3\omega_3 c_s^2\omega_4\omega_1\omega_2^2 + 2\omega_4\omega_1^2\omega_2 - 4\omega_3 c_s^2\omega_4\omega_2^2 + \omega_3\omega_4\omega_1 v_2^2\omega_2^2 - 6\omega_3\omega_1\omega_2^2 - 9\omega_3 c_s^2\omega_1^2\omega_2^2 + \omega_3\omega_4\omega_1^2\omega_2 - 12\omega_3\omega_4\omega_1 v_1^2\omega_2$$

$$C_9 = 18\omega_3 c_s^2\omega_1\omega_2^2 + 4\omega_3\omega_4\omega_1\omega_2 - 6c_s^2\omega_4\omega_1^2\omega_2 - 3\omega_3\omega_1^2 v_1^2\omega_2^2 + 3\omega_3\omega_1^2\omega_2^2 + 6\omega_3\omega_4 v_2^2\omega_2^2 + 3\omega_4\omega_1^2 v_1^2\omega_2^2 - \omega_3\omega_4\omega_1^2 v_1^2\omega_2 - 2\omega_4\omega_1^2 v_1^2\omega_2 + 9c_s^2\omega_4\omega_1^2\omega_2^2 - 3\omega_3 c_s^2\omega_4\omega_1^2\omega_2 + 4\omega_4\omega_1\omega_2^2 + 2\omega_3\omega_4\omega_1^2 v_1^2 - \omega_3\omega_4\omega_1\omega_2^2 + 8\omega_3 c_s^2\omega_4\omega_1^2 - 2\omega_3\omega_4 v_1^2\omega_2^2 + 6\omega_3\omega_4\omega_1^2 v_2^2 + \omega_3\omega_4\omega_1 v_1^2\omega_2^2 - 4\omega_3 c_s^2\omega_4\omega_1\omega_2 - 12c_s^2\omega_4\omega_1\omega_2^2 - 12\omega_3\omega_4\omega_1 v_2^2\omega_2 - 4\omega_3\omega_4\omega_1^2 - 3\omega_4\omega_1^2\omega_2^2 + 3\omega_3 c_s^2\omega_4\omega_1\omega_2^2 + 2\omega_4\omega_1^2\omega_2 - 4\omega_3 c_s^2\omega_4\omega_2^2 - 6\omega_3\omega_1\omega_2^2 - 9\omega_3 c_s^2\omega_1^2\omega_2^2 + 6\omega_3\omega_1 v_1^2\omega_2^2 + \omega_3\omega_4\omega_1^2\omega_2 - 4\omega_4\omega_1 v_1^2\omega_2^2$$

$$C_{10} = 2\omega_1^2 v_2^4 + 6c_s^2\omega_1 v_2^2\omega_2 + 12c_s^2\omega_1^2 v_2^2 + 3\omega_1^2 v_2^2\omega_2 + 3\omega_1 v_2^4\omega_2^2 + 2c_s^2\omega_2^2 + 2c_s^4\omega_1^2 - 4v_2^4\omega_2^2 - 2c_s^2\omega_1\omega_2^2 + 2\omega_1 v_2^4\omega_2 - 18c_s^2 v_2^2\omega_2^2 + 15c_s^2\omega_1 v_2^2\omega_2^2 + 14c_s^4\omega_1\omega_2^2 - 3\omega_1^2 v_2^4\omega_2 - 3\omega_1 v_2^2\omega_2^2 - 2c_s^2\omega_1^2 - 14c_s^4\omega_2^2 - c_s^4\omega_1^2\omega_2^2 + 4v_2^2\omega_2^2 + 2c_s^2\omega_1^2\omega_2 - 15c_s^2\omega_1^2 v_2^2\omega_2 - 2\omega_1^2 v_2^2 - 2\omega_1 v_2^2\omega_2 - 2c_s^4\omega_1^2\omega_2$$

$$C_{11} = 6\omega_2^2 - 11\omega_1^2 v_2^2\omega_2 - 10c_s^2\omega_2^2 + 9c_s^2\omega_1\omega_2^2 + 2c_s^2\omega_1\omega_2 + 5\omega_1^2\omega_2 - 4\omega_1^2 + 11\omega_1 v_2^2\omega_2^2 + 8c_s^2\omega_1^2 - 14v_2^2\omega_2^2 - 9c_s^2\omega_1^2\omega_2 - 2\omega_1\omega_2 - 5\omega_1\omega_2^2 + 8\omega_1^2 v_2^2 + 6\omega_1 v_2^2\omega_2$$

$$C_{12} = 2\omega_2^2 - 6c_s^2\omega_2^2 + 9c_s^2\omega_1\omega_2^2 - 6c_s^2\omega_1\omega_2 + 3\omega_1^2\omega_2 - 3\omega_1^2 v_1^2\omega_2 + 2v_3^2\omega_2^2 - 4\omega_1^2 + 12c_s^2\omega_1^2 + 2\omega_1 v_1^2\omega_2 - 9c_s^2\omega_1^2\omega_2 + 2\omega_1\omega_2 + 2v_3^2\omega_1^2 - 3\omega_1\omega_2^2 - 4v_1^2\omega_2^2 + 3\omega_1 v_1^2\omega_2^2 - 4v_3^2\omega_1\omega_2 + 2\omega_1^2 v_1^2$$

$$C_{13} = -36\omega_3 c_s^2\omega_1\omega_2^2 + 6v_3^2\omega_4\omega_1^2\omega_2^2 - 4\omega_3\omega_4\omega_1\omega_2 - 2\omega_3 v_3^2\omega_4\omega_1^2\omega_2 - 12c_s^2\omega_4\omega_1^2\omega_2 - 11\omega_3 c_s^2\omega_4\omega_1^2\omega_2^2 - 6\omega_3\omega_1^2\omega_2^2 - 18\omega_3\omega_4\omega_1^2 v_1^2\omega_2 + 6\omega_3 v_3^2\omega_1^2\omega_2^2 + 18c_s^2\omega_4\omega_1^2\omega_2^2 - 12\omega_3 c_s^2\omega_4\omega_1^2\omega_2 + 8\omega_4\omega_1\omega_2^2 + 12\omega_3\omega_4\omega_1^2 v_1^2 - 4v_3^2\omega_4\omega_1^2\omega_2 - 8\omega_3\omega_4\omega_1\omega_2^2 - 3\omega_3 v_3^2\omega_4\omega_1^2\omega_2^2 + 8\omega_3 v_3^2\omega_4\omega_2^2 + 16\omega_3 c_s^2\omega_4\omega_1^2 - 24\omega_3\omega_4 v_1^2\omega_2^2 + 18\omega_3\omega_4\omega_1 v_1^2\omega_2^2 + 3\omega_3\omega_4\omega_1^2\omega_2^2 + 2\omega_3 v_3^2\omega_4\omega_1\omega_2^2 - 12\omega_3 v_3^2\omega_1\omega_2^2 + 4\omega_3 c_s^2\omega_4\omega_1\omega_2 - 24c_s^2\omega_4\omega_1\omega_2^2 - 8\omega_3\omega_4\omega_1^2 - 6\omega_4\omega_1^2\omega_2^2 + 12\omega_3 c_s^2\omega_4\omega_1\omega_2^2 + 4\omega_4\omega_1^2\omega_2 + 16\omega_3 c_s^2\omega_4\omega_2^2 + 4\omega_3 v_3^2\omega_4\omega_1^2 + 12\omega_3\omega_1\omega_2^2 + 18\omega_3 c_s^2\omega_1^2\omega_2^2 + 8\omega_3\omega_4\omega_1^2\omega_2 + 12\omega_3\omega_4\omega_1 v_1^2\omega_2 - 8v_3^2\omega_4\omega_1\omega_2^2$$

$$C_{14} = 3\omega_3 c_s^2\omega_1\omega_2^2 - 4\omega_3 c_s^2\omega_2^2 + 6c_s^2\omega_1\omega_2^2 + \omega_3\omega_1^2\omega_2 - \omega_3\omega_1^2 v_1^2\omega_2 + 2\omega_1^2\omega_2 - 2\omega_1^2 v_1^2\omega_2 - 4\omega_3 c_s^2\omega_1\omega_2 + 6\omega_3 v_3^2\omega_2^2 + 8\omega_3 c_s^2\omega_1^2 - 3\omega_3 c_s^2\omega_1^2\omega_2 + 4\omega_3\omega_1\omega_2 - 6c_s^2\omega_1^2\omega_2 - 2\omega_3 v_1^2\omega_2^2 - 2\omega_1\omega_2^2 - 12\omega_3 v_3^2\omega_1\omega_2 - \omega_3\omega_1\omega_2^2 + 6\omega_3 v_3^2\omega_1^2 + 2\omega_1 v_1^2\omega_2^2 - 4\omega_3\omega_1^2 + \omega_3\omega_1 v_1^2\omega_2^2 + 2\omega_3\omega_1^2 v_1^2$$

$$C_{15} = 2\omega_2^2 - 3\omega_1^2 v_2^2\omega_2 - 6c_s^2\omega_2^2 + 9c_s^2\omega_1\omega_2^2 - 6c_s^2\omega_1\omega_2 + 3\omega_1^2\omega_2 + 2v_3^2\omega_2^2 - 4\omega_1^2 + 3\omega_1 v_2^2\omega_2^2 + 12c_s^2\omega_1^2 - 4v_2^2\omega_2^2 - 9c_s^2\omega_1^2\omega_2 + 2\omega_1\omega_2 + 2v_3^2\omega_1^2 - 3\omega_1\omega_2^2 + 2\omega_1^2 v_2^2 + 2\omega_1 v_2^2\omega_2 - 4v_3^2\omega_1\omega_2$$

$$C_{16} = -36\omega_3 c_s^2\omega_1\omega_2^2 + 6v_3^2\omega_4\omega_1^2\omega_2^2 - 4\omega_3\omega_4\omega_1\omega_2 - 2\omega_3 v_3^2\omega_4\omega_1^2\omega_2 - 12c_s^2\omega_4\omega_1^2\omega_2 - 11\omega_3 c_s^2\omega_4\omega_1^2\omega_2^2 - 6\omega_3\omega_1^2\omega_2^2 - 24\omega_3\omega_4 v_2^2\omega_2^2 + 6\omega_3 v_3^2\omega_1^2\omega_2^2 + 18c_s^2\omega_4\omega_1^2\omega_2^2 - 12\omega_3 c_s^2\omega_4\omega_1^2\omega_2 + 8\omega_4\omega_1\omega_2^2 - 4v_3^2\omega_4\omega_1^2\omega_2 - 8\omega_3\omega_4\omega_1\omega_2^2 - 3\omega_3 v_3^2\omega_4\omega_1^2\omega_2^2 + 8\omega_3 v_3^2\omega_4\omega_2^2 + 16\omega_3 c_s^2\omega_4\omega_1^2 - 18\omega_3\omega_4\omega_1^2 v_2^2\omega_2 + 12\omega_3\omega_4\omega_1^2 v_2^2 + 3\omega_3\omega_4\omega_1^2\omega_2^2 + 2\omega_3 v_3^2\omega_4\omega_1\omega_2^2 - 12\omega_3 v_3^2\omega_1\omega_2^2 + 4\omega_3 c_s^2\omega_4\omega_1\omega_2 - 24c_s^2\omega_4\omega_1\omega_2^2 + 12\omega_3\omega_4\omega_1 v_2^2\omega_2 - 8\omega_3\omega_4\omega_1^2 - 6\omega_4\omega_1^2\omega_2^2 + 12\omega_3 c_s^2\omega_4\omega_1\omega_2^2 + 4\omega_4\omega_1^2\omega_2 + 16\omega_3 c_s^2\omega_4\omega_2^2 + 4\omega_3 v_3^2\omega_4\omega_1^2 + 18\omega_3\omega_4\omega_1 v_2^2\omega_2^2 + 12\omega_3\omega_1\omega_2^2 + 18\omega_3 c_s^2\omega_1^2\omega_2^2 + 8\omega_3\omega_4\omega_1^2\omega_2 - 8v_3^2\omega_4\omega_1\omega_2^2$$

$$C_{17} = 3\omega_3 c_s^2\omega_1\omega_2^2 - \omega_3\omega_1^2 v_2^2\omega_2 - 4\omega_3 c_s^2\omega_2^2 - 2\omega_1^2 v_2^2\omega_2 + 6c_s^2\omega_1\omega_2^2 + \omega_3\omega_1^2\omega_2 + 2\omega_1^2\omega_2 - 4\omega_3 c_s^2\omega_1\omega_2 + 6\omega_3 v_3^2\omega_2^2 - 2\omega_3 v_2^2\omega_2^2 + 8\omega_3 c_s^2\omega_1^2 - 3\omega_3 c_s^2\omega_1^2\omega_2 + 2\omega_1 v_2^2\omega_2^2 + 4\omega_3\omega_1\omega_2 + \omega_3\omega_1 v_2^2\omega_2^2 - 6c_s^2\omega_1^2\omega_2 + 2\omega_3\omega_1^2 v_2^2 - 2\omega_1\omega_2^2 - 12\omega_3 v_3^2\omega_1\omega_2 - \omega_3\omega_1\omega_2^2 + 6\omega_3 v_3^2\omega_1^2 - 4\omega_3\omega_1^2$$

$$C_{18} = 48c_s^2 v_3^2\omega_1\omega_2 + 12v_3^2\omega_1^2\omega_2 + 24c_s^2 v_3^2\omega_1^2 - 8c_s^2\omega_2^2 + 4c_s^4\omega_1^2 + 7v_3^4\omega_1^2\omega_2^2 + 8c_s^2\omega_1\omega_2^2 - 12v_3^4\omega_1^2\omega_2 + 4v_3^4\omega_1^2 - 16v_3^2\omega_2^2 - 96c_s^2 v_3^2\omega_1\omega_2^2 - 7v_3^2\omega_1^2\omega_2^2 - 8c_s^4\omega_1\omega_2^2 + 72c_s^2 v_3^2\omega_2^2 + 24c_s^2 v_3^2\omega_1^2\omega_2^2 - 4c_s^2\omega_1^2 + 8c_s^4\omega_2^2 + c_s^4\omega_1^2\omega_2^2 + 24v_3^2\omega_1\omega_2^2 + 16v_3^4\omega_1\omega_2 + 4c_s^2\omega_1^2\omega_2 + 16v_3^4\omega_2^2 - 4v_3^2\omega_1^2 - c_s^2\omega_1^2\omega_2^2 - 24v_3^4\omega_1\omega_2^2 - 48c_s^2 v_3^2\omega_1^2\omega_2 - 16v_3^2\omega_1\omega_2 - 4c_s^4\omega_1^2\omega_2$$

$$C_{19} = -20v_3^2\omega_1^2\omega_2 - 12\omega_2^2 - 4\omega_1^2\omega_2^2 + 20c_s^2\omega_2^2 - 24c_s^2\omega_1\omega_2^2 + 8c_s^2\omega_1\omega_2 + 8\omega_1^2\omega_2 + 28v_3^2\omega_2^2 + 11v_3^2\omega_1^2\omega_2^2 - 4\omega_1^2 + 8c_s^2\omega_1^2 - 40v_3^2\omega_1\omega_2^2 - 12c_s^2\omega_1^2\omega_2 - 8\omega_1\omega_2 + 8v_3^2\omega_1^2 + 16\omega_1\omega_2^2 + 5c_s^2\omega_1^2\omega_2^2 + 24v_3^2\omega_1\omega_2$$

$C_{20} = 12v_1^4\omega_2 - 9\omega_1 v_1^4\omega_2 - 3c_s^4\omega_1\omega_2 - 6\omega_1 v_1^2 - 36c_s^2\omega_1 v_1^2\omega_2 - 4c_s^2\omega_2 + 2c_s^4\omega_1 + 3c_s^2\omega_1\omega_2 + 48c_s^2 v_1^2\omega_2 - 12v_1^2\omega_2 + 9\omega_1 v_1^2\omega_2 + 6\omega_1 v_1^4 + 24c_s^2\omega_1 v_1^2 - 2c_s^2\omega_1 + 4c_s^4\omega_2$

$C_{21} = 24\omega_3^2 c_s^4\omega_4^2 - 18\omega_3\omega_4\omega_1^3 v_1^2 - 12\omega_3^2 c_s^2\omega_4^2\omega_1^2 v_1^2 + 12\omega_3^2\omega_4^2\omega_1^2 v_1^2 - 8\omega_3^2 c_s^2\omega_4^2\omega_1^2 + 36\omega_3^2\omega_4\omega_1^2 v_1^4 + 27c_s^2\omega_4^2\omega_1^3 v_1^2 - 15\omega_3\omega_4^2\omega_1^3 v_1^4 + 18\omega_3^2\omega_1^2 v_1^2 - 48\omega_3^2 c_s^4\omega_4^2\omega_1 + 9\omega_4^2\omega_1^3 v_1^4 + 36\omega_3^2 c_s^2\omega_4\omega_1 v_1^2 + 72\omega_3 c_s^2\omega_4^2\omega_1^2 v_1^2 + \omega_3^2 c_s^2\omega_4^2\omega_1^3 + 36\omega_3\omega_4^2\omega_1^2 v_1^4 - 54c_s^2\omega_4^2\omega_1^2 v_1^2 - 15\omega_3^2\omega_4\omega_1^3 v_1^4 + 24\omega_3^2 c_s^4\omega_4^2\omega_1^2 - 3\omega_3^2\omega_4^2\omega_1^3 v_1^2 + 6\omega_3^2 c_s^2\omega_4^2\omega_1^3 v_1^2 + 36\omega_3\omega_4\omega_1^2 v_1^2 + 12\omega_3^2 c_s^2\omega_4^2\omega_1 - 36\omega_3 c_s^2\omega_4^2\omega_1^3 v_1^2 - 18\omega_4^2\omega_1^2 v_1^4 - 9\omega_3^2\omega_1^3 v_1^2 - 3\omega_3^2 c_s^4\omega_4^2\omega_1^3 + 3\omega_3^2\omega_4^2\omega_1^3 v_1^4 - 12\omega_3^2 c_s^2\omega_4\omega_1 + 12\omega_3 c_s^2\omega_4^2\omega_1^2 - 36\omega_3\omega_4\omega_1^2 v_1^4 - 36\omega_3^2 c_s^2\omega_4\omega_1^3 v_1^2 - 36\omega_3\omega_4^2\omega_1^2 v_1^2 + 3\omega_3^2 c_s^4\omega_4\omega_1^3 + 15\omega_3^2\omega_4\omega_1^3 v_1^2 - 3\omega_3 c_s^2\omega_4^2\omega_1^3 + 54\omega_3 c_s^2\omega_4\omega_1^3 v_1^2 - 54\omega_3^2 c_s^2\omega_1^2 v_1^2 + 9\omega_3^2\omega_1^3 v_1^4 + 18\omega_4^2\omega_1^2 v_1^2 - 12\omega_3^2 c_s^4\omega_4\omega_1^2 + 12\omega_3 c_s^4\omega_4^2\omega_1 + 12\omega_3^2 c_s^4\omega_4\omega_1 - 36\omega_3^2\omega_4\omega_1^2 v_1^2 - 12\omega_3 c_s^4\omega_4^2\omega_1^2 + 15\omega_3\omega_4^2\omega_1^3 v_1^2 + 72\omega_3^2 c_s^2\omega_4\omega_1^2 v_1^2 + 36\omega_3 c_s^2\omega_4^2\omega_1 v_1^2 + 18\omega_3\omega_4\omega_1^3 v_1^4 - 12\omega_3^2\omega_4^2\omega_1^2 v_1^4 - 3\omega_3^2 c_s^2\omega_4\omega_1^3 - 36\omega_3^2 c_s^2\omega_4^2\omega_1 v_1^2 + 3\omega_3 c_s^4\omega_4^2\omega_1^3 - 9\omega_4^2\omega_1^3 v_1^2 + 12\omega_3^2 c_s^2\omega_4\omega_1^2 - 18\omega_3^2\omega_1^2 v_1^4 - 108\omega_3 c_s^2\omega_4\omega_1^2 v_1^2 - 12\omega_3 c_s^2\omega_4^2\omega_1 + 27\omega_3^2 c_s^2\omega_1^3 v_1^2$

$C_{22} = 4\omega_3\omega_4 v_1^2\omega_2 - 6\omega_3\omega_4\omega_1\omega_2 + 12\omega_3 c_s^2\omega_4\omega_1 + 9\omega_4\omega_1\omega_2 - 18\omega_3\omega_4 v_2^2\omega_2 + 2\omega_3\omega_4\omega_2 - 27\omega_3 c_s^2\omega_1\omega_2 - 9\omega_4\omega_1 v_1^2\omega_2 - 9\omega_3\omega_1 v_1^2\omega_2 + 18\omega_3\omega_4\omega_1 v_2^2 + 9\omega_3\omega_1\omega_2 + 18\omega_3 c_s^2\omega_4\omega_1\omega_2 + 2\omega_3\omega_4\omega_1 v_1^2 + 6\omega_3 c_s^2\omega_4\omega_2 - 27c_s^2\omega_4\omega_1\omega_2 - 8\omega_3\omega_4\omega_1 + 6\omega_3\omega_4\omega_1 v_1^2\omega_2$

$C_{23} = 2\omega_3^2\omega_4\omega_1 v_2^2 - 2\omega_3^2\omega_4\omega_1 + 6\omega_3\omega_4^2 v_2^2 - 6\omega_3\omega_4^2 - 18\omega_3 c_s^2\omega_4\omega_1 - 6\omega_4^2 v_2^2 + 36\omega_3 c_s^2\omega_4 - 6\omega_3^2\omega_4 v_2^2 + 2\omega_3\omega_4^2\omega_1 - 6\omega_4^2\omega_1 - 6\omega_4^2 v_1^2 + 3\omega_4^2\omega_1 v_1^2 - 2\omega_3\omega_4^2\omega_1 v_2^2 + 6\omega_3^2 v_2^2 + 12\omega_4^2 + 3\omega_4^2\omega_1 v_2^2 + 18\omega_3 c_s^2\omega_4^2 - 36c_s^2\omega_4^2 - 12\omega_3\omega_4 - 6\omega_3^2 v_1^2 + 6\omega_3^2 c_s^2\omega_4\omega_1 + 6\omega_3^2\omega_4 - 6\omega_3\omega_4\omega_1 v_1^2 + 18c_s^2\omega_4^2\omega_1 + 3\omega_3^2\omega_1 v_1^2 + 12\omega_3\omega_4 v_1^2 + 6\omega_3\omega_4\omega_1 - 18\omega_3^2 c_s^2\omega_4 - 3\omega_3^2\omega_1 v_2^2 - 6\omega_3 c_s^2\omega_4^2\omega_1$

$C_{24} = -3\omega_4^2\omega_1^3 v_2^2\omega_5 + 6\omega_3^2\omega_1^2 v_2^4\omega_5 + 12\omega_3 c_s^2\omega_4^2\omega_1 v_1^2\omega_5 - 6\omega_4^2\omega_1^2 v_2^4\omega_5 + 3\omega_3^2\omega_1^3 v_2^2\omega_5 + 2\omega_3^2 c_s^2\omega_4\omega_1^3\omega_5 - 9\omega_3^2 c_s^2\omega_1^3 v_2^2\omega_5 - 32\omega_3^2 c_s^4\omega_4^2\omega_1 - 8\omega_3^2 c_s^4\omega_4\omega_1\omega_5 + 6\omega_3^2\omega_4\omega_1^2 v_1^2\omega_5 - 18c_s^2\omega_4^2\omega_1^2 v_1^2\omega_5 + 6\omega_3\omega_4^2\omega_1^2 v_1^4\omega_5 + 3\omega_3^2\omega_4\omega_1^3 v_1^4\omega_5 - 6\omega_3 c_s^2\omega_4^2\omega_1^3 v_2^2\omega_5 - 6\omega_3^2 c_s^2\omega_4\omega_1^2 v_1^2\omega_5 + 3\omega_3\omega_4^2\omega_1^3 v_1^2\omega_5 - 8\omega_3 c_s^4\omega_4^2\omega_1^2\omega_5 + 12\omega_3 c_s^2\omega_4^2\omega_1 v_2^2\omega_5 + 6\omega_3^2\omega_1^2 v_1^4\omega_5 - 8\omega_3^2 c_s^2\omega_4\omega_1^2\omega_5 - 3\omega_4^2\omega_1^3 v_1^2\omega_5 + 32\omega_3^2 c_s^4\omega_4^2\omega_1^2 - 9\omega_3^2 c_s^2\omega_1^3 v_1^2\omega_5 - 8\omega_3 c_s^2\omega_4^2\omega_1\omega_5 + 3\omega_3^2\omega_1^3 v_1^2\omega_5 - 6\omega_4^2\omega_1^2 v_1^4\omega_5 + 2\omega_3 c_s^4\omega_4^2\omega_1^3\omega_5 + 6\omega_3\omega_4^2\omega_1^2 v_2^4\omega_5 - 18c_s^2\omega_4^2\omega_1^2 v_2^2\omega_5 + 6\omega_3^2\omega_4\omega_1^2 v_2^2\omega_5 + 3\omega_3\omega_4^2\omega_1^3 v_2^2\omega_5 - 6\omega_3^2 c_s^2\omega_4\omega_1^2 v_2^2\omega_5 - 6\omega_3 c_s^2\omega_4^2\omega_1^3 v_1^2\omega_5 + 3\omega_3^2\omega_4\omega_1^3 v_2^4\omega_5 - 8\omega_3^2 c_s^4\omega_4^2\omega_1^3 - 6\omega_3^2\omega_4\omega_1^2 v_1^4\omega_5 - 6\omega_3\omega_4^2\omega_1^2 v_1^2\omega_5 + 6\omega_3 c_s^2\omega_4^2\omega_1^2 v_2^2\omega_5 + 6\omega_3^2 c_s^2\omega_4\omega_1^3 v_1^2\omega_5 - 3\omega_3^2\omega_4\omega_1^3 v_1^2\omega_5 - 3\omega_3\omega_4^2\omega_1^3 v_1^4\omega_5 + 9c_s^2\omega_4^2\omega_1^3 v_1^2\omega_5 - 2\omega_3^2 c_s^2\omega_4\omega_1^3\omega_5 - 6\omega_3^2\omega_1^2 v_2^2\omega_5 + 3\omega_4^2\omega_1^3 v_2^2\omega_5 + 8\omega_3^2 c_s^2\omega_4\omega_1\omega_5 + 16\omega_3^2 c_s^4\omega_4^2\omega_5 + 18\omega_3^2 c_s^2\omega_1^2 v_2^2\omega_5 + 8\omega_3 c_s^2\omega_4^2\omega_1^2\omega_5 - 3\omega_3^2\omega_1^3 v_2^4\omega_5 + 6\omega_4^2\omega_1^2 v_2^2\omega_5 - 12\omega_3^2 c_s^2\omega_4\omega_1 v_2^2\omega_5 + 6\omega_3^2 c_s^2\omega_4\omega_1^3 v_2^2\omega_5 + 8\omega_3^2 c_s^4\omega_4\omega_2^2\omega_5 + 6\omega_3 c_s^2\omega_4^2\omega_1^2 v_1^2\omega_5 - 6\omega_3\omega_4^2\omega_1^2 v_2^2\omega_5 - 6\omega_3^2\omega_4\omega_1^2 v_2^4\omega_5 + 9c_s^2\omega_4^2\omega_1^3 v_2^2\omega_5 - 3\omega_3\omega_4^2\omega_1^3 v_2^4\omega_5 - 3\omega_3^2\omega_4\omega_1^3 v_2^2\omega_5 + 8\omega_3 c_s^4\omega_4^2\omega_1\omega_5 + 18\omega_3^2 c_s^2\omega_1^2 v_1^2\omega_5 - 2\omega_3 c_s^2\omega_4^2\omega_1^3\omega_5 + 3\omega_4^2\omega_1^3 v_1^4\omega_5 - 8\omega_3^2 c_s^4\omega_4^2\omega_1\omega_5 - 6\omega_3^2\omega_1^2 v_1^2\omega_5 - 12\omega_3^2 c_s^2\omega_4\omega_1 v_1^2\omega_5 + 6\omega_4^2\omega_1^2 v_1^2\omega_5 - 3\omega_3^2\omega_1^3 v_1^4\omega_5$

$C_{25} = -18\omega_3\omega_4 v_1^2\omega_2 - 6\omega_3\omega_4\omega_1\omega_2 + 12\omega_3 c_s^2\omega_4\omega_1 + 9\omega_4\omega_1\omega_2 + 4\omega_3\omega_4 v_2^2\omega_2 + 2\omega_3\omega_4\omega_2 - 27\omega_3 c_s^2\omega_1\omega_2 + 2\omega_3\omega_4\omega_1 v_2^2 + 9\omega_3\omega_1\omega_2 + 18\omega_3 c_s^2\omega_4\omega_1\omega_2 + 6\omega_3\omega_4\omega_1 v_2^2\omega_2 + 18\omega_3\omega_4\omega_1 v_1^2 + 6\omega_3 c_s^2\omega_4\omega_2 - 27c_s^2\omega_4\omega_1\omega_2 - 8\omega_3\omega_4\omega_1 - 9\omega_4\omega_1 v_2^2\omega_2 - 9\omega_3\omega_1 v_2^2\omega_2$

$C_{26} = -2\omega_3^2\omega_4\omega_1 - 6\omega_3\omega_4^2 - 6\omega_3^2\omega_4 v_1^2 - 18\omega_3 c_s^2\omega_4\omega_1 - 6\omega_4^2 v_2^2 + 36\omega_3 c_s^2\omega_4 + 2\omega_3^2\omega_4\omega_1 v_1^2 + 6\omega_3\omega_4^2 v_1^2 + 2\omega_3\omega_4^2\omega_1 - 6\omega_4^2\omega_1 - 6\omega_4^2 v_1^2 + 3\omega_4^2\omega_1 v_1^2 - 6\omega_3^2 v_2^2 + 12\omega_4^2 + 3\omega_4^2\omega_1 v_2^2 + 18\omega_3 c_s^2\omega_4^2 - 36c_s^2\omega_4^2 - 12\omega_3\omega_4 - 2\omega_3\omega_4^2\omega_1 v_1^2 + 6\omega_3^2 v_1^2 + 6\omega_3^2 c_s^2\omega_4\omega_1 + 6\omega_3^2\omega_4 - 6\omega_3\omega_4\omega_1 v_2^2 + 18c_s^2\omega_4^2\omega_1 - 3\omega_3^2\omega_1 v_1^2 + 6\omega_3\omega_4\omega_1 - 18\omega_3^2 c_s^2\omega_4 + 12\omega_3\omega_4 v_2^2 + 3\omega_3^2\omega_1 v_2^2 - 6\omega_3 c_s^2\omega_4^2\omega_1$

$C_{27} = -3c_s^4\omega_1\omega_2 - 36c_s^2\omega_1 v_2^2\omega_2 + 48c_s^2 v_2^2\omega_2 - 6\omega_1 v_2^2 - 9\omega_1 v_2^4\omega_2 - 4c_s^2\omega_2 + 2c_s^4\omega_1 + 3c_s^2\omega_1\omega_2 + 12v_2^4\omega_2 + 24c_s^2\omega_1 v_2^2 + 9\omega_1 v_2^2\omega_2 + 6\omega_1 v_2^4 - 2c_s^2\omega_1 + 4c_s^4\omega_2 - 12v_2^2\omega_2$

$C_{28} = 24\omega_3^2 c_s^4\omega_4^2 + 9\omega_4^2\omega_1^3 v_2^4 + 18\omega_3^2\omega_1^2 v_2^2 + 36\omega_3^2 c_s^2\omega_4\omega_1 v_2^2 + 72\omega_3 c_s^2\omega_4^2\omega_1^2 v_2^2 - 8\omega_3^2 c_s^2\omega_4^2\omega_1^2 - 12\omega_3^2 c_s^2\omega_4^2\omega_1^2 v_2^2 - 18\omega_3\omega_4\omega_1^3 v_2^2 - 48\omega_3^2 c_s^4\omega_4^2\omega_1 + 12\omega_3^2\omega_4^2\omega_1^2 v_2^2 + 36\omega_3^2\omega_4\omega_1^2 v_2^4 + \omega_3^2 c_s^2\omega_4^2\omega_1^3 - 15\omega_3\omega_4^2\omega_1^3 v_2^4 + 27c_s^2\omega_4^2\omega_1^3 v_2^2 - 36\omega_3 c_s^2\omega_4^2\omega_1^3 v_2^2 + 24\omega_3^2 c_s^4\omega_4^2\omega_1^2 - 9\omega_3^2\omega_1^3 v_2^2 - 18\omega_4^2\omega_1^2 v_2^4 - 54c_s^2\omega_4^2\omega_1^2 v_2^2 + 36\omega_3\omega_4^2\omega_1^2 v_2^4 + 12\omega_3^2 c_s^2\omega_4^2\omega_1 - 15\omega_3^2\omega_4\omega_1^3 v_2^4 - 3\omega_3^2\omega_4^2\omega_1^3 v_2^2 + 36\omega_3\omega_4\omega_1^2 v_2^2 + 6\omega_3^2 c_s^2\omega_4^2\omega_1^3 v_2^2 - 3\omega_3^2 c_s^4\omega_4^2\omega_1^3 - 54\omega_3^2 c_s^2\omega_1^2 v_2^2 - 12\omega_3^2 c_s^2\omega_4\omega_1 + 54\omega_3 c_s^2\omega_4\omega_1^3 v_2^2 + 18\omega_4^2\omega_1^2 v_2^2 + 9\omega_3^2\omega_1^3 v_2^4 + 12\omega_3 c_s^2\omega_4^2\omega_1^2 + 3\omega_3^2 c_s^4\omega_4\omega_1^3 - 3\omega_3 c_s^2\omega_4^2\omega_1^3 + 3\omega_3^2\omega_4^2\omega_1^3 v_2^2 - 36\omega_3\omega_4\omega_1^2 v_2^4 - 36\omega_3\omega_4^2\omega_1^2 v_2^2 - 12\omega_3^2 c_s^4\omega_4\omega_1^2 - 36\omega_3^2 c_s^2\omega_4\omega_1^3 v_2^2 + 15\omega_3^2\omega_4\omega_1^3 v_2^2 + 12\omega_3 c_s^4\omega_4^2\omega_1 + 12\omega_3^2 c_s^4\omega_4\omega_1 - 36\omega_3^2 c_s^2\omega_4^2\omega_1 v_2^2 - 12\omega_3 c_s^4\omega_4^2\omega_1^2 - 18\omega_3^2\omega_1^2 v_2^4 - 9\omega_4^2\omega_1^3 v_2^2 + 27\omega_3^2 c_s^2\omega_1^3 v_2^2 - 108\omega_3 c_s^2\omega_4\omega_1 v_2^2 - 3\omega_3^2 c_s^2\omega_4\omega_1^3 - 36\omega_3^2\omega_4\omega_1^2 v_2^2 + 3\omega_3 c_s^4\omega_4^2\omega_1^3 + 72\omega_3^2 c_s^2\omega_4\omega_1^2 v_2^2 + 15\omega_3\omega_4^2\omega_1^3 v_2^2 + 18\omega_3\omega_4\omega_1^3 v_2^4 + 12\omega_3^2 c_s^2\omega_4\omega_1^2 + 36\omega_3 c_s^2\omega_4^2\omega_1 v_2^2 - 12\omega_3^2\omega_4^2\omega_1^2 v_2^4 - 12\omega_3 c_s^2\omega_4^2\omega_1$

$C_{29} = 160\omega_3^2\omega_4^2 v_1^2\omega_2^3 - 256\omega_3^2\omega_4^2\omega_1 v_1^2\omega_2^3 - 9\omega_3 c_s^2\omega_4^2\omega_1^3 v_1^2\omega_2^3 + 144\omega_3^2 c_s^4\omega_4^2\omega_1^3\omega_2^2 - 18\omega_3^2 c_s^2\omega_1^3\omega_2^3 - 784\omega_3^2 c_s^2\omega_4^2 v_1^2\omega_2^3 - 368\omega_3^2 c_s^2\omega_4^2\omega_1\omega_2^3 - 108\omega_3^2 c_s^4\omega_1^2\omega_2^3 - 27\omega_3 c_s^4\omega_4^2\omega_1^3\omega_2^3 + 1232\omega_3^2 c_s^2\omega_4^2\omega_1 v_1^2\omega_2^3 - 16\omega_3^2\omega_4^2\omega_2^3 + 28\omega_3^2\omega_4^2\omega_1\omega_2^3 + 18\omega_3^2 c_s^2\omega_1^3 v_1^2\omega_2^3 + 152\omega_3^2\omega_4^2\omega_1^3 v_1^2\omega_2 + 56\omega_3 c_s^2\omega_4^2\omega_1\omega_2^3 + 72\omega_3^2 c_s^4\omega_4^2\omega_1^2\omega_2 + 18\omega_3^2 c_s^4\omega_4^2\omega_1^3\omega_2^3 - 36\omega_3 c_s^2\omega_4^2\omega_1^3 v_1^2\omega_2^2 + 32\omega_3^2\omega_4^2\omega_1 v_1^2\omega_2^2 - 8\omega_3^2\omega_4^2\omega_1\omega_2^2 - 56\omega_3^2 c_s^2\omega_4^2\omega_1 v_1^2\omega_2^2 + 120\omega_3^2\omega_4^2\omega_1^2 v_1^4\omega_2 - 104\omega_3^2 c_s^2\omega_4^2\omega_1^3 - 108\omega_3 c_s^4\omega_4^2\omega_1^3\omega_2^2 - 108c_s^4\omega_4^2\omega_1^2\omega_2^3 - 36\omega_3^2 c_s^2\omega_4\omega_1^2\omega_2^3 - 712\omega_3^2 c_s^2\omega_4^2\omega_1^3 v_1^2\omega_2 + 56\omega_3^2 c_s^2\omega_4^2\omega_1\omega_2^2 - 6\omega_3^2 v_3^4\omega_4^2\omega_1^2\omega_2^3 - 96\omega_3^2\omega_4^2\omega_1^2 v_1^4\omega_2^2 + 54\omega_3^2 c_s^4\omega_1^3\omega_2^2 + 6\omega_3^2 v_3^4\omega_4^2\omega_1^3\omega_2^2 + 48\omega_3 c_s^4\omega_4^2\omega_1^3\omega_2 + 36\omega_3^2 c_s^2\omega_4\omega_1^2 v_1^2\omega_2^3 + 394\omega_3^2 c_s^2\omega_4^2\omega_1^3 v_1^2\omega_2^2 + 216\omega_3 c_s^4\omega_4^2\omega_1^2\omega_2^3 + 12\omega_3^2 c_s^4\omega_4^2\omega_1^2\omega_2^2 - 92\omega_3^2\omega_4^2\omega_1^3 v_1^2\omega_2^2 - 56\omega_3^2\omega_4^2\omega_1^3 v_1^2 + 36\omega_3^2 c_s^2\omega_1^2\omega_2^3 + 16\omega_3 c_s^2\omega_4^2\omega_1^3 v_1^2\omega_2 - 36c_s^2\omega_4^2\omega_1^2 v_1^2\omega_2^3 + 320\omega_3^2 c_s^2\omega_4^2\omega_1^3 v_1^2 + 54c_s^4\omega_4^2\omega_1^3\omega_2^3 + 9\omega_3^2 c_s^2\omega_4\omega_1^3\omega_2^3 + 120\omega_3 c_s^4\omega_4^2\omega_1^2\omega_2^2 + 6\omega_3^2 c_s^2\omega_4^2\omega_1^3 v_1^2\omega_2^3 - 78\omega_3^2\omega_4^2\omega_1^2 v_1^4\omega_2^3 - 276\omega_3^2 c_s^4\omega_4^2\omega_1^3\omega_2 + 144\omega_3^2 c_s^4\omega_4^2\omega_1^3 - 56\omega_3 c_s^2\omega_4^2\omega_1 v_1^2\omega_2^3 - 342\omega_3^2 c_s^4\omega_4^2\omega_1^2\omega_2^3 - 118\omega_3^2 c_s^2\omega_4^2\omega_1^3\omega_2^2 - 132\omega_3^2\omega_4^2\omega_1^3 v_1^4\omega_2 + 48\omega_3^2\omega_4^2\omega_1^3 v_1^4 - 24\omega_3^2\omega_4^2\omega_1 v_1^4\omega_2^2 + 448\omega_3^2 c_s^2\omega_4^2\omega_1^2 v_1^2\omega_2 + 14\omega_3^2\omega_4^2\omega_1^3\omega_2^2 - 136\omega_3^2\omega_4^2\omega_1^2 v_1^2\omega_2 - 36\omega_3^2 c_s^2\omega_1^2 v_1^2\omega_2^3 + 588\omega_3^2 c_s^4\omega_4^2\omega_1\omega_2^3 + 208\omega_3^2 c_s^2\omega_4^2\omega_2^3 + 40\omega_3 c_s^2\omega_4^2\omega_1^2 v_1^2\omega_2^2 + 9\omega_3 c_s^2\omega_4^2\omega_1^3\omega_2^3 - 144\omega_3^2\omega_4^2 v_1^4\omega_2^3 + 228\omega_3^2\omega_4^2\omega_1 v_1^4\omega_2^3 + 16\omega_3^2\omega_4^2\omega_2^2\omega_2 - 88\omega_3^2 c_s^2\omega_4^2\omega_1^2\omega_2 - 168\omega_3 c_s^4\omega_4^2\omega_1\omega_2^3 - 18\omega_3^2 c_s^2 v_3^2\omega_4^2\omega_1^2\omega_2^3 - 6\omega_3^2 c_s^2\omega_4^2\omega_1^3\omega_2^3 + 36c_s^2\omega_4^2\omega_1^2\omega_2^3 + 72\omega_3 c_s^2\omega_4^2\omega_1^2 v_1^2\omega_2^3 + 108\omega_3^2 c_s^4\omega_4\omega_1^2\omega_2^3 + 36\omega_3 c_s^2\omega_4^2\omega_1^3\omega_2^2 + 6\omega_3^2 v_3^2\omega_4^2\omega_1^2\omega_2^3 - 144\omega_3^2 c_s^4\omega_4^2\omega_1\omega_2^2 + 8\omega_3^2\omega_4^2\omega_1^3 - 16\omega_3 c_s^2\omega_4^2\omega_1^3\omega_2 - 6\omega_3^2 v_3^2\omega_4^2\omega_1^3\omega_2^2 - 72\omega_3 c_s^2\omega_4^2\omega_1^2\omega_2^3 + 92\omega_3^2\omega_4^2\omega_1^2 v_1^2\omega_2^3 - 460\omega_3^2 c_s^2\omega_4^2\omega_1^2 v_1^2\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^2\omega_2^2 + 52\omega_3^2 c_s^2\omega_4^2\omega_1^2\omega_2^2 + 18\omega_3^2 c_s^2 v_3^2\omega_4^2\omega_1^3\omega_2^2 - 288\omega_3^2 c_s^4\omega_4^2\omega_2^3 + 104\omega_3^2\omega_4^2\omega_1^2 v_1^2\omega_2^2 - 40\omega_3 c_s^2\omega_4^2\omega_1^2\omega_2^2 - 18c_s^2\omega_4^2\omega_1^3\omega_2^3 - 27\omega_3^2 c_s^4\omega_4\omega_1^3\omega_2^3 + 18c_s^2\omega_4^2\omega_1^3 v_1^2\omega_2^3 + 78\omega_3^2\omega_4^2\omega_1^3 v_1^4\omega_2^2 + 208\omega_3^2 c_s^2\omega_4^2\omega_1^3\omega_2 + 184\omega_3^2 c_s^2\omega_4^2\omega_1^2\omega_2^3 - 14\omega_3^2\omega_4^2\omega_1^2\omega_2^3 - 412\omega_3^2 c_s^2\omega_4^2\omega_1^2 v_1^2\omega_2^2 - 9\omega_3^2 c_s^2\omega_4\omega_1^3 v_1^2\omega_2^3 - 20\omega_3^2\omega_4^2\omega_1^3\omega_2$

$C_{30} = -3\omega_3 c_s^2 v_3^2\omega_4\omega_1^2\omega_2^3 + 16\omega_3 c_s^4\omega_4\omega_1^3 - 60\omega_3\omega_4\omega_1^3 v_1^2 - 90\omega_3 c_s^2\omega_4\omega_1^2 v_1^2\omega_2^2 + 24\omega_3 c_s^2\omega_4\omega_1^2\omega_2^3 + 18c_s^2\omega_4\omega_1^3\omega_2^2 + 42\omega_3 c_s^2\omega_4\omega_1^3\omega_2 + 24c_s^2\omega_4\omega_1 v_2^2\omega_2^3 + 408\omega_3\omega_4\omega_1 v_1^4\omega_2^3 + 8c_s^4\omega_4\omega_1\omega_2^3 + 27\omega_3 c_s^2\omega_1^3 v_1^2\omega_2^3 - 24\omega_3\omega_4\omega_1 v_1^4\omega_2^2 - 6\omega_3 c_s^2\omega_4\omega_1^2\omega_2^2 - 9c_s^2\omega_4\omega_1^3\omega_2^3 - 153\omega_3 c_s^2\omega_4\omega_1^2 v_1^2\omega_2^3 - 36\omega_3 c_s^2\omega_1\omega_2^3 - 240\omega_3\omega_4\omega_1^3 v_1^4\omega_2 + 24c_s^2\omega_4\omega_1^3 v_1^2\omega_2 - 8\omega_3\omega_4\omega_2^3 - \omega_3 v_3^2\omega_4\omega_1^3\omega_2^2 - 96\omega_3\omega_4\omega_1^2 v_1^2\omega_2 - 20\omega_3 c_s^2\omega_4\omega_1^3 - 28\omega_3 c_s^4\omega_4\omega_1\omega_2^2 + \omega_3 v_3^2\omega_4\omega_1^2\omega_2^3 + 14\omega_3\omega_4\omega_1\omega_2^3 + 84\omega_3\omega_4\omega_1^2 v_1^2\omega_2^2 - 20c_s^2\omega_4\omega_1^2\omega_2^2 + 144\omega_3\omega_4 v_1^2\omega_2^3 - 16\omega_3 c_s^2\omega_4\omega_1^2\omega_2 + 138\omega_3\omega_4\omega_1^3 v_1^4\omega_2^2 - 54c_s^2\omega_4\omega_1^3 v_1^2\omega_2^2 + 81\omega_3\omega_4\omega_1^2 v_1^2\omega_2^3 + 94\omega_3 c_s^4\omega_4\omega_1\omega_2^3 - 4\omega_3\omega_4\omega_1\omega_2^2 + 108\omega_3 c_s^2\omega_1 v_1^2\omega_2^3 + 36\omega_3 c_s^4\omega_1\omega_2^3 + 27c_s^2\omega_4\omega_1^3 v_1^2\omega_2^3 + 3\omega_3 c_s^2 v_3^2\omega_4\omega_1^3\omega_2^2 + 120\omega_3 c_s^2\omega_4\omega_1^2 v_1^2\omega_2 - 8c_s^2\omega_4\omega_1^3\omega_2 + 18c_s^2\omega_4\omega_1^2\omega_2^3 - 24\omega_3 c_s^2\omega_4\omega_1^3\omega_2^2 - 18c_s^4\omega_4\omega_1^3\omega_2^2 + 12\omega_3\omega_4\omega_1 v_1^2\omega_2^2 - 4\omega_3\omega_4\omega_1^2\omega_2^2 - 29\omega_3 c_s^4\omega_4\omega_1^2\omega_2^3 - 32\omega_3 c_s^4\omega_4\omega_1^3\omega_2 + 138\omega_3\omega_4\omega_1^3 v_1^2\omega_2 -$

$36\omega_3c_s^4\omega_1^2\omega_2^3 + 4\omega_3\omega_4\omega_1^3 - 9\omega_3c_s^2\omega_1^3\omega_2^3 - 8c_s^2\omega_4\omega_1\omega_2^3 + 192\omega_3\omega_4\omega_1^2v_1^4\omega_2 + 144\omega_3c_s^2\omega_4\omega_1^3v_1^2 - 68\omega_3c_s^4\omega_4\omega_2^3 - 108\omega_3c_s^2\omega_1^2v_1^2\omega_2^3 -$
$10\omega_3\omega_4\omega_1^3\omega_2 - 7\omega_3\omega_4\omega_1^2\omega_2^3 - 222\omega_3\omega_4\omega_1v_1^2\omega_2^3 + 9c_s^4\omega_4\omega_1^3\omega_2^3 + 10\omega_3c_s^4\omega_4\omega_1^2\omega_2^2 + 153\omega_3c_s^2\omega_4\omega_1^3v_1^2\omega_2^2 + \omega_3v_3^4\omega_4\omega_1^3\omega_2^2 - 288\omega_3c_s^2\omega_4\omega_1^3v_1^2\omega_2 -$
$\omega_3v_3^4\omega_4\omega_1^2\omega_2^3 - 54c_s^2\omega_4\omega_1^2v_1^2\omega_2^3 - 138\omega_3\omega_4\omega_1^2v_1^4\omega_2^3 + 32\omega_3c_s^2\omega_4\omega_1\omega_2^2 - 60\omega_3c_s^2\omega_4\omega_1v_1^2\omega_2^2 + 36\omega_3c_s^2\omega_1^2\omega_2^3 + 9\omega_3c_s^4\omega_1^3\omega_2^3 + 96\omega_3\omega_4\omega_1^3v_1^4 -$
$3\omega_3c_s^4\omega_4\omega_1^3\omega_2^3 + 7\omega_3\omega_4\omega_1^3\omega_2^2 + 20c_s^4\omega_4\omega_1^2\omega_2^2 + 8\omega_3c_s^4\omega_4\omega_1^2\omega_2 + 40\omega_3c_s^2\omega_4\omega_2^3 + 432\omega_3c_s^2\omega_4\omega_1v_1^2\omega_2^3 - 54\omega_3c_s^2\omega_4\omega_1\omega_2^3 + 60c_s^2\omega_4\omega_1^2v_1^2\omega_2^2 -$
$168\omega_3\omega_4\omega_1^2v_1^4\omega_2^2 - 312\omega_3c_s^2\omega_4v_1^2\omega_2^3 + 8\omega_3\omega_4\omega_1^2\omega_2 + 8c_s^4\omega_4\omega_1^3\omega_2 + 17\omega_3c_s^4\omega_4\omega_1^3\omega_2^2 - 264\omega_3\omega_4v_1^4\omega_2^3 - 18c_s^4\omega_4\omega_1^2\omega_2^3 - 81\omega_3\omega_4\omega_1^3v_1^2\omega_2^2$

$C_{31} = 4\omega_3\omega_4v_1^2\omega_2 - 6\omega_3\omega_4\omega_1\omega_2 + 12\omega_3c_s^2\omega_4\omega_1 - 18\omega_3v_3^2\omega_4\omega_2 + 9\omega_4\omega_1\omega_2 + 2\omega_3\omega_4\omega_2 - 27\omega_3c_s^2\omega_1\omega_2 - 9\omega_4\omega_1v_1^2\omega_2 - 9\omega_3\omega_1v_1^2\omega_2 +$
$9\omega_3\omega_1\omega_2 + 18\omega_3c_s^2\omega_4\omega_1\omega_2 + 2\omega_3\omega_4\omega_1v_1^2 + 18\omega_3v_3^2\omega_4\omega_1 + 6\omega_3c_s^2\omega_4\omega_2 - 27c_s^2\omega_4\omega_1\omega_2 - 8\omega_3\omega_4\omega_1 + 6\omega_3\omega_4\omega_1v_1^2\omega_2$

$C_{32} = -96\omega_3^2\omega_4^2v_1^2\omega_2^3 + 10\omega_3^2c_s^2\omega_4^2\omega_1^3v_2^2\omega_2^2 - 108\omega_3^2c_s^2\omega_4\omega_1^2v_2^2\omega_2^3 + 96\omega_3^2\omega_4^2\omega_1v_1^2\omega_2^3 - 60\omega_3^2\omega_4^2\omega_1^3v_2^2v_1^2\omega_2 + 30\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^2 + 54\omega_3^2c_s^2\omega_1^3\omega_2^3 +$
$432\omega_3^2c_s^2\omega_4^2v_1^2\omega_2^3 + 64\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^3 - 84c_s^2\omega_4^2\omega_1^2v_2^2\omega_2^3 - 8\omega_3c_s^2\omega_4^2\omega_1^3v_2^2\omega_2 + 324\omega_3^2c_s^4\omega_1^2\omega_2^3 - 81\omega_3c_s^4\omega_4^2\omega_1^3\omega_2^3 + 120\omega_3^2\omega_4^2\omega_1^2v_2^2v_1^2\omega_2^2 -$
$432\omega_3^2c_s^2\omega_4^2\omega_1v_1^2\omega_2^3 + 8\omega_3^2\omega_4^2\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1\omega_2^3 + 96\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_2 + 56\omega_3c_s^2\omega_4^2\omega_1\omega_2^3 - 72\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2 + 96\omega_3^2\omega_4^2\omega_1v_1^2\omega_2^2 - 8\omega_3^2\omega_4^2\omega_1\omega_2^2 -$
$432\omega_3^2c_s^2\omega_4^2\omega_1v_1^2\omega_2^2 - 72\omega_3^2\omega_4^2\omega_1^2v_1^4\omega_2 - 56\omega_3c_s^2\omega_4^2\omega_1v_2^2\omega_2^3 - 104\omega_3^2c_s^2\omega_4^2\omega_1^3 - 252c_s^4\omega_4^2\omega_1^2\omega_2^3 + 108\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^3 - 432\omega_3^2c_s^2\omega_4^2\omega_1^3v_1^2\omega_2 +$
$128\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^2 + 32\omega_3^2c_s^2\omega_4^2v_2^2\omega_2^3 + 72\omega_3^2\omega_4^2\omega_1^2v_1^4\omega_2^2 - 162\omega_3^2c_s^4\omega_1^3\omega_2^3 - 8\omega_3^2\omega_4^2v_2^2\omega_2^3 - 24\omega_3c_s^4\omega_4^2\omega_1^3\omega_2 - 27\omega_3c_s^2\omega_4^2\omega_1^3v_2^2\omega_2^3 - 72c_s^4\omega_4^2\omega_1^3\omega_2^2 +$
$8\omega_3^2\omega_4^2\omega_1v_2^2\omega_2^3 + 324\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^3 + 192\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^2 - 96\omega_3^2\omega_4^2\omega_1^3v_1^2 + 8\omega_3^2c_s^2\omega_4^2\omega_1v_2^2\omega_2^3 - 108\omega_3^2c_s^2\omega_1^2\omega_2^3 + 432\omega_3^2c_s^2\omega_4^2\omega_1^3v_1^2 + 8\omega_3^2\omega_4^2\omega_1v_2^2\omega_2^2 +$
$162c_s^4\omega_4^2\omega_1^3\omega_2^3 - 27\omega_3^2c_s^2\omega_4\omega_1^3\omega_2^3 + 192\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^2 - 24\omega_3^2\omega_4^2\omega_1^2v_2^2v_1^2\omega_2 + 8\omega_3^2\omega_4^2\omega_1^3v_2^2\omega_2 - 54\omega_3^2c_s^2\omega_1^3v_2^2\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^3v_2^2 - 40\omega_3^2c_s^2\omega_4^2\omega_1^3v_2^2\omega_2 -$
$168\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2 + 32\omega_3^2c_s^2\omega_4^2\omega_1^3v_2^2 + 144\omega_3^2c_s^4\omega_4^2\omega_1^3 - 30\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^3 - 56\omega_3^2c_s^2\omega_4^2\omega_1v_2^2\omega_2^2 - 10\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^2 - 36\omega_3^2\omega_4^2\omega_1^3v_1^4\omega_2 +$
$48\omega_3^2\omega_4^2\omega_1^3v_1^4 - 24c_s^2\omega_4^2\omega_1^3v_2^2\omega_2^2 - 432\omega_3^2c_s^2\omega_4^2\omega_1^2v_1^2\omega_2 - 96\omega_3^2\omega_4^2\omega_1v_2^2v_1^2\omega_2^2 + 96\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2 - 24\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^3 - 104\omega_3^2c_s^2\omega_4^2\omega_2^3 -$
$10\omega_3^2c_s^2\omega_4^2\omega_1^2v_2^2\omega_2^3 + 27\omega_3c_s^2\omega_4^2\omega_1^3\omega_2^3 - 60\omega_3^2\omega_4^2\omega_1v_2^2v_1^2\omega_2^3 + 24\omega_3^2\omega_4^2v_1^4\omega_2^3 - 36\omega_3^2\omega_4^2\omega_1v_1^4\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^2\omega_2 + 54c_s^2\omega_4^2\omega_1^3v_2^2\omega_2^3 + 80\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2 -$
$168\omega_3c_s^4\omega_4^2\omega_1\omega_2^3 - 16\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2^2 + 72\omega_3^2\omega_4^2v_2^2v_1^2\omega_2^3 + 27\omega_3^2c_s^2\omega_4\omega_1^3v_2^2\omega_2^3 + 84c_s^2\omega_4^2\omega_1^2\omega_2^3 - 324\omega_3^2c_s^4\omega_4\omega_1^2\omega_2^3 + 32\omega_3^2c_s^2\omega_4^2\omega_1^2v_2^2\omega_2^2 -$
$216\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^2 + 8\omega_3^2\omega_4^2\omega_1^3 + 8\omega_3c_s^2\omega_4^2\omega_1^3\omega_2 - 8\omega_3^2c_s^2\omega_4^2\omega_1^2v_2^2\omega_2 + 48\omega_3^2\omega_4^2\omega_1^3v_2^2v_1^2 - 108\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^3 + 24c_s^2\omega_4^2\omega_1^3\omega_2^2 + 16\omega_3^2\omega_4^2\omega_1^2\omega_2^2 +$
$64\omega_3c_s^2\omega_4^2\omega_1^2v_2^2\omega_2^2 - 176\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^2 + 144\omega_3^2c_s^4\omega_4^2\omega_2^3 + 108\omega_3^2c_s^2\omega_1^2v_2^2\omega_2^3 + 8\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2 - 192\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2^2 - 64\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^2 -$
$54c_s^2\omega_4^2\omega_1^3\omega_2^3 + 81\omega_3^2c_s^4\omega_4\omega_1^3\omega_2^3 + 112\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2 + 10\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^3 + 864\omega_3^2c_s^2\omega_4^2\omega_1^2v_1^2\omega_2^2 + 108\omega_3c_s^2\omega_4^2\omega_1^2v_2^2\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^3\omega_2$

$C_{33} = -24\omega_3c_s^2\omega_1\omega_2^2 + 2\omega_1^3\omega_2 + 26\omega_3c_s^2\omega_2^3 - 6c_s^2\omega_1\omega_2^3 - 4\omega_3\omega_1^2v_2^2\omega_2 + 10\omega_3\omega_1^3\omega_2 - 24\omega_3c_s^2\omega_1\omega_2^3 - 4\omega_1^2\omega_2^2 + 26\omega_3\omega_1^2v_1^2\omega_2^2 - 20\omega_3\omega_1^2\omega_2^2 +$
$14\omega_3\omega_1^2\omega_2 - 22\omega_3\omega_1^2v_1^2\omega_2 + 4\omega_1^2v_2^2\omega_2^2 + 6\omega_3\omega_1^2v_2^2\omega_2^2 - 10\omega_3\omega_2^3 - 3\omega_3\omega_1v_2^2\omega_2^3 + 4\omega_3\omega_1^3v_2^2 - 30\omega_3c_s^2\omega_1^2\omega_2 - 2\omega_1^3v_2^2\omega_2 - 3\omega_3\omega_1^3v_2^2\omega_2 +$
$28\omega_3c_s^2\omega_1^3 - 4\omega_3\omega_1v_2^2\omega_2^2 + 4\omega_3v_2^2\omega_2^3 + 16\omega_3\omega_1^3v_1^2 - 2\omega_1v_2^2\omega_2^3 - 24\omega_3c_s^2\omega_1^3\omega_2 - 12\omega_3\omega_1^3 - 13\omega_3\omega_1v_1^2\omega_2^3 + 8\omega_3\omega_1\omega_2^2 + 12c_s^2\omega_1^2\omega_2^2 +$
$48\omega_3c_s^2\omega_1^2\omega_2^2 - 4\omega_3\omega_1v_1^2\omega_2^2 + 10\omega_3v_1^2\omega_2^3 + 2\omega_1\omega_2^3 - 13\omega_3\omega_1^3v_1^2\omega_2 - 6c_s^2\omega_1^3\omega_2 + 10\omega_3\omega_1\omega_2^3$

$C_{34} =$
$-108\omega_3^2\omega_1^2v_1^2\omega_5\omega_2^3 + 8\omega_3^2c_s^4\omega_4^2\omega_1\omega_5\omega_2^3 - 88\omega_3^2c_s^2\omega_4^2\omega_5\omega_2^3 + 54\omega_4^2\omega_1^3v_1^4\omega_5\omega_2^3 + 300\omega_3^2c_s^2\omega_4^2\omega_1v_1^2\omega_5\omega_2^3 + 24\omega_3^2\omega_4^2\omega_1^3v_2^2\omega_5\omega_2 - 36\omega_3^2\omega_4\omega_1v_1^2\omega_5\omega_2^3 -$
$96\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_5 - 72\omega_3c_s^2\omega_4^2\omega_1^3\omega_5\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1\omega_5\omega_2^3 - 6\omega_3^2c_s^2\omega_4^2\omega_1^2v_2^2\omega_5\omega_2^3 + 8\omega_3^2\omega_4^2\omega_5\omega_2^3 + 180\omega_3c_s^2\omega_4^2\omega_1^3v_1^2\omega_5\omega_2^2 + 264\omega_3^2c_s^2\omega_4^2\omega_1^3v_1^2\omega_5 +$
$36\omega_3^2c_s^2\omega_4^2\omega_1\omega_5\omega_2^3 + 72\omega_3^2\omega_4^2\omega_1v_1^2\omega_5\omega_2^2 - 48\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_5\omega_2^2 + 12\omega_3\omega_4^2\omega_1v_1^4\omega_5\omega_2^3 - 72\omega_3^2\omega_4^2\omega_1^2v_2^2v_1^2\omega_5\omega_2 - 27\omega_3c_s^2v_3^2\omega_4^2\omega_1^3\omega_5\omega_2^3 +$
$72\omega_3c_s^4\omega_4^2\omega_1^3\omega_5\omega_2^3 + 324\omega_3^2c_s^2\omega_1^2v_1^2\omega_5\omega_2^3 + 144\omega_3^2\omega_4^2\omega_1^3v_2^2v_1^2\omega_5 + 132\omega_3^2c_s^2\omega_4^2\omega_1^2v_2^2\omega_5\omega_2^2 - 8\omega_3^2\omega_4^2\omega_1\omega_5\omega_2^2 + 72\omega_3c_s^2\omega_4^2\omega_1^3\omega_5\omega_2^2 - 28\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_5\omega_2 -$
$72\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^3 - 108\omega_3c_s^2\omega_4\omega_1^3v_1^2\omega_5\omega_2^2 - 36\omega_4^2\omega_1^3v_1^4\omega_5\omega_2^2 - 54\omega_3^2\omega_1^3v_1^4\omega_5\omega_2^3 - 216\omega_3^2c_s^2\omega_4^2v_1^2\omega_5\omega_2^3 - 24\omega_3^2c_s^2\omega_4^2\omega_1^2v_1^2\omega_5\omega_2^2 - 56\omega_3^2c_s^4\omega_4^2\omega_1\omega_5\omega_2^2 +$
$72\omega_4^2\omega_1^2v_1^2\omega_5\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^3\omega_5\omega_2 - 72\omega_3c_s^4\omega_4^2\omega_1^3\omega_5\omega_2^2 + 36\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_5\omega_2 - 108\omega_3^2c_s^2\omega_4\omega_1v_1^2\omega_5\omega_2^3 + 24\omega_3^2\omega_4^2v_1^2\omega_5\omega_2^3 - 108\omega_3c_s^2\omega_4^2\omega_1^3v_1^2\omega_5\omega_2^3 -$
$48\omega_3^2\omega_4^2\omega_1v_1^2\omega_5\omega_2^3 + 64\omega_3^2c_s^2\omega_4^2\omega_1\omega_5\omega_2^2 - 12\omega_3^2c_s^2\omega_4^2\omega_1^3v_2^2\omega_5\omega_2 + 648\omega_3^2c_s^2\omega_4\omega_1^2v_2^2\omega_5\omega_2^3 + 16\omega_3c_s^4\omega_4^2\omega_1^3\omega_5\omega_2 - 54\omega_4^2\omega_1^3v_1^2\omega_5\omega_2^3 - 4\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_5\omega_2^2 -$
$288\omega_3^2c_s^2\omega_4\omega_1^2\omega_5\omega_2^3 - 24\omega_3^2\omega_4^2\omega_1^3v_2^2\omega_5 + 108\omega_3^2\omega_1^2v_1^4\omega_5\omega_2^3 - 2\omega_3^2v_3^4\omega_4^2\omega_1^2\omega_5\omega_2^3 + 6\omega_3^2c_s^2\omega_4^2\omega_1^3v_2^2\omega_5\omega_2^2 + 27\omega_3^2c_s^2v_3^2\omega_4\omega_1^3\omega_5\omega_2^3 + 36\omega_3^2\omega_4\omega_1v_1^4\omega_5\omega_2^3 +$
$32\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_5 + 24\omega_3^2\omega_4^2\omega_1v_1^4\omega_5\omega_2^2 - 72\omega_3c_s^2\omega_4^2\omega_1^2v_1^2\omega_5\omega_2^3 + 288\omega_3^2c_s^4\omega_4\omega_1^2\omega_5\omega_2^3 - 16\omega_3c_s^2\omega_4^2\omega_1^3\omega_5\omega_2 - 162\omega_3^2c_s^2\omega_4\omega_1^3v_2^2\omega_5\omega_2^3 + 4\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_5\omega_2^2 -$
$96\omega_3^2c_s^2\omega_4^2\omega_1^2v_2^2\omega_5\omega_2 + 336\omega_3c_s^2\omega_4^2\omega_1v_2^2\omega_5\omega_2^3 - 288\omega_3^2\omega_4^2\omega_1v_2^2v_1^2\omega_5\omega_2^2 + 24\omega_3^2c_s^2\omega_4^2\omega_1^3v_2^2\omega_5 + 2\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_5\omega_2^3 - 12\omega_3\omega_4^2\omega_1v_1^2\omega_5\omega_2^3 -$
$6\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^2\omega_5\omega_2^3 + 160\omega_3c_s^4\omega_4^2\omega_1\omega_5\omega_2^3 + 108\omega_3c_s^2\omega_4\omega_1^2v_1^2\omega_5\omega_2^3 + 9\omega_3^2v_3^4\omega_4\omega_1^3\omega_5\omega_2^3 - 72\omega_3c_s^2\omega_4^2\omega_1^3v_1^2\omega_5\omega_2 - 72\omega_4^2\omega_1^2v_1^4\omega_5\omega_2^3 +$
$24\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_5\omega_2 + 36\omega_4^2\omega_1^3v_1^2\omega_5\omega_2^2 + 54\omega_3^2\omega_1^3v_1^2\omega_5\omega_2^3 + 360\omega_3^2\omega_4^2\omega_1^2v_2^2v_1^2\omega_5\omega_2^2 + 216\omega_3^2\omega_4^2v_2^2v_1^2\omega_5\omega_2^3 - 96\omega_3^2\omega_4^2v_1^4\omega_5\omega_2^3 - 9\omega_3^2v_3^2\omega_4\omega_1^3\omega_5\omega_2^3 -$
$180\omega_3^2\omega_4^2\omega_1v_2^2v_1^2\omega_5\omega_2^3 - 160\omega_3c_s^2\omega_4^2\omega_1\omega_5\omega_2^3 - 162\omega_3^2c_s^2\omega_1^3v_1^2\omega_5\omega_2^3 + 108\omega_3c_s^2\omega_4^2\omega_1^2v_1^2\omega_5\omega_2^2 - 6\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_5\omega_2^3 + 288\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^3 +$
$108\omega_3^2\omega_4^2\omega_1v_1^4\omega_5\omega_2^3 - 108\omega_3^2c_s^2\omega_4\omega_1^2v_1^2\omega_5\omega_2^2 + 24\omega_3^2\omega_4^2\omega_1v_2^2\omega_5\omega_2^2 - 180\omega_3c_s^2\omega_4^2\omega_1^3v_2^2\omega_5\omega_2^2 + 36\omega_3\omega_4^2\omega_1^2v_1^4\omega_5\omega_2^3 - 216c_s^2\omega_4^2\omega_1^2v_1^2\omega_5\omega_2^3 +$
$64\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_5\omega_2 + 112\omega_3c_s^4\omega_4^2\omega_1^2\omega_5\omega_2^2 - 72\omega_3\omega_4^2\omega_1^3v_1^2\omega_5\omega_2^2 + 152\omega_3^2c_s^4\omega_4^2\omega_5\omega_2^3 + 9\omega_3v_3^2\omega_4^2\omega_1^3\omega_5\omega_2^3 + 288\omega_3^2c_s^2\omega_4\omega_1\omega_5\omega_2^3 - 84\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_5\omega_2^2 +$
$132\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_5\omega_2 - 120\omega_3^2c_s^2\omega_4^2\omega_1v_2^2\omega_5\omega_2^3 + 144\omega_3^2\omega_4\omega_1^2v_1^2\omega_5\omega_2^3 - 56\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_5\omega_2 - 112\omega_3c_s^2\omega_4^2\omega_1^2\omega_5\omega_2^2 + 36\omega_3^2\omega_4\omega_1^3v_1^4\omega_5\omega_2^2 -$
$288\omega_3^2c_s^4\omega_4\omega_1\omega_5\omega_2^3 - 9\omega_3v_3^4\omega_4^2\omega_1^3\omega_5\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^2\omega_5\omega_2 - 288\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^3 - 60\omega_3^2c_s^2\omega_4^2\omega_1^2v_1^2\omega_5\omega_2^3 - 648\omega_3^2c_s^2\omega_4\omega_1v_2^2\omega_5\omega_2^3 + 18\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_5\omega_2^3 -$
$24\omega_3^2\omega_4^2v_2^2\omega_5\omega_2^3 + 18\omega_3^2\omega_4^2\omega_1^3v_1^4\omega_5\omega_2^2 - 216\omega_3c_s^4\omega_4^2\omega_1^2\omega_5\omega_2^3 + 48\omega_3^2\omega_4^2\omega_1^3v_1^4\omega_5 + 54\omega_3\omega_4^2\omega_1^3v_1^2\omega_5\omega_2^3 - 348\omega_3^2c_s^2\omega_4^2\omega_1^3v_1^2\omega_5\omega_2 + 24\omega_3^2\omega_4^2\omega_1v_2^2\omega_5\omega_2^3 -$
$216\omega_3^2c_s^2\omega_4\omega_1^2v_1^2\omega_5\omega_2^3 + 12\omega_3\omega_4^2\omega_1^2v_1^4\omega_5\omega_2^2 + 162\omega_3c_s^2\omega_4^2\omega_1^3v_2^2\omega_5\omega_2^3 - 24\omega_3\omega_4^2\omega_1^3v_1^4\omega_5\omega_2 + 36\omega_3\omega_4\omega_1^2v_1^4\omega_5\omega_2^3 + 48\omega_3^2c_s^2\omega_4^2\omega_1^2v_1^2\omega_5\omega_2^2 +$
$36\omega_3\omega_4\omega_1^3v_1^2\omega_5\omega_2^2 + 24\omega_3^2\omega_4^2\omega_1^2v_1^4\omega_5\omega_2 + 54\omega_3^2\omega_4\omega_1^3v_1^4\omega_5\omega_2^3 + 36\omega_3^2\omega_4\omega_1^2v_1^2\omega_5\omega_2^2 - 168\omega_3^2c_s^2\omega_4^2\omega_1v_2^2\omega_5\omega_2^2 + 240\omega_3^2c_s^2\omega_4^2v_2^2\omega_5\omega_2^3 +$
$216\omega_3c_s^2\omega_4^2\omega_1^2\omega_5\omega_2^3 + 108\omega_3^2c_s^2\omega_4\omega_1^3v_1^2\omega_5\omega_2^3 - 24\omega_3^2c_s^2\omega_4^2\omega_1^2v_1^2\omega_5\omega_2 - 468\omega_3c_s^2\omega_4^2\omega_1^2v_2^2\omega_5\omega_2^3 + 72\omega_3\omega_4^2\omega_1^3v_1^4\omega_5\omega_2^2 - 108c_s^2\omega_4^2\omega_1^3v_1^2\omega_5\omega_2^2 -$
$2\omega_3^2v_3^2\omega_4^2\omega_1^3\omega_5\omega_2^2 - 180\omega_3^2\omega_4^2\omega_1^3v_2^2v_1^2\omega_5\omega_2 - 36\omega_3\omega_4^2\omega_1^2v_1^2\omega_5\omega_2^3 - 36\omega_3^2\omega_4^2\omega_1^2v_1^4\omega_5\omega_2^2 + 180\omega_3c_s^2\omega_4^2\omega_1v_1^2\omega_5\omega_2^3 - 28\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_5\omega_2^3 -$
$36\omega_3^2\omega_4\omega_1^3v_1^2\omega_5\omega_2^2 + 2\omega_3^2v_3^4\omega_4^2\omega_1^3\omega_5\omega_2^2 - 144\omega_3^2\omega_4\omega_1^2v_1^4\omega_5\omega_2^3 - 72\omega_3^2\omega_4^2\omega_1^3v_1^4\omega_5\omega_2 + 8\omega_3^2\omega_4^2\omega_1^3\omega_5 - 40\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_5 + 4\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_5\omega_2^3 +$
$60\omega_3^2c_s^2\omega_4^2\omega_1^3v_1^2\omega_5\omega_2^2 + 56\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_5\omega_2^2 - 72\omega_3^2c_s^4\omega_4\omega_1^3\omega_5\omega_2^3 - 18\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_5\omega_2^2 - 18\omega_3^2\omega_4^2\omega_1^2v_1^4\omega_5\omega_2^3 + 16\omega_3^2\omega_4^2\omega_1^2\omega_5\omega_2^2 - 12\omega_3\omega_4^2\omega_1^2v_1^2\omega_5\omega_2^2 +$
$108\omega_3^2c_s^2\omega_4\omega_1^3v_1^2\omega_5\omega_2^2 + 162c_s^2\omega_4^2\omega_1^3v_1^2\omega_5\omega_2^3 - 54\omega_3\omega_4^2\omega_1^3v_1^4\omega_5\omega_2^3 + 264\omega_3c_s^2\omega_4^2\omega_1^2v_2^2\omega_5\omega_2^2 - 36\omega_3\omega_4\omega_1^3v_1^4\omega_5\omega_2^2 + 48\omega_3c_s^2\omega_4^2\omega_1^3v_2^2\omega_5\omega_2 +$
$72\omega_3^2c_s^2\omega_4\omega_1^3\omega_5\omega_2^3 - 36\omega_3\omega_4\omega_1^2v_1^2\omega_5\omega_2^3 + 24\omega_3\omega_4^2\omega_1^3v_1^2\omega_5\omega_2 - 72\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_5\omega_2^2 + 6\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^3\omega_5\omega_2^2 - 36\omega_3^2\omega_4\omega_1^2v_1^4\omega_5\omega_2^2 - 54\omega_3^2\omega_4\omega_1^3v_1^2\omega_5\omega_2^3$

$C_{35} = 6\omega_3c_s^2\omega_4\omega_1 + 9\omega_4\omega_1\omega_2 - 2\omega_3\omega_4v_2^2\omega_2 + 2\omega_3\omega_4\omega_2 + 27\omega_3c_s^2\omega_1\omega_2 + 2\omega_3\omega_4\omega_1v_2^2 - 9\omega_3\omega_1\omega_2 - 6\omega_3c_s^2\omega_4\omega_2 - 27c_s^2\omega_4\omega_1\omega_2 - 2\omega_3\omega_4\omega_1 -$
$9\omega_4\omega_1v_2^2\omega_2 + 9\omega_3\omega_1v_2^2\omega_2$

$C_{36} = -8\omega_3^2\omega_4^2v_1^2\omega_2^3 + 8\omega_3^2\omega_4^2\omega_1v_1^2\omega_2^3 - 27\omega_3c_s^2\omega_4^2\omega_1^3v_1^2\omega_2^3 - 60\omega_3^2\omega_4^2\omega_1^3v_2^2v_1^2\omega_2 + 30\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^2 + 54\omega_3^2c_s^2\omega_1^3\omega_2^3 + 72\omega_3^2\omega_4^2\omega_1^2v_1^4\omega_2^2 +$
$32\omega_3^2c_s^2\omega_4^2v_1^2\omega_2^3 + 64\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^3 + 324\omega_3^2c_s^4\omega_1^2\omega_2^3 - 81\omega_3c_s^4\omega_4^2\omega_1^3\omega_2^3 + 120\omega_3^2\omega_4^2\omega_1^2v_2^2v_1^2\omega_2^2 + 8\omega_3^2c_s^2\omega_4^2\omega_1v_1^2\omega_2^3 + 8\omega_3^2\omega_4^2\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1\omega_2^3 -$
$54\omega_3^2c_s^2\omega_1^3v_1^2\omega_2^3 + 8\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_2 + 56\omega_3c_s^2\omega_4^2\omega_1\omega_2^3 - 72\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2 + 8\omega_3^2\omega_4^2\omega_1v_1^2\omega_2^2 - 8\omega_3^2\omega_4^2\omega_1\omega_2^2 - 56\omega_3^2c_s^2\omega_4^2\omega_1v_1^2\omega_2^2 - 104\omega_3^2c_s^2\omega_4^2\omega_1^3 -$
$252c_s^4\omega_4^2\omega_1^2\omega_2^3 + 108\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^3 - 40\omega_3^2c_s^2\omega_4^2\omega_1^3v_1^2\omega_2 + 128\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^2 + 432\omega_3^2c_s^2\omega_4^2v_2^2\omega_2^3 - 162\omega_3^2c_s^4\omega_1^3\omega_2^3 - 96\omega_3^2\omega_4^2v_2^2\omega_2^3 -$
$24\omega_3c_s^4\omega_4^2\omega_1^3\omega_2 - 72c_s^4\omega_4^2\omega_1^3\omega_2^2 - 108\omega_3^2c_s^2\omega_4\omega_1^2v_1^2\omega_2^3 + 96\omega_3^2\omega_4^2\omega_1v_2^2\omega_2^3 + 10\omega_3^2c_s^2\omega_4^2\omega_1^3v_1^2\omega_2^2 + 324\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^3 + 192\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^2 -$

$8\omega_3^2\omega_4^2\omega_1^3v_1^2 - 432\omega_3^2c_s^2\omega_4^2\omega_1v_2^2\omega_2^3 - 108\omega_3^2c_s^2\omega_1^2\omega_2^3 - 8\omega_3c_s^2\omega_4^2\omega_1^3v_1^2\omega_2 - 84c_s^2\omega_4^2\omega_1^2v_1^2\omega_2^3 + 32\omega_3^2c_s^2\omega_4^2\omega_1^3v_1^2 + 96\omega_3^2\omega_4^2\omega_1v_2^2\omega_2^2 + 162c_s^4\omega_4^2\omega_1^3\omega_2^3 - 27\omega_3^2c_s^2\omega_4\omega_1^3\omega_2^2 + 192\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^2 - 24\omega_3^2\omega_4^2\omega_1^2v_2^2v_1^2\omega_2 + 96\omega_3^2\omega_4^2\omega_1^3v_2^2\omega_2 - 96\omega_3^2\omega_4^2\omega_1^3v_2^2 - 432\omega_3^2c_s^2\omega_4^2\omega_1^3v_2^2\omega_2 - 168\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2 + 432\omega_3^2c_s^2\omega_4^2\omega_1^3v_2^2 + 144\omega_3^2c_s^4\omega_4^2\omega_1^3 - 56\omega_3c_s^2\omega_4^2\omega_1v_1^2\omega_2^3 - 72\omega_3^2\omega_4^2\omega_1^2v_2^4\omega_2 - 30\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^3 - 432\omega_3^2c_s^2\omega_4^2\omega_1v_2^2\omega_2^2 - 10\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2^2 - 8\omega_3^2c_s^2\omega_4^2\omega_1^2v_1^2\omega_2 - 96\omega_3^2\omega_4^2\omega_1v_2^2v_1^2\omega_2^2 + 8\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2 + 108\omega_3^2c_s^2\omega_1^2v_1^2\omega_2^3 - 24\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^3 - 104\omega_3^2c_s^2\omega_4^2\omega_2^3 + 64\omega_3c_s^2\omega_4^2\omega_1^2v_1^2\omega_2^2 + 27\omega_3c_s^2\omega_4^2\omega_1^3\omega_2^3 - 60\omega_3^2\omega_4^2\omega_1v_2^2v_1^2\omega_2^3 + 48\omega_3^2\omega_4^2\omega_1^3v_2^4 - 8\omega_3^2\omega_4^2\omega_1^2\omega_2 + 80\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2 - 168\omega_3c_s^4\omega_4^2\omega_1\omega_2^3 - 192\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2^2 + 72\omega_3^2\omega_4^2v_2^2v_1^2\omega_2^3 + 84c_s^2\omega_4^2\omega_1^2\omega_2^3 + 108\omega_3c_s^2\omega_4^2\omega_1^2v_1^2\omega_2^3 - 324\omega_3^2c_s^4\omega_4\omega_1^2\omega_2^3 + 864\omega_3^2c_s^2\omega_4^2\omega_1^2v_2^2\omega_2^2 - 216\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^2 + 8\omega_3^2\omega_4^2\omega_1^3 - 24c_s^2\omega_4^2\omega_1^3v_1^2\omega_2^2 + 8\omega_3c_s^2\omega_4^2\omega_1^3\omega_2 - 432\omega_3^2c_s^2\omega_4^2\omega_1^2v_2^2\omega_2 + 48\omega_3^2\omega_4^2\omega_1^3v_2^2v_1^2 - 108\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^3 + 24c_s^2\omega_4^2\omega_1^3\omega_2^2 - 36\omega_3^2\omega_4^2\omega_1^3v_2^4\omega_2 - 10\omega_3^2c_s^2\omega_4^2\omega_1^2v_1^2\omega_2^3 + 16\omega_3^2\omega_4^2\omega_1^2\omega_2^2 - 176\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^2 + 144\omega_3^2c_s^4\omega_4^2\omega_2^3 + 96\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2 - 16\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2^2 + 24\omega_3^2\omega_4^2v_2^4\omega_2^3 - 64\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^2 - 54c_s^2\omega_4^2\omega_1^3\omega_2^3 + 81\omega_3^2c_s^4\omega_4\omega_1^3\omega_2^3 + 54c_s^2\omega_4^2\omega_1^3v_1^2\omega_2^3 - 36\omega_3^2\omega_4^2\omega_1v_2^4\omega_2^3 + 112\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2 + 10\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^3 + 32\omega_3^2c_s^2\omega_4^2\omega_1^2v_1^2\omega_2^2 + 27\omega_3^2c_s^2\omega_4\omega_1^3v_1^2\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^3\omega_2$

$C_{37} = 8\omega_3^2c_s^4\omega_4^2\omega_1\omega_5\omega_2^3 - 88\omega_3^2c_s^2\omega_4^2\omega_5\omega_2^3 + 36\omega_3^2\omega_4\omega_1^3v_2^4\omega_5\omega_2^2 - 120\omega_3^2c_s^2\omega_4^2\omega_1v_1^2\omega_5\omega_2^3 + 132\omega_3^2\omega_4^2\omega_1^3v_2^2\omega_5\omega_2 + 144\omega_3^2\omega_4\omega_1^2v_2^2\omega_5\omega_2^3 - 24\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_5 - 72\omega_3c_s^2\omega_4^2\omega_1^3\omega_5\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1\omega_5\omega_2^3 - 60\omega_3^2c_s^2\omega_4^2\omega_1^2v_2^2\omega_5\omega_2^3 + 8\omega_3^2\omega_4^2\omega_5\omega_2^3 - 72\omega_3\omega_4^2\omega_1^3v_2^2\omega_5\omega_2^2 - 180\omega_3c_s^2\omega_4^2\omega_1^3v_1^2\omega_5\omega_2^2 - 216c_s^2\omega_4^2\omega_1^2v_2^2\omega_5\omega_2^3 + 36\omega_3\omega_4^2\omega_1^2v_2^4\omega_5\omega_2^3 + 24\omega_3^2c_s^2\omega_4^2\omega_1^3v_1^2\omega_5 - 108\omega_3^2c_s^2\omega_4\omega_1^2v_2^2\omega_5\omega_2^2 + 36\omega_3^2c_s^2\omega_4^2\omega_1\omega_5\omega_2^3 + 24\omega_3^2\omega_4^2\omega_1v_1^2\omega_5\omega_2^2 - 84\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_5\omega_2^2 - 72\omega_3^2\omega_4^2\omega_1^2v_2^2v_1^2\omega_5\omega_2 - 27\omega_3c_s^2v_3^2\omega_4^2\omega_1^3\omega_5\omega_2^3 + 72\omega_3c_s^4\omega_4^2\omega_1^3\omega_5\omega_2^3 + 36\omega_3\omega_4\omega_1^3v_2^2\omega_5\omega_2^2 + 144\omega_3^2\omega_4^2\omega_1^3v_2^2v_1^2\omega_5 + 48\omega_3^2c_s^2\omega_4^2\omega_1^2v_2^2\omega_5\omega_2^2 - 8\omega_3^2\omega_4^2\omega_1\omega_5\omega_2^2 + 72\omega_3c_s^2\omega_4^2\omega_1^3\omega_5\omega_2^2 - 28\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_5\omega_2 - 72\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^3 - 24\omega_3\omega_4^2\omega_1^3v_2^4\omega_5\omega_2 + 36\omega_3\omega_4\omega_1^2v_2^4\omega_5\omega_2^3 + 36\omega_3^2\omega_4\omega_1^2v_2^2\omega_5\omega_2^2 + 240\omega_3^2c_s^2\omega_4^2v_1^2\omega_5\omega_2^3 - 168\omega_3^2c_s^2\omega_4^2\omega_1v_1^2\omega_5\omega_2^2 - 56\omega_3^2c_s^4\omega_4^2\omega_1\omega_5\omega_2^2 - 8\omega_3^2\omega_4^2\omega_1^3\omega_5\omega_2 + 24\omega_3^2\omega_4^2\omega_1^2v_2^4\omega_5\omega_2 + 54\omega_3^2\omega_4\omega_1^3v_2^4\omega_5\omega_2^3 + 18\omega_3^2\omega_4^2\omega_1^3v_2^4\omega_5\omega_2^2 - 72\omega_3c_s^4\omega_4^2\omega_1^3\omega_5\omega_2^2 + 36\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_5\omega_2 - 648\omega_3^2c_s^2\omega_4\omega_1v_1^2\omega_5\omega_2^3 - 24\omega_3^2\omega_4^2v_1^2\omega_5\omega_2^3 + 18\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_5\omega_2^3 + 12\omega_3\omega_4^2\omega_1^2v_2^4\omega_5\omega_2^2 + 162\omega_3c_s^2\omega_4^2\omega_1^3v_1^2\omega_5\omega_2^3 + 24\omega_3^2\omega_4^2\omega_1v_1^2\omega_5\omega_2^3 + 64\omega_3^2c_s^2\omega_4^2\omega_1\omega_5\omega_2^2 - 348\omega_3^2c_s^2\omega_4^2\omega_1^3v_2^2\omega_5\omega_2 - 216\omega_3^2c_s^2\omega_4\omega_1^2v_2^2\omega_5\omega_2^3 + 54\omega_3\omega_4^2\omega_1^3v_2^2\omega_5\omega_2^3 + 16\omega_3c_s^4\omega_4^2\omega_1^3\omega_5\omega_2 - 4\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_5\omega_2^2 - 144\omega_3^2\omega_4\omega_1^2v_2^4\omega_5\omega_2^3 - 288\omega_3^2c_s^2\omega_4\omega_1^2\omega_5\omega_2^3 - 72\omega_3^2\omega_4^2\omega_1^3v_2^4\omega_5\omega_2 - 96\omega_3^2\omega_4^2\omega_1^3v_2^2\omega_5 - 36\omega_3^2\omega_4\omega_1^3v_2^2\omega_5\omega_2^2 - 2\omega_3^2v_3^4\omega_4^2\omega_1^2\omega_5\omega_2^3 + 60\omega_3^2c_s^2\omega_4^2\omega_1^3v_2^2\omega_5\omega_2^2 + 27\omega_3^2c_s^2v_3^2\omega_4\omega_1^3\omega_5\omega_2^3 - 36\omega_3\omega_4^2\omega_1^2v_2^2\omega_5\omega_2^3 + 32\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_5 - 468\omega_3c_s^2\omega_4^2\omega_1^2v_1^2\omega_5\omega_2^3 + 288\omega_3^2c_s^4\omega_4\omega_1^2\omega_5\omega_2^3 - 108c_s^2\omega_4^2\omega_1^3v_2^2\omega_5\omega_2^2 + 72\omega_3\omega_4^2\omega_1^3v_2^4\omega_5\omega_2^2 - 16\omega_3c_s^2\omega_4^2\omega_1^3\omega_5\omega_2 + 108\omega_3^2c_s^2\omega_4\omega_1^3v_2^2\omega_5\omega_2^3 + 4\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_5\omega_2^2 - 24\omega_3^2c_s^2\omega_4^2\omega_1^2v_2^2\omega_5\omega_2 + 180\omega_3c_s^2\omega_4^2\omega_1v_2^2\omega_5\omega_2^3 - 288\omega_3^2\omega_4^2\omega_1v_2^2v_1^2\omega_5\omega_2^2 + 264\omega_3^2c_s^2\omega_4^2\omega_1^3v_2^2\omega_5 - 36\omega_3^2\omega_4^2\omega_1^2v_2^4\omega_5\omega_2^2 + 2\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_5\omega_2^3 - 36\omega_3\omega_4\omega_1^2v_2^2\omega_5\omega_2^3 + 24\omega_3\omega_4^2\omega_1^3v_2^2\omega_5\omega_2 - 6\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^2\omega_5\omega_2^3 + 160\omega_3c_s^4\omega_4^2\omega_1\omega_5\omega_2^3 + 9\omega_3^2v_3^4\omega_4\omega_1^3\omega_5\omega_2^3 + 48\omega_3c_s^2\omega_4^2\omega_1^3v_1^2\omega_5\omega_2 - 36\omega_3\omega_4\omega_1^3v_2^4\omega_5\omega_2^2 - 54\omega_3^2\omega_4\omega_1^3v_2^2\omega_5\omega_2^3 + 360\omega_3^2\omega_4^2\omega_1^2v_2^2v_1^2\omega_5\omega_2^2 + 216\omega_3^2\omega_4^2v_2^2v_1^2\omega_5\omega_2^3 - 36\omega_3^2\omega_4\omega_1^2v_2^4\omega_5\omega_2^2 - 18\omega_3^2\omega_4^2\omega_1^2v_2^4\omega_5\omega_2^3 - 9\omega_3^2v_3^2\omega_4\omega_1^3\omega_5\omega_2^3 - 180\omega_3^2\omega_4^2\omega_1v_2^2v_1^2\omega_5\omega_2^3 - 160\omega_3c_s^2\omega_4^2\omega_1\omega_5\omega_2^3 - 18\omega_3^2\omega_4^2\omega_1^3v_2^2\omega_5\omega_2^2 - 54\omega_3\omega_4^2\omega_1^3v_2^4\omega_5\omega_2^3 + 162c_s^2\omega_4^2\omega_1^3v_2^2\omega_5\omega_2^3 + 264\omega_3c_s^2\omega_4^2\omega_1^2v_1^2\omega_5\omega_2^2 - 6\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_5\omega_2^3 + 108\omega_3^2c_s^2\omega_4\omega_1^3v_2^2\omega_5\omega_2^2 + 288\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^3 - 12\omega_3\omega_4^2\omega_1^2v_2^2\omega_5\omega_2^2 + 72\omega_3^2\omega_4^2\omega_1v_2^2\omega_5\omega_2^2 + 180\omega_3c_s^2\omega_4^2\omega_1^3v_2^2\omega_5\omega_2^2 + 64\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_5\omega_2 + 112\omega_3c_s^4\omega_4^2\omega_1^2\omega_5\omega_2^2 + 324\omega_3^2c_s^2\omega_1^2v_2^2\omega_5\omega_2^3 + 152\omega_3^2c_s^4\omega_4^2\omega_5\omega_2^3 + 9\omega_3v_3^2\omega_4^2\omega_1^3\omega_5\omega_2^3 + 12\omega_3\omega_4^2\omega_1v_2^4\omega_5\omega_2^3 + 288\omega_3^2c_s^2\omega_4\omega_1\omega_5\omega_2^3 - 48\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_5\omega_2^2 + 24\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_5\omega_2 + 300\omega_3^2c_s^2\omega_4^2\omega_1v_2^2\omega_5\omega_2^3 - 56\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_5\omega_2 - 112\omega_3c_s^2\omega_4^2\omega_1^2\omega_5\omega_2^2 + 54\omega_4^2\omega_1^3v_2^4\omega_5\omega_2^3 - 108\omega_3^2\omega_1^2v_2^2\omega_5\omega_2^3 - 288\omega_3^2c_s^4\omega_4\omega_1\omega_5\omega_2^3 - 9\omega_3v_3^4\omega_4^2\omega_1^3\omega_5\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^2\omega_5\omega_2 - 288\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^3 - 36\omega_3^2\omega_4\omega_1v_2^2\omega_5\omega_2^3 - 6\omega_3^2c_s^2\omega_4^2\omega_1^2v_1^2\omega_5\omega_2^3 - 108\omega_3^2c_s^2\omega_4\omega_1v_2^2\omega_5\omega_2^3 + 24\omega_3^2\omega_4^2v_2^2\omega_5\omega_2^3 - 216\omega_3c_s^4\omega_4^2\omega_1^2\omega_5\omega_2^3 - 12\omega_3^2c_s^2\omega_4^2\omega_1^3v_1^2\omega_5\omega_2 - 48\omega_3^2\omega_4^2\omega_1v_2^2\omega_5\omega_2^3 + 648\omega_3^2c_s^2\omega_4\omega_1^2v_1^2\omega_5\omega_2^3 - 108\omega_3c_s^2\omega_4^2\omega_1^3v_2^2\omega_5\omega_2^3 - 108\omega_3c_s^2\omega_4\omega_1^3v_2^2\omega_5\omega_2^2 + 132\omega_3^2c_s^2\omega_4^2\omega_1^2v_1^2\omega_5\omega_2^2 + 72\omega_4^2\omega_1^2v_2^2\omega_5\omega_2^3 - 24\omega_3^2c_s^2\omega_4^2\omega_1v_2^2\omega_5\omega_2^2 - 216\omega_3^2c_s^2\omega_4^2v_2^2\omega_5\omega_2^3 + 216\omega_3c_s^2\omega_4^2\omega_1^2\omega_5\omega_2^3 - 54\omega_3^2\omega_1^3v_2^4\omega_5\omega_2^3 - 36\omega_4^2\omega_1^3v_2^4\omega_5\omega_2^2 - 162\omega_3^2c_s^2\omega_4\omega_1^3v_1^2\omega_5\omega_2^3 - 96\omega_3^2c_s^2\omega_4^2\omega_1^2v_1^2\omega_5\omega_2 - 72\omega_3c_s^2\omega_4^2\omega_1^2v_2^2\omega_5\omega_2^3 - 2\omega_3^2v_3^2\omega_4^2\omega_1^3\omega_5\omega_2^2 + 24\omega_3^2\omega_4^2\omega_1v_2^4\omega_5\omega_2^2 - 180\omega_3^2\omega_4^2\omega_1^3v_2^2v_1^2\omega_5\omega_2 - 12\omega_3\omega_4^2\omega_1v_2^2\omega_5\omega_2^3 + 336\omega_3c_s^2\omega_4^2\omega_1v_1^2\omega_5\omega_2^3 - 28\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_5\omega_2^3 + 2\omega_3^2v_3^4\omega_4^2\omega_1^3\omega_5\omega_2^2 + 108\omega_3^2\omega_1^2v_2^4\omega_5\omega_2^3 + 8\omega_3^2\omega_4^2\omega_1^3\omega_5 - 54\omega_4^2\omega_1^3v_2^2\omega_5\omega_2^3 - 40\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_5 + 4\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_5\omega_2^3 + 36\omega_3^2\omega_4\omega_1v_2^4\omega_5\omega_2^3 + 6\omega_3^2c_s^2\omega_4^2\omega_1^3v_1^2\omega_5\omega_2^2 + 56\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_5\omega_2^2 + 48\omega_3^2\omega_4^2\omega_1^3v_2^4\omega_5 - 72\omega_3^2c_s^4\omega_4\omega_1^3\omega_5\omega_2^3 - 162\omega_3^2c_s^2\omega_1^3v_2^2\omega_5\omega_2^3 - 96\omega_3^2\omega_4^2v_2^4\omega_5\omega_2^3 + 16\omega_3^2\omega_4^2\omega_1^2\omega_5\omega_2^2 + 108\omega_3^2\omega_4^2\omega_1v_2^4\omega_5\omega_2^3 + 108\omega_3c_s^2\omega_4^2\omega_1^2v_2^2\omega_5\omega_2^2 + 108\omega_3c_s^2\omega_4\omega_1^2v_2^2\omega_5\omega_2^3 - 72\omega_3c_s^2\omega_4^2\omega_1^3v_2^2\omega_5\omega_2 + 72\omega_3^2c_s^2\omega_4\omega_1^3\omega_5\omega_2^3 - 72\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_5\omega_2^2 + 6\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^3\omega_5\omega_2^2 + 54\omega_3^2\omega_1^3v_2^2\omega_5\omega_2^3 + 36\omega_4^2\omega_1^3v_2^2\omega_5\omega_2^2 + 24\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_5\omega_2 - 72\omega_4^2\omega_1^2v_2^4\omega_5\omega_2^3$

$C_{38} = -24\omega_3c_s^2\omega_1\omega_2^2 + 2\omega_1^3\omega_2 + 26\omega_3c_s^2\omega_2^3 - 6c_s^2\omega_1\omega_2^3 + 4\omega_1^2v_1^2\omega_2^2 - 22\omega_3\omega_1^2v_2^2\omega_2 + 10\omega_3\omega_1^3\omega_2 - 24\omega_3c_s^2\omega_1\omega_2^3 - 4\omega_1^2\omega_2^2 + 6\omega_3\omega_1^2v_1^2\omega_2^2 - 20\omega_3\omega_1^2\omega_2^2 + 14\omega_3\omega_1^2\omega_2 - 4\omega_3\omega_1^2v_1^2\omega_2 + 26\omega_3\omega_1^2v_2^2\omega_2^2 - 10\omega_3\omega_2^3 - 13\omega_3\omega_1v_2^2\omega_2^3 + 16\omega_3\omega_1^3v_2^2 - 30\omega_3c_s^2\omega_1^2\omega_2 - 13\omega_3\omega_1^3v_2^2\omega_2 + 28\omega_3c_s^2\omega_1^3 - 4\omega_3\omega_1v_2^2\omega_2^2 + 10\omega_3v_2^2\omega_2^3 + 4\omega_3\omega_1^3v_1^2 - 24\omega_3c_s^2\omega_1^3\omega_2 - 12\omega_3\omega_1^3 - 3\omega_3\omega_1v_1^2\omega_2^2 - 2\omega_1^3v_1^2\omega_2 + 8\omega_3\omega_1\omega_2^2 + 12c_s^2\omega_1^2\omega_2^2 + 48\omega_3c_s^2\omega_1^2\omega_2^2 - 4\omega_3\omega_1v_1^2\omega_2^2 + 4\omega_3v_1^2\omega_2^3 + 2\omega_1\omega_2^3 - 3\omega_3\omega_1^3v_1^2\omega_2 - 6c_s^2\omega_1^3\omega_2 - 2\omega_1v_1^2\omega_2^3 + 10\omega_3\omega_1\omega_2^3$

$C_{39} = -2\omega_3\omega_4v_1^2\omega_2 + 6\omega_3c_s^2\omega_4\omega_1 + 9\omega_4\omega_1\omega_2 + 2\omega_3\omega_4\omega_2 + 27\omega_3c_s^2\omega_1\omega_2 - 9\omega_4\omega_1v_1^2\omega_2 + 9\omega_3\omega_1v_1^2\omega_2 - 9\omega_3\omega_1\omega_2 + 2\omega_3\omega_4\omega_1v_1^2 - 6\omega_3c_s^2\omega_4\omega_2 - 27c_s^2\omega_4\omega_1\omega_2 - 2\omega_3\omega_4\omega_1$

$C_{40} = 394\omega_3^2c_s^2\omega_4^2\omega_1^3v_2^2\omega_2^2 + 36\omega_3^2c_s^2\omega_4\omega_1^2v_2^2\omega_2^3 + 144\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^2 - 18\omega_3^2c_s^2\omega_1^3\omega_2^3 - 96\omega_3^2\omega_4^2\omega_1^2v_2^4\omega_2^2 - 368\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^3 - 36c_s^2\omega_4^2\omega_1^2v_2^2\omega_2^3 + 16\omega_3c_s^2\omega_4^2\omega_1^3v_2^2\omega_2 - 108\omega_3^2c_s^4\omega_1^2\omega_2^3 - 27\omega_3c_s^4\omega_4^2\omega_1^3\omega_2^3 - 92\omega_3^2\omega_4^2\omega_1^3v_2^2\omega_2^2 - 16\omega_3^2\omega_4^2\omega_2^3 + 28\omega_3^2\omega_4^2\omega_1\omega_2^3 + 56\omega_3c_s^2\omega_4^2\omega_1\omega_2^3 - 78\omega_3^2\omega_4^2\omega_1^2v_2^4\omega_2^3 + 72\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2 + 18\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^3 + 6\omega_3^2c_s^2\omega_4^2\omega_1^3v_2^2\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1\omega_2^2 - 56\omega_3c_s^2\omega_4^2\omega_1v_2^2\omega_2^3 - 104\omega_3^2c_s^2\omega_4^2\omega_1^3 - 108\omega_3c_s^4\omega_4^2\omega_1^3\omega_2^2 - 108c_s^4\omega_4^2\omega_1^2\omega_2^3 - 36\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^3 + 56\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^2 - 6\omega_3^2v_3^4\omega_4^2\omega_1^2\omega_2^3 - 784\omega_3^2c_s^2\omega_4^2v_2^2\omega_2^3 + 54\omega_3^2c_s^4\omega_1^3\omega_2^3 + 6\omega_3^2v_3^4\omega_4^2\omega_1^3\omega_2^2 + 160\omega_3^2\omega_4^2v_2^2\omega_2^3 + 48\omega_3c_s^4\omega_4^2\omega_1^3\omega_2 - 9\omega_3c_s^2\omega_4^2\omega_1^3v_2^2\omega_2^3 - 256\omega_3^2\omega_4^2\omega_1v_2^2\omega_2^3 + 216\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^3 + 12\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^2 + 1232\omega_3^2c_s^2\omega_4^2\omega_1v_2^2\omega_2^3 + 36\omega_3^2c_s^2\omega_1^2\omega_2^3 + 32\omega_3^2\omega_4^2\omega_1v_2^2\omega_2^2 + 54c_s^4\omega_4^2\omega_1^3\omega_2^3 + 9\omega_3^2c_s^2\omega_4\omega_1^3\omega_2^3 - 36\omega_3c_s^2\omega_4^2\omega_1^3v_2^2\omega_2^2 + 120\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^2 + 152\omega_3^2\omega_4^2\omega_1^3v_2^2\omega_2 + 18\omega_3^2c_s^2\omega_1^3v_2^2\omega_2^3 - 56\omega_3^2\omega_4^2\omega_1^3v_2^2 - 712\omega_3^2c_s^2\omega_4^2\omega_1^3v_2^2\omega_2 - 276\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2 + 320\omega_3^2c_s^2\omega_4^2\omega_1^3v_2^2 + 144\omega_3^2c_s^4\omega_4^2\omega_1^3 + 120\omega_3^2\omega_4^2\omega_1^2v_2^4\omega_2 - 342\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^3 - 56\omega_3^2c_s^2\omega_4^2\omega_1v_2^2\omega_2^2 - 118\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2^2 + 92\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2^3 + 14\omega_3^2\omega_4^2\omega_1^3\omega_2^2 + 588\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^3 + 208\omega_3^2c_s^2\omega_4^2\omega_2^3 - 460\omega_3^2c_s^2\omega_4^2\omega_1^2v_2^2\omega_2^3 + 9\omega_3c_s^2\omega_4^2\omega_1^3\omega_2^3 + 48\omega_3^2\omega_4^2\omega_1^3v_2^4 + 16\omega_3^2\omega_4^2\omega_1^2\omega_2 + 18c_s^2\omega_4^2\omega_1^3v_2^2\omega_2^3 - 88\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2 - 168\omega_3c_s^4\omega_4^2\omega_1\omega_2^3 - 18\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^2\omega_2^3 + 104\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2^2 - 6\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2^3 - 9\omega_3^2c_s^2\omega_4\omega_1^3v_2^2\omega_2^3 + 36c_s^2\omega_4^2\omega_1^2\omega_2^3 + 108\omega_3^2c_s^4\omega_4\omega_1^2\omega_2^3 + 36\omega_3c_s^2\omega_4^2\omega_1^3\omega_2^2 - 412\omega_3^2c_s^2\omega_4^2\omega_1^2v_2^2\omega_2^2 + 6\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2^3 - 144\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^2 + 78\omega_3^2\omega_4^2\omega_1^3v_2^4\omega_2^2 + 8\omega_3^2\omega_4^2\omega_1^3 - 16\omega_3c_s^2\omega_4^2\omega_1^3\omega_2 + 448\omega_3^2c_s^2\omega_4^2\omega_1^2v_2^2\omega_2 - 24\omega_3^2\omega_4^2\omega_1v_2^4\omega_2^2 - 6\omega_3^2v_3^2\omega_4^2\omega_1^3\omega_2^2 - 72\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^3 - 132\omega_3^2\omega_4^2\omega_1^3v_2^4\omega_2 - 8\omega_3^2\omega_4^2\omega_1^2\omega_2^2 + 40\omega_3c_s^2\omega_4^2\omega_1^2v_2^2\omega_2^2 + 52\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^2 + 18\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^3\omega_2^2 - 288\omega_3^2c_s^4\omega_4^2\omega_2^3 - 36\omega_3^2c_s^2\omega_1^2v_2^2\omega_2^3 - 136\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2 - 144\omega_3^2\omega_4^2v_2^4\omega_2^3 - 40\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^2 - 18c_s^2\omega_4^2\omega_1^3\omega_2^3 - 27\omega_3^2c_s^4\omega_4\omega_1^3\omega_2^3 + 228\omega_3^2\omega_4^2\omega_1v_2^4\omega_2^3 + 208\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2 + 184\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^3 - 14\omega_3^2\omega_4^2\omega_1^2\omega_2^3 + 72\omega_3c_s^2\omega_4^2\omega_1^2v_2^2\omega_2^3 - 20\omega_3^2\omega_4^2\omega_1^3\omega_2$

$C_{41} = -3\omega_3c_s^2v_3^2\omega_4\omega_1^2\omega_2^3 + 16\omega_3c_s^4\omega_4\omega_1^3 + 84\omega_3\omega_4\omega_1^2v_2^2\omega_2^2 + 24\omega_3c_s^2\omega_4\omega_1^2\omega_2^3 + 18c_s^2\omega_4\omega_1^3\omega_2^2 + 42\omega_3c_s^2\omega_4\omega_1^3\omega_2 + 8c_s^4\omega_4\omega_1\omega_2^3 - 54c_s^2\omega_4\omega_1^3v_2^2\omega_2^2 + 138\omega_3\omega_4\omega_1^3v_2^4\omega_2^2 + 144\omega_3\omega_4v_2^2\omega_2^3 - 60\omega_3\omega_4\omega_1^3v_2^2 + 108\omega_3c_s^2\omega_1v_2^2\omega_2^3 - 6\omega_3c_s^2\omega_4\omega_1^2\omega_2^2 - 9c_s^2\omega_4\omega_1^3\omega_2^3 - 36\omega_3c_s^2\omega_1\omega_2^3 + 81\omega_3\omega_4\omega_1^2v_2^2\omega_2^3 - 8\omega_3\omega_4\omega_2^3 - \omega_3v_3^2\omega_4\omega_1^3\omega_2^2 + 120\omega_3c_s^2\omega_4\omega_1^2v_2^2\omega_2 + 27c_s^2\omega_4\omega_1^3v_2^2\omega_2^3 + 408\omega_3\omega_4\omega_1v_2^4\omega_2^3 + 24c_s^2\omega_4\omega_1v_2^2\omega_2^3 - 20\omega_3c_s^2\omega_4\omega_1^3 + 81\omega_3\omega_4\omega_1^2v_2^2\omega_2^3 - 28\omega_3c_s^4\omega_4\omega_1\omega_2^2 + \omega_3v_3^2\omega_4\omega_1^2\omega_2^3 + 14\omega_3\omega_4\omega_1\omega_2^3 - 90\omega_3c_s^2\omega_4\omega_1^2v_2^2\omega_2^2 - 20c_s^2\omega_4\omega_1^2\omega_2^2 - 16\omega_3c_s^2\omega_4\omega_1^2\omega_2 + 27\omega_3c_s^2\omega_1^3v_2^2\omega_2^3 + 24c_s^2\omega_4\omega_1^3v_2^2\omega_2 - 240\omega_3\omega_4\omega_1^3v_2^4\omega_2 -$

$153\omega_3c_s^2\omega_4\omega_1^2v_2^2\omega_2^3 + 94\omega_3c_s^4\omega_4\omega_1\omega_2^3 - 4\omega_3\omega_4\omega_1\omega_2^2 - 24\omega_3\omega_4\omega_1v_2^4\omega_2^2 + 36\omega_3c_s^4\omega_1\omega_2^3 - 96\omega_3\omega_4\omega_1^2v_2^2\omega_2 + 3\omega_3c_s^2v_3^2\omega_4\omega_1^3\omega_2^2 - 8c_s^2\omega_4\omega_1^3\omega_2 +$
$18c_s^2\omega_4\omega_1^2\omega_2^3 - 24\omega_3c_s^2\omega_4\omega_1^3\omega_2^2 - 18c_s^4\omega_4\omega_1^3\omega_2^2 - 4\omega_3\omega_4\omega_1^2\omega_2^2 - 60\omega_3c_s^2\omega_4\omega_1v_2^2\omega_2^2 - 29\omega_3c_s^4\omega_4\omega_1^2\omega_2^3 + 144\omega_3c_s^2\omega_4\omega_1^3v_2^2 - 32\omega_3c_s^4\omega_4\omega_1^3\omega_2 -$
$138\omega_3\omega_4\omega_1^2v_2^4\omega_2^3 - 54c_s^2\omega_4\omega_1^2v_2^2\omega_2^3 - 36\omega_3c_s^4\omega_1^2\omega_2^3 - 288\omega_3c_s^2\omega_4\omega_1^3v_2^2\omega_2 + 4\omega_3\omega_4\omega_1^3 - 9\omega_3c_s^2\omega_1^3\omega_2^3 - 8c_s^2\omega_4\omega_1\omega_2^3 - 68\omega_3c_s^4\omega_4\omega_2^3 -$
$168\omega_3\omega_4\omega_1^2v_2^4\omega_2^2 + 60c_s^2\omega_4\omega_1^2v_2^2\omega_2^2 - 10\omega_3\omega_4\omega_1^3\omega_2 - 7\omega_3\omega_4\omega_1^2\omega_2^3 + 9c_s^4\omega_4\omega_1^3\omega_2^3 + 10\omega_3c_s^4\omega_4\omega_1^2\omega_2^2 + 432\omega_3c_s^2\omega_4\omega_1v_2^2\omega_2^3 - 81\omega_3\omega_4\omega_1^3v_2^2\omega_2^2 +$
$\omega_3v_3^4\omega_4\omega_1^3\omega_2^2 - 312\omega_3c_s^2\omega_4v_2^2\omega_2^3 - 264\omega_3\omega_4v_2^4\omega_2^3 - \omega_3v_3^4\omega_4\omega_1^2\omega_2^3 + 138\omega_3\omega_4\omega_1^3v_2^2\omega_2 + 32\omega_3c_s^2\omega_4\omega_1\omega_2^2 + 12\omega_3\omega_4\omega_1v_2^2\omega_2^2 + 36\omega_3c_s^2\omega_1^2\omega_2^3 +$
$9\omega_3c_s^4\omega_1^3\omega_2^3 + 192\omega_3\omega_4\omega_1^2v_2^4\omega_2 - 3\omega_3c_s^4\omega_4\omega_1^3\omega_2^3 + 7\omega_3\omega_4\omega_1^3\omega_2^2 + 20c_s^4\omega_4\omega_1^2\omega_2^2 + 8\omega_3c_s^4\omega_4\omega_1^2\omega_2 + 40\omega_3c_s^2\omega_4\omega_2^3 - 222\omega_3\omega_4\omega_1v_2^2\omega_2^3 -$
$108\omega_3c_s^2\omega_1^2v_2^2\omega_2^3 - 54\omega_3c_s^2\omega_4\omega_1\omega_2^3 + 96\omega_3\omega_4\omega_1^3v_2^4 + 8\omega_3\omega_4\omega_1^2\omega_2 + 8c_s^4\omega_4\omega_1^3\omega_2 + 17\omega_3c_s^4\omega_4\omega_1^3\omega_2^2 - 18c_s^4\omega_4\omega_1^2\omega_2^3 + 153\omega_3c_s^2\omega_4\omega_1^3v_2^2\omega_2^2$

$C_{42} = -6\omega_3\omega_4\omega_1\omega_2 + 12\omega_3c_s^2\omega_4\omega_1 - 18\omega_3v_3^2\omega_4\omega_2 + 9\omega_4\omega_1\omega_2 + 4\omega_3\omega_4v_2^2\omega_2 + 2\omega_3\omega_4\omega_2 - 27\omega_3c_s^2\omega_1\omega_2 + 2\omega_3\omega_4\omega_1v_2^2 + 9\omega_3\omega_1\omega_2 +$
$18\omega_3c_s^2\omega_4\omega_1\omega_2 + 6\omega_3\omega_4\omega_1v_2^2\omega_2 + 18\omega_3v_3^2\omega_4\omega_1 + 6\omega_3c_s^2\omega_4\omega_2 - 27c_s^2\omega_4\omega_1\omega_2 - 8\omega_3\omega_4\omega_1 - 9\omega_4\omega_1v_2^2\omega_2 - 9\omega_3\omega_1v_2^2\omega_2$

$C_{43} = 24\omega_3^2\omega_4^2v_1^2\omega_2^3 - 42\omega_3^2\omega_4^2\omega_1v_1^2\omega_2^3 + 35\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^2 - 18\omega_3^2c_s^2\omega_1^3\omega_2^3 - 12\omega_3^2v_3^2\omega_4^2\omega_1^2v_1^2\omega_2 - 216\omega_3^2c_s^2\omega_4^2v_1^2\omega_2^3 - 58\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^3 -$
$108\omega_3^2c_s^4\omega_1^2\omega_2^3 - 27\omega_3c_s^4\omega_4^2\omega_1^3\omega_2^3 + 324\omega_3^2c_s^2\omega_4^2\omega_1v_1^2\omega_2^3 + 4\omega_3^2\omega_4^2\omega_2^3 + 24\omega_3^2v_3^2\omega_4^2\omega_1^3v_1^2 - 4\omega_3^2\omega_4^2\omega_1\omega_2^3 + 66\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_2 + 28\omega_3c_s^2\omega_4^2\omega_1\omega_2^3 -$
$24c_s^2v_3^2\omega_4^2\omega_1^2\omega_2^3 + 15\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^3 - 28\omega_3c_s^2v_3^2\omega_4^2\omega_1\omega_2^3 + 12\omega_3^2\omega_4^2\omega_1v_1^2\omega_2^2 - 4\omega_3^2\omega_4^2\omega_1\omega_2^2 + 16\omega_3^2c_s^2v_3^2\omega_4^2\omega_2^3 - 52\omega_3^2c_s^2\omega_4^2\omega_1^3 - 72c_s^4\omega_4^2\omega_1^2\omega_2^3 -$
$4\omega_3^2v_3^2\omega_4^2\omega_2^3 - 36\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^3 - 324\omega_3^2c_s^2\omega_4^2\omega_1^3v_1^2\omega_2 + 28\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^2 - 9\omega_3^2c_s^2v_3^2\omega_4\omega_1^3\omega_2^3 - 36\omega_3^2\omega_4^2\omega_1^2v_1^4\omega_2^2 + 54\omega_3^2c_s^4\omega_1^3\omega_2^3 - 12\omega_3c_s^4\omega_4^2\omega_1^3\omega_2 +$
$36\omega_3^2v_3^2\omega_4^2v_1^2\omega_2^3 + 4\omega_3^2c_s^2v_3^2\omega_4^2\omega_1\omega_2^3 - 36c_s^4\omega_4^2\omega_1^3\omega_2^2 + 138\omega_3^2c_s^2\omega_4^2\omega_1^3v_1^2\omega_2^2 + 108\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^3 + 24\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^2 - 27\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_2^2 -$
$48\omega_3^2\omega_4^2\omega_1^3v_1^2 + 4\omega_3^2v_3^2\omega_4^2\omega_1\omega_2^3 - 12c_s^2v_3^2\omega_4^2\omega_1^2\omega_2^3 + 36\omega_3^2c_s^2\omega_1^2\omega_2^3 + 216\omega_3^2c_s^2\omega_4^2\omega_1^3v_1^2 + 54c_s^4\omega_4^2\omega_1^3\omega_2^3 + 9\omega_3^2c_s^2\omega_4\omega_1^3\omega_2^3 - 28\omega_3^2c_s^2v_3^2\omega_4^2\omega_1\omega_2^2 +$
$96\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^2 + 36\omega_3^2c_s^2v_3^2\omega_4\omega_1^2\omega_2^3 - 27\omega_3^2\omega_4^2\omega_1^2v_1^4\omega_2^3 - 102\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2 + 72\omega_3^2c_s^4\omega_4^2\omega_1^3 + 60\omega_3^2v_3^2\omega_4^2\omega_1^2v_1^2\omega_2^2 - 119\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^3 +$
$18c_s^2v_3^2\omega_4^2\omega_1^3\omega_2^3 + 4\omega_3^2v_3^2\omega_4^2\omega_1\omega_2^2 - 25\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2^2 - 36\omega_3^2\omega_4^2\omega_1^3v_1^4\omega_2 + 24\omega_3^2\omega_4^2\omega_1^3v_1^4 + 16\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^2\omega_2^2 + 36\omega_3^2\omega_4^2\omega_1v_1^4\omega_2^2 + 12\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2 -$
$9\omega_3c_s^2v_3^2\omega_4^2\omega_1^3\omega_2^3 + 16\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^3 - 4\omega_3^2v_3^2\omega_4^2\omega_1^3 - 8\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2^2 + 78\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^3 + 20\omega_3^2c_s^2\omega_4^2\omega_2^3 - 30\omega_3^2v_3^2\omega_4^2\omega_1v_1^2\omega_2^2 + 9\omega_3c_s^2\omega_4^2\omega_1^3\omega_2^3 +$
$18\omega_3^2c_s^2v_3^2\omega_1^3\omega_2^3 - 60\omega_3^2\omega_4^2v_1^4\omega_2^3 + 72\omega_3^2\omega_4^2\omega_1v_1^4\omega_2^3 - 4\omega_3^2\omega_4^2\omega_1^2\omega_2 + 4\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2 - 84\omega_3c_s^4\omega_4^2\omega_1\omega_2^3 - 32\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^2\omega_2^3 - 3\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2^3 -$
$20\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^3\omega_2 + 24c_s^2\omega_4^2\omega_1^2\omega_2^3 - 48\omega_3^2v_3^2\omega_4^2\omega_1v_1^2\omega_2^2 + 108\omega_3^2c_s^4\omega_4\omega_1^2\omega_2^3 + 4\omega_3^2v_3^2\omega_4^2\omega_1^3\omega_2 - 72\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^2 - 30\omega_3^2v_3^2\omega_4^2\omega_1^3v_1^2\omega_2 +$
$4\omega_3^2\omega_4^2\omega_1^3 + 4\omega_3c_s^2\omega_4^2\omega_1^3\omega_2 - 36\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^3 + 12c_s^2\omega_4^2\omega_1^3\omega_2^2 + 27\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2^3 - 4\omega_3c_s^2v_3^2\omega_4^2\omega_1^3\omega_2 + 36\omega_3c_s^2v_3^2\omega_4^2\omega_1^2\omega_2^3 - 138\omega_3^2c_s^2\omega_4^2\omega_1^2v_1^2\omega_2^3 +$
$8\omega_3^2\omega_4^2\omega_1^2\omega_2^2 - 16\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^2 + 8\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^3\omega_2^2 + 32\omega_3c_s^2v_3^2\omega_4^2\omega_1^2\omega_2^2 - 24\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2^2 - 32\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^2 - 18c_s^2\omega_4^2\omega_1^3\omega_2^3 + 4\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2 -$
$27\omega_3^2c_s^4\omega_4\omega_1^3\omega_2^3 + 3\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^3\omega_2^3 + 27\omega_3^2\omega_4^2\omega_1^3v_1^4\omega_2^2 + 74\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2 - 4\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^2\omega_2 + 49\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^3 - 36\omega_3^2c_s^2v_3^2\omega_1^2\omega_2^3 - 4\omega_3^2\omega_4^2\omega_1^3\omega_2$

$C_{44} = -50\omega_3\omega_1^2v_1^2\omega_2^3 + 6\omega_1^3\omega_2 - 66\omega_3c_s^2\omega_2^3 - 18c_s^2\omega_1\omega_2^3 + 48\omega_3\omega_1^3\omega_2 + 23\omega_3\omega_1^2\omega_2^3 + 108\omega_3c_s^2\omega_1\omega_2^3 - 12\omega_1^2\omega_2^2 - 66\omega_3\omega_1^2v_1^2\omega_2^2 + 12\omega_3\omega_1^2\omega_2^2 -$
$12\omega_3v_3^2\omega_1^2\omega_2 + 6\omega_3\omega_1^2\omega_2 + 18\omega_3v_3^2\omega_1^2\omega_2^2 - 6v_3^2\omega_1^3\omega_2 + 12\omega_3v_3^2\omega_2^3 + 6\omega_3\omega_1^2v_1^2\omega_2 - 9\omega_3v_3^2\omega_1^3\omega_2 - 23\omega_3\omega_1^3\omega_2^2 + 42\omega_3\omega_2^3 + 12v_3^2\omega_1^2\omega_2^2 - 9\omega_3v_3^2\omega_1\omega_2^3 -$
$18\omega_3c_s^2\omega_1^2\omega_2 + 50\omega_3\omega_1^3v_1^2\omega_2^2 - 12\omega_3v_3^2\omega_1\omega_2^2 + 84\omega_3c_s^2\omega_1^3 - 6v_3^2\omega_1\omega_2^3 + 48\omega_3\omega_1^3v_1^2 + 42\omega_3c_s^2\omega_1^3\omega_2^2 - 108\omega_3c_s^2\omega_1^3\omega_2 - 36\omega_3\omega_1^3 + 141\omega_3\omega_1v_1^2\omega_2^3 -$
$42\omega_3c_s^2\omega_1^2\omega_2^3 - 12\omega_3\omega_1\omega_2^2 + 36c_s^2\omega_1^2\omega_2^2 + 60\omega_3\omega_1v_1^2\omega_2^2 - 114\omega_3v_1^2\omega_2^3 + 6\omega_1\omega_2^3 - 75\omega_3\omega_1^3v_1^2\omega_2 - 18c_s^2\omega_1^3\omega_2 + 12\omega_3v_3^2\omega_1^3 - 60\omega_3\omega_1\omega_2^3$

$C_{45} = -18\omega_3^2\omega_1^3v_1^2\omega_2^2 - 18\omega_3\omega_1^2v_1^2\omega_2^3 - 126\omega_3c_s^2v_3^2\omega_4\omega_1^2\omega_2^3 - 90\omega_3^2v_3^2\omega_4\omega_1v_1^2\omega_2^3 + 54\omega_3c_s^2\omega_4\omega_1^2v_1^2\omega_2^2 + 24\omega_3c_s^2v_3^2\omega_4\omega_1^3\omega_2 + 36\omega_3c_s^2\omega_4\omega_1^2\omega_2^3 -$
$18\omega_3^2c_s^2\omega_1^3\omega_2^3 - 8\omega_3c_s^2\omega_4\omega_1^3\omega_2 - \omega_3^2v_3^2\omega_4\omega_1^3\omega_2^2 + 54\omega_3^2c_s^2\omega_1^3v_1^2\omega_2^2 + 6\omega_3\omega_4\omega_1v_1^4\omega_2^3 + 6\omega_3^2c_s^2v_3^2\omega_4\omega_1^3\omega_2^2 + 12\omega_3^2\omega_4\omega_1v_1^4\omega_2^2 - 72\omega_3^2c_s^4\omega_1^2\omega_2^3 -$
$12\omega_3^2c_s^2\omega_4\omega_1^2v_1^2\omega_2 - 18\omega_4\omega_1^2v_1^2\omega_2^3 - 18\omega_3^2\omega_1^2v_1^4\omega_2^2 - 36\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^2 + 8\omega_3^2\omega_4\omega_1^2\omega_2^2 - 36\omega_3^2\omega_4\omega_1^3v_1^4\omega_2 + 216\omega_3^2c_s^2v_3^2\omega_1\omega_2^3 - 90\omega_3^2v_3^2\omega_4\omega_1^3v_1^2\omega_2 -$
$56\omega_3c_s^2\omega_4\omega_1^2\omega_2^2 + 12\omega_3^2v_3^2\omega_4\omega_1^2\omega_2 - 90\omega_3c_s^2\omega_4\omega_1^2v_1^2\omega_2^3 - 144\omega_3^2v_3^2\omega_4\omega_1v_1^2\omega_2^2 - 12\omega_3\omega_4\omega_1^3v_1^4\omega_2 - 18\omega_4\omega_1^3v_1^4\omega_2^2 + 132\omega_3c_s^2v_3^2\omega_4\omega_1^2\omega_2^2 -$
$4\omega_3^2\omega_4\omega_1^3\omega_2 - 48\omega_3^2c_s^2v_3^2\omega_4\omega_1^2\omega_2 - 68\omega_3^2c_s^4\omega_4\omega_2^3 - 18\omega_3^2\omega_1^2v_1^4\omega_2^3 + 2\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^3 - 18\omega_3\omega_1^3v_1^4\omega_2^2 + 54\omega_3^2\omega_4\omega_1v_1^4\omega_2^3 - 54\omega_3c_s^2\omega_1^3v_1^2\omega_2^2 +$
$18\omega_3^2c_s^2\omega_4\omega_1^3\omega_2 + 18\omega_3^2c_s^4\omega_1^3\omega_2^3 + 66\omega_3^2c_s^2v_3^2\omega_4\omega_1^2\omega_2^2 - 6\omega_3\omega_4\omega_1^2v_1^2\omega_2^2 - 2\omega_3^2c_s^2\omega_4\omega_1^3\omega_2^2 + 24\omega_3^2\omega_4\omega_1^3v_1^4 - 30\omega_3^2c_s^2\omega_4\omega_1^2v_1^2\omega_2^3 - 18\omega_3c_s^2\omega_4\omega_1^3\omega_2^3 +$
$9\omega_3^2\omega_4\omega_1^2v_1^2\omega_2^3 - 24\omega_3^2v_3^2\omega_4\omega_1^2\omega_2^2 + 72\omega_3^2c_s^2\omega_1^2\omega_2^3 - 18\omega_3^2\omega_1v_1^2\omega_2^3 + 76\omega_3^2c_s^4\omega_4\omega_1\omega_2^3 + 36\omega_3\omega_4\omega_1^3v_1^4\omega_2^2 + 54\omega_3^2c_s^2\omega_1v_1^2\omega_2^3 + 54\omega_3c_s^2v_3^2\omega_4\omega_1^3\omega_2^3 -$
$54c_s^2\omega_4\omega_1^3v_1^2\omega_2^2 + 4\omega_3^2\omega_4\omega_1^3 + 24\omega_3^2c_s^2\omega_4\omega_1^2v_1^2\omega_2^2 + 36\omega_3\omega_4\omega_1^2v_1^2\omega_2^3 - 6\omega_3^2c_s^2v_3^2\omega_4\omega_1^3\omega_2 + 32\omega_3^2c_s^2\omega_4\omega_1^2\omega_2 + 8\omega_3c_s^4\omega_4\omega_1\omega_2^3 - 6\omega_3^2c_s^2v_3^2\omega_4\omega_1^2\omega_2^3 +$
$9\omega_3^2\omega_4\omega_1^3v_1^4\omega_2^2 - 4\omega_3^2\omega_4\omega_1^2\omega_2 - 48\omega_3^2\omega_4v_1^4\omega_2^3 + 12\omega_3^2c_s^2v_3^2\omega_4\omega_1^3 - 90\omega_3c_s^2v_3^2\omega_4\omega_1^3\omega_2^2 + \omega_3^2v_3^2\omega_4\omega_1^2\omega_2^3 - 28\omega_3^2c_s^4\omega_4\omega_1\omega_2^2 + 28\omega_3^2c_s^2\omega_4\omega_2^3 +$
$12\omega_3^2v_3^2\omega_4\omega_1^3\omega_2 - 12\omega_3^2v_3^2\omega_4\omega_1^3 - 42\omega_3^2\omega_4\omega_1^2v_1^2\omega_2^2 + 36\omega_3c_s^2\omega_4\omega_1^3\omega_2^2 + 108\omega_3^2v_3^2\omega_4v_1^2\omega_2^3 + 48\omega_3^2c_s^2v_3^2\omega_4\omega_1\omega_2^3 + 150\omega_3^2c_s^2\omega_4\omega_1v_1^2\omega_2^3 -$
$36\omega_3c_s^4\omega_4\omega_1^2\omega_2^3 + \omega_3^2v_3^4\omega_4\omega_1^3\omega_2^2 + 8\omega_3c_s^4\omega_4\omega_1^3\omega_2 + 12\omega_3\omega_4\omega_1^3v_1^2\omega_2 + 18\omega_4\omega_1^3v_1^2\omega_2^2 + 132\omega_3^2c_s^2\omega_4\omega_1^3v_1^2 - 54\omega_3^2c_s^2\omega_1^2v_1^2\omega_2^3 - 36\omega_3^2v_3^2\omega_4\omega_1^2v_1^2\omega_2 +$
$18\omega_3\omega_1^3v_1^2\omega_2^2 + 16\omega_3^2c_s^4\omega_4\omega_1^3 + 18\omega_3^2\omega_1^2v_1^2\omega_2^3 + 28\omega_3^2c_s^4\omega_4\omega_1^2\omega_2^2 - 48\omega_3^2\omega_4\omega_1^3v_1^2 + 12\omega_3^2v_3^2\omega_4\omega_1\omega_2^3 - 24\omega_3^2\omega_4\omega_1v_1^2\omega_2^3 + 18\omega_3\omega_1^2v_1^4\omega_2^3 +$
$18\omega_3^2\omega_1^3v_1^4\omega_2^2 + 54\omega_3^2c_s^2v_3^2\omega_1^3\omega_2^3 - 174\omega_3^2c_s^2\omega_4\omega_1^3v_1^2\omega_2 + 54\omega_3c_s^2\omega_1^2v_1^2\omega_2^3 - 12\omega_3^2c_s^2\omega_4\omega_1v_1^2\omega_2^2 - 6\omega_3\omega_4\omega_1v_1^2\omega_2^3 - 84\omega_3^2c_s^2v_3^2\omega_4\omega_1\omega_2^2 +$
$56\omega_3c_s^4\omega_4\omega_1^2\omega_2^2 + 12\omega_3^2\omega_4\omega_1^2v_1^4\omega_2 - 72\omega_3^2c_s^2\omega_1\omega_2^3 - 14\omega_3^2c_s^4\omega_4\omega_1^2\omega_2^3 + 36\omega_3^2\omega_4\omega_1v_1^2\omega_2^2 + 12\omega_3^2v_3^2\omega_4\omega_1\omega_2^2 + 90\omega_3c_s^2\omega_4\omega_1^3v_1^2\omega_2^2 -$
$14\omega_3^2c_s^4\omega_4\omega_1^3\omega_2 + 18\omega_3^2\omega_1^2v_1^2\omega_2^2 + 18\omega_4\omega_1^2v_1^4\omega_2^3 - 54\omega_3^2c_s^2\omega_1^2v_1^2\omega_2^2 + 66\omega_3^2\omega_4\omega_1^3v_1^2\omega_2 - 36\omega_3c_s^2\omega_4\omega_1^3v_1^2\omega_2 - 108\omega_3^2c_s^2\omega_4v_1^2\omega_2^3 + 54c_s^2\omega_4\omega_1^2v_1^2\omega_2^3 -$
$36\omega_3\omega_4\omega_1^2v_1^4\omega_2^3 + 2\omega_3^2c_s^4\omega_4\omega_1^3\omega_2^2 - 9\omega_3^2\omega_4\omega_1^3v_1^2\omega_2^2 + 12\omega_3^2\omega_4v_1^2\omega_2^3 + 72\omega_3^2v_3^2\omega_4\omega_1^3v_1^2 - 96\omega_3^2c_s^2v_3^2\omega_4\omega_2^3 - 4\omega_3^2\omega_4\omega_1\omega_2^3 + 30\omega_3^2c_s^2\omega_4\omega_1^3v_1^2\omega_2^2 +$
$18\omega_3c_s^4\omega_4\omega_1^3\omega_2^3 - 12\omega_3^2v_3^2\omega_4\omega_2^3 - 18\omega_3^2\omega_4\omega_1^2v_1^4\omega_2^2 - 18\omega_3^2c_s^2\omega_4\omega_1\omega_2^3 - 20\omega_3^2c_s^2\omega_4\omega_1^3 + 180\omega_3^2v_3^2\omega_4\omega_1^2v_1^2\omega_2^2 - 18\omega_3c_s^2\omega_4\omega_1v_1^2\omega_2^3 +$
$60\omega_3c_s^2v_3^2\omega_4\omega_1\omega_2^3 - 3\omega_3^2c_s^4\omega_4\omega_1^3\omega_2^3 - 8\omega_3c_s^2\omega_4\omega_1\omega_2^3 + 6\omega_3\omega_4\omega_1^2v_1^4\omega_2^2 - 28\omega_3^2c_s^4\omega_4\omega_1^2\omega_2 + 32\omega_3^2c_s^2\omega_4\omega_1\omega_2^2 - 9\omega_3^2\omega_4\omega_1^2v_1^4\omega_2^3 - \omega_3^2v_3^4\omega_4\omega_1^2\omega_2^3 +$
$18\omega_3^2\omega_1v_1^4\omega_2^3 - 36\omega_3c_s^4\omega_4\omega_1^3\omega_2^2 + 72\omega_3^2c_s^4\omega_1\omega_2^3 - 216\omega_3^2c_s^2v_3^2\omega_1^2\omega_2^3 + 4\omega_3^2\omega_4\omega_2^3 - 36\omega_3\omega_4\omega_1^3v_1^2\omega_2^2 - 4\omega_3^2\omega_4\omega_1\omega_2^2$

$C_{46} = 6\omega_1^3\omega_2 - 12v_3^2\omega_1^2\omega_2 - 18c_s^2\omega_1\omega_2^3 + 6\omega_1^2v_1^2\omega_2^2 - 6\omega_1^2v_2^2\omega_2 - 12\omega_1^2\omega_2^2 + 36c_s^2\omega_1\omega_2^2 - 4v_3^2\omega_2^3 + 6\omega_1^2v_2^2\omega_2^2 + 24\omega_1^2\omega_2 - 6\omega_1^2v_1^2\omega_2 + 4\omega_1^3v_2^2 -$
$3\omega_1^3v_2^2\omega_2 + 12v_3^2\omega_1\omega_2^2 + 4\omega_1^3v_1^2 - 72c_s^2\omega_1^2\omega_2 - 12\omega_1^3 + 2v_2^2\omega_2^3 + 36c_s^2\omega_1^3 - 3\omega_1v_2^2\omega_2^3 - 12\omega_1\omega_2^2 - 3\omega_1^3v_1^2\omega_2 + 36c_s^2\omega_1^2\omega_2^2 + 6\omega_1\omega_2^3 + 4v_3^2\omega_1^3 -$
$18c_s^2\omega_1^3\omega_2 - 3\omega_1v_1^2\omega_2^2 + 2v_1^2\omega_2^3$

$C_{47} = 72\omega_3^2\omega_4^2v_1^2\omega_2^3 - 108\omega_4^2\omega_1^3\omega_2^3 - 63\omega_3\omega_4^2\omega_1^3v_2^2\omega_2^3 - 108\omega_3^2\omega_4^2\omega_1v_1^2\omega_2^3 + 432\omega_3c_s^2\omega_4\omega_1^2\omega_2^3 - 36\omega_3^2v_3^2\omega_4\omega_1^3\omega_2^2 + 180\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^3 -$
$108\omega_3v_3^2\omega_4\omega_1^3\omega_2^3 - 108\omega_3\omega_4^2\omega_1^3\omega_2^2 + 216\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^2 - 180\omega_3^2\omega_4\omega_1^2v_2^2\omega_2^3 - 72\omega_3^2\omega_4\omega_1^2\omega_2^2 + 20\omega_3^2\omega_4^2\omega_1^3v_2^2\omega_2^2 + 24\omega_3^2\omega_4^2\omega_2^3 - 36\omega_3^2\omega_4^2\omega_1\omega_2^3 -$
$108\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_2 - 36\omega_3c_s^2\omega_4^2\omega_1\omega_2^3 + 72\omega_3\omega_4^2\omega_1^3v_2^2\omega_2^2 - 36\omega_3\omega_4\omega_1^2v_2^2\omega_2^3 + 72\omega_4^2\omega_1^3\omega_2^2 + 24\omega_3^2\omega_4^2\omega_1\omega_2^2 + 36\omega_3^2\omega_4\omega_1^2v_2^2\omega_2^2 + 144\omega_3^2\omega_4\omega_1^2\omega_2^2 +$
$336\omega_3^2c_s^2\omega_4^2\omega_1^3 + 48\omega_3^2v_3^2\omega_4^2\omega_2^3 - 432\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^3 + 63\omega_3\omega_4^2\omega_1^3\omega_2^2 + 36\omega_3v_3^2\omega_4\omega_1^3\omega_2^2 - 72\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^2 + 72\omega_3^2\omega_4\omega_1^3\omega_2^2 - 96\omega_3^2\omega_4^2v_2^2\omega_2^3 +$
$180\omega_3v_3^2\omega_4\omega_1^2\omega_2^3 - 216\omega_3^2c_s^2\omega_4\omega_1^3\omega_2^2 + 48\omega_3\omega_4^2\omega_1^2\omega_2^2 + 108\omega_3^2\omega_4^2\omega_1v_2^2\omega_2^3 + 144\omega_3^2\omega_4^2\omega_1^3v_1^2 - 36\omega_3^2v_3^2\omega_4^2\omega_1\omega_2^3 - 324\omega_3c_s^2\omega_4\omega_1^3\omega_2^2 +$
$36\omega_3^2v_3^2\omega_4\omega_1^2\omega_2^2 + 144\omega_4^2\omega_1^2\omega_2^3 - 24\omega_3\omega_4^2\omega_1^3v_2^2\omega_2 - 36\omega_4^2\omega_1^3v_2^2\omega_2^2 - 108\omega_3\omega_4^2\omega_1^2\omega_2^3 + 24\omega_3^2\omega_4^2\omega_1v_2^2\omega_2^2 + 12\omega_3v_3^2\omega_4^2\omega_1\omega_2^2 + 189\omega_3^2c_s^2\omega_4\omega_1^3\omega_2^3 +$
$48\omega_3\omega_4^2\omega_1^3\omega_2 - 54\omega_3^2\omega_1^3v_2^2\omega_2^3 - 72\omega_3^2\omega_4^2\omega_1^3v_2^2\omega_2 - 63\omega_3^2\omega_4\omega_1^3\omega_2^3 + 54\omega_4^2\omega_1^3v_2^2\omega_2^3 + 48\omega_3^2\omega_4^2\omega_1^3v_2^2 + 36\omega_3^2v_3^2\omega_4\omega_1^2\omega_2^3 + 216\omega_3c_s^2\omega_4\omega_1^3\omega_2^2 -$
$24\omega_3\omega_4^2\omega_1v_2^2\omega_2^3 - 48\omega_3^2v_3^2\omega_4^2\omega_1\omega_2^2 + 60\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2^2 - 20\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2^3 - 24\omega_3v_3^2\omega_4^2\omega_1^3\omega_2 - 36\omega_3^2\omega_4\omega_1^3v_2^2\omega_2^2 - 36v_3^2\omega_4^2\omega_1^3v_2^2 + 12\omega_3\omega_4^2\omega_1\omega_2^3 -$
$36\omega_3v_3^2\omega_4^2\omega_1^2\omega_2^3 - 20\omega_3^2\omega_4^2\omega_1^3\omega_2^2 - 216\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2 + 48\omega_3^2v_3^2\omega_4^2\omega_1^3 + 72\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2^2 - 120\omega_3^2c_s^2\omega_4^2\omega_2^3 - 60\omega_3\omega_4^2\omega_1^2v_2^2\omega_2^2 - 36\omega_3^2v_3^2\omega_4\omega_1\omega_2^3 -$

$189\omega_3c_s^2\omega_4^2\omega_1^3\omega_2^3 + 96\omega_3^2\omega_4^2\omega_1^2\omega_2 + 54v_3^2\omega_4^2\omega_1^3\omega_2^3 - 144\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2 + 12\omega_3v_3^2\omega_4^2\omega_1^2\omega_2^2 + 54\omega_3^2v_3^2\omega_1^3\omega_2^3 - 144\omega_3\omega_4\omega_1^2\omega_2^3 - 36\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2^2 +$
$63\omega_3^2\omega_4\omega_1^3v_2^2\omega_2^3 - 432c_s^2\omega_4^2\omega_1^2\omega_2^3 + 36\omega_3\omega_4\omega_1^3v_2^2\omega_2^2 - 36\omega_3^2v_3^2\omega_4^2\omega_1^3\omega_2 + 324\omega_3c_s^2\omega_4^2\omega_1^3\omega_2^2 + 144\omega_3\omega_4^2\omega_1^2v_2^2\omega_2^3 - 144\omega_3^2\omega_4^2\omega_1^3 - 144\omega_3c_s^2\omega_4^2\omega_1^3\omega_2 +$
$324\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^3 - 72\omega_4^2\omega_1^2v_2^2\omega_2^3 - 216c_s^2\omega_4^2\omega_1^3\omega_2^2 + 108\omega_3^2\omega_1^2v_2^2\omega_2^3 - 36\omega_3^2\omega_4\omega_1\omega_2^3 + 72\omega_3^2\omega_4\omega_1v_2^2\omega_2^3 - 108\omega_3^2\omega_4^2\omega_1^2\omega_2^2 - 72\omega_3\omega_4\omega_1^3\omega_2^2 +$
$180\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^2 + 108\omega_3^2c_s^2\omega_4\omega_1\omega_2^3 + 24\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2 + 216\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2^2 - 144\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^2 + 324c_s^2\omega_4^2\omega_1^3\omega_2^2 - 48\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2 +$
$36\omega_3v_3^2\omega_4^2\omega_1^3\omega_2^2 - 72v_3^2\omega_4^2\omega_1^2\omega_2^3 - 360\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2 - 60\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^3 - 108\omega_3^2v_3^2\omega_1^2\omega_2^3 + 108\omega_3\omega_4\omega_1^3\omega_2^3 + 20\omega_3^2\omega_4^2\omega_1^2\omega_2^3 + 144\omega_3^2\omega_4^2\omega_1^3\omega_2$

$C_{48} = -96\omega_3^2\omega_4^2v_1^2\omega_2^2 - 108\omega_4^2\omega_1^3\omega_2^3 + 108\omega_3^2\omega_4^2\omega_1v_1^2\omega_2^3 + 432\omega_3c_s^2\omega_4\omega_1^2\omega_2^3 - 36\omega_3^2v_3^2\omega_4\omega_1^3\omega_2^2 + 180\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^3 - 24\omega_3\omega_4^2\omega_1^3v_1^2\omega_2 -$
$108\omega_3v_3^2\omega_4\omega_1^3\omega_2^3 - 36\omega_4^2\omega_1^3v_1^2\omega_2^2 - 108\omega_3\omega_4^2\omega_1^3\omega_2^2 + 216\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^2 - 72\omega_3^2\omega_4\omega_1^2\omega_2^2 + 24\omega_3^2\omega_4^2\omega_2^3 - 36\omega_3^2\omega_4^2\omega_1\omega_2^3 - 72\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_2 -$
$36\omega_3c_s^2\omega_4^2\omega_1\omega_2^3 + 24\omega_3^2\omega_4^2\omega_1v_1^2\omega_2^2 + 72\omega_4^2\omega_1^3\omega_2^2 - 54\omega_3^2\omega_1^3v_2^2\omega_2^3 + 24\omega_3^2\omega_4^2\omega_1\omega_2^2 - 24\omega_3\omega_4^2\omega_1v_1^2\omega_2^3 + 144\omega_3^2\omega_4\omega_1^2\omega_2^3 + 336\omega_3^2c_s^2\omega_4^2\omega_1^3 +$
$48\omega_3^2v_3^2\omega_4^2\omega_2^3 - 432\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^3 + 63\omega_3\omega_4^2\omega_1^3\omega_2^3 + 54\omega_4^2\omega_1^3v_1^2\omega_2^3 + 36\omega_3v_3^2\omega_4\omega_1^3\omega_2^2 - 72\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^2 + 72\omega_3^2\omega_4\omega_1^3\omega_2^2 + 72\omega_3^2\omega_4^2v_2^2\omega_2^3 +$
$180\omega_3v_3^2\omega_4\omega_1^2\omega_2^3 - 216\omega_3^2c_s^2\omega_4\omega_1^3\omega_2^2 + 48\omega_3\omega_4^2\omega_1^2\omega_2^2 - 108\omega_3^2\omega_4^2\omega_1v_2^2\omega_2^3 - 63\omega_3\omega_4^2\omega_1^3v_1^2\omega_2^3 + 20\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_2^2 + 48\omega_3^2\omega_4^2\omega_1^3v_1^2 -$
$36\omega_3^2v_3^2\omega_4^2\omega_1\omega_2^3 - 324\omega_3c_s^2\omega_4\omega_1^3\omega_2^3 - 180\omega_3\omega_4\omega_1^2v_1^2\omega_2^3 + 36\omega_3^2v_3^2\omega_4\omega_1^2\omega_2^2 + 144\omega_4^2\omega_1^2\omega_2^3 - 108\omega_3\omega_4^2\omega_1^2\omega_2^3 + 12\omega_3v_3^2\omega_4^2\omega_1\omega_2^3 + 189\omega_3^2c_s^2\omega_4\omega_1^3\omega_2^3 -$
$36\omega_3\omega_4\omega_1^2v_1^2\omega_2^3 + 72\omega_3\omega_4^2\omega_1^3v_1^2\omega_2^2 + 48\omega_3\omega_4^2\omega_1^3\omega_2 - 108\omega_3^2\omega_4^2\omega_1^3v_2^2\omega_2 - 63\omega_3^2\omega_4\omega_1^3\omega_2^3 + 144\omega_3^2\omega_4^2\omega_1^3v_2^2 + 36\omega_3^2v_3^2\omega_4\omega_1^2\omega_2^3 + 36\omega_3^2\omega_4\omega_1^2v_1^2\omega_2^2 +$
$216\omega_3c_s^2\omega_4\omega_1^3\omega_2^2 - 48\omega_3^2v_3^2\omega_4^2\omega_1\omega_2^2 + 60\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2^2 - 24\omega_3v_3^2\omega_4^2\omega_1^3\omega_2 - 36v_3^2\omega_4^2\omega_1^3\omega_2^2 + 12\omega_3\omega_4^2\omega_1\omega_2^3 - 36\omega_3v_3^2\omega_4^2\omega_1^2\omega_2^3 - 72\omega_4^2\omega_1^2v_1^2\omega_2^3 -$
$20\omega_3^2\omega_4^2\omega_1^3\omega_2^2 + 24\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2 + 48\omega_3^2v_3^2\omega_4^2\omega_1^3 + 72\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2^2 - 120\omega_3^2c_s^2\omega_4^2\omega_2^3 + 108\omega_3^2\omega_1^2v_1^2\omega_2^3 - 36\omega_3^2v_3^2\omega_4\omega_1\omega_2^3 + 72\omega_3^2\omega_4\omega_1v_1^2\omega_2^3 -$
$189\omega_3c_s^2\omega_4^2\omega_1^3\omega_2^3 + 96\omega_3^2\omega_4^2\omega_1^2\omega_2 + 54v_3^2\omega_4^2\omega_1^3\omega_2^3 - 144\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2 + 12\omega_3v_3^2\omega_4^2\omega_1^2\omega_2^2 + 54\omega_3^2v_3^2\omega_1^3\omega_2^3 - 144\omega_3\omega_4\omega_1^2\omega_2^3 + 216\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2^2 -$
$432c_s^2\omega_4^2\omega_1^2\omega_2^3 - 36\omega_3^2v_3^2\omega_4^2\omega_1^3\omega_2 + 324\omega_3c_s^2\omega_4^2\omega_1^3\omega_2^2 - 144\omega_4^2\omega_1^3 - 144\omega_3c_s^2\omega_4^2\omega_1^3\omega_2 + 324\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^3 - 216c_s^2\omega_4^2\omega_1^3\omega_2^2 - 36\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_2^2 -$
$20\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2^3 - 36\omega_3^2\omega_4\omega_1\omega_2^3 - 108\omega_3^2\omega_4^2\omega_1^2\omega_2^2 - 60\omega_3\omega_4^2\omega_1^2v_1^2\omega_2^2 - 72\omega_3\omega_4\omega_1^3\omega_2^2 + 180\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^2 + 108\omega_3^2c_s^2\omega_4\omega_1\omega_2^2 - 216\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2 +$
$63\omega_3^2\omega_4\omega_1^3v_1^2\omega_2^3 - 36\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2^2 - 144\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^2 + 324c_s^2\omega_4^2\omega_1^3\omega_2^3 - 48\omega_3^2v_3^2\omega_1^2\omega_2 + 36\omega_3v_3^2\omega_4^2\omega_1^3\omega_2^2 - 72v_3^2\omega_4^2\omega_1^2\omega_2^3 -$
$360\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2 - 60\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^3 - 108\omega_3^2v_3^2\omega_1^2\omega_2^3 + 108\omega_3\omega_4\omega_1^3\omega_2^3 + 144\omega_3\omega_4^2\omega_1^2v_1^2\omega_2^3 + 20\omega_3^2\omega_4^2\omega_1^2\omega_2^3 + 36\omega_3\omega_4\omega_1^3v_1^2\omega_2^2 + 144\omega_3^2\omega_4^2\omega_1^3\omega_2$

$C_{49} =$
$-3\omega_3^2\omega_1^3v_1^2\omega_2^2 - 3\omega_3\omega_1^2v_1^2\omega_2^3 + \omega_3\omega_4\omega_1^2v_2^2\omega_2^2 - 18\omega_3c_s^2\omega_4\omega_1^2\omega_2^3 - 18c_s^2\omega_4\omega_1^3\omega_2^2 - 12\omega_3c_s^2\omega_4\omega_1^3\omega_2 - 4\omega_3^2\omega_4\omega_1^2v_1^2\omega_2 + 3\omega_4\omega_1^2v_1^2\omega_2^3 + 36\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^2 -$
$12\omega_3^2\omega_4\omega_1^2\omega_2^2 - 3\omega_3^2\omega_1v_2^2\omega_2^3 + 6\omega_3\omega_1^2\omega_2^3 - 18\omega_3^2c_s^2\omega_1^3\omega_2^2 + 6\omega_3c_s^2\omega_4\omega_1^2\omega_2^2 - 36\omega_3^2v_3^2\omega_4\omega_1^2\omega_2 - 3\omega_3\omega_4\omega_1^2v_2^2\omega_2^3 + 6\omega_3^2\omega_4\omega_1^3\omega_2 + 6\omega_3^2\omega_4\omega_1^2v_2^2\omega_2^2 +$
$6\omega_3^2\omega_1\omega_2^3 - 18\omega_3^2c_s^2\omega_4\omega_1^3\omega_2 - 4\omega_3^2\omega_4\omega_1^2v_2^2\omega_2 - 3\omega_3\omega_1^2v_2^2\omega_2^3 - 2\omega_3\omega_4\omega_1\omega_2^3 - 3\omega_3^2\omega_1^3v_2^2\omega_2^2 + \omega_3\omega_4\omega_1^2v_1^2\omega_2^2 + 18\omega_3^2c_s^2\omega_1^2\omega_2^3 - 3\omega_3^2\omega_1v_1^2\omega_2^3 - 12\omega_3^2\omega_4\omega_1^3 +$
$3\omega_4\omega_1^2v_2^2\omega_2^3 - 3\omega_3\omega_4\omega_1^2v_1^2\omega_2^3 - 36\omega_3^2c_s^2\omega_4\omega_1^2\omega_2 + 20\omega_3^2\omega_4\omega_1^2\omega_2 - 6\omega_3\omega_1^3\omega_2^2 + 18\omega_3^2c_s^2\omega_1^2\omega_2^2 + 20\omega_3^2c_s^2\omega_4\omega_2^3 + 18c_s^2\omega_4\omega_1^2\omega_2^3 + 12\omega_3^2v_3^2\omega_4\omega_1^3 +$
$6\omega_3^2\omega_4\omega_1^2v_1^2\omega_2^2 + 18\omega_3c_s^2\omega_4\omega_1^3\omega_2^2 - 2\omega_3\omega_4\omega_1^2\omega_2^2 + 4\omega_3^2\omega_4v_2^2\omega_2^2 - 2\omega_3\omega_4\omega_1^3v_1^2\omega_2 - 3\omega_4\omega_1^3v_1^2\omega_2^2 - 6\omega_4\omega_1^2\omega_2^3 + 3\omega_3\omega_1^3v_1^2\omega_2^2 + 3\omega_3^2\omega_1^2v_1^2\omega_2^2 + 4\omega_3^2\omega_4\omega_1^3v_1^2 -$
$3\omega_3^2\omega_4\omega_1v_1^2\omega_2^2 + 6\omega_3^2\omega_1^3\omega_2^2 + 4\omega_3\omega_4\omega_1^3\omega_2 + 6\omega_3\omega_4\omega_1^2\omega_2^2 + \omega_3\omega_4\omega_1v_1^2\omega_2^3 - 18\omega_3^2c_s^2\omega_1\omega_2^3 + 3\omega_3\omega_4\omega_1^3v_2^2\omega_2^2 - 4\omega_3^2\omega_4\omega_1v_1^2\omega_2^2 + 36\omega_3^2v_3^2\omega_4\omega_1\omega_2^2 +$
$3\omega_3^2\omega_1^2v_1^2\omega_2^2 + 4\omega_3^2\omega_4\omega_1^3v_2^2 + 18\omega_3c_s^2\omega_1^3\omega_2^2 - 3\omega_3^2\omega_4\omega_1^3v_1^2\omega_2 - 2\omega_3\omega_4\omega_1^3v_2^2\omega_2 - 3\omega_4\omega_1^3v_2^2\omega_2^2 + 4\omega_3^2\omega_4v_1^2\omega_2^3 - 18\omega_3c_s^2\omega_1^2\omega_2^3 + 3\omega_3^2\omega_1^2v_2^2\omega_2^3 - 6\omega_3^2\omega_1^2\omega_2^3 +$
$3\omega_3\omega_1^3v_2^2\omega_2^2 + 6\omega_3^2\omega_4\omega_1\omega_2^3 - 3\omega_3^2\omega_4\omega_1v_2^2\omega_2^3 - 6\omega_3\omega_4\omega_1^3\omega_2^2 - 12\omega_3^2v_3^2\omega_4\omega_2^3 - 18\omega_3^2c_s^2\omega_4\omega_1\omega_2^3 + 28\omega_3^2c_s^2\omega_4\omega_1^3 + 6\omega_4\omega_1^3\omega_2^2 + \omega_3\omega_4\omega_1v_2^2\omega_2^3 +$
$6\omega_3c_s^2\omega_4\omega_1\omega_2^3 - 3\omega_3^2\omega_4\omega_1^3v_2^2\omega_2 - 12\omega_3^2c_s^2\omega_4\omega_1\omega_2^2 - 4\omega_3^2\omega_4\omega_1v_2^2\omega_2^2 - 4\omega_3^2\omega_4\omega_2^3 + 3\omega_3\omega_4\omega_1^3v_1^2\omega_2^2 - 6\omega_3^2\omega_1^2\omega_2^2 + 3\omega_3^2\omega_1^2v_2^2\omega_2^2 - 4\omega_3^2\omega_4\omega_1\omega_2^2$

$C_{50} = 138\omega_3^2c_s^2\omega_4^2\omega_1^3v_2^2\omega_2^2 + 36\omega_3^2v_3^2\omega_4^2v_2^2\omega_2^3 + 35\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^2 - 18\omega_3^2c_s^2\omega_1^3\omega_2^3 - 36\omega_3^2\omega_4^2\omega_1^2v_4^2\omega_2^2 - 58\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^3 - 108\omega_3^2c_s^4\omega_1^2\omega_2^3 -$
$27\omega_3c_s^4\omega_4^2\omega_1^3\omega_2^3 - 27\omega_3^2\omega_4^2\omega_1^3v_2^2\omega_2^2 + 4\omega_3^2\omega_4^2\omega_2^3 - 4\omega_3^2\omega_4^2\omega_1\omega_2^3 + 28\omega_3c_s^2\omega_4^2\omega_1\omega_2^3 - 27\omega_3^2\omega_4^2\omega_1^2v_2^4\omega_2^3 - 24c_s^2v_3^2\omega_4^2\omega_1^2\omega_2^3 + 15\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^3 -$
$28\omega_3c_s^2v_3^2\omega_4^2\omega_1\omega_2^3 - 4\omega_3^2\omega_4^2\omega_1\omega_2^2 + 16\omega_3^2c_s^2v_3^2\omega_4^2\omega_2^3 + 60\omega_3^2v_3^2\omega_4^2\omega_1^2v_2^2\omega_2^2 - 52\omega_3^2c_s^2\omega_4^2\omega_1^3 + 24\omega_3^2v_3^2\omega_4^2\omega_1^3v_2^2 - 72c_s^4\omega_4^2\omega_1^2\omega_2^3 - 4\omega_3^2v_3^2\omega_4^2\omega_2^3 -$
$36\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^3 + 28\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^2 - 9\omega_3^2c_s^2v_3^2\omega_4\omega_1^3\omega_2^3 - 216\omega_3^2c_s^2\omega_4^2v_2^2\omega_2^3 - 12\omega_3^2v_3^2\omega_4^2\omega_1^2v_2^2\omega_2 + 54\omega_3^2c_s^4\omega_1^3\omega_2^3 + 24\omega_3^2\omega_4^2v_2^2\omega_2^3 - 12\omega_3c_s^4\omega_4^2\omega_1^3\omega_2 +$
$4\omega_3^2c_s^2v_3^2\omega_4^2\omega_1\omega_2^3 - 36c_s^4\omega_4^2\omega_1^3\omega_2^2 - 42\omega_3^2\omega_4^2\omega_1v_2^2\omega_2^3 + 108\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^3 + 24\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^2 + 4\omega_3^2v_3^2\omega_4^2\omega_1\omega_2^3 - 12c_s^2v_3^2\omega_4^2\omega_1^3\omega_2^2 + 324\omega_3^2c_s^2\omega_4^2\omega_1v_2^2\omega_2^3 +$
$36\omega_3^2c_s^2\omega_1^2\omega_2^3 + 12\omega_3^2\omega_4^2\omega_1v_2^2\omega_2^2 + 54c_s^4\omega_4^2\omega_1^3\omega_2^3 + 9\omega_3^2c_s^2\omega_4\omega_1^3\omega_2^3 - 28\omega_3^2c_s^2v_3^2\omega_4^2\omega_1\omega_2^2 + 96\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^2 + 36\omega_3^2c_s^2v_3^2\omega_4\omega_1^2\omega_2^3 + 66\omega_3^2\omega_4^2\omega_1^3v_2^2\omega_2 -$
$48\omega_3^2\omega_4^2\omega_1^3v_2^2 - 324\omega_3^2c_s^2\omega_4^2\omega_1^3v_2^2\omega_2 - 102\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2 + 216\omega_3^2c_s^2\omega_4^2\omega_1^3v_2^2 + 72\omega_3^2c_s^4\omega_4^2\omega_1^3 - 119\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^3 + 18c_s^2v_3^2\omega_4^2\omega_1^3\omega_2^3 + 4\omega_3^2v_3^2\omega_4^2\omega_1\omega_2^2 -$
$25\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2^2 + 27\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2^3 + 16\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^2\omega_2^2 - 9\omega_3c_s^2v_3^2\omega_4^2\omega_1^3\omega_2^3 + 16\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^3 - 4\omega_3^2v_3^2\omega_4^2\omega_1^3 - 8\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2^2 + 78\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^3 +$
$20\omega_3^2c_s^2\omega_4^2\omega_2^3 - 138\omega_3^2c_s^2\omega_4^2\omega_1^2v_2^2\omega_2^3 + 9\omega_3c_s^2\omega_4^2\omega_1^3\omega_2^3 + 18\omega_3^2c_s^2v_3^2\omega_1^3\omega_2^3 + 24\omega_3^2\omega_4^2\omega_1^3v_2^4 - 4\omega_3^2\omega_4^2\omega_1^2\omega_2 + 4\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2 - 84\omega_3c_s^4\omega_4^2\omega_1\omega_2^3 -$
$32\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^2\omega_2^3 - 24\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2^2 - 3\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2^3 - 20\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^3\omega_2 + 24c_s^2\omega_4^2\omega_1^2\omega_2^3 + 108\omega_3^2c_s^4\omega_4\omega_1^2\omega_2^3 + 4\omega_3^2v_3^2\omega_4^2\omega_1^3\omega_2 -$
$72\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^2 + 27\omega_3^2\omega_4^2\omega_1^3v_2^4\omega_2^2 + 4\omega_3^2\omega_4^2\omega_1^3 + 4\omega_3c_s^2\omega_4^2\omega_1^3\omega_2 + 36\omega_3^2\omega_4^2\omega_1v_2^4\omega_2^2 - 36\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^3 + 12c_s^2\omega_4^2\omega_1^3\omega_2^2 - 4\omega_3c_s^2v_3^2\omega_4^2\omega_1^3\omega_2 -$
$36\omega_3^2\omega_4^2\omega_1^3v_2^4\omega_2 + 36\omega_3c_s^2v_3^2\omega_4^2\omega_1^2\omega_2^3 + 8\omega_3^2\omega_4^2\omega_1^2\omega_2^2 - 30\omega_3^2v_3^2\omega_4^2\omega_1v_2^2\omega_2^3 - 16\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^2 + 8\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^3\omega_2^2 + 12\omega_3^2\omega_4^2\omega_1^2v_2^2\omega_2 +$
$32\omega_3c_s^2v_3^2\omega_4^2\omega_1^2\omega_2^2 - 60\omega_3^2\omega_4^2v_2^4\omega_2^3 - 32\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^2 - 18c_s^2\omega_4^2\omega_1^3\omega_2^3 + 4\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2 - 27\omega_3^2c_s^4\omega_4\omega_1^3\omega_2^3 + 72\omega_3^2\omega_4^2\omega_1v_2^4\omega_2^3 + 3\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^3\omega_2^3 +$
$74\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2 - 30\omega_3^2v_3^2\omega_4^2\omega_1^3v_2^2\omega_2 - 4\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^2\omega_2 + 49\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^3 - 36\omega_3^2c_s^2v_3^2\omega_1^2\omega_2^3 - 48\omega_3^2v_3^2\omega_4^2\omega_1v_2^2\omega_2^2 - 4\omega_3^2\omega_4^2\omega_1^3\omega_2$

$C_{51} = 6\omega_1^3\omega_2 - 66\omega_3c_s^2\omega_2^3 - 18c_s^2\omega_1\omega_2^3 + 6\omega_3\omega_1^2v_2^2\omega_2 + 48\omega_3\omega_1^3\omega_2 + 23\omega_3\omega_1^2\omega_2^3 + 108\omega_3c_s^2\omega_1\omega_2^3 - 12\omega_1^2\omega_2^2 + 12\omega_3\omega_1^2\omega_2^2 - 12\omega_3v_3^2\omega_1^2\omega_2 +$
$6\omega_3\omega_1^2\omega_2 + 18\omega_3v_3^2\omega_1^2\omega_2^2 - 50\omega_3\omega_1^2v_2^2\omega_2^3 - 6v_3^2\omega_1^3\omega_2 + 12\omega_3v_3^2\omega_2^3 - 66\omega_3\omega_1^2v_2^2\omega_2^2 - 9\omega_3v_3^2\omega_1^3\omega_2 - 23\omega_3\omega_1^3\omega_2^2 + 42\omega_3\omega_2^3 + 12v_3^2\omega_1^2\omega_2^2 +$
$141\omega_3\omega_1v_2^2\omega_2^3 - 9\omega_3v_3^2\omega_1\omega_2^3 + 48\omega_3\omega_1^3v_2^2 - 18\omega_3c_s^2\omega_1^2\omega_2 - 75\omega_3\omega_1^3v_2^2\omega_2 - 12\omega_3v_3^2\omega_1\omega_2^2 + 84\omega_3c_s^2\omega_1^3 + 60\omega_3\omega_1v_2^2\omega_2^2 - 114\omega_3v_2^2\omega_2^3 - 6v_3^2\omega_1\omega_2^3 +$
$42\omega_3c_s^2\omega_1^3\omega_2^2 - 108\omega_3c_s^2\omega_1^3\omega_2 - 36\omega_3\omega_1^3 - 42\omega_3c_s^2\omega_1^2\omega_2^3 + 50\omega_3\omega_1^3v_2^2\omega_2^2 - 12\omega_3\omega_1\omega_2^2 + 36c_s^2\omega_1^2\omega_2^2 + 6\omega_1\omega_2^3 - 18c_s^2\omega_1^3\omega_2 + 12\omega_3v_3^2\omega_1^3 - 60\omega_3\omega_1\omega_2^3$

$C_{52} =$
$-126\omega_3c_s^2v_3^2\omega_4\omega_1^2\omega_2^3 - 30\omega_3^2c_s^2\omega_4\omega_1^2v_2^2\omega_2^3 + 24\omega_3c_s^2v_3^2\omega_4\omega_1^3\omega_2 - 6\omega_3\omega_4\omega_1^2v_2^2\omega_2^2 + 36\omega_3c_s^2\omega_4\omega_1^2\omega_2^3 - 18\omega_3^2c_s^2\omega_1^3\omega_2^3 - 8\omega_3c_s^2\omega_4\omega_1^3\omega_2 - \omega_3^2v_3^2\omega_4\omega_1^3\omega_2^2 +$
$6\omega_3^2c_s^2v_3^2\omega_4\omega_1^3\omega_2^2 - 54c_s^2\omega_4\omega_1^3v_2^2\omega_2^2 + 54\omega_3^2c_s^2\omega_1v_2^2\omega_2^3 + 36\omega_3\omega_4\omega_1^3v_2^4\omega_2^2 - 72\omega_3^2c_s^4\omega_1^2\omega_2^3 - 36\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^2 + 9\omega_3^2\omega_4\omega_1^2v_2^2\omega_2^3 + 8\omega_3^2\omega_4\omega_1^2\omega_2^2 -$
$18\omega_3^2\omega_1v_2^2\omega_2^3 + 216\omega_3^2c_s^2v_3^2\omega_1\omega_2^3 + 9\omega_3^2\omega_4\omega_1^3v_2^4\omega_2^2 - 48\omega_3^2\omega_4v_2^4\omega_2^3 - 56\omega_3c_s^2\omega_4\omega_1^2\omega_2^2 + 12\omega_3^2v_3^2\omega_4\omega_1^2\omega_2 + 36\omega_3\omega_4\omega_1^2v_2^2\omega_2^3 + 24\omega_3^2c_s^2\omega_4\omega_1^2v_2^2\omega_2^2 +$
$132\omega_3c_s^2v_3^2\omega_4\omega_1^2\omega_2^2 - 4\omega_3^2\omega_4\omega_1^3\omega_2 - 42\omega_3^2\omega_4\omega_1^2v_2^2\omega_2^2 - 48\omega_3^2c_s^2v_3^2\omega_4\omega_1^2\omega_2 - 68\omega_3^2c_s^4\omega_4\omega_2^3 + 2\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^3 + 18\omega_3^2c_s^2\omega_4\omega_1^3\omega_2 + 6\omega_3\omega_4\omega_1v_2^4\omega_2^3 +$
$54\omega_3^2c_s^2\omega_1^3v_2^2\omega_2^2 + 18\omega_3^2c_s^4\omega_1^3\omega_2^3 - 18\omega_3\omega_1^2v_2^2\omega_2^3 + 66\omega_3^2c_s^2v_3^2\omega_4\omega_1^2\omega_2^2 - 18\omega_3^2\omega_1^3v_2^2\omega_2^2 - 2\omega_3^2c_s^2\omega_4\omega_1^3\omega_2^2 + 54\omega_3c_s^2\omega_4\omega_1^2v_2^2\omega_2^2 - 90\omega_3^2v_3^2\omega_4\omega_1v_2^2\omega_2^3 -$
$36\omega_3^2\omega_4\omega_1^3v_2^4\omega_2 - 18\omega_3c_s^2\omega_4\omega_1^3\omega_2^3 - 24\omega_3^2v_3^2\omega_4\omega_1^2\omega_2^2 + 72\omega_3^2c_s^2\omega_1^2\omega_2^3 + 76\omega_3^2c_s^4\omega_4\omega_1\omega_2^3 + 54\omega_3c_s^2v_3^2\omega_4\omega_1^3\omega_2^2 + 4\omega_3^2\omega_4\omega_1^3 - 12\omega_3^2c_s^2\omega_4\omega_1^2v_2^2\omega_2 +$
$12\omega_3^2\omega_4\omega_1v_2^4\omega_2^2 - 18\omega_4\omega_1^2v_2^2\omega_2^3 - 18\omega_3^2\omega_1^2v_2^4\omega_2^2 - 12\omega_3\omega_4\omega_1^3v_2^4\omega_2 - 6\omega_3^2c_s^2v_3^2\omega_4\omega_1^3\omega_2 - 144\omega_3^2v_3^2\omega_4\omega_1v_2^2\omega_2^2 - 90\omega_3c_s^2\omega_4\omega_1^2v_2^2\omega_2^3 + 32\omega_3^2c_s^2\omega_4\omega_1^2\omega_2 +$
$8\omega_3c_s^4\omega_4\omega_1\omega_2^3 - 6\omega_3^2c_s^2v_3^2\omega_4\omega_1^2\omega_2^3 - 18\omega_4\omega_1^3v_2^4\omega_2^2 + 24\omega_3^2\omega_4\omega_1^3v_2^4 - 90\omega_3^2v_3^2\omega_4\omega_1^3v_2^2\omega_2 - 4\omega_3^2\omega_4\omega_1^2\omega_2 - 18\omega_3\omega_1^3v_2^4\omega_2^2 + 12\omega_3^2c_s^2v_3^2\omega_4\omega_1^3 -$
$18\omega_3^2\omega_1^2v_2^4\omega_2^3 - 90\omega_3c_s^2v_3^2\omega_4\omega_1^3\omega_2^2 - 54\omega_3c_s^2\omega_1^3v_2^2\omega_2^2 + 54\omega_3^2\omega_4\omega_1v_2^4\omega_2^3 + \omega_3^2v_3^2\omega_4\omega_1^2\omega_2^3 - 28\omega_3^2c_s^4\omega_4\omega_1\omega_2^2 + 28\omega_3^2c_s^2\omega_4\omega_2^3 + 12\omega_3^2v_3^2\omega_4\omega_1^3\omega_2 -$
$12\omega_3^2v_3^2\omega_4\omega_1^3 + 36\omega_3c_s^2\omega_4\omega_1^3\omega_2^2 + 48\omega_3^2c_s^2v_3^2\omega_4\omega_1\omega_2^3 - 36\omega_3c_s^4\omega_4\omega_1^2\omega_2^3 - 9\omega_3^2\omega_4\omega_1^3v_2^2\omega_2^2 + \omega_3^2v_3^2\omega_4\omega_1^3\omega_2^2 + 12\omega_3^2\omega_4v_2^2\omega_2^3 + 8\omega_3c_s^4\omega_4\omega_1^3\omega_2 -$
$36\omega_3\omega_4\omega_1^2v_2^4\omega_2^3 + 54c_s^2\omega_4\omega_1^2v_2^2\omega_2^3 - 108\omega_3^2c_s^2\omega_4v_2^2\omega_2^3 - 36\omega_3c_s^2\omega_4\omega_1^3v_2^2\omega_2 - 18\omega_3^2\omega_4\omega_1^2v_2^4\omega_2^2 + 16\omega_3^2c_s^4\omega_4\omega_1^3 + 28\omega_3^2c_s^4\omega_4\omega_1^2\omega_2^2 + 30\omega_3^2c_s^2\omega_4\omega_1^3v_2^2\omega_2^2 +$
$12\omega_3^2v_3^2\omega_4\omega_1\omega_2^3 + 54\omega_3^2c_s^2v_3^2\omega_1^3\omega_2^3 + 6\omega_3\omega_4\omega_1^2v_2^4\omega_2^2 - 84\omega_3^2c_s^2v_3^2\omega_4\omega_1\omega_2^2 + 56\omega_3c_s^4\omega_4\omega_1^2\omega_2^2 - 18\omega_3c_s^2\omega_4\omega_1v_2^2\omega_2^3 + 180\omega_3^2v_3^2\omega_4\omega_1^2v_2^2\omega_2^2 - 72\omega_3^2c_s^2\omega_1\omega_2^3 -$

$$36\omega_3\omega_4\omega_3^1v_2^2\omega_2^2 - 14\omega_3^2c_s^4\omega_4\omega_1^2\omega_2^3 + 12\omega_3^2v_3^2\omega_4\omega_1\omega_2^2 - 14\omega_3^2c_s^4\omega_4\omega_3^1\omega_2 + 132\omega_3^2c_s^2\omega_4\omega_3^1v_2^2 - 48\omega_3^2\omega_4\omega_3^1v_2^2 - 9\omega_3^2\omega_4\omega_1^2v_2^4\omega_2^3 + 18\omega_3^2\omega_1v_2^4\omega_2^3 +$$
$$12\omega_3\omega_4\omega_1^3v_2^2\omega_2 + 18\omega_4\omega_1^3v_2^2\omega_2^2 + 2\omega_3^2c_s^4\omega_4\omega_1^3\omega_2^2 + 150\omega_3^2c_s^2\omega_4\omega_1v_2^2\omega_2^3 + 108\omega_3^2v_3^2\omega_4v_2^2\omega_2^3 + 18\omega_3^2\omega_1^2v_2^2\omega_2^3 + 18\omega_3\omega_1^2v_2^2\omega_2^2 - 96\omega_3^2c_s^2v_3^2\omega_4\omega_2^3 -$$
$$4\omega_3^2\omega_4\omega_1\omega_2^3 - 24\omega_3^2\omega_4\omega_1v_2^2\omega_2^3 + 18\omega_3c_s^4\omega_4\omega_1^3\omega_2^3 - 12\omega_3^2v_3^2\omega_4\omega_2^3 - 36\omega_3^2v_3^2\omega_4\omega_1^2v_2^2\omega_2 - 18\omega_3^2c_s^2\omega_4\omega_1\omega_2^3 - 20\omega_3^2c_s^2\omega_4\omega_1^3 - 54\omega_3^2c_s^2\omega_1^2v_2^2\omega_2^3 +$$
$$12\omega_3^2\omega_4\omega_1^2v_2^4\omega_2 + 60\omega_3c_s^2v_3^2\omega_4\omega_1\omega_2^3 - 6\omega_3\omega_4\omega_1v_2^2\omega_2^3 - 12\omega_3^2c_s^2\omega_4\omega_1v_2^2\omega_2^2 + 18\omega_3^2\omega_1^3v_2^4\omega_2^2 - 3\omega_3^2c_s^4\omega_4\omega_1^3\omega_2^3 + 18\omega_3\omega_1^2v_2^4\omega_2^3 + 54\omega_3c_s^2\omega_1^2v_2^2\omega_2^3 -$$
$$174\omega_3^2c_s^2\omega_4\omega_1^3v_2^2\omega_2 - 8\omega_3c_s^2\omega_4\omega_1\omega_2^3 - 28\omega_3^2c_s^4\omega_4\omega_1^2\omega_2 + 66\omega_3^2\omega_4\omega_1^3v_2^2\omega_2 + 32\omega_3^2c_s^2\omega_4\omega_1\omega_2^2 - 54\omega_3^2c_s^2\omega_1^2v_2^2\omega_2^2 - \omega_3^2v_3^4\omega_4\omega_1^2\omega_2^3 - 36\omega_3c_s^4\omega_4\omega_1^3\omega_2^2 +$$
$$72\omega_3^2c_s^4\omega_1\omega_2^3 + 72\omega_3^2v_3^2\omega_4\omega_1^3v_2^2 - 216\omega_3^2c_s^2v_3^2\omega_1^2\omega_2^3 + 90\omega_3c_s^2\omega_4\omega_1^3v_2^2\omega_2^2 + 36\omega_3^2\omega_4\omega_1v_2^2\omega_2^2 + 4\omega_3^2\omega_4\omega_2^3 + 18\omega_3^2\omega_1^2v_2^2\omega_2^2 + 18\omega_4\omega_1^2v_2^4\omega_2^3 - 4\omega_3^2\omega_4\omega_1\omega_2^2$$

$$C_{53} = -\omega_3^2\omega_1^3v_1^2\omega_2^2 + 40\omega_3^2c_s^2\omega_1^2\omega_2 - 72\omega_3^2v_3^2v_1^2\omega_2^3 + 2\omega_3^2c_s^2\omega_1^3v_1^2\omega_2^2 - 60\omega_3^2v_3^2\omega_1\omega_2^3 - 6\omega_3^2c_s^4\omega_1^2\omega_2^3 - 84\omega_3^2c_s^4\omega_1^3\omega_2 + 96\omega_3^2v_3^2\omega_1v_1^2\omega_2^3 + 8\omega_3^2\omega_1\omega_2^2 +$$
$$108\omega_3^2c_s^2v_3^2\omega_1\omega_2^3 - 5\omega_3^2c_s^2\omega_1^3\omega_2^2 - 8\omega_3c_s^2\omega_1\omega_2^3 + 8\omega_3^2v_1^2\omega_2^3 + 4\omega_3^2\omega_1^3 - 216\omega_3^2c_s^2v_3^2\omega_1\omega_2^2 + 24\omega_3^2v_3^2\omega_1v_1^2\omega_2^2 + 8\omega_3^2\omega_1\omega_2^3 + 48\omega_3^2v_3^4\omega_2^3 - 48\omega_3^2v_3^2\omega_1^3 +$$
$$48\omega_3^2v_3^2\omega_1\omega_2^2 + 18\omega_3c_s^2\omega_1^3v_1^2\omega_2^2 + 42\omega_3^2c_s^4\omega_1^2\omega_2^2 - 48\omega_3^2v_3^2\omega_1^3v_1^2\omega_2 - 12c_s^2\omega_1^3v_1^2\omega_2^2 - 36\omega_3^2c_s^4\omega_1^2\omega_2 + 24\omega_3^2v_3^2\omega_1^3v_1^2\omega_2^2 - 4\omega_3c_s^2\omega_1^3v_1^2\omega_2 + 56\omega_3^2c_s^2\omega_1^3\omega_2 -$$
$$36\omega_3^2v_3^4\omega_1\omega_2^3 + 5\omega_3^2c_s^2\omega_1^2\omega_2^3 - 8\omega_3^2\omega_1v_1^2\omega_2^3 + 22\omega_3^2c_s^2\omega_1v_1^2\omega_2^3 + 24\omega_3^2v_3^2\omega_1^3v_1^2 + 6\omega_3^2c_s^4\omega_1^3\omega_2^2 - 52\omega_3^2c_s^2\omega_1^3 - 36\omega_3^2c_s^4\omega_2^3 + 8\omega_3c_s^2\omega_1v_1^2\omega_2^3 + 24\omega_3c_s^4\omega_1\omega_2^3 +$$
$$4\omega_3^2\omega_1^3v_1^2\omega_2 + 8\omega_3^2c_s^2\omega_1v_1^2\omega_2^2 - 4\omega_3^2\omega_1^3v_1^2 - 72\omega_3^2v_3^4\omega_1\omega_2^2 - 8\omega_3^2\omega_1v_1^2\omega_2^2 - 34\omega_3^2c_s^2\omega_1^2\omega_2^2 - 20\omega_3^2c_s^2\omega_1^3v_1^2\omega_2 - 24\omega_3^2v_3^2\omega_1^3\omega_2^2 + 12c_s^2\omega_1^3\omega_2^2 +$$
$$24\omega_3^2v_3^2\omega_1^2v_1^2\omega_2 - 8\omega_3^2\omega_2^3 - 54\omega_3c_s^4\omega_1^2\omega_2^3 - 4\omega_3c_s^2\omega_1^2v_1^2\omega_2^2 + 72\omega_3^2c_s^2v_3^2\omega_1^3\omega_2^2 - 4\omega_3^2\omega_1^2\omega_2 - 12\omega_3c_s^4\omega_1^3\omega_2 - 2\omega_3^2c_s^2\omega_1^2v_1^2\omega_2^3 + 24\omega_3^2v_3^4\omega_1^3 + 24\omega_3^2v_3^2\omega_2^3 +$$
$$\omega_3^2\omega_1^2v_1^2\omega_2^3 - 8\omega_3^2c_s^2\omega_1\omega_2^2 + 72\omega_3^2v_3^4\omega_1^2\omega_2^2 - 18\omega_3c_s^2\omega_1^2v_1^2\omega_2^3 - 12\omega_3c_s^4\omega_1^2\omega_2^2 + \omega_3^2\omega_1^3\omega_2^2 - 24\omega_3^2v_3^2\omega_1^2\omega_2 - 20\omega_3^2c_s^2v_1^2\omega_2^3 + 36c_s^4\omega_1^2\omega_2^3 - 22\omega_3^2c_s^2\omega_1\omega_2^3 +$$
$$4\omega_3^2\omega_1^2v_1^2\omega_2^2 - 36\omega_3^2v_3^4\omega_1^3\omega_2 - 2\omega_3^2c_s^2\omega_1^2v_1^2\omega_2^2 - 18\omega_3c_s^2\omega_1^3\omega_2^2 + 216\omega_3^2c_s^2v_3^2\omega_1^3 + 4\omega_3^2\omega_1^2v_1^2\omega_2 - 36c_s^4\omega_1^3\omega_2^2 - 4\omega_3^2c_s^2\omega_1^2v_1^2\omega_2 + 4\omega_3c_s^2\omega_1^3\omega_2 + 20\omega_3^2c_s^2\omega_2^3 +$$
$$72\omega_3^2c_s^4\omega_1^3 + 18\omega_3c_s^2\omega_1^2\omega_2^3 - \omega_3^2\omega_1^2\omega_2^3 + 12c_s^2\omega_1^2v_1^2\omega_2^3 - 4\omega_3^2\omega_1^3\omega_2 + 216\omega_3^2c_s^2v_3^2\omega_1^2\omega_2^2 - 24\omega_3^2v_3^2\omega_1^2v_1^2\omega_2^3 - 24\omega_3^2v_3^2\omega_1^2\omega_2^2 + 4\omega_3c_s^2\omega_1^2\omega_2^2 + 84\omega_3^2v_3^2\omega_1^3\omega_2 -$$
$$12c_s^2\omega_1^2\omega_2^3 + 42\omega_3^2c_s^4\omega_1\omega_2^3 + 24\omega_3^2v_3^2\omega_1^2\omega_2^3 - 72\omega_3^2c_s^2v_3^2\omega_1^2\omega_2^3 - 48\omega_3^2v_3^2\omega_1^2v_1^2\omega_2^2 + 54\omega_3c_s^4\omega_1^3\omega_2^2 - 4\omega_3^2\omega_1^2\omega_2^2 - 324\omega_3^2c_s^2v_3^2\omega_1^3\omega_2 + 16\omega_3^2c_s^2\omega_1^3v_1^2$$

$$C_{54} = 48\omega_3^2\omega_4^2v_1^2\omega_2^3 - 540\omega_3c_s^2v_3^2\omega_4\omega_1^2\omega_2^3 - 48\omega_3^2\omega_4^2\omega_1v_1^2\omega_2^3 - 24\omega_3v_3^4\omega_4^2\omega_1^3\omega_2 - 2\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^2 + 216\omega_3v_3^4\omega_4^2\omega_1^2\omega_2^3 + 144\omega_3^2v_3^2\omega_4^2\omega_1^2v_1^2\omega_2 +$$
$$24\omega_3^2c_s^2\omega_4^2v_1^2\omega_2^3 - 36\omega_3^2v_3^2\omega_4\omega_1^3\omega_2^2 - 36v_3^4\omega_4^2\omega_1^3\omega_2^2 + 48\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^3 + 108\omega_3^2c_s^2v_3^2\omega_4\omega_1^3\omega_2^2 - 108\omega_3v_3^2\omega_4\omega_1^3\omega_2^3 - 144\omega_3^2v_3^4\omega_4^2\omega_1^2\omega_2^2 +$$
$$18\omega_3c_s^4\omega_4^2\omega_1^3\omega_2^3 - 72\omega_3^2v_3^4\omega_4\omega_1\omega_2^3 - 12\omega_3^2c_s^2\omega_4^2\omega_1v_1^2\omega_2^3 - 16\omega_3^2\omega_4^2\omega_2^3 + 144\omega_3^2v_3^2\omega_4^2\omega_1^3v_1^2 + 16\omega_3^2\omega_4^2\omega_1\omega_2^3 - 60\omega_3v_3^4\omega_4^2\omega_1^2\omega_2^2 + 24\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_2 -$$
$$16\omega_3c_s^2\omega_4^2\omega_1\omega_2^3 + 54v_3^4\omega_4^2\omega_1^3\omega_2^3 + 117\omega_3^2v_3^2\omega_4\omega_1^3\omega_2^3 - 56\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2 - 216c_s^2v_3^2\omega_4^2\omega_1^2\omega_2^3 - 6\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^2 + 72\omega_3c_s^2v_3^2\omega_4^2\omega_1\omega_2^3 -$$
$$72\omega_3c_s^2\omega_4^2\omega_1^3v_1^2\omega_2^2 - 48\omega_3^2\omega_4^2\omega_1v_1^2\omega_2^2 + 16\omega_3^2\omega_4^2\omega_1\omega_2^2 + 48\omega_3^2c_s^2\omega_4^2\omega_1v_1^2\omega_2^2 + 432\omega_3^2c_s^2v_3^2\omega_4^2\omega_2^3 - 40\omega_3^2c_s^2\omega_4^2\omega_1^3 - 36\omega_3c_s^4\omega_4^2\omega_1^3\omega_2^2 - 48\omega_3^2v_3^2\omega_4^2\omega_2^3 -$$
$$108\omega_3^2v_3^4\omega_4^2\omega_1^3\omega_2 + 72\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^3 - 12\omega_3^2c_s^2\omega_4^2\omega_1^3v_1^2\omega_2 + 36\omega_3v_3^2\omega_4\omega_1^3\omega_2^2 - 32\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^2 - 297\omega_3^2c_s^2v_3^2\omega_4\omega_1^3\omega_2^2 + 40\omega_3^2v_3^4\omega_4^2\omega_1^2\omega_2^2 +$$
$$38\omega_3^2v_3^4\omega_4^2\omega_1^3\omega_2^2 + 16\omega_3c_s^4\omega_4^2\omega_1^3\omega_2 + 180\omega_3v_3^2\omega_4\omega_1^2\omega_2^3 - 108\omega_3^2c_s^2v_3^2\omega_4\omega_1^2\omega_2^2 - 432\omega_3^2v_3^2\omega_4^2v_1^2\omega_2^3 - 852\omega_3^2c_s^2v_3^2\omega_4^2\omega_1\omega_2^3 - 12\omega_3^2c_s^2\omega_4^2\omega_1^3v_1^2\omega_2^2 -$$
$$36\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^3 - 144\omega_3^2v_3^2\omega_4^2\omega_1^2v_1^2\omega_2^3 + 20\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^2 - 6\omega_3^2\omega_4^2\omega_1^3v_1^2\omega_2^2 - 24\omega_3^2\omega_4^2\omega_1^3v_1^2 + 96\omega_3^2v_3^2\omega_4^2\omega_1\omega_2^3 - 108c_s^2v_3^2\omega_4^2\omega_1^3\omega_2^2 + 36\omega_3^2v_3^2\omega_4\omega_1^2\omega_2^2 -$$
$$117\omega_3v_3^4\omega_4^2\omega_1^3\omega_2^3 + 72\omega_3^2c_s^4\omega_4\omega_1\omega_2^3 + 324\omega_3c_s^2v_3^2\omega_4\omega_1^3\omega_2^3 + 48\omega_3c_s^2\omega_4^2\omega_1^3v_1^2\omega_2 + 24\omega_3^2c_s^2\omega_4^2\omega_1^3v_1^2 + 24\omega_3v_3^2\omega_4^2\omega_1\omega_2^3 - 18\omega_3^2c_s^2\omega_4\omega_1^3\omega_2^3 +$$
$$96\omega_3^2v_3^4\omega_4^2\omega_1^2\omega_2 + 336\omega_3^2c_s^2v_3^2\omega_4^2\omega_1\omega_2^2 + 40\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^2 + 24\omega_3^2v_3^4\omega_4^2\omega_1^3\omega_2^3 + 648\omega_3^2c_s^2v_3^2\omega_4\omega_1^2\omega_2^3 - 108\omega_3c_s^2v_3^2\omega_4\omega_1^3\omega_2^2 - 72v_3^4\omega_4^2\omega_1^2\omega_2^3 -$$
$$28\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2 - 288\omega_3^2v_3^2\omega_4\omega_1^2\omega_2^3 + 108\omega_3v_3^4\omega_4^2\omega_1^3\omega_2^2 + 32\omega_3^2c_s^4\omega_4^2\omega_1^3 - 288\omega_3^2v_3^2\omega_4^2\omega_1^2v_1^2\omega_2^2 - 96\omega_3c_s^2\omega_4^2\omega_1v_1^2\omega_2^3 + 86\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^3 +$$
$$162c_s^2v_3^2\omega_4^2\omega_1^3\omega_2^3 + 192\omega_3^2v_3^4\omega_4^2\omega_2^3 - 144\omega_3^2v_3^2\omega_4^2\omega_1\omega_2^2 + 24\omega_3v_3^2\omega_4^2\omega_1^3\omega_2 + 36\omega_3^2v_3^4\omega_4\omega_1^3\omega_2^2 + 36v_3^2\omega_4^2\omega_1^3\omega_2^2 - 216\omega_3v_3^2\omega_4^2\omega_1^2\omega_2^3 - 492\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^2\omega_2^2 -$$
$$96\omega_3^2c_s^2\omega_4^2\omega_1^2v_1^2\omega_2 + 2\omega_3^2\omega_4^2\omega_1^3\omega_2^2 + 24\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2 - 297\omega_3c_s^2v_3^2\omega_4^2\omega_1^3\omega_2^3 + 264\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^3 - 96\omega_3^2v_3^2\omega_4^2\omega_1^3 + 240\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2^2 +$$
$$108\omega_3v_3^4\omega_4\omega_1^3\omega_2^3 - 172\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^3 + 8\omega_3^2c_s^2\omega_4^2\omega_2^3 + 576\omega_3^2v_3^2\omega_4^2\omega_1v_1^2\omega_2^3 + 48\omega_3c_s^2\omega_4^2\omega_1^2v_1^2\omega_2^2 + 72\omega_3^2v_3^2\omega_4\omega_1\omega_2^3 - 18\omega_3c_s^2\omega_4^2\omega_1^3\omega_2^3 +$$
$$162\omega_3^2c_s^2v_3^2\omega_1^3\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^2\omega_2 - 54v_3^2\omega_4^2\omega_1^3\omega_2^3 + 64\omega_3^2c_s\omega_4^2\omega_1^2\omega_2 - 117\omega_3^2v_3^4\omega_4\omega_1^3\omega_2^3 + 16\omega_3c_s^4\omega_4^2\omega_1\omega_2^3 + 174\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^2\omega_2^3 + 60\omega_3v_3^2\omega_4^2\omega_1^2\omega_2^2 -$$
$$54\omega_3^2v_3^2\omega_1^3\omega_2^3 - 492\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^3\omega_2 + 72\omega_3c_s^2\omega_4^2\omega_1^2v_1^2\omega_2^3 + 144\omega_3^2v_3^2\omega_4^2\omega_1v_1^2\omega_2^2 - 72\omega_3^2c_s^4\omega_4\omega_1^2\omega_2^3 + 204\omega_3^2v_3^2\omega_4^2\omega_1^3\omega_2 + 36\omega_3c_s^2\omega_4^2\omega_1^3\omega_2^2 -$$
$$108\omega_3^2v_3^4\omega_1^2\omega_2^3 + 8\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2^3 + 16\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^2 - 36\omega_3v_3^4\omega_4\omega_1^3\omega_2^2 - 288\omega_3^2v_3^2\omega_4^2\omega_1^3v_1^2\omega_2 + 288\omega_3c_s^2v_3^2\omega_4^2\omega_1^3\omega_2^2 + 8\omega_3^2\omega_4^2\omega_1^3 - 180\omega_3v_3^4\omega_4\omega_1^2\omega_2^3 -$$
$$16\omega_3c_s^2\omega_4^2\omega_1^3\omega_2 - 86\omega_3^2v_3^2\omega_4^2\omega_1^3\omega_2^2 + 36\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^3 + 6\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2^3 - 72\omega_3c_s^2v_3^2\omega_4^2\omega_1^3\omega_2 + 144\omega_3^2v_3^2\omega_4^2\omega_1^3v_1^2\omega_2^2 + 468\omega_3c_s^2v_3^2\omega_4^2\omega_1^2\omega_2^2 +$$
$$12\omega_3^2c_s^2\omega_4^2\omega_1^2v_1^2\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^2\omega_2^2 - 288\omega_3^2v_3^4\omega_4^2\omega_1\omega_2^3 - 12\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^2 - 72\omega_3^2c_s^2\omega_4\omega_1\omega_2^3 + 168\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^3\omega_2^2 + 117\omega_3v_3^2\omega_4^2\omega_1^3\omega_2^3 +$$
$$48\omega_3^2v_3^4\omega_4^2\omega_1^3 - 36\omega_3^2v_3^4\omega_4\omega_1^2\omega_2^2 + 80\omega_3^2c_s^4\omega_4^2\omega_2^3 - 108\omega_3c_s^2v_3^2\omega_4^2\omega_1^2\omega_2^2 + 24\omega_3^2\omega_4^2\omega_1^2v_1^2\omega_2^2 - 40\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^2 + 54\omega_3^2v_3^4\omega_1^3\omega_2^3 - 144\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2 +$$
$$18\omega_3^2c_s^4\omega_4\omega_1^3\omega_2^3 - 24\omega_3v_3^4\omega_4^2\omega_1\omega_2^3 - 24\omega_3^2v_3^2\omega_4^2\omega_1^3\omega_2^3 - 108\omega_3v_3^2\omega_4^2\omega_1^3\omega_2^2 + 72\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^3\omega_2^3 + 72v_3^2\omega_4^2\omega_1^2\omega_2^3 + 288\omega_3^2v_3^4\omega_4\omega_1^2\omega_2^3 + 36\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2 +$$
$$264\omega_3^2c_s^2v_3^2\omega_4^2\omega_1^2\omega_2 + 96\omega_3^2v_3^4\omega_4^2\omega_1\omega_2^2 - 36\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^3 + 108\omega_3^2v_3^2\omega_1^2\omega_2^3 - 324\omega_3^2c_s^2v_3^2\omega_1^2\omega_2^3 - 2\omega_3^2\omega_4^2\omega_1^2\omega_2^3 + 24\omega_3^2c_s^2\omega_4^2\omega_1^2v_1^2\omega_2^2 - 8\omega_3^2\omega_4^2\omega_1^3\omega_2$$

$$C_{55} = 9\omega_1^2\omega_2^3 - 5\omega_3\omega_1^2v_1^2\omega_2^3 - 54\omega_3c_s^2\omega_1\omega_2^2 + 6\omega_1^3\omega_2 - 12\omega_3c_s^2\omega_2^3 + 36c_s^2\omega_1\omega_2^3 - 6\omega_1^2v_1^2\omega_2^2 + 48\omega_3\omega_1^3\omega_2 + 5\omega_3\omega_1^2\omega_2^3 + 27\omega_3c_s^2\omega_1\omega_2^3 + 6\omega_1^2\omega_2^2 -$$
$$9\omega_3\omega_1^2v_1^2\omega_2^2 - 51\omega_3\omega_1^2\omega_2^2 - 12\omega_3v_3^2\omega_1^2\omega_2 - 9\omega_1^2v_1^2\omega_2^3 + 6\omega_3\omega_1^2\omega_2 + 132\omega_3v_3^2\omega_1^2\omega_2^2 + 84\omega_3v_3^2\omega_2^3 + 6\omega_3\omega_1^2v_1^2\omega_2 - 66\omega_3v_3^2\omega_1^3\omega_2 - 5\omega_3\omega_1^3\omega_2^2 -$$
$$12\omega_3\omega_2^3 - 9\omega_1^3\omega_2^2 + 27c_s^2\omega_1^3\omega_2^2 - 66\omega_3v_3^2\omega_1\omega_2^3 - 18\omega_3c_s^2\omega_1^2\omega_2 + 5\omega_3\omega_1^3v_1^2\omega_2^2 + 9\omega_1^3v_1^2\omega_2^2 - 120\omega_3v_3^2\omega_1\omega_2^2 + 84\omega_3c_s^2\omega_1^3 + 12\omega_3\omega_1^3v_1^2 +$$
$$15\omega_3c_s^2\omega_1^3\omega_2^2 - 108\omega_3c_s^2\omega_1^3\omega_2 - 36\omega_3\omega_1^3 + 27\omega_3\omega_1v_1^2\omega_2^3 - 15\omega_3c_s^2\omega_1^2\omega_2^3 - 6\omega_1^3v_1^2\omega_2 + 42\omega_3\omega_1\omega_2^2 - 18c_s^2\omega_1^2\omega_2^2 + 81\omega_3c_s^2\omega_1^2\omega_2^2 + 6\omega_3\omega_1v_1^2\omega_2^2 -$$
$$24\omega_3v_1^2\omega_2^3 - 12\omega_1\omega_2^3 - 18\omega_3\omega_1^3v_1^2\omega_2 - 18c_s^2\omega_1^3\omega_2 + 12\omega_1v_1^2\omega_2^3 + 48\omega_3v_3^2\omega_1^3 - 27c_s^2\omega_1^2\omega_2^3 + 3\omega_3\omega_1\omega_2^3$$

$$C_{56} = -12c_s^2\omega_1^3v_2^2\omega_2^2 - 4\omega_3c_s^2\omega_1^3v_2^2\omega_2 + 24\omega_3^2v_3^2\omega_1^3v_2^2\omega_2^2 + 40\omega_3^2c_s^2\omega_1^2\omega_2 - 60\omega_3^2v_3^2\omega_1\omega_2^3 + 22\omega_3^2c_s^2\omega_1v_2^2\omega_2^3 - 6\omega_3^2c_s^4\omega_1^2\omega_2^3 - 84\omega_3^2c_s^4\omega_1^3\omega_2 +$$
$$8\omega_3^2\omega_1\omega_2^2 - 8\omega_3^2\omega_1v_2^2\omega_2^3 + 108\omega_3^2c_s^2v_3^2\omega_1\omega_2^3 - 5\omega_3^2c_s^2\omega_1^3\omega_2^2 + 8\omega_3c_s^2\omega_1v_2^2\omega_2^3 - 8\omega_3c_s^2\omega_1\omega_2^3 + 4\omega_3^2\omega_1^3 - 8\omega_3^2\omega_1v_2^2\omega_2^2 - 216\omega_3^2c_s^2v_3^2\omega_1\omega_2^2 -$$
$$20\omega_3^2c_s^2\omega_1^3v_2^2\omega_2 + 8\omega_3^2\omega_1\omega_2^3 + 4\omega_3^2\omega_1^3v_2^2\omega_2 + 48\omega_3^2v_3^4\omega_2^3 - 48\omega_3^2v_3^2\omega_1^3 + 48\omega_3^2v_3^2\omega_1\omega_2^2 + 42\omega_3^2c_s^4\omega_1^2\omega_2^2 + 8\omega_3^2c_s^2\omega_1v_2^2\omega_2^2 - 72\omega_3^2v_3^2v_2^2\omega_2^3 +$$
$$2\omega_3^2c_s^2\omega_1^3v_2^2\omega_2^2 - \omega_3^2\omega_1^3v_2^2\omega_2^2 - 36\omega_3^2c_s^4\omega_1^2\omega_2 + 96\omega_3^2v_3^2\omega_1v_2^2\omega_2^3 + 56\omega_3^2c_s^2\omega_1^3\omega_2 - 36\omega_3^2v_3^4\omega_1\omega_2^3 + 5\omega_3^2c_s^2\omega_1^2\omega_2^3 - 4\omega_3^2\omega_1^3v_2^2 + 8\omega_3^2v_2^2\omega_2^3 +$$
$$6\omega_3^2c_s^4\omega_1^3\omega_2^2 - 52\omega_3^2c_s^2\omega_1^3 - 36\omega_3^2c_s^4\omega_2^3 + 24\omega_3c_s^4\omega_1\omega_2^3 - 48\omega_3^2v_3^2\omega_1^3v_2^2\omega_2 + 18\omega_3c_s^2\omega_1^2v_2^2\omega_2^2 - 72\omega_3^2v_3^4\omega_1\omega_2^2 + 24\omega_3^2v_3^2\omega_1^3v_2^2 - 34\omega_3^2c_s^2\omega_1^2\omega_2^2 +$$
$$24\omega_3^2v_3^2\omega_1v_2^2\omega_2^2 - 4\omega_3^2c_s^2\omega_1^2v_2^2\omega_2 - 24\omega_3^2v_3^2\omega_1^3\omega_2^2 + 12c_s^2\omega_1^3\omega_2^2 - 8\omega_3^2\omega_2^3 - 54\omega_3c_s^4\omega_1^2\omega_2^3 + 4\omega_3^2\omega_1^2v_2^2\omega_2 + 72\omega_3^2c_s^2v_3^2\omega_1^3\omega_2^2 - 4\omega_3^2\omega_1^2\omega_2 -$$
$$12\omega_3c_s^4\omega_1^3\omega_2 + 12c_s^2\omega_1^2v_2^2\omega_2^3 + 24\omega_3^2v_3^4\omega_1^3 + 24\omega_3^2v_3^2\omega_2^3 - 8\omega_3^2c_s^2\omega_1\omega_2^2 - 24\omega_3^2v_3^2\omega_1^2v_2^2\omega_2^3 + 72\omega_3^2v_3^4\omega_1^2\omega_2^2 - 12\omega_3c_s^4\omega_1^2\omega_2^2 + \omega_3^2\omega_1^3\omega_2^2 -$$
$$24\omega_3^2v_3^2\omega_1^2\omega_2 + 36c_s^4\omega_1^2\omega_2^3 - 48\omega_3^2v_3^2\omega_1^2v_2^2\omega_2^2 - 22\omega_3^2c_s^2\omega_1\omega_2^3 - 36\omega_3^2v_3^4\omega_1^3\omega_2 - 18\omega_3c_s^2\omega_1^3\omega_2^2 + 216\omega_3^2c_s^2v_3^2\omega_1^3 - 4\omega_3c_s^2\omega_1^2v_2^2\omega_2^2 +$$
$$24\omega_3^2v_3^2\omega_1^2v_2^2\omega_2 - 36c_s^4\omega_1^3\omega_2^2 + 4\omega_3c_s^2\omega_1^3\omega_2 + 20\omega_3^2c_s^2\omega_2^3 + 72\omega_3^2c_s^4\omega_1^3 + 18\omega_3c_s^2\omega_1^2\omega_2^3 + \omega_3^2\omega_1^2v_2^2\omega_2^3 - \omega_3^2\omega_1^2\omega_2^3 - 4\omega_3^2\omega_1^3\omega_2 + 216\omega_3^2c_s^2v_3^2\omega_1^2\omega_2^2 -$$
$$24\omega_3^2v_3^2\omega_1^2\omega_2^2 + 16\omega_3^2c_s^2\omega_1^3v_2^2 - 2\omega_3^2c_s^2\omega_1^2v_2^2\omega_2^3 + 4\omega_3c_s^2\omega_1^2\omega_2^2 - 20\omega_3^2c_s^2v_2^2\omega_2^3 - 18\omega_3c_s^2\omega_1^2v_2^2\omega_2^3 - 2\omega_3^2c_s^2\omega_1^2v_2^2\omega_2^2 + 84\omega_3^2v_3^2\omega_1^3\omega_2 - 12c_s^2\omega_1^2\omega_2^3 +$$
$$42\omega_3^2c_s^4\omega_1\omega_2^3 + 24\omega_3^2v_3^2\omega_1^2\omega_2^3 - 72\omega_3^2c_s^2v_3^2\omega_1^2\omega_2^3 + 54\omega_3c_s^4\omega_1^3\omega_2^2 - 4\omega_3^2\omega_1^2\omega_2^2 + 4\omega_3^2\omega_1^2v_2^2\omega_2^2 - 324\omega_3^2c_s^2v_3^2\omega_1^3\omega_2$$

$$C_{57} = -540\omega_3c_s^2v_3^2\omega_4\omega_1^2\omega_2^3 - 12\omega_3^2c_s^2\omega_4^2\omega_1^3v_2^2\omega_2^2 - 432\omega_3^2v_3^2\omega_4^2v_2^2\omega_2^3 - 24\omega_3v_3^4\omega_4^2\omega_1^3\omega_2 - 2\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^2 + 216\omega_3v_3^4\omega_4^2\omega_1^2\omega_2^3 - 36\omega_3^2v_3^2\omega_4\omega_1^3\omega_2^2 -$$
$$36v_3^4\omega_4^2\omega_1^3\omega_2^2 + 48\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^3 + 108\omega_3^2c_s^2v_3^2\omega_4\omega_1^3\omega_2^2 - 108\omega_3v_3^2\omega_4\omega_1^3\omega_2^3 - 144\omega_3^2v_3^4\omega_4^2\omega_1^2\omega_2^2 + 48\omega_3c_s^2\omega_4^2\omega_1^3v_2^2\omega_2 + 18\omega_3c_s^4\omega_4^2\omega_1^3\omega_2^3 -$$
$$72\omega_3^2v_3^4\omega_4\omega_1\omega_2^3 - 6\omega_3^2\omega_4^2\omega_1^3v_2^2\omega_2^2 - 144\omega_3^2v_3^2\omega_4^2\omega_1^2v_2^2\omega_2^3 - 16\omega_3^2\omega_4^2\omega_2^3 + 16\omega_3^2\omega_4^2\omega_1\omega_2^3 - 60\omega_3v_3^4\omega_4^2\omega_1^2\omega_2^2 - 16\omega_3c_s^2\omega_4^2\omega_1\omega_2^3 + 54v_3^4\omega_4^2\omega_1^3\omega_2^3 +$$
$$117\omega_3^2v_3^2\omega_4\omega_1^3\omega_2^3 - 56\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2 - 216c_s^2v_3^2\omega_4^2\omega_1^2\omega_2^3 - 6\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^2 + 72\omega_3c_s^2v_3^2\omega_4^2\omega_1\omega_2^3 + 16\omega_3^2\omega_4^2\omega_1^3\omega_2^2 + 432\omega_3^2c_s^2v_3^2\omega_4^2\omega_2^3 -$$
$$96\omega_3c_s^2\omega_4^2\omega_1v_2^2\omega_2^3 - 288\omega_3^2v_3^2\omega_4^2\omega_1^2v_2^2\omega_2^2 - 40\omega_3^2c_s^2\omega_4^2\omega_1^3 + 144\omega_3^2v_3^2\omega_4^2\omega_1^3v_2^2 - 36\omega_3c_s^4\omega_4^2\omega_1^3\omega_2^2 - 48\omega_3^2v_3^2\omega_4^2\omega_2^3 - 108\omega_3^2v_3^4\omega_4^2\omega_1^3\omega_2 + 72\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^3 +$$

$$36\omega_3 v_3^2\omega_4\omega_1^3\omega_2^2 - 32\omega_3^2 c_s^2\omega_4^2\omega_1\omega_2^2 - 297\omega_3^2 c_s^2 v_3^2\omega_4\omega_1^3\omega_2^3 + 40\omega_3^2 v_3^4\omega_4^2\omega_1^2\omega_2^3 + 24\omega_3^2 c_s^2\omega_4^2 v_2^2\omega_2^3 + 144\omega_3^2 v_3^2\omega_4^2\omega_1^2 v_2^2\omega_2 + 38\omega_3^2 v_3^4\omega_4^2\omega_1^3\omega_2^2 +$$
$$48\omega_3^2\omega_4^2 v_2^2\omega_2^3 + 16\omega_3 c_s^4\omega_4^2\omega_1^3\omega_2 + 180\omega_3 v_3^2\omega_4\omega_2^2\omega_2^3 - 108\omega_3^2 c_s^2 v_3^2\omega_4\omega_2^2\omega_2^2 - 852\omega_3^2 c_s^2 v_3^2\omega_4^2\omega_1\omega_2^3 - 48\omega_3^2\omega_4^2\omega_1 v_2^2\omega_2^3 - 36\omega_3 c_s^4\omega_4^2\omega_1^2\omega_2^3 +$$
$$20\omega_3^2 c_s^4\omega_4^2\omega_1^2\omega_2^2 + 96\omega_3^2 v_3^2\omega_4^2\omega_1\omega_2^3 - 108 c_s^2 v_3^2\omega_4^2\omega_1^3\omega_2^2 - 12\omega_3^2 c_s^2\omega_4^2\omega_1 v_2^2\omega_2^3 + 36\omega_3^2 v_3^2\omega_4\omega_1^2\omega_2^2 - 117\omega_3 v_3^4\omega_4^2\omega_1^3\omega_2^2 + 72\omega_3^2 c_s^4\omega_4\omega_1\omega_2^3 +$$
$$324\omega_3 c_s^2 v_3^2\omega_4\omega_1^3\omega_2^3 - 48\omega_3^2\omega_4^2\omega_1 v_2^2\omega_2^2 + 24\omega_3 v_3^2\omega_4^2\omega_1\omega_2^3 - 18\omega_3^2 c_s^2\omega_4\omega_1^3\omega_2^3 - 72\omega_3 c_s^2\omega_4^2\omega_1^3 v_2^2\omega_2^2 + 96\omega_3^2 v_3^4\omega_4^2\omega_1^2\omega_2 + 336\omega_3^2 c_s^2 v_3^2\omega_4^2\omega_1\omega_2^2 +$$
$$40\omega_3 c_s^4\omega_4^2\omega_1^2\omega_2^2 + 24\omega_3^2 v_3^4\omega_4^2\omega_1^3\omega_2^3 + 648\omega_3^2 c_s^2 v_3^2\omega_4\omega_1^2\omega_2^3 + 24\omega_3^2\omega_4^2\omega_1^3 v_2^2\omega_2 - 24\omega_3^2\omega_4^2\omega_1^3 v_2^2 - 108\omega_3 c_s^2 v_3^2\omega_4\omega_1^3\omega_2^2 - 12\omega_3^2 c_s^2\omega_4^2\omega_1^3 v_2^2\omega_2 -$$
$$72 v_3^4\omega_4^2\omega_1^2\omega_2^3 - 28\omega_3^2 c_s^4\omega_4^2\omega_1^3\omega_2 - 288\omega_3^2 v_3^2\omega_4\omega_1^3\omega_2^3 + 24\omega_3^2 c_s^2\omega_4^2\omega_1^3 v_2^2 + 108\omega_3 v_3^4\omega_4^2\omega_1^3\omega_2^2 + 32\omega_3^2 c_s^4\omega_4^2\omega_1^3 + 86\omega_3^2 c_s^4\omega_4^2\omega_1^2\omega_2^2 + 48\omega_3^2 c_s^2\omega_4^2\omega_1 v_2^2\omega_2^2 +$$
$$162 c_s^2 v_3^2\omega_4^2\omega_1^3\omega_2^3 + 192\omega_3^2 v_3^4\omega_4^2\omega_2^3 - 144\omega_3^2 v_3^2\omega_4^2\omega_1\omega_2^2 + 144\omega_3^2 v_3^2\omega_4^2\omega_1^3 v_2^2\omega_2^2 + 6\omega_3^2\omega_4^2\omega_1^3 v_2^2\omega_2^3 + 24\omega_3 v_3^2\omega_4^2\omega_1^3\omega_2 + 36\omega_3^2 v_3^4\omega_4\omega_1^3\omega_2^2 + 36 v_3^2\omega_4^2\omega_1^3\omega_2^2 -$$
$$216\omega_3 v_3^2\omega_4^2\omega_1^2\omega_2^3 - 492\omega_3^2 c_s^2 v_3^2\omega_4^2\omega_1^2\omega_2^2 + 2\omega_3^2\omega_4^2\omega_2^3\omega_2^2 - 297\omega_3 c_s^2 v_3^2\omega_4^2\omega_1^3\omega_2^3 + 264\omega_3^2 c_s^2 v_3^2\omega_4^2\omega_1^3 - 96\omega_3^2 v_3^2\omega_4^2\omega_1^3 + 240\omega_3^2 v_3^2\omega_4^2\omega_1^2\omega_2^2 +$$
$$108\omega_3 v_3^4\omega_4\omega_1^3\omega_2^3 - 172\omega_3^2 c_s^4\omega_4^2\omega_1\omega_2^3 + 8\omega_3^2 c_s^2\omega_4^2\omega_2^3 + 72\omega_3^2 v_3^2\omega_4\omega_1\omega_2^3 + 12\omega_3^2 c_s^2\omega_4^2\omega_1^2 v_2^2\omega_2^3 - 18\omega_3 c_s^2\omega_4^2\omega_1^3\omega_2^3 + 162\omega_3^2 c_s^2 v_3^2\omega_1^3\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^2\omega_2 -$$
$$54 v_3^2\omega_4^2\omega_1^3\omega_2^3 + 64\omega_3^2 c_s^2\omega_4^2\omega_1^2\omega_2 - 117\omega_3^2 v_3^4\omega_4\omega_1^3\omega_2^3 + 16\omega_3 c_s^4\omega_4^2\omega_1\omega_2^3 + 174\omega_3^2 c_s^2 v_3^2\omega_4^2\omega_1^2\omega_2^3 + 60\omega_3 v_3^2\omega_4^2\omega_1^2\omega_2^2 - 54\omega_3^2 v_3^2\omega_1^3\omega_2^3 + 24\omega_3^2\omega_4^2\omega_1^2 v_2^2\omega_2^2 -$$
$$492\omega_3^2 c_s^2 v_3^2\omega_4^2\omega_1^3\omega_2 - 72\omega_3^2 c_s^4\omega_4\omega_1^2\omega_2^3 + 204\omega_3^2 v_3^2\omega_4^2\omega_1^3\omega_2 + 36\omega_3 c_s^2\omega_4^2\omega_1^3\omega_2^2 - 108\omega_3^2 v_3^4\omega_1^2\omega_2^3 + 24\omega_3^2 c_s^2\omega_4^2\omega_1^2 v_2^2\omega_2^2 + 8\omega_3^2 v_3^2\omega_4^2\omega_1^2\omega_2^3 +$$
$$16\omega_3^2 c_s^4\omega_4^2\omega_1\omega_2^2 - 36\omega_3 v_3^4\omega_4\omega_1^3\omega_2^2 + 288\omega_3 c_s^2 v_3^2\omega_4^2\omega_1^3\omega_2^2 + 8\omega_3^2\omega_4^2\omega_1^3 - 180\omega_3 v_3^4\omega_4\omega_1^2\omega_2^2 - 16\omega_3 c_s^2\omega_4^2\omega_1^3\omega_2 - 96\omega_3^2 c_s^2\omega_4^2\omega_1^2 v_2^2\omega_2 - 86\omega_3^2 v_3^2\omega_4^2\omega_1^3\omega_2^2 +$$
$$36\omega_3 c_s^2\omega_4^2\omega_1^2\omega_2^3 - 72\omega_3 c_s^2 v_3^2\omega_4^2\omega_1^3\omega_2 + 468\omega_3 c_s^2 v_3^2\omega_4^2\omega_1^2\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^2\omega_2^2 + 48\omega_3 c_s^2\omega_4^2\omega_1^2 v_2^2\omega_2^2 + 576\omega_3^2 v_3^2\omega_4^2\omega_1 v_2^2\omega_2^3 - 288\omega_3^2 v_3^4\omega_4^2\omega_1\omega_2^3 -$$
$$12\omega_3^2 c_s^2\omega_4^2\omega_1^2\omega_2^2 - 72\omega_3^2 c_s^2\omega_4\omega_1\omega_2^3 + 168\omega_3^2 c_s^2 v_3^2\omega_4^2\omega_1^3\omega_2^2 + 117\omega_3 v_3^2\omega_4^2\omega_1^3\omega_2^3 + 48\omega_3^2 v_3^4\omega_4^2\omega_1^3 - 36\omega_3^2 v_3^4\omega_4\omega_1^2\omega_2^2 + 80\omega_3^2 c_s^4\omega_4^2\omega_2^3 + 24\omega_3^2\omega_4^2\omega_1^2 v_2^2\omega_2 -$$
$$108\omega_3 c_s^2 v_3^2\omega_4^2\omega_1^2\omega_2^2 - 40\omega_3 c_s^2\omega_4^2\omega_1^2\omega_2^2 + 54\omega_3^2 v_3^4\omega_1^3\omega_2^3 - 144\omega_3^2 v_3^2\omega_4^2\omega_1^2\omega_2 + 18\omega_3^2 c_s^4\omega_4\omega_1^3\omega_2^3 - 24\omega_3 v_3^4\omega_4^2\omega_1\omega_2^3 - 24\omega_3^2 v_3^2\omega_4^2\omega_1^3\omega_2^3 -$$
$$108\omega_3 v_3^2\omega_4^2\omega_1^3\omega_2^2 + 72\omega_3^2 c_s^2 v_3^2\omega_4^2\omega_1^3\omega_2^3 + 72 v_3^2\omega_4^2\omega_1^2\omega_2^3 + 288\omega_3^2 v_3^4\omega_4\omega_1^2\omega_2^3 + 36\omega_3^2 c_s^2\omega_4^2\omega_1^3\omega_2 - 288\omega_3^2 v_3^2\omega_4^2\omega_1^3 v_2^2\omega_2 + 264\omega_3^2 c_s^2 v_3^2\omega_4^2\omega_1^2\omega_2 +$$
$$96\omega_3^2 v_3^4\omega_4^2\omega_1\omega_2^2 - 36\omega_3^2 c_s^2\omega_4^2\omega_1^2\omega_2^3 + 108\omega_3^2 v_3^2\omega_1^2\omega_2^3 - 324\omega_3^2 c_s^2 v_3^2\omega_1^2\omega_2^3 - 2\omega_3^2\omega_4^2\omega_1^2\omega_2^3 + 144\omega_3^2 v_3^2\omega_4^2\omega_1 v_2^2\omega_2^2 + 72\omega_3 c_s^2\omega_4^2\omega_1^2 v_2^2\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^3\omega_2$$

$$C_{58} = 9\omega_1^2\omega_2^3 - 54\omega_3 c_s^2\omega_1\omega_2^2 + 6\omega_1^3\omega_2 - 12\omega_3 c_s^2\omega_2^3 + 36 c_s^2\omega_1\omega_2^3 + 6\omega_3\omega_1^2 v_2^2\omega_2 + 48\omega_3\omega_1^3\omega_2 + 5\omega_3\omega_1^2\omega_2^3 + 27\omega_3 c_s^2\omega_1\omega_2^3 + 6\omega_1^2\omega_2^2 - 51\omega_3\omega_1^2\omega_2^2 -$$
$$12\omega_3 v_3^2\omega_1^2\omega_2 + 6\omega_3\omega_1^2\omega_2 + 132\omega_3 v_3^2\omega_1^2\omega_2^2 - 5\omega_3\omega_1^2 v_2^2\omega_2^3 + 84\omega_3 v_3^2\omega_2^3 - 6\omega_1^2 v_2^2\omega_2^2 - 9\omega_3\omega_1^2 v_2^2\omega_2^2 - 66\omega_3 v_3^2\omega_1^3\omega_2 - 5\omega_3\omega_1^3\omega_2^2 - 12\omega_3\omega_2^3 -$$
$$9\omega_1^2 v_2^2\omega_2^3 - 9\omega_1^3\omega_2^2 + 27 c_s^2\omega_1^3\omega_2^2 + 27\omega_3\omega_1 v_2^2\omega_2^3 - 66\omega_3 v_3^2\omega_1\omega_2^3 + 12\omega_3\omega_1^3 v_2^2 - 18\omega_3 c_s^2\omega_1^2\omega_2 - 6\omega_1^3 v_2^2\omega_2 - 18\omega_3\omega_1^3 v_2^2\omega_2 - 120\omega_3 v_3^2\omega_1\omega_2^2 +$$
$$84\omega_3 c_s^2\omega_1^3 + 6\omega_3\omega_1 v_2^2\omega_2^2 - 24\omega_3 v_2^2\omega_2^3 + 15\omega_3 c_s^2\omega_1^3\omega_2^2 + 12\omega_1 v_2^2\omega_2^3 - 108\omega_3 c_s^2\omega_1^3\omega_2 - 36\omega_3\omega_1^3 - 15\omega_3 c_s^2\omega_1^2\omega_2^3 + 5\omega_3\omega_1^3 v_2^2\omega_2^2 + 42\omega_3\omega_1\omega_2^2 -$$
$$18 c_s^2\omega_1^2\omega_2^2 + 81\omega_3 c_s^2\omega_1^2\omega_2^2 - 12\omega_1\omega_2^3 + 9\omega_1^3 v_2^2\omega_2^2 - 18 c_s^2\omega_1^3\omega_2 + 48\omega_3 v_3^2\omega_1^3 - 27 c_s^2\omega_1^2\omega_2^3 + 3\omega_3\omega_1\omega_2^3$$

$$C_{59} = 656\omega_3 c_s^2 v_3^2\omega_1\omega_2^2 - 80\omega_3 c_s^2\omega_1\omega_2^2 - 264\omega_3 v_3^4\omega_1^2\omega_2^2 + 72\omega_3 c_s^4\omega_1^3 - 184\omega_3 c_s^2\omega_2^3 - 8 c_s^2\omega_1\omega_2^3 - 98\omega_3 v_3^2\omega_1^3\omega_2^2 - 10\omega_3\omega_1^3\omega_2 + 16\omega_3\omega_1^2\omega_2^3 +$$
$$160\omega_3 c_s^2 v_3^2\omega_1^3 + 320\omega_3 c_s^2\omega_1\omega_2^3 + 180\omega_3 v_3^4\omega_1^2\omega_2^3 - 1472\omega_3 c_s^2 v_3^2\omega_1\omega_2^3 - 84\omega_3 v_3^4\omega_1^3\omega_2 - 16\omega_3\omega_1^2\omega_2^2 - 104\omega_3 v_3^2\omega_1^2\omega_2 + 30\omega_3 v_3^2\omega_1^3\omega_2^2 +$$
$$72\omega_3 c_s^4\omega_1\omega_2^2 + 8\omega_3\omega_1^2\omega_2 + 280\omega_3 v_3^2\omega_1^2\omega_2^2 - 3\omega_3\omega_1^3\omega_2^3 + 24 c_s^4\omega_1\omega_2^3 - 160\omega_3 v_3^2\omega_2^3 + 24\omega_3 v_3^4\omega_1^3 + 8 c_s^2 v_3^2\omega_1\omega_2^3 + 90\omega_3 v_3^4\omega_1^3\omega_2^2 + 94\omega_3 v_3^2\omega_1^3\omega_2 +$$
$$8\omega_3\omega_1^3\omega_2^2 - 372\omega_3 c_s^4\omega_1\omega_2^3 - 196\omega_3 v_3^2\omega_1^2\omega_2^3 + 16\omega_3\omega_2^3 - 27\omega_3 v_3^4\omega_1^3\omega_2^3 + 96\omega_3 v_3^4\omega_1^2\omega_2 + 760\omega_3 c_s^2 v_3^2\omega_2^3 + 328\omega_3 v_3^2\omega_1\omega_2^3 + 164\omega_3 c_s^4\omega_1^2\omega_2^3 -$$
$$156\omega_3 c_s^4\omega_1^3\omega_2 - 102\omega_3 c_s^2 v_3^2\omega_1^3\omega_2^3 - 80\omega_3 c_s^2\omega_1^2\omega_2 - 16 c_s^2 v_3^2\omega_1^2\omega_2^2 + 18\omega_3 c_s^2\omega_1^3\omega_2^3 + 440\omega_3 c_s^2 v_3^2\omega_1^2\omega_2 - 48 c_s^4\omega_1^2\omega_2^2 + 216\omega_3 c_s^4\omega_2^3 - 176\omega_3 v_3^2\omega_1\omega_2^2 -$$
$$52\omega_3 c_s^2\omega_1^3 - 120\omega_3 c_s^4\omega_1^2\omega_2^2 + 24 c_s^4\omega_1^3\omega_2 - 78\omega_3 c_s^2\omega_1^3\omega_2^2 + 8 c_s^2 v_3^2\omega_1^3\omega_2 + 404\omega_3 c_s^2 v_3^2\omega_1^3\omega_2^2 + 122\omega_3 c_s^2\omega_1^3\omega_2 + 808\omega_3 c_s^2 v_3^2\omega_1^2\omega_2^3 + 4\omega_3\omega_1^3 -$$
$$300\omega_3 v_3^4\omega_1\omega_2^3 - 464\omega_3 c_s^2 v_3^2\omega_1^3\omega_2 - 156\omega_3 c_s^2\omega_1^2\omega_2^3 - 15\omega_3 c_s^4\omega_1^3\omega_2^3 + 72\omega_3 c_s^4\omega_1^2\omega_2 + 8\omega_3\omega_1\omega_2^2 + 16 c_s^2\omega_1^2\omega_2^2 + 168\omega_3 v_3^4\omega_1\omega_2^2 + 152\omega_3 c_s^2\omega_1^2\omega_2^2 -$$
$$1088\omega_3 c_s^2 v_3^2\omega_1^2\omega_2^2 - 8 c_s^2\omega_1^3\omega_2 - 28\omega_3 v_3^2\omega_1^3 + 144\omega_3 v_3^4\omega_2^3 - 28\omega_3\omega_1\omega_2^3 + 82\omega_3 c_s^4\omega_1^3\omega_2^2$$

$$C_{60} = 336\omega_3 c_s^2 v_3^2\omega_1\omega_2^2 - 16\omega_3 c_s^2\omega_1\omega_2^2 - 888\omega_3 v_3^4\omega_1^2\omega_2^2 + 16\omega_3 c_s^4\omega_1^3 - 56\omega_3 c_s^2\omega_2^3 - 8 c_s^2\omega_1\omega_2^3 - 154\omega_3 v_3^2\omega_1^3\omega_2^2 - 10\omega_3\omega_1^3\omega_2 + 16\omega_3\omega_1^2\omega_2^3 +$$
$$144\omega_3 c_s^2 v_3^2\omega_1^3 + 96\omega_3 c_s^2\omega_1\omega_2^3 + 620\omega_3 v_3^4\omega_1^2\omega_2^3 - 1008\omega_3 c_s^2 v_3^2\omega_1\omega_2^3 - 312\omega_3 v_3^4\omega_1^3\omega_2 - 16\omega_3\omega_1^2\omega_2^2 - 168\omega_3 v_3^2\omega_1^2\omega_2 + 42\omega_3 v_3^2\omega_1^3\omega_2^2 +$$
$$8\omega_3 c_s^4\omega_1\omega_2^2 + 8\omega_3\omega_1^2\omega_2 + 408\omega_3 v_3^2\omega_1^2\omega_2^2 - 3\omega_3\omega_1^3\omega_2^3 + 8 c_s^4\omega_1\omega_2^3 - 288\omega_3 v_3^2\omega_2^3 + 96\omega_3 v_3^4\omega_1^3 + 24 c_s^2 v_3^2\omega_1\omega_2^3 + 310\omega_3 v_3^4\omega_1^3\omega_2^2 + 174\omega_3 v_3^2\omega_1^3\omega_2 +$$
$$8\omega_3\omega_1^3\omega_2^2 - 68\omega_3 c_s^4\omega_1\omega_2^3 - 308\omega_3 v_3^2\omega_1^2\omega_2^3 + 16\omega_3\omega_2^3 - 87\omega_3 v_3^4\omega_1^3\omega_2^3 + 336\omega_3 v_3^4\omega_1^2\omega_2 + 552\omega_3 c_s^2 v_3^2\omega_2^3 + 552\omega_3 v_3^2\omega_1\omega_2^3 + 28\omega_3 c_s^4\omega_1^2\omega_2^3 -$$
$$32\omega_3 c_s^4\omega_1^3\omega_2 - 54\omega_3 c_s^2 v_3^2\omega_1^3\omega_2^3 - 16\omega_3 c_s^2\omega_1^2\omega_2 - 48 c_s^2 v_3^2\omega_1^2\omega_2^2 + 6\omega_3 c_s^2\omega_1^3\omega_2^3 + 264\omega_3 c_s^2 v_3^2\omega_1^2\omega_2 - 16 c_s^4\omega_1^2\omega_2^2 + 40\omega_3 c_s^4\omega_2^3 - 240\omega_3 v_3^2\omega_1\omega_2^2 -$$
$$20\omega_3 c_s^2\omega_1^3 - 8\omega_3 c_s^4\omega_1^2\omega_2^2 + 8 c_s^4\omega_1^3\omega_2 - 22\omega_3 c_s^2\omega_1^3\omega_2^2 + 24 c_s^2 v_3^2\omega_1^3\omega_2 + 252\omega_3 c_s^2 v_3^2\omega_1^3\omega_2^2 + 42\omega_3 c_s^2\omega_1^3\omega_2 + 504\omega_3 c_s^2 v_3^2\omega_1^2\omega_2^3 + 4\omega_3\omega_1^3 -$$
$$1068\omega_3 v_3^4\omega_1\omega_2^3 - 360\omega_3 c_s^2 v_3^2\omega_1^3\omega_2 - 44\omega_3 c_s^2\omega_1^2\omega_2^3 - 3\omega_3 c_s^4\omega_1^3\omega_2^3 + 8\omega_3 c_s^4\omega_1^2\omega_2 + 8\omega_3\omega_1\omega_2^2 + 16 c_s^2\omega_1^2\omega_2^2 + 552\omega_3 v_3^4\omega_1\omega_2^2 + 24\omega_3 c_s^2\omega_1^2\omega_2^2 -$$
$$576\omega_3 c_s^2 v_3^2\omega_1^2\omega_2^2 - 8 c_s^2\omega_1^3\omega_2 - 60\omega_3 v_3^2\omega_1^3 + 528\omega_3 v_3^4\omega_2^3 - 28\omega_3\omega_1\omega_2^3 + 14\omega_3 c_s^4\omega_1^3\omega_2^2$$

3 Comparison of SRT, MRT, CLBM, and CuLBM

3.1 Conservation of mass: ρ

$$\frac{\partial\rho}{\partial t} + v_1\frac{\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_1} + \rho\frac{\delta_l}{\delta_t}\frac{\partial v_1}{\partial x_1} + v_2\frac{\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_2} + \rho\frac{\delta_l}{\delta_t}\frac{\partial v_2}{\partial x_2} + v_3\frac{\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_3} + \rho\frac{\delta_l}{\delta_t}\frac{\partial v_3}{\partial x_3} + (-1+v_1^2+3c_s^2)\frac{v_1}{12}\frac{\delta_l^3}{\delta_t}\frac{\partial^3\rho}{\partial x_1^3} +$$
$$(-1+3v_1^2+c_s^2)\frac{\rho}{12}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_1}{\partial x_1^3} - \frac{c_s^2\rho}{6}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_2}{\partial x_1^2\partial x_2} - \frac{c_s^2\rho}{6}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_1}{\partial x_1\partial x_2^2} + (-1+3c_s^2+v_2^2)\frac{v_2}{12}\frac{\delta_l^3}{\delta_t}\frac{\partial^3\rho}{\partial x_2^3} + (-1+c_s^2+3v_2^2)\frac{\rho}{12}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_2}{\partial x_2^3}$$
$$- \frac{c_s^2\rho}{6}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_3}{\partial x_1^2\partial x_3} - \frac{c_s^2\rho}{6}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_3}{\partial x_2^2\partial x_3} - \frac{c_s^2\rho}{6}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_1}{\partial x_1\partial x_3^2} - \frac{c_s^2\rho}{6}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_2}{\partial x_2\partial x_3^2} + (-1+v_3^2+3c_s^2)\frac{v_3}{12}\frac{\delta_l^3}{\delta_t}\frac{\partial^3\rho}{\partial x_3^3} +$$
$$(-1+3v_3^2+c_s^2)\frac{\rho}{12}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_3}{\partial x_3^3} + C^{(0)}_{\mathrm{D}_x^4\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4\rho}{\partial x_1^4} + C^{(0)}_{\mathrm{D}_x^4 v_1}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_1}{\partial x_1^4} + C^{(0)}_{\mathrm{D}_x^3\mathrm{D}_y\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4\rho}{\partial x_1^3\partial x_2} + C^{(0)}_{\mathrm{D}_x^3\mathrm{D}_y v_1}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_1}{\partial x_1^3\partial x_2} +$$
$$C^{(0)}_{\mathrm{D}_x^3\mathrm{D}_y v_2}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_2}{\partial x_1^3\partial x_2} + C^{(0)}_{\mathrm{D}_x^2\mathrm{D}_y^2\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4\rho}{\partial x_1^2\partial x_2^2} + C^{(0)}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_1}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_1}{\partial x_1^2\partial x_2^2} + C^{(0)}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_2}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_2}{\partial x_1^2\partial x_2^2} + C^{(0)}_{\mathrm{D}_x\mathrm{D}_y^3\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4\rho}{\partial x_1\partial x_2^3} +$$
$$C^{(0)}_{\mathrm{D}_x\mathrm{D}_y^3 v_1}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_2^3} + C^{(0)}_{\mathrm{D}_x\mathrm{D}_y^3 v_2}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_2}{\partial x_1\partial x_2^3} + C^{(0)}_{\mathrm{D}_y^4\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4\rho}{\partial x_2^4} + C^{(0)}_{\mathrm{D}_y^4 v_2}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_2}{\partial x_2^4} + C^{(0)}_{\mathrm{D}_x^3\mathrm{D}_z\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4\rho}{\partial x_1^3\partial x_3} +$$
$$C^{(0)}_{\mathrm{D}_x^3\mathrm{D}_z v_1}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_1}{\partial x_1^3\partial x_3} + C^{(0)}_{\mathrm{D}_x^3\mathrm{D}_z v_3}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_3}{\partial x_1^3\partial x_3} + C^{(0)}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_2}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_2}{\partial x_1^2\partial x_2\partial x_3} + C^{(0)}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_3}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_3}{\partial x_1^2\partial x_2\partial x_3} +$$
$$C^{(0)}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_1}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_2^2\partial x_3} + C^{(0)}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_3}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_3}{\partial x_1\partial x_2^2\partial x_3} + C^{(0)}_{\mathrm{D}_y^3\mathrm{D}_z\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4\rho}{\partial x_2^3\partial x_3} + C^{(0)}_{\mathrm{D}_y^3\mathrm{D}_z v_2}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_2}{\partial x_2^3\partial x_3} +$$

$$C^{(0)}_{\mathrm{D}^3_y\mathrm{D}_z v_3}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_3}{\partial x_2^3\partial x_3} + C^{(0)}_{\mathrm{D}^2_x\mathrm{D}^2_z\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 \rho}{\partial x_1^2\partial x_3^2} + C^{(0)}_{\mathrm{D}^2_x\mathrm{D}^2_z v_1}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_1}{\partial x_1^2\partial x_3^2} + C^{(0)}_{\mathrm{D}^2_x\mathrm{D}^2_z v_3}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_3}{\partial x_1^2\partial x_3^2} + C^{(0)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}^2_z v_1}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_2\partial x_3^2} + C^{(0)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}^2_z v_2}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_2}{\partial x_1\partial x_2\partial x_3^2} + C^{(0)}_{\mathrm{D}^2_y\mathrm{D}^2_z\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 \rho}{\partial x_2^2\partial x_3^2} + C^{(0)}_{\mathrm{D}^2_y\mathrm{D}^2_z v_2}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_2}{\partial x_2^2\partial x_3^2} + C^{(0)}_{\mathrm{D}^2_y\mathrm{D}^2_z v_3}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_3}{\partial x_2^2\partial x_3^2} + C^{(0)}_{\mathrm{D}_x\mathrm{D}^3_z\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 \rho}{\partial x_1\partial x_3^3} + C^{(0)}_{\mathrm{D}_x\mathrm{D}^3_z v_1}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_3^3} + C^{(0)}_{\mathrm{D}_x\mathrm{D}^3_z v_3}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_3}{\partial x_1\partial x_3^3} + C^{(0)}_{\mathrm{D}_y\mathrm{D}^3_z\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 \rho}{\partial x_2\partial x_3^3} + C^{(0)}_{\mathrm{D}_y\mathrm{D}^3_z v_2}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_2}{\partial x_2\partial x_3^3} + C^{(0)}_{\mathrm{D}_y\mathrm{D}^3_z v_3}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_3}{\partial x_2\partial x_3^3} + C^{(0)}_{\mathrm{D}^4_z\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 \rho}{\partial x_3^4} + C^{(0)}_{\mathrm{D}^4_z v_3}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_3}{\partial x_3^4} = 0,$$

where:

coefficient $C^{(0)}_{\mathrm{D}^4_x\rho}$ at $\frac{\partial^4\rho}{\partial x_1^4}$:

$C^{(0),\mathrm{SRT}}_{\mathrm{D}^4_x\rho} = (-6v_1^2 - 12c_s^2v_1^2\omega + 3v_1^2\omega + 2c_s^4 - c_s^4\omega - 3v_1^4\omega + 6v_1^4 + c_s^2\omega - 2c_s^2 + 24c_s^2v_1^2)\frac{1}{24\omega}$

$C^{(0),\mathrm{MRT1}}_{\mathrm{D}^4_x\rho} = (-6v_1^2 - 12c_s^2v_1^2\omega_9 + 3v_1^2\omega_9 + 2c_s^4 - c_s^4\omega_9 - 3v_1^4\omega_9 + 6v_1^4 + c_s^2\omega_9 - 2c_s^2 + 24c_s^2v_1^2)\frac{1}{24\omega_9}$

$C^{(0),\mathrm{MRT2}}_{\mathrm{D}^4_x\rho} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}^4_x\rho}$

$C^{(0),\mathrm{CLBM1}}_{\mathrm{D}^4_x\rho} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}^4_x\rho}$

$C^{(0),\mathrm{CLBM2}}_{\mathrm{D}^4_x\rho} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}^4_x\rho}$

$C^{(0),\mathrm{CuLBM1}}_{\mathrm{D}^4_x\rho} = (-6v_1^2 - 12c_s^2v_1^2\omega_4 + 3v_1^2\omega_4 + 2c_s^4 - c_s^4\omega_4 - 3v_1^4\omega_4 + c_s^2\omega_4 + 6v_1^4 - 2c_s^2 + 24c_s^2v_1^2)\frac{1}{24\omega_4}$

$C^{(0),\mathrm{CuLBM2}}_{\mathrm{D}^4_x\rho} = (-3c_s^4\omega_1\omega_2 - 6v_1^2\omega_1 + 4c_s^4\omega_2 + 24c_s^2v_1^2\omega_1 - 12v_1^2\omega_2 + 48c_s^2v_1^2\omega_2 + 2c_s^4\omega_1 + 3c_s^2\omega_1\omega_2 + 6v_1^4\omega_1 - 4c_s^2\omega_2 - 9v_1^4\omega_1\omega_2 - 36c_s^2v_1^2\omega_1\omega_2 + 12v_1^4\omega_2 - 2c_s^2\omega_1 + 9v_1^2\omega_1\omega_2)\frac{1}{72\omega_1\omega_2}$

coefficient $C^{(0)}_{\mathrm{D}^4_x v_1}$ at $\frac{\partial^4 v_1}{\partial x_1^4}$:

$C^{(0),\mathrm{SRT}}_{\mathrm{D}^4_x v_1} = (-4 + 10v_1^2 - 5v_1^2\omega + 2\omega - 3c_s^2\omega + 6c_s^2)\frac{v_1\rho}{12\omega}$

$C^{(0),\mathrm{MRT1}}_{\mathrm{D}^4_x v_1} = (-4 + 10v_1^2 - 5v_1^2\omega_9 - 3c_s^2\omega_9 + 6c_s^2 + 2\omega_9)\frac{v_1\rho}{12\omega_9}$

$C^{(0),\mathrm{MRT2}}_{\mathrm{D}^4_x v_1} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}^4_x v_1}$

$C^{(0),\mathrm{CLBM1}}_{\mathrm{D}^4_x v_1} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}^4_x v_1}$

$C^{(0),\mathrm{CLBM2}}_{\mathrm{D}^4_x v_1} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}^4_x v_1}$

$C^{(0),\mathrm{CuLBM1}}_{\mathrm{D}^4_x v_1} = (-4 + 10v_1^2 - 5v_1^2\omega_4 + 2\omega_4 - 3c_s^2\omega_4 + 6c_s^2)\frac{v_1\rho}{12\omega_4}$

$C^{(0),\mathrm{CuLBM2}}_{\mathrm{D}^4_x v_1} = (10v_1^2\omega_1 + 20v_1^2\omega_2 + 6\omega_1\omega_2 - 9c_s^2\omega_1\omega_2 - 4\omega_1 + 12c_s^2\omega_2 - 8\omega_2 + 6c_s^2\omega_1 - 15v_1^2\omega_1\omega_2)\frac{v_1\rho}{36\omega_1\omega_2}$

coefficient $C^{(0)}_{\mathrm{D}^3_x\mathrm{D}_y\rho}$ at $\frac{\partial^4\rho}{\partial x_1^3\partial x_2}$:

$C^{(0),\mathrm{SRT}}_{\mathrm{D}^3_x\mathrm{D}_y\rho} = 0$

$C^{(0),\mathrm{MRT1}}_{\mathrm{D}^3_x\mathrm{D}_y\rho} = (v_1^2\omega_{12} - v_1^2\omega_9 - 3c_s^2\omega_9 + \omega_9 - \omega_{12} + 3c_s^2\omega_{12})\frac{v_2v_1}{4\omega_9\omega_{12}}$

$C^{(0),\mathrm{MRT2}}_{\mathrm{D}^3_x\mathrm{D}_y\rho} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}^3_x\mathrm{D}_y\rho}$

$C^{(0),\mathrm{CLBM1}}_{\mathrm{D}^3_x\mathrm{D}_y\rho} = 0$

$C^{(0),\mathrm{CLBM2}}_{\mathrm{D}^3_x\mathrm{D}_y\rho} = 0$

$C^{(0),\mathrm{CuLBM1}}_{\mathrm{D}^3_x\mathrm{D}_y\rho} = 0$

$C^{(0),\mathrm{CuLBM2}}_{\mathrm{D}^3_x\mathrm{D}_y\rho} = (-\omega_1 - 3c_s^2\omega_2 - v_2^2\omega_2 + \omega_2 + v_2^2\omega_1 + 3c_s^2\omega_1)\frac{v_2v_1}{12\omega_1\omega_2}$

coefficient $C^{(0)}_{\mathrm{D}^3_x\mathrm{D}_y v_1}$ **at** $\frac{\partial^4 v_1}{\partial x_1^3\partial x_2}$**:**

$C^{(0),\mathrm{SRT}}_{\mathrm{D}^3_x\mathrm{D}_y v_1} = 0$

$C^{(0),\mathrm{MRT1}}_{\mathrm{D}^3_x\mathrm{D}_y v_1} = (3v_1^2\omega_{12} - 3v_1^2\omega_9 - c_s^2\omega_9 + \omega_9 - \omega_{12} + c_s^2\omega_{12})\frac{v_2\rho}{4\omega_9\omega_{12}}$

$C^{(0),\mathrm{MRT2}}_{\mathrm{D}^3_x\mathrm{D}_y v_1} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}^3_x\mathrm{D}_y v_1}$

$C^{(0),\mathrm{CLBM1}}_{\mathrm{D}^3_x\mathrm{D}_y v_1} = 0$

$C^{(0),\mathrm{CLBM2}}_{\mathrm{D}^3_x\mathrm{D}_y v_1} = 0$

$C^{(0),\mathrm{CuLBM1}}_{\mathrm{D}^3_x\mathrm{D}_y v_1} = 0$

$C^{(0),\mathrm{CuLBM2}}_{\mathrm{D}^3_x\mathrm{D}_y v_1} = (-\omega_1 - 3c_s^2\omega_2 - v_2^2\omega_2 + \omega_2 + v_2^2\omega_1 + 3c_s^2\omega_1)\frac{v_2\rho}{36\omega_1\omega_2}$

coefficient $C^{(0)}_{\mathrm{D}^3_x\mathrm{D}_y v_2}$ **at** $\frac{\partial^4 v_2}{\partial x_1^3\partial x_2}$**:**

$C^{(0),\mathrm{SRT}}_{\mathrm{D}^3_x\mathrm{D}_y v_2} = (2 - 2v_1^2 + v_1^2\omega - \omega + 3c_s^2\omega - 6c_s^2)\frac{v_1\rho}{12\omega}$

$C^{(0),\mathrm{MRT1}}_{\mathrm{D}^3_x\mathrm{D}_y v_2} = (3c_s^2\omega_5\omega_{12} + 3\omega_5\omega_9 - 6c_s^2\omega_9\omega_{12} - \omega_5\omega_{12} - 3c_s^2\omega_5\omega_9 + v_1^2\omega_5\omega_{12} + v_1^2\omega_5\omega_9\omega_{12} - 3v_1^2\omega_5\omega_9 - \omega_5\omega_9\omega_{12} + 3c_s^2\omega_5\omega_9\omega_{12})\frac{v_1\rho}{12\omega_5\omega_9\omega_{12}}$

$C^{(0),\mathrm{MRT2}}_{\mathrm{D}^3_x\mathrm{D}_y v_2} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}^3_x\mathrm{D}_y v_2}$

$C^{(0),\mathrm{CLBM1}}_{\mathrm{D}^3_x\mathrm{D}_y v_2} = (-\omega_9\omega_{12} + 3c_s^2\omega_9\omega_{12} + v_1^2\omega_{12} - 3v_1^2\omega_9 + v_1^2\omega_9\omega_{12} - 9c_s^2\omega_9 + 3\omega_9 - \omega_{12} + 3c_s^2\omega_{12})\frac{v_1\rho}{12\omega_9\omega_{12}}$

$C^{(0),\mathrm{CLBM2}}_{\mathrm{D}^3_x\mathrm{D}_y v_2} = C^{(0),\mathrm{CLBM1}}_{\mathrm{D}^3_x\mathrm{D}_y v_2}$

$C^{(0),\mathrm{CuLBM1}}_{\mathrm{D}^3_x\mathrm{D}_y v_2} = (-3v_1^2\omega_4 + v_1^2\omega_9 - \omega_4\omega_9 + 3c_s^2\omega_4\omega_9 + 3\omega_4 - 9c_s^2\omega_4 + 3c_s^2\omega_9 - \omega_9 + v_1^2\omega_4\omega_9)\frac{v_1\rho}{12\omega_4\omega_9}$

$C^{(0),\mathrm{CuLBM2}}_{\mathrm{D}^3_x\mathrm{D}_y v_2} = (-18\omega_3v_2^2\omega_4\omega_2 + 9\omega_4\omega_1\omega_2 - 27\omega_3c_s^2\omega_1\omega_2 - 27c_s^2\omega_4\omega_1\omega_2 + 12\omega_3c_s^2\omega_4\omega_1 + 6\omega_3c_s^2\omega_4\omega_2 + 18\omega_3v_2^2\omega_4\omega_1 - 9v_1^2\omega_4\omega_1\omega_2 - 6\omega_3\omega_4\omega_1\omega_2 + 2\omega_3\omega_4\omega_2 - 9\omega_3v_1^2\omega_1\omega_2 + 2\omega_3v_1^2\omega_4\omega_1 + 6\omega_3v_1^2\omega_4\omega_1\omega_2 + 18\omega_3c_s^2\omega_4\omega_1\omega_2 - 8\omega_3\omega_4\omega_1 + 4\omega_3v_1^2\omega_4\omega_2 + 9\omega_3\omega_1\omega_2)\frac{v_1\rho}{72\omega_3\omega_4\omega_1\omega_2}$

coefficient $C^{(0)}_{\mathrm{D}^2_x\mathrm{D}^2_y\rho}$ **at** $\frac{\partial^4\rho}{\partial x_1^2\partial x_2^2}$**:**

$C^{(0),\mathrm{SRT}}_{\mathrm{D}^2_x\mathrm{D}^2_y\rho} = (-2 + \omega)\frac{c_s^4}{6\omega}$

$C^{(0),\mathrm{MRT1}}_{\mathrm{D}^2_x\mathrm{D}^2_y\rho} = (-2 + \omega_5)\frac{c_s^4}{6\omega_5}$

$C^{(0),\mathrm{MRT2}}_{\mathrm{D}^2_x\mathrm{D}^2_y\rho} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}^2_x\mathrm{D}^2_y\rho}$

$C^{(0),\mathrm{CLBM1}}_{\mathrm{D}^2_x\mathrm{D}^2_y\rho} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}^2_x\mathrm{D}^2_y\rho}$

$C^{(0),\mathrm{CLBM2}}_{\mathrm{D}^2_x\mathrm{D}^2_y\rho} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}^2_x\mathrm{D}^2_y\rho}$

$C^{(0),\mathrm{CuLBM1}}_{\mathrm{D}^2_x\mathrm{D}^2_y\rho} = (-2 + \omega_1)\frac{c_s^4}{6\omega_1}$

$C^{(0),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y^2\rho} = (3v_1^2\omega_1 - 3v_1^2\omega_2 + 6c_s^2\omega_1\omega_2 - 2\omega_1 - 14c_s^2\omega_2 - 3v_2^2\omega_2 + 2\omega_2 + 3v_2^2\omega_1 + 2c_s^2\omega_1)\frac{c_s^2}{36\omega_1\omega_2}$

coefficient $C^{(0)}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_1}$ **at** $\frac{\partial^4 v_1}{\partial x_1^2\partial x_2^2}$**:**

$C^{(0),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_1} = 0$

$C^{(0),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_1} = (\omega_5 - \omega_{12})\frac{c_s^2 v_1\rho}{2\omega_5\omega_{12}}$

$C^{(0),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_1} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_1}$

$C^{(0),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_1} = 0$

$C^{(0),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_1} = 0$

$C^{(0),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_1} = 0$

$C^{(0),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_1} = (v_1^2\omega_1 - v_1^2\omega_2 - \omega_1 - 3c_s^2\omega_2 + \omega_2 + 3c_s^2\omega_1)\frac{v_1\rho}{36\omega_1\omega_2}$

coefficient $C^{(0)}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_2}$ **at** $\frac{\partial^4 v_2}{\partial x_1^2\partial x_2^2}$**:**

$C^{(0),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_2} = 0$

$C^{(0),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_2} = (\omega_5 - \omega_{15})\frac{c_s^2 v_2\rho}{2\omega_5\omega_{15}}$

$C^{(0),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_2} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_2}$

$C^{(0),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_2} = 0$

$C^{(0),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_2} = 0$

$C^{(0),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_2} = 0$

$C^{(0),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_2} = (-\omega_1 - 3c_s^2\omega_2 - v_2^2\omega_2 + \omega_2 + v_2^2\omega_1 + 3c_s^2\omega_1)\frac{v_2\rho}{36\omega_1\omega_2}$

coefficient $C^{(0)}_{\mathrm{D}_x\mathrm{D}_y^3\rho}$ **at** $\frac{\partial^4\rho}{\partial x_1\partial x_2^3}$**:**

$C^{(0),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y^3\rho} = 0$

$C^{(0),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^3\rho} = (\omega_{10} - 3c_s^2\omega_{10} - v_2^2\omega_{10} + 3c_s^2\omega_{15} - \omega_{15} + v_2^2\omega_{15})\frac{v_2 v_1}{4\omega_{10}\omega_{15}}$

$C^{(0),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y^3\rho} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^3\rho}$

$C^{(0),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y^3\rho} = 0$

$C^{(0),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y^3\rho} = 0$

$C^{(0),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y^3\rho} = 0$

$C^{(0),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y^3\rho} = (v_1^2\omega_1 - v_1^2\omega_2 - \omega_1 - 3c_s^2\omega_2 + \omega_2 + 3c_s^2\omega_1)\frac{v_2 v_1}{12\omega_1\omega_2}$

coefficient $C^{(0)}_{\mathrm{D}_x\mathrm{D}_y^3 v_1}$ **at** $\frac{\partial^4 v_1}{\partial x_1 \partial x_2^3}$**:**

$C^{(0),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y^3 v_1} = (2 - \omega + v_2^2\omega + 3c_s^2\omega - 6c_s^2 - 2v_2^2)\frac{v_2\rho}{12\omega}$

$C^{(0),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^3 v_1} =$
$(-3v_2^2\omega_{10}\omega_5 + 3c_s^2\omega_5\omega_{15} - \omega_5\omega_{15} - 3c_s^2\omega_{10}\omega_5 - \omega_{10}\omega_5\omega_{15} + 3\omega_{10}\omega_5 + v_2^2\omega_5\omega_{15} + 3c_s^2\omega_{10}\omega_5\omega_{15} + v_2^2\omega_{10}\omega_5\omega_{15} - 6c_s^2\omega_{10}\omega_{15})\frac{v_2\rho}{12\omega_{10}\omega_5\omega_{15}}$

$C^{(0),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y^3 v_1} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^3 v_1}$

$C^{(0),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y^3 v_1} = (3\omega_{10} - 9c_s^2\omega_{10} - 3v_2^2\omega_{10} + v_2^2\omega_{10}\omega_{15} + 3c_s^2\omega_{15} - \omega_{15} - \omega_{10}\omega_{15} + 3c_s^2\omega_{10}\omega_{15} + v_2^2\omega_{15})\frac{v_2\rho}{12\omega_{10}\omega_{15}}$

$C^{(0),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y^3 v_1} = C^{(0),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y^3 v_1}$

$C^{(0),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y^3 v_1} = (-\omega_7\omega_5 + 3c_s^2\omega_7\omega_5 - 3v_2^2\omega_5 + v_2^2\omega_7\omega_5 - \omega_7 - 9c_s^2\omega_5 + v_2^2\omega_7 + 3c_s^2\omega_7 + 3\omega_5)\frac{v_2\rho}{12\omega_7\omega_5}$

$C^{(0),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y^3 v_1} = (4\omega_3 v_2^2\omega_4\omega_2 + 9\omega_4\omega_1\omega_2 - 27\omega_3 c_s^2\omega_1\omega_2 - 27c_s^2\omega_4\omega_1\omega_2 + 12\omega_3 c_s^2\omega_4\omega_1 + 6\omega_3 c_s^2\omega_4\omega_2 + 2\omega_3 v_2^2\omega_4\omega_1 + 6\omega_3 v_2^2\omega_4\omega_1\omega_2 -$
$9\omega_3 v_2^2\omega_1\omega_2 - 6\omega_3\omega_4\omega_1\omega_2 - 9v_2^2\omega_4\omega_1\omega_2 + 2\omega_3\omega_4\omega_2 + 18\omega_3 v_1^2\omega_4\omega_1 + 18\omega_3 c_s^2\omega_4\omega_1\omega_2 - 8\omega_3\omega_4\omega_1 - 18\omega_3 v_1^2\omega_4\omega_2 + 9\omega_3\omega_1\omega_2)\frac{v_2\rho}{72\omega_3\omega_4\omega_1\omega_2}$

coefficient $C^{(0)}_{\mathrm{D}_x\mathrm{D}_y^3 v_2}$ **at** $\frac{\partial^4 v_2}{\partial x_1 \partial x_2^3}$**:**

$C^{(0),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y^3 v_2} = 0$

$C^{(0),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^3 v_2} = (\omega_{10} - c_s^2\omega_{10} - 3v_2^2\omega_{10} + c_s^2\omega_{15} - \omega_{15} + 3v_2^2\omega_{15})\frac{v_1\rho}{4\omega_{10}\omega_{15}}$

$C^{(0),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y^3 v_2} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^3 v_2}$

$C^{(0),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y^3 v_2} = 0$

$C^{(0),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y^3 v_2} = 0$

$C^{(0),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y^3 v_2} = 0$

$C^{(0),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y^3 v_2} = (v_1^2\omega_1 - v_1^2\omega_2 - \omega_1 - 3c_s^2\omega_2 + \omega_2 + 3c_s^2\omega_1)\frac{v_1\rho}{36\omega_1\omega_2}$

coefficient $C^{(0)}_{\mathrm{D}_y^4\rho}$ **at** $\frac{\partial^4 \rho}{\partial x_2^4}$**:**

$C^{(0),\mathrm{SRT}}_{\mathrm{D}_y^4\rho} = (24c_s^2v_2^2 + 6v_2^4 + 2c_s^4 - c_s^4\omega - 3v_2^4\omega + 3v_2^2\omega - 12c_s^2v_2^2\omega + c_s^2\omega - 2c_s^2 - 6v_2^2)\frac{1}{24\omega}$

$C^{(0),\mathrm{MRT1}}_{\mathrm{D}_y^4\rho} = (24c_s^2v_2^2 - 3v_2^4\omega_{10} - c_s^4\omega_{10} + 6v_2^4 + 2c_s^4 + c_s^2\omega_{10} + 3v_2^2\omega_{10} - 12c_s^2v_2^2\omega_{10} - 2c_s^2 - 6v_2^2)\frac{1}{24\omega_{10}}$

$C^{(0),\mathrm{MRT2}}_{\mathrm{D}_y^4\rho} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}_y^4\rho}$

$C^{(0),\mathrm{CLBM1}}_{\mathrm{D}_y^4\rho} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}_y^4\rho}$

$C^{(0),\mathrm{CLBM2}}_{\mathrm{D}_y^4\rho} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}_y^4\rho}$

$C^{(0),\mathrm{CuLBM1}}_{\mathrm{D}_y^4\rho} = (24c_s^2v_2^2 + 6v_2^4 + 2c_s^4 + 3v_2^2\omega_5 - 12c_s^2v_2^2\omega_5 + c_s^2\omega_5 - c_s^4\omega_5 - 3v_2^4\omega_5 - 2c_s^2 - 6v_2^2)\frac{1}{24\omega_5}$

$C^{(0),\mathrm{CuLBM2}}_{\mathrm{D}_y^4\rho} = (9v_2^2\omega_1\omega_2 - 3c_s^4\omega_1\omega_2 + 12v_2^4\omega_2 - 36c_s^2v_2^2\omega_1\omega_2 + 4c_s^4\omega_2 - 9v_2^4\omega_1\omega_2 + 2c_s^4\omega_1 + 3c_s^2\omega_1\omega_2 + 6v_2^4\omega_1 - 4c_s^2\omega_2 + 48c_s^2v_2^2\omega_2 -$
$12v_2^2\omega_2 + 24c_s^2v_2^2\omega_1 - 6v_2^2\omega_1 - 2c_s^2\omega_1)\frac{1}{72\omega_1\omega_2}$

coefficient $C^{(0)}_{\mathrm{D}^4_y v_2}$ **at** $\frac{\partial^4 v_2}{\partial x_2^4}$**:**

$C^{(0),\mathrm{SRT}}_{\mathrm{D}^4_y v_2} = (-4 + 2\omega - 5v_2^2\omega - 3c_s^2\omega + 6c_s^2 + 10v_2^2)\frac{v_2\rho}{12\omega}$

$C^{(0),\mathrm{MRT1}}_{\mathrm{D}^4_y v_2} = (-4 + 2\omega_{10} - 3c_s^2\omega_{10} - 5v_2^2\omega_{10} + 6c_s^2 + 10v_2^2)\frac{v_2\rho}{12\omega_{10}}$

$C^{(0),\mathrm{MRT2}}_{\mathrm{D}^4_y v_2} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}^4_y v_2}$

$C^{(0),\mathrm{CLBM1}}_{\mathrm{D}^4_y v_2} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}^4_y v_2}$

$C^{(0),\mathrm{CLBM2}}_{\mathrm{D}^4_y v_2} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}^4_y v_2}$

$C^{(0),\mathrm{CuLBM1}}_{\mathrm{D}^4_y v_2} = (-4 - 5v_2^2\omega_5 - 3c_s^2\omega_5 + 2\omega_5 + 6c_s^2 + 10v_2^2)\frac{v_2\rho}{12\omega_5}$

$C^{(0),\mathrm{CuLBM2}}_{\mathrm{D}^4_y v_2} = (-15v_2^2\omega_1\omega_2 + 6\omega_1\omega_2 - 9c_s^2\omega_1\omega_2 - 4\omega_1 + 12c_s^2\omega_2 + 20v_2^2\omega_2 - 8\omega_2 + 10v_2^2\omega_1 + 6c_s^2\omega_1)\frac{v_2\rho}{36\omega_1\omega_2}$

coefficient $C^{(0)}_{\mathrm{D}^3_x \mathrm{D}_z \rho}$ **at** $\frac{\partial^4 \rho}{\partial x_1^3 \partial x_3}$**:**

$C^{(0),\mathrm{SRT}}_{\mathrm{D}^3_x \mathrm{D}_z \rho} = 0$

$C^{(0),\mathrm{MRT1}}_{\mathrm{D}^3_x \mathrm{D}_z \rho} = (-v_1^2\omega_9 - \omega_{13} + v_1^2\omega_{13} + 3c_s^2\omega_{13} - 3c_s^2\omega_9 + \omega_9)\frac{v_3 v_1}{4\omega_{13}\omega_9}$

$C^{(0),\mathrm{MRT2}}_{\mathrm{D}^3_x \mathrm{D}_z \rho} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}^3_x \mathrm{D}_z \rho}$

$C^{(0),\mathrm{CLBM1}}_{\mathrm{D}^3_x \mathrm{D}_z \rho} = 0$

$C^{(0),\mathrm{CLBM2}}_{\mathrm{D}^3_x \mathrm{D}_z \rho} = 0$

$C^{(0),\mathrm{CuLBM1}}_{\mathrm{D}^3_x \mathrm{D}_z \rho} = 0$

$C^{(0),\mathrm{CuLBM2}}_{\mathrm{D}^3_x \mathrm{D}_z \rho} = (-\omega_1 + v_3^2\omega_1 - 3c_s^2\omega_2 + \omega_2 + 3c_s^2\omega_1 - v_3^2\omega_2)\frac{v_3 v_1}{12\omega_1\omega_2}$

coefficient $C^{(0)}_{\mathrm{D}^3_x \mathrm{D}_z v_1}$ **at** $\frac{\partial^4 v_1}{\partial x_1^3 \partial x_3}$**:**

$C^{(0),\mathrm{SRT}}_{\mathrm{D}^3_x \mathrm{D}_z v_1} = 0$

$C^{(0),\mathrm{MRT1}}_{\mathrm{D}^3_x \mathrm{D}_z v_1} = (-3v_1^2\omega_9 - \omega_{13} + 3v_1^2\omega_{13} + c_s^2\omega_{13} - c_s^2\omega_9 + \omega_9)\frac{v_3\rho}{4\omega_{13}\omega_9}$

$C^{(0),\mathrm{MRT2}}_{\mathrm{D}^3_x \mathrm{D}_z v_1} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}^3_x \mathrm{D}_z v_1}$

$C^{(0),\mathrm{CLBM1}}_{\mathrm{D}^3_x \mathrm{D}_z v_1} = 0$

$C^{(0),\mathrm{CLBM2}}_{\mathrm{D}^3_x \mathrm{D}_z v_1} = 0$

$C^{(0),\mathrm{CuLBM1}}_{\mathrm{D}^3_x \mathrm{D}_z v_1} = 0$

$C^{(0),\mathrm{CuLBM2}}_{\mathrm{D}^3_x \mathrm{D}_z v_1} = (-\omega_1 + v_3^2\omega_1 - 3c_s^2\omega_2 + \omega_2 + 3c_s^2\omega_1 - v_3^2\omega_2)\frac{v_3\rho}{36\omega_1\omega_2}$

coefficient $C^{(0)}_{\mathrm{D}^3_x \mathrm{D}_z v_3}$ **at** $\frac{\partial^4 v_3}{\partial x_1^3 \partial x_3}$**:**

$C^{(0),\mathrm{SRT}}_{\mathrm{D}^3_x \mathrm{D}_z v_3} = (2 - 2v_1^2 + v_1^2\omega - \omega + 3c_s^2\omega - 6c_s^2)\frac{v_1\rho}{12\omega}$

$C^{(0),\mathrm{MRT1}}_{\mathrm{D}_x^3\mathrm{D}_z v_3} = (\omega_6 v_1^2\omega_{13} + 3\omega_6 c_s^2\omega_{13}\omega_9 - 3\omega_6 v_1^2\omega_9 - 3\omega_6 c_s^2\omega_9 - \omega_6\omega_{13}\omega_9 - \omega_6\omega_{13} + \omega_6 v_1^2\omega_{13}\omega_9 + 3\omega_6\omega_9 + 3\omega_6 c_s^2\omega_{13} - 6c_s^2\omega_{13}\omega_9)\frac{v_1\rho}{12\omega_6\omega_{13}\omega_9}$

$C^{(0),\mathrm{MRT2}}_{\mathrm{D}_x^3\mathrm{D}_z v_3} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}_x^3\mathrm{D}_z v_3}$

$C^{(0),\mathrm{CLBM1}}_{\mathrm{D}_x^3\mathrm{D}_z v_3} = (-3v_1^2\omega_9 - \omega_{13} + v_1^2\omega_{13} + v_1^2\omega_{13}\omega_9 + 3c_s^2\omega_{13} - 9c_s^2\omega_9 - \omega_{13}\omega_9 + 3c_s^2\omega_{13}\omega_9 + 3\omega_9)\frac{v_1\rho}{12\omega_{13}\omega_9}$

$C^{(0),\mathrm{CLBM2}}_{\mathrm{D}_x^3\mathrm{D}_z v_3} = C^{(0),\mathrm{CLBM1}}_{\mathrm{D}_x^3\mathrm{D}_z v_3}$

$C^{(0),\mathrm{CuLBM1}}_{\mathrm{D}_x^3\mathrm{D}_z v_3} = (-3v_1^2\omega_4 + v_1^2\omega_{12} + 3c_s^2\omega_4\omega_{12} - \omega_4\omega_{12} + 3\omega_4 - 9c_s^2\omega_4 + v_1^2\omega_4\omega_{12} - \omega_{12} + 3c_s^2\omega_{12})\frac{v_1\rho}{12\omega_4\omega_{12}}$

$C^{(0),\mathrm{CuLBM2}}_{\mathrm{D}_x^3\mathrm{D}_z v_3} = (9\omega_4\omega_1\omega_2 - 27\omega_3 c_s^2\omega_1\omega_2 - 27c_s^2\omega_4\omega_1\omega_2 + 12\omega_3 c_s^2\omega_4\omega_1 + 6\omega_3 c_s^2\omega_4\omega_2 - 9v_1^2\omega_4\omega_1\omega_2 - 6\omega_3\omega_4\omega_1\omega_2 + 2\omega_3\omega_4\omega_2 - 9\omega_3 v_1^2\omega_1\omega_2 + 2\omega_3 v_1^2\omega_4\omega_1 - 18\omega_3 v_3^2\omega_4\omega_2 + 6\omega_3 v_1^2\omega_4\omega_1\omega_2 + 18\omega_3 c_s^2\omega_4\omega_1\omega_2 - 8\omega_3\omega_4\omega_1 + 18\omega_3 v_3^2\omega_4\omega_1 + 4\omega_3 v_1^2\omega_4\omega_2 + 9\omega_3\omega_1\omega_2)\frac{v_1\rho}{72\omega_3\omega_4\omega_1\omega_2}$

coefficient $C^{(0)}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_2}$ **at** $\frac{\partial^4 v_2}{\partial x_1^2\partial x_2\partial x_3}$**:**

$C^{(0),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_2} = 0$

$C^{(0),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_2} = (-\omega_8 + \omega_5)\frac{v_3 c_s^2\rho}{2\omega_8\omega_5}$

$C^{(0),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_2} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_2}$

$C^{(0),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_2} = 0$

$C^{(0),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_2} = 0$

$C^{(0),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_2} = 0$

$C^{(0),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_2} = (9\omega_4\omega_1\omega_2 + 27\omega_3 c_s^2\omega_1\omega_2 - 27c_s^2\omega_4\omega_1\omega_2 + 6\omega_3 c_s^2\omega_4\omega_1 - 6\omega_3 c_s^2\omega_4\omega_2 + 2\omega_3\omega_4\omega_2 - 2\omega_3 v_3^2\omega_4\omega_2 - 9v_3^2\omega_4\omega_1\omega_2 - 2\omega_3\omega_4\omega_1 + 9\omega_3 v_3^2\omega_1\omega_2 + 2\omega_3 v_3^2\omega_4\omega_1 - 9\omega_3\omega_1\omega_2)\frac{v_3\rho}{72\omega_3\omega_4\omega_1\omega_2}$

coefficient $C^{(0)}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_3}$ **at** $\frac{\partial^4 v_3}{\partial x_1^2\partial x_2\partial x_3}$**:**

$C^{(0),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_3} = 0$

$C^{(0),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_3} = (\omega_6 - \omega_8)\frac{c_s^2 v_2\rho}{2\omega_6\omega_8}$

$C^{(0),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_3} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_3}$

$C^{(0),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_3} = 0$

$C^{(0),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_3} = 0$

$C^{(0),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_3} = 0$

$C^{(0),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_3} = (-2\omega_3 v_2^2\omega_4\omega_2 + 9\omega_4\omega_1\omega_2 + 27\omega_3 c_s^2\omega_1\omega_2 - 27c_s^2\omega_4\omega_1\omega_2 + 6\omega_3 c_s^2\omega_4\omega_1 - 6\omega_3 c_s^2\omega_4\omega_2 + 2\omega_3 v_2^2\omega_4\omega_1 + 9\omega_3 v_2^2\omega_1\omega_2 - 9v_2^2\omega_4\omega_1\omega_2 + 2\omega_3\omega_4\omega_2 - 2\omega_3\omega_4\omega_1 - 9\omega_3\omega_1\omega_2)\frac{v_2\rho}{72\omega_3\omega_4\omega_1\omega_2}$

coefficient $C^{(0)}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_1}$ **at** $\frac{\partial^4 v_1}{\partial x_1\partial x_2^2\partial x_3}$**:**

$C^{(0),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_1} = 0$

$C^{(0),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_1} = (-\omega_8 + \omega_5)\frac{v_3 c_s^2\rho}{2\omega_8\omega_5}$

$C^{(0),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_1} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_1}$

$C^{(0),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_1} = 0$

$C^{(0),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_1} = 0$

$C^{(0),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_1} = 0$

$C^{(0),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_1} = (9\omega_4\omega_1\omega_2 + 27\omega_3 c_s^2\omega_1\omega_2 - 27c_s^2\omega_4\omega_1\omega_2 + 6\omega_3 c_s^2\omega_4\omega_1 - 6\omega_3 c_s^2\omega_4\omega_2 + 2\omega_3\omega_4\omega_2 - 2\omega_3 v_3^2\omega_4\omega_2 - 9v_3^2\omega_4\omega_1\omega_2 - 2\omega_3\omega_4\omega_1 + 9\omega_3 v_3^2\omega_1\omega_2 + 2\omega_3 v_3^2\omega_4\omega_1 - 9\omega_3\omega_1\omega_2)\frac{v_3\rho}{72\omega_3\omega_4\omega_1\omega_2}$

coefficient $C^{(0)}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_3}$ **at** $\frac{\partial^4 v_3}{\partial x_1\partial x_2^2\partial x_3}$**:**

$C^{(0),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_3} = 0$

$C^{(0),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_3} = (\omega_7 - \omega_8)\frac{c_s^2 v_1\rho}{2\omega_7\omega_8}$

$C^{(0),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_3} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_3}$

$C^{(0),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_3} = 0$

$C^{(0),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_3} = 0$

$C^{(0),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_3} = 0$

$C^{(0),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_3} = (9\omega_4\omega_1\omega_2 + 27\omega_3 c_s^2\omega_1\omega_2 - 27c_s^2\omega_4\omega_1\omega_2 + 6\omega_3 c_s^2\omega_4\omega_1 - 6\omega_3 c_s^2\omega_4\omega_2 - 9v_1^2\omega_4\omega_1\omega_2 + 2\omega_3\omega_4\omega_2 + 9\omega_3 v_1^2\omega_1\omega_2 + 2\omega_3 v_1^2\omega_4\omega_1 - 2\omega_3\omega_4\omega_1 - 2\omega_3 v_1^2\omega_4\omega_2 - 9\omega_3\omega_1\omega_2)\frac{v_1\rho}{72\omega_3\omega_4\omega_1\omega_2}$

coefficient $C^{(0)}_{\mathrm{D}_y^3\mathrm{D}_z\rho}$ **at** $\frac{\partial^4\rho}{\partial x_2^3\partial x_3}$**:**

$C^{(0),\mathrm{SRT}}_{\mathrm{D}_y^3\mathrm{D}_z\rho} = 0$

$C^{(0),\mathrm{MRT1}}_{\mathrm{D}_y^3\mathrm{D}_z\rho} = (-\omega_{16} + \omega_{10} + 3c_s^2\omega_{16} - 3c_s^2\omega_{10} - v_2^2\omega_{10} + \omega_{16}v_2^2)\frac{v_3 v_2}{4\omega_{16}\omega_{10}}$

$C^{(0),\mathrm{MRT2}}_{\mathrm{D}_y^3\mathrm{D}_z\rho} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}_y^3\mathrm{D}_z\rho}$

$C^{(0),\mathrm{CLBM1}}_{\mathrm{D}_y^3\mathrm{D}_z\rho} = 0$

$C^{(0),\mathrm{CLBM2}}_{\mathrm{D}_y^3\mathrm{D}_z\rho} = 0$

$C^{(0),\mathrm{CuLBM1}}_{\mathrm{D}_y^3\mathrm{D}_z\rho} = 0$

$C^{(0),\mathrm{CuLBM2}}_{\mathrm{D}_y^3\mathrm{D}_z\rho} = (-\omega_1 + v_3^2\omega_1 - 3c_s^2\omega_2 + \omega_2 + 3c_s^2\omega_1 - v_3^2\omega_2)\frac{v_3 v_2}{12\omega_1\omega_2}$

coefficient $C^{(0)}_{\mathrm{D}_y^3\mathrm{D}_z v_2}$ **at** $\frac{\partial^4 v_2}{\partial x_2^3\partial x_3}$**:**

$C^{(0),\mathrm{SRT}}_{\mathrm{D}_y^3\mathrm{D}_z v_2} = 0$

$C^{(0),\mathrm{MRT1}}_{\mathrm{D}_y^3\mathrm{D}_z v_2} = (-\omega_{16} + \omega_{10} + c_s^2\omega_{16} - c_s^2\omega_{10} - 3v_2^2\omega_{10} + 3\omega_{16}v_2^2)\frac{v_3\rho}{4\omega_{16}\omega_{10}}$

$C^{(0),\mathrm{MRT2}}_{\mathrm{D}^3_y\mathrm{D}_z v_2} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}^3_y\mathrm{D}_z v_2}$

$C^{(0),\mathrm{CLBM1}}_{\mathrm{D}^3_y\mathrm{D}_z v_2} = 0$

$C^{(0),\mathrm{CLBM2}}_{\mathrm{D}^3_y\mathrm{D}_z v_2} = 0$

$C^{(0),\mathrm{CuLBM1}}_{\mathrm{D}^3_y\mathrm{D}_z v_2} = 0$

$C^{(0),\mathrm{CuLBM2}}_{\mathrm{D}^3_y\mathrm{D}_z v_2} = (-\omega_1 + v_3^2\omega_1 - 3c_s^2\omega_2 + \omega_2 + 3c_s^2\omega_1 - v_3^2\omega_2)\frac{v_3\rho}{36\omega_1\omega_2}$

coefficient $C^{(0)}_{\mathrm{D}^3_y\mathrm{D}_z v_3}$ **at** $\frac{\partial^4 v_3}{\partial x_2^3\partial x_3}$**:**

$C^{(0),\mathrm{SRT}}_{\mathrm{D}^3_y\mathrm{D}_z v_3} = (2 - \omega + v_2^2\omega + 3c_s^2\omega - 6c_s^2 - 2v_2^2)\frac{v_2\rho}{12\omega}$

$C^{(0),\mathrm{MRT1}}_{\mathrm{D}^3_y\mathrm{D}_z v_3} = (3c_s^2\omega_{16}\omega_{10}\omega_7 - \omega_{16}\omega_{10}\omega_7 + \omega_{16}v_2^2\omega_7 - 6c_s^2\omega_{16}\omega_{10} + 3c_s^2\omega_{16}\omega_7 - \omega_{16}\omega_7 - 3c_s^2\omega_{10}\omega_7 + 3\omega_{10}\omega_7 + \omega_{16}v_2^2\omega_{10}\omega_7 - 3v_2^2\omega_{10}\omega_7)\frac{v_2\rho}{12\omega_{16}\omega_{10}\omega_7}$

$C^{(0),\mathrm{MRT2}}_{\mathrm{D}^3_y\mathrm{D}_z v_3} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}^3_y\mathrm{D}_z v_3}$

$C^{(0),\mathrm{CLBM1}}_{\mathrm{D}^3_y\mathrm{D}_z v_3} = (\omega_{16}v_2^2\omega_{10} - \omega_{16} + 3\omega_{10} + 3c_s^2\omega_{16}\omega_{10} - \omega_{16}\omega_{10} + 3c_s^2\omega_{16} - 9c_s^2\omega_{10} - 3v_2^2\omega_{10} + \omega_{16}v_2^2)\frac{v_2\rho}{12\omega_{16}\omega_{10}}$

$C^{(0),\mathrm{CLBM2}}_{\mathrm{D}^3_y\mathrm{D}_z v_3} = C^{(0),\mathrm{CLBM1}}_{\mathrm{D}^3_y\mathrm{D}_z v_3}$

$C^{(0),\mathrm{CuLBM1}}_{\mathrm{D}^3_y\mathrm{D}_z v_3} = (3c_s^2\omega_{11}\omega_5 + v_2^2\omega_{11} - \omega_{11}\omega_5 + 3c_s^2\omega_{11} - 3v_2^2\omega_5 + v_2^2\omega_{11}\omega_5 - 9c_s^2\omega_5 - \omega_{11} + 3\omega_5)\frac{v_2\rho}{12\omega_{11}\omega_5}$

$C^{(0),\mathrm{CuLBM2}}_{\mathrm{D}^3_y\mathrm{D}_z v_3} = (4\omega_3v_2^2\omega_4\omega_2 + 9\omega_4\omega_1\omega_2 - 27\omega_3c_s^2\omega_1\omega_2 - 27c_s^2\omega_4\omega_1\omega_2 + 12\omega_3c_s^2\omega_4\omega_1 + 6\omega_3c_s^2\omega_4\omega_2 + 2\omega_3v_2^2\omega_4\omega_1 + 6\omega_3v_2^2\omega_4\omega_1\omega_2 - 9\omega_3v_2^2\omega_1\omega_2 - 6\omega_3\omega_4\omega_1\omega_2 - 9v_2^2\omega_4\omega_1\omega_2 + 2\omega_3\omega_4\omega_2 - 18\omega_3v_3^2\omega_4\omega_2 + 18\omega_3c_s^2\omega_4\omega_1\omega_2 - 8\omega_3\omega_4\omega_1 + 18\omega_3v_3^2\omega_4\omega_1 + 9\omega_3\omega_1\omega_2)\frac{v_2\rho}{72\omega_3\omega_4\omega_1\omega_2}$

coefficient $C^{(0)}_{\mathrm{D}^2_x\mathrm{D}^2_z\rho}$ **at** $\frac{\partial^4\rho}{\partial x_1^2\partial x_3^2}$**:**

$C^{(0),\mathrm{SRT}}_{\mathrm{D}^2_x\mathrm{D}^2_z\rho} = (-2 + \omega)\frac{c_s^4}{6\omega}$

$C^{(0),\mathrm{MRT1}}_{\mathrm{D}^2_x\mathrm{D}^2_z\rho} = (-2 + \omega_6)\frac{c_s^4}{6\omega_6}$

$C^{(0),\mathrm{MRT2}}_{\mathrm{D}^2_x\mathrm{D}^2_z\rho} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}^2_x\mathrm{D}^2_z\rho}$

$C^{(0),\mathrm{CLBM1}}_{\mathrm{D}^2_x\mathrm{D}^2_z\rho} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}^2_x\mathrm{D}^2_z\rho}$

$C^{(0),\mathrm{CLBM2}}_{\mathrm{D}^2_x\mathrm{D}^2_z\rho} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}^2_x\mathrm{D}^2_z\rho}$

$C^{(0),\mathrm{CuLBM1}}_{\mathrm{D}^2_x\mathrm{D}^2_z\rho} = (-2 + \omega_2)\frac{c_s^4}{6\omega_2}$

$C^{(0),\mathrm{CuLBM2}}_{\mathrm{D}^2_x\mathrm{D}^2_z\rho} = (3v_1^2\omega_1 - 3v_1^2\omega_2 + 6c_s^2\omega_1\omega_2 - 2\omega_1 + 3v_3^2\omega_1 - 14c_s^2\omega_2 + 2\omega_2 + 2c_s^2\omega_1 - 3v_3^2\omega_2)\frac{c_s^2}{36\omega_1\omega_2}$

coefficient $C^{(0)}_{\mathrm{D}^2_x\mathrm{D}^2_z v_1}$ **at** $\frac{\partial^4 v_1}{\partial x_1^2\partial x_3^2}$**:**

$C^{(0),\mathrm{SRT}}_{\mathrm{D}^2_x\mathrm{D}^2_z v_1} = 0$

$C^{(0),\mathrm{MRT1}}_{\mathrm{D}^2_x\mathrm{D}^2_z v_1} = (\omega_6 - \omega_{13})\frac{c_s^2 v_1\rho}{2\omega_6\omega_{13}}$

$C^{(0),\mathrm{MRT2}}_{\mathrm{D}^2_x\mathrm{D}^2_z v_1} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}^2_x\mathrm{D}^2_z v_1}$

$C^{(0),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_z^2 v_1} = 0$

$C^{(0),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_z^2 v_1} = 0$

$C^{(0),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_z^2 v_1} = 0$

$C^{(0),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_z^2 v_1} = (v_1^2\omega_1 - v_1^2\omega_2 - \omega_1 - 3c_s^2\omega_2 + \omega_2 + 3c_s^2\omega_1)\frac{v_1\rho}{36\omega_1\omega_2}$

coefficient $C^{(0)}_{\mathrm{D}_x^2\mathrm{D}_z^2 v_3}$ **at** $\frac{\partial^4 v_3}{\partial x_1^2 \partial x_3^2}$**:**

$C^{(0),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_z^2 v_3} = 0$

$C^{(0),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_z^2 v_3} = (\omega_6 - \omega_{18})\frac{v_3 c_s^2\rho}{2\omega_6\omega_{18}}$

$C^{(0),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_z^2 v_3} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_z^2 v_3}$

$C^{(0),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_z^2 v_3} = 0$

$C^{(0),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_z^2 v_3} = 0$

$C^{(0),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_z^2 v_3} = 0$

$C^{(0),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_z^2 v_3} = (-\omega_1 + v_3^2\omega_1 - 3c_s^2\omega_2 + \omega_2 + 3c_s^2\omega_1 - v_3^2\omega_2)\frac{v_3\rho}{36\omega_1\omega_2}$

coefficient $C^{(0)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_1}$ **at** $\frac{\partial^4 v_1}{\partial x_1 \partial x_2 \partial x_3^2}$**:**

$C^{(0),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_1} = 0$

$C^{(0),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_1} = (\omega_6 - \omega_8)\frac{c_s^2 v_2\rho}{2\omega_6\omega_8}$

$C^{(0),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_1} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_1}$

$C^{(0),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_1} = 0$

$C^{(0),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_1} = 0$

$C^{(0),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_1} = 0$

$C^{(0),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_1} = (-2\omega_3 v_2^2\omega_4\omega_2 + 9\omega_4\omega_1\omega_2 + 27\omega_3 c_s^2\omega_1\omega_2 - 27c_s^2\omega_4\omega_1\omega_2 + 6\omega_3 c_s^2\omega_4\omega_1 - 6\omega_3 c_s^2\omega_4\omega_2 + 2\omega_3 v_2^2\omega_4\omega_1 + 9\omega_3 v_2^2\omega_1\omega_2 - 9v_2^2\omega_4\omega_1\omega_2 + 2\omega_3\omega_4\omega_2 - 2\omega_3\omega_4\omega_1 - 9\omega_3\omega_1\omega_2)\frac{v_2\rho}{72\omega_3\omega_4\omega_1\omega_2}$

coefficient $C^{(0)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_2}$ **at** $\frac{\partial^4 v_2}{\partial x_1 \partial x_2 \partial x_3^2}$**:**

$C^{(0),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_2} = 0$

$C^{(0),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_2} = (\omega_7 - \omega_8)\frac{c_s^2 v_1\rho}{2\omega_7\omega_8}$

$C^{(0),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_2} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_2}$

$C^{(0),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_2} = 0$

$C^{(0),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_2} = 0$

$C^{(0),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_2} = 0$

$C^{(0),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_2} = (9\omega_4\omega_1\omega_2 + 27\omega_3 c_s^2\omega_1\omega_2 - 27c_s^2\omega_4\omega_1\omega_2 + 6\omega_3 c_s^2\omega_4\omega_1 - 6\omega_3 c_s^2\omega_4\omega_2 - 9v_1^2\omega_4\omega_1\omega_2 + 2\omega_3\omega_4\omega_2 + 9\omega_3 v_1^2\omega_1\omega_2 + 2\omega_3 v_1^2\omega_4\omega_1 - 2\omega_3\omega_4\omega_1 - 2\omega_3 v_1^2\omega_4\omega_2 - 9\omega_3\omega_1\omega_2)\frac{v_1\rho}{72\omega_3\omega_4\omega_1\omega_2}$

coefficient $C^{(0)}_{\mathrm{D}_y^2\mathrm{D}_z^2\rho}$ **at** $\frac{\partial^4\rho}{\partial x_2^2\partial x_3^2}$**:**

$C^{(0),\mathrm{SRT}}_{\mathrm{D}_y^2\mathrm{D}_z^2\rho} = (-2+\omega)\frac{c_s^4}{6\omega}$

$C^{(0),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z^2\rho} = (-2+\omega_7)\frac{c_s^4}{6\omega_7}$

$C^{(0),\mathrm{MRT2}}_{\mathrm{D}_y^2\mathrm{D}_z^2\rho} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z^2\rho}$

$C^{(0),\mathrm{CLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z^2\rho} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z^2\rho}$

$C^{(0),\mathrm{CLBM2}}_{\mathrm{D}_y^2\mathrm{D}_z^2\rho} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z^2\rho}$

$C^{(0),\mathrm{CuLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z^2\rho} = (-2+\omega_3)\frac{c_s^4}{6\omega_3}$

$C^{(0),\mathrm{CuLBM2}}_{\mathrm{D}_y^2\mathrm{D}_z^2\rho} = (6c_s^2\omega_1\omega_2 - 2\omega_1 + 3v_3^2\omega_1 - 14c_s^2\omega_2 - 3v_2^2\omega_2 + 2\omega_2 + 3v_2^2\omega_1 + 2c_s^2\omega_1 - 3v_3^2\omega_2)\frac{c_s^2}{36\omega_1\omega_2}$

coefficient $C^{(0)}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_2}$ **at** $\frac{\partial^4 v_2}{\partial x_2^2\partial x_3^2}$**:**

$C^{(0),\mathrm{SRT}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_2} = 0$

$C^{(0),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_2} = (-\omega_{16}+\omega_7)\frac{c_s^2 v_2\rho}{2\omega_{16}\omega_7}$

$C^{(0),\mathrm{MRT2}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_2} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_2}$

$C^{(0),\mathrm{CLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_2} = 0$

$C^{(0),\mathrm{CLBM2}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_2} = 0$

$C^{(0),\mathrm{CuLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_2} = 0$

$C^{(0),\mathrm{CuLBM2}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_2} = (-\omega_1 - 3c_s^2\omega_2 - v_2^2\omega_2 + \omega_2 + v_2^2\omega_1 + 3c_s^2\omega_1)\frac{v_2\rho}{36\omega_1\omega_2}$

coefficient $C^{(0)}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_3}$ **at** $\frac{\partial^4 v_3}{\partial x_2^2\partial x_3^2}$**:**

$C^{(0),\mathrm{SRT}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_3} = 0$

$C^{(0),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_3} = (-\omega_{19}+\omega_7)\frac{v_3 c_s^2\rho}{2\omega_{19}\omega_7}$

$C^{(0),\mathrm{MRT2}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_3} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_3}$

$C^{(0),\mathrm{CLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_3} = 0$

$C^{(0),\mathrm{CLBM2}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_3} = 0$

$C^{(0),\mathrm{CuLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_3} = 0$

$C^{(0),\mathrm{CuLBM2}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_3} = (-\omega_1 + v_3^2\omega_1 - 3c_s^2\omega_2 + \omega_2 + 3c_s^2\omega_1 - v_3^2\omega_2)\frac{v_3\rho}{36\omega_1\omega_2}$

coefficient $C^{(0)}_{\mathrm{D}_x\mathrm{D}_z^3\rho}$ **at** $\frac{\partial^4\rho}{\partial x_1\partial x_3^3}$**:**

$C^{(0),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_z^3\rho} = 0$

$C^{(0),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^3\rho} = (-3c_s^2\omega_{11} - v_3^2\omega_{11} + \omega_{11} + 3c_s^2\omega_{18} + v_3^2\omega_{18} - \omega_{18})\frac{v_3 v_1}{4\omega_{11}\omega_{18}}$

$C^{(0),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_z^3\rho} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^3\rho}$

$C^{(0),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_z^3\rho} = 0$

$C^{(0),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_z^3\rho} = 0$

$C^{(0),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_z^3\rho} = 0$

$C^{(0),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_z^3\rho} = (v_1^2\omega_1 - v_1^2\omega_2 - \omega_1 - 3c_s^2\omega_2 + \omega_2 + 3c_s^2\omega_1)\frac{v_3 v_1}{12\omega_1\omega_2}$

coefficient $C^{(0)}_{\mathrm{D}_x\mathrm{D}_z^3 v_1}$ **at** $\frac{\partial^4 v_1}{\partial x_1\partial x_3^3}$**:**

$C^{(0),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_z^3 v_1} = (2 - \omega + v_3^2\omega - 2v_3^2 + 3c_s^2\omega - 6c_s^2)\frac{v_3\rho}{12\omega}$

$C^{(0),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^3 v_1} = (3\omega_6\omega_{11} - 3\omega_6 v_3^2\omega_{11} + 3\omega_6 c_s^2\omega_{11}\omega_{18} - 3\omega_6 c_s^2\omega_{11} + \omega_6 v_3^2\omega_{11}\omega_{18} - \omega_6\omega_{11}\omega_{18} - \omega_6\omega_{18} + \omega_6 v_3^2\omega_{18} - 6c_s^2\omega_{11}\omega_{18} + 3\omega_6 c_s^2\omega_{18})\frac{v_3\rho}{12\omega_6\omega_{11}\omega_{18}}$

$C^{(0),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_z^3 v_1} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^3 v_1}$

$C^{(0),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_z^3 v_1} = (v_3^2\omega_{11}\omega_{18} - 9c_s^2\omega_{11} - 3v_3^2\omega_{11} + 3\omega_{11} + 3c_s^2\omega_{18} - \omega_{11}\omega_{18} + 3c_s^2\omega_{11}\omega_{18} + v_3^2\omega_{18} - \omega_{18})\frac{v_3\rho}{12\omega_{11}\omega_{18}}$

$C^{(0),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_z^3 v_1} = C^{(0),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_z^3 v_1}$

$C^{(0),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_z^3 v_1} = (-3\omega_6 v_3^2 + 3\omega_6 + 3\omega_6 c_s^2\omega_8 + v_3^2\omega_8 - 9\omega_6 c_s^2 + 3c_s^2\omega_8 - \omega_6\omega_8 + \omega_6 v_3^2\omega_8 - \omega_8)\frac{v_3\rho}{12\omega_6\omega_8}$

$C^{(0),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_z^3 v_1} = (9\omega_4\omega_1\omega_2 - 27\omega_3 c_s^2\omega_1\omega_2 - 27c_s^2\omega_4\omega_1\omega_2 + 12\omega_3 c_s^2\omega_4\omega_1 + 6\omega_3 c_s^2\omega_4\omega_2 + 6\omega_3 v_3^2\omega_4\omega_1\omega_2 - 6\omega_3\omega_4\omega_1\omega_2 + 2\omega_3\omega_4\omega_2 + 18\omega_3 v_1^2\omega_4\omega_1 + 4\omega_3 v_3^2\omega_4\omega_2 - 9v_3^2\omega_4\omega_1\omega_2 + 18\omega_3 c_s^2\omega_4\omega_1\omega_2 - 8\omega_3\omega_4\omega_1 - 9\omega_3 v_3^2\omega_1\omega_2 + 2\omega_3 v_3^2\omega_4\omega_1 - 18\omega_3 v_1^2\omega_4\omega_2 + 9\omega_3\omega_1\omega_2)\frac{v_3\rho}{72\omega_3\omega_4\omega_1\omega_2}$

coefficient $C^{(0)}_{\mathrm{D}_x\mathrm{D}_z^3 v_3}$ **at** $\frac{\partial^4 v_3}{\partial x_1\partial x_3^3}$**:**

$C^{(0),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_z^3 v_3} = 0$

$C^{(0),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^3 v_3} = (-c_s^2\omega_{11} - 3v_3^2\omega_{11} + \omega_{11} + c_s^2\omega_{18} + 3v_3^2\omega_{18} - \omega_{18})\frac{v_1\rho}{4\omega_{11}\omega_{18}}$

$C^{(0),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_z^3 v_3} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^3 v_3}$

$C^{(0),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_z^3 v_3} = 0$

$C^{(0),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_z^3 v_3} = 0$

$C^{(0),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_z^3 v_3} = 0$

$C^{(0),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_z^3 v_3} = (v_1^2\omega_1 - v_1^2\omega_2 - \omega_1 - 3c_s^2\omega_2 + \omega_2 + 3c_s^2\omega_1)\frac{v_1\rho}{36\omega_1\omega_2}$

coefficient $C^{(0)}_{\mathrm{D}_y\mathrm{D}_z^3\rho}$ **at** $\frac{\partial^4\rho}{\partial x_2\partial x_3^3}$**:**

$C^{(0),\mathrm{SRT}}_{\mathrm{D}_y\mathrm{D}_z^3\rho} = 0$

$C^{(0),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^3\rho} = (-3c_s^2\omega_{11} - \omega_{19} - v_3^2\omega_{11} + \omega_{19}v_3^2 + \omega_{11} + 3\omega_{19}c_s^2)\frac{v_3v_2}{4\omega_{19}\omega_{11}}$

$C^{(0),\mathrm{MRT2}}_{\mathrm{D}_y\mathrm{D}_z^3\rho} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^3\rho}$

$C^{(0),\mathrm{CLBM1}}_{\mathrm{D}_y\mathrm{D}_z^3\rho} = 0$

$C^{(0),\mathrm{CLBM2}}_{\mathrm{D}_y\mathrm{D}_z^3\rho} = 0$

$C^{(0),\mathrm{CuLBM1}}_{\mathrm{D}_y\mathrm{D}_z^3\rho} = 0$

$C^{(0),\mathrm{CuLBM2}}_{\mathrm{D}_y\mathrm{D}_z^3\rho} = (-\omega_1 - 3c_s^2\omega_2 - v_2^2\omega_2 + \omega_2 + v_2^2\omega_1 + 3c_s^2\omega_1)\frac{v_3v_2}{12\omega_1\omega_2}$

coefficient $C^{(0)}_{\mathrm{D}_y\mathrm{D}_z^3v_2}$ **at** $\frac{\partial^4 v_2}{\partial x_2\partial x_3^3}$**:**

$C^{(0),\mathrm{SRT}}_{\mathrm{D}_y\mathrm{D}_z^3v_2} = (2 - \omega + v_3^2\omega - 2v_3^2 + 3c_s^2\omega - 6c_s^2)\frac{v_3\rho}{12\omega}$

$C^{(0),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^3v_2} =$
$(-\omega_{19}\omega_7 - \omega_{19}\omega_7\omega_{11} + \omega_{19}v_3^2\omega_7\omega_{11} + 3\omega_7\omega_{11} - 3c_s^2\omega_7\omega_{11} - 6\omega_{19}c_s^2\omega_{11} + \omega_{19}v_3^2\omega_7 - 3v_3^2\omega_7\omega_{11} + 3\omega_{19}c_s^2\omega_7\omega_{11} + 3\omega_{19}c_s^2\omega_7)\frac{v_3\rho}{12\omega_{19}\omega_7\omega_{11}}$

$C^{(0),\mathrm{MRT2}}_{\mathrm{D}_y\mathrm{D}_z^3v_2} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^3v_2}$

$C^{(0),\mathrm{CLBM1}}_{\mathrm{D}_y\mathrm{D}_z^3v_2} = (\omega_{19}v_3^2\omega_{11} - 9c_s^2\omega_{11} - \omega_{19} - 3v_3^2\omega_{11} + 3\omega_{19}c_s^2\omega_{11} + \omega_{19}v_3^2 - \omega_{19}\omega_{11} + 3\omega_{11} + 3\omega_{19}c_s^2)\frac{v_3\rho}{12\omega_{19}\omega_{11}}$

$C^{(0),\mathrm{CLBM2}}_{\mathrm{D}_y\mathrm{D}_z^3v_2} = C^{(0),\mathrm{CLBM1}}_{\mathrm{D}_y\mathrm{D}_z^3v_2}$

$C^{(0),\mathrm{CuLBM1}}_{\mathrm{D}_y\mathrm{D}_z^3v_2} = (-3\omega_6v_3^2 + 3\omega_6 - 9\omega_6c_s^2 - \omega_{10} + 3c_s^2\omega_{10} + \omega_6v_3^2\omega_{10} - \omega_6\omega_{10} + 3\omega_6c_s^2\omega_{10} + v_3^2\omega_{10})\frac{v_3\rho}{12\omega_6\omega_{10}}$

$C^{(0),\mathrm{CuLBM2}}_{\mathrm{D}_y\mathrm{D}_z^3v_2} = (-18\omega_3v_2^2\omega_4\omega_2 + 9\omega_4\omega_1\omega_2 - 27\omega_3c_s^2\omega_1\omega_2 - 27c_s^2\omega_4\omega_1\omega_2 + 12\omega_3c_s^2\omega_4\omega_1 + 6\omega_3c_s^2\omega_4\omega_2 + 6\omega_3v_3^2\omega_4\omega_1\omega_2 + 18\omega_3v_2^2\omega_4\omega_1 -$
$6\omega_3\omega_4\omega_1\omega_2 + 2\omega_3\omega_4\omega_2 + 4\omega_3v_3^2\omega_4\omega_2 - 9v_3^2\omega_4\omega_1\omega_2 + 18\omega_3c_s^2\omega_4\omega_1\omega_2 - 8\omega_3\omega_4\omega_1 - 9\omega_3v_3^2\omega_1\omega_2 + 2\omega_3v_3^2\omega_4\omega_1 + 9\omega_3\omega_1\omega_2)\frac{v_3\rho}{72\omega_3\omega_4\omega_1\omega_2}$

coefficient $C^{(0)}_{\mathrm{D}_y\mathrm{D}_z^3v_3}$ **at** $\frac{\partial^4 v_3}{\partial x_2\partial x_3^3}$**:**

$C^{(0),\mathrm{SRT}}_{\mathrm{D}_y\mathrm{D}_z^3v_3} = 0$

$C^{(0),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^3v_3} = (-c_s^2\omega_{11} - \omega_{19} - 3v_3^2\omega_{11} + 3\omega_{19}v_3^2 + \omega_{11} + \omega_{19}c_s^2)\frac{v_2\rho}{4\omega_{19}\omega_{11}}$

$C^{(0),\mathrm{MRT2}}_{\mathrm{D}_y\mathrm{D}_z^3v_3} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^3v_3}$

$C^{(0),\mathrm{CLBM1}}_{\mathrm{D}_y\mathrm{D}_z^3v_3} = 0$

$C^{(0),\mathrm{CLBM2}}_{\mathrm{D}_y\mathrm{D}_z^3v_3} = 0$

$C^{(0),\mathrm{CuLBM1}}_{\mathrm{D}_y\mathrm{D}_z^3v_3} = 0$

$C^{(0),\mathrm{CuLBM2}}_{\mathrm{D}_y\mathrm{D}_z^3v_3} = (-\omega_1 - 3c_s^2\omega_2 - v_2^2\omega_2 + \omega_2 + v_2^2\omega_1 + 3c_s^2\omega_1)\frac{v_2\rho}{36\omega_1\omega_2}$

coefficient $C^{(0)}_{\mathrm{D}_z^4\rho}$ **at** $\frac{\partial^4 \rho}{\partial x_3^4}$**:**

$C^{(0),\mathrm{SRT}}_{\mathrm{D}_z^4\rho} = (6v_3^4 - 3v_3^4\omega - 12v_3^2c_s^2\omega + 2c_s^4 - c_s^4\omega + 24v_3^2c_s^2 + 3v_3^2\omega - 6v_3^2 + c_s^2\omega - 2c_s^2)\frac{1}{24\omega}$

$C^{(0),\mathrm{MRT1}}_{\mathrm{D}_z^4\rho} = (6v_3^4 + c_s^2\omega_{11} + 2c_s^4 + 3v_3^2\omega_{11} + 24v_3^2c_s^2 - c_s^4\omega_{11} - 6v_3^2 - 3v_3^4\omega_{11} - 2c_s^2 - 12v_3^2c_s^2\omega_{11})\frac{1}{24\omega_{11}}$

$C^{(0),\mathrm{MRT2}}_{\mathrm{D}_z^4\rho} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}_z^4\rho}$

$C^{(0),\mathrm{CLBM1}}_{\mathrm{D}_z^4\rho} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}_z^4\rho}$

$C^{(0),\mathrm{CLBM2}}_{\mathrm{D}_z^4\rho} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}_z^4\rho}$

$C^{(0),\mathrm{CuLBM1}}_{\mathrm{D}_z^4\rho} = (3\omega_6 v_3^2 + 6v_3^4 + \omega_6 c_s^2 - 12\omega_6 v_3^2 c_s^2 + 2c_s^4 + 24 v_3^2 c_s^2 - 3\omega_6 v_3^4 - 6v_3^2 - \omega_6 c_s^4 - 2c_s^2)\frac{1}{24\omega_6}$

$C^{(0),\mathrm{CuLBM2}}_{\mathrm{D}_z^4\rho} = (-3c_s^4\omega_1\omega_2 + 24v_3^2c_s^2\omega_1 + 6v_3^4\omega_1 + 4c_s^4\omega_2 + 48v_3^2c_s^2\omega_2 + 2c_s^4\omega_1 + 12v_3^4\omega_2 + 3c_s^2\omega_1\omega_2 - 6v_3^2\omega_1 - 4c_s^2\omega_2 + 9v_3^2\omega_1\omega_2 - 9v_3^4\omega_1\omega_2 - 2c_s^2\omega_1 - 36v_3^2c_s^2\omega_1\omega_2 - 12v_3^2\omega_2)\frac{1}{72\omega_1\omega_2}$

coefficient $C^{(0)}_{\mathrm{D}_z^4 v_3}$ **at** $\frac{\partial^4 v_3}{\partial x_3^4}$**:**

$C^{(0),\mathrm{SRT}}_{\mathrm{D}_z^4 v_3} = (-4 + 2\omega - 5v_3^2\omega + 10v_3^2 - 3c_s^2\omega + 6c_s^2)\frac{v_3\rho}{12\omega}$

$C^{(0),\mathrm{MRT1}}_{\mathrm{D}_z^4 v_3} = (-4 - 3c_s^2\omega_{11} - 5v_3^2\omega_{11} + 2\omega_{11} + 10v_3^2 + 6c_s^2)\frac{v_3\rho}{12\omega_{11}}$

$C^{(0),\mathrm{MRT2}}_{\mathrm{D}_z^4 v_3} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}_z^4 v_3}$

$C^{(0),\mathrm{CLBM1}}_{\mathrm{D}_z^4 v_3} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}_z^4 v_3}$

$C^{(0),\mathrm{CLBM2}}_{\mathrm{D}_z^4 v_3} = C^{(0),\mathrm{MRT1}}_{\mathrm{D}_z^4 v_3}$

$C^{(0),\mathrm{CuLBM1}}_{\mathrm{D}_z^4 v_3} = (-4 - 5\omega_6 v_3^2 + 2\omega_6 - 3\omega_6 c_s^2 + 10v_3^2 + 6c_s^2)\frac{v_3\rho}{12\omega_6}$

$C^{(0),\mathrm{CuLBM2}}_{\mathrm{D}_z^4 v_3} = (6\omega_1\omega_2 - 9c_s^2\omega_1\omega_2 - 4\omega_1 + 10v_3^2\omega_1 + 12c_s^2\omega_2 - 15v_3^2\omega_1\omega_2 - 8\omega_2 + 6c_s^2\omega_1 + 20v_3^2\omega_2)\frac{v_3\rho}{36\omega_1\omega_2}$

3.2 Conservation of momentum: ρv_1

$$
\begin{aligned}
&v_1\frac{\partial\rho}{\partial t} + \rho\frac{\partial v_1}{\partial t} + (v_1^2 + c_s^2)\frac{\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_1} + 2v_1\rho\frac{\delta_l}{\delta_t}\frac{\partial v_1}{\partial x_1} + v_2 v_1\frac{\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_2} + v_2\rho\frac{\delta_l}{\delta_t}\frac{\partial v_1}{\partial x_2} + v_1\rho\frac{\delta_l}{\delta_t}\frac{\partial v_2}{\partial x_2} + v_3 v_1\frac{\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_3} + v_3\rho\frac{\delta_l}{\delta_t}\frac{\partial v_1}{\partial x_3} + \\
&v_1\rho\frac{\delta_l}{\delta_t}\frac{\partial v_3}{\partial x_3} + C^{(1)}_{\mathrm{D}_x\rho,\mathrm{D}_x v_1}\frac{\delta_l^2}{\delta_t}\frac{\partial\rho}{\partial x_1}\frac{\partial v_1}{\partial x_1} + C^{(1)}_{\mathrm{D}_x v_1,\mathrm{D}_x v_1}\frac{\delta_l^2}{\delta_t}\left(\frac{\partial v_1}{\partial x_1}\right)^2 + C^{(1)}_{\mathrm{D}_x\rho,\mathrm{D}_y v_2}\frac{\delta_l^2}{\delta_t}\frac{\partial\rho}{\partial x_1}\frac{\partial v_2}{\partial x_2} + C^{(1)}_{\mathrm{D}_x v_2,\mathrm{D}_y v_2}\frac{\delta_l^2}{\delta_t}\frac{\partial v_2}{\partial x_1}\frac{\partial v_2}{\partial x_2} + \\
&C^{(1)}_{\mathrm{D}_x\rho,\mathrm{D}_z v_3}\frac{\delta_l^2}{\delta_t}\frac{\partial\rho}{\partial x_1}\frac{\partial v_3}{\partial x_3} + C^{(1)}_{\mathrm{D}_x v_3,\mathrm{D}_z v_3}\frac{\delta_l^2}{\delta_t}\frac{\partial v_3}{\partial x_1}\frac{\partial v_3}{\partial x_3} + C^{(1)}_{\mathrm{D}_y\rho,\mathrm{D}_x v_2}\frac{\delta_l^2}{\delta_t}\frac{\partial\rho}{\partial x_2}\frac{\partial v_2}{\partial x_1} + C^{(1)}_{\mathrm{D}_y\rho,\mathrm{D}_y v_1}\frac{\delta_l^2}{\delta_t}\frac{\partial\rho}{\partial x_2}\frac{\partial v_1}{\partial x_2} + \\
&C^{(1)}_{\mathrm{D}_z\rho,\mathrm{D}_x v_3}\frac{\delta_l^2}{\delta_t}\frac{\partial\rho}{\partial x_3}\frac{\partial v_3}{\partial x_1} + C^{(1)}_{\mathrm{D}_z\rho,\mathrm{D}_z v_1}\frac{\delta_l^2}{\delta_t}\frac{\partial\rho}{\partial x_3}\frac{\partial v_1}{\partial x_3} + C^{(1)}_{\mathrm{D}_x^2\rho}\frac{\delta_l^2}{\delta_t}\frac{\partial^2\rho}{\partial x_1^2} + C^{(1)}_{\mathrm{D}_x^2 v_1}\frac{\delta_l^2}{\delta_t}\frac{\partial^2 v_1}{\partial x_1^2} + C^{(1)}_{\mathrm{D}_x\mathrm{D}_y\rho}\frac{\delta_l^2}{\delta_t}\frac{\partial^2\rho}{\partial x_1\partial x_2} + \\
&C^{(1)}_{\mathrm{D}_x\mathrm{D}_y v_2}\frac{\delta_l^2}{\delta_t}\frac{\partial^2 v_2}{\partial x_1\partial x_2} + C^{(1)}_{\mathrm{D}_y^2 v_1}\frac{\delta_l^2}{\delta_t}\frac{\partial^2 v_1}{\partial x_2^2} + C^{(1)}_{\mathrm{D}_x\mathrm{D}_z\rho}\frac{\delta_l^2}{\delta_t}\frac{\partial^2\rho}{\partial x_1\partial x_3} + C^{(1)}_{\mathrm{D}_x\mathrm{D}_z v_3}\frac{\delta_l^2}{\delta_t}\frac{\partial^2 v_3}{\partial x_1\partial x_3} + C^{(1)}_{\mathrm{D}_z^2 v_1}\frac{\delta_l^2}{\delta_t}\frac{\partial^2 v_1}{\partial x_3^2} + C^{(1)}_{\mathrm{D}_x^3\rho}\frac{\delta_l^3}{\delta_t}\frac{\partial^3\rho}{\partial x_1^3} + \\
&C^{(1)}_{\mathrm{D}_x^3 v_1}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_1}{\partial x_1^3} + C^{(1)}_{\mathrm{D}_x^2\mathrm{D}_y\rho}\frac{\delta_l^3}{\delta_t}\frac{\partial^3\rho}{\partial x_1^2\partial x_2} + C^{(1)}_{\mathrm{D}_x^2\mathrm{D}_y v_1}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_1}{\partial x_1^2\partial x_2} + C^{(1)}_{\mathrm{D}_x^2\mathrm{D}_y v_2}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_2}{\partial x_1^2\partial x_2} + C^{(1)}_{\mathrm{D}_x\mathrm{D}_y^2\rho}\frac{\delta_l^3}{\delta_t}\frac{\partial^3\rho}{\partial x_1\partial x_2^2} + \\
&C^{(1)}_{\mathrm{D}_x\mathrm{D}_y^2 v_1}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_1}{\partial x_1\partial x_2^2} + C^{(1)}_{\mathrm{D}_x\mathrm{D}_y^2 v_2}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_2}{\partial x_1\partial x_2^2} + C^{(1)}_{\mathrm{D}_y^3\rho}\frac{\delta_l^3}{\delta_t}\frac{\partial^3\rho}{\partial x_2^3} + C^{(1)}_{\mathrm{D}_y^3 v_1}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_1}{\partial x_2^3} + C^{(1)}_{\mathrm{D}_y^3 v_2}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_2}{\partial x_2^3} + C^{(1)}_{\mathrm{D}_x^2\mathrm{D}_z\rho}\frac{\delta_l^3}{\delta_t}\frac{\partial^3\rho}{\partial x_1^2\partial x_3} + \\
&C^{(1)}_{\mathrm{D}_x^2\mathrm{D}_z v_1}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_1}{\partial x_1^2\partial x_3} + C^{(1)}_{\mathrm{D}_x^2\mathrm{D}_z v_3}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_3}{\partial x_1^2\partial x_3} + C^{(1)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z\rho}\frac{\delta_l^3}{\delta_t}\frac{\partial^3\rho}{\partial x_1\partial x_2\partial x_3} + C^{(1)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_2}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_2}{\partial x_1\partial x_2\partial x_3} + \\
&C^{(1)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_3}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_3}{\partial x_1\partial x_2\partial x_3} + C^{(1)}_{\mathrm{D}_y^2\mathrm{D}_z v_1}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_1}{\partial x_2^2\partial x_3} + C^{(1)}_{\mathrm{D}_y^2\mathrm{D}_z v_3}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_3}{\partial x_2^2\partial x_3} + C^{(1)}_{\mathrm{D}_x\mathrm{D}_z^2\rho}\frac{\delta_l^3}{\delta_t}\frac{\partial^3\rho}{\partial x_1\partial x_3^2} + C^{(1)}_{\mathrm{D}_x\mathrm{D}_z^2 v_1}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_1}{\partial x_1\partial x_3^2} + \\
&C^{(1)}_{\mathrm{D}_x\mathrm{D}_z^2 v_3}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_3}{\partial x_1\partial x_3^2} + C^{(1)}_{\mathrm{D}_y\mathrm{D}_z^2 v_1}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_1}{\partial x_2\partial x_3^2} + C^{(1)}_{\mathrm{D}_y\mathrm{D}_z^2 v_2}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_2}{\partial x_2\partial x_3^2} + C^{(1)}_{\mathrm{D}_z^3\rho}\frac{\delta_l^3}{\delta_t}\frac{\partial^3\rho}{\partial x_3^3} + C^{(1)}_{\mathrm{D}_z^3 v_1}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_1}{\partial x_3^3} + C^{(1)}_{\mathrm{D}_z^3 v_3}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_3}{\partial x_3^3} + \\
&C^{(1)}_{\mathrm{D}_x^4\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4\rho}{\partial x_1^4} + C^{(1)}_{\mathrm{D}_x^4 v_1}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_1}{\partial x_1^4} + C^{(1)}_{\mathrm{D}_x^3\mathrm{D}_y\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4\rho}{\partial x_1^3\partial x_2} + C^{(1)}_{\mathrm{D}_x^3\mathrm{D}_y v_1}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_1}{\partial x_1^3\partial x_2} + C^{(1)}_{\mathrm{D}_x^3\mathrm{D}_y v_2}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_2}{\partial x_1^3\partial x_2} + C^{(1)}_{\mathrm{D}_x^2\mathrm{D}_y^2\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4\rho}{\partial x_1^2\partial x_2^2} \\
&+ C^{(1)}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_1}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_1}{\partial x_1^2\partial x_2^2} + C^{(1)}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_2}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_2}{\partial x_1^2\partial x_2^2} + C^{(1)}_{\mathrm{D}_x\mathrm{D}_y^3\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4\rho}{\partial x_1\partial x_2^3} + C^{(1)}_{\mathrm{D}_x\mathrm{D}_y^3 v_1}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_2^3} + C^{(1)}_{\mathrm{D}_x\mathrm{D}_y^3 v_2}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_2}{\partial x_1\partial x_2^3} + \\
&C^{(1)}_{\mathrm{D}_y^4\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4\rho}{\partial x_2^4} + C^{(1)}_{\mathrm{D}_y^4 v_1}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_1}{\partial x_2^4} + C^{(1)}_{\mathrm{D}_y^4 v_2}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_2}{\partial x_2^4} + C^{(1)}_{\mathrm{D}_x^3\mathrm{D}_z\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4\rho}{\partial x_1^3\partial x_3} + C^{(1)}_{\mathrm{D}_x^3\mathrm{D}_z v_1}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_1}{\partial x_1^3\partial x_3} + C^{(1)}_{\mathrm{D}_x^3\mathrm{D}_z v_3}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_3}{\partial x_1^3\partial x_3} + \\
&C^{(1)}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4\rho}{\partial x_1^2\partial x_2\partial x_3} + C^{(1)}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_1}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_1}{\partial x_1^2\partial x_2\partial x_3} + C^{(1)}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_2}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_2}{\partial x_1^2\partial x_2\partial x_3} + C^{(1)}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_3}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_3}{\partial x_1^2\partial x_2\partial x_3} +
\end{aligned}
$$

$$C^{(1)}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4\rho}{\partial x_1\partial x_2^2\partial x_3} + C^{(1)}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_1}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_2^2\partial x_3} + C^{(1)}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_2}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_2}{\partial x_1\partial x_2^2\partial x_3} + C^{(1)}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_3}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_3}{\partial x_1\partial x_2^2\partial x_3} +$$
$$C^{(1)}_{\mathrm{D}_y^3\mathrm{D}_z\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4\rho}{\partial x_2^3\partial x_3} + C^{(1)}_{\mathrm{D}_y^3\mathrm{D}_z v_1}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_1}{\partial x_2^3\partial x_3} + C^{(1)}_{\mathrm{D}_y^3\mathrm{D}_z v_2}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_2}{\partial x_2^3\partial x_3} + C^{(1)}_{\mathrm{D}_y^3\mathrm{D}_z v_3}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_3}{\partial x_2^3\partial x_3} + C^{(1)}_{\mathrm{D}_x^2\mathrm{D}_z^2\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4\rho}{\partial x_1^2\partial x_3^2} +$$
$$C^{(1)}_{\mathrm{D}_x^2\mathrm{D}_z^2 v_1}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_1}{\partial x_1^2\partial x_3^2} + C^{(1)}_{\mathrm{D}_x^2\mathrm{D}_z^2 v_3}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_3}{\partial x_1^2\partial x_3^2} + C^{(1)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4\rho}{\partial x_1\partial x_2\partial x_3^2} + C^{(1)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_1}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_2\partial x_3^2} +$$
$$C^{(1)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_2}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_2}{\partial x_1\partial x_2\partial x_3^2} + C^{(1)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_3}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_3}{\partial x_1\partial x_2\partial x_3^2} + C^{(1)}_{\mathrm{D}_y^2\mathrm{D}_z^2\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4\rho}{\partial x_2^2\partial x_3^2} + C^{(1)}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_1}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_1}{\partial x_2^2\partial x_3^2} +$$
$$C^{(1)}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_2}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_2}{\partial x_2^2\partial x_3^2} + C^{(1)}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_3}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_3}{\partial x_2^2\partial x_3^2} + C^{(1)}_{\mathrm{D}_x\mathrm{D}_z^3\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4\rho}{\partial x_1\partial x_3^3} + C^{(1)}_{\mathrm{D}_x\mathrm{D}_z^3 v_1}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_3^3} + C^{(1)}_{\mathrm{D}_x\mathrm{D}_z^3 v_3}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_3}{\partial x_1\partial x_3^3} +$$
$$C^{(1)}_{\mathrm{D}_y\mathrm{D}_z^3\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4\rho}{\partial x_2\partial x_3^3} + C^{(1)}_{\mathrm{D}_y\mathrm{D}_z^3 v_1}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_1}{\partial x_2\partial x_3^3} + C^{(1)}_{\mathrm{D}_y\mathrm{D}_z^3 v_2}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_2}{\partial x_2\partial x_3^3} + C^{(1)}_{\mathrm{D}_y\mathrm{D}_z^3 v_3}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_3}{\partial x_2\partial x_3^3} + C^{(1)}_{\mathrm{D}_z^4\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4\rho}{\partial x_3^4} +$$
$$C^{(1)}_{\mathrm{D}_z^4 v_1}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_1}{\partial x_3^4} + C^{(1)}_{\mathrm{D}_z^4 v_3}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_3}{\partial x_3^4} = 0,$$

where:

coefficient $C^{(1)}_{\mathrm{D}_x\rho,\mathrm{D}_x v_1}$ **at** $\frac{\partial\rho}{\partial x_1}\frac{\partial v_1}{\partial x_1}$**:**

$$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x\rho,\mathrm{D}_x v_1} = (-2 + 6v_1^2 - 3v_1^2\omega + \omega - 2c_s^2\omega + 4c_s^2)\frac{1}{\omega}$$

$$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\rho,\mathrm{D}_x v_1} = (-2 + 6v_1^2 - 3v_1^2\omega_9 - 2c_s^2\omega_9 + 4c_s^2 + \omega_9)\frac{1}{\omega_9}$$

$$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x\rho,\mathrm{D}_x v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\rho,\mathrm{D}_x v_1}$$

$$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x\rho,\mathrm{D}_x v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\rho,\mathrm{D}_x v_1}$$

$$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x\rho,\mathrm{D}_x v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\rho,\mathrm{D}_x v_1}$$

$$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x\rho,\mathrm{D}_x v_1} = (-2 + 6v_1^2 - 3v_1^2\omega_4 + \omega_4 - 2c_s^2\omega_4 + 4c_s^2)\frac{1}{\omega_4}$$

$$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x\rho,\mathrm{D}_x v_1} = (6v_1^2\omega_1 + 12v_1^2\omega_2 + 3\omega_1\omega_2 - 6c_s^2\omega_1\omega_2 - 2\omega_1 + 8c_s^2\omega_2 - 4\omega_2 + 4c_s^2\omega_1 - 9v_1^2\omega_1\omega_2)\frac{1}{3\omega_1\omega_2}$$

coefficient $C^{(1)}_{\mathrm{D}_x v_1,\mathrm{D}_x v_1}$ **at** $\left(\frac{\partial v_1}{\partial x_1}\right)^2$**:**

$$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x v_1,\mathrm{D}_x v_1} = (2-\omega)\frac{3v_1\rho}{\omega}$$

$$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x v_1,\mathrm{D}_x v_1} = (2-\omega_9)\frac{3v_1\rho}{\omega_9}$$

$$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x v_1,\mathrm{D}_x v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x v_1,\mathrm{D}_x v_1}$$

$$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x v_1,\mathrm{D}_x v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x v_1,\mathrm{D}_x v_1}$$

$$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x v_1,\mathrm{D}_x v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x v_1,\mathrm{D}_x v_1}$$

$$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x v_1,\mathrm{D}_x v_1} = (2-\omega_4)\frac{3v_1\rho}{\omega_4}$$

$$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x v_1,\mathrm{D}_x v_1} = (-3\omega_1\omega_2 + 2\omega_1 + 4\omega_2)\frac{v_1\rho}{\omega_1\omega_2}$$

coefficient $C^{(1)}_{\mathrm{D}_x\rho,\mathrm{D}_y v_2}$ **at** $\frac{\partial\rho}{\partial x_1}\frac{\partial v_2}{\partial x_2}$**:**

$$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x\rho,\mathrm{D}_y v_2} = 0$$

$$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\rho,\mathrm{D}_y v_2} = 0$$

$$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x\rho,\mathrm{D}_y v_2} = 0$$

$$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x\rho,\mathrm{D}_y v_2} = 0$$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x\rho,\mathrm{D}_y v_2} = 0$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x\rho,\mathrm{D}_y v_2} = 0$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x\rho,\mathrm{D}_y v_2} = (-\omega_1 - c_s^2\omega_2 - 3v_2^2\omega_2 + \omega_2 + 3v_2^2\omega_1 + c_s^2\omega_1)\frac{1}{3\omega_1\omega_2}$

coefficient $C^{(1)}_{\mathrm{D}_x v_2,\mathrm{D}_y v_2}$ **at** $\frac{\partial v_2}{\partial x_1}\frac{\partial v_2}{\partial x_2}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x v_2,\mathrm{D}_y v_2} = 0$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x v_2,\mathrm{D}_y v_2} = 0$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x v_2,\mathrm{D}_y v_2} = 0$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x v_2,\mathrm{D}_y v_2} = 0$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x v_2,\mathrm{D}_y v_2} = 0$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x v_2,\mathrm{D}_y v_2} = 0$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x v_2,\mathrm{D}_y v_2} = (\omega_1 - \omega_2)\frac{2v_2\rho}{\omega_1\omega_2}$

coefficient $C^{(1)}_{\mathrm{D}_x\rho,\mathrm{D}_z v_3}$ **at** $\frac{\partial\rho}{\partial x_1}\frac{\partial v_3}{\partial x_3}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x\rho,\mathrm{D}_z v_3} = 0$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\rho,\mathrm{D}_z v_3} = 0$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x\rho,\mathrm{D}_z v_3} = 0$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x\rho,\mathrm{D}_z v_3} = 0$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x\rho,\mathrm{D}_z v_3} = 0$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x\rho,\mathrm{D}_z v_3} = 0$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x\rho,\mathrm{D}_z v_3} = (-\omega_1 + 3v_3^2\omega_1 - c_s^2\omega_2 + \omega_2 + c_s^2\omega_1 - 3v_3^2\omega_2)\frac{1}{3\omega_1\omega_2}$

coefficient $C^{(1)}_{\mathrm{D}_x v_3,\mathrm{D}_z v_3}$ **at** $\frac{\partial v_3}{\partial x_1}\frac{\partial v_3}{\partial x_3}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x v_3,\mathrm{D}_z v_3} = 0$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x v_3,\mathrm{D}_z v_3} = 0$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x v_3,\mathrm{D}_z v_3} = 0$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x v_3,\mathrm{D}_z v_3} = 0$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x v_3,\mathrm{D}_z v_3} = 0$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x v_3,\mathrm{D}_z v_3} = 0$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x v_3,\mathrm{D}_z v_3} = (\omega_1 - \omega_2)\frac{2v_3\rho}{\omega_1\omega_2}$

coefficient $C^{(1)}_{\mathrm{D}_y\rho,\mathrm{D}_x v_2}$ **at** $\frac{\partial\rho}{\partial x_2}\frac{\partial v_2}{\partial x_1}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_y\rho,\mathrm{D}_x v_2} = (-2 + \omega)\frac{c_s^2}{2\omega}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y\rho,\mathrm{D}_x v_2} = (-2+\omega_5)\frac{c_s^2}{2\omega_5}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_y\rho,\mathrm{D}_x v_2} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y\rho,\mathrm{D}_x v_2}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_y\rho,\mathrm{D}_x v_2} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y\rho,\mathrm{D}_x v_2}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_y\rho,\mathrm{D}_x v_2} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y\rho,\mathrm{D}_x v_2}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_y\rho,\mathrm{D}_x v_2} = (-2+\omega_1)\frac{c_s^2}{2\omega_1}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_y\rho,\mathrm{D}_x v_2} = (3c_s^2\omega_1\omega_2 - 2\omega_1 - 12c_s^2\omega_2 - 6v_2^2\omega_2 + 2\omega_2 + 6v_2^2\omega_1 + 6c_s^2\omega_1)\frac{1}{6\omega_1\omega_2}$

coefficient $C^{(1)}_{\mathrm{D}_y\rho,\mathrm{D}_y v_1}$ **at** $\frac{\partial\rho}{\partial x_2}\frac{\partial v_1}{\partial x_2}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_y\rho,\mathrm{D}_y v_1} = (-2+\omega)\frac{c_s^2}{2\omega}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y\rho,\mathrm{D}_y v_1} = (-2+\omega_5)\frac{c_s^2}{2\omega_5}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_y\rho,\mathrm{D}_y v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y\rho,\mathrm{D}_y v_1}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_y\rho,\mathrm{D}_y v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y\rho,\mathrm{D}_y v_1}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_y\rho,\mathrm{D}_y v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y\rho,\mathrm{D}_y v_1}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_y\rho,\mathrm{D}_y v_1} = (-2+\omega_1)\frac{c_s^2}{2\omega_1}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_y\rho,\mathrm{D}_y v_1} = C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_y\rho,\mathrm{D}_y v_1}$

coefficient $C^{(1)}_{\mathrm{D}_z\rho,\mathrm{D}_x v_3}$ **at** $\frac{\partial\rho}{\partial x_3}\frac{\partial v_3}{\partial x_1}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_z\rho,\mathrm{D}_x v_3} = (-2+\omega)\frac{c_s^2}{2\omega}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_z\rho,\mathrm{D}_x v_3} = (-2+\omega_6)\frac{c_s^2}{2\omega_6}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_z\rho,\mathrm{D}_x v_3} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_z\rho,\mathrm{D}_x v_3}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_z\rho,\mathrm{D}_x v_3} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_z\rho,\mathrm{D}_x v_3}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_z\rho,\mathrm{D}_x v_3} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_z\rho,\mathrm{D}_x v_3}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_z\rho,\mathrm{D}_x v_3} = (-2+\omega_2)\frac{c_s^2}{2\omega_2}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_z\rho,\mathrm{D}_x v_3} = (3c_s^2\omega_1\omega_2 - 2\omega_1 + 6v_3^2\omega_1 - 12c_s^2\omega_2 + 2\omega_2 + 6c_s^2\omega_1 - 6v_3^2\omega_2)\frac{1}{6\omega_1\omega_2}$

coefficient $C^{(1)}_{\mathrm{D}_z\rho,\mathrm{D}_z v_1}$ **at** $\frac{\partial\rho}{\partial x_3}\frac{\partial v_1}{\partial x_3}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_z\rho,\mathrm{D}_z v_1} = (-2+\omega)\frac{c_s^2}{2\omega}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_z\rho,\mathrm{D}_z v_1} = (-2+\omega_6)\frac{c_s^2}{2\omega_6}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_z\rho,\mathrm{D}_z v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_z\rho,\mathrm{D}_z v_1}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_z\rho,\mathrm{D}_z v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_z\rho,\mathrm{D}_z v_1}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_z\rho,\mathrm{D}_z v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_z\rho,\mathrm{D}_z v_1}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_z\rho,\mathrm{D}_z v_1} = (-2+\omega_2)\frac{c_s^2}{2\omega_2}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_z\rho,\mathrm{D}_z v_1} = (-2+\omega_1)\frac{c_s^2}{2\omega_1}$

coefficient $C^{(1)}_{\mathrm{D}_x^2\rho}$ **at** $\frac{\partial^2\rho}{\partial x_1^2}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x^2\rho} = (-2+2v_1^2-v_1^2\omega+\omega-3c_s^2\omega+6c_s^2)\frac{v_1}{2\omega}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^2\rho} = (-2+2v_1^2-v_1^2\omega_9-3c_s^2\omega_9+6c_s^2+\omega_9)\frac{v_1}{2\omega_9}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x^2\rho} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^2\rho}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x^2\rho} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^2\rho}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x^2\rho} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^2\rho}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\rho} = (-2+2v_1^2-v_1^2\omega_4+\omega_4-3c_s^2\omega_4+6c_s^2)\frac{v_1}{2\omega_4}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\rho} = (2v_1^2\omega_1+4v_1^2\omega_2+3\omega_1\omega_2-9c_s^2\omega_1\omega_2-2\omega_1+12c_s^2\omega_2-4\omega_2+6c_s^2\omega_1-3v_1^2\omega_1\omega_2)\frac{v_1}{6\omega_1\omega_2}$

coefficient $C^{(1)}_{\mathrm{D}_x^2 v_1}$ **at** $\frac{\partial^2 v_1}{\partial x_1^2}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x^2 v_1} = (-2+6v_1^2-3v_1^2\omega+\omega-c_s^2\omega+2c_s^2)\frac{\rho}{2\omega}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^2 v_1} = (-2+6v_1^2-3v_1^2\omega_9-c_s^2\omega_9+2c_s^2+\omega_9)\frac{\rho}{2\omega_9}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x^2 v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^2 v_1}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x^2 v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^2 v_1}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x^2 v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^2 v_1}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x^2 v_1} = (-2+6v_1^2-3v_1^2\omega_4+\omega_4-c_s^2\omega_4+2c_s^2)\frac{\rho}{2\omega_4}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x^2 v_1} = (6v_1^2\omega_1+12v_1^2\omega_2+3\omega_1\omega_2-3c_s^2\omega_1\omega_2-2\omega_1+4c_s^2\omega_2-4\omega_2+2c_s^2\omega_1-9v_1^2\omega_1\omega_2)\frac{\rho}{6\omega_1\omega_2}$

coefficient $C^{(1)}_{\mathrm{D}_x\mathrm{D}_y\rho}$ **at** $\frac{\partial^2\rho}{\partial x_1\partial x_2}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y\rho} = 0$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y\rho} = 0$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y\rho} = 0$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y\rho} = 0$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y\rho} = 0$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y\rho} = 0$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y\rho} = (-\omega_1-3c_s^2\omega_2-v_2^2\omega_2+\omega_2+v_2^2\omega_1+3c_s^2\omega_1)\frac{v_2}{3\omega_1\omega_2}$

coefficient $C^{(1)}_{\mathrm{D}_x\mathrm{D}_y v_2}$ **at** $\frac{\partial^2 v_2}{\partial x_1\partial x_2}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y v_2} = (-2+\omega)\frac{c_s^2\rho}{2\omega}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y v_2} = (-2+\omega_5)\frac{c_s^2\rho}{2\omega_5}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y v_2} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y v_2}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y v_2} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y v_2}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y v_2} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y v_2}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y v_2} = (-2+\omega_1)\frac{c_s^2\rho}{2\omega_1}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y v_2} = (3c_s^2\omega_1\omega_2 - 2\omega_1 - 8c_s^2\omega_2 - 6v_2^2\omega_2 + 2\omega_2 + 6v_2^2\omega_1 + 2c_s^2\omega_1)\frac{\rho}{6\omega_1\omega_2}$

coefficient $C^{(1)}_{\mathrm{D}_y^2 v_1}$ **at** $\frac{\partial^2 v_1}{\partial x_2^2}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_y^2 v_1} = (-2+\omega)\frac{c_s^2\rho}{2\omega}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y^2 v_1} = (-2+\omega_5)\frac{c_s^2\rho}{2\omega_5}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_y^2 v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y^2 v_1}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_y^2 v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y^2 v_1}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_y^2 v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y^2 v_1}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_y^2 v_1} = (-2+\omega_1)\frac{c_s^2\rho}{2\omega_1}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_y^2 v_1} = C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_y^2 v_1}$

coefficient $C^{(1)}_{\mathrm{D}_x\mathrm{D}_z \rho}$ **at** $\frac{\partial^2 \rho}{\partial x_1 \partial x_3}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_z \rho} = 0$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z \rho} = 0$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_z \rho} = 0$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_z \rho} = 0$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_z \rho} = 0$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_z \rho} = 0$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_z \rho} = (-\omega_1 + v_3^2\omega_1 - 3c_s^2\omega_2 + \omega_2 + 3c_s^2\omega_1 - v_3^2\omega_2)\frac{v_3}{3\omega_1\omega_2}$

coefficient $C^{(1)}_{\mathrm{D}_x\mathrm{D}_z v_3}$ **at** $\frac{\partial^2 v_3}{\partial x_1 \partial x_3}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_z v_3} = (-2+\omega)\frac{c_s^2\rho}{2\omega}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z v_3} = (-2+\omega_6)\frac{c_s^2\rho}{2\omega_6}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_z v_3} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z v_3}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_z v_3} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z v_3}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_z v_3} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z v_3}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_z v_3} = (-2+\omega_2)\frac{c_s^2\rho}{2\omega_2}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_z v_3} = (3c_s^2\omega_1\omega_2 - 2\omega_1 + 6v_3^2\omega_1 - 8c_s^2\omega_2 + 2\omega_2 + 2c_s^2\omega_1 - 6v_3^2\omega_2)\frac{\rho}{6\omega_1\omega_2}$

coefficient $C^{(1)}_{\mathrm{D}_z^2 v_1}$ **at** $\frac{\partial^2 v_1}{\partial x_3^2}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_z^2 v_1} = (-2+\omega)\frac{c_s^2\rho}{2\omega}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_z^2 v_1} = (-2+\omega_6)\frac{c_s^2\rho}{2\omega_6}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_z^2 v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_z^2 v_1}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_z^2 v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_z^2 v_1}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_z^2 v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_z^2 v_1}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_z^2 v_1} = (-2+\omega_2)\frac{c_s^2\rho}{2\omega_2}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_z^2 v_1} = (-2+\omega_1)\frac{c_s^2\rho}{2\omega_1}$

coefficient $C^{(1)}_{\mathrm{D}_x^3 \rho}$ **at** $\frac{\partial^3 \rho}{\partial x_1^3}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x^3 \rho} = (-36v_1^2 - 144c_s^2v_1^2\omega + c_s^4\omega^2 + 36v_1^2\omega + 12c_s^4 - 7v_1^2\omega^2 - 12c_s^4\omega + 24c_s^2v_1^2\omega^2 - 36v_1^4\omega - c_s^2\omega^2 + 36v_1^4 + 12c_s^2\omega + 7v_1^4\omega^2 - 12c_s^2 + 144c_s^2v_1^2)\frac{1}{12\omega^2}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^3 \rho} =$
$(-36v_1^2 - 144c_s^2v_1^2\omega_9 + 36v_1^2\omega_9 + c_s^4\omega_9^2 + 12c_s^4 - 12c_s^4\omega_9 - 7v_1^2\omega_9^2 + 24c_s^2v_1^2\omega_9^2 - c_s^2\omega_9^2 - 36v_1^4\omega_9 + 36v_1^4 + 7v_1^4\omega_9^2 + 12c_s^2\omega_9 - 12c_s^2 + 144c_s^2v_1^2)\frac{1}{12\omega_9^2}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x^3 \rho} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^3 \rho}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x^3 \rho} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^3 \rho}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x^3 \rho} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^3 \rho}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x^3 \rho} =$
$(-36v_1^2 - 144c_s^2v_1^2\omega_4 + 36v_1^2\omega_4 + c_s^4\omega_4^2 + 12c_s^4 - 12c_s^4\omega_4 - 7v_1^2\omega_4^2 + 24c_s^2v_1^2\omega_4^2 - c_s^2\omega_4^2 - 36v_1^4\omega_4 + 7v_1^4\omega_4^2 + 12c_s^2\omega_4 + 36v_1^4 - 12c_s^2 + 144c_s^2v_1^2)\frac{1}{12\omega_4^2}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x^3 \rho} = (12v_1^2\omega_1^2\omega_2 + 4c_s^4\omega_1^2 + 72c_s^2v_1^2\omega_2^2 + 7v_1^4\omega_1^2\omega_2^2 + 8c_s^2\omega_1\omega_2^2 - 48c_s^2v_1^2\omega_1^2\omega_2 - 16v_1^2\omega_2^2 + 24c_s^2v_1^2\omega_1^2 + 24c_s^2v_1^2\omega_1^2\omega_2^2 + 8c_s^4\omega_2^2 - 4v_1^2\omega_1^2 - 12v_1^4\omega_1^2\omega_2 - 8c_s^4\omega_1\omega_2^2 - 7v_1^2\omega_1^2\omega_2^2 - 4c_s^2\omega_1^2 + 24v_1^2\omega_1\omega_2^2 + c_s^4\omega_1^2\omega_2^2 + 16v_1^4\omega_2^2 - 96c_s^2v_1^2\omega_1\omega_2^2 + 4c_s^2\omega_1^2\omega_2 + 16v_1^4\omega_1\omega_2 - c_s^2\omega_1^2\omega_2^2 - 24v_1^4\omega_1\omega_2^2 + 48c_s^2v_1^2\omega_1\omega_2 - 8c_s^2\omega_2^2 + 4v_1^4\omega_1^2 - 16v_1^2\omega_1\omega_2 - 4c_s^4\omega_1^2\omega_2)\frac{1}{12\omega_1^2\omega_2^2}$

coefficient $C^{(1)}_{\mathrm{D}_x^3 v_1}$ **at** $\frac{\partial^3 v_1}{\partial x_1^3}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x^3 v_1} = (-24 + 60v_1^2 - 60v_1^2\omega + 11v_1^2\omega^2 - 4\omega^2 + 24\omega + 5c_s^2\omega^2 - 36c_s^2\omega + 36c_s^2)\frac{v_1\rho}{6\omega^2}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^3 v_1} = (-24 + 60v_1^2 - 60v_1^2\omega_9 + 11v_1^2\omega_9^2 - 4\omega_9^2 + 5c_s^2\omega_9^2 - 36c_s^2\omega_9 + 36c_s^2 + 24\omega_9)\frac{v_1\rho}{6\omega_9^2}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x^3 v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^3 v_1}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}^3_x v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}^3_x v_1}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}^3_x v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}^3_x v_1}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}^3_x v_1} = (-24 + 60v_1^2 - 60v_1^2\omega_4 - 4\omega_4^2 + 24\omega_4 + 11v_1^2\omega_4^2 + 5c_s^2\omega_4^2 - 36c_s^2\omega_4 + 36c_s^2)\frac{v_1\rho}{6\omega_4^2}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}^3_x v_1} = (-12\omega_2^2 - 20v_1^2\omega_1^2\omega_2 - 24c_s^2\omega_1\omega_2^2 + 28v_1^2\omega_2^2 + 16\omega_1\omega_2^2 - 8\omega_1\omega_2 + 8v_1^2\omega_1^2 + 8c_s^2\omega_1\omega_2 + 11v_1^2\omega_1^2\omega_2^2 - 4\omega_1^2 + 8c_s^2\omega_1^2 - 40v_1^2\omega_1\omega_2^2 + 8\omega_1^2\omega_2 - 12c_s^2\omega_1^2\omega_2 + 5c_s^2\omega_1^2\omega_2^2 - 4\omega_1^2\omega_2^2 + 20c_s^2\omega_2^2 + 24v_1^2\omega_1\omega_2)\frac{v_1\rho}{6\omega_1^2\omega_2^2}$

coefficient $C^{(1)}_{\mathrm{D}^2_x \mathrm{D}_y \rho}$ **at** $\frac{\partial^3 \rho}{\partial x_1^2 \partial x_2}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}^2_x \mathrm{D}_y \rho} = 0$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}^2_x \mathrm{D}_y \rho} = (3c_s^2\omega_5\omega_{12} - \omega_9\omega_{12} + \omega_5\omega_9 + 3c_s^2\omega_9\omega_{12} - \omega_5\omega_{12} - 3c_s^2\omega_5\omega_9 - v_1^2\omega_9^2 + \omega_9^2 + 3c_s^2\omega_5\omega_9^2 - \omega_5\omega_9^2 - 3c_s^2\omega_9^2 + v_1^2\omega_5\omega_{12} - v_1^2\omega_5\omega_9\omega_{12} + v_1^2\omega_9\omega_{12} - v_1^2\omega_5\omega_9 + \omega_5\omega_9\omega_{12} + v_1^2\omega_5\omega_9^2 - 3c_s^2\omega_5\omega_9\omega_{12})\frac{v_2 v_1}{\omega_5\omega_9^2\omega_{12}}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}^2_x \mathrm{D}_y \rho} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}^2_x \mathrm{D}_y \rho}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}^2_x \mathrm{D}_y \rho} = 0$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}^2_x \mathrm{D}_y \rho} = 0$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}^2_x \mathrm{D}_y \rho} = 0$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}^2_x \mathrm{D}_y \rho} = (2v_2^2\omega_1\omega_2 + 2\omega_2^2 + 9c_s^2\omega_1\omega_2^2 + 2v_1^2\omega_2^2 - 3\omega_1\omega_2^2 + 2\omega_1\omega_2 + 2v_1^2\omega_1^2 - 6c_s^2\omega_1\omega_2 - 4\omega_1^2 + 3v_2^2\omega_1\omega_2^2 + 12c_s^2\omega_1^2 + 2v_2^2\omega_1^2 + 3\omega_1^2\omega_2 - 9c_s^2\omega_1^2\omega_2 - 4v_2^2\omega_2^2 - 6c_s^2\omega_2^2 - 3v_2^2\omega_1^2\omega_2 - 4v_1^2\omega_1\omega_2)\frac{v_2 v_1}{6\omega_1^2\omega_2^2}$

coefficient $C^{(1)}_{\mathrm{D}^2_x \mathrm{D}_y v_1}$ **at** $\frac{\partial^3 v_1}{\partial x_1^2 \partial x_2}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}^2_x \mathrm{D}_y v_1} = 0$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}^2_x \mathrm{D}_y v_1} = (c_s^2\omega_5\omega_{12} - \omega_9\omega_{12} + \omega_5\omega_9 + c_s^2\omega_9\omega_{12} - \omega_5\omega_{12} - c_s^2\omega_5\omega_9 - 3v_1^2\omega_9^2 + \omega_9^2 + c_s^2\omega_5\omega_9^2 - \omega_5\omega_9^2 - c_s^2\omega_9^2 + 3v_1^2\omega_5\omega_{12} - 3v_1^2\omega_5\omega_9\omega_{12} + 3v_1^2\omega_9\omega_{12} - 3v_1^2\omega_5\omega_9 + \omega_5\omega_9\omega_{12} + 3v_1^2\omega_5\omega_9^2 - c_s^2\omega_5\omega_9\omega_{12})\frac{v_2\rho}{\omega_5\omega_9^2\omega_{12}}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}^2_x \mathrm{D}_y v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}^2_x \mathrm{D}_y v_1}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}^2_x \mathrm{D}_y v_1} = 0$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}^2_x \mathrm{D}_y v_1} = 0$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}^2_x \mathrm{D}_y v_1} = 0$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}^2_x \mathrm{D}_y v_1} = (\omega_3 v_2^2\omega_1\omega_2^2 + \omega_3\omega_1^2\omega_2 + 2\omega_3 v_2^2\omega_1^2 - 4\omega_3 c_s^2\omega_1\omega_2 + 6c_s^2\omega_1\omega_2^2 - 2\omega_1\omega_2^2 + 8\omega_3 c_s^2\omega_1^2 + 3\omega_3 c_s^2\omega_1\omega_2^2 - 4\omega_3 c_s^2\omega_2^2 - 2\omega_3 v_2^2\omega_2^2 + 2v_2^2\omega_1\omega_2^2 - 12\omega_3 v_1^2\omega_1\omega_2 - \omega_3\omega_1\omega_2^2 + 6\omega_3 v_1^2\omega_2^2 - \omega_3 v_2^2\omega_1^2\omega_2 + 2\omega_1^2\omega_2 - 6c_s^2\omega_1^2\omega_2 - 3\omega_3 c_s^2\omega_1^2\omega_2 - 4\omega_3\omega_1^2 - 2v_2^2\omega_1^2\omega_2 + 6\omega_3 v_1^2\omega_1^2 + 4\omega_3\omega_1\omega_2)\frac{v_2\rho}{6\omega_3\omega_1^2\omega_2^2}$

coefficient $C^{(1)}_{\mathrm{D}^2_x \mathrm{D}_y v_2}$ **at** $\frac{\partial^3 v_2}{\partial x_1^2 \partial x_2}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}^2_x \mathrm{D}_y v_2} = (12 - 12v_1^2 + 12v_1^2\omega - 3v_1^2\omega^2 + 3\omega^2 - 12\omega - 11c_s^2\omega^2 + 36c_s^2\omega - 36c_s^2)\frac{v_1\rho}{12\omega^2}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}^2_x \mathrm{D}_y v_2} = (6\omega_5^2\omega_9\omega_{12} + 42c_s^2\omega_5\omega_9^2\omega_{12} - 18c_s^2\omega_5^2\omega_9\omega_{12} - 6\omega_5\omega_9^2\omega_{12} + 12v_1^2\omega_5^2\omega_9^2 + 6v_1^2\omega_5\omega_9^2\omega_{12} + 12v_1^2\omega_5^2\omega_{12} - 12v_1^2\omega_5^2\omega_9 - 6v_1^2\omega_5^2\omega_9\omega_{12} - 12c_s^2\omega_5\omega_9^2 + 12\omega_5\omega_9^2 + 12c_s^2\omega_5^2\omega_9^2 - 3v_1^2\omega_5^2\omega_9^2\omega_{12} - 12\omega_5^2\omega_9^2 - 11c_s^2\omega_5^2\omega_9^2\omega_{12} - 12v_1^2\omega_5\omega_9^2 + 36c_s^2\omega_5^2\omega_{12} - 24c_s^2\omega_5\omega_9\omega_{12} + 3\omega_5^2\omega_9^2\omega_{12} + 12\omega_5^2\omega_9 - 12\omega_5^2\omega_{12} - 24c_s^2\omega_9^2\omega_{12} - 12c_s^2\omega_5^2\omega_9)\frac{v_1\rho}{12\omega_5^2\omega_9^2\omega_{12}}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_y v_2} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y v_2}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y v_2} = (36c_s^2\omega_5\omega_{12} + 12\omega_5\omega_9 - 11c_s^2\omega_5\omega_9^2\omega_{12} - 12\omega_5\omega_{12} - 36c_s^2\omega_5\omega_9 + 3\omega_5\omega_9^2\omega_{12} - 3v_1^2\omega_5\omega_9^2\omega_{12} - 12v_1^2\omega_9^2 + 6v_1^2\omega_9^2\omega_{12} + 12\omega_9^2 + 36c_s^2\omega_5\omega_9^2 - 12\omega_5\omega_9^2 - 36c_s^2\omega_9^2 + 12v_1^2\omega_5\omega_{12} - 6v_1^2\omega_5\omega_9\omega_{12} - 12v_1^2\omega_5\omega_9 + 6\omega_5\omega_9\omega_{12} + 12v_1^2\omega_5\omega_9^2 - 6\omega_9^2\omega_{12} - 18c_s^2\omega_5\omega_9\omega_{12} + 18c_s^2\omega_9^2\omega_{12})\frac{v_1\rho}{12\omega_5\omega_9^2\omega_{12}}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y v_2} = C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y v_2}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y v_2} = (12v_1^2\omega_4^2\omega_1 - 6v_1^2\omega_4\omega_1\omega_9 + 6v_1^2\omega_4^2\omega_9 + 36c_s^2\omega_1\omega_9 - 12\omega_1\omega_9 + 12\omega_4^2 - 36c_s^2\omega_4\omega_1 - 18c_s^2\omega_4\omega_1\omega_9 + 12\omega_4\omega_1 - 12v_1^2\omega_4^2 + 6\omega_4\omega_1\omega_9 + 12v_1^2\omega_1\omega_9 - 11c_s^2\omega_4^2\omega_1\omega_9 + 36c_s^2\omega_4^2\omega_1 - 6\omega_4^2\omega_9 + 3\omega_4^2\omega_1\omega_9 + 18c_s^2\omega_4^2\omega_9 - 36c_s^2\omega_4^2 - 12\omega_4^2\omega_1 - 3v_1^2\omega_4^2\omega_1\omega_9 - 12v_1^2\omega_4\omega_1)\frac{v_1\rho}{12\omega_4^2\omega_1\omega_9}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y v_2} = (18\omega_3v_2^2\omega_4\omega_1\omega_2^2 - 8\omega_3\omega_4\omega_1\omega_2^2 - 3\omega_3v_1^2\omega_4\omega_1^2\omega_2^2 + 12\omega_3v_2^2\omega_4\omega_1^2 + 6\omega_3v_1^2\omega_1^2\omega_2^2 - 8v_1^2\omega_4\omega_1\omega_2^2 + 16\omega_3c_s^2\omega_4\omega_2^2 - 12\omega_3c_s^2\omega_4\omega_1^2\omega_2 - 11\omega_3c_s^2\omega_4\omega_1^2\omega_2^2 + 16\omega_3c_s^2\omega_4\omega_1^2 - 36\omega_3c_s^2\omega_1\omega_2^2 - 24c_s^2\omega_4\omega_1\omega_2^2 - 6\omega_3\omega_1^2\omega_2^2 + 12\omega_3v_2^2\omega_4\omega_1\omega_2 - 24\omega_3v_2^2\omega_4\omega_2^2 - 4\omega_3\omega_4\omega_1\omega_2 - 2\omega_3v_1^2\omega_4\omega_1^2\omega_2 + 8\omega_4\omega_1\omega_2^2 + 12\omega_3\omega_1\omega_2^2 + 8\omega_3v_1^2\omega_4\omega_2^2 - 4v_1^2\omega_4\omega_1^2\omega_2 + 8\omega_3\omega_4\omega_1^2\omega_2 - 18\omega_3v_2^2\omega_4\omega_1^2\omega_2 - 8\omega_3\omega_4\omega_1^2 - 6\omega_4\omega_1^2\omega_2^2 + 12\omega_3c_s^2\omega_4\omega_1\omega_2^2 + 18\omega_3c_s^2\omega_1^2\omega_2^2 + 18c_s^2\omega_4\omega_1^2\omega_2^2 - 12c_s^2\omega_4\omega_1^2\omega_2 + 4\omega_3c_s^2\omega_4\omega_1\omega_2 + 3\omega_3\omega_4\omega_1^2\omega_2^2 + 4\omega_3v_1^2\omega_4\omega_1^2 + 4\omega_4\omega_1^2\omega_2 + 2\omega_3v_1^2\omega_4\omega_1\omega_2^2 - 12\omega_3v_1^2\omega_1\omega_2^2 + 6v_1^2\omega_4\omega_1^2\omega_2^2)\frac{v_1\rho}{12\omega_3\omega_4\omega_1^2\omega_2^2}$

coefficient $C^{(1)}_{\mathrm{D}_x\mathrm{D}_y^2\rho}$ **at** $\frac{\partial^3\rho}{\partial x_1\partial x_2^2}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y^2\rho} = (-12 - \omega^2 + 12\omega)\frac{c_s^4}{6\omega^2}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^2\rho} = (-12 + 12\omega_5 - \omega_5^2)\frac{c_s^4}{6\omega_5^2}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y^2\rho} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^2\rho}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2\rho} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^2\rho}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y^2\rho} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^2\rho}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2\rho} = (-12 - \omega_1^2 + 12\omega_1)\frac{c_s^4}{6\omega_1^2}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y^2\rho} = (2v_2^4\omega_1^2 - 2v_2^2\omega_1\omega_2 + 2c_s^4\omega_1^2 + 6c_s^2v_2^2\omega_1\omega_2 - 2c_s^2\omega_1\omega_2^2 + 3v_2^4\omega_1\omega_2^2 - 14c_s^4\omega_2^2 + 2v_2^4\omega_1\omega_2 + 15c_s^2v_2^2\omega_1\omega_2^2 + 14c_s^4\omega_1\omega_2^2 - 4v_2^4\omega_2^2 - 3v_2^2\omega_1\omega_2^2 - 2c_s^2\omega_1^2 - c_s^4\omega_1^2\omega_2^2 - 2v_2^2\omega_1^2 - 3v_2^4\omega_1^2\omega_2 + 2c_s^2\omega_1^2\omega_2 + 12c_s^2v_2^2\omega_1^2 - 15c_s^2v_2^2\omega_1^2\omega_2 + 4v_2^2\omega_2^2 - 18c_s^2v_2^2\omega_2^2 + 2c_s^2\omega_2^2 + 3v_2^2\omega_1^2\omega_2 - 2c_s^4\omega_1^2\omega_2)\frac{1}{6\omega_1^2\omega_2^2}$

coefficient $C^{(1)}_{\mathrm{D}_x\mathrm{D}_y^2 v_1}$ **at** $\frac{\partial^3 v_1}{\partial x_1\partial x_2^2}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y^2 v_1} = \frac{-c_s^2v_1\rho}{6}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^2 v_1} = (-12\omega_9\omega_{12} - \omega_5^2\omega_9\omega_{12} + 12\omega_5\omega_9 - 12\omega_5\omega_{12} + 12\omega_5\omega_9\omega_{12} + 12\omega_5^2 - 12\omega_5^2\omega_9)\frac{c_s^2v_1\rho}{6\omega_5^2\omega_9\omega_{12}}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y^2 v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^2 v_1}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2 v_1} = C^{(1),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y^2 v_1}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y^2 v_1} = C^{(1),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y^2 v_1}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2 v_1} = C^{(1),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y^2 v_1}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y^2 v_1} = C^{(1),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y^2 v_1}$

coefficient $C^{(1)}_{\mathrm{D}_x\mathrm{D}_y^2 v_2}$ **at** $\frac{\partial^3 v_2}{\partial x_1\partial x_2^2}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y^2 v_2} = 0$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^2 v_2} = (\omega_5\omega_{15} + 2\omega_5 - 2\omega_{15} - \omega_5^2)\frac{c_s^2 v_2 \rho}{\omega_5^2\omega_{15}}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y^2 v_2} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^2 v_2}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2 v_2} = 0$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y^2 v_2} = 0$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2 v_2} = 0$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y^2 v_2} = (6v_2^2\omega_1\omega_2 + 6\omega_2^2 + 9c_s^2\omega_1\omega_2^2 - 5\omega_1\omega_2^2 - 2\omega_1\omega_2 + 2c_s^2\omega_1\omega_2 - 4\omega_1^2 + 11v_2^2\omega_1\omega_2^2 + 8c_s^2\omega_1^2 + 8v_2^2\omega_1^2 + 5\omega_1^2\omega_2 - 9c_s^2\omega_1^2\omega_2 - 14v_2^2\omega_2^2 - 10c_s^2\omega_2^2 - 11v_2^2\omega_1^2\omega_2)\frac{v_2\rho}{6\omega_1^2\omega_2^2}$

coefficient $C^{(1)}_{\mathrm{D}_y^3\rho}$ at $\frac{\partial^3\rho}{\partial x_2^3}$:

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_y^3\rho} = (-1 + 3c_s^2 + v_2^2)\frac{v_2 v_1}{12}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y^3\rho} = (6v_2^2\omega_{10}\omega_5 - 18c_s^2\omega_5\omega_{15} + 6\omega_5\omega_{15} + 18c_s^2\omega_{10}\omega_5 + 12\omega_{10} - \omega_{10}\omega_5\omega_{15} - 6\omega_{10}\omega_5 - 6v_2^2\omega_5\omega_{15} + 3c_s^2\omega_{10}\omega_5\omega_{15} - 36c_s^2\omega_{10} - 12v_2^2\omega_{10} + 36c_s^2\omega_{15} + v_2^2\omega_{10}\omega_5\omega_{15} - 12\omega_{15} + 12v_2^2\omega_{15})\frac{v_2 v_1}{12\omega_{10}\omega_5\omega_{15}}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_y^3\rho} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y^3\rho}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_y^3\rho} = C^{(1),\mathrm{SRT}}_{\mathrm{D}_y^3\rho}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_y^3\rho} = C^{(1),\mathrm{SRT}}_{\mathrm{D}_y^3\rho}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_y^3\rho} = C^{(1),\mathrm{SRT}}_{\mathrm{D}_y^3\rho}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_y^3\rho} = C^{(1),\mathrm{SRT}}_{\mathrm{D}_y^3\rho}$

coefficient $C^{(1)}_{\mathrm{D}_y^3 v_1}$ at $\frac{\partial^3 v_1}{\partial x_2^3}$:

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_y^3 v_1} = (6 + \omega^2 - 6\omega - 3c_s^2\omega^2 - v_2^2\omega^2 + 6v_2^2\omega + 18c_s^2\omega - 18c_s^2 - 6v_2^2)\frac{v_2\rho}{6\omega^2}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y^3 v_1} = (3c_s^2\omega_5^2 + 15c_s^2\omega_5\omega_{15} + 3v_2^2\omega_5^2 - 3\omega_5\omega_{15} - 6v_2^2\omega_5 - 6c_s^2\omega_5 + 3v_2^2\omega_5\omega_{15} - v_2^2\omega_5^2\omega_{15} + 6\omega_5 - 3c_s^2\omega_5^2\omega_{15} - 12c_s^2\omega_{15} + \omega_5^2\omega_{15} - 3\omega_5^2)\frac{v_2\rho}{6\omega_5^2\omega_{15}}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_y^3 v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y^3 v_1}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_y^3 v_1} = (6 - 3c_s^2\omega_5\omega_{15} + \omega_5\omega_{15} + 3v_2^2\omega_5 + 9c_s^2\omega_5 - v_2^2\omega_5\omega_{15} - 3\omega_5 + 9c_s^2\omega_{15} - 3\omega_{15} - 18c_s^2 - 6v_2^2 + 3v_2^2\omega_{15})\frac{v_2\rho}{6\omega_5\omega_{15}}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_y^3 v_1} = C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_y^3 v_1}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_y^3 v_1} = (6 - 3\omega_7 - 3\omega_1 - 3c_s^2\omega_7\omega_1 + 3v_2^2\omega_7 + \omega_7\omega_1 + 9c_s^2\omega_7 - v_2^2\omega_7\omega_1 + 3v_2^2\omega_1 - 18c_s^2 + 9c_s^2\omega_1 - 6v_2^2)\frac{v_2\rho}{6\omega_7\omega_1}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_y^3 v_1} = (6\omega_3 + 3v_2^2\omega_4\omega_1 - 6\omega_3 c_s^2\omega_4\omega_1 - 18\omega_3 c_s^2 + 9\omega_3 c_s^2\omega_1 + 9c_s^2\omega_4\omega_1 - 3\omega_4\omega_1 - 6\omega_3 v_2^2 + 6\omega_3 v_2^2\omega_4 + 3\omega_3 v_2^2\omega_1 - 2\omega_3 v_2^2\omega_4\omega_1 + 6\omega_4 + 18\omega_3 c_s^2\omega_4 - 6\omega_3\omega_4 - 3\omega_3\omega_1 - 18c_s^2\omega_4 - 6v_2^2\omega_4 + 2\omega_3\omega_4\omega_1)\frac{v_2\rho}{12\omega_3\omega_4\omega_1}$

coefficient $C^{(1)}_{\mathrm{D}_y^3 v_2}$ at $\frac{\partial^3 v_2}{\partial x_2^3}$:

$C^{(1),\mathrm{SRT}}_{\mathrm{D}^3_y v_2} = (-1 + c_s^2 + 3v_2^2)\frac{v_1\rho}{12}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}^3_y v_2} = (18v_2^2\omega_{10}\omega_5 - 6c_s^2\omega_5\omega_{15} + 6\omega_5\omega_{15} + 6c_s^2\omega_{10}\omega_5 + 12\omega_{10} - \omega_{10}\omega_5\omega_{15} - 6\omega_{10}\omega_5 - 18v_2^2\omega_5\omega_{15} + c_s^2\omega_{10}\omega_5\omega_{15} - 12c_s^2\omega_{10} - 36v_2^2\omega_{10} + 12c_s^2\omega_{15} + 3v_2^2\omega_{10}\omega_5\omega_{15} - 12\omega_{15} + 36v_2^2\omega_{15})\frac{v_1\rho}{12\omega_{10}\omega_5\omega_{15}}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}^3_y v_2} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}^3_y v_2}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}^3_y v_2} = C^{(1),\mathrm{SRT}}_{\mathrm{D}^3_y v_2}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}^3_y v_2} = C^{(1),\mathrm{SRT}}_{\mathrm{D}^3_y v_2}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}^3_y v_2} = C^{(1),\mathrm{SRT}}_{\mathrm{D}^3_y v_2}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}^3_y v_2} = C^{(1),\mathrm{SRT}}_{\mathrm{D}^3_y v_2}$

coefficient $C^{(1)}_{\mathrm{D}^2_x \mathrm{D}_z \rho}$ **at** $\frac{\partial^3 \rho}{\partial x_1^2 \partial x_3}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}^2_x \mathrm{D}_z \rho} = 0$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}^2_x \mathrm{D}_z \rho} = (\omega_6 v_1^2\omega_{13} + \omega_6 v_1^2\omega_9^2 - v_1^2\omega_9^2 + v_1^2\omega_{13}\omega_9 + \omega_9^2 - 3\omega_6 c_s^2\omega_{13}\omega_9 - \omega_6 v_1^2\omega_9 - 3c_s^2\omega_9^2 - 3\omega_6 c_s^2\omega_9 + \omega_6\omega_{13}\omega_9 - \omega_6\omega_{13} - \omega_6\omega_9^2 - \omega_6 v_1^2\omega_{13}\omega_9 + \omega_6\omega_9 + 3\omega_6 c_s^2\omega_{13} + 3\omega_6 c_s^2\omega_9^2 - \omega_{13}\omega_9 + 3c_s^2\omega_{13}\omega_9)\frac{v_3 v_1}{\omega_6\omega_{13}\omega_9^2}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}^2_x \mathrm{D}_z \rho} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}^2_x \mathrm{D}_z \rho}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}^2_x \mathrm{D}_z \rho} = 0$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}^2_x \mathrm{D}_z \rho} = 0$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}^2_x \mathrm{D}_z \rho} = 0$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}^2_x \mathrm{D}_z \rho} = (2\omega_2^2 + 9c_s^2\omega_1\omega_2^2 + 2v_1^2\omega_2^2 - 3\omega_1\omega_2^2 + 2\omega_1\omega_2 + 2v_1^2\omega_1^2 - 6c_s^2\omega_1\omega_2 - 4\omega_1^2 - 3v_3^2\omega_1^2\omega_2 + 12c_s^2\omega_1^2 - 4v_3^2\omega_2^2 + 2v_3^2\omega_1\omega_2 + 3\omega_1^2\omega_2 - 9c_s^2\omega_1^2\omega_2 + 2v_3^2\omega_1^2 - 6c_s^2\omega_2^2 + 3v_3^2\omega_1\omega_2^2 - 4v_1^2\omega_1\omega_2)\frac{v_3 v_1}{6\omega_1^2\omega_2^2}$

coefficient $C^{(1)}_{\mathrm{D}^2_x \mathrm{D}_z v_1}$ **at** $\frac{\partial^3 v_1}{\partial x_1^2 \partial x_3}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}^2_x \mathrm{D}_z v_1} = 0$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}^2_x \mathrm{D}_z v_1} = (3\omega_6 v_1^2\omega_{13} + 3\omega_6 v_1^2\omega_9^2 - 3v_1^2\omega_9^2 + 3v_1^2\omega_{13}\omega_9 + \omega_9^2 - \omega_6 c_s^2\omega_{13}\omega_9 - 3\omega_6 v_1^2\omega_9 - c_s^2\omega_9^2 - \omega_6 c_s^2\omega_9 + \omega_6\omega_{13}\omega_9 - \omega_6\omega_{13} - \omega_6\omega_9^2 - 3\omega_6 v_1^2\omega_{13}\omega_9 + \omega_6\omega_9 + \omega_6 c_s^2\omega_{13} + \omega_6 c_s^2\omega_9^2 - \omega_{13}\omega_9 + c_s^2\omega_{13}\omega_9)\frac{v_3\rho}{\omega_6\omega_{13}\omega_9^2}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}^2_x \mathrm{D}_z v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}^2_x \mathrm{D}_z v_1}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}^2_x \mathrm{D}_z v_1} = 0$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}^2_x \mathrm{D}_z v_1} = 0$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}^2_x \mathrm{D}_z v_1} = 0$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}^2_x \mathrm{D}_z v_1} = (-\omega_3 v_3^2\omega_1^2\omega_2 + \omega_3\omega_1^2\omega_2 - 4\omega_3 c_s^2\omega_1\omega_2 + 6c_s^2\omega_1\omega_2^2 - 2\omega_1\omega_2^2 - 2\omega_3 v_3^2\omega_2^2 + 8\omega_3 c_s^2\omega_1^2 + 3\omega_3 c_s^2\omega_1\omega_2^2 - 4\omega_3 c_s^2\omega_2^2 + 2\omega_3 v_3^2\omega_1^2 - 2v_3^2\omega_1^2\omega_2 - 12\omega_3 v_1^2\omega_1\omega_2 - \omega_3\omega_1\omega_2^2 + 6\omega_3 v_1^2\omega_2^2 + \omega_3 v_3^2\omega_1\omega_2^2 + 2\omega_1^2\omega_2 - 6c_s^2\omega_1^2\omega_2 - 3\omega_3 c_s^2\omega_1^2\omega_2 - 4\omega_3\omega_1^2 + 6\omega_3 v_1^2\omega_1^2 + 2v_3^2\omega_1\omega_2^2 + 4\omega_3\omega_1\omega_2)\frac{v_3\rho}{6\omega_3\omega_1^2\omega_2^2}$

coefficient $C^{(1)}_{\mathrm{D}_x^2\mathrm{D}_z v_3}$ **at** $\frac{\partial^3 v_3}{\partial x_1^2 \partial x_3}$**:**

$$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_z v_3} = (12 - 12v_1^2 + 12v_1^2\omega - 3v_1^2\omega^2 + 3\omega^2 - 12\omega - 11c_s^2\omega^2 + 36c_s^2\omega - 36c_s^2)\frac{v_1\rho}{12\omega^2}$$

$$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_z v_3} = (-12\omega_6 v_1^2\omega_9^2 + 3\omega_6^2\omega_{13}\omega_9^2 + 42\omega_6 c_s^2\omega_{13}\omega_9^2 + 12\omega_6^2 c_s^2\omega_9^2 + 36\omega_6^2 c_s^2\omega_{13} - 3\omega_6^2 v_1^2\omega_{13}\omega_9^2 + 12\omega_6^2\omega_9 - 12\omega_6^2\omega_{13} - 12\omega_6^2\omega_9^2 - 6\omega_6^2 v_1^2\omega_{13}\omega_9 + 6\omega_6^2\omega_{13}\omega_9 - 12\omega_6^2 c_s^2\omega_9 - 24\omega_6 c_s^2\omega_{13}\omega_9 - 24c_s^2\omega_{13}\omega_9^2 - 11\omega_6^2 c_s^2\omega_{13}\omega_9^2 + 6\omega_6 v_1^2\omega_{13}\omega_9^2 - 12\omega_6^2 v_1^2\omega_9 + 12\omega_6\omega_9^2 + 12\omega_6^2 v_1^2\omega_9^2 + 12\omega_6^2 v_1^2\omega_{13} - 12\omega_6 c_s^2\omega_9^2 - 6\omega_6\omega_{13}\omega_9^2 - 18\omega_6^2 c_s^2\omega_{13}\omega_9)\frac{v_1\rho}{12\omega_6^2\omega_{13}\omega_9^2}$$

$$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_z v_3} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_z v_3}$$

$$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_z v_3} = (12\omega_6 v_1^2\omega_{13} + 12\omega_6 v_1^2\omega_9^2 - 11\omega_6 c_s^2\omega_{13}\omega_9^2 + 6v_1^2\omega_{13}\omega_9^2 - 12v_1^2\omega_9^2 + 12\omega_9^2 - 18\omega_6 c_s^2\omega_{13}\omega_9 - 12\omega_6 v_1^2\omega_9 + 18c_s^2\omega_{13}\omega_9^2 - 36c_s^2\omega_9^2 - 6\omega_{13}\omega_9^2 - 36\omega_6 c_s^2\omega_9 + 6\omega_6\omega_{13}\omega_9 - 3\omega_6 v_1^2\omega_{13}\omega_9^2 - 12\omega_6\omega_{13} - 12\omega_6\omega_9^2 - 6\omega_6 v_1^2\omega_{13}\omega_9 + 12\omega_6\omega_9 + 36\omega_6 c_s^2\omega_{13} + 36\omega_6 c_s^2\omega_9^2 + 3\omega_6\omega_{13}\omega_9^2)\frac{v_1\rho}{12\omega_6\omega_{13}\omega_9^2}$$

$$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_z v_3} = C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_z v_3}$$

$$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_z v_3} = (6v_1^2\omega_4^2\omega_{12} - 3v_1^2\omega_4^2\omega_2\omega_{12} - 36c_s^2\omega_4\omega_2 + 12\omega_4\omega_2 + 12\omega_4^2 - 11c_s^2\omega_4^2\omega_2\omega_{12} + 12v_1^2\omega_2\omega_{12} + 3\omega_4^2\omega_2\omega_{12} + 12v_1^2\omega_4^2\omega_2 - 12v_1^2\omega_4^2 - 18c_s^2\omega_4\omega_2\omega_{12} - 12v_1^2\omega_4\omega_2 + 18c_s^2\omega_4^2\omega_{12} + 6\omega_4\omega_2\omega_{12} - 6\omega_4^2\omega_{12} - 36c_s^2\omega_4^2 - 6v_1^2\omega_4\omega_2\omega_{12} + 36c_s^2\omega_4^2\omega_2 - 12\omega_4^2\omega_2 - 12\omega_2\omega_{12} + 36c_s^2\omega_2\omega_{12})\frac{v_1\rho}{12\omega_4^2\omega_2\omega_{12}}$$

$$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_z v_3} = (-8\omega_3\omega_4\omega_1\omega_2^2 - 3\omega_3 v_1^2\omega_4\omega_1^2\omega_2^2 + 6\omega_3 v_1^2\omega_1^2\omega_2^2 - 8v_1^2\omega_4\omega_1\omega_2^2 + 16\omega_3 c_s^2\omega_4\omega_2^2 + 18\omega_3 v_3^2\omega_4\omega_1\omega_2^2 - 12\omega_3 c_s^2\omega_4\omega_1^2\omega_2 - 11\omega_3 c_s^2\omega_4\omega_1^2\omega_2^2 + 16\omega_3 c_s^2\omega_4\omega_1^2 - 36\omega_3 c_s^2\omega_1\omega_2^2 - 24c_s^2\omega_4\omega_1\omega_2^2 + 12\omega_3 v_3^2\omega_4\omega_1\omega_2 - 6\omega_3\omega_1^2\omega_2^2 - 4\omega_3\omega_4\omega_1\omega_2 - 2\omega_3 v_1^2\omega_4\omega_1^2\omega_2 + 8\omega_4\omega_1\omega_2^2 + 12\omega_3\omega_1\omega_2^2 + 8\omega_3 v_1^2\omega_4\omega_2^2 + 12\omega_3 v_3^2\omega_4\omega_1^2 - 4v_1^2\omega_4\omega_1^2\omega_2 + 8\omega_3\omega_4\omega_1^2\omega_2 - 8\omega_3\omega_4\omega_1^2 - 6\omega_4\omega_1^2\omega_2^2 + 12\omega_3 c_s^2\omega_4\omega_1\omega_2^2 - 18\omega_3 v_3^2\omega_4\omega_1^2\omega_2 + 18\omega_3 c_s^2\omega_1^2\omega_2^2 + 18c_s^2\omega_4\omega_1^2\omega_2^2 - 12c_s^2\omega_4\omega_1^2\omega_2 + 4\omega_3 c_s^2\omega_4\omega_1\omega_2 - 24\omega_3 v_3^2\omega_4\omega_2^2 + 3\omega_3\omega_4\omega_1^2\omega_2^2 + 4\omega_3 v_1^2\omega_4\omega_1^2 + 4\omega_4\omega_1^2\omega_2 + 2\omega_3 v_1^2\omega_4\omega_1\omega_2^2 - 12\omega_3 v_1^2\omega_1\omega_2^2 + 6v_1^2\omega_4\omega_1^2\omega_2^2)\frac{v_1\rho}{12\omega_3\omega_4\omega_1^2\omega_2^2}$$

coefficient $C^{(1)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z \rho}$ **at** $\frac{\partial^3 \rho}{\partial x_1 \partial x_2 \partial x_3}$**:**

$$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z \rho} = 0$$

$$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z \rho} = 0$$

$$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z \rho} = 0$$

$$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z \rho} = 0$$

$$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z \rho} = 0$$

$$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z \rho} = 0$$

$$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z \rho} = (-2v_2^2\omega_1\omega_2 - 2\omega_2^2 + 4\omega_1\omega_2 - 12c_s^2\omega_1\omega_2 - 2\omega_1^2 + 6c_s^2\omega_1^2 + v_3^2\omega_2^2 - 2v_3^2\omega_1\omega_2 + v_2^2\omega_1^2 + v_2^2\omega_2^2 + v_3^2\omega_1^2 + 6c_s^2\omega_2^2)\frac{v_3 v_2}{3\omega_1^2\omega_2^2}$$

coefficient $C^{(1)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_2}$ **at** $\frac{\partial^3 v_2}{\partial x_1 \partial x_2 \partial x_3}$**:**

$$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_2} = 0$$

$$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_2} = (-\omega_6\omega_5^2 + \omega_6\omega_5 - \omega_6\omega_8 + \omega_6\omega_8\omega_5 - \omega_8\omega_5 + \omega_5^2)\frac{v_3 c_s^2\rho}{\omega_6\omega_8\omega_5^2}$$

$$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_2} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_2}$$

$$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_2} = 0$$

$$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_2} = 0$$

$$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_2} = 0$$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_2} = (-\omega_3\omega_4\omega_1\omega_2^2 + 6\omega_3 v_2^2\omega_4\omega_1^2 - 4\omega_3 c_s^2\omega_4\omega_2^2 + \omega_3 v_3^2\omega_4\omega_1\omega_2^2 + 3v_3^2\omega_4\omega_1^2\omega_2^2 - 3\omega_3 c_s^2\omega_4\omega_1^2\omega_2 - 2v_3^2\omega_4\omega_1^2\omega_2 + 8\omega_3 c_s^2\omega_4\omega_1^2 + 18\omega_3 c_s^2\omega_1\omega_2^2 - 12c_s^2\omega_4\omega_1\omega_2^2 + 3\omega_3\omega_1^2\omega_2^2 - 3\omega_3 v_3^2\omega_1^2\omega_2^2 - 12\omega_3 v_2^2\omega_4\omega_1\omega_2 + 6\omega_3 v_2^2\omega_4\omega_2^2 + 4\omega_3\omega_4\omega_1\omega_2 + 4\omega_4\omega_1\omega_2^2 - 6\omega_3\omega_1\omega_2^2 + 2\omega_3 v_3^2\omega_4\omega_1^2 + \omega_3\omega_4\omega_1^2\omega_2 + 6\omega_3 v_3^2\omega_1\omega_2^2 - 4\omega_3\omega_4\omega_1^2 - 3\omega_4\omega_1^2\omega_2^2 + 3\omega_3 c_s^2\omega_4\omega_1\omega_2^2 - \omega_3 v_3^2\omega_4\omega_1^2\omega_2 - 9\omega_3 c_s^2\omega_1^2\omega_2^2 + 9c_s^2\omega_4\omega_1^2\omega_2^2 - 6c_s^2\omega_4\omega_1^2\omega_2 - 4\omega_3 c_s^2\omega_4\omega_1\omega_2 - 4v_3^2\omega_4\omega_1\omega_2^2 - 2\omega_3 v_3^2\omega_4\omega_2^2 + 2\omega_4\omega_1^2\omega_2)\frac{v_3\rho}{6\omega_3\omega_4\omega_1^2\omega_2^2}$

coefficient $C^{(1)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_3}$ **at** $\frac{\partial^3 v_3}{\partial x_1\partial x_2\partial x_3}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_3} = 0$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_3} = (\omega_6\omega_5 - \omega_6\omega_8 + \omega_6\omega_8\omega_5 + \omega_6^2 - \omega_6^2\omega_5 - \omega_8\omega_5)\frac{c_s^2 v_2\rho}{\omega_6^2\omega_8\omega_5}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_3} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_3}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_3} = 0$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_3} = 0$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_3} = 0$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_3} = (\omega_3 v_2^2\omega_4\omega_1\omega_2^2 - \omega_3\omega_4\omega_1\omega_2^2 + 6\omega_3 v_2^2\omega_1\omega_2^2 + 2\omega_3 v_2^2\omega_4\omega_1^2 + 3v_2^2\omega_4\omega_1^2\omega_2^2 - 4\omega_3 c_s^2\omega_4\omega_2^2 - 3\omega_3 c_s^2\omega_4\omega_1^2\omega_2 + 8\omega_3 c_s^2\omega_4\omega_1^2 + 18\omega_3 c_s^2\omega_1\omega_2^2 - 12c_s^2\omega_4\omega_1\omega_2^2 - 12\omega_3 v_3^2\omega_4\omega_1\omega_2 + 3\omega_3\omega_1^2\omega_2^2 - 2v_2^2\omega_4\omega_1^2\omega_2 - 2\omega_3 v_2^2\omega_4\omega_2^2 + 4\omega_3\omega_4\omega_1\omega_2 + 4\omega_4\omega_1\omega_2^2 - 6\omega_3\omega_1\omega_2^2 + 6\omega_3 v_3^2\omega_4\omega_1^2 + \omega_3\omega_4\omega_1^2\omega_2 - \omega_3 v_2^2\omega_4\omega_1^2\omega_2 - 4\omega_3\omega_4\omega_1^2 - 3\omega_4\omega_1^2\omega_2^2 + 3\omega_3 c_s^2\omega_4\omega_1\omega_2^2 - 9\omega_3 c_s^2\omega_1^2\omega_2^2 + 9c_s^2\omega_4\omega_1^2\omega_2^2 - 6c_s^2\omega_4\omega_1^2\omega_2 - 4\omega_3 c_s^2\omega_4\omega_1\omega_2 - 3\omega_3 v_2^2\omega_1^2\omega_2^2 + 6\omega_3 v_3^2\omega_4\omega_2^2 + 2\omega_4\omega_1^2\omega_2 - 4v_2^2\omega_4\omega_1\omega_2^2)\frac{v_2\rho}{6\omega_3\omega_4\omega_1^2\omega_2^2}$

coefficient $C^{(1)}_{\mathrm{D}_y^2\mathrm{D}_z v_1}$ **at** $\frac{\partial^3 v_1}{\partial x_2^2\partial x_3}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_y^2\mathrm{D}_z v_1} = 0$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z v_1} = (-\omega_6\omega_5^2 + \omega_6\omega_5 - \omega_6\omega_8 + \omega_6\omega_8\omega_5 - \omega_8\omega_5 + \omega_5^2)\frac{v_3 c_s^2\rho}{\omega_6\omega_8\omega_5^2}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_y^2\mathrm{D}_z v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z v_1}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z v_1} = 0$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_y^2\mathrm{D}_z v_1} = 0$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z v_1} = 0$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_y^2\mathrm{D}_z v_1} = (-2\omega_3 - \omega_3 v_3^2\omega_1 + 6\omega_3 c_s^2 - 3\omega_3 c_s^2\omega_1 + 3c_s^2\omega_4\omega_1 - \omega_4\omega_1 + 2\omega_4 + 2\omega_3 v_3^2 + v_3^2\omega_4\omega_1 + \omega_3\omega_1 - 2v_3^2\omega_4 - 6c_s^2\omega_4)\frac{v_3\rho}{4\omega_3\omega_4\omega_1}$

coefficient $C^{(1)}_{\mathrm{D}_y^2\mathrm{D}_z v_3}$ **at** $\frac{\partial^3 v_3}{\partial x_2^2\partial x_3}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_y^2\mathrm{D}_z v_3} = \frac{-c_s^2 v_1\rho}{6}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z v_3} = (6\omega_7\omega_5 - 6\omega_6\omega_7\omega_5 - 6\omega_6\omega_8 + 6\omega_6\omega_7 + 6\omega_6\omega_8\omega_5 - \omega_6\omega_7\omega_8\omega_5 - 6\omega_8\omega_5)\frac{c_s^2 v_1\rho}{6\omega_6\omega_7\omega_8\omega_5}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_y^2\mathrm{D}_z v_3} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z v_3}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z v_3} = C^{(1),\mathrm{SRT}}_{\mathrm{D}_y^2\mathrm{D}_z v_3}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_y^2\mathrm{D}_z v_3} = C^{(1),\mathrm{SRT}}_{\mathrm{D}_y^2\mathrm{D}_z v_3}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z v_3} = C^{(1),\mathrm{SRT}}_{\mathrm{D}_y^2\mathrm{D}_z v_3}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_y^2\mathrm{D}_z v_3} = C^{(1),\mathrm{SRT}}_{\mathrm{D}_y^2\mathrm{D}_z v_3}$

coefficient $C^{(1)}_{\mathrm{D}_x\mathrm{D}_z^2\rho}$ **at** $\frac{\partial^3\rho}{\partial x_1\partial x_3^2}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_z^2\rho} = (-12-\omega^2+12\omega)\frac{c_s^4}{6\omega^2}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^2\rho} = (-12+12\omega_6-\omega_6^2)\frac{c_s^4}{6\omega_6^2}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_z^2\rho} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^2\rho}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_z^2\rho} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^2\rho}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_z^2\rho} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^2\rho}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_z^2\rho} = (-12-\omega_2^2+12\omega_2)\frac{c_s^4}{6\omega_2^2}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_z^2\rho} = (-15v_3^2c_s^2\omega_1^2\omega_2+2c_s^4\omega_1^2-4v_3^4\omega_2^2-2c_s^2\omega_1\omega_2^2-18v_3^2c_s^2\omega_2^2-3v_3^4\omega_1^2\omega_2+2v_3^4\omega_1^2-14c_s^4\omega_2^2+12v_3^2c_s^2\omega_1^2+14c_s^4\omega_1\omega_2^2+3v_3^2\omega_1^2\omega_2-2c_s^2\omega_1^2+4v_3^2\omega_2^2+15v_3^2c_s^2\omega_1\omega_2^2-c_s^4\omega_1^2\omega_2^2-2v_3^2\omega_1\omega_2+3v_3^4\omega_1\omega_2^2+2c_s^2\omega_1^2\omega_2+2v_3^4\omega_1\omega_2-2v_3^2\omega_1^2+2c_s^2\omega_2^2-3v_3^2\omega_1\omega_2^2+6v_3^2c_s^2\omega_1\omega_2-2c_s^4\omega_1^2\omega_2)\frac{1}{6\omega_1^2\omega_2^2}$

coefficient $C^{(1)}_{\mathrm{D}_x\mathrm{D}_z^2 v_1}$ **at** $\frac{\partial^3 v_1}{\partial x_1\partial x_3^2}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_z^2 v_1} = \frac{-c_s^2 v_1\rho}{6}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^2 v_1} = (-12\omega_6^2\omega_9-\omega_6^2\omega_{13}\omega_9+12\omega_6^2+12\omega_6\omega_{13}\omega_9-12\omega_6\omega_{13}+12\omega_6\omega_9-12\omega_{13}\omega_9)\frac{c_s^2 v_1\rho}{6\omega_6^2\omega_{13}\omega_9}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_z^2 v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^2 v_1}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_z^2 v_1} = C^{(1),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_z^2 v_1}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_z^2 v_1} = C^{(1),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_z^2 v_1}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_z^2 v_1} = C^{(1),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_z^2 v_1}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_z^2 v_1} = C^{(1),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_z^2 v_1}$

coefficient $C^{(1)}_{\mathrm{D}_x\mathrm{D}_z^2 v_3}$ **at** $\frac{\partial^3 v_3}{\partial x_1\partial x_3^2}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_z^2 v_3} = 0$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^2 v_3} = (2\omega_6-\omega_6^2+\omega_6\omega_{18}-2\omega_{18})\frac{v_3c_s^2\rho}{\omega_6^2\omega_{18}}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_z^2 v_3} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^2 v_3}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_z^2 v_3} = 0$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_z^2 v_3} = 0$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_z^2 v_3} = 0$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_z^2 v_3} = (6\omega_2^2 + 9c_s^2\omega_1\omega_2^2 - 5\omega_1\omega_2^2 - 2\omega_1\omega_2 + 2c_s^2\omega_1\omega_2 - 4\omega_1^2 - 11v_3^2\omega_1^2\omega_2 + 8c_s^2\omega_1^2 - 14v_3^2\omega_2^2 + 6v_3^2\omega_1\omega_2 + 5\omega_1^2\omega_2 - 9c_s^2\omega_1^2\omega_2 + 8v_3^2\omega_1^2 - 10c_s^2\omega_2^2 + 11v_3^2\omega_1\omega_2^2)\frac{v_3\rho}{6\omega_1^2\omega_2^2}$

coefficient $C^{(1)}_{\mathrm{D}_y\mathrm{D}_z^2 v_1}$ **at** $\frac{\partial^3 v_1}{\partial x_2 \partial x_3^2}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_y\mathrm{D}_z^2 v_1} = 0$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^2 v_1} = (\omega_6\omega_5 - \omega_6\omega_8 + \omega_6\omega_8\omega_5 + \omega_6^2 - \omega_6^2\omega_5 - \omega_8\omega_5)\frac{c_s^2 v_2\rho}{\omega_6^2\omega_8\omega_5}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_y\mathrm{D}_z^2 v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^2 v_1}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_y\mathrm{D}_z^2 v_1} = 0$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_y\mathrm{D}_z^2 v_1} = 0$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_y\mathrm{D}_z^2 v_1} = 0$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_y\mathrm{D}_z^2 v_1} = (-2\omega_3 + v_2^2\omega_4\omega_1 + 6\omega_3 c_s^2 - 3\omega_3 c_s^2\omega_1 + 3c_s^2\omega_4\omega_1 - \omega_4\omega_1 + 2\omega_3 v_2^2 - \omega_3 v_2^2\omega_1 + 2\omega_4 + \omega_3\omega_1 - 6c_s^2\omega_4 - 2v_2^2\omega_4)\frac{v_2\rho}{4\omega_3\omega_4\omega_1}$

coefficient $C^{(1)}_{\mathrm{D}_y\mathrm{D}_z^2 v_2}$ **at** $\frac{\partial^3 v_2}{\partial x_2 \partial x_3^2}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_y\mathrm{D}_z^2 v_2} = \frac{-c_s^2 v_1\rho}{6}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^2 v_2} = (6\omega_7\omega_5 - 6\omega_6\omega_7\omega_5 - 6\omega_6\omega_8 + 6\omega_6\omega_7 + 6\omega_6\omega_8\omega_5 - \omega_6\omega_7\omega_8\omega_5 - 6\omega_8\omega_5)\frac{c_s^2 v_1\rho}{6\omega_6\omega_7\omega_8\omega_5}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_y\mathrm{D}_z^2 v_2} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^2 v_2}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_y\mathrm{D}_z^2 v_2} = C^{(1),\mathrm{SRT}}_{\mathrm{D}_y\mathrm{D}_z^2 v_2}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_y\mathrm{D}_z^2 v_2} = C^{(1),\mathrm{SRT}}_{\mathrm{D}_y\mathrm{D}_z^2 v_2}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_y\mathrm{D}_z^2 v_2} = C^{(1),\mathrm{SRT}}_{\mathrm{D}_y\mathrm{D}_z^2 v_2}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_y\mathrm{D}_z^2 v_2} = C^{(1),\mathrm{SRT}}_{\mathrm{D}_y\mathrm{D}_z^2 v_2}$

coefficient $C^{(1)}_{\mathrm{D}_z^3\rho}$ **at** $\frac{\partial^3 \rho}{\partial x_3^3}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_z^3\rho} = (-1 + v_3^2 + 3c_s^2)\frac{v_3 v_1}{12}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_z^3\rho} = (-6\omega_6\omega_{11} + 6\omega_6 v_3^2\omega_{11} - 36c_s^2\omega_{11} + 3\omega_6 c_s^2\omega_{11}\omega_{18} - 12v_3^2\omega_{11} + 18\omega_6 c_s^2\omega_{11} + \omega_6 v_3^2\omega_{11}\omega_{18} - \omega_6\omega_{11}\omega_{18} + 12\omega_{11} + 6\omega_6\omega_{18} - 6\omega_6 v_3^2\omega_{18} + 36c_s^2\omega_{18} + 12v_3^2\omega_{18} - 12\omega_{18} - 18\omega_6 c_s^2\omega_{18})\frac{v_3 v_1}{12\omega_6\omega_{11}\omega_{18}}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_z^3\rho} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_z^3\rho}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_z^3\rho} = C^{(1),\mathrm{SRT}}_{\mathrm{D}_z^3\rho}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_z^3\rho} = C^{(1),\mathrm{SRT}}_{\mathrm{D}_z^3\rho}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_z^3\rho} = C^{(1),\mathrm{SRT}}_{\mathrm{D}_z^3\rho}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_z^3\rho} = C^{(1),\mathrm{SRT}}_{\mathrm{D}_z^3\rho}$

coefficient $C^{(1)}_{\mathrm{D}^3_z v_1}$ at $\frac{\partial^3 v_1}{\partial x_3^3}$:

$C^{(1),\mathrm{SRT}}_{\mathrm{D}^3_z v_1} = (6 + \omega^2 - 6\omega + 6v_3^2\omega - 3c_s^2\omega^2 - 6v_3^2 + 18c_s^2\omega - 18c_s^2 - v_3^2\omega^2)\frac{v_3\rho}{6\omega^2}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}^3_z v_1} = (-6\omega_6 v_3^2 + 6\omega_6 - 6\omega_6 c_s^2 - 3\omega_6^2 c_s^2\omega_{18} - \omega_6^2 v_3^2\omega_{18} + \omega_6^2\omega_{18} - 3\omega_6^2 - 3\omega_6\omega_{18} + 3\omega_6 v_3^2\omega_{18} - 12c_s^2\omega_{18} + 3\omega_6^2 c_s^2 + 3\omega_6^2 v_3^2 + 15\omega_6 c_s^2\omega_{18})\frac{v_3\rho}{6\omega_6^2\omega_{18}}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}^3_z v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}^3_z v_1}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}^3_z v_1} = (6 + 3\omega_6 v_3^2 - 3\omega_6 + 9\omega_6 c_s^2 + \omega_6\omega_{18} - \omega_6 v_3^2\omega_{18} + 9c_s^2\omega_{18} + 3v_3^2\omega_{18} - 3\omega_{18} - 6v_3^2 - 18c_s^2 - 3\omega_6 c_s^2\omega_{18})\frac{v_3\rho}{6\omega_6\omega_{18}}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}^3_z v_1} = C^{(1),\mathrm{CLBM1}}_{\mathrm{D}^3_z v_1}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}^3_z v_1} = (6 - 3c_s^2\omega_8\omega_2 + 3v_3^2\omega_8 + \omega_8\omega_2 + 9c_s^2\omega_8 + 9c_s^2\omega_2 - 3\omega_8 - 3\omega_2 - 6v_3^2 - v_3^2\omega_8\omega_2 - 18c_s^2 + 3v_3^2\omega_2)\frac{v_3\rho}{6\omega_8\omega_2}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}^3_z v_1} = (6\omega_3 v_3^2\omega_4 + 6\omega_3 + 3\omega_3 v_3^2\omega_1 - 6\omega_3 c_s^2\omega_4\omega_1 - 18\omega_3 c_s^2 + 9\omega_3 c_s^2\omega_1 + 9c_s^2\omega_4\omega_1 - 3\omega_4\omega_1 + 6\omega_4 + 18\omega_3 c_s^2\omega_4 - 6\omega_3 v_3^2 + 3v_3^2\omega_4\omega_1 - 6\omega_3\omega_4 - 3\omega_3\omega_1 - 6v_3^2\omega_4 - 18c_s^2\omega_4 + 2\omega_3\omega_4\omega_1 - 2\omega_3 v_3^2\omega_4\omega_1)\frac{v_3\rho}{12\omega_3\omega_4\omega_1}$

coefficient $C^{(1)}_{\mathrm{D}^3_z v_3}$ at $\frac{\partial^3 v_3}{\partial x_3^3}$:

$C^{(1),\mathrm{SRT}}_{\mathrm{D}^3_z v_3} = (-1 + 3v_3^2 + c_s^2)\frac{v_1\rho}{12}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}^3_z v_3} = (-6\omega_6\omega_{11} + 18\omega_6 v_3^2\omega_{11} - 12c_s^2\omega_{11} + \omega_6 c_s^2\omega_{11}\omega_{18} - 36v_3^2\omega_{11} + 6\omega_6 c_s^2\omega_{11} + 3\omega_6 v_3^2\omega_{11}\omega_{18} - \omega_6\omega_{11}\omega_{18} + 12\omega_{11} + 6\omega_6\omega_{18} - 18\omega_6 v_3^2\omega_{18} + 12c_s^2\omega_{18} + 36v_3^2\omega_{18} - 12\omega_{18} - 6\omega_6 c_s^2\omega_{18})\frac{v_1\rho}{12\omega_6\omega_{11}\omega_{18}}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}^3_z v_3} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}^3_z v_3}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}^3_z v_3} = C^{(1),\mathrm{SRT}}_{\mathrm{D}^3_z v_3}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}^3_z v_3} = C^{(1),\mathrm{SRT}}_{\mathrm{D}^3_z v_3}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}^3_z v_3} = C^{(1),\mathrm{SRT}}_{\mathrm{D}^3_z v_3}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}^3_z v_3} = C^{(1),\mathrm{SRT}}_{\mathrm{D}^3_z v_3}$

coefficient $C^{(1)}_{\mathrm{D}^4_x \rho}$ at $\frac{\partial^4 \rho}{\partial x_1^4}$:

$C^{(1),\mathrm{SRT}}_{\mathrm{D}^4_x \rho} = (12 - 156v_1^2 - 5c_s^4\omega^3 - 1008c_s^2 v_1^2\omega + 82c_s^4\omega^2 + 234v_1^2\omega + 144c_s^4 - 98v_1^2\omega^2 - 216c_s^4\omega - \omega^3 + 404c_s^2 v_1^2\omega^2 + 8\omega^2 + 10v_1^2\omega^3 - 18\omega - 34c_s^2 v_1^2\omega^3 - 216v_1^4\omega - 78c_s^2\omega^2 + 6c_s^2\omega^3 - 9v_1^4\omega^3 + 144v_1^4 + 198c_s^2\omega + 90v_1^4\omega^2 - 132c_s^2 + 672c_s^2 v_1^2)\frac{v_1}{12\omega^3}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}^4_x \rho} = (12 - 156v_1^2 - 5c_s^4\omega_9^3 - 1008c_s^2 v_1^2\omega_9 + 234v_1^2\omega_9 + 82c_s^4\omega_9^2 + 144c_s^4 - 216c_s^4\omega_9 - 98v_1^2\omega_9^2 - \omega_9^3 + 404c_s^2 v_1^2\omega_9^2 + 8\omega_9^2 + 10v_1^2\omega_9^3 - 34c_s^2 v_1^2\omega_9^3 - 78c_s^2\omega_9^2 - 216v_1^4\omega_9 + 6c_s^2\omega_9^3 - 9v_1^4\omega_9^3 + 144v_1^4 + 90v_1^4\omega_9^2 + 198c_s^2\omega_9 - 132c_s^2 - 18\omega_9 + 672c_s^2 v_1^2)\frac{v_1}{12\omega_9^3}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}^4_x \rho} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}^4_x \rho}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}^4_x \rho} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}^4_x \rho}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}^4_x \rho} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}^4_x \rho}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}^4_x \rho} = (12 - 156v_1^2 - 1008c_s^2 v_1^2\omega_4 + 234v_1^2\omega_4 + 82c_s^4\omega_4^2 - 5c_s^4\omega_4^3 + 144c_s^4 + 10v_1^2\omega_4^3 + 8\omega_4^2 - 34c_s^2 v_1^2\omega_4^3 - \omega_4^3 - 18\omega_4 - 216c_s^4\omega_4 - 98v_1^2\omega_4^2 + 404c_s^2 v_1^2\omega_4^2 + 6c_s^2\omega_4^3 - 78c_s^2\omega_4^2 - 216v_1^4\omega_4 + 90v_1^4\omega_4^2 + 198c_s^2\omega_4 + 144v_1^4 - 9v_1^4\omega_4^3 - 132c_s^2 + 672c_s^2 v_1^2)\frac{v_1}{12\omega_4^3}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}^4_x \rho} = (-8c_s^2\omega_1\omega_2^3 + 144\omega_3 v_1^4\omega_2^3 + 90\omega_3 v_1^4\omega_1^3\omega_2^2 + 72\omega_3 c_s^4\omega_1\omega_2^2 + 8\omega_3\omega_1^2\omega_2 + 160\omega_3 c_s^2 v_1^2\omega_1^3 - 52\omega_3 c_s^2\omega_1^3 - 3\omega_3\omega_1^3\omega_2^3 +$

$280\omega_3 v_1^2\omega_1^2\omega_2^2 + 96\omega_3 v_1^4\omega_1^2\omega_2 - 27\omega_3 v_1^4\omega_1^3\omega_2^3 + 8\omega_3\omega_1^3\omega_2^2 - 196\omega_3 v_1^2\omega_1^2\omega_2^3 - 372\omega_3 c_s^4\omega_1\omega_2^3 + 94\omega_3 v_1^2\omega_1^3\omega_2 + 24c_s^4\omega_1\omega_2^3 - 16c_s^2 v_1^2\omega_1^2\omega_2^2 -$
$10\omega_3\omega_1^3\omega_2 - 98\omega_3 v_1^2\omega_1^3\omega_2^2 + 16\omega_3\omega_1^2\omega_2^3 + 656\omega_3 c_s^2 v_1^2\omega_1\omega_2^2 - 264\omega_3 v_1^4\omega_1^2\omega_2^2 - 80\omega_3 c_s^2\omega_1\omega_2^2 + 30\omega_3 v_1^2\omega_1^3\omega_2^3 + 24\omega_3 v_1^4\omega_1^3 - 16\omega_3\omega_1^2\omega_2^2 -$
$104\omega_3 v_1^2\omega_1^2\omega_2 + 8c_s^2 v_1^2\omega_1^3\omega_2 - 184\omega_3 c_s^2\omega_2^3 + 760\omega_3 c_s^2 v_1^2\omega_2^3 + 320\omega_3 c_s^2\omega_1\omega_2^3 - 84\omega_3 v_1^4\omega_1^3\omega_2 + 180\omega_3 v_1^4\omega_1^2\omega_2^3 - 1472\omega_3 c_s^2 v_1^2\omega_1\omega_2^3 -$
$15\omega_3 c_s^4\omega_1^3\omega_2^3 + 8\omega_3\omega_1\omega_2^2 + 72\omega_3 c_s^4\omega_1^2\omega_2 + 8c_s^2 v_1^2\omega_1\omega_2^3 - 48c_s^4\omega_1^2\omega_2^2 - 300\omega_3 v_1^4\omega_1\omega_2^3 + 808\omega_3 c_s^2 v_1^2\omega_1^2\omega_2^3 + 122\omega_3 c_s^2\omega_1^3\omega_2 - 464\omega_3 c_s^2 v_1^2\omega_1^3\omega_2 +$
$16\omega_3\omega_2^3 - 156\omega_3 c_s^2\omega_1^2\omega_2^3 - 160\omega_3 v_1^2\omega_2^3 + 24c_s^4\omega_1^3\omega_2 - 28\omega_3\omega_1\omega_2^3 + 82\omega_3 c_s^4\omega_1^3\omega_2^2 + 72\omega_3 c_s^4\omega_1^3 + 152\omega_3 c_s^2\omega_1^2\omega_2^2 - 1088\omega_3 c_s^2 v_1^2\omega_1^2\omega_2^2 +$
$168\omega_3 v_1^4\omega_1\omega_2^2 - 80\omega_3 c_s^2\omega_1^2\omega_2 - 28\omega_3 v_1^2\omega_1^3 - 102\omega_3 c_s^2 v_1^2\omega_1^3\omega_2^3 + 18\omega_3 c_s^2\omega_1^3\omega_2^3 + 440\omega_3 c_s^2 v_1^2\omega_1^2\omega_2 + 16c_s^2\omega_1^2\omega_2^2 + 216\omega_3 c_s^4\omega_2^3 + 164\omega_3 c_s^4\omega_1^2\omega_2^3 +$
$328\omega_3 v_1^2\omega_1\omega_2^3 - 156\omega_3 c_s^4\omega_1^3\omega_2 - 8c_s^2\omega_1^3\omega_2 - 78\omega_3 c_s^2\omega_1^3\omega_2^2 + 404\omega_3 c_s^2 v_1^2\omega_1^3\omega_2^2 - 176\omega_3 v_1^2\omega_1\omega_2^2 - 120\omega_3 c_s^4\omega_1^2\omega_2^2 + 4\omega_3\omega_1^3)\frac{v_1}{36\omega_3\omega_1^3\omega_2^3}$

coefficient $C^{(1)}_{\mathrm{D}_x^4 v_1}$ **at** $\frac{\partial^4 v_1}{\partial x_1^4}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x^4 v_1} = (12 - 252v_1^2 - c_s^4\omega^3 - 648c_s^2 v_1^2\omega + 14c_s^4\omega^2 + 378v_1^2\omega + 24c_s^4 - 154v_1^2\omega^2 - 36c_s^4\omega - \omega^3 + 252c_s^2 v_1^2\omega^2 + 8\omega^2 + 14v_1^2\omega^3 - 18\omega -$
$18c_s^2 v_1^2\omega^3 - 756v_1^4\omega - 22c_s^2\omega^2 + 2c_s^2\omega^3 - 29v_1^4\omega^3 + 504v_1^4 + 54c_s^2\omega + 310v_1^4\omega^2 - 36c_s^2 + 432c_s^2 v_1^2)\frac{\rho}{12\omega^3}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^4 v_1} = (12 - 252v_1^2 - c_s^4\omega_9^3 - 648c_s^2 v_1^2\omega_9 + 378v_1^2\omega_9 + 14c_s^4\omega_9^2 + 24c_s^4 - 36c_s^4\omega_9 - 154v_1^2\omega_9^2 - \omega_9^3 + 252c_s^2 v_1^2\omega_9^2 + 8\omega_9^2 + 14v_1^2\omega_9^3 -$
$18c_s^2 v_1^2\omega_9^3 - 22c_s^2\omega_9^2 - 756v_1^4\omega_9 + 2c_s^2\omega_9^3 - 29v_1^4\omega_9^3 + 504v_1^4 + 310v_1^4\omega_9^2 + 54c_s^2\omega_9 - 36c_s^2 - 18\omega_9 + 432c_s^2 v_1^2)\frac{\rho}{12\omega_9^3}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x^4 v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^4 v_1}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x^4 v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^4 v_1}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x^4 v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^4 v_1}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x^4 v_1} = (12 - 252v_1^2 - 648c_s^2 v_1^2\omega_4 + 378v_1^2\omega_4 + 14c_s^4\omega_4^2 - c_s^4\omega_4^3 + 24c_s^4 + 14v_1^2\omega_4^3 + 8\omega_4^2 - 18c_s^2 v_1^2\omega_4^3 - \omega_4^3 - 18\omega_4 - 36c_s^4\omega_4 -$
$154v_1^2\omega_4^2 + 252c_s^2 v_1^2\omega_4^2 + 2c_s^2\omega_4^3 - 22c_s^2\omega_4^2 - 756v_1^4\omega_4 + 310v_1^4\omega_4^2 + 54c_s^2\omega_4 + 504v_1^4 - 29v_1^4\omega_4^3 - 36c_s^2 + 432c_s^2 v_1^2)\frac{\rho}{12\omega_4^3}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x^4 v_1} = (-8c_s^2\omega_1\omega_2^3 + 528\omega_3 v_1^4\omega_2^3 + 310\omega_3 v_1^4\omega_1^3\omega_2^2 + 8\omega_3 c_s^4\omega_1\omega_2^2 + 8\omega_3\omega_1^2\omega_2 + 144\omega_3 c_s^2 v_1^2\omega_1^3 - 20\omega_3 c_s^2\omega_1^3 - 3\omega_3\omega_1^3\omega_2^3 +$
$408\omega_3 v_1^2\omega_1^2\omega_2^2 + 336\omega_3 v_1^4\omega_1^2\omega_2 - 87\omega_3 v_1^4\omega_1^3\omega_2^3 + 8\omega_3\omega_1^3\omega_2^2 - 308\omega_3 v_1^2\omega_1^2\omega_2^3 - 68\omega_3 c_s^4\omega_1\omega_2^3 + 174\omega_3 v_1^2\omega_1^3\omega_2 + 8c_s^4\omega_1\omega_2^3 - 48c_s^2 v_1^2\omega_1^2\omega_2^2 -$
$10\omega_3\omega_1^3\omega_2 - 154\omega_3 v_1^2\omega_1^3\omega_2^2 + 16\omega_3\omega_1^2\omega_2^3 + 336\omega_3 c_s^2 v_1^2\omega_1\omega_2^2 - 888\omega_3 v_1^4\omega_1^2\omega_2^2 - 16\omega_3 c_s^2\omega_1\omega_2^2 + 42\omega_3 v_1^2\omega_1^3\omega_2^3 + 96\omega_3 v_1^4\omega_1^3 - 16\omega_3\omega_1^2\omega_2^2 -$
$168\omega_3 v_1^2\omega_1^2\omega_2 + 24c_s^2 v_1^2\omega_1^3\omega_2 - 56\omega_3 c_s^2\omega_2^3 + 552\omega_3 c_s^2 v_1^2\omega_2^3 + 96\omega_3 c_s^2\omega_1\omega_2^3 - 312\omega_3 v_1^4\omega_1^3\omega_2 + 620\omega_3 v_1^4\omega_1^2\omega_2^3 - 1008\omega_3 c_s^2 v_1^2\omega_1\omega_2^3 -$
$3\omega_3 c_s^4\omega_1^3\omega_2^3 + 8\omega_3\omega_1\omega_2^2 + 8\omega_3 c_s^4\omega_1^2\omega_2 + 24c_s^2 v_1^2\omega_1\omega_2^3 - 16c_s^4\omega_1^2\omega_2^2 - 1068\omega_3 v_1^4\omega_1\omega_2^3 + 504\omega_3 c_s^2 v_1^2\omega_1^2\omega_2^3 + 42\omega_3 c_s^2\omega_1^3\omega_2 - 360\omega_3 c_s^2 v_1^2\omega_1^3\omega_2 +$
$16\omega_3\omega_2^3 - 44\omega_3 c_s^2\omega_1^2\omega_2^3 - 288\omega_3 v_1^2\omega_2^3 + 8c_s^4\omega_1^3\omega_2 - 28\omega_3\omega_1\omega_2^3 + 14\omega_3 c_s^4\omega_1^3\omega_2^2 + 16\omega_3 c_s^4\omega_1^3 + 24\omega_3 c_s^2\omega_1^2\omega_2^2 - 576\omega_3 c_s^2 v_1^2\omega_1^2\omega_2^2 + 552\omega_3 v_1^4\omega_1\omega_2^2 -$
$16\omega_3 c_s^2\omega_1^2\omega_2 - 60\omega_3 v_1^2\omega_1^3 - 54\omega_3 c_s^2 v_1^2\omega_1^3\omega_2^3 + 6\omega_3 c_s^2\omega_1^3\omega_2^3 + 264\omega_3 c_s^2 v_1^2\omega_1^2\omega_2 + 16c_s^2\omega_1^2\omega_2^2 + 40\omega_3 c_s^4\omega_2^3 + 28\omega_3 c_s^4\omega_1^2\omega_2^3 + 552\omega_3 v_1^2\omega_1\omega_2^3 -$
$32\omega_3 c_s^4\omega_1^3\omega_2 - 8c_s^2\omega_1^3\omega_2 - 22\omega_3 c_s^2\omega_1^3\omega_2^2 + 252\omega_3 c_s^2 v_1^2\omega_1^3\omega_2^2 - 240\omega_3 v_1^2\omega_1\omega_2^2 - 8\omega_3 c_s^4\omega_1^2\omega_2^2 + 4\omega_3\omega_1^3)\frac{\rho}{36\omega_3\omega_1^3\omega_2^3}$

coefficient $C^{(1)}_{\mathrm{D}_x^3\mathrm{D}_y\rho}$ **at** $\frac{\partial^4\rho}{\partial x_1^3\partial x_2}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x^3\mathrm{D}_y\rho} = 0$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^3\mathrm{D}_y\rho} = (-4v_1^2\omega_5^2\omega_9^3 - 24c_s^2 v_1^2\omega_5^2\omega_9^2 - 4c_s^4\omega_5\omega_9^3 + 32v_1^4\omega_5^2\omega_9^2\omega_{12} + 8v_1^2\omega_9^3\omega_{12} + 36c_s^2 v_1^2\omega_9^2\omega_{12}^2 - 48c_s^2 v_1^2\omega_5\omega_9^2\omega_{12} + 4c_s^4\omega_5\omega_9\omega_{12}^2 -$
$4c_s^4\omega_5^2\omega_9^3\omega_{12} + 96c_s^2 v_1^2\omega_5^2\omega_{12}^2 + 36v_1^2\omega_5^2\omega_9\omega_{12}^2 - 20v_1^2\omega_5\omega_9^3\omega_{12} + 4c_s^2\omega_5^2\omega_9\omega_{12} - 8v_1^2\omega_9^2\omega_{12}^2 - 36c_s^2 v_1^2\omega_9^3\omega_{12} + 24c_s^2 v_1^2\omega_5^2\omega_9^3 + 4v_1^2\omega_5^2\omega_9^2 -$
$24v_1^2\omega_5^2\omega_{12}^2 + 20v_1^2\omega_5\omega_9^2\omega_{12}^2 - 72c_s^2 v_1^2\omega_5^2\omega_9\omega_{12} + 4c_s^4\omega_5^2\omega_9^2\omega_{12}^2 + 16v_1^2\omega_5\omega_9^2\omega_{12} + 4c_s^2\omega_5\omega_9^3 + 4v_1^4\omega_5^2\omega_9^3 - 144c_s^2 v_1^2\omega_5^2\omega_9\omega_{12}^2 + 84c_s^2 v_1^2\omega_5\omega_9^3\omega_{12} +$
$8c_s^4\omega_5^2\omega_9^3\omega_{12} - 8v_1^4\omega_9^3\omega_{12} - 8c_s^2\omega_5\omega_9^3\omega_{12} + 12c_s^2\omega_5^2\omega_9\omega_{12}^2 - 13v_1^4\omega_5^2\omega_9^3\omega_{12} + 20v_1^4\omega_5\omega_9\omega_{12}^2 - 84c_s^2 v_1^2\omega_5\omega_9^2\omega_{12}^2 + 8v_1^4\omega_9^2\omega_{12}^2 - 4v_1^4\omega_5^2\omega_9^2 +$
$20v_1^2\omega_5^2\omega_9\omega_{12} + 13v_1^4\omega_5^2\omega_9^2\omega_{12}^2 + 24v_1^4\omega_5^2\omega_{12}^2 + 8c_s^2\omega_5\omega_9^2\omega_{12}^2 + 72c_s^2 v_1^2\omega_5\omega_9\omega_{12}^2 - 4c_s^2\omega_9^2\omega_{12}^2 - 51c_s^2 v_1^2\omega_5^2\omega_9^3\omega_{12} + 4c_s^2\omega_5^2\omega_9^2 - 32v_1^2\omega_5^2\omega_9^2\omega_{12} +$
$20v_1^4\omega_5\omega_9^3\omega_{12} - 36v_1^4\omega_5^2\omega_9\omega_{12}^2 - 8c_s^2\omega_5^2\omega_{12}^2 + 4c_s^2\omega_5^2\omega_9^3\omega_{12} - 4c_s^2\omega_5\omega_9\omega_{12}^2 - 4v_1^4\omega_5\omega_9^3 - 4c_s^2\omega_5^2\omega_9^3 - 4c_s^4\omega_5^2\omega_9\omega_{12} + 51c_s^2 v_1^2\omega_5^2\omega_9^2\omega_{12}^2 + 4c_s^2\omega_9^3\omega_{12} -$
$4c_s^2\omega_5^2\omega_9^2\omega_{12}^2 - 20v_1^4\omega_5\omega_9^2\omega_{12}^2 + 4c_s^4\omega_9^2\omega_{12}^2 - 8c_s^2\omega_5^2\omega_9^2\omega_{12} - 16v_1^4\omega_5\omega_9^2\omega_{12} - 4c_s^4\omega_5^2\omega_9^2 - 24c_s^2 v_1^2\omega_5\omega_9^3 + 8c_s^4\omega_5^2\omega_{12}^2 - 20v_1^2\omega_5\omega_9\omega_{12}^2 + 13v_1^2\omega_5^2\omega_9^3\omega_{12} -$
$12c_s^4\omega_5^2\omega_9\omega_{12}^2 + 8c_s^4\omega_5\omega_9^3\omega_{12} + 120c_s^2 v_1^2\omega_5^2\omega_9^2\omega_{12} + 4c_s^4\omega_5^2\omega_9^3 - 20v_1^4\omega_5^2\omega_9\omega_{12} + 4v_1^2\omega_5\omega_9^3 - 4c_s^4\omega_9^3\omega_{12} - 8c_s^4\omega_5\omega_9^2\omega_{12}^2 - 13v_1^2\omega_5^2\omega_9^2\omega_{12}^2)\frac{v_2}{4\omega_5^2\omega_9^3\omega_{12}^2}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x^3\mathrm{D}_y\rho} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^3\mathrm{D}_y\rho}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x^3\mathrm{D}_y\rho} = 0$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x^3\mathrm{D}_y\rho} = 0$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x^3\mathrm{D}_y\rho} = 0$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}^3_x\mathrm{D}_y\rho} = (-36\omega_3^2v_1^4\omega_1\omega_2^3 + 56\omega_3^2c_s^2\omega_1^3\omega_2 - 4\omega_3^2c_s^2v_2^2\omega_1^2\omega_2 + 5\omega_3^2c_s^2\omega_1^2\omega_2^3 - 48\omega_3^2v_2^2v_1^2\omega_1^3\omega_2 + 4\omega_3^2v_2^2\omega_1^2\omega_2 - 48\omega_3^2v_1^2\omega_1^3 -$
$24\omega_3^2v_2^2v_1^2\omega_1^2\omega_2^3 - 20\omega_3^2c_s^2v_2^2\omega_2^3 + 18\omega_3c_s^2v_2^2\omega_1^3\omega_2^2 - 36\omega_3^2c_s^4\omega_2^3 - 36\omega_3^2c_s^4\omega_1^2\omega_2 + 4\omega_3^2\omega_1^3 - 48\omega_3^2v_2^2v_1^2\omega_1^2\omega_2^2 - \omega_3^2v_2^2\omega_1^3\omega_2^2 - 34\omega_3^2c_s^2\omega_1^2\omega_2^2 +$
$2\omega_3^2c_s^2v_2^2\omega_1^3\omega_2^2 - 72\omega_3^2v_1^4\omega_1\omega_2^2 + 6\omega_3^2c_s^4\omega_1^3\omega_2^2 + 24\omega_3c_s^4\omega_1\omega_2^3 - 6\omega_3^2c_s^4\omega_1^2\omega_2^3 - 4\omega_3c_s^2v_2^2\omega_1^2\omega_2^2 - 60\omega_3^2v_1^2\omega_1\omega_2^3 - 84\omega_3^2c_s^4\omega_1^3\omega_2 + 8\omega_3^2\omega_1\omega_2^2 +$
$108\omega_3^2c_s^2v_1^2\omega_1\omega_2^3 + 4\omega_3^2v_2^2\omega_1^3\omega_2 + 24\omega_3^2v_2^2v_1^2\omega_1^2\omega_2 + \omega_3^2v_2^2\omega_1^2\omega_2^3 - 20\omega_3^2c_s^2v_2^2\omega_1^3\omega_2 + 40\omega_3^2c_s^2\omega_1^2\omega_2 - 2\omega_3^2c_s^2v_2^2\omega_1^2\omega_2^3 - 216\omega_3^2c_s^2v_1^2\omega_1\omega_2^2 +$
$8\omega_3^2\omega_1\omega_2^3 + 48\omega_3^2v_1^2\omega_1\omega_2^2 + 24\omega_3^2v_1^2\omega_2^3 - 4\omega_3c_s^2v_2^2\omega_1^3\omega_2 - 18\omega_3c_s^2v_2^2\omega_1^2\omega_2^3 + 42\omega_3^2c_s^4\omega_1^2\omega_2^2 - 2\omega_3^2c_s^2v_2^2\omega_1^2\omega_2^2 - 5\omega_3^2c_s^2\omega_1^3\omega_2^2 + 16\omega_3^2c_s^2v_2^2\omega_1^3 -$
$8\omega_3c_s^2\omega_1\omega_2^3 + 4\omega_3^2v_2^2\omega_1^2\omega_2^2 - 8\omega_3^2\omega_2^3 + 24\omega_3^2v_2^2v_1^2\omega_1^3\omega_2^2 + 72\omega_3^2c_s^4\omega_1^3 - \omega_3^2\omega_1^2\omega_2^3 - 4\omega_3^2\omega_1^3\omega_2 + 216\omega_3^2c_s^2v_1^2\omega_1^2\omega_2^2 + 216\omega_3^2c_s^2v_1^2\omega_1^3 + 8\omega_3c_s^2v_2^2\omega_1\omega_2^3 -$
$24\omega_3^2v_1^2\omega_1^2\omega_2^2 + 8\omega_3^2v_2^2\omega_2^3 + 12c_s^2\omega_1^3\omega_2^2 + 8\omega_3^2c_s^2v_2^2\omega_1\omega_2^2 + 4\omega_3c_s^2\omega_1^3\omega_2 + 12c_s^2v_2^2\omega_1^2\omega_2^3 + 18\omega_3c_s^2\omega_1^2\omega_2^3 - 8\omega_3^2v_2^2\omega_1\omega_2^2 + 24\omega_3^2v_1^2\omega_1^2\omega_2^3 +$
$36c_s^4\omega_1^2\omega_2^3 + 42\omega_3^2c_s^4\omega_1\omega_2^3 + 84\omega_3^2v_1^2\omega_1^3\omega_2 - 72\omega_3^2c_s^2v_1^2\omega_1^2\omega_2^3 + 54\omega_3c_s^4\omega_1^3\omega_2^2 + 24\omega_3^2v_1^4\omega_1^3 - 4\omega_3^2\omega_1^2\omega_2^2 - 324\omega_3^2c_s^2v_1^2\omega_1^3\omega_2 - 8\omega_3^2v_2^2\omega_1\omega_2^3 +$
$4\omega_3c_s^2\omega_1^2\omega_2^2 + 20\omega_3^2c_s^2\omega_2^3 + 22\omega_3^2c_s^2v_2^2\omega_1\omega_2^3 - 72\omega_3^2v_2^2v_1^2\omega_2^3 + 24\omega_3^2v_2^2v_1^2\omega_1\omega_2^2 + 48\omega_3^2v_1^4\omega_2^3 + 72\omega_3^2v_1^4\omega_1^2\omega_2^2 - 8\omega_3^2c_s^2\omega_1\omega_2^2 - 36c_s^4\omega_1^3\omega_2^2 -$
$24\omega_3^2v_1^2\omega_1^3\omega_2^2 - 54\omega_3c_s^4\omega_1^2\omega_2^3 + 24\omega_3^2v_2^2v_1^2\omega_1^3 + 72\omega_3^2c_s^2v_1^2\omega_1^3\omega_2^2 - 4\omega_3^2\omega_1^2\omega_2 - 52\omega_3^2c_s^2\omega_1^3 - 12\omega_3c_s^4\omega_1^3\omega_2 - 22\omega_3^2c_s^2\omega_1\omega_2^3 - 36\omega_3^2v_1^4\omega_1^3\omega_2 -$
$12c_s^2\omega_1^2\omega_2^3 - 18\omega_3c_s^2\omega_1^3\omega_2^2 - 12c_s^2v_2^2\omega_1^3\omega_2^2 + 96\omega_3^2v_2^2v_1^2\omega_1\omega_2^3 + \omega_3^2\omega_1^3\omega_2^2 - 12\omega_3c_s^4\omega_1^2\omega_2^2 - 4\omega_3^2v_2^2\omega_1^3 - 24\omega_3^2v_1^2\omega_1^2\omega_2)\frac{v_2}{36\omega_3^2\omega_1^3\omega_2^3}$

coefficient $C^{(1)}_{\mathrm{D}^3_x\mathrm{D}_y v_1}$ **at** $\frac{\partial^4 v_1}{\partial x_1^3\partial x_2}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}^3_x\mathrm{D}_y v_1} = 0$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}^3_x\mathrm{D}_y v_1} = (16v_1^2\omega_5^2\omega_9^3 + 24\omega_5^2\omega_9\omega_{12} - 28v_1^2\omega_9^3\omega_{12} - 16c_s^2\omega_5\omega_9^2\omega_{12} - 120v_1^2\omega_5^2\omega_9\omega_{12}^2 + 68v_1^2\omega_5\omega_9^3\omega_{12} - 32c_s^2\omega_5^2\omega_9\omega_{12} + 16\omega_5\omega_9^2\omega_{12} +$
$28v_1^2\omega_9^2\omega_{12}^2 - 16v_1^2\omega_5^2\omega_9^2 + 80v_1^2\omega_5^2\omega_{12}^2 - 68v_1^2\omega_5\omega_9^2\omega_{12}^2 - 48v_1^2\omega_5\omega_9^2\omega_{12} - 16c_s^2\omega_5\omega_9^3 + 28\omega_5\omega_9^2\omega_{12}^2 + 44c_s^2\omega_5\omega_9^3\omega_{12} - 72c_s^2\omega_5^2\omega_9\omega_{12}^2 + 8\omega_5\omega_9^3 -$
$64v_1^2\omega_5^2\omega_9\omega_{12} - 28\omega_5\omega_9^3\omega_{12} - 44c_s^2\omega_5\omega_9^2\omega_{12}^2 + 48\omega_5^2\omega_9\omega_{12}^2 - 32\omega_5^2\omega_{12}^2 + 20c_s^2\omega_9^2\omega_{12}^2 - 16c_s^2\omega_5^2\omega_9^2 + 104v_1^2\omega_5^2\omega_9^2\omega_{12} - 12\omega_9^2\omega_{12}^2 + 48c_s^2\omega_5^2\omega_{12}^2 +$
$8\omega_5^2\omega_9^2 - 25c_s^2\omega_5^2\omega_9^3\omega_{12} - 17\omega_5^2\omega_9^2\omega_{12}^2 + 32c_s^2\omega_5\omega_9\omega_{12}^2 + 16c_s^2\omega_5^2\omega_9^3 - 20c_s^2\omega_9^3\omega_{12} - 8\omega_5^2\omega_9^3 + 25c_s^2\omega_5^2\omega_9^2\omega_{12}^2 + 17\omega_5^2\omega_9^3\omega_{12} - 24\omega_5\omega_9\omega_{12}^2 +$
$12\omega_9^3\omega_{12} + 56c_s^2\omega_5^2\omega_9^2\omega_{12} + 64v_1^2\omega_5\omega_9\omega_{12}^2 - 43v_1^2\omega_5^2\omega_9^3\omega_{12} - 16v_1^2\omega_5\omega_9^3 - 40\omega_5^2\omega_9^2\omega_{12} + 43v_1^2\omega_5^2\omega_9^2\omega_{12}^2)\frac{v_2v_1\rho}{4\omega_5^2\omega_9^3\omega_{12}^2}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}^3_x\mathrm{D}_y v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}^3_x\mathrm{D}_y v_1}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}^3_x\mathrm{D}_y v_1} = 0$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}^3_x\mathrm{D}_y v_1} = 0$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}^3_x\mathrm{D}_y v_1} = 0$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}^3_x\mathrm{D}_y v_1} = (36c_s^2\omega_1\omega_2^3 + 6\omega_3v_2^2\omega_1\omega_2^2 + 6\omega_3\omega_1^2\omega_2 + 84\omega_3c_s^2\omega_1^3 - 12\omega_1\omega_2^3 + 132\omega_3v_1^2\omega_1^2\omega_2^2 + 27\omega_3v_2^2\omega_1\omega_2^3 - 5\omega_3\omega_1^3\omega_2^2 + 12\omega_3v_2^2\omega_1^3 -$
$66\omega_3v_1^2\omega_1^3\omega_2 + 48\omega_3\omega_1^3\omega_2 + 5\omega_3\omega_1^2\omega_2^3 + 12v_2^2\omega_1\omega_2^3 - 54\omega_3c_s^2\omega_1\omega_2^2 - 24\omega_3v_2^2\omega_2^3 - 51\omega_3\omega_1^2\omega_2^2 - 12\omega_3v_1^2\omega_1^2\omega_2 - 12\omega_3c_s^2\omega_2^3 + 27\omega_3c_s^2\omega_1\omega_2^3 +$
$42\omega_3\omega_1\omega_2^2 - 9\omega_1^3\omega_2^2 + 27c_s^2\omega_1^3\omega_2^2 + 6\omega_3v_2^2\omega_1^2\omega_2 - 6v_2^2\omega_1^2\omega_2^2 - 108\omega_3c_s^2\omega_1^3\omega_2 - 12\omega_3\omega_2^3 - 15\omega_3c_s^2\omega_1^2\omega_2^3 + 84\omega_3v_1^2\omega_2^3 + 3\omega_3\omega_1\omega_2^3 - 6v_2^2\omega_1^3\omega_2 +$
$81\omega_3c_s^2\omega_1^2\omega_2^2 - 9v_2^2\omega_1^2\omega_2^3 + 5\omega_3v_2^2\omega_1^3\omega_2^2 - 18\omega_3c_s^2\omega_1^2\omega_2 + 48\omega_3v_1^2\omega_1^3 + 9v_2^2\omega_1^3\omega_2^2 - 18\omega_3v_2^2\omega_1^3\omega_2 - 18c_s^2\omega_1^2\omega_2^2 - 5\omega_3v_2^2\omega_1^2\omega_2^3 - 66\omega_3v_1^2\omega_1\omega_2^3 +$
$6\omega_1^2\omega_2^2 - 9\omega_3v_2^2\omega_1^2\omega_2^2 - 18c_s^2\omega_1^3\omega_2 - 27c_s^2\omega_1^2\omega_2^3 + 15\omega_3c_s^2\omega_1^3\omega_2^2 - 120\omega_3v_1^2\omega_1\omega_2^2 + 9\omega_1^2\omega_2^3 + 6\omega_1^3\omega_2 - 36\omega_3\omega_1^3)\frac{v_2v_1\rho}{18\omega_3\omega_1^3\omega_2^3}$

coefficient $C^{(1)}_{\mathrm{D}^3_x\mathrm{D}_y v_2}$ **at** $\frac{\partial^4 v_2}{\partial x_1^3\partial x_2}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}^3_x\mathrm{D}_y v_2} = (36v_1^2 - c_s^4\omega^3 + 54c_s^2v_1^2\omega + 20c_s^4\omega^2 - 54v_1^2\omega + 36c_s^4 + 26v_1^2\omega^2 - 54c_s^4\omega - 42c_s^2v_1^2\omega^2 - 4v_1^2\omega^3 + 12c_s^2v_1^2\omega^3 + 54v_1^4\omega - 12c_s^2\omega^2 +$
$4v_1^4\omega^3 - 36v_1^4 + 36c_s^2\omega - 26v_1^4\omega^2 - 24c_s^2 - 36c_s^2v_1^2)\frac{\rho}{12\omega^3}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}^3_x\mathrm{D}_y v_2} = (12v_1^2\omega_5^2\omega_9^3 - c_s^2\omega_5^3\omega_9^2\omega_{12}^2 - 24v_1^4\omega_5^2\omega_9^2\omega_{12} - 4v_1^2\omega_5^3\omega_9^3\omega_{12}^2 - 18c_s^4\omega_5^2\omega_9^3\omega_{12} + 60c_s^2v_1^2\omega_5^3\omega_9^2\omega_{12}^2 + 24v_1^2\omega_5\omega_9^3\omega_{12} + 12v_1^4\omega_5^3\omega_9^3 +$
$6c_s^2\omega_5\omega_9^3\omega_{12}^2 - 90v_1^4\omega_5^3\omega_9\omega_{12}^2 - 12c_s^2v_1^2\omega_5^2\omega_9^3 - 6c_s^2\omega_5^3\omega_9^3\omega_{12} + 72v_1^4\omega_5^3\omega_{12}^2 - 18v_1^4\omega_5^2\omega_9^3\omega_{12}^2 - 21c_s^2v_1^2\omega_5^3\omega_9^3\omega_{12} - 12v_1^4\omega_5^3\omega_9^2 + 102c_s^2v_1^2\omega_5\omega_9^3\omega_{12}^2 -$
$60v_1^2\omega_5^3\omega_9^2\omega_{12} + 6c_s^4\omega_5^2\omega_9^2\omega_{12}^2 + 12c_s^2v_1^2\omega_5^3\omega_9^3\omega_{12}^2 + 252c_s^2v_1^2\omega_5^3\omega_{12}^2 - 12v_1^4\omega_5^2\omega_9^3 - 19v_1^2\omega_5^3\omega_9^2\omega_{12}^2 - 108c_s^2v_1^2\omega_5^2\omega_9\omega_{12}^2 - 12c_s^2v_1^2\omega_5\omega_9^3\omega_{12} +$
$12c_s^4\omega_5^2\omega_9^2\omega_{12} - 12c_s^2\omega_5\omega_9^3\omega_{12} - 48c_s^2v_1^2\omega_9^3\omega_{12}^2 + 12c_s^2\omega_5^2\omega_9\omega_{12}^2 - 36v_1^4\omega_5^3\omega_9\omega_{12} - 12v_1^2\omega_5^3\omega_9^3 + 48v_1^4\omega_5^2\omega_9^3\omega_{12} - 12c_s^2v_1^2\omega_5^3\omega_9^2 + 27v_1^2\omega_5^3\omega_9^3\omega_{12} -$
$48c_s^2v_1^2\omega_5\omega_9^2\omega_{12}^2 + 13c_s^4\omega_5^2\omega_9^3\omega_{12}^2 - 12v_1^2\omega_5\omega_9^3\omega_{12}^2 + 54c_s^2v_1^2\omega_5^3\omega_9^2\omega_{12} - 72v_1^2\omega_5^3\omega_{12}^2 - 12c_s^4\omega_5^3\omega_9\omega_{12}^2 + 6c_s^2\omega_5^3\omega_9^2\omega_{12} + 12c_s^2v_1^2\omega_5^3\omega_9^3 +$
$12v_1^4\omega_5^2\omega_9^2\omega_{12}^2 + 12v_1^2\omega_5^3\omega_9^2 + 30c_s^2v_1^2\omega_5^2\omega_9^3\omega_{12} + c_s^4\omega_5^3\omega_9^2\omega_{12}^2 + 12c_s^4\omega_5^3\omega_{12}^2 - 36c_s^2v_1^2\omega_5^3\omega_9\omega_{12} + 24v_1^2\omega_5^2\omega_9^2\omega_{12} - 24v_1^4\omega_5\omega_9^3\omega_{12} + 4v_1^4\omega_5^3\omega_9^3\omega_{12}^2 +$
$12c_s^4\omega_9^3\omega_{12}^2 + 18c_s^2\omega_5^2\omega_9^3\omega_{12} + 6c_s^4\omega_5^3\omega_9^3\omega_{12} + 18v_1^2\omega_5^2\omega_9^3\omega_{12}^2 - 24c_s^4\omega_5\omega_9^3\omega_{12}^2 + 90v_1^2\omega_5^3\omega_9\omega_{12}^2 + 162c_s^2v_1^2\omega_5^2\omega_9^2\omega_{12}^2 + 60v_1^4\omega_5^3\omega_9^2\omega_{12} - 6c_s^2\omega_5^2\omega_9^2\omega_{12}^2 +$
$19v_1^4\omega_5^3\omega_9^2\omega_{12}^2 - 12c_s^2\omega_5^2\omega_9^2\omega_{12} - 12c_s^2\omega_5^3\omega_{12}^2 - c_s^4\omega_5^3\omega_9^3\omega_{12}^2 - 48v_1^2\omega_5^2\omega_9^3\omega_{12} - 12c_s^4\omega_5^2\omega_9\omega_{12}^2 + 12c_s^4\omega_5\omega_9^3\omega_{12} - 12c_s^2v_1^2\omega_5^2\omega_9^3\omega_{12} + 36v_1^2\omega_5^3\omega_9\omega_{12} +$
$12v_1^4\omega_5\omega_9^3\omega_{12}^2 + 12c_s^2\omega_5^3\omega_9\omega_{12}^2 - 27v_1^4\omega_5^3\omega_9^3\omega_{12} - 5c_s^2\omega_5^2\omega_9^3\omega_{12}^2 - 81c_s^2v_1^2\omega_5^2\omega_9^3\omega_{12}^2 - 6c_s^4\omega_5^3\omega_9^2\omega_{12} - 12v_1^2\omega_5^2\omega_9^2\omega_{12}^2 - 306c_s^2v_1^2\omega_5^3\omega_9\omega_{12}^2)\frac{\rho}{12\omega_5^3\omega_9^3\omega_{12}^2}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}^3_x\mathrm{D}_y v_2} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}^3_x\mathrm{D}_y v_2}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}^3_x\mathrm{D}_y v_2} = (36v_1^2\omega_5^2\omega_9^3 - c_s^2\omega_5^3\omega_9^2\omega_{12}^2 - 4v_1^2\omega_5^3\omega_9^3\omega_{12}^2 - 18c_s^4\omega_5^2\omega_9^3\omega_{12} + 60c_s^2v_1^2\omega_5^3\omega_9^2\omega_{12}^2 + 36v_1^4\omega_5^3\omega_9^3 + 6c_s^2\omega_5\omega_9^3\omega_{12}^2 - 90v_1^4\omega_5^3\omega_9\omega_{12}^2 -$
$108c_s^2v_1^2\omega_5^2\omega_9^3 - 6c_s^2\omega_5^3\omega_9^3\omega_{12} + 72v_1^4\omega_5^3\omega_{12}^2 - 6v_1^4\omega_5^2\omega_9^3\omega_{12}^2 - 99c_s^2v_1^2\omega_5^3\omega_9^3\omega_{12} - 36v_1^4\omega_5^3\omega_9^2 - 18c_s^2v_1^2\omega_5\omega_9^3\omega_{12}^2 - 72v_1^2\omega_5^3\omega_9^2\omega_{12} + 6c_s^4\omega_5^2\omega_9^2\omega_{12}^2 +$
$12c_s^2v_1^2\omega_5^3\omega_9^3\omega_{12}^2 + 252c_s^2v_1^2\omega_5^3\omega_{12}^2 - 36v_1^4\omega_5^2\omega_9^3 - 19v_1^2\omega_5^3\omega_9^2\omega_{12}^2 - 36c_s^2v_1^2\omega_5^2\omega_9\omega_{12}^2 + 36c_s^2v_1^2\omega_5\omega_9^3\omega_{12} + 12c_s^4\omega_5^2\omega_9^2\omega_{12} - 12c_s^2\omega_5\omega_9^3\omega_{12} +$

$12c_s^2\omega_5^2\omega_9\omega_{12}^2 - 36v_1^4\omega_5^3\omega_9\omega_{12} - 36v_1^2\omega_5^3\omega_9^3 + 36v_1^4\omega_5^2\omega_9^3\omega_{12} - 108c_s^2v_1^2\omega_5^3\omega_9^2 + 39v_1^2\omega_5^3\omega_9^3\omega_{12} + 13c_s^4\omega_5^2\omega_9^3\omega_{12}^2 + 198c_s^2v_1^2\omega_5^3\omega_9^2\omega_{12} - 72v_1^2\omega_5^3\omega_{12}^3 - 12c_s^4\omega_5^3\omega_9^2\omega_{12}^2 + 6c_s^2\omega_5^3\omega_9^3\omega_{12} + 6c_s^4\omega_5^3\omega_9^3\omega_{12} + 6v_1^2\omega_5^2\omega_9^3\omega_{12}^2 - 24c_s^4\omega_5\omega_9^3\omega_{12}^2 + 90v_1^2\omega_5^3\omega_9\omega_{12}^2 + 18c_s^2v_1^2\omega_5^2\omega_9^2\omega_{12}^2 + 72v_1^4\omega_5^3\omega_9^2\omega_{12} - 6c_s^2\omega_5^2\omega_9^2\omega_{12}^2 + 19v_1^4\omega_5^3\omega_9^2\omega_{12}^2 - 12c_s^2\omega_5^2\omega_9^2\omega_{12} - 12c_s^2\omega_5^3\omega_{12}^2 - c_s^4\omega_5^3\omega_9^3\omega_{12}^2 - 36v_1^2\omega_5^2\omega_9^3\omega_{12} - 12c_s^4\omega_5^2\omega_9\omega_{12}^2 + 12c_s^4\omega_5\omega_9^3\omega_{12} + 36c_s^2v_1^2\omega_5^2\omega_9^2\omega_{12} + 36v_1^2\omega_5^3\omega_9\omega_{12} + 12c_s^2\omega_5^3\omega_9\omega_{12}^2 - 39v_1^4\omega_5^3\omega_9^3\omega_{12} - 5c_s^2\omega_5^2\omega_9^3\omega_{12}^2 - 3c_s^2v_1^2\omega_5^2\omega_9^3\omega_{12}^2 - 6c_s^4\omega_5^3\omega_9^2\omega_{12} - 306c_s^2v_1^2\omega_5^3\omega_9\omega_{12}^2)\frac{\rho}{12\omega_5^3\omega_9^3\omega_{12}^2}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x^3\mathrm{D}_y v_2} = C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x^3\mathrm{D}_y v_2}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x^3\mathrm{D}_y v_2} =$
$(72v_1^4\omega_1^3\omega_9^2 - 36v_1^2\omega_4^3\omega_1^3 - 6c_s^2\omega_4^2\omega_1^2\omega_9^2 + 36v_1^4\omega_4^3\omega_1^2\omega_9 - 108c_s^2v_1^2\omega_4^3\omega_1^2 + 18c_s^2v_1^2\omega_4^2\omega_1^2\omega_9^2 - 36v_1^4\omega_4^2\omega_1^3 - 12c_s^4\omega_4\omega_1^3\omega_9^2 - 19v_1^2\omega_4^2\omega_1^3\omega_9^2 + 6c_s^4\omega_4^3\omega_1^3\omega_9 + 108c_s^2v_1^2\omega_4^3\omega_1^3 + 6c_s^2\omega_4^2\omega_1^3\omega_9 + 4v_1^4\omega_4^3\omega_1^3\omega_9^2 + 36v_1^2\omega_4^3\omega_1^2 - 12c_s^2\omega_4^3\omega_1\omega_9 - 36v_1^4\omega_4\omega_1^3\omega_9 + 36c_s^2v_1^2\omega_4^3\omega_1\omega_9 + 13c_s^4\omega_4^3\omega_1^2\omega_9^2 + 198c_s^2v_1^2\omega_4^2\omega_1^3\omega_9 - 72v_1^2\omega_1^3\omega_9^2 - 18c_s^2v_1^2\omega_4^3\omega_1\omega_9^2 - 18c_s^4\omega_4^3\omega_1^2\omega_9 + 60c_s^2v_1^2\omega_4^2\omega_1^3\omega_9^2 - 12c_s^4\omega_4\omega_1^2\omega_9^2 + 36v_1^4\omega_4^3\omega_1^3 - c_s^2\omega_4^2\omega_1^3\omega_9^2 + 36v_1^2\omega_4^2\omega_1^3 - 39v_1^4\omega_4^3\omega_1^3\omega_9 + 6c_s^2\omega_4^3\omega_1\omega_9^2 - 90v_1^4\omega_4\omega_1^3\omega_9^2 - 36v_1^4\omega_4^3\omega_1^2 + 36c_s^2v_1^2\omega_4^2\omega_1^2\omega_9 + 252c_s^2v_1^2\omega_1^3\omega_9^2 - 72v_1^2\omega_4^2\omega_1^3\omega_9 - c_s^4\omega_4^3\omega_1^3\omega_9^2 - 12c_s^2\omega_4^2\omega_1^2\omega_9 - 108c_s^2v_1^2\omega_4^2\omega_1^3 - 6v_1^4\omega_4^3\omega_1^2\omega_9^2 + 6c_s^4\omega_4^2\omega_1^2\omega_9^2 - 36v_1^2\omega_4^3\omega_1^2\omega_9 - 306c_s^2v_1^2\omega_4\omega_1^3\omega_9^2 - 99c_s^2v_1^2\omega_4^3\omega_1^3\omega_9 + 19v_1^4\omega_4^2\omega_1^3\omega_9^2 - 6c_s^2\omega_4^3\omega_1^3\omega_9 + 12c_s^2\omega_4\omega_1^3\omega_9^2 + 12c_s^4\omega_1^3\omega_9^2 + 12c_s^4\omega_4^3\omega_1\omega_9 + 36v_1^2\omega_4\omega_1^3\omega_9 - 3c_s^2v_1^2\omega_4^3\omega_1^2\omega_9^2 - 6c_s^4\omega_4^2\omega_1^3\omega_9 - 4v_1^2\omega_4^3\omega_1^3\omega_9^2 - 5c_s^2\omega_4^3\omega_1^2\omega_9^2 + 12c_s^2\omega_4\omega_1^2\omega_9^2 + 18c_s^2\omega_4^3\omega_1^2\omega_9 - 24c_s^4\omega_4^3\omega_1\omega_9^2 + 54c_s^2v_1^2\omega_4^3\omega_1^2\omega_9 + 12c_s^4\omega_4^3\omega_9^2 + 90v_1^2\omega_4\omega_1^3\omega_9^2 + c_s^4\omega_4^2\omega_1^3\omega_9^2 - 36c_s^2v_1^2\omega_4\omega_1^2\omega_9^2 + 39v_1^2\omega_4^3\omega_1^3\omega_9 + 72v_1^4\omega_4^2\omega_1^3\omega_9 - 12c_s^2\omega_1^3\omega_9^2 + 12c_s^4\omega_4^2\omega_1^2\omega_9 - 108c_s^2v_1^2\omega_4\omega_1^3\omega_9 + 6v_1^2\omega_4^3\omega_1^2\omega_9^2 + 12c_s^2v_1^2\omega_4^3\omega_1^3\omega_9^2)\frac{\rho}{12\omega_4^3\omega_1^3\omega_9^2}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x^3\mathrm{D}_y v_2} = (336\omega_3^2c_s^2v_1^2\omega_4^2\omega_1\omega_2^2 - 18\omega_3^2c_s^2\omega_4\omega_1^3\omega_2^3 + 648\omega_3^2c_s^2v_1^2\omega_4\omega_1^2\omega_2^3 + 40\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^2 + 24\omega_3^2v_1^4\omega_4^2\omega_1^3\omega_2^3 + 24\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^2\omega_2^2 + 24\omega_3v_1^2\omega_4^2\omega_1\omega_2^3 + 96\omega_3^2v_1^4\omega_4^2\omega_1^2\omega_2 + 162c_s^2v_1^2\omega_4^2\omega_1^3\omega_2^3 - 144\omega_3^2v_1^2\omega_4^2\omega_1\omega_2^2 - 40\omega_3^2c_s^2\omega_4^2\omega_1^3 - 288\omega_3^2v_1^2\omega_4\omega_2^2\omega_2^3 - 108\omega_3c_s^2v_1^2\omega_4\omega_1^3\omega_2^2 + 108\omega_3v_1^4\omega_4^2\omega_1^3\omega_2^2 + 24\omega_3^2v_2^2\omega_4^2\omega_1^2\omega_2^2 + 86\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^3 + 72v_1^2\omega_4^2\omega_1^2\omega_2^3 - 28\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2 + 144\omega_3^2v_2^2v_1^2\omega_4^2\omega_1^3 + 48\omega_3^2v_2^2\omega_4^2\omega_2^3 - 12\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^3\omega_2 + 38\omega_3^2v_1^4\omega_4^2\omega_1^3\omega_2^2 + 180\omega_3v_1^2\omega_4\omega_1^2\omega_2^3 + 12\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^2\omega_2^2 + 24\omega_3^2c_s^2v_2^2\omega_4^2\omega_2^3 - 36\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^3 - 108\omega_3^2c_s^2v_1^2\omega_4\omega_1^2\omega_2^2 - 852\omega_3^2c_s^2v_1^2\omega_4^2\omega_1\omega_2^3 + 16\omega_3c_s^4\omega_4^2\omega_1^3\omega_2 + 24\omega_3^2v_2^2\omega_4^2\omega_1^3\omega_2 + 72\omega_3^2c_s^4\omega_4\omega_1\omega_2^3 - 72\omega_3c_s^2v_2^2\omega_4^2\omega_1^3\omega_2^2 + 20\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^2 + 6\omega_3^2v_2^2\omega_4^2\omega_1^2\omega_2^3 + 80\omega_3^2c_s^4\omega_4^2\omega_2^3 + 324\omega_3c_s^2v_1^2\omega_4\omega_1^3\omega_2^3 + 36\omega_3^2v_1^2\omega_4\omega_1^2\omega_2^2 - 117\omega_3v_1^4\omega_4^2\omega_1^3\omega_2^3 + 96\omega_3^2v_1^2\omega_4^2\omega_1\omega_2^3 - 108c_s^2v_1^2\omega_4^2\omega_1^3\omega_2^2 - 54v_1^2\omega_4^2\omega_1^3\omega_2^3 + 72\omega_3c_s^2v_2^2\omega_4^2\omega_1^2\omega_2^3 - 6\omega_3^2v_2^2\omega_4^2\omega_1^3\omega_2^2 - 6\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^3 - 56\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2 - 16\omega_3c_s^2\omega_4^2\omega_1\omega_2^3 - 24\omega_3^2v_2^2\omega_4^2\omega_1^3 + 48\omega_3c_s^2v_2^2\omega_4^2\omega_1^3\omega_2 - 216c_s^2v_1^2\omega_4^2\omega_1^2\omega_2^3 + 72\omega_3c_s^2v_1^2\omega_4^2\omega_1\omega_2^3 - 60\omega_3v_1^4\omega_4^2\omega_1^2\omega_2^2 + 144\omega_3^2v_2^2v_1^2\omega_4^2\omega_1\omega_2^2 + 24\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^3 + 117\omega_3^2v_1^2\omega_4\omega_1^3\omega_2^3 + 36\omega_3v_1^2\omega_4\omega_1^3\omega_2^2 + 32\omega_3^2c_s^4\omega_4^2\omega_1^3 - 12\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^3\omega_2^2 + 16\omega_3^2\omega_4^2\omega_1\omega_2^2 + 40\omega_3^2v_1^4\omega_4^2\omega_1^2\omega_2^3 - 108\omega_3^2v_1^4\omega_4^2\omega_1^3\omega_2 - 32\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^2 - 36\omega_3c_s^4\omega_4^2\omega_1^3\omega_2^2 - 297\omega_3^2c_s^2v_1^2\omega_4\omega_1^3\omega_2^3 + 72\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^3 + 576\omega_3^2v_2^2v_1^2\omega_4^2\omega_1\omega_2^2 + 216\omega_3v_1^4\omega_4^2\omega_1^2\omega_2^3 - 36\omega_3^2v_1^2\omega_4\omega_1^3\omega_2^2 - 540\omega_3c_s^2v_1^2\omega_4\omega_1^2\omega_2^3 - 24\omega_3v_1^4\omega_4^2\omega_1^3\omega_2 + 24\omega_3^2v_2^2\omega_4^2\omega_1^2\omega_2 - 2\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^2 + 48\omega_3c_s^2v_2^2\omega_4^2\omega_1^2\omega_2^2 + 36v_1^2\omega_4^2\omega_1^3\omega_2^2 + 108\omega_3^2c_s^2v_1^2\omega_4\omega_1^3\omega_2^2 + 18\omega_3c_s^4\omega_4^2\omega_1^3\omega_2^3 + 8\omega_3^2c_s^2\omega_4^2\omega_2^3 + 48\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^3 - 432\omega_3^2v_2^2v_1^2\omega_4^2\omega_2^3 - 96\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^2\omega_2 - 72\omega_3^2v_1^4\omega_4\omega_1\omega_2^3 + 16\omega_3^2\omega_4^2\omega_1\omega_2^3 - 108\omega_3v_1^2\omega_4\omega_1^3\omega_2^3 - 144\omega_3^2v_1^4\omega_4^2\omega_1^2\omega_2^2 - 108\omega_3c_s^2v_1^2\omega_4^2\omega_1^2\omega_2^2 - 24\omega_3^2v_1^2\omega_4^2\omega_1^3\omega_2^3 - 288\omega_3^2v_2^2v_1^2\omega_4^2\omega_1^3\omega_2 - 144\omega_3^2v_2^2v_1^2\omega_4^2\omega_2^3 - 144\omega_3^2v_1^2\omega_4^2\omega_1^2\omega_2 - 24\omega_3v_1^4\omega_4^2\omega_1\omega_2^3 - 40\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^2 + 18\omega_3^2c_s^4\omega_4\omega_1^3\omega_2^3 + 8\omega_3^2\omega_4^2\omega_1^3 + 72\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^3\omega_2^3 - 72v_1^4\omega_4^2\omega_1^2\omega_2^3 + 192\omega_3^2v_1^4\omega_4^2\omega_2^3 - 36\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^3 + 264\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^2\omega_2 + 36\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2 + 96\omega_3^2v_1^4\omega_4^2\omega_1\omega_2^2 - 2\omega_3^2\omega_4^2\omega_1^2\omega_2^3 - 108\omega_3v_1^2\omega_4^2\omega_1^3\omega_2^2 - 8\omega_3^2\omega_4^2\omega_1^3\omega_2 + 288\omega_3^2v_1^4\omega_4\omega_1^2\omega_2^3 + 36\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^3 + 108\omega_3^2v_1^2\omega_1^2\omega_2^3 - 96\omega_3c_s^2v_2^2\omega_4^2\omega_1\omega_2^3 - 16\omega_3c_s^2\omega_4^2\omega_1^3\omega_2 - 72\omega_3c_s^2v_1^2\omega_4^2\omega_1^3\omega_2 - 324\omega_3^2c_s^2v_1^2\omega_1^2\omega_2^3 - 288\omega_3^2v_2^2v_1^2\omega_4^2\omega_1^2\omega_2^2 - 180\omega_3v_1^4\omega_4\omega_1^2\omega_2^3 - 86\omega_3^2v_1^2\omega_4^2\omega_1^3\omega_2^2 + 468\omega_3c_s^2v_1^2\omega_4^2\omega_2^3 - 96\omega_3^2v_1^2\omega_4^2\omega_1^3 + 117\omega_3v_1^2\omega_4^2\omega_1^3\omega_2^3 - 36\omega_3^2v_1^4\omega_4\omega_1^2\omega_2^2 - 288\omega_3^2v_1^4\omega_4^2\omega_1\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^2\omega_2^2 + 264\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^3 - 72\omega_3^2c_s^2\omega_4\omega_1\omega_2^3 + 168\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^3\omega_2^2 + 54\omega_3^2v_1^4\omega_1^3\omega_2^3 - 12\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^2 - 12\omega_3^2c_s^2v_2^2\omega_4^2\omega_1\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^2\omega_2 - 117\omega_3^2v_1^4\omega_4\omega_1^3\omega_2^3 + 60\omega_3v_1^2\omega_4^2\omega_1^2\omega_2^2 + 54v_1^4\omega_4^2\omega_1^3\omega_2^3 + 174\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^2\omega_2^3 + 16\omega_3c_s^4\omega_4^2\omega_1\omega_2^3 + 64\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2 - 492\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^3\omega_2 + 16\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^2 - 48\omega_3^2v_2^2\omega_4^2\omega_1\omega_2^3 - 72\omega_3^2c_s^4\omega_4\omega_1^2\omega_2^3 - 48\omega_3^2v_1^2\omega_4^2\omega_2^3 + 36\omega_3c_s^2\omega_4^2\omega_1^3\omega_2^2 + 8\omega_3^2v_1^2\omega_4^2\omega_1^2\omega_2^3 + 144\omega_3^2v_2^2v_1^2\omega_4^2\omega_1^2\omega_2 + 288\omega_3c_s^2v_1^2\omega_4^2\omega_1^3\omega_2^2 - 36\omega_3v_1^4\omega_4\omega_1^3\omega_2^2 + 204\omega_3^2v_1^2\omega_4^2\omega_1^3\omega_2 + 432\omega_3^2c_s^2v_1^2\omega_4^2\omega_2^3 - 36v_1^4\omega_4^2\omega_1^3\omega_2^2 - 108\omega_3^2v_1^4\omega_4^2\omega_2^3 - 492\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^2\omega_2^2 + 36\omega_3^2v_1^4\omega_4\omega_1^3\omega_2^2 - 216\omega_3v_1^2\omega_4^2\omega_1^2\omega_2^3 + 48\omega_3^2c_s^2v_2^2\omega_4^2\omega_1\omega_2^2 + 2\omega_3^2\omega_4^2\omega_1^3\omega_2^2 + 24\omega_3v_1^2\omega_4^2\omega_1^3\omega_2 + 162\omega_3^2c_s^2v_1^2\omega_1^3\omega_2^3 + 144\omega_3^2v_2^2v_1^2\omega_4^2\omega_1^3\omega_2^2 + 72\omega_3^2v_1^2\omega_4\omega_1\omega_2^3 - 297\omega_3c_s^2v_1^2\omega_4^2\omega_1^3\omega_2^3 + 48\omega_3^2v_1^4\omega_4^2\omega_1^3 + 240\omega_3^2v_1^2\omega_4^2\omega_1^2\omega_2^2 - 16\omega_3^2\omega_4^2\omega_2^3 + 108\omega_3v_1^4\omega_4\omega_1^3\omega_2^3 - 54\omega_3^2v_1^2\omega_1^3\omega_2^3 - 18\omega_3c_s^2\omega_4^2\omega_1^3\omega_2^3 - 48\omega_3^2v_2^2\omega_4^2\omega_1\omega_2^2 - 172\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^3)\frac{\rho}{72\omega_3^2\omega_4^2\omega_1^3\omega_2^3}$

coefficient $C^{(1)}_{\mathrm{D}_x^2\mathrm{D}_y^2\rho}$ **at** $\frac{\partial^4\rho}{\partial x_1^2\partial x_2^2}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_y^2\rho} = (24 - 24v_1^2 + 36v_1^2\omega - 14v_1^2\omega^2 - \omega^3 + 14\omega^2 + v_1^2\omega^3 - 36\omega - 46c_s^2\omega^2 + 5c_s^2\omega^3 + 108c_s^2\omega - 72c_s^2)\frac{c_s^2v_1}{12\omega^3}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y^2\rho} = (36c_s^2v_2^2\omega_5^3\omega_{15}\omega_9^2\omega_{12} - 96c_s^4\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 - 42c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 24v_2^2\omega_5\omega_{21}\omega_{15}\omega_9^3\omega_{12} + 6v_2^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 12v_2^2v_1^2\omega_5^2\omega_{15}\omega_9^3\omega_{12}^2 - c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 - 12c_s^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3 + 18c_s^2v_2^2\omega_5^3\omega_{21}\omega_9^2\omega_{12}^2 - 6v_2^2v_1^2\omega_5^3\omega_9^3\omega_{12}^2 - 36c_s^2v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} + 36c_s^2v_2^2\omega_5^2\omega_9^3\omega_{12}^2 - 12v_2^2v_1^2\omega_5^3\omega_{15}\omega_9^3\omega_{12} - 12v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_9^3 - 6c_s^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9^3\omega_{12} + 24v_2^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 18v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 12v_2^2v_1^2\omega_5^2\omega_{21}\omega_9^2\omega_{12}^2 - 36c_s^2v_2^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 18c_s^2v_2^2\omega_5^3\omega_{15}\omega_9^3\omega_{12}^2 + 12c_s^4\omega_5^2\omega_{21}\omega_{15}\omega_9^3 + 5c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 - 12v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_{12}^2 - 24v_2^2\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 12v_2^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9^3\omega_{12} - 18c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^3\omega_{12} + 12v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2 - 6v_2^2v_1^2\omega_5^3\omega_{15}\omega_9^3\omega_{12}^2 - 2c_s^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 36c_s^2v_2^2\omega_5^2\omega_{15}\omega_9^3\omega_{12} - 36v_2^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12} + 12v_2^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 12c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3 - 72c_s^2v_2^2\omega_5\omega_{21}\omega_{15}\omega_9^3\omega_{12} - 6c_s^2v_1^2\omega_5^3\omega_9^3\omega_{12}^2 + 12v_2^2v_1^2\omega_5^3\omega_{15}\omega_9^2\omega_{12} - 36c_s^2v_2^2\omega_5^2\omega_{15}\omega_9^3\omega_{12}^2 + 18c_s^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 12c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9^3 - 12v_2^2\omega_5^2\omega_9^3\omega_{12}^2 - 12c_s^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2 - 48c_s^4\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 6v_2^2v_1^2\omega_5^3\omega_{21}\omega_9^2\omega_{12}^2 + 12v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} - 12c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^3 + 12c_s^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_{12}^2 + 6c_s^2\omega_5^3\omega_9^3\omega_{12}^2 + 30c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9^3\omega_{12} - 72c_s^2v_2^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 36c_s^2v_2^2\omega_5^3\omega_{15}\omega_9^3\omega_{12} + 2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 36c_s^2v_2^2\omega_5^2\omega_{21}\omega_9^2\omega_{12}^2 - 12c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_{12}^2 + 12c_s^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9^3 + 36c_s^4\omega_5^2\omega_9^3\omega_{12}^2 - 54c_s^2v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 72c_s^2v_2^2\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 12c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9^2 + 6v_2^2v_1^2\omega_5^3\omega_{15}\omega_9^3\omega_{12}^2 + 12v_2^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} + c_s^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 + 12v_2^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3 - 6c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 18c_s^2v_2^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 + 108c_s^2v_2^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12} + 12v_2^2v_1^2\omega_5^2\omega_{15}\omega_9^3\omega_{12} + 6c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^3\omega_{12} + 24v_2^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 36c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_{12}^2 + 12c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2 + 18c_s^2v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 12c_s^2v_1^2\omega_5^3\omega_{15}\omega_9^3\omega_{12} - 42c_s^4\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12} + 12c_s^2v_1^2\omega_5\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 - 18c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 18c_s^4\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 - 6v_2^2\omega_5^3\omega_{15}\omega_9^3\omega_{12}^2 + 12c_s^2\omega_5^2\omega_{21}\omega_9^2\omega_{12}^2 + 36c_s^2v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_{12}^2 - 12v_2^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3 - 36c_s^2v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2 - 12v_2^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} - 12v_2^2\omega_5^2\omega_{15}\omega_9^3\omega_{12} - 36c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 36c_s^4\omega_5^2\omega_{21}\omega_9^2\omega_{12}^2 - 84c_s^4\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 6c_s^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 + 12c_s^2\omega_5\omega_{21}\omega_{15}\omega_9^3\omega_{12} - 12c_s^2v_1^2\omega_5^2\omega_{15}\omega_9^3\omega_{12}^2 -$

$36c_s^4\omega_5^3\omega_{15}\omega_9^3\omega_{12} - 12c_s^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} - 12v_2^2\omega_5^3\omega_{15}\omega_9^2\omega_{12} - 6c_s^2v_1^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 - 36c_s^2v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_9^3\omega_{12} + 12c_s^2\omega_5^2\omega_{15}\omega_9^3\omega_{12}^2 +$
$150c_s^4\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 12v_2^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 18c_s^2v_2^2\omega_5^3\omega_9^3\omega_{12}^2 - 18c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12} - 6v_2^2\omega_5^3\omega_{21}\omega_9^2\omega_{12}^2 + 12c_s^4\omega_5\omega_{21}\omega_{15}\omega_9^3\omega_{12} +$
$12c_s^2\omega_5^3\omega_{15}\omega_9^3\omega_{12} + 12c_s^2\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 12c_s^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 - 24v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 12v_2^2v_1^2\omega_5^2\omega_9^3\omega_{12}^2 + 12c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 -$
$12c_s^2v_1^2\omega_5^2\omega_{21}\omega_9^2\omega_{12}^2 - 36c_s^4\omega_5^2\omega_{15}\omega_9^3\omega_{12}^2 + 36c_s^2v_2^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 36c_s^2v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_9^3 + 12v_2^2\omega_5^2\omega_{21}\omega_9^2\omega_{12}^2 + 180c_s^4\omega_5\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 -$
$6v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 18c_s^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12} - 6c_s^2\omega_5^3\omega_{15}\omega_9^3\omega_{12}^2 - 24v_2^2v_1^2\omega_5\omega_{21}\omega_{15}\omega_9^3\omega_{12} + 12c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} + 12v_2^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_{12}^2 +$
$36c_s^4\omega_5^2\omega_{15}\omega_9^3\omega_{12} - 12c_s^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 6v_2^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 - 12v_2^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2 + 18c_s^4\omega_5^3\omega_{15}\omega_9^3\omega_{12}^2 - 36c_s^2v_2^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3 -$
$18c_s^4\omega_5^3\omega_9^3\omega_{12}^2 + 6c_s^2v_1^2\omega_5^3\omega_{21}\omega_9^2\omega_{12}^2 - 12c_s^2\omega_5^2\omega_{15}\omega_9^3\omega_{12} + 12c_s^2v_1^2\omega_5^3\omega_{15}\omega_9^2\omega_{12} + 12c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 - 24v_2^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 -$
$12c_s^2v_1^2\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 18v_2^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 6c_s^2\omega_5^3\omega_{21}\omega_9^2\omega_{12}^2 + 12c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} + 12v_2^2\omega_5^2\omega_{15}\omega_9^3\omega_{12}^2 + 12c_s^2v_1^2\omega_5^2\omega_{15}\omega_9^3\omega_{12} +$
$12v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_9^3\omega_{12} + 18c_s^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 12c_s^2\omega_5\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 - 12c_s^2\omega_5^2\omega_9^3\omega_{12}^2 + 24v_2^2v_1^2\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 12c_s^2\omega_5^3\omega_{15}\omega_9^2\omega_{12} -$
$88c_s^4\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 + 72c_s^2v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 6c_s^2v_1^2\omega_5^3\omega_{15}\omega_9^3\omega_{12}^2 + 12c_s^2v_1^2\omega_5^2\omega_9^3\omega_{12}^2 + 36v_2^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12} + 18c_s^4\omega_5^3\omega_{21}\omega_9^2\omega_{12}^2 -$
$12c_s^2v_1^2\omega_5\omega_{21}\omega_{15}\omega_9^3\omega_{12} + 12v_2^2\omega_5^3\omega_{15}\omega_9^3\omega_{12} + 36c_s^4\omega_5^3\omega_{15}\omega_9^2\omega_{12} - 12v_2^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 12v_2^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9^3 + 6v_2^2\omega_5^3\omega_9^3\omega_{12}^2)\frac{v_1}{12\omega_5^3\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_y^2\rho} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y^2\rho}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y^2\rho} = (-12\omega_5\omega_9^3\omega_{12}^2 + 36c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_{12}^2 + 6\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12} - 36c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2 - 12\omega_5\omega_{15}\omega_9^3\omega_{12} - 36c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} +$
$12v_1^2\omega_5^2\omega_{15}\omega_9^2\omega_{12} - 36c_s^2\omega_5\omega_{21}\omega_9^2\omega_{12}^2 + 36c_s^2\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 - 18\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 6v_1^2\omega_5^2\omega_{21}\omega_9^2\omega_{12}^2 + 12\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 36c_s^2\omega_5\omega_9^3\omega_{12}^2 +$
$2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 12v_1^2\omega_5\omega_{21}\omega_{15}\omega_9^3 - 36c_s^2\omega_5\omega_{15}\omega_9^3\omega_{12}^2 + 12\omega_{21}\omega_{15}\omega_9^3\omega_{12} + 36c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3 - 12v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} + 6v_1^2\omega_5^2\omega_{15}\omega_9^3\omega_{12}^2 -$
$18\omega_5\omega_{21}\omega_{15}\omega_9^3\omega_{12} + 36c_s^2\omega_5\omega_{15}\omega_9^3\omega_{12} + 12\omega_5^2\omega_{21}\omega_{15}\omega_9^2 + 12\omega_5\omega_{21}\omega_9^2\omega_{12}^2 - 12\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 - 36c_s^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 12\omega_5\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 -$
$12v_1^2\omega_5^2\omega_{15}\omega_9^3\omega_{12} - 12v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 18\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 12\omega_5^2\omega_{21}\omega_{15}\omega_{12}^2 - 36c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 12\omega_5\omega_{15}\omega_9^3\omega_{12}^2 -$
$36c_s^2\omega_{21}\omega_{15}\omega_9^3\omega_{12} - 6v_1^2\omega_5^2\omega_{15}\omega_9^2\omega_{12}^2 + 12v_1^2\omega_5\omega_9^3\omega_{12}^2 - 12\omega_5^2\omega_{21}\omega_{15}\omega_9^3 - \omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 + 12v_1^2\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 - 12v_1^2\omega_5\omega_{21}\omega_9^2\omega_{12}^2 -$
$6v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12} + 36c_s^2\omega_5^2\omega_{15}\omega_9^2\omega_{12} - 12v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2 - 6c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 12\omega_5^2\omega_{15}\omega_9^3\omega_{12} + 18c_s^2\omega_5^2\omega_{21}\omega_9^2\omega_{12}^2 +$
$18v_1^2\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 12v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_{12}^2 + 54c_s^2\omega_5\omega_{21}\omega_{15}\omega_9^3\omega_{12} + 6\omega_5^2\omega_{15}\omega_9^2\omega_{12}^2 - 12v_1^2\omega_5\omega_{15}\omega_9^3\omega_{12}^2 - 36c_s^2\omega_5\omega_{21}\omega_{15}\omega_9^3 - 6v_1^2\omega_5^2\omega_9^3\omega_{12}^2 -$
$2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 18c_s^2\omega_5^2\omega_{15}\omega_9^3\omega_{12}^2 + 12v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3 - 18c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12} + 12\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} + 18v_1^2\omega_5\omega_{21}\omega_{15}\omega_9^3\omega_{12} +$
$54c_s^2\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 12v_1^2\omega_5\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 + 12\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 6\omega_5^2\omega_9^3\omega_{12}^2 - 12\omega_5^2\omega_{15}\omega_9^2\omega_{12} + 12v_1^2\omega_5\omega_{15}\omega_9^3\omega_{12} - 36c_s^2\omega_5^2\omega_{15}\omega_9^3\omega_{12} +$
$18v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 12v_1^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 5c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 - 6\omega_5^2\omega_{21}\omega_9^2\omega_{12}^2 - 40c_s^2\omega_5\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 - 18c_s^2\omega_5^2\omega_9^3\omega_{12}^2 -$
$18c_s^2\omega_5^2\omega_{15}\omega_9^2\omega_{12}^2 + v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 - 12v_1^2\omega_{21}\omega_{15}\omega_9^3\omega_{12} + 54c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 12\omega_5\omega_{21}\omega_{15}\omega_9^3 - 6\omega_5^2\omega_{15}\omega_9^3\omega_{12}^2)\frac{c_s^2v_1}{12\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y^2\rho} = C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y^2\rho}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y^2\rho} = (-18\omega_4^3\omega_1\omega_9 + 12c_s^2\omega_4^2\omega_1^2\omega_9^2 - 12v_1^2\omega_4^3\omega_1\omega_9^2 + 12v_1^2\omega_1^2\omega_9^2 - 4\omega_4^2\omega_1^2\omega_9^2 + 12v_1^2\omega_4^3\omega_1^2 + 54c_s^2\omega_4^3\omega_1\omega_9 + 6v_1^2\omega_4^2\omega_1^2\omega_9 +$
$12v_1^2\omega_4^3\omega_9^2 + 4v_1^2\omega_4^2\omega_1^2\omega_9^2 - 12v_1^2\omega_1^3\omega_9 - 6\omega_4^2\omega_1^2\omega_9 - 12v_1^2\omega_4^3\omega_1 - 40c_s^2\omega_4^3\omega_1\omega_9^2 + 18v_1^2\omega_4^3\omega_1\omega_9 - 12v_1^2\omega_4^2\omega_9^2 + 12\omega_4^3\omega_1\omega_9^2 + 18c_s^2\omega_4^2\omega_1^2\omega_9 -$
$12v_1^2\omega_4^2\omega_1^2 + 36c_s^2\omega_4^3\omega_1^2 - 12\omega_4^3\omega_9^2 - 6v_1^2\omega_4^3\omega_1^2\omega_9 - 18v_1^2\omega_4\omega_1^2\omega_9^2 + 36c_s^2\omega_4^3\omega_9^2 - \omega_4^3\omega_1^2\omega_9^2 - 12\omega_4^3\omega_1^2 + 36c_s^2\omega_4^2\omega_1\omega_9 + 6v_1^2\omega_4^2\omega_1\omega_9^2 - 12\omega_1^2\omega_9^2 -$
$12\omega_4^2\omega_1\omega_9 + 5c_s^2\omega_4^3\omega_1^2\omega_9^2 + 36c_s^2\omega_1^2\omega_9^2 - 6\omega_4^2\omega_1\omega_9^2 - 54c_s^2\omega_4\omega_1^2\omega_9^2 - 36c_s^2\omega_4^2\omega_9^2 + 12\omega_4^2\omega_1^2 - 18c_s^2\omega_4^3\omega_1^2\omega_9 + 12v_1^2\omega_4^2\omega_1\omega_9 - 36c_s^2\omega_4^2\omega_1^2 +$
$12\omega_4^2\omega_9^2 - 36c_s^2\omega_4^3\omega_9 + 12\omega_4^3\omega_1 + 6\omega_4^3\omega_1^2\omega_9 + 18c_s^2\omega_4^2\omega_1\omega_9^2 + 18\omega_4\omega_1^2\omega_9^2 - 36c_s^2\omega_4^3\omega_1 + v_1^2\omega_4^3\omega_1^2\omega_9^2 + 12\omega_4^3\omega_9)\frac{c_s^2v_1}{12\omega_4^3\omega_1^2\omega_9^2}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y^2\rho} = (-28\omega_3^2c_s^2v_1^2\omega_4^2\omega_1\omega_2^2 + 24\omega_3^2v_2^2\omega_4^2\omega_1^3 + 9\omega_3^2c_s^2\omega_4\omega_1^3\omega_2^3 + 36\omega_3^2c_s^2v_1^2\omega_4\omega_1^2\omega_2^3 + 96\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^2 + 36\omega_3^2c_s^2\omega_1^2\omega_2^3 - 18c_s^2\omega_4^2\omega_1^3\omega_2^3 +$
$18c_s^2v_1^2\omega_4^2\omega_1^3\omega_2^3 + 4\omega_3^2v_1^2\omega_4^2\omega_1\omega_2^2 - 52\omega_3^2c_s^2\omega_4^2\omega_1^3 - 24\omega_3^2v_2^2\omega_4^2\omega_1^2\omega_2^2 - 119\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^3 + 54\omega_3^2c_s^4\omega_1^3\omega_2^3 - 102\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2 + 24\omega_3^2v_2^2v_1^2\omega_4^2\omega_1^3 +$
$24\omega_3^2v_2^2\omega_4^2\omega_2^3 - 324\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^3\omega_2 + 12c_s^2\omega_4^2\omega_1^3\omega_2^2 - 138\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^2\omega_2^3 - 216\omega_3^2c_s^2v_2^2\omega_4^2\omega_2^3 + 108\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^3 + 4\omega_3^2c_s^2v_1^2\omega_4^2\omega_1\omega_2^3 -$
$12\omega_3c_s^4\omega_4^2\omega_1^3\omega_2 + 66\omega_3^2v_2^2\omega_4^2\omega_1^3\omega_2 + 24\omega_3^2c_s^4\omega_1^2\omega_2^2 + 27\omega_3^2v_2^2\omega_4^2\omega_1^2\omega_2^3 + 4\omega_3^2v_1^2\omega_4^2\omega_1\omega_2^3 - 12c_s^2v_1^2\omega_4^2\omega_1^3\omega_2^2 - 108\omega_3^2c_s^4\omega_1^2\omega_2^3 - 27\omega_3^2v_2^2\omega_4^2\omega_1^3\omega_2^2 +$
$15\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^3 + 28\omega_3c_s^2\omega_4^2\omega_1\omega_2^3 - 48\omega_3^2v_2^2\omega_4^2\omega_1^3 - 24c_s^2v_1^2\omega_4^2\omega_1^2\omega_2^3 - 28\omega_3c_s^2v_1^2\omega_4^2\omega_1\omega_2^3 - 48\omega_3^2v_2^2v_1^2\omega_4^2\omega_1\omega_2^2 + 216\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^3 + 72\omega_3^2c_s^4\omega_4^2\omega_1^3 +$
$138\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^3\omega_2^2 - 4\omega_3^2\omega_4^2\omega_1\omega_2^2 + 24c_s^2\omega_4^2\omega_1^2\omega_2^3 + 28\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^2 + 72\omega_3^2v_2^4\omega_4^2\omega_1\omega_2^3 - 18\omega_3^2c_s^2\omega_1^3\omega_2^3 - 9\omega_3^2c_s^2v_1^2\omega_4\omega_1^3\omega_2^3 - 36\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^3 -$
$30\omega_3^2v_1^2\omega_4^2\omega_1\omega_2^3 - 60\omega_3^2v_2^4\omega_4^2\omega_2^3 + 12\omega_3^2v_2^2\omega_4^2\omega_1^2\omega_2 + 35\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^2 - 27\omega_3c_s^4\omega_4^2\omega_1^3\omega_2^3 + 20\omega_3^2c_s^2\omega_4^2\omega_2^3 + 36\omega_3^2v_2^4\omega_4^2\omega_1\omega_2^2 - 58\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^3 +$
$36\omega_3^2v_2^2v_1^2\omega_4^2\omega_2^3 - 4\omega_3^2\omega_4^2\omega_1\omega_2^3 + 32\omega_3c_s^2v_1^2\omega_4^2\omega_1^2\omega_2^2 + 54c_s^4\omega_4^2\omega_1^3\omega_2^3 - 30\omega_3^2v_2^2v_1^2\omega_4^2\omega_1^3\omega_2 + 4\omega_3^2v_1^2\omega_4^2\omega_1^2\omega_2 - 32\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^2 - 27\omega_3^2c_s^4\omega_4\omega_1^3\omega_2^3 +$
$4\omega_3^2\omega_4^2\omega_1^3 + 3\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^3\omega_2^3 - 36\omega_3^2v_2^4\omega_4^2\omega_1^2\omega_2^2 + 49\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^3 - 4\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^2\omega_2 + 74\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2 - 4\omega_3^2\omega_4^2\omega_1^3\omega_2 - 36\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^3 +$
$4\omega_3c_s^2\omega_4^2\omega_1^3\omega_2 - 4\omega_3c_s^2v_1^2\omega_4^2\omega_1^3\omega_2 - 36\omega_3^2c_s^2v_1^2\omega_1^2\omega_2^3 + 60\omega_3^2v_2^2v_1^2\omega_4^2\omega_1^2\omega_2^2 - 36c_s^4\omega_4^2\omega_1^3\omega_2^2 + 36\omega_3c_s^2v_1^2\omega_4^2\omega_1^2\omega_2^3 - 4\omega_3^2v_1^2\omega_4^2\omega_1^3 + 8\omega_3^2\omega_4^2\omega_1^2\omega_2^2 +$
$16\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^3 - 36\omega_3^2v_2^4\omega_4^2\omega_1^3\omega_2 + 8\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^3\omega_2^2 - 16\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^2 - 27\omega_3^2v_2^4\omega_4^2\omega_1^2\omega_2^3 + 324\omega_3^2c_s^2v_2^2\omega_4^2\omega_1\omega_2^3 - 4\omega_3^2\omega_4^2\omega_1^2\omega_2 + 27\omega_3^2v_2^4\omega_4^2\omega_1^3\omega_2^2 -$
$3\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2^3 - 32\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^2\omega_2^3 - 84\omega_3c_s^4\omega_4^2\omega_1\omega_2^3 + 4\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2 - 20\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^3\omega_2 - 72\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^2 - 42\omega_3^2v_2^2\omega_4^2\omega_1\omega_2^3 +$
$108\omega_3^2c_s^4\omega_4\omega_1^2\omega_2^3 - 4\omega_3^2v_1^2\omega_4^2\omega_2^3 - 12\omega_3^2v_2^2v_1^2\omega_4^2\omega_1^2\omega_2 - 72c_s^4\omega_4^2\omega_1^2\omega_2^3 + 4\omega_3^2v_1^2\omega_4^2\omega_1^3\omega_2 + 16\omega_3^2c_s^2v_1^2\omega_4^2\omega_2^3 - 25\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2^2 + 16\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^2\omega_2^2 +$
$18\omega_3^2c_s^2v_1^2\omega_1^3\omega_2^3 - 9\omega_3c_s^2v_1^2\omega_4^2\omega_1^3\omega_2^3 - 8\omega_3^2v_1^2\omega_4^2\omega_1^2\omega_2^2 + 4\omega_3^2\omega_4^2\omega_2^3 + 9\omega_3c_s^2\omega_4^2\omega_1^3\omega_2^3 + 12\omega_3^2v_2^2\omega_4^2\omega_1\omega_2^2 + 78\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^3)\frac{v_1}{36\omega_3^2\omega_4^2\omega_1^3\omega_2^3}$

coefficient $C^{(1)}_{\mathrm{D}_x^2\mathrm{D}_y^2v_1}$ **at** $\frac{\partial^4 v_1}{\partial x_1^2\partial x_2^2}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_y^2v_1} = (-24 + 72v_1^2 - 108v_1^2\omega + 36v_1^2\omega^2 - 12\omega^2 + 36\omega + 8c_s^2\omega^2 - c_s^2\omega^3 - 18c_s^2\omega + 12c_s^2)\frac{c_s^2\rho}{12\omega^3}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y^2v_1} = (12c_s^2v_2^2\omega_5^3\omega_{15}\omega_9^2\omega_{12} - 12c_s^4\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 - 12c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 24v_2^2\omega_5\omega_{21}\omega_{15}\omega_9^3\omega_{12} + 18v_2^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 -$
$36v_2^2v_1^2\omega_5^2\omega_{15}\omega_9^3\omega_{12}^2 + 24c_s^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3 - 108c_s^2v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 6c_s^2v_2^2\omega_5^3\omega_{21}\omega_9^2\omega_{12}^2 - 18v_2^2v_1^2\omega_5^3\omega_9^3\omega_{12}^2 - 12c_s^2v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} +$
$12c_s^2v_2^2\omega_5^2\omega_9^3\omega_{12}^2 - 36v_2^2v_1^2\omega_5^3\omega_{15}\omega_9^3\omega_{12} - 12v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_9^3 + 78c_s^2v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9^3\omega_{12} + 24v_2^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 48c_s^2v_1^2\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2 +$

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

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_1}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_1} =$
$(-12\omega_5^2\omega_{15}\omega_9^2 - 6c_s^2\omega_5^3\omega_{15}\omega_9\omega_{12} - 36v_1^2\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12} - 12c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9 - 24c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2 + 6c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} + 24c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} -$
$36v_1^2\omega_5^2\omega_{15}\omega_9^2\omega_{12} - 12c_s^2\omega_5^2\omega_{21}\omega_9\omega_{12} + 36v_1^2\omega_5\omega_{21}\omega_{15}\omega_9^2 - 12c_s^2\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12} - 6\omega_5^3\omega_{21}\omega_9\omega_{12} + 12c_s^2\omega_5^2\omega_{15}\omega_9^2 - 12\omega_5^3\omega_{21}\omega_{15}\omega_9^2 +$
$12\omega_5^2\omega_{21}\omega_{15}\omega_{12} - c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 12\omega_5^2\omega_{21}\omega_{15}\omega_9 - 18v_1^2\omega_5^3\omega_9^2\omega_{12} + 72v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} - 12c_s^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 24\omega_5^2\omega_{21}\omega_{15}\omega_9^2 -$
$6\omega_5^3\omega_{21}\omega_{15}\omega_{12} + 12\omega_5^2\omega_{21}\omega_9\omega_{12} + 6\omega_5^3\omega_9^2\omega_{12} + 6\omega_5^3\omega_{15}\omega_9\omega_{12} + 12\omega_5^3\omega_{21}\omega_{15}\omega_9 + 36v_1^2\omega_5^2\omega_{15}\omega_9^2 + 12c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9 + 6\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} -$
$6c_s^2\omega_5^3\omega_9^2\omega_{12} + 6c_s^2\omega_5^3\omega_{21}\omega_9\omega_{12} + 18v_1^2\omega_5^3\omega_{15}\omega_9^2\omega_{12} + 12c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2 - 12c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_{12} - 12c_s^2\omega_5^2\omega_{15}\omega_9^2\omega_{12} + 12\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12} +$
$18v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} - 72v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2 + 12c_s^2\omega_5\omega_{21}\omega_{15}\omega_9^2 - 36v_1^2\omega_5^2\omega_{21}\omega_9\omega_{12} + 36v_1^2\omega_5^2\omega_9^2\omega_{12} - 36v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9 - 12c_s^2\omega_5^3\omega_{15}\omega_9^2 -$
$18v_1^2\omega_5^3\omega_{15}\omega_9\omega_{12} + 36v_1^2\omega_5^3\omega_{15}\omega_9 - 24\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} + 12\omega_5^3\omega_{15}\omega_9^2 - 6\omega_5^3\omega_{15}\omega_9^2\omega_{12} + 12c_s^2\omega_5^2\omega_9^2\omega_{12} + 18c_s^2\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 12\omega_5^3\omega_{15}\omega_9 -$
$6c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} + 12\omega_5^2\omega_{15}\omega_9^2\omega_{12} - 36v_1^2\omega_5^3\omega_{15}\omega_9^2 - 12\omega_5\omega_{21}\omega_{15}\omega_9^2 + 18v_1^2\omega_5^3\omega_{21}\omega_9\omega_{12} - 18v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} - 36v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_{12} +$
$36v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2 - 12\omega_5^2\omega_9^2\omega_{12} + 12c_s^2\omega_5^3\omega_{15}\omega_9 + 6c_s^2\omega_5^3\omega_{15}\omega_9^2\omega_{12} - 4c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 36v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9)\frac{c_s^2\rho}{12\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_1} = C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_1}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_1} = (24\omega_4\omega_1^3 + 36v_1^2\omega_4^2\omega_1 - 24c_s^2\omega_4\omega_1^3 - 36v_1^2\omega_4\omega_1\omega_9 - c_s^2\omega_4^2\omega_1^3\omega_9 - 24\omega_4\omega_1^2 + 24c_s^2\omega_4\omega_1^2 + 36v_1^2\omega_4^2\omega_1^3 - 12c_s^2\omega_4\omega_1\omega_9 - 12\omega_1^3 -$
$36v_1^2\omega_1^2\omega_9 - 4c_s^2\omega_4^2\omega_1^2\omega_9 + 12\omega_4\omega_1\omega_9 + 36v_1^2\omega_1^3 - 72v_1^2\omega_4^2\omega_1^2 + 72v_1^2\omega_4\omega_1^2 - 12\omega_4\omega_1^2\omega_9 + 18c_s^2\omega_4^2\omega_1\omega_9 + 12c_s^2\omega_4^2\omega_1 + 12c_s^2\omega_1^3 + 12c_s^2\omega_4\omega_1^2\omega_9 -$
$72v_1^2\omega_4\omega_1^3 - 12c_s^2\omega_4^2\omega_9 - 12\omega_4^2\omega_1 - 12c_s^2\omega_1^2\omega_9 + 24\omega_4^2\omega_1^2 - 24c_s^2\omega_4^2\omega_1^2 + 12\omega_1^2\omega_9 - 12\omega_4^2\omega_1^3 + 12c_s^2\omega_4^2\omega_1^3 + 36v_1^2\omega_4\omega_1^2\omega_9)\frac{c_s^2\rho}{12\omega_4^2\omega_1^3\omega_9}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_1} = (8\omega_3c_s^4\omega_4\omega_1\omega_2^3 + 32\omega_3^2c_s^2\omega_4\omega_1^2\omega_2 - 6\omega_3^2c_s^2v_1^2\omega_4\omega_1^3\omega_2 + 9\omega_3^2v_2^4\omega_4\omega_1^3\omega_2^2 - 6\omega_3^2c_s^2v_1^2\omega_4\omega_1^2\omega_2^3 + 72\omega_3^2c_s^2\omega_1^2\omega_2^3 - 4\omega_3^2\omega_4\omega_1^2\omega_2 +$
$150\omega_3^2c_s^2v_2^2\omega_4\omega_1\omega_2^3 + 4\omega_3^2\omega_4\omega_2^3 + 12\omega_3^2v_1^2\omega_4\omega_1^3\omega_2 - 18\omega_3^2v_2^4\omega_1^2\omega_2^3 - 36\omega_3^2v_2^2v_1^2\omega_4\omega_1^2\omega_2 + \omega_3^2v_1^2\omega_4\omega_1^2\omega_2^3 - 90\omega_3c_s^2v_1^2\omega_4\omega_1^3\omega_2^2 + 18\omega_3^2c_s^4\omega_1^3\omega_2^3 -$
$54\omega_3c_s^2v_2^2\omega_1^3\omega_2^2 + 36\omega_3c_s^2\omega_4\omega_1^3\omega_2^2 - 24\omega_3^2v_2^2\omega_4\omega_1\omega_2^3 - 54c_s^2v_2^2\omega_4\omega_1^3\omega_2^2 - 28\omega_3^2c_s^4\omega_4\omega_1\omega_2^2 - 12\omega_3^2c_s^2v_2^2\omega_4\omega_1\omega_2^2 - 18\omega_3^2v_2^2\omega_1^3\omega_2^2 - 2\omega_3^2c_s^2\omega_4\omega_1^3\omega_2^2 +$
$54\omega_3^2c_s^2v_2^2\omega_1^3\omega_2^2 + 66\omega_3^2c_s^2v_1^2\omega_4\omega_1^2\omega_2^2 + 12\omega_3^2v_2^4\omega_4\omega_1^2\omega_2 - 6\omega_3v_2^2\omega_4\omega_1\omega_2^3 - 12\omega_3^2v_1^2\omega_4\omega_2^3 + 76\omega_3^2c_s^4\omega_4\omega_1\omega_2^3 + 36\omega_3^2v_2^2\omega_4\omega_1\omega_2^2 +$
$36\omega_3v_2^4\omega_4\omega_1^3\omega_2^2 - 18\omega_3c_s^2\omega_4\omega_1^3\omega_2^3 - 18v_2^2\omega_4\omega_1^2\omega_2^3 - 96\omega_3^2c_s^2v_1^2\omega_4\omega_2^3 + 54\omega_3c_s^2v_1^2\omega_4\omega_1^3\omega_2^3 - 24\omega_3^2v_1^2\omega_4\omega_1^2\omega_2^2 - 18\omega_3^2v_2^4\omega_1^2\omega_2^2 - 56\omega_3c_s^2\omega_4\omega_1^2\omega_2^2 -$
$36\omega_3v_2^4\omega_4\omega_1^2\omega_2^3 - 72\omega_3^2c_s^4\omega_1^2\omega_2^3 - 12\omega_3v_2^4\omega_4\omega_1^3\omega_2 + 12\omega_3^2v_1^2\omega_4\omega_1^2\omega_2 + 216\omega_3^2c_s^2v_1^2\omega_1\omega_2^3 + 18v_2^2\omega_4\omega_1^3\omega_2^2 + 132\omega_3c_s^2v_1^2\omega_4\omega_1^2\omega_2^2 -$
$90\omega_3^2v_2^2v_1^2\omega_4\omega_1^3\omega_2 - 4\omega_3^2\omega_4\omega_1^3\omega_2 + 18\omega_3^2v_2^2\omega_1^2\omega_2^3 - 12\omega_3^2v_1^2\omega_4\omega_1^3 - 48\omega_3^2c_s^2v_1^2\omega_4\omega_1^2\omega_2 + 18\omega_3^2c_s^2\omega_4\omega_1^3\omega_2 - 18\omega_3^2c_s^2\omega_1^3\omega_2^3 - 54\omega_3^2c_s^2v_2^2\omega_1^2\omega_2^3 +$
$12\omega_3^2c_s^2v_1^2\omega_4\omega_1^3 + 2\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^3 - 18\omega_3^2v_2^4\omega_4\omega_1^2\omega_2^2 - \omega_3^2v_1^2\omega_4\omega_1^3\omega_2^2 - 126\omega_3c_s^2v_1^2\omega_4\omega_1^2\omega_2^3 + 24\omega_3c_s^2v_1^2\omega_4\omega_1^3\omega_2 + 180\omega_3^2v_2^2v_1^2\omega_4\omega_1^2\omega_2^2 +$
$18\omega_3^2v_2^4\omega_1^3\omega_2^2 - 8\omega_3c_s^2\omega_4\omega_1^3\omega_2 - 18\omega_3c_s^2v_2^2\omega_4\omega_1\omega_2^3 + 54c_s^2v_2^2\omega_4\omega_1^2\omega_2^3 + 6\omega_3v_2^4\omega_4\omega_1^2\omega_2^2 + 36\omega_3c_s^2\omega_4\omega_1^2\omega_2^3 + 54\omega_3c_s^2v_2^2\omega_1^2\omega_2^3 + 6\omega_3^2c_s^2v_1^2\omega_4\omega_1^3\omega_2^2 -$
$54\omega_3^2c_s^2v_2^2\omega_1^2\omega_2^2 - 9\omega_3^2v_2^4\omega_4\omega_1^2\omega_2^3 - 36\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^2 + 4\omega_3^2\omega_4\omega_1^3 - 36\omega_3^2v_2^4\omega_4\omega_1^3\omega_2 + 18\omega_3^2v_2^2\omega_1^2\omega_2^2 + 8\omega_3^2\omega_4\omega_1^2\omega_2^2 - 144\omega_3^2v_2^2v_1^2\omega_4\omega_1\omega_2^2 -$
$48\omega_3^2v_2^4\omega_4\omega_2^3 + 60\omega_3c_s^2v_1^2\omega_4\omega_1\omega_2^3 + 18\omega_3v_2^4\omega_1^2\omega_2^3 - 28\omega_3^2c_s^4\omega_4\omega_1^2\omega_2 - 36\omega_3c_s^2v_2^2\omega_4\omega_1^3\omega_2 - 8\omega_3c_s^2\omega_4\omega_1\omega_2^3 - 90\omega_3c_s^2v_2^2\omega_4\omega_1^2\omega_2^3 -$
$3\omega_3^2c_s^4\omega_4\omega_1^3\omega_2^2 - 9\omega_3^2v_2^2\omega_4\omega_1^3\omega_2^2 - 36\omega_3c_s^4\omega_4\omega_1^3\omega_2^2 + 54\omega_3^2v_2^4\omega_4\omega_1\omega_2^3 + 32\omega_3^2c_s^2\omega_4\omega_1\omega_2^2 + 28\omega_3^2c_s^2\omega_4\omega_2^3 - 4\omega_3^2\omega_4\omega_1\omega_2^2 + 30\omega_3^2c_s^2v_2^2\omega_4\omega_1^3\omega_2^2 +$
$108\omega_3^2v_2^2v_1^2\omega_4\omega_2^3 - \omega_3^2v_1^4\omega_4\omega_1^2\omega_2^3 - 48\omega_3^2v_2^2\omega_4\omega_1^3 + 2\omega_3^2c_s^4\omega_4\omega_1^3\omega_2^2 + 54\omega_3c_s^2v_2^2\omega_4\omega_1^2\omega_2^2 + 72\omega_3^2c_s^4\omega_1\omega_2^3 + 6\omega_3v_2^4\omega_4\omega_1\omega_2^3 + 132\omega_3^2c_s^2v_2^2\omega_4\omega_1^3 -$
$216\omega_3^2c_s^2v_1^2\omega_1^2\omega_2^3 - 90\omega_3^2v_2^2v_1^2\omega_4\omega_1\omega_2^3 - 4\omega_3^2\omega_4\omega_1\omega_2^3 - 18\omega_3^2v_2^2\omega_1\omega_2^3 + 18v_2^4\omega_4\omega_1^2\omega_2^3 - 12\omega_3^2c_s^2v_2^2\omega_4\omega_1^2\omega_2 + 16\omega_3^2c_s^4\omega_4\omega_1^3 - 18\omega_3^2c_s^2\omega_4\omega_1\omega_2^3 +$
$12\omega_3^2v_2^4\omega_4\omega_1\omega_2^2 + 18\omega_3v_2^2\omega_1^3\omega_2^2 + 54\omega_3^2c_s^2v_2^2\omega_1\omega_2^3 - 36\omega_3v_2^2\omega_4\omega_1^3\omega_2^2 + 18\omega_3c_s^4\omega_4\omega_1^3\omega_2^3 - 18v_2^4\omega_4\omega_1^3\omega_2^2 + 24\omega_3^2c_s^2v_2^2\omega_4\omega_1^2\omega_2^2 + 12\omega_3^2v_2^2\omega_4\omega_2^3 +$
$56\omega_3c_s^4\omega_4\omega_1^2\omega_2^2 + 36\omega_3v_2^2\omega_4\omega_1^2\omega_2^3 - 84\omega_3^2c_s^2v_1^2\omega_4\omega_1\omega_2^2 - 18\omega_3v_2^2\omega_1^2\omega_2^3 + 12\omega_3v_2^2\omega_4\omega_1^3\omega_2 - 108\omega_3^2c_s^2v_2^2\omega_4\omega_2^3 - 68\omega_3^2c_s^4\omega_4\omega_2^3 - 14\omega_3^2c_s^4\omega_4\omega_1^3\omega_2 -$
$14\omega_3^2c_s^4\omega_4\omega_1^2\omega_2^3 - 42\omega_3^2v_2^2\omega_4\omega_1^2\omega_2^2 + 12\omega_3^2v_1^2\omega_4\omega_1\omega_2^2 + 48\omega_3^2c_s^2v_1^2\omega_4\omega_1\omega_2^3 - 72\omega_3^2c_s^2\omega_1\omega_2^3 + 8\omega_3c_s^4\omega_4\omega_1^3\omega_2 + 24\omega_3^2v_2^4\omega_4\omega_1^3 - 6\omega_3v_2^2\omega_4\omega_1^2\omega_2^2 -$

$36\omega_3 c_s^4\omega_4\omega_1^2\omega_2^3+\omega_3^2 v_1^4\omega_4\omega_1^3\omega_2^2-30\omega_3^2 c_s^2 v_2^2\omega_4\omega_1^2\omega_2^3-174\omega_3^2 c_s^2 v_2^2\omega_4\omega_1^3\omega_2+54\omega_3^2 c_s^2 v_1^2\omega_1^3\omega_2^3+12\omega_3^2 v_1^2\omega_4\omega_1\omega_2^3-20\omega_3^2 c_s^2\omega_4\omega_1^3+18\omega_3^2 v_2^4\omega_1\omega_2^3+72\omega_3^2 v_2^2 v_1^2\omega_1\omega_4\omega_1^3+90\omega_3 c_s^2 v_2^2\omega_4\omega_1^3\omega_2^2+9\omega_3^2 v_2^2\omega_4\omega_1^2\omega_2^3+28\omega_3^2 c_s^4\omega_4\omega_1^2\omega_2^2+66\omega_3^2 v_2^2\omega_4\omega_1^3\omega_2-18\omega_3 v_2^4\omega_1^3\omega_2^2)\frac{\rho}{36\omega_3^2\omega_4\omega_1^3\omega_2^3}$

coefficient $C^{(1)}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_2}$ **at** $\frac{\partial^4 v_2}{\partial x_1^2\partial x_2^2}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_2}=0$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_2}=(-4v_1^2\omega_{10}\omega_5^2\omega_{15}^2\omega_9^3\omega_{12}^2+3c_s^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2-2c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2+2\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2+2c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^3\omega_{12}^2-$
$2v_1^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2+8c_s^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2-2c_s^2\omega_{10}\omega_5^3\omega_{15}^2\omega_9^2\omega_{12}^2-4v_1^2\omega_{10}\omega_5^3\omega_{15}^2\omega_9^3\omega_{12}-4c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_9^3\omega_{12}^2-5c_s^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9^3\omega_{12}+$
$7v_1^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}+2\omega_{10}\omega_5^3\omega_{15}\omega_9^3\omega_{12}^2-4c_s^2\omega_{10}\omega_5^2\omega_{15}^2\omega_9^3\omega_{12}^2-4c_s^2\omega_{10}\omega_5^3\omega_{15}^2\omega_9^3\omega_{12}+4\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9^3-7\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}-$
$2v_1^2\omega_{10}\omega_5^3\omega_{15}^2\omega_9^2\omega_{12}^2+2c_s^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2-4\omega_{10}\omega_5^2\omega_{15}\omega_9^3\omega_{12}^2+2c_s^2\omega_{10}\omega_5^3\omega_{15}^2\omega_9^3\omega_{12}^2-\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2+4v_1^2\omega_{10}\omega_5^3\omega_{15}^2\omega_9^2\omega_{12}-$
$24c_s^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2+4c_s^2\omega_{10}\omega_5^2\omega_{15}^2\omega_9^3\omega_{12}-4\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9^3+v_1^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2+2v_1^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2+4c_s^2\omega_{10}\omega_5^3\omega_{15}^2\omega_9^2\omega_{12}+$
$3\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9^3\omega_{12}+2v_1^2\omega_{10}\omega_5^3\omega_{15}^2\omega_9^3\omega_{12}^2-4\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_{12}^2+4\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2+4v_1^2\omega_{10}\omega_5^2\omega_{15}^2\omega_9^3\omega_{12}+13c_s^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}-$
$3v_1^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9^3\omega_{12}-2\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2+12c_s^2\omega_{10}\omega_5\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2-8c_s^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9^3\omega_{12}^2-3v_1^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2+$
$6\omega_{10}\omega_5\omega_{21}\omega_{15}^2\omega_9^3\omega_{12}+4\omega_{10}\omega_5^2\omega_{15}^2\omega_9^3\omega_{12}^2-2c_s^2\omega_{10}\omega_5^3\omega_{15}\omega_9^3\omega_{12}^2-8c_s^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9^3+4\omega_{10}\omega_5^3\omega_{15}^2\omega_9^3\omega_{12}-16c_s^2\omega_{10}\omega_{21}\omega_{15}^2\omega_9^3\omega_{12}^2-$
$8c_s^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}+8c_s^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2+4c_s^2\omega_{10}\omega_5^2\omega_{21}\omega_9^3\omega_{12}^2-6v_1^2\omega_{10}\omega_5\omega_{21}\omega_{15}^2\omega_9^3\omega_{12}+3\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2-2v_1^2\omega_{10}\omega_5^3\omega_{15}\omega_9^3\omega_{12}^2+$
$5\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2+2c_s^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}+9v_1^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9^3\omega_{12}-2\omega_{10}\omega_5\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2+26c_s^2\omega_{10}\omega_5\omega_{21}\omega_{15}^2\omega_9^3\omega_{12}^2+$
$2v_1^2\omega_{10}\omega_5\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2-9\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9^3\omega_{12}-5v_1^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2+2\omega_{10}\omega_5^3\omega_{15}^2\omega_9^2\omega_{12}^2-4v_1^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9^3-6c_s^2\omega_{10}\omega_5\omega_{21}\omega_{15}^2\omega_9^3\omega_{12}+$
$\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9^3\omega_{12}^2+v_1^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2-4\omega_{10}\omega_5^3\omega_{15}^2\omega_9^2\omega_{12}-4v_1^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}-4c_s^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2+4v_1^2\omega_{10}\omega_5^2\omega_{15}\omega_9^3\omega_{12}^2+$
$12c_s^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_{12}^2+4v_1^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9^3+4\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}-8c_s^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2-\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2-c_s^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2+$
$4c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9^3\omega_{12}^2-v_1^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9^3\omega_{12}^2+4v_1^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_{12}^2-2\omega_{10}\omega_5^3\omega_{15}^2\omega_9^3\omega_{12}^2+4c_s^2\omega_{10}\omega_5^2\omega_{15}\omega_9^3\omega_{12}^2-15c_s^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2-$
$6c_s^2\omega_{10}\omega_5\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2+2\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}+2v_1^2\omega_{10}\omega_5\omega_{21}\omega_{15}^2\omega_9^3\omega_{12}^2-2c_s^2\omega_{10}\omega_5^3\omega_{21}\omega_9^3\omega_{12}^2+11c_s^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9^3\omega_{12}-$
$2\omega_{10}\omega_5\omega_{21}\omega_{15}^2\omega_9^3\omega_{12}^2-2v_1^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}-4v_1^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2+8c_s^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9^3-4\omega_{10}\omega_5^2\omega_{15}^2\omega_9^3\omega_{12})\frac{v_2 v_1\rho}{2\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9^3\omega_{12}^2}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_2}=C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_2}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_2}=0$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_2}=0$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_2}=0$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_2}=$
$(-18c_s^2\omega_1\omega_2^3+60\omega_3 v_2^2\omega_1\omega_2^2+6\omega_3\omega_1^2\omega_2+84\omega_3 c_s^2\omega_1^3+6\omega_1\omega_2^3+18\omega_3 v_1^2\omega_1^2\omega_2^2+141\omega_3 v_2^2\omega_1\omega_2^3-23\omega_3\omega_1^3\omega_2^2+48\omega_3 v_2^2\omega_1^3-9\omega_3 v_1^2\omega_1^3\omega_2-6v_1^2\omega_1^3\omega_2+$
$48\omega_3\omega_1^3\omega_2+23\omega_3\omega_1^2\omega_2^3-114\omega_3 v_2^2\omega_2^3+12\omega_3\omega_1^2\omega_2^2-12\omega_3 v_1^2\omega_1^2\omega_2+12v_1^2\omega_1^2\omega_2^2-66\omega_3 c_s^2\omega_2^3+108\omega_3 c_s^2\omega_1\omega_2^3-12\omega_3\omega_1\omega_2^2+6\omega_3 v_2^2\omega_1^2\omega_2-$
$108\omega_3 c_s^2\omega_1^3\omega_2+42\omega_3\omega_2^3-42\omega_3 c_s^2\omega_1^2\omega_2^3-6v_1^2\omega_1\omega_2^3+12\omega_3 v_1^2\omega_2^3-60\omega_3\omega_1\omega_2^3+50\omega_3 v_2^2\omega_1^3\omega_2^2-18\omega_3 c_s^2\omega_1^2\omega_2+12\omega_3 v_1^2\omega_1^3-75\omega_3 v_2^2\omega_1^3\omega_2+$
$36c_s^2\omega_1^2\omega_2^2-50\omega_3 v_2^2\omega_1^2\omega_2^3-9\omega_3 v_1^2\omega_1\omega_2^3-12\omega_1^2\omega_2^2-66\omega_3 v_2^2\omega_1^2\omega_2^2-18c_s^2\omega_1^3\omega_2+42\omega_3 c_s^2\omega_1^3\omega_2^2-12\omega_3 v_1^2\omega_1\omega_2^2+6\omega_1^3\omega_2-36\omega_3\omega_1^3)\frac{v_2 v_1\rho}{18\omega_3\omega_1^3\omega_2^3}$

coefficient $C^{(1)}_{\mathrm{D}_x\mathrm{D}_y^3\rho}$ **at** $\frac{\partial^4\rho}{\partial x_1\partial x_2^3}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y^3\rho}=(24-\omega^3+14\omega^2-36\omega+v_2^2\omega^3-42c_s^2\omega^2+3c_s^2\omega^3-14v_2^2\omega^2+36v_2^2\omega+108c_s^2\omega-72c_s^2-24v_2^2)\frac{c_s^2 v_2}{12\omega^3}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^3\rho}=(-72c_s^2 v_1^2\omega_{10}^2\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}-36c_s^2 v_1^2\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9+36c_s^2 v_1^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}\omega_{12}-6v_1^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}-$
$36c_s^2 v_1^2\omega_{10}^2\omega_5^2\omega_{21}\omega_9\omega_{12}-6c_s^2\omega_{10}^2\omega_5^3\omega_{21}\omega_9\omega_{12}-12c_s^2 v_2^2\omega_{10}^2\omega_5^2\omega_{15}^2\omega_9\omega_{12}+36v_1^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}-12c_s^2 v_2^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9-$
$12v_1^2\omega_{10}^2\omega_5^2\omega_{15}^2\omega_9+54c_s^4\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}-12v_2^2 v_1^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2-12c_s^2\omega_{10}^2\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12}-18c_s^2 v_1^2\omega_{10}^2\omega_5^3\omega_{15}\omega_9\omega_{12}-$
$18c_s^2 v_1^2\omega_{10}^2\omega_5^3\omega_{15}^2\omega_{12}-12c_s^2\omega_{10}^2\omega_5^2\omega_{15}\omega_9\omega_{12}-6c_s^4\omega_{10}^2\omega_5^3\omega_{21}\omega_9\omega_{12}+9v_2^2 v_1^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}+12v_1^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2-36c_s^4\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9-$
$24v_1^2\omega_{10}\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12}-6v_1^2\omega_{10}^2\omega_5^3\omega_{21}\omega_9\omega_{12}-36c_s^4\omega_{10}\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12}-6v_2^2 v_1^2\omega_{10}^2\omega_5^3\omega_{15}\omega_9\omega_{12}+12v_2^2 v_1^2\omega_{10}^2\omega_5^3\omega_{15}^2+6c_s^2\omega_{10}^2\omega_5^3\omega_{15}^2\omega_{12}+$
$12c_s^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}+6v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}+24v_1^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}\omega_{12}-5c_s^2 v_2^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}+12v_2^2 v_1^2\omega_{10}^2\omega_5^2\omega_{15}^2\omega_9-$
$12v_1^2\omega_{10}^2\omega_5^2\omega_{15}\omega_9\omega_{12}+36c_s^4\omega_{10}^2\omega_5^2\omega_{15}\omega_9\omega_{12}+12v_2^2 v_1^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}\omega_{12}+144c_s^2 v_1^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}-12v_1^2\omega_{10}^2\omega_5^3\omega_{15}^2+12c_s^2\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9-$
$12v_2^2 v_1^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}-12v_2^2 v_1^2\omega_{10}^2\omega_5^2\omega_{21}\omega_9\omega_{12}+3c_s^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}-18c_s^4\omega_{10}^2\omega_5^3\omega_{15}^2\omega_{12}+27c_s^2 v_1^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}+$
$156c_s^4\omega_{10}^2\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12}-96c_s^4\omega_{10}^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}+12v_2^2 v_1^2\omega_{10}^2\omega_5^2\omega_{15}\omega_9\omega_{12}-12v_1^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}\omega_{12}+c_s^2 v_2^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}+$
$12c_s^4\omega_{10}^2\omega_5^2\omega_{21}\omega_9\omega_{12}+12v_1^2\omega_{10}^2\omega_5^2\omega_{21}\omega_9\omega_{12}-18c_s^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}+48v_2^2 v_1^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}-36c_s^2 v_1^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}+$
$6v_2^2 v_1^2\omega_{10}^2\omega_5^3\omega_{21}\omega_9\omega_{12}-12c_s^2 v_2^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2+6v_1^2\omega_{10}^2\omega_5^3\omega_{15}\omega_9\omega_{12}+18c_s^2 v_2^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}-24v_2^2 v_1^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}\omega_{12}-$
$6v_2^2 v_1^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}-18c_s^4\omega_{10}^2\omega_5^3\omega_{15}\omega_9\omega_{12}+12c_s^2\omega_{10}^2\omega_5^2\omega_{21}\omega_9\omega_{12}-24v_2^2 v_1^2\omega_{10}^2\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}+6c_s^2 v_2^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_{12}+$
$6c_s^2 v_2^2\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9\omega_{12}+15v_1^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}+15c_s^4\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}+36c_s^2 v_1^2\omega_{10}^2\omega_5^3\omega_{15}^2+18c_s^2 v_1^2\omega_{10}^2\omega_5^3\omega_{21}\omega_9\omega_{12}+$
$12c_s^2 v_2^2\omega_{10}^2\omega_5^2\omega_{15}^2\omega_9-72c_s^2 v_1^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}\omega_{12}-18c_s^2 v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}-12c_s^2 v_2^2\omega_{10}^2\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}-60c_s^4\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}+$

$6c_s^2\omega_{10}^2\omega_5^3\omega_{15}\omega_9\omega_{12} + 36c_s^2v_1^2\omega_{10}^2\omega_5^2\omega_{15}\omega_9\omega_{12} + 12c_s^2v_2^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9 + 12c_s^2\omega_{10}\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 12c_s^2\omega_{10}^2\omega_5^3\omega_{15}^2 - 36c_s^2v_1^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2 -$
$12c_s^2\omega_{10}^2\omega_5^2\omega_{15}^2\omega_9 - 6v_2^2v_1^2\omega_{10}^2\omega_5^3\omega_{15}^2\omega_{12} + 12v_2^2v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 3c_s^2v_2^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} - 15v_2^2v_1^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} -$
$12v_2^2v_1^2\omega_{10}^2\omega_5^2\omega_{15}^2\omega_9\omega_{12} + 12c_s^2v_2^2\omega_{10}^2\omega_5^3\omega_{15}^2 + 24v_1^2\omega_{10}^2\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12} + 24v_2^2v_1^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} + 18c_s^2v_1^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} +$
$36c_s^4\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9 + 12c_s^4\omega_{10}^2\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12} - 12v_1^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9 + 18c_s^4\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} - 6v_1^2\omega_{10}^2\omega_5^3\omega_9\omega_{12} -$
$12c_s^2v_2^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 6v_1^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} + 18c_s^4\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9\omega_{12} + 36c_s^4\omega_{10}^2\omega_5^2\omega_{15}^2\omega_9 + 5c_s^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} -$
$12v_2^2v_1^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9 - 12v_2^2v_1^2\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9 - 108c_s^2v_2^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 12c_s^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9 - 36c_s^4\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2 +$
$12v_1^2\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9 + 12c_s^2v_2^2\omega_{10}^2\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 36c_s^2v_1^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9 + 3c_s^4\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 72c_s^2v_1^2\omega_{10}\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12} -$
$6c_s^2v_2^2\omega_{10}^2\omega_5^3\omega_{15}\omega_9\omega_{12} + 36c_s^2v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 12c_s^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2 + 36c_s^2v_1^2\omega_{10}^2\omega_5^2\omega_{15}^2\omega_9 - 48v_1^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} -$
$36c_s^2v_1^2\omega_{10}^2\omega_5^2\omega_{15}^2\omega_9\omega_{12} + 72c_s^2v_1^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} - 6c_s^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} - 12c_s^2v_2^2\omega_{10}^2\omega_5^2\omega_{21}\omega_9\omega_{12} + 6v_1^2\omega_{10}^2\omega_5^3\omega_{15}^2\omega_{12} -$
$42c_s^4\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} - 6c_s^2\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9\omega_{12} + 12c_s^2v_2^2\omega_{10}^2\omega_5^2\omega_{15}\omega_9\omega_{12} - 12c_s^2v_2^2\omega_{10}\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 6c_s^2v_2^2\omega_{10}^2\omega_5^3\omega_{15}^2\omega_{12} +$
$24v_2^2v_1^2\omega_{10}\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 9v_1^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 36c_s^2v_1^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9 + 12c_s^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9 - 15c_s^4\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} +$
$6c_s^2v_2^2\omega_{10}^2\omega_5^3\omega_{21}\omega_9\omega_{12} + 12c_s^2\omega_{10}^2\omega_5^2\omega_{15}^2\omega_9\omega_{12} + 12c_s^2\omega_{10}^2\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12} + 18c_s^2v_1^2\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9\omega_{12} - 18c_s^2v_1^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} -$
$12c_s^2v_2^2\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9 + 12v_1^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} - 36c_s^4\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9 + 12v_1^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9 + 6v_2^2v_1^2\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9\omega_{12} -$
$18c_s^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} - 6v_2^2v_1^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} - 45c_s^2v_1^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} + 6v_2^2v_1^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} - c_s^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} -$
$12v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 18c_s^2v_2^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 36c_s^4\omega_{10}^2\omega_5^3\omega_{15}^2 - 36v_2^2v_1^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 12v_2^2v_1^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9 +$
$12v_1^2\omega_{10}^2\omega_5^2\omega_{15}^2\omega_9\omega_{12} - 36c_s^4\omega_{10}^2\omega_5^2\omega_{15}^2\omega_9\omega_{12} - 24v_1^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_{12})\frac{v_2}{12\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y^3\rho} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^3\rho}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y^3\rho} = (-12v_2^2\omega_5^2\omega_{21}\omega_{15}^2 - 18c_s^2\omega_{10}\omega_5^2\omega_{15}^2\omega_{12} - 12v_2^2\omega_{10}\omega_{21}\omega_{15}\omega_9\omega_{12} - \omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 36c_s^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} -$
$12\omega_{10}\omega_5\omega_{15}\omega_9\omega_{12} - 36c_s^2\omega_{10}\omega_5^2\omega_{15}^2\omega_9 - 36c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_9 - 18c_s^2\omega_{10}\omega_5^2\omega_{15}\omega_9\omega_{12} + 12v_2^2\omega_{10}\omega_5\omega_{15}\omega_9\omega_{12} + 12\omega_{10}\omega_{21}\omega_{15}\omega_9\omega_{12} +$
$12\omega_{10}\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 6\omega_{10}\omega_5^2\omega_{15}^2\omega_9\omega_{12} + 12\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 5v_2^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 12\omega_{10}\omega_5^2\omega_{15}^2\omega_9 - 6v_2^2\omega_{10}\omega_5^2\omega_{15}^2\omega_{12} + 12\omega_5\omega_{21}\omega_{15}^2\omega_9 -$
$12v_2^2\omega_{10}\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 12v_2^2\omega_{10}\omega_5^2\omega_{15}^2 - 18\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 3c_s^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 12v_2^2\omega_5\omega_{21}\omega_{15}^2\omega_9 - 12v_2^2\omega_{10}\omega_5\omega_{21}\omega_9\omega_{12} +$
$18c_s^2\omega_{10}\omega_5^2\omega_{21}\omega_9\omega_{12} - 12v_2^2\omega_{10}\omega_5^2\omega_{15}^2\omega_9 + 6\omega_{10}\omega_5^2\omega_{15}^2\omega_{12} - 12v_2^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 36c_s^2\omega_{10}\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 12\omega_{10}\omega_5\omega_{21}\omega_9\omega_{12} +$
$18v_2^2\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 6v_2^2\omega_{10}\omega_5^2\omega_{15}^2\omega_9\omega_{12} - 36c_s^2\omega_{10}\omega_5\omega_{15}^2\omega_9\omega_{12} + 5\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 36c_s^2\omega_{10}\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12} + v_2^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} +$
$18v_2^2\omega_{10}\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12} - 9c_s^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} + 36c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9 - 12\omega_{10}\omega_5\omega_{15}^2\omega_9 + 6\omega_{10}\omega_5^2\omega_{15}\omega_9\omega_{12} + 12\omega_5^2\omega_{21}\omega_{15}^2 -$
$36c_s^2\omega_{10}\omega_{21}\omega_{15}\omega_9\omega_{12} + 18c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} + 12v_2^2\omega_{10}\omega_5\omega_{15}^2\omega_9 - 36c_s^2\omega_5^2\omega_{21}\omega_{15}^2 + 54c_s^2\omega_{10}\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12} - 3v_2^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} -$
$6v_2^2\omega_{10}\omega_5^2\omega_{15}\omega_9\omega_{12} + 36c_s^2\omega_{10}\omega_5\omega_{15}\omega_9\omega_{12} - 12\omega_{10}\omega_5^2\omega_{15}^2 + 12v_2^2\omega_{10}\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 3\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} + 12v_2^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9 -$
$6\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} - 36c_s^2\omega_{10}\omega_5\omega_{21}\omega_9\omega_{12} + 6v_2^2\omega_{10}\omega_5^2\omega_{21}\omega_9\omega_{12} - 12\omega_5^2\omega_{21}\omega_{15}^2\omega_9 + 6v_2^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} + 36c_s^2\omega_{10}\omega_5^2\omega_{15}^2\omega_9 + 12\omega_{10}\omega_5\omega_{15}^2\omega_9\omega_{12} -$
$15c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 18c_s^2\omega_{10}\omega_5^2\omega_{15}^2\omega_9\omega_{12} - 12v_2^2\omega_{10}\omega_5\omega_{15}^2\omega_9\omega_{12} + 36c_s^2\omega_{10}\omega_5^2\omega_{15}^2 + 54c_s^2\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 6\omega_{10}\omega_5^2\omega_{21}\omega_9\omega_{12} -$
$18\omega_{10}\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12} - 12\omega_{10}\omega_{21}\omega_{15}^2\omega_9\omega_{12})\frac{c_s^2v_2}{12\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y^3\rho} = C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y^3\rho}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y^3\rho} = (-\omega_7^2\omega_1^2 + 12\omega_7\omega_5 - 3v_2^2\omega_7\omega_1^2\omega_5 + 3c_s^2\omega_7^2\omega_1^2 + 6v_2^2\omega_1^2\omega_5 - 36c_s^2\omega_7\omega_5 - 12v_2^2\omega_7^2\omega_1\omega_5 + 12\omega_7^2 + 6v_2^2\omega_7^2\omega_1 + v_2^2\omega_7^2\omega_1^2 +$
$18c_s^2\omega_1^2\omega_5 - \omega_7^2\omega_1^2\omega_5 - 12v_2^2\omega_7\omega_5 + 54c_s^2\omega_7\omega_1\omega_5 - 6\omega_1^2\omega_5 + 18c_s^2\omega_7^2\omega_1 + 3c_s^2\omega_7^2\omega_1^2\omega_5 - 18\omega_7\omega_1\omega_5 - 6\omega_7^2\omega_1 + 3\omega_7\omega_1^2\omega_5 - 36c_s^2\omega_7^2\omega_1\omega_5 +$
$36c_s^2\omega_7\omega_1 - 12\omega_7\omega_1 - 36c_s^2\omega_1\omega_5 - 6v_2^2\omega_7\omega_1^2 + 12v_2^2\omega_7^2\omega_5 - 9c_s^2\omega_7\omega_1^2\omega_5 + 12\omega_7^2\omega_1\omega_5 + 12\omega_1\omega_5 + v_2^2\omega_7^2\omega_1^2\omega_5 + 12v_2^2\omega_7\omega_1 - 36c_s^2\omega_7^2 + 6\omega_7\omega_1^2 +$
$18v_2^2\omega_7\omega_1\omega_5 - 12\omega_7^2\omega_5 - 12v_2^2\omega_1\omega_5 - 18c_s^2\omega_7\omega_1^2 - 12v_2^2\omega_7^2 + 36c_s^2\omega_7^2\omega_5)\frac{c_s^2v_2}{12\omega_7^2\omega_1^2\omega_5}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y^3\rho} =$
$(48\omega_3^2v_2^4\omega_4^2\omega_1^3 + 9\omega_3^2c_s^2\omega_4\omega_1^3\omega_2^3 + 18\omega_3^2c_s^2v_2^2\omega_1^3\omega_2^3 + 120\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^2 + 36\omega_3^2c_s^2\omega_1^2\omega_2^3 - 18c_s^2\omega_4^2\omega_1^3\omega_2^3 - 412\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^2\omega_2^2 - 104\omega_3^2c_s^2\omega_4^2\omega_1^3 +$
$104\omega_3^2v_2^2\omega_4^2\omega_1^2\omega_2^2 - 342\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^3 + 54\omega_3^2c_s^4\omega_1^3\omega_2^3 - 9\omega_3c_s^2v_2^2\omega_4^2\omega_1^3\omega_2^3 - 276\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2 + 160\omega_3^2v_2^2\omega_4^2\omega_2^3 - 712\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^3\omega_2 + 6\omega_3^2v_1^4\omega_4^2\omega_1^3\omega_2^2 -$
$460\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^2\omega_2^3 - 784\omega_3^2c_s^2v_2^2\omega_4^2\omega_2^3 + 216\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^3 + 48\omega_3c_s^4\omega_1^3\omega_2 + 152\omega_3^2v_2^2\omega_4^2\omega_1^3\omega_2 - 36\omega_3c_s^2v_2^2\omega_4^2\omega_1^3\omega_2^2 + 12\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^2 +$
$92\omega_3^2v_2^2\omega_4^2\omega_1^2\omega_2^3 - 288\omega_3^2c_s^4\omega_4^2\omega_2^3 + 72\omega_3c_s^2v_2^2\omega_4^2\omega_1^2\omega_2^3 - 108\omega_3^2c_s^4\omega_1^2\omega_2^3 - 92\omega_3^2v_2^2\omega_4^2\omega_1^3\omega_2^2 + 18\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^3 + 72\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2 + 56\omega_3c_s^2\omega_4^2\omega_1\omega_2^3 -$
$56\omega_3^2v_2^2\omega_4^2\omega_1^3 + 16\omega_3c_s^2v_2^2\omega_4^2\omega_1^3\omega_2 + 320\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^3 + 144\omega_3^2c_s^4\omega_4^2\omega_1^3 + 394\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^3\omega_2^2 - 8\omega_3^2\omega_4^2\omega_1\omega_2^2 + 36c_s^2\omega_4^2\omega_1^2\omega_2^3 - 6\omega_3^2v_1^4\omega_4^2\omega_1^2\omega_2^3 +$
$56\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^2 + 228\omega_3^2v_2^4\omega_4^2\omega_1\omega_2^3 - 18\omega_3^2c_s^2\omega_1^3\omega_2^3 - 108\omega_3c_s^4\omega_4^2\omega_1^3\omega_2^2 - 36\omega_3^2c_s^2v_2^2\omega_1^2\omega_2^3 - 36\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^3 - 144\omega_3^2v_2^4\omega_4^2\omega_2^3 - 136\omega_3^2v_2^2\omega_4^2\omega_1^2\omega_2 +$
$144\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^2 + 40\omega_3c_s^2v_2^2\omega_4^2\omega_1^2\omega_2^2 - 27\omega_3c_s^4\omega_4^2\omega_1^3\omega_2^3 + 208\omega_3^2c_s^2\omega_4^2\omega_2^3 - 24\omega_3^2v_2^4\omega_4^2\omega_1\omega_2^2 - 368\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^3 + 448\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^2\omega_2 +$
$28\omega_3^2\omega_4^2\omega_1\omega_2^3 + 6\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^3\omega_2^3 + 54c_s^4\omega_4^2\omega_1^3\omega_2^3 - 40\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^2 - 27\omega_3^2c_s^4\omega_4\omega_1^3\omega_2^3 + 8\omega_3^2\omega_4^2\omega_1^3 - 96\omega_3^2v_2^4\omega_4^2\omega_1^2\omega_2^2 + 184\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^3 +$
$208\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2 - 14\omega_3^2\omega_4^2\omega_1^2\omega_2^3 - 20\omega_3^2\omega_4^2\omega_1^3\omega_2 - 72\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^3 - 56\omega_3c_s^2v_2^2\omega_4^2\omega_1\omega_2^3 - 16\omega_3c_s^2\omega_4^2\omega_1^3\omega_2 - 36c_s^2v_2^2\omega_4^2\omega_1^2\omega_2^3 - 6\omega_3^2v_1^2\omega_4^2\omega_1^3\omega_2^2 -$
$9\omega_3^2c_s^2v_2^2\omega_4\omega_1^3\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^2\omega_2^2 - 132\omega_3^2v_2^4\omega_4^2\omega_1^3\omega_2 + 18\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^3\omega_2^2 + 52\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^2 - 78\omega_3^2v_2^4\omega_4^2\omega_1^2\omega_2^3 + 1232\omega_3^2c_s^2v_2^2\omega_4^2\omega_1\omega_2^3 +$
$16\omega_3^2\omega_4^2\omega_1^2\omega_2 + 78\omega_3^2v_2^4\omega_4^2\omega_1^3\omega_2^2 - 6\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2^3 - 18\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^2\omega_2^3 - 168\omega_3c_s^4\omega_4^2\omega_1\omega_2^3 - 88\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2 - 144\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^2 - 256\omega_3^2v_2^2\omega_4^2\omega_1\omega_2^3 +$
$108\omega_3^2c_s^4\omega_4\omega_1^2\omega_2^3 + 36\omega_3c_s^2\omega_4^2\omega_1^3\omega_2^2 + 6\omega_3^2v_1^2\omega_4^2\omega_1^2\omega_2^3 - 108c_s^4\omega_4^2\omega_1^2\omega_2^3 + 120\omega_3^2v_2^4\omega_4^2\omega_1^2\omega_2 - 118\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2^2 + 36\omega_3^2c_s^2v_2^2\omega_4\omega_1^2\omega_2^3 -$
$56\omega_3^2c_s^2v_2^2\omega_4^2\omega_1\omega_2^2 + 14\omega_3^2\omega_4^2\omega_1^3\omega_2^2 - 16\omega_3^2\omega_4^2\omega_2^3 + 9\omega_3c_s^2\omega_4^2\omega_1^3\omega_2^3 + 32\omega_3^2v_2^2\omega_4^2\omega_1\omega_2^2 + 18c_s^2v_2^2\omega_4^2\omega_1^3\omega_2^3 + 588\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^3)\frac{v_2}{72\omega_3^2\omega_4^2\omega_1^3\omega_2^3}$

coefficient $C^{(1)}_{\mathrm{D}_x\mathrm{D}_y^3 v_1}$ **at** $\frac{\partial^4 v_1}{\partial x_1 \partial x_2^3}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y^3 v_1} = (2 - \omega + v_2^2\omega + 3c_s^2\omega - 6c_s^2 - 2v_2^2)\frac{v_2 v_1 \rho}{12\omega}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^3 v_1} = (12v_2^2\omega_{10}^2\omega_5^3\omega_{21}\omega_9^2\omega_{12}^2 + 12c_s^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 + 36\omega_{10}^2\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 6v_2^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 - 12\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 +$
$24v_2^2\omega_{10}^2\omega_5^2\omega_{15}\omega_9^2\omega_{12}^2 - 12c_s^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 60c_s^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} - 12\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 - 24\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9\omega_{12} -$
$\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 - 12v_2^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 12v_2^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} + 24v_2^2\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9\omega_{12} - 24\omega_{10}^2\omega_5^2\omega_{15}\omega_9^2\omega_{12}^2 + 12c_s^2\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9^2\omega_{12}^2 +$
$48c_s^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 4v_2^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 + 6\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 + 24c_s^2\omega_{10}^2\omega_5^2\omega_{15}^2\omega_9^2\omega_{12} - 66\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 12\omega_{10}^2\omega_5^3\omega_{21}\omega_9^2\omega_{12}^2 -$
$36c_s^2\omega_{10}^2\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 66v_2^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 4\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 + 12\omega_{10}^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 - 24c_s^2\omega_{10}^2\omega_5^2\omega_{15}^2\omega_9^2\omega_{12}^2 + 36c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 +$
$12c_s^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 12\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} + 12\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 12v_2^2\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9\omega_{12}^2 + v_2^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 + 24\omega_{10}^2\omega_5^2\omega_{21}\omega_9^2\omega_{12}^2 -$
$24c_s^2\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9^2\omega_{12} + 84c_s^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 + 3c_s^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 + 12v_2^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 - 72c_s^2\omega_{10}^2\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 -$
$24v_2^2\omega_{10}^2\omega_5^2\omega_{21}\omega_9^2\omega_{12}^2 + 12\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9\omega_{12}^2 - 36v_2^2\omega_{10}^2\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 90c_s^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 12v_2^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 -$
$12v_2^2\omega_{10}^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 - 6\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 12\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9^2\omega_{12}^2 + 12\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} + 24c_s^2\omega_{10}^2\omega_5^2\omega_{15}\omega_9^2\omega_{12}^2 + 156c_s^2\omega_{10}^2\omega_5\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 +$
$24c_s^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^3 + 24c_s^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} - 12v_2^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 - 18c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 - 24c_s^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12}^2 + 24c_s^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9 -$
$24c_s^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 24\omega_{10}^2\omega_5^2\omega_{15}^2\omega_9^2\omega_{12} - 18v_2^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 24c_s^2\omega_{10}^2\omega_5^3\omega_{21}\omega_9^2\omega_{12}^2 + 18\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 -$
$24v_2^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 24c_s^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 24v_2^2\omega_{10}^2\omega_5^2\omega_{15}^2\omega_9\omega_{12} - 12\omega_{10}\omega_5\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 + 12v_2^2\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9^2\omega_{12}^2 +$
$12\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 12v_2^2\omega_{10}^2\omega_5\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 + 24c_s^2\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9\omega_{12}^2 - 66c_s^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 - 24v_2^2\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9^2\omega_{12} -$
$12v_2^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 12\omega_{10}^2\omega_5\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 - 12c_s^2\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9\omega_{12}^2 + 132c_s^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} + 6c_s^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 +$
$24\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 12v_2^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 + 12v_2^2\omega_{10}\omega_5\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 - 42c_s^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 - 24v_2^2\omega_{10}^2\omega_5^2\omega_{15}^2\omega_9^2\omega_{12}^2 -$
$24c_s^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2 + 24\omega_{10}^2\omega_5^2\omega_{15}^2\omega_9^2\omega_{12}^2 - 12c_s^2\omega_{10}^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 + 12c_s^2\omega_{10}\omega_5\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 - 12\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 - 18v_2^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 +$
$18\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 84c_s^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 48c_s^2\omega_{10}^2\omega_5^2\omega_{21}\omega_9^2\omega_{12}^2 + 12\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 - 96c_s^2\omega_{10}^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 +$
$24\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9^2\omega_{12} - 12v_2^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} + 6v_2^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 72c_s^2\omega_{10}^2\omega_5\omega_{21}\omega_{15}^2\omega_9^2\omega_{12})\frac{v_2 v_1 \rho}{12\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y^3 v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^3 v_1}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y^3 v_1} = (3\omega_{10} - 9c_s^2\omega_{10} - 3v_2^2\omega_{10} + v_2^2\omega_{10}\omega_{15} + 3c_s^2\omega_{15} - \omega_{15} - \omega_{10}\omega_{15} + 3c_s^2\omega_{10}\omega_{15} + v_2^2\omega_{15})\frac{v_2 v_1 \rho}{12\omega_{10}\omega_{15}}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y^3 v_1} = C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y^3 v_1}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y^3 v_1} = (-\omega_7\omega_5 + 3c_s^2\omega_7\omega_5 - 3v_2^2\omega_5 + v_2^2\omega_7\omega_5 - \omega_7 - 9c_s^2\omega_5 + v_2^2\omega_7 + 3c_s^2\omega_7 + 3\omega_5)\frac{v_2 v_1 \rho}{12\omega_7\omega_5}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y^3 v_1} = (4\omega_3 v_2^2\omega_4\omega_2 + 9\omega_4\omega_1\omega_2 - 27\omega_3 c_s^2\omega_1\omega_2 - 27c_s^2\omega_4\omega_1\omega_2 + 12\omega_3 c_s^2\omega_4\omega_1 + 6\omega_3 c_s^2\omega_4\omega_2 + 2\omega_3 v_2^2\omega_4\omega_1 + 6\omega_3 v_2^2\omega_4\omega_1\omega_2 -$
$9\omega_3 v_2^2\omega_1\omega_2 - 6\omega_3\omega_4\omega_1\omega_2 - 9v_2^2\omega_4\omega_1\omega_2 + 2\omega_3\omega_4\omega_2 + 18\omega_3 v_1^2\omega_4\omega_1 + 18\omega_3 c_s^2\omega_4\omega_1\omega_2 - 8\omega_3\omega_4\omega_1 - 18\omega_3 v_1^2\omega_4\omega_2 + 9\omega_3\omega_1\omega_2)\frac{v_2 v_1 \rho}{72\omega_3\omega_4\omega_1\omega_2}$

coefficient $C^{(1)}_{\mathrm{D}_x\mathrm{D}_y^3 v_2}$ **at** $\frac{\partial^4 v_2}{\partial x_1 \partial x_2^3}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y^3 v_2} = (-12 - 6\omega^2 + 18\omega + 2c_s^2\omega^2 - c_s^2\omega^3 + 18v_2^2\omega^2 - 54v_2^2\omega + 36v_2^2)\frac{c_s^2\rho}{12\omega^3}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^3 v_2} =$
$(-24c_s^2 v_1^2\omega_{10}^2\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12} - 12c_s^2 v_1^2\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9 + 12c_s^2 v_1^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} - 6v_1^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} - 12c_s^2 v_1^2\omega_{10}^2\omega_5^2\omega_{21}\omega_9\omega_{12} -$
$36c_s^2 v_2^2\omega_{10}^2\omega_5^2\omega_{15}\omega_9\omega_{12} + 36v_1^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 36c_s^2 v_2^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9 - 12v_1^2\omega_{10}^2\omega_5^2\omega_{15}\omega_9 + 18c_s^4\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} -$
$36v_2^2 v_1^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2 - 6c_s^2 v_1^2\omega_{10}^2\omega_5^3\omega_{15}\omega_9\omega_{12} - 6c_s^2 v_1^2\omega_{10}^2\omega_5^3\omega_{15}^2\omega_{12} - 12c_s^2\omega_{10}^2\omega_5^2\omega_{15}\omega_9\omega_{12} + 27v_2^2 v_1^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} +$
$12v_1^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2 - 12c_s^4\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9 - 24v_1^2\omega_{10}\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 6v_1^2\omega_{10}^2\omega_5^3\omega_{21}\omega_9\omega_{12} - 12c_s^4\omega_{10}\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 18v_2^2 v_1^2\omega_{10}^2\omega_5^3\omega_{15}\omega_9\omega_{12} +$
$36v_2^2 v_1^2\omega_{10}^2\omega_5^3\omega_{15}^2 + 6c_s^2\omega_{10}^2\omega_5^3\omega_{15}^2\omega_{12} + c_s^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 6v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 24v_1^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}\omega_{12} - 15c_s^2 v_2^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} +$
$36v_2^2 v_1^2\omega_{10}^2\omega_5^2\omega_{15}^2\omega_9 - 12v_1^2\omega_{10}^2\omega_5^2\omega_{15}\omega_9\omega_{12} + 12c_s^4\omega_{10}^2\omega_5^2\omega_{15}\omega_9\omega_{12} + 36v_2^2 v_1^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} + 48c_s^2 v_1^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} -$
$12v_1^2\omega_{10}^2\omega_5^3\omega_{15}^2 + 12c_s^2\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9 - 36v_2^2 v_1^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} - 36v_2^2 v_1^2\omega_{10}^2\omega_5^2\omega_{21}\omega_9\omega_{12} - 6c_s^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} - 6c_s^4\omega_{10}^2\omega_5^3\omega_{15}^2\omega_{12} +$
$9c_s^2 v_1^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 18c_s^4\omega_{10}^2\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 12c_s^4\omega_{10}^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 36v_2^2 v_1^2\omega_{10}^2\omega_5^2\omega_{15}\omega_9\omega_{12} - 12v_1^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} +$
$12v_1^2\omega_{10}^2\omega_5^2\omega_{21}\omega_9\omega_{12} - 18c_s^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 144v_2^2 v_1^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} - 12c_s^2 v_1^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} + 18v_2^2 v_1^2\omega_{10}^2\omega_5^3\omega_{21}\omega_9\omega_{12} -$
$36c_s^2 v_2^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2 + 6v_1^2\omega_{10}^2\omega_5^3\omega_{15}\omega_9\omega_{12} - 102c_s^2 v_2^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} - 72v_2^2 v_1^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}\omega_{12} - 18v_2^2 v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} -$
$6c_s^4\omega_{10}^2\omega_5^3\omega_{15}\omega_9\omega_{12} - 72v_2^2 v_1^2\omega_{10}^2\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12} + 18c_s^2 v_2^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} + 18c_s^2 v_2^2\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9\omega_{12} + 15v_1^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} +$
$6c_s^4\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} + 12c_s^2 v_1^2\omega_{10}^2\omega_5^3\omega_{15}^2 + 6c_s^2 v_1^2\omega_{10}^2\omega_5^3\omega_{21}\omega_9\omega_{12} + 36c_s^2 v_2^2\omega_{10}^2\omega_5^2\omega_{15}^2\omega_9 - 24c_s^2 v_1^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}\omega_{12} - 6c_s^2 v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} +$
$60c_s^2 v_2^2\omega_{10}^2\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12} - 5c_s^4\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 6c_s^2\omega_{10}^2\omega_5^3\omega_{15}\omega_9\omega_{12} + 12c_s^2 v_1^2\omega_{10}^2\omega_5^2\omega_{15}\omega_9\omega_{12} + 36c_s^2 v_2^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9 +$
$12c_s^2\omega_{10}\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 12c_s^2\omega_{10}^2\omega_5^3\omega_{15}^2 - 12c_s^2 v_1^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2 - 12c_s^2\omega_{10}^2\omega_5^2\omega_{15}^2\omega_9 - 18v_2^2 v_1^2\omega_{10}^2\omega_5^3\omega_{15}^2\omega_{12} + 36v_2^2 v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} +$
$30c_s^2 v_2^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} - 45v_2^2 v_1^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} - 36v_2^2 v_1^2\omega_{10}^2\omega_5^2\omega_{15}^2\omega_9\omega_{12} + 36c_s^2 v_2^2\omega_{10}^2\omega_5^3\omega_{15}^2 + 24v_1^2\omega_{10}^2\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12} +$
$72v_2^2 v_1^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} + 6c_s^2 v_1^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} + 12c_s^4\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9 + 12c_s^4\omega_{10}^2\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12} - 12v_1^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9 +$
$6c_s^4\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} - 6v_1^2\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9\omega_{12} - 15c_s^2 v_2^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 6v_1^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} + 6c_s^4\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9\omega_{12} + 12c_s^4\omega_{10}^2\omega_5^2\omega_{15}^2\omega_9 +$
$5c_s^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 36v_2^2 v_1^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9 - 36v_2^2 v_1^2\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9 - 36c_s^2 v_1^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 12c_s^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9 -$
$12c_s^4\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2 + 12v_1^2 v_1^2\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9 + 60c_s^2 v_2^2\omega_{10}^2\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 12c_s^2 v_1^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9 - c_s^4\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} +$
$24c_s^2 v_1^2\omega_{10}\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 18c_s^2 v_2^2\omega_{10}^2\omega_5^3\omega_{15}\omega_9\omega_{12} - 48c_s^2 v_2^2\omega_{10}^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 12c_s^2 v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 12c_s^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2 +$
$12c_s^2 v_1^2\omega_{10}^2\omega_5^2\omega_{15}^2\omega_9 - 48v_1^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} - 12c_s^2 v_1^2\omega_{10}^2\omega_5^2\omega_{15}^2\omega_9\omega_{12} + 24c_s^2 v_1^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} - 6c_s^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} +$
$24c_s^2 v_2^2\omega_{10}^2\omega_5^2\omega_{21}\omega_9\omega_{12} + 6v_1^2\omega_{10}^2\omega_5^3\omega_{15}^2\omega_{12} - 18c_s^4\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} - 6c_s^2\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9\omega_{12} + 36c_s^2 v_2^2\omega_{10}^2\omega_5^2\omega_{15}\omega_9\omega_{12} -$
$36c_s^2 v_2^2\omega_{10}\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 18c_s^2 v_2^2\omega_{10}^2\omega_5^3\omega_{15}^2\omega_{12} + 72v_2^2 v_1^2\omega_{10}\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 9v_1^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 12c_s^2 v_1^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9 +$

$12c_s^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9 - 5c_s^4\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 12c_s^2v_2^2\omega_{10}^2\omega_5^3\omega_{21}\omega_9\omega_{12} + 12c_s^2\omega_{10}^2\omega_5^2\omega_{15}^2\omega_9\omega_{12} - 12c_s^2\omega_{10}^2\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12} +$
$6c_s^2v_1^2\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9\omega_{12} - 6c_s^2v_1^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} - 36c_s^2v_2^2\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9 + 12v_1^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} - 12c_s^4\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9 +$
$12v_1^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9 + 18v_2^2v_1^2\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9\omega_{12} + 18c_s^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} - 18v_2^2v_1^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} - 15c_s^2v_1^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} +$
$18v_2^2v_1^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} - 12v_1^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 54c_s^2v_2^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 12c_s^4\omega_{10}^2\omega_5^3\omega_{15}^2 - 108v_2^2v_1^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} +$
$36v_2^2v_1^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9 + 12v_1^2\omega_{10}^2\omega_5^2\omega_{15}^2\omega_9\omega_{12} - 12c_s^4\omega_{10}^2\omega_5^2\omega_{15}^2\omega_9\omega_{12} - 24v_1^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_{12})\frac{\rho}{12\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y^3 v_2} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^3 v_2}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y^3 v_2} =$
$(6\omega_{10}\omega_5^3\omega_{15}\omega_{12} - 36v_2^2\omega_{10}\omega_5^3\omega_{15}\omega_9 + 12c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9 + 6c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} + 18c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} - 18v_2^2\omega_{10}\omega_5^3\omega_{15}\omega_{12} + 12\omega_{10}\omega_5^3\omega_{15}\omega_9 -$
$12c_s^2\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12} - 12c_s^2\omega_{10}\omega_5^2\omega_{15}\omega_9\omega_{12} - 36v_2^2\omega_5^2\omega_{21}\omega_{15}\omega_9 - 6c_s^2\omega_{10}\omega_5^3\omega_9\omega_{12} + 12\omega_5^2\omega_{21}\omega_{15}\omega_9 + 6c_s^2\omega_{10}\omega_5^3\omega_{21}\omega_9\omega_{12} + 6c_s^2\omega_{10}\omega_5^3\omega_{15}\omega_9\omega_{12} -$
$6\omega_5^3\omega_{21}\omega_{15}\omega_{12} + 36v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_9 + 12\omega_5^3\omega_{21}\omega_{15} - 12c_s^2\omega_{10}\omega_5^3\omega_{15}\omega_9 - 15v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} + 36v_2^2\omega_{10}\omega_5\omega_{21}\omega_9\omega_{12} - 18c_s^2\omega_{10}\omega_5^2\omega_{21}\omega_9\omega_{12} -$
$6c_s^2\omega_{10}\omega_5^3\omega_{15}\omega_{12} - c_s^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} + 18v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} - 12\omega_5^3\omega_{21}\omega_{15}\omega_9 - 12c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_9 - 12c_s^2\omega_5^3\omega_{21}\omega_{15} + 6\omega_{10}\omega_5^3\omega_9\omega_{12} +$
$36v_2^2\omega_{10}\omega_5^3\omega_{15} - 12\omega_{10}\omega_5\omega_{21}\omega_9\omega_{12} + 5\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} - 18v_2^2\omega_{10}\omega_5^3\omega_9\omega_{12} + 12\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12} - 5c_s^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} + 12c_s^2\omega_{10}\omega_5^2\omega_9\omega_{12} +$
$54v_2^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} + 12\omega_{10}\omega_5^2\omega_{15}\omega_9\omega_{12} - 12c_s^2\omega_{10}\omega_{21}\omega_{15}\omega_9\omega_{12} - 6\omega_{10}\omega_5^3\omega_{21}\omega_9\omega_{12} + 18v_2^2\omega_{10}\omega_5^3\omega_{21}\omega_9\omega_{12} - 12\omega_{10}\omega_5^2\omega_{15}\omega_9 -$
$18\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} + 36v_2^2\omega_{10}\omega_5^2\omega_{15}\omega_9 + 18c_s^2\omega_{10}\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12} - 3v_2^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} - 36v_2^2\omega_{10}\omega_5^2\omega_{15}\omega_9\omega_{12} - 36v_2^2\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12} +$
$12c_s^2\omega_{10}\omega_5^3\omega_{15} - 36v_2^2\omega_5^3\omega_{21}\omega_{15} + \omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} + 36v_2^2\omega_{10}\omega_5^2\omega_9\omega_{12} - 5c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} + 12c_s^2\omega_{10}\omega_5\omega_{21}\omega_9\omega_{12} - 54v_2^2\omega_{10}\omega_5^2\omega_{21}\omega_9\omega_{12} -$
$12\omega_{10}\omega_5^2\omega_9\omega_{12} + 18v_2^2\omega_{10}\omega_5^3\omega_{15}\omega_9\omega_{12} - 6\omega_{10}\omega_5^3\omega_{15}\omega_9\omega_{12} - 12\omega_{10}\omega_5^3\omega_{15} + 18\omega_{10}\omega_5^2\omega_{21}\omega_9\omega_{12} + 12c_s^2\omega_{10}\omega_5^2\omega_{15}\omega_9)\frac{c_s^2\rho}{12\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y^3 v_2} = C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y^3 v_2}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y^3 v_2} = (-6\omega_1^3\omega_5 - 3v_2^2\omega_7\omega_1^2\omega_5 - 54v_2^2\omega_1^2\omega_5 - 12c_s^2\omega_7\omega_5 + 6c_s^2\omega_1^3\omega_5 - 18c_s^2\omega_1^2\omega_5 + 18v_2^2\omega_1^3\omega_5 + 18c_s^2\omega_7\omega_1\omega_5 + 18\omega_1^2\omega_5 + 6\omega_1^3 -$
$12\omega_1^2 + \omega_7\omega_1^2\omega_5 + 12c_s^2\omega_1^2 - 12c_s^2\omega_7\omega_1 - 18v_2^2\omega_1^3 + 3v_2^2\omega_7\omega_1^3 + 12\omega_7\omega_1 + 12c_s^2\omega_1\omega_5 + 18v_2^2\omega_7\omega_1^2 - 5c_s^2\omega_7\omega_1^2\omega_5 + 36v_2^2\omega_1^2 - 6c_s^2\omega_1^3 - 12\omega_1\omega_5 -$
$\omega_7\omega_1^3 - 36v_2^2\omega_7\omega_1 + c_s^2\omega_7\omega_1^3 - 6\omega_7\omega_1^2 + 36v_2^2\omega_1\omega_5 - c_s^2\omega_7\omega_1^3\omega_5 + 6c_s^2\omega_7\omega_1^2)\frac{c_s^2\rho}{12\omega_7\omega_1^3\omega_5}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y^3 v_2} = (12\omega_3v_2^2\omega_4\omega_1\omega_2^2 + 94\omega_3c_s^4\omega_4\omega_1\omega_2^3 - 4\omega_3\omega_4\omega_1\omega_2^2 + 40\omega_3c_s^2\omega_4\omega_2^3 + 8c_s^4\omega_4\omega_1^3\omega_2 - 18c_s^4\omega_4\omega_1^2\omega_2^3 + 3\omega_3c_s^2v_1^2\omega_4\omega_1^3\omega_2^2 -$
$264\omega_3v_2^4\omega_4\omega_2^3 - 24\omega_3c_s^2\omega_4\omega_1^3\omega_2^2 + 192\omega_3v_2^4\omega_4\omega_1^2\omega_2 - 54c_s^2v_2^2\omega_4\omega_1^3\omega_2^2 + \omega_3v_1^2\omega_4\omega_1^2\omega_2^3 + 14\omega_3\omega_4\omega_1\omega_2^3 - 28\omega_3c_s^4\omega_4\omega_1\omega_2^2 - 222\omega_3v_2^2\omega_4\omega_1\omega_2^3 +$
$16\omega_3c_s^4\omega_4\omega_1^3 + 27c_s^2v_2^2\omega_4\omega_1^3\omega_2^3 - 16\omega_3c_s^2\omega_4\omega_1^2\omega_2 + 27\omega_3c_s^2v_2^2\omega_1^3\omega_2^3 + 138\omega_3v_2^4\omega_4\omega_1^3\omega_2^2 + 20c_s^4\omega_4\omega_1^2\omega_2^2 - 60\omega_3v_2^2\omega_4\omega_1^3 + 36\omega_3c_s^4\omega_1\omega_2^3 -$
$6\omega_3c_s^2\omega_4\omega_1^2\omega_2^2 - 138\omega_3v_2^4\omega_4\omega_1^2\omega_2^3 + 60c_s^2v_2^2\omega_4\omega_1^2\omega_2^2 - 240\omega_3v_2^4\omega_4\omega_1^3\omega_2 - 60\omega_3c_s^2v_2^2\omega_4\omega_1\omega_2^2 - 68\omega_3c_s^4\omega_4\omega_2^3 + 9c_s^4\omega_4\omega_1^3\omega_2^3 - \omega_3v_1^2\omega_4\omega_1^3\omega_2^2 +$
$144\omega_3v_2^2\omega_4\omega_2^3 - 3\omega_3c_s^2v_1^2\omega_4\omega_1^2\omega_2^3 - 18c_s^4\omega_4\omega_1^3\omega_2^2 + 42\omega_3c_s^2\omega_4\omega_1^3\omega_2 + 432\omega_3c_s^2v_2^2\omega_4\omega_1\omega_2^3 - 54c_s^2v_2^2\omega_4\omega_1^2\omega_2^3 - 20\omega_3c_s^2\omega_4\omega_1^3 + 24c_s^2v_2^2\omega_4\omega_1^3\omega_2 -$
$168\omega_3v_2^4\omega_4\omega_1^2\omega_2^2 + 24\omega_3c_s^2\omega_4\omega_1^2\omega_2^3 - 108\omega_3c_s^2v_2^2\omega_1^2\omega_2^3 - 8c_s^2\omega_4\omega_1\omega_2^3 - 36\omega_3c_s^2\omega_1\omega_2^3 + 96\omega_3v_2^4\omega_4\omega_1^3 + 9\omega_3c_s^4\omega_1^3\omega_2^3 + 108\omega_3c_s^2v_2^2\omega_1\omega_2^3 -$
$24\omega_3v_2^4\omega_4\omega_1\omega_2^2 - 288\omega_3c_s^2v_2^2\omega_4\omega_1^3\omega_2 - 54\omega_3c_s^2\omega_4\omega_1\omega_2^3 - 153\omega_3c_s^2v_2^2\omega_4\omega_1^2\omega_2^3 + 24c_s^2v_2^2\omega_4\omega_1\omega_2^3 + 17\omega_3c_s^4\omega_4\omega_1^3\omega_2^2 + 8\omega_3\omega_4\omega_1^2\omega_2 - 96\omega_3v_2^2\omega_4\omega_1^2\omega_2 +$
$144\omega_3c_s^2v_2^2\omega_4\omega_1^3 - 8c_s^2\omega_4\omega_1^3\omega_2 + 18c_s^2\omega_4\omega_1^2\omega_2^3 + 36\omega_3c_s^2\omega_1^2\omega_2^3 - 90\omega_3c_s^2v_2^2\omega_4\omega_1^2\omega_2^2 + 32\omega_3c_s^2\omega_4\omega_1\omega_2^2 + 408\omega_3v_2^4\omega_4\omega_1\omega_2^3 - \omega_3v_1^4\omega_4\omega_1^2\omega_2^3 -$
$20c_s^2\omega_4\omega_1^2\omega_2^2 + 8\omega_3c_s^4\omega_4\omega_1^2\omega_2 + 7\omega_3\omega_4\omega_1^3\omega_2^2 + 4\omega_3\omega_4\omega_1^3 - 81\omega_3v_2^2\omega_4\omega_1^3\omega_2^2 - 3\omega_3c_s^4\omega_4\omega_1^3\omega_2^3 - 9c_s^2\omega_4\omega_1^3\omega_2^3 - 9\omega_3c_s^2\omega_1^3\omega_2^3 - 10\omega_3\omega_4\omega_1^3\omega_2 +$
$10\omega_3c_s^4\omega_4\omega_1^2\omega_2^2 + 81\omega_3v_2^2\omega_4\omega_1^2\omega_2^3 + 138\omega_3v_2^2\omega_4\omega_1^3\omega_2 - 7\omega_3\omega_4\omega_1^2\omega_2^3 + 120\omega_3c_s^2v_2^2\omega_4\omega_1^2\omega_2 - 36\omega_3c_s^4\omega_1^2\omega_2^3 + \omega_3v_1^4\omega_4\omega_1^3\omega_2^2 - 8\omega_3\omega_4\omega_2^3 - 4\omega_3\omega_4\omega_1^2\omega_2^2 -$
$32\omega_3c_s^4\omega_4\omega_1^3\omega_2 + 84\omega_3v_2^2\omega_4\omega_1^2\omega_2^2 - 29\omega_3c_s^4\omega_4\omega_1^2\omega_2^3 + 18c_s^2\omega_4\omega_1^3\omega_2^2 + 8c_s^4\omega_4\omega_1\omega_2^3 + 153\omega_3c_s^2v_2^2\omega_4\omega_1^3\omega_2^2 - 312\omega_3c_s^2v_2^2\omega_4\omega_2^3)\frac{\rho}{36\omega_3\omega_4\omega_1^3\omega_2^3}$

coefficient $C^{(1)}_{\mathrm{D}_y^4\rho}$ at $\frac{\partial^4\rho}{\partial x_2^4}$:

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_y^4\rho} = (24c_s^2v_2^2 + 6v_2^4 + 2c_s^4 - c_s^4\omega - 3v_2^4\omega + 3v_2^2\omega - 12c_s^2v_2^2\omega + c_s^2\omega - 2c_s^2 - 6v_2^2)\frac{v_1}{24\omega}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y^4\rho} = (-48v_2^4\omega_{10}^2\omega_{15} - 3v_2^4\omega_{10}^2\omega_5^2\omega_{15}^2 + 48c_s^2\omega_{10}\omega_5\omega_{15}^2 - 72v_2^2\omega_5\omega_{15}^2 - 96v_2^2\omega_{10}^2\omega_5\omega_{15} + 24c_s^4\omega_5\omega_{15}^2 + 24c_s^2\omega_{10}^2\omega_{15} +$
$150c_s^2v_2^2\omega_{10}\omega_5^2\omega_{15}^2 - 96v_2^4\omega_{10}\omega_5\omega_{15}^2 + c_s^2\omega_{10}^2\omega_5^2\omega_{15}^2 + 288c_s^2v_2^2\omega_5\omega_{15}^2 + 48c_s^4\omega_{10}^2\omega_5\omega_{15} - 24v_2^2\omega_{10}\omega_5^2\omega_{15} + 432c_s^2v_2^2\omega_{10}^2\omega_5\omega_{15} + 72v_2^4\omega_5\omega_{15}^2 +$
$48v_2^2\omega_{10}^2\omega_{15} - 36v_2^2\omega_{10}\omega_5^2\omega_{15}^2 - 48v_2^4\omega_{10}\omega_5\omega_{15} + 12c_s^2\omega_{10}^2\omega_5^2\omega_{15} - 24c_s^4\omega_{10}^2\omega_{15} - 24c_s^2\omega_5\omega_{15}^2 + 14c_s^4\omega_{10}\omega_5^2\omega_{15}^2 - 216c_s^2v_2^2\omega_{10}^2\omega_{15} +$
$72c_s^2v_2^2\omega_{10}\omega_5^2\omega_{15} - 30v_2^4\omega_{10}^2\omega_5^2\omega_{15} + 3v_2^2\omega_{10}^2\omega_5^2\omega_{15}^2 - 12v_2^2\omega_{10}^2\omega_5^2 - 48c_s^4\omega_{10}\omega_5\omega_{15}^2 - 144c_s^2v_2^2\omega_{10}\omega_5\omega_{15} - 24c_s^2\omega_{10}\omega_{15}^2 + 12c_s^4\omega_{10}^2\omega_5^2 +$
$96v_2^4\omega_{10}^2\omega_5\omega_{15} + 48v_2^4\omega_{10}\omega_{15}^2 - 126c_s^2v_2^2\omega_{10}^2\omega_5^2\omega_{15} + 24c_s^2\omega_{10}^2\omega_5 + 96v_2^2\omega_{10}\omega_5\omega_{15}^2 - 36v_2^4\omega_5^2\omega_{15}^2 + 72c_s^2v_2^2\omega_{10}^2\omega_5^2 - c_s^4\omega_{10}^2\omega_5^2\omega_{15}^2 -$
$48c_s^2\omega_{10}^2\omega_5\omega_{15} - 24v_2^4\omega_{10}^2\omega_5 + 24v_2^4\omega_{10}\omega_5^2\omega_{15} + 12c_s^2\omega_5^2\omega_{15}^2 - 144c_s^2v_2^2\omega_5^2\omega_{15}^2 + 12v_2^4\omega_{10}^2\omega_5^2 + 36v_2^4\omega_{10}\omega_5^2\omega_{15}^2 + 24c_s^4\omega_{10}\omega_{15}^2 -$
$12c_s^2v_2^2\omega_{10}^2\omega_5^2\omega_{15}^2 - 12c_s^2\omega_{10}^2\omega_5^2 - 48v_2^2\omega_{10}\omega_{15}^2 + 48v_2^2\omega_{10}\omega_5\omega_{15} - 12c_s^4\omega_{10}^2\omega_5^2\omega_{15} - 144c_s^2v_2^2\omega_{10}^2\omega_5 - 24c_s^4\omega_{10}^2\omega_5 - 14c_s^2\omega_{10}\omega_5^2\omega_{15}^2 +$
$36v_2^2\omega_5^2\omega_{15}^2 + 30v_2^2\omega_{10}^2\omega_5^2\omega_{15} + 216c_s^2v_2^2\omega_{10}\omega_{15}^2 + 24v_2^2\omega_{10}^2\omega_5 - 432c_s^2v_2^2\omega_{10}\omega_5\omega_{15}^2 - 12c_s^4\omega_5^2\omega_{15}^2)\frac{v_1}{24\omega_{10}^2\omega_5^2\omega_{15}^2}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_y^4\rho} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y^4\rho}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_y^4\rho} = (24c_s^2v_2^2 - 3v_2^4\omega_{10} - c_s^4\omega_{10} + 6v_2^4 + 2c_s^4 + c_s^2\omega_{10} + 3v_2^2\omega_{10} - 12c_s^2v_2^2\omega_{10} - 2c_s^2 - 6v_2^2)\frac{v_1}{24\omega_{10}}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_y^4\rho} = C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_y^4\rho}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}^4_y\rho} = (24c_s^2v_2^2 + 6v_2^4 + 2c_s^4 + 3v_2^2\omega_5 - 12c_s^2v_2^2\omega_5 + c_s^2\omega_5 - c_s^4\omega_5 - 3v_2^4\omega_5 - 2c_s^2 - 6v_2^2)\frac{v_1}{24\omega_5}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}^4_y\rho} = (9v_2^2\omega_1\omega_2 - 3c_s^4\omega_1\omega_2 + 12v_2^4\omega_2 - 36c_s^2v_2^2\omega_1\omega_2 + 4c_s^4\omega_2 - 9v_2^4\omega_1\omega_2 + 2c_s^4\omega_1 + 3c_s^2\omega_1\omega_2 + 6v_2^4\omega_1 - 4c_s^2\omega_2 + 48c_s^2v_2^2\omega_2 - 12v_2^2\omega_2 + 24c_s^2v_2^2\omega_1 - 6v_2^2\omega_1 - 2c_s^2\omega_1)\frac{v_1}{72\omega_1\omega_2}$

coefficient $C^{(1)}_{\mathrm{D}^4_y v_1}$ **at** $\frac{\partial^4 v_1}{\partial x_2^4}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}^4_y v_1} = (-144c_s^2v_2^2 - 3c_s^4\omega^3 - 42v_2^4\omega^2 - 72v_2^4 + 3v_2^4\omega^3 + 30c_s^4\omega^2 + 48c_s^4 - 72c_s^4\omega + 108v_2^4\omega + 6c_s^2v_2^2\omega^3 - 3v_2^2\omega^3 - 14c_s^2\omega^2 - 84c_s^2v_2^2\omega^2 + c_s^2\omega^3 + 42v_2^2\omega^2 - 108v_2^2\omega + 216c_s^2v_2^2\omega + 36c_s^2\omega - 24c_s^2 + 72v_2^2)\frac{\rho}{24\omega^3}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}^4_y v_1} = (24c_s^4\omega_{15}^2 + 12c_s^2v_2^2\omega_5^3 - 24v_2^2\omega_5\omega_{15}^2 - 48c_s^4\omega_5\omega_{15}^2 - 12v_2^2\omega_5^3 - 24c_s^2v_2^2\omega_5^2 + 156c_s^2v_2^2\omega_5\omega_{15}^2 - 24c_s^2\omega_5\omega_{15} + 24v_2^2\omega_5^2 - 48v_2^4\omega_5\omega_{15} + 24v_2^4\omega_5\omega_{15}^2 - 24c_s^2v_2^2\omega_5\omega_{15} + 12c_s^2\omega_5\omega_{15}^2 + 24c_s^4\omega_5\omega_{15} + 48v_2^2\omega_5\omega_{15} - 18v_2^4\omega_5^3\omega_{15} - 24c_s^4\omega_5^2\omega_{15} - 6c_s^2\omega_5^3\omega_{15} - 24v_2^4\omega_5^2 - 72v_2^2\omega_5^2\omega_{15} + 6c_s^2v_2^2\omega_5^3\omega_{15}^2 - 96c_s^2v_2^2\omega_{15}^2 - 3c_s^4\omega_5^3\omega_{15}^2 - 24v_2^4\omega_5^2\omega_{15}^2 - 3v_2^2\omega_5^3\omega_{15}^2 + 48c_s^2v_2^2\omega_5^2\omega_{15} - 8c_s^2\omega_5^2\omega_{15}^2 + 12v_2^4\omega_5^3 + 18v_2^2\omega_5^3\omega_{15} - 72c_s^2v_2^2\omega_5^2\omega_{15}^2 + 24c_s^2\omega_5^2\omega_{15} + 6c_s^4\omega_5^3\omega_{15} + 72v_2^4\omega_5^2\omega_{15} + c_s^2\omega_5^3\omega_{15}^2 + 24v_2^2\omega_5^2\omega_{15}^2 - 12c_s^2v_2^2\omega_5^3\omega_{15} + 3v_2^4\omega_5^3\omega_{15}^2 + 24c_s^4\omega_5^2\omega_{15}^2)\frac{\rho}{24\omega_5^3\omega_{15}^2}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}^4_y v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}^4_y v_1}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}^4_y v_1} = (24c_s^4\omega_{15}^2 + 108c_s^2v_2^2\omega_5^3 - 48c_s^4\omega_5\omega_{15}^2 - 36v_2^2\omega_5^3 - 216c_s^2v_2^2\omega_5^2 - 36c_s^2v_2^2\omega_5\omega_{15}^2 - 24c_s^2\omega_5\omega_{15} + 72v_2^2\omega_5^2 + 72c_s^2v_2^2\omega_5\omega_{15} + 12c_s^2\omega_5\omega_{15}^2 + 24c_s^4\omega_5\omega_{15} - 30v_2^4\omega_5^3\omega_{15} - 24c_s^4\omega_5^2\omega_{15} - 6c_s^2\omega_5^3\omega_{15} - 72v_2^4\omega_5^2 - 72v_2^2\omega_5^2\omega_{15} + 6c_s^2v_2^2\omega_5^3\omega_{15}^2 - 3c_s^4\omega_5^3\omega_{15}^2 - 12v_2^4\omega_5^2\omega_{15}^2 - 3v_2^2\omega_5^3\omega_{15}^2 + 144c_s^2v_2^2\omega_5^2\omega_{15} - 8c_s^2\omega_5^2\omega_{15}^2 + 36v_2^4\omega_5^3 + 30v_2^2\omega_5^3\omega_{15} - 12c_s^2v_2^2\omega_5^2\omega_{15}^2 + 24c_s^2\omega_5^2\omega_{15} + 6c_s^4\omega_5^3\omega_{15} + 72v_2^4\omega_5^2\omega_{15} + c_s^2\omega_5^3\omega_{15}^2 + 12v_2^2\omega_5^2\omega_{15}^2 - 72c_s^2v_2^2\omega_5^3\omega_{15} + 3v_2^4\omega_5^3\omega_{15}^2 + 24c_s^4\omega_5^2\omega_{15}^2)\frac{\rho}{24\omega_5^3\omega_{15}^2}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}^4_y v_1} = C^{(1),\mathrm{CLBM1}}_{\mathrm{D}^4_y v_1}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}^4_y v_1} = (-12v_2^4\omega_7^2\omega_1^2 - 72v_2^4\omega_1^2 - 8c_s^2\omega_7^2\omega_1^2 - 36c_s^2v_2^2\omega_7^2\omega_1 + 36v_2^4\omega_1^3 - 48c_s^4\omega_7^2\omega_1 + 3v_2^4\omega_7^2\omega_1^3 + c_s^2\omega_7^2\omega_1^3 + 12v_2^2\omega_7^2\omega_1^2 + 6c_s^2v_2^2\omega_7^2\omega_1^3 + 24c_s^4\omega_7^2\omega_1^2 + 12c_s^2\omega_7^2\omega_1 - 12c_s^2v_2^2\omega_7^2\omega_1^2 - 3v_2^2\omega_7^2\omega_1^3 - 3c_s^4\omega_7^2\omega_1^3 + 24c_s^4\omega_7^2 - 24c_s^2\omega_7\omega_1 - 36v_2^2\omega_1^3 + 30v_2^2\omega_7\omega_1^3 + 144c_s^2v_2^2\omega_7\omega_1^2 + 108c_s^2v_2^2\omega_1^3 + 6c_s^4\omega_7\omega_1^3 - 72c_s^2v_2^2\omega_7\omega_1^3 - 72v_2^2\omega_7\omega_1^2 + 72v_2^2\omega_1^2 - 24c_s^4\omega_7\omega_1^2 - 216c_s^2v_2^2\omega_1^2 + 24c_s^4\omega_7\omega_1 - 30v_2^4\omega_7\omega_1^3 - 6c_s^2\omega_7\omega_1^3 + 72v_2^4\omega_7\omega_1^2 + 24c_s^2\omega_7\omega_1^2 + 72c_s^2v_2^2\omega_7\omega_1)\frac{\rho}{24\omega_7^2\omega_1^3}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}^4_y v_1} = (3\omega_3^2v_2^4\omega_4^2\omega_1^3 - 48\omega_3^2c_s^4\omega_4^2\omega_1 - 36\omega_3^2c_s^2v_2^2\omega_4^2\omega_1 + \omega_3^2c_s^2\omega_4^2\omega_1^3 + 36\omega_3v_2^2\omega_4\omega_1^2 + 36\omega_3c_s^2v_2^2\omega_4^2\omega_1 - 12\omega_3^2v_2^4\omega_4^2\omega_1^2 - 18\omega_3v_2^2\omega_4\omega_1^3 - 8\omega_3^2c_s^2\omega_4^2\omega_1^2 - 3\omega_3^2v_2^2\omega_4^2\omega_1^3 + 12\omega_3^2c_s^2\omega_4^2\omega_1 + 6\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^3 - 36\omega_3v_2^4\omega_4\omega_1^2 - 3\omega_3^2c_s^4\omega_4^2\omega_1^3 + 72\omega_3c_s^2v_2^2\omega_4^2\omega_1^2 + 9\omega_3^2v_2^4\omega_1^3 - 54\omega_3^2c_s^2v_2^2\omega_1^2 - 12\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^2 + 12\omega_3^2v_2^2\omega_4^2\omega_1^2 + 24\omega_3^2c_s^4\omega_4^2 + 27\omega_3^2c_s^2v_2^2\omega_1^3 - 18\omega_3^2v_2^4\omega_1^2 - 36\omega_3c_s^2v_2^2\omega_4^2\omega_1^3 + 24\omega_3^2c_s^4\omega_4^2\omega_1^2 + 18\omega_3v_2^4\omega_4\omega_1^3 + 72\omega_3^2c_s^2v_2^2\omega_4\omega_1^2 + 18v_2^2\omega_4^2\omega_1^2 - 36\omega_3^2v_2^2\omega_4\omega_1^2 - 3\omega_3c_s^2\omega_4^2\omega_1^3 + 27c_s^2v_2^2\omega_4^2\omega_1^3 + 12\omega_3c_s^4\omega_4^2\omega_1 + 54\omega_3c_s^2v_2^2\omega_4\omega_1^3 - 12\omega_3^2c_s^4\omega_4\omega_1^2 - 15\omega_3v_2^4\omega_4^2\omega_1^3 + 12\omega_3c_s^2\omega_4^2\omega_1^2 + 15\omega_3^2v_2^2\omega_4\omega_1^3 - 54c_s^2v_2^2\omega_4^2\omega_1^2 - 9v_2^2\omega_4^2\omega_1^3 - 36\omega_3^2c_s^2v_2^2\omega_4\omega_1^3 - 12\omega_3^2c_s^2\omega_4\omega_1 + 36\omega_3v_2^4\omega_4^2\omega_1^2 + 3\omega_3^2c_s^4\omega_4\omega_1^3 - 108\omega_3c_s^2v_2^2\omega_4\omega_1^2 + 3\omega_3c_s^4\omega_4^2\omega_1^3 + 36\omega_3^2v_2^4\omega_4\omega_1^2 - 18v_2^4\omega_4^2\omega_1^2 - 12\omega_3c_s^2\omega_4^2\omega_1 + 18\omega_3^2v_2^2\omega_1^2 + 15\omega_3v_2^2\omega_4^2\omega_1^3 + 12\omega_3^2c_s^2\omega_4\omega_1^2 + 9v_2^4\omega_4^2\omega_1^3 - 15\omega_3^2v_2^2\omega_4\omega_1^3 - 12\omega_3c_s^4\omega_4^2\omega_1^2 + 12\omega_3^2c_s^4\omega_4\omega_1 - 3\omega_3^2c_s^2\omega_4\omega_1^3 - 36\omega_3v_2^2\omega_4^2\omega_1^2 + 36\omega_3^2c_s^2v_2^2\omega_4\omega_1 - 9\omega_3^2v_2^2\omega_1^3)\frac{\rho}{24\omega_3^2\omega_4^2\omega_1^3}$

coefficient $C^{(1)}_{\mathrm{D}^4_y v_2}$ **at** $\frac{\partial^4 v_2}{\partial x_2^4}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}^4_y v_2} = (-4 + 2\omega - 5v_2^2\omega - 3c_s^2\omega + 6c_s^2 + 10v_2^2)\frac{v_2v_1\rho}{12\omega}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}^4_y v_2} = (36\omega_{10}^2\omega_{15} + 2\omega_{10}^2\omega_5^2\omega_{15}^2 - 120c_s^2\omega_{10}\omega_5\omega_{15}^2 + 120v_2^2\omega_5\omega_{15}^2 + 168v_2^2\omega_{10}^2\omega_5\omega_{15} - 60c_s^2\omega_{10}^2\omega_{15} - 3c_s^2\omega_{10}^2\omega_5^2\omega_{15}^2 + 72\omega_{10}\omega_5\omega_{15}^2 + 36v_2^2\omega_{10}\omega_5^2\omega_{15} - 48\omega_5\omega_{15}^2 - 84v_2^2\omega_{10}^2\omega_{15} + 61v_2^2\omega_{10}\omega_5^2\omega_{15}^2 + 24\omega_{10}\omega_5\omega_{15} - 33c_s^2\omega_{10}^2\omega_5^2\omega_{15} + 72c_s^2\omega_5\omega_{15}^2 - 24c_s^2\omega_{10}\omega_5\omega_{15} + 21\omega_{10}^2\omega_5^2\omega_{15} - 5v_2^2\omega_{10}^2\omega_5^2\omega_{15}^2 + 24v_2^2\omega_{10}^2\omega_5^2 + 60c_s^2\omega_{10}\omega_{15}^2 - 72\omega_{10}^2\omega_5\omega_{15} + 12c_s^2\omega_{10}\omega_5^2\omega_{15} - 36\omega_{10}\omega_{15}^2 - 48c_s^2\omega_{10}^2\omega_5 - 168v_2^2\omega_{10}\omega_5\omega_{15}^2 + 24\omega_5^2\omega_{15}^2 + 24\omega_{10}^2\omega_5 + 120c_s^2\omega_{10}^2\omega_5\omega_{15} - 12\omega_{10}\omega_5^2\omega_{15} - 36c_s^2\omega_5^2\omega_{15}^2 - 25\omega_{10}\omega_5^2\omega_{15}^2 - 12\omega_{10}^2\omega_5^2 + 24c_s^2\omega_{10}^2\omega_5^2 + 84v_2^2\omega_{10}\omega_{15}^2 - 72v_2^2\omega_{10}\omega_5\omega_{15} + 39c_s^2\omega_{10}\omega_5^2\omega_{15}^2 - 60v_2^2\omega_5^2\omega_{15}^2 - 51v_2^2\omega_{10}^2\omega_5^2\omega_{15} - 48v_2^2\omega_{10}^2\omega_5)\frac{v_2v_1\rho}{12\omega_{10}^2\omega_5^2\omega_{15}^2}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}^4_y v_2} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}^4_y v_2}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}^4_y v_2} = (-4 + 2\omega_{10} - 3c_s^2\omega_{10} - 5v_2^2\omega_{10} + 6c_s^2 + 10v_2^2)\frac{v_2v_1\rho}{12\omega_{10}}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}^4_y v_2} = C^{(1),\mathrm{CLBM1}}_{\mathrm{D}^4_y v_2}$

$$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_y^4 v_2} = (-4 - 5v_2^2\omega_5 - 3c_s^2\omega_5 + 2\omega_5 + 6c_s^2 + 10v_2^2)\frac{v_2 v_1 \rho}{12\omega_5}$$

$$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_y^4 v_2} = (-15v_2^2\omega_1\omega_2 + 6\omega_1\omega_2 - 9c_s^2\omega_1\omega_2 - 4\omega_1 + 12c_s^2\omega_2 + 20v_2^2\omega_2 - 8\omega_2 + 10v_2^2\omega_1 + 6c_s^2\omega_1)\frac{v_2 v_1 \rho}{36\omega_1\omega_2}$$

coefficient $C^{(1)}_{\mathrm{D}_x^3\mathrm{D}_z\rho}$ **at** $\frac{\partial^4\rho}{\partial x_1^3\partial x_3}$**:**

$$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x^3\mathrm{D}_z\rho} = 0$$

$$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^3\mathrm{D}_z\rho} = (13\omega_6^2v_1^2\omega_{13}\omega_9^3 + 8v_1^2\omega_{13}\omega_9^3 + 84\omega_6c_s^2v_1^2\omega_{13}\omega_9^3 + 120\omega_6^2c_s^2v_1^2\omega_{13}\omega_9^2 - 20\omega_6v_1^4\omega_{13}^2\omega_9^2 + 4\omega_6^2c_s^2\omega_9^2 + 24\omega_6^2v_1^4\omega_{13}^2 + 12\omega_6^2c_s^2\omega_{13}^2\omega_9 - 20\omega_6^2v_1^4\omega_{13}\omega_9 + 4c_s^4\omega_{13}^2\omega_9^2 - 36c_s^2v_1^2\omega_{13}\omega_9^3 - 48\omega_6c_s^2v_1^2\omega_{13}\omega_9^2 + 4\omega_6v_1^2\omega_9^3 - 20\omega_6v_1^2\omega_{13}^2\omega_9 + 96\omega_6^2c_s^2v_1^2\omega_{13}^2 - 32\omega_6^2v_1^2\omega_{13}\omega_9^2 + 4\omega_6^2c_s^4\omega_{13}^2\omega_9^2 - 8\omega_6c_s^2\omega_{13}\omega_9^3 - 4\omega_6^2c_s^2\omega_9^3 - 51\omega_6^2c_s^2v_1^2\omega_{13}\omega_9^3 - 13\omega_6^2v_1^4\omega_{13}\omega_9^3 + 4\omega_6^2v_1^4\omega_9^3 - 8v_1^4\omega_{13}\omega_9^3 - 4\omega_6c_s^4\omega_9^3 + 20\omega_6v_1^2\omega_{13}^2\omega_9^2 - 24\omega_6^2c_s^2v_1^2\omega_9^2 + 20\omega_6^2v_1^2\omega_{13}\omega_9 - 12\omega_6^2c_s^4\omega_{13}^2\omega_9 + 20\omega_6v_1^4\omega_{13}^2\omega_9 - 72\omega_6^2c_s^2v_1^2\omega_{13}\omega_9 - 4c_s^2\omega_{13}^2\omega_9^2 - 4\omega_6^2v_1^4\omega_9^2 - 8\omega_6^2c_s^2\omega_{13}^2 - 4\omega_6^2c_s^2\omega_{13}^2\omega_9^2 + 32\omega_6^2v_1^4\omega_{13}\omega_9^2 + 24\omega_6^2c_s^2v_1^2\omega_9^3 + 8\omega_6c_s^4\omega_{13}\omega_9^3 - 4\omega_6c_s^2\omega_{13}^2\omega_9 - 144\omega_6^2c_s^2v_1^2\omega_{13}^2\omega_9 + 8v_1^4\omega_{13}^2\omega_9^2 - 4\omega_6v_1^4\omega_9^3 + 13\omega_6^2v_1^4\omega_{13}^2\omega_9^2 - 8\omega_6^2c_s^2\omega_{13}\omega_9^2 + 4\omega_6^2c_s^4\omega_9^3 - 20\omega_6v_1^2\omega_{13}\omega_9^3 + 4\omega_6^2c_s^2\omega_{13}\omega_9^3 + 4c_s^2\omega_{13}\omega_9^3 + 16\omega_6v_1^2\omega_{13}\omega_9^2 - 4\omega_6^2c_s^4\omega_9^2 - 8\omega_6c_s^4\omega_{13}^2\omega_9^2 + 72\omega_6c_s^2v_1^2\omega_{13}^2\omega_9 - 4\omega_6^2c_s^4\omega_{13}\omega_9 - 24\omega_6^2v_1^2\omega_{13}^2 + 36\omega_6^2v_1^2\omega_{13}\omega_9 - 8v_1^2\omega_{13}^2\omega_9^2 + 4\omega_6^2v_1^2\omega_9^2 + 4\omega_6c_s^4\omega_{13}^2\omega_9 - 84\omega_6c_s^2v_1^2\omega_{13}^2\omega_9^2 + 8\omega_6^2c_s^4\omega_{13}\omega_9^2 + 8\omega_6^2c_s^4\omega_{13}^2 - 13\omega_6^2v_1^2\omega_{13}^2\omega_9^2 + 20\omega_6v_1^4\omega_{13}\omega_9^3 - 4\omega_6^2c_s^4\omega_{13}\omega_9^3 + 36c_s^2v_1^2\omega_{13}^2\omega_9^2 - 4\omega_6^2v_1^2\omega_9^3 - 4c_s^4\omega_{13}\omega_9^3 - 24\omega_6c_s^2v_1^2\omega_9^3 + 8\omega_6c_s^2\omega_{13}^2\omega_9^2 - 16\omega_6v_1^4\omega_{13}\omega_9^2 + 51\omega_6^2c_s^2v_1^2\omega_{13}^2\omega_9^2 + 4\omega_6c_s^2\omega_9^3 - 36\omega_6^2v_1^4\omega_{13}^2\omega_9 + 4\omega_6^2c_s^2\omega_{13}\omega_9)\frac{v_3}{4\omega_6^2\omega_{13}^2\omega_9^3}$$

$$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x^3\mathrm{D}_z\rho} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^3\mathrm{D}_z\rho}$$

$$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x^3\mathrm{D}_z\rho} = 0$$

$$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x^3\mathrm{D}_z\rho} = 0$$

$$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x^3\mathrm{D}_z\rho} = 0$$

$$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x^3\mathrm{D}_z\rho} = (-36\omega_3^2v_1^4\omega_1\omega_2^3 + 56\omega_3^2c_s^2\omega_1^3\omega_2 - 48\omega_3^2v_3^2v_1^2\omega_1^2\omega_2^2 + 5\omega_3^2c_s^2\omega_1^2\omega_2^3 - 48\omega_3^2v_1^2\omega_1^3 - 8\omega_3^2v_3^2\omega_1\omega_2^2 - 36\omega_3^2c_s^4\omega_2^3 - 36\omega_3^2c_s^4\omega_1^2\omega_2 + 4\omega_3^2\omega_1^3 - 8\omega_3^2v_3^2\omega_1\omega_2^3 - 24\omega_3^2v_3^2v_1^2\omega_1^2\omega_2^3 - 34\omega_3^2c_s^2\omega_1^2\omega_2^2 - 72\omega_3^2v_1^4\omega_1\omega_2^2 - 48\omega_3^2v_3^2v_1^2\omega_1^3\omega_2 - 72\omega_3^2v_3^2v_1^2\omega_2^3 + 6\omega_3^2c_s^4\omega_1^3\omega_2^2 - 12v_3^2c_s^2\omega_1^3\omega_2^2 + 24\omega_3c_s^4\omega_1\omega_2^3 - 6\omega_3^2c_s^4\omega_1^2\omega_2^3 - 60\omega_3^2v_1^2\omega_1\omega_2^3 + 8\omega_3^2v_3^2c_s^2\omega_1\omega_2^2 - 84\omega_3^2c_s^4\omega_1^3\omega_2 + 8\omega_3^2\omega_1\omega_2^2 + 24\omega_3^2v_3^2v_1^2\omega_1^3 + 108\omega_3^2c_s^2v_1^2\omega_1\omega_2^3 + 12v_3^2c_s^2\omega_1^2\omega_2^3 + 8\omega_3v_3^2c_s^2\omega_1\omega_2^3 + 40\omega_3^2c_s^2\omega_1^2\omega_2 + 24\omega_3^2v_3^2v_1^2\omega_1^3\omega_2^2 - 216\omega_3^2c_s^2v_1^2\omega_1\omega_2^2 + 8\omega_3^2\omega_1\omega_2^3 + 48\omega_3^2v_1^2\omega_1\omega_2^2 + 24\omega_3^2v_1^2\omega_2^3 + 22\omega_3^2v_3^2c_s^2\omega_1\omega_2^3 + 42\omega_3^2c_s^4\omega_1^2\omega_2^2 - 5\omega_3^2c_s^2\omega_1^3\omega_2^2 + 24\omega_3^2v_3^2v_1^2\omega_1^2\omega_2 - 8\omega_3c_s^2\omega_1\omega_2^3 - 8\omega_3^2\omega_2^3 + 72\omega_3^2c_s^4\omega_1^3 - \omega_3^2\omega_1^2\omega_2^3 - 4\omega_3^2\omega_1^3\omega_2 + 216\omega_3^2c_s^2v_1^2\omega_1^2\omega_2^2 + 216\omega_3^2c_s^2v_1^2\omega_1^3 - 20\omega_3^2v_3^2c_s^2\omega_1^3\omega_2 - 2\omega_3^2v_3^2c_s^2\omega_1^2\omega_2^3 - 24\omega_3^2v_1^2\omega_1^2\omega_2^2 + 12c_s^2\omega_1^3\omega_2^2 - 4\omega_3v_3^2c_s^2\omega_1^2\omega_2^2 + 4\omega_3^2v_3^2\omega_1^2\omega_2 + 16\omega_3^2v_3^2c_s^2\omega_1^3 + 4\omega_3c_s^2\omega_1^3\omega_2 + 18\omega_3c_s^2\omega_1^2\omega_2^3 - 2\omega_3^2v_3^2c_s^2\omega_1^2\omega_2^2 + 24\omega_3^2v_1^2\omega_1^2\omega_2^3 + 36c_s^4\omega_1^2\omega_2^3 + 42\omega_3^2c_s^4\omega_1\omega_2^3 + 84\omega_3^2v_1^2\omega_1^3\omega_2 - 72\omega_3^2c_s^2v_1^2\omega_1^2\omega_2^3 + 54\omega_3c_s^4\omega_1^3\omega_2^2 + 24\omega_3^2v_1^4\omega_1^3 - 4\omega_3^2\omega_1^2\omega_2^2 - 324\omega_3^2c_s^2v_1^2\omega_1^3\omega_2 - \omega_3^2v_3^2\omega_1^3\omega_2^2 + 4\omega_3c_s^2\omega_1^2\omega_2^2 + 20\omega_3^2c_s^2\omega_2^3 - 4\omega_3v_3^2c_s^2\omega_1^3\omega_2 - 4\omega_3^2v_3^2\omega_1^3 - 18\omega_3v_3^2c_s^2\omega_1^2\omega_2^3 + 4\omega_3^2v_3^2\omega_1^3\omega_2 + \omega_3^2v_3^2\omega_1^2\omega_2^3 + 48\omega_3^2v_1^4\omega_2^3 + 18\omega_3v_3^2c_s^2\omega_1^3\omega_2^2 + 72\omega_3^2v_1^4\omega_1^2\omega_2^2 - 8\omega_3^2c_s^2\omega_1\omega_2^2 + 96\omega_3^2v_3^2v_1^2\omega_1\omega_2^3 - 4\omega_3^2v_3^2c_s^2\omega_1^2\omega_2 - 36c_s^4\omega_1^3\omega_2^2 - 24\omega_3^2v_1^2\omega_1^3\omega_2^2 + 8\omega_3^2v_3^2\omega_2^3 - 54\omega_3c_s^4\omega_1^2\omega_2^3 + 72\omega_3^2c_s^2v_1^2\omega_1^3\omega_2^2 - 4\omega_3^2\omega_1^2\omega_2 - 52\omega_3^2c_s^2\omega_1^3 - 12\omega_3c_s^4\omega_1^3\omega_2 - 22\omega_3^2c_s^2\omega_1\omega_2^3 - 36\omega_3^2v_1^4\omega_1^3\omega_2 + 24\omega_3^2v_3^2v_1^2\omega_1\omega_2^2 - 12c_s^2\omega_1^2\omega_2^3 - 18\omega_3c_s^2\omega_1^3\omega_2^2 + 4\omega_3^2v_3^2\omega_1^2\omega_2^2 + \omega_3^2\omega_1^3\omega_2^2 - 12\omega_3c_s^4\omega_1^2\omega_2^2 + 2\omega_3^2v_3^2c_s^2\omega_1^3\omega_2^2 - 24\omega_3^2v_1^2\omega_1^2\omega_2 - 20\omega_3^2v_3^2c_s^2\omega_2^3)\frac{v_3}{36\omega_3^2\omega_1^3\omega_2^2}$$

coefficient $C^{(1)}_{\mathrm{D}_x^3\mathrm{D}_z v_1}$ **at** $\frac{\partial^4 v_1}{\partial x_1^3\partial x_3}$**:**

$$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x^3\mathrm{D}_z v_1} = 0$$

$$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^3\mathrm{D}_z v_1} = (-43\omega_6^2v_1^2\omega_{13}\omega_9^3 - 28v_1^2\omega_{13}\omega_9^3 - 40\omega_6^2\omega_{13}\omega_9^2 - 16\omega_6c_s^2\omega_{13}\omega_9^2 - 16\omega_6^2c_s^2\omega_9^2 - 72\omega_6^2c_s^2\omega_{13}^2\omega_9 - 16\omega_6v_1^2\omega_9^3 + 64\omega_6v_1^2\omega_{13}^2\omega_9 - 32\omega_6^2\omega_{13}^2 + 104\omega_6^2v_1^2\omega_{13}\omega_9^2 + 44\omega_6c_s^2\omega_{13}\omega_9^3 + 28\omega_6\omega_{13}^2\omega_9^2 + 16\omega_6^2c_s^2\omega_9^3 + 17\omega_6^2\omega_{13}\omega_9^3 - 24\omega_6\omega_{13}^2\omega_9 - 68\omega_6v_1^2\omega_{13}^2\omega_9^2 + 8\omega_6^2\omega_9^2 - 64\omega_6^2v_1^2\omega_{13}\omega_9 + 24\omega_6^2\omega_{13}\omega_9 + 20c_s^2\omega_{13}^2\omega_9^2 + 48\omega_6^2c_s^2\omega_{13}^2 + 25\omega_6^2c_s^2\omega_{13}^2\omega_9^2 - 12\omega_{13}^2\omega_9^2 - 8\omega_6^2\omega_9^3 + 32\omega_6c_s^2\omega_{13}^2\omega_9 + 48\omega_6^2\omega_{13}^2\omega_9 + 56\omega_6^2c_s^2\omega_{13}\omega_9^2 + 8\omega_6\omega_9^3 + 68\omega_6v_1^2\omega_{13}\omega_9^3 - 25\omega_6^2c_s^2\omega_{13}\omega_9^3 - 20c_s^2\omega_{13}\omega_9^3 - 48\omega_6v_1^2\omega_{13}\omega_9^2 + 12\omega_{13}\omega_9^3 + 80\omega_6^2v_1^2\omega_{13}^2 - 120\omega_6^2v_1^2\omega_{13}\omega_9 + 28v_1^2\omega_{13}^2\omega_9 - 16\omega_6^2v_1^2\omega_9^2 + 43\omega_6^2v_1^2\omega_{13}^2\omega_9^2 + 16\omega_6\omega_{13}\omega_9^2 + 16\omega_6^2v_1^2\omega_9^3 - 28\omega_6\omega_{13}\omega_9^3 - 44\omega_6c_s^2\omega_{13}^2\omega_9^2 - 17\omega_6^2\omega_{13}^2\omega_9^2 - 16\omega_6c_s^2\omega_9^3 - 32\omega_6^2c_s^2\omega_{13}\omega_9)\frac{v_3 v_1 \rho}{4\omega_6^2\omega_{13}^2\omega_9^3}$$

$$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x^3\mathrm{D}_z v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^3\mathrm{D}_z v_1}$$

$$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x^3\mathrm{D}_z v_1} = 0$$

$$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x^3\mathrm{D}_z v_1} = 0$$

$$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x^3\mathrm{D}_z v_1} = 0$$

$$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x^3\mathrm{D}_z v_1} = (36c_s^2\omega_1\omega_2^3 + 6\omega_3 v_3^2\omega_1^2\omega_2 - 6v_3^2\omega_1^2\omega_2^2 + 6\omega_3\omega_1^2\omega_2 + 84\omega_3 c_s^2\omega_1^3 - 24\omega_3 v_3^2\omega_2^3 - 12\omega_1\omega_2^3 + 132\omega_3 v_1^2\omega_1^2\omega_2^2 - 6v_3^2\omega_1^3\omega_2 - 9v_3^2\omega_1^2\omega_2^3 + 5\omega_3 v_3^2\omega_1^3\omega_2^2 - 5\omega_3\omega_1^3\omega_2^2 - 66\omega_3 v_1^2\omega_1^3\omega_2 + 48\omega_3\omega_1^3\omega_2 + 5\omega_3\omega_1^2\omega_2^3 + 9v_3^2\omega_1^3\omega_2^2 - 54\omega_3 c_s^2\omega_1\omega_2^2 - 18\omega_3 v_3^2\omega_1^3\omega_2 - 5\omega_3 v_3^2\omega_1^2\omega_2^3 - 51\omega_3\omega_1^2\omega_2^2 - 12\omega_3 v_1^2\omega_1^2\omega_2 - 9\omega_3 v_3^2\omega_1^2\omega_2^2 + 12\omega_3 v_3^2\omega_1^3 - 12\omega_3 c_s^2\omega_2^3 + 27\omega_3 c_s^2\omega_1\omega_2^3 + 42\omega_3\omega_1\omega_2^2 - 9\omega_1^3\omega_2^2 + 27c_s^2\omega_1^3\omega_2^2 + 6\omega_3 v_3^2\omega_1\omega_2^2 - 108\omega_3 c_s^2\omega_1^3\omega_2 - 12\omega_3\omega_2^3 - 15\omega_3 c_s^2\omega_1^2\omega_2^3 + 84\omega_3 v_1^2\omega_2^3 + 3\omega_3\omega_1\omega_2^3 + 81\omega_3 c_s^2\omega_1^2\omega_2^2 + 27\omega_3 v_3^2\omega_1\omega_2^3 + 12v_3^2\omega_1\omega_2^3 - 18\omega_3 c_s^2\omega_1^2\omega_2 + 48\omega_3 v_1^2\omega_1^3 - 18c_s^2\omega_1^2\omega_2^2 - 66\omega_3 v_1^2\omega_1\omega_2^3 + 6\omega_1^2\omega_2^2 - 18c_s^2\omega_1^3\omega_2 - 27c_s^2\omega_1^2\omega_2^3 + 15\omega_3 c_s^2\omega_1^3\omega_2^2 - 120\omega_3 v_1^2\omega_1\omega_2^2 + 9\omega_1^2\omega_2^2 + 6\omega_1^3\omega_2 - 36\omega_3\omega_1^3)\frac{v_3 v_1\rho}{18\omega_3\omega_1^3\omega_2^3}$$

coefficient $C^{(1)}_{\mathrm{D}_x^3\mathrm{D}_z v_3}$ **at** $\frac{\partial^4 v_3}{\partial x_1^3\partial x_3}$**:**

$$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x^3\mathrm{D}_z v_3} = (36v_1^2 - c_s^4\omega^3 + 54c_s^2 v_1^2\omega + 20c_s^4\omega^2 - 54v_1^2\omega + 36c_s^4 + 26v_1^2\omega^2 - 54c_s^4\omega - 42c_s^2 v_1^2\omega^2 - 4v_1^2\omega^3 + 12c_s^2 v_1^2\omega^3 + 54v_1^4\omega - 12c_s^2\omega^2 + 4v_1^4\omega^3 - 36v_1^4 + 36c_s^2\omega - 26v_1^4\omega^2 - 24c_s^2 - 36c_s^2 v_1^2)\frac{\rho}{12\omega^3}$$

$$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^3\mathrm{D}_z v_3} = (12\omega_6^3 c_s^2 v_1^2\omega_{13}^2\omega_9^3 + 60\omega_6^3 v_1^4\omega_{13}\omega_9^2 + 13\omega_6^2 c_s^4\omega_{13}^2\omega_9^3 - 48\omega_6^2 v_1^2\omega_{13}\omega_9^3 - \omega_6^3 c_s^2\omega_{13}^2\omega_9^2 - 72\omega_6^3 v_1^2\omega_{13}^2 + 12c_s^4\omega_{13}^2\omega_9^3 - 12\omega_6 c_s^2 v_1^2\omega_{13}\omega_9^3 - 12\omega_6^2 c_s^2 v_1^2\omega_{13}\omega_9^2 + 12\omega_6^3 c_s^2 v_1^2\omega_9^3 + 12\omega_6^2 c_s^2\omega_{13}^2\omega_9 + 24\omega_6^2 v_1^2\omega_{13}\omega_9^2 - 27\omega_6^3 v_1^4\omega_{13}\omega_9^3 + 60\omega_6^3 c_s^2 v_1^2\omega_{13}^2\omega_9^2 + 6\omega_6^2 c_s^4\omega_{13}^2\omega_9^2 - 12\omega_6^3 c_s^4\omega_{13}^2\omega_9 - 12\omega_6^3 c_s^2 v_1^2\omega_9^2 + 36\omega_6^3 v_1^2\omega_{13}\omega_9 - 12\omega_6 c_s^2\omega_{13}\omega_9^3 + 30\omega_6^2 c_s^2 v_1^2\omega_{13}\omega_9^3 + 12\omega_6 v_1^4\omega_{13}^2\omega_9^3 + 48\omega_6^2 v_1^4\omega_{13}\omega_9^3 + \omega_6^3 c_s^4\omega_{13}^2\omega_9^2 - 60\omega_6^3 v_1^2\omega_{13}\omega_9^2 - 5\omega_6^2 c_s^2\omega_{13}^2\omega_9^3 + 252\omega_6^3 c_s^2 v_1^2\omega_{13}^2 - 12\omega_6^2 v_1^4\omega_9^3 - 12\omega_6^2 c_s^4\omega_{13}^2\omega_9 - 12\omega_6^3 v_1^2\omega_9^3 - 306\omega_6^3 c_s^2 v_1^2\omega_{13}^2\omega_9 + 27\omega_6^3 v_1^2\omega_{13}\omega_9^3 - 6\omega_6^2 c_s^2\omega_{13}^2\omega_9^2 - 24\omega_6^2 v_1^4\omega_{13}\omega_9^2 - \omega_6^3 c_s^4\omega_{13}^2\omega_9^3 - 36\omega_6^3 v_1^4\omega_{13}\omega_9 + 12\omega_6^3 v_1^2\omega_9^2 + 12\omega_6^3 c_s^2\omega_{13}^2\omega_9 - 12\omega_6^2 c_s^2 v_1^2\omega_9^3 - 12\omega_6 v_1^2\omega_{13}^2\omega_9^3 + 12\omega_6 c_s^4\omega_{13}\omega_9^3 + 12\omega_6^3 c_s^4\omega_{13}^2 - 108\omega_6^2 c_s^2 v_1^2\omega_{13}^2\omega_9 + 6\omega_6^3 c_s^4\omega_{13}\omega_9^3 + 12\omega_6^2 v_1^4\omega_{13}^2\omega_9^2 - 12\omega_6^2 c_s^2\omega_{13}\omega_9^2 - 4\omega_6^3 v_1^2\omega_{13}^2\omega_9^3 - 90\omega_6^3 v_1^4\omega_{13}^2\omega_9 - 24\omega_6 c_s^4\omega_{13}^2\omega_9^3 + 24\omega_6 v_1^2\omega_{13}\omega_9^3 + 18\omega_6^2 c_s^2\omega_{13}\omega_9^3 - 19\omega_6^3 v_1^2\omega_{13}^2\omega_9^2 - 6\omega_6^3 c_s^4\omega_{13}\omega_9^2 - 18\omega_6^2 v_1^4\omega_{13}^2\omega_9^3 + 72\omega_6^3 v_1^4\omega_{13}^2 - 36\omega_6^3 c_s^2 v_1^2\omega_{13}\omega_9 - 48c_s^2 v_1^2\omega_{13}^2\omega_9^3 - 48\omega_6 c_s^2 v_1^2\omega_{13}^2\omega_9^2 + 12\omega_6^2 c_s^4\omega_{13}\omega_9^2 + 4\omega_6^3 v_1^4\omega_{13}^2\omega_9^3 + 54\omega_6^3 c_s^2 v_1^2\omega_{13}\omega_9^2 - 6\omega_6^3 c_s^2\omega_{13}\omega_9^3 - 12\omega_6^2 v_1^2\omega_{13}^2\omega_9^2 - 12\omega_6^3 v_1^4\omega_9^2 + 90\omega_6^3 v_1^2\omega_{13}^2\omega_9 - 24\omega_6 v_1^4\omega_{13}\omega_9^3 - 81\omega_6^2 c_s^2 v_1^2\omega_{13}^2\omega_9^3 + 6\omega_6 c_s^2\omega_{13}^2\omega_9^3 - 12\omega_6^3 c_s^2\omega_{13}^2 + 6\omega_6^3 c_s^2\omega_{13}\omega_9^2 + 18\omega_6^2 v_1^2\omega_{13}^2\omega_9^3 - 18\omega_6^2 c_s^4\omega_{13}\omega_9^3 - 21\omega_6^3 c_s^2 v_1^2\omega_{13}\omega_9^3 + 19\omega_6^3 v_1^4\omega_{13}^2\omega_9^2 + 102\omega_6 c_s^2 v_1^2\omega_{13}^2\omega_9^2 + 12\omega_6^2 v_1^2\omega_9^3 + 162\omega_6^2 c_s^2 v_1^2\omega_{13}^2\omega_9^2 + 12\omega_6^3 v_1^4\omega_9^3)\frac{\rho}{12\omega_6^3\omega_{13}^2\omega_9^3}$$

$$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x^3\mathrm{D}_z v_3} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^3\mathrm{D}_z v_3}$$

$$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x^3\mathrm{D}_z v_3} = (12\omega_6^3 c_s^2 v_1^2\omega_{13}^2\omega_9^3 + 72\omega_6^3 v_1^4\omega_{13}\omega_9^2 + 13\omega_6^2 c_s^4\omega_{13}^2\omega_9^3 - 36\omega_6^2 v_1^2\omega_{13}\omega_9^3 - \omega_6^3 c_s^2\omega_{13}^2\omega_9^2 - 72\omega_6^3 v_1^2\omega_{13}^2 + 12c_s^4\omega_{13}^2\omega_9^3 + 36\omega_6 c_s^2 v_1^2\omega_{13}\omega_9^3 + 36\omega_6^2 c_s^2 v_1^2\omega_{13}\omega_9^2 + 108\omega_6^3 c_s^2 v_1^2\omega_9^3 + 12\omega_6^2 c_s^2\omega_{13}^2\omega_9 - 39\omega_6^3 v_1^4\omega_{13}\omega_9^3 + 60\omega_6^3 c_s^2 v_1^2\omega_{13}\omega_9^2 + 6\omega_6^2 c_s^4\omega_{13}^2\omega_9^2 - 12\omega_6^3 c_s^4\omega_{13}^2\omega_9 - 108\omega_6^3 c_s^2 v_1^2\omega_9^2 + 36\omega_6^3 v_1^2\omega_{13}\omega_9 - 12\omega_6 c_s^2\omega_{13}\omega_9^3 + 54\omega_6^2 c_s^2 v_1^2\omega_{13}\omega_9^3 + 36\omega_6^2 v_1^4\omega_{13}\omega_9^3 + \omega_6^3 c_s^4\omega_{13}^2\omega_9^2 - 72\omega_6^3 v_1^2\omega_{13}\omega_9^2 - 5\omega_6^2 c_s^2\omega_{13}^2\omega_9^3 + 252\omega_6^3 c_s^2 v_1^2\omega_{13}^2 - 36\omega_6^2 v_1^4\omega_9^3 - 12\omega_6^2 c_s^4\omega_{13}^2\omega_9 - 36\omega_6^3 v_1^2\omega_9^3 - 306\omega_6^3 c_s^2 v_1^2\omega_{13}^2\omega_9 + 39\omega_6^3 v_1^2\omega_{13}\omega_9^3 - 6\omega_6^2 c_s^2\omega_{13}^2\omega_9^2 - \omega_6^3 c_s^4\omega_{13}^2\omega_9^3 - 36\omega_6^3 v_1^4\omega_{13}\omega_9 + 36\omega_6^3 v_1^2\omega_9^2 + 12\omega_6^3 c_s^2\omega_{13}^2\omega_9 - 108\omega_6^2 c_s^2 v_1^2\omega_9^3 + 12\omega_6 c_s^4\omega_{13}\omega_9^3 + 12\omega_6^3 c_s^4\omega_{13}^2 - 36\omega_6^2 c_s^2 v_1^2\omega_{13}\omega_9 + 6\omega_6^3 c_s^4\omega_{13}\omega_9^3 - 12\omega_6^2 c_s^2\omega_{13}\omega_9^2 - 4\omega_6^3 v_1^2\omega_{13}^2\omega_9^3 - 90\omega_6^3 v_1^4\omega_{13}^2\omega_9 - 24\omega_6 c_s^4\omega_{13}^2\omega_9^3 + 18\omega_6^2 c_s^2\omega_{13}\omega_9^3 - 19\omega_6^3 v_1^2\omega_{13}^2\omega_9^2 - 6\omega_6^3 c_s^4\omega_{13}\omega_9^2 - 6\omega_6^2 v_1^4\omega_{13}^2\omega_9^3 + 72\omega_6^3 v_1^4\omega_{13}^2 - 108\omega_6^3 c_s^2 v_1^2\omega_{13}\omega_9 + 12\omega_6^2 c_s^4\omega_{13}\omega_9^2 + 4\omega_6^3 v_1^4\omega_{13}^2\omega_9^3 + 198\omega_6^3 c_s^2 v_1^2\omega_{13}\omega_9^2 - 6\omega_6^3 c_s^2\omega_{13}\omega_9^3 - 36\omega_6^3 v_1^4\omega_9^2 + 90\omega_6^3 v_1^2\omega_{13}^2\omega_9 - 3\omega_6^2 c_s^2 v_1^2\omega_{13}^2\omega_9^3 + 6\omega_6 c_s^2\omega_{13}^2\omega_9^3 - 12\omega_6^3 c_s^2\omega_{13}^2 + 6\omega_6^3 c_s^2\omega_{13}\omega_9^2 + 6\omega_6^2 v_1^2\omega_{13}^2\omega_9^3 - 18\omega_6^2 c_s^4\omega_{13}\omega_9^3 - 99\omega_6^3 c_s^2 v_1^2\omega_{13}\omega_9^3 + 19\omega_6^3 v_1^4\omega_{13}^2\omega_9^2 - 18\omega_6 c_s^2 v_1^2\omega_{13}^2\omega_9^3 + 36\omega_6^2 v_1^2\omega_9^3 + 18\omega_6^2 c_s^2 v_1^2\omega_{13}^2\omega_9^2 + 36\omega_6^3 v_1^4\omega_9^3)\frac{\rho}{12\omega_6^3\omega_{13}^2\omega_9^3}$$

$$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x^3\mathrm{D}_z v_3} = C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x^3\mathrm{D}_z v_3}$$

$$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x^3\mathrm{D}_z v_3} = (-24c_s^4\omega_4^3\omega_2\omega_{12}^2 - 36v_1^4\omega_4^3\omega_2^2 + 54c_s^2 v_1^2\omega_4^3\omega_2^2\omega_{12} + 90v_1^2\omega_4\omega_2^3\omega_{12}^2 + c_s^4\omega_4^2\omega_2^3\omega_{12}^2 - 36c_s^2 v_1^2\omega_4\omega_2^2\omega_{12}^2 + 39v_1^2\omega_4^3\omega_2^3\omega_{12} + 12c_s^2\omega_4\omega_2^2\omega_{12}^2 + 18c_s^2\omega_4^3\omega_2^2\omega_{12} - 108c_s^2 v_1^2\omega_4^2\omega_2^3 + 12c_s^4\omega_4^2\omega_2^2\omega_{12} - 108c_s^2 v_1^2\omega_4\omega_2^3\omega_{12} + 6v_1^2\omega_4^3\omega_2^2\omega_{12}^2 + 36v_1^4\omega_4^3\omega_2^3 + 12c_s^2 v_1^2\omega_4^3\omega_2^3\omega_{12}^2 + 72v_1^4\omega_4^2\omega_2^3\omega_{12} - 12c_s^2\omega_2^3\omega_{12}^2 + 36v_1^2\omega_4^2\omega_2^3 + 36v_1^2\omega_4^3\omega_2^2 + 19v_1^4\omega_4^2\omega_2^3\omega_{12}^2 - 6c_s^2\omega_4^3\omega_2^3\omega_{12} + 108c_s^2 v_1^2\omega_4^3\omega_2^3 + 12c_s^2\omega_4\omega_2^3\omega_{12}^2 + 6c_s^4\omega_4^2\omega_2^2\omega_{12}^2 - 36v_1^2\omega_4^3\omega_2^2\omega_{12} - 306c_s^2 v_1^2\omega_4\omega_2^3\omega_{12}^2 - 99c_s^2 v_1^2\omega_4^2\omega_2^3\omega_{12} - 108c_s^2 v_1^2\omega_4^3\omega_2^2 - 5c_s^2\omega_4^3\omega_2^2\omega_{12}^2 - 36v_1^2\omega_4^3\omega_2^3 + 12c_s^4\omega_2^3\omega_{12}^2 + 12c_s^4\omega_4^3\omega_2\omega_{12} - 36v_1^4\omega_4^2\omega_2^3 + 36v_1^2\omega_4\omega_2^3\omega_{12} - 3c_s^2 v_1^2\omega_4^3\omega_2^2\omega_{12}^2 - 6c_s^4\omega_4^2\omega_2^3\omega_{12} - 4v_1^2\omega_4^3\omega_2^3\omega_{12}^2 - c_s^2\omega_4^2\omega_2^3\omega_{12}^2 - 39v_1^4\omega_4^3\omega_2^3\omega_{12} + 6c_s^2\omega_4^3\omega_2\omega_{12}^2 - 90v_1^4\omega_4\omega_2^3\omega_{12}^2 - 18c_s^2 v_1^2\omega_4^3\omega_2\omega_{12}^2 - 72v_1^2\omega_1^3\omega_{12}^2 - 18c_s^4\omega_4^3\omega_2^2\omega_{12} + 60c_s^2 v_1^2\omega_4^2\omega_2^3\omega_{12}^2 - 12c_s^4\omega_4\omega_2^2\omega_{12}^2 - 12c_s^2\omega_4^2\omega_2^2\omega_{12} - 6v_1^4\omega_4^3\omega_2^2\omega_{12}^2 + 36c_s^2 v_1^2\omega_4^2\omega_2^2\omega_{12} - 72v_1^2\omega_4^2\omega_2^3\omega_{12} + 252c_s^2 v_1^2\omega_2^3\omega_{12}^2 - c_s^4\omega_4^3\omega_2^3\omega_{12}^2 + 18c_s^2 v_1^2\omega_4^2\omega_2^2\omega_{12}^2 - 12c_s^4\omega_4\omega_2^3\omega_{12}^2 + 12c_s^4\omega_4^3\omega_{12}^2 - 19v_1^2\omega_4^2\omega_2^3\omega_{12}^2 + 6c_s^4\omega_4^3\omega_2^3\omega_{12} + 72v_1^4\omega_4^3\omega_{12}^2 - 6c_s^2\omega_4^2\omega_2^2\omega_{12}^2 + 36v_1^4\omega_4^3\omega_2^3\omega_{12} + 36c_s^2 v_1^2\omega_4^3\omega_2\omega_{12} + 13c_s^4\omega_4^3\omega_2^2\omega_{12}^2 + 198c_s^2 v_1^2\omega_4^2\omega_2^3\omega_{12} + 6c_s^2\omega_4^2\omega_2^3\omega_{12} + 4v_1^4\omega_4^3\omega_2^3\omega_{12}^2 - 12c_s^2\omega_4^3\omega_2\omega_{12} - 36v_1^4\omega_4\omega_2^3\omega_{12})\frac{\rho}{12\omega_4^3\omega_2^3\omega_{12}^2}$$

$$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x^3\mathrm{D}_z v_3} = (336\omega_3^2 c_s^2 v_1^2\omega_4^2\omega_1\omega_2^2 - 18\omega_3^2 c_s^2\omega_4\omega_1^3\omega_2^3 + 144\omega_3^2 v_3^2 v_1^2\omega_4^2\omega_1\omega_2^2 + 648\omega_3^2 c_s^2 v_1^2\omega_4\omega_1^2\omega_2^3 - 96\omega_3 v_3^2 c_s^2\omega_4^2\omega_1\omega_2^3 + 40\omega_3 c_s^4\omega_4^2\omega_1^2\omega_2^2 + 24\omega_3^2 v_1^4\omega_4^2\omega_1^3\omega_2^3 + 24\omega_3 v_1^2\omega_4^2\omega_1\omega_2^3 + 96\omega_3^2 v_1^4\omega_4^2\omega_1^2\omega_2 + 6\omega_3^2 v_3^2\omega_4^2\omega_1^2\omega_2^3 + 162c_s^2 v_1^2\omega_4^2\omega_1^3\omega_2^3 - 144\omega_3^2 v_1^2\omega_4^2\omega_1\omega_2^2 + 24\omega_3^2 v_3^2\omega_4^2\omega_1^3\omega_2 - 40\omega_3^2 c_s^2\omega_4^2\omega_1^3 - 288\omega_3^2 v_1^2\omega_4\omega_1^2\omega_2^3 - 108\omega_3 c_s^2 v_1^2\omega_4\omega_1^3\omega_2^2 + 108\omega_3 v_1^4\omega_4^2\omega_1^3\omega_2^2 + 86\omega_3^2 c_s^4\omega_4^2\omega_1^2\omega_2^3 + 72v_1^2\omega_4^2\omega_1^2\omega_2^3 - 28\omega_3^2 c_s^4\omega_4^2\omega_1^3\omega_2 + 38\omega_3^2 v_1^4\omega_4^2\omega_1^3\omega_2^2 + 180\omega_3 v_1^2\omega_4\omega_1^2\omega_2^3 + 576\omega_3^2 v_3^2 v_1^2\omega_4^2\omega_1\omega_2^2 - 36\omega_3 c_s^4\omega_4^2\omega_1^2\omega_2^3 - 108\omega_3^2 c_s^2 v_1^2\omega_4\omega_1^2\omega_2^2 - 852\omega_3^2 c_s^2 v_1^2\omega_4^2\omega_1\omega_2^2 + 16\omega_3 c_s^4\omega_4^2\omega_1^3\omega_2 + 72\omega_3^2 c_s^4\omega_4\omega_1\omega_2^2 + 20\omega_3^2 c_s^4\omega_4^2\omega_1^2\omega_2^2 + 80\omega_3^2 c_s^4\omega_4^2\omega_2^3 + 324\omega_3 c_s^2 v_1^2\omega_4\omega_1^3\omega_2^3 + 36\omega_3^2 v_1^2\omega_4\omega_1^2\omega_2^2 + 144\omega_3^2 v_3^2 v_1^2\omega_4^2\omega_1^3 - 117\omega_3 v_1^4\omega_4^2\omega_1^3\omega_2^3 + 24\omega_3^2 v_3^2\omega_4^2\omega_1^2\omega_2^2 + 96\omega_3^2 v_1^2\omega_4^2\omega_1\omega_2^3 - 108c_s^2 v_1^2\omega_4^2\omega_1^3\omega_2^2 - 54v_1^2\omega_4^2\omega_1^3\omega_2^3 - 6\omega_3^2 c_s^4\omega_4^2\omega_1^3\omega_2^3 - 56\omega_3^2 c_s^4\omega_4^2\omega_1^2\omega_2 - 16\omega_3 c_s^2\omega_4^2\omega_1\omega_2^3 - 216c_s^2 v_1^2\omega_4^2\omega_1^2\omega_2^3 + 72\omega_3 c_s^2 v_1^2\omega_4^2\omega_1\omega_2^3 - 60\omega_3 v_1^4\omega_4^2\omega_1^2\omega_2^2 + 48\omega_3^2 v_3^2 c_s^2\omega_4^2\omega_1\omega_2^2 + 24\omega_3^2 v_3^2\omega_4^2\omega_1^2\omega_2 + 117\omega_3^2 v_1^2\omega_4\omega_1^3\omega_2^3 + 36\omega_3 v_1^2\omega_4\omega_1^3\omega_2^2 + 32\omega_3^2 c_s^4\omega_4^2\omega_1^3 + 16\omega_3^2\omega_4^2\omega_1\omega_2^2 + 40\omega_3^2 v_1^4\omega_4^2\omega_1^2\omega_2^3 - 108\omega_3^2 v_1^4\omega_4^2\omega_1^3\omega_2 - 32\omega_3^2 c_s^2\omega_4^2\omega_1\omega_2^2 - 432\omega_3^2 v_3^2 v_1^2\omega_4^2\omega_2^3 - 36\omega_3 c_s^4\omega_4^2\omega_1^3\omega_2^2 - 297\omega_3^2 c_s^2 v_1^2\omega_4\omega_1^3\omega_2^3 + 72\omega_3^2 c_s^2\omega_4\omega_1^2\omega_2^3 + 216\omega_3 v_1^4\omega_4^2\omega_1^2\omega_2^3 - 36\omega_3^2 v_1^2\omega_4\omega_1^3\omega_2^2 - 540\omega_3 c_s^2 v_1^2\omega_4\omega_1^2\omega_2^3 - 12\omega_3^2 v_3^2 c_s^2\omega_4^2\omega_1\omega_2^3 - 24\omega_3 v_1^4\omega_4^2\omega_1^3\omega_2 - 6\omega_3^2 v_3^2\omega_4^2\omega_1^3\omega_2^2 - 2\omega_3^2 c_s^4\omega_4^2\omega_1^3\omega_2^2 + 36v_1^2\omega_4^2\omega_1^3\omega_2^2 + 108\omega_3^2 c_s^2 v_1^2\omega_4\omega_1^3\omega_2^2 + 18\omega_3 c_s^4\omega_4^2\omega_1^3\omega_2^2 + 8\omega_3^2 c_s^2\omega_4^2\omega_2^3 + 48\omega_3^2 c_s^2\omega_4^2\omega_1\omega_2^3 - 72\omega_3^2 v_1^4\omega_4\omega_1\omega_2^3 + 16\omega_3^2\omega_4^2\omega_1\omega_2^3 - 108\omega_3 v_1^2\omega_4\omega_1^3\omega_2^3 - 144\omega_3^2 v_1^4\omega_4^2\omega_1^2\omega_2^2 - 12\omega_3^2 v_3^2 c_s^2\omega_4^2\omega_1^3\omega_2 - 108\omega_3 c_s^2 v_1^2\omega_4^2\omega_1^2\omega_2^2 - 24\omega_3^2 v_1^2\omega_4^2\omega_1^3\omega_2^2 + 12\omega_3^2 v_3^2 c_s^2\omega_4^2\omega_1^2\omega_2^3 - 144\omega_3^2 v_1^2\omega_4^2\omega_1^2\omega_2 - 24\omega_3 v_1^4\omega_4^2\omega_1\omega_2^3 - 40\omega_3 c_s^2\omega_4^2\omega_1^2\omega_2^2 + 18\omega_3^2 c_s^4\omega_4\omega_1^3\omega_2^3 + 8\omega_3^2\omega_4^2\omega_1^3 + 144\omega_3^2 v_3^2 v_1^2\omega_4^2\omega_1^2\omega_2 + 72\omega_3^2 c_s^2 v_1^2\omega_4^2\omega_1^3\omega_2^2 - 72v_1^4\omega_4^2\omega_1^2\omega_2^2 + 192\omega_3^2 v_1^4\omega_4^2\omega_2^3 - 36\omega_3^2 c_s^2\omega_4^2\omega_1^2\omega_2^3 + 264\omega_3^2 c_s^2 v_1^2\omega_4^2\omega_1^2\omega_2 + 36\omega_3^2 c_s^2\omega_4^2\omega_1^3\omega_2 - 72\omega_3 v_3^2 c_s^2\omega_4^2\omega_1^3\omega_2^2 + 96\omega_3^2 v_1^4\omega_4^2\omega_1\omega_2^2 - 2\omega_3^2\omega_4^2\omega_1^2\omega_2^3 - 108\omega_3 v_1^2\omega_4^2\omega_1^3\omega_2^2 - 8\omega_3^2\omega_4^2\omega_1^3\omega_2 + 288\omega_3^2 v_1^4\omega_4\omega_1^2\omega_2^3 + 24\omega_3^2 v_3^2 c_s^2\omega_4^2\omega_1^3 + 36\omega_3 c_s^2\omega_4^2\omega_1^2\omega_2^3 + 108\omega_3^2 v_1^2\omega_1^2\omega_2^3 - 16\omega_3 c_s^2\omega_4^2\omega_1^3\omega_2 + 24\omega_3^2 v_3^2 c_s^2\omega_4^2\omega_1^2\omega_2^2 - 72\omega_3 c_s^2 v_1^2\omega_4^2\omega_1^3\omega_2 - 324\omega_3^2 c_s^2 v_1^2\omega_1^2\omega_2^3 - 180\omega_3 v_1^4\omega_4\omega_1^2\omega_2^3 - 86\omega_3^2 v_1^2\omega_4^2\omega_1^3\omega_2^2 + 468\omega_3 c_s^2 v_1^2\omega_4^2\omega_1^2\omega_2^3 - 96\omega_3^2 v_1^2\omega_4^2\omega_1^3 + 117\omega_3 v_1^2\omega_4^2\omega_1^3\omega_2^3 - 36\omega_3^2 v_1^4\omega_4\omega_1^2\omega_2^2 + 48\omega_3^2 v_3^2\omega_4^2\omega_2^3 - 288\omega_3^2 v_1^4\omega_4^2\omega_1\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^2\omega_2^2 + 144\omega_3^2 v_3^2 v_1^2\omega_4^2\omega_1^3\omega_2^2 +$$

$264\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^3 - 72\omega_3^2c_s^2\omega_4\omega_1\omega_2^3 + 168\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^3\omega_2^2 + 54\omega_3^2v_1^4\omega_1^3\omega_2^3 - 12\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^2 - 8\omega_3^2\omega_4^2\omega_1^2\omega_2 - 117\omega_3^2v_1^4\omega_4\omega_1^3\omega_2^3 + 60\omega_3v_1^2\omega_4^2\omega_1^2\omega_2^2 +$
$54v_1^4\omega_4^2\omega_1^3\omega_2^3 + 174\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^2\omega_2^3 - 288\omega_3^2v_3^2v_1^2\omega_4^2\omega_1^3\omega_2 + 16\omega_3c_s^4\omega_4^2\omega_1\omega_2^3 + 48\omega_3v_3^2c_s^2\omega_4^2\omega_1^2\omega_2^2 + 64\omega_3^2c_s^2\omega_4^2\omega_2^2\omega_2 - 144\omega_3^2v_3^2v_1^2\omega_4^2\omega_1^2\omega_2^3 -$
$492\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^3\omega_2 + 16\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^2 - 72\omega_3^2c_s^4\omega_4\omega_1^2\omega_2^3 - 24\omega_3^2v_3^2\omega_4^2\omega_1^3 - 48\omega_3^2v_1^2\omega_4^2\omega_2^3 + 36\omega_3c_s^2\omega_4^2\omega_1^3\omega_2^2 + 8\omega_3^2v_1^2\omega_4^2\omega_1^2\omega_2^3 + 288\omega_3c_s^2v_1^2\omega_4^2\omega_1^3\omega_2^2 -$
$48\omega_3^2v_3^2\omega_4^2\omega_1\omega_2^2 - 96\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^2\omega_2 - 36\omega_3v_1^4\omega_4\omega_1^3\omega_2^2 + 204\omega_3^2v_1^2\omega_4^2\omega_1^3\omega_2 + 432\omega_3^2c_s^2v_1^2\omega_4^2\omega_2^3 + 72\omega_3v_3^2c_s^2\omega_4^2\omega_1^2\omega_2^3 - 288\omega_3^2v_3^2v_1^2\omega_4^2\omega_1^2\omega_2^2 -$
$36v_1^4\omega_4^2\omega_1^3\omega_2^2 + 48\omega_3v_3^2c_s^2\omega_4^2\omega_1^3\omega_2 - 108\omega_3^2v_1^4\omega_1^2\omega_2^3 - 492\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^2\omega_2^2 + 36\omega_3^2v_1^4\omega_4\omega_1^3\omega_2^2 - 216\omega_3v_1^2\omega_4^2\omega_1^2\omega_2^3 + 2\omega_3^2\omega_4^2\omega_1^3\omega_2^2 +$
$24\omega_3v_1^2\omega_4^2\omega_1^3\omega_2 + 162\omega_3^2c_s^2v_1^2\omega_1^3\omega_2^2 + 72\omega_3^2v_1^2\omega_4\omega_1\omega_2^3 - 12\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^3\omega_2^2 - 297\omega_3c_s^2v_1^2\omega_4^2\omega_1^3\omega_2^3 + 48\omega_3^2v_1^4\omega_4^2\omega_2^3 + 240\omega_3^2v_1^2\omega_4^2\omega_1^2\omega_2^2 -$
$16\omega_3^2\omega_4^2\omega_2^3 + 108\omega_3v_1^4\omega_4\omega_1^3\omega_2^3 - 48\omega_3^2v_3^2\omega_4^2\omega_1\omega_2^3 - 54\omega_3^2v_1^2\omega_1^3\omega_2^3 + 24\omega_3^2v_3^2c_s^2\omega_4^2\omega_2^3 - 18\omega_3c_s^2\omega_4^2\omega_1^3\omega_2^3 - 172\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^3)\frac{\rho}{72\omega_3^2\omega_4^2\omega_1^3\omega_2^3}$

coefficient $C^{(1)}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z\rho}$ **at** $\frac{\partial^4\rho}{\partial x_1^2\partial x_2\partial x_3}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z\rho} = 0$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z\rho} = (-3\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2 - 3\omega_6^2c_s^2\omega_{13}^2\omega_5^2\omega_9^3\omega_{12}^2 + \omega_6^2v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^3 + v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 - 2\omega_6^2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 +$
$3\omega_6c_s^2\omega_{13}\omega_8\omega_5^2\omega_9^3\omega_{12}^2 - \omega_6^2v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_9^3\omega_{12} + \omega_6^2v_1^2\omega_{13}\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}^2 + 3\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_9^2\omega_{12}^2 + 6\omega_6c_s^2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2 -$
$3\omega_6^2c_s^2\omega_{13}\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2 - 2\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12} + 3\omega_6c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12} - \omega_6v_1^2\omega_{13}^2\omega_8\omega_5^2\omega_9^3\omega_{12}^2 + 6\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2 -$
$2\omega_6^2v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12} + \omega_6^2v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2 - \omega_6v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12} - 3\omega_6^2v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 - \omega_6^2v_1^2\omega_{13}^2\omega_8\omega_5\omega_9^3\omega_{12}^2 -$
$\omega_6^2\omega_{13}^2\omega_8\omega_5^2\omega_9^3\omega_{12}^2 - \omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 + \omega_6^2v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_9^2\omega_{12}^2 + \omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2 - 3\omega_6^2c_s^2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 - 3\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_9^3\omega_{12} +$
$\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^3 + \omega_6v_1^2\omega_{13}\omega_8\omega_5^2\omega_9^3\omega_{12}^2 + \omega_6^2\omega_{13}\omega_8\omega_5^2\omega_9^3\omega_{12}^2 + 3\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^3 - \omega_6^2v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2 - 6\omega_6c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 -$
$3\omega_6^2c_s^2\omega_{13}^2\omega_8\omega_5\omega_9^3\omega_{12}^2 + 3\omega_6^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2 - 3\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12} + 2\omega_6^2v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_{12}^2 - 2\omega_6^2v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2 -$
$3\omega_6c_s^2\omega_{13}^2\omega_8\omega_5^2\omega_9^3\omega_{12}^2 - \omega_6^2\omega_{13}^2\omega_8\omega_5^2\omega_9^2\omega_{12} - v_1^2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2 - 9\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 - \omega_6\omega_{13}^2\omega_5^2\omega_9^3\omega_{12}^2 + 6\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12} +$
$3\omega_6^2c_s^2\omega_{13}^2\omega_8\omega_5\omega_9^3\omega_{12} - 3\omega_6c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12} + \omega_6^2\omega_{13}^2\omega_8\omega_5^2\omega_9^2\omega_{12}^2 + \omega_6v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12} - \omega_6^2v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 +$
$\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12} - \omega_6\omega_{13}\omega_8\omega_5^2\omega_9^3\omega_{12}^2 - \omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2 - \omega_6\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 + \omega_6\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12} +$
$2\omega_6v_1^2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2 - \omega_6^2v_1^2\omega_{13}\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2 + 3\omega_6^2c_s^2\omega_{13}\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}^2 + \omega_6\omega_{13}\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}^2 + 3\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_5^2\omega_9^2\omega_{12}^2 +$
$\omega_6^2v_1^2\omega_{13}^2\omega_5\omega_9^3\omega_{12}^2 + 3c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 + \omega_6^2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2 - \omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 - 3c_s^2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2 -$
$2\omega_6\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2 + 3\omega_6c_s^2\omega_{13}^2\omega_5^2\omega_9^3\omega_{12}^2 - 3\omega_6^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 - 6\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2 - \omega_6^2v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12} +$
$\omega_6^2\omega_{13}^2\omega_8\omega_5^2\omega_9^3\omega_{12} + \omega_6^2v_1^2\omega_{13}^2\omega_8\omega_5\omega_9^3\omega_{12} - 2\omega_6v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 + \omega_6^2\omega_{13}^2\omega_5^2\omega_9^3\omega_{12}^2 + \omega_6^2\omega_{13}^2\omega_{14}\omega_5\omega_9^2\omega_{12}^2 + \omega_6^2v_1^2\omega_{13}^2\omega_{14}\omega_5^2\omega_9^2\omega_{12}^2 -$
$\omega_6^2\omega_{13}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 + \omega_6\omega_{13}^2\omega_8\omega_5^2\omega_9^3\omega_{12}^2 - \omega_6^2v_1^2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 - \omega_6\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12} - 2\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12} + 3\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 +$
$\omega_6v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 - \omega_6^2v_1^2\omega_{13}^2\omega_8\omega_5^2\omega_9^2\omega_{12}^2 + 2\omega_6^2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 - \omega_6^2\omega_{13}^2\omega_{14}\omega_5^2\omega_9^3\omega_{12} - \omega_6^2v_1^2\omega_{13}^2\omega_8\omega_5^2\omega_9^3\omega_{12} + 2\omega_6v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2 -$
$3\omega_6^2c_s^2\omega_{13}^2\omega_8\omega_5^2\omega_9^2\omega_{12}^2 + 3\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 + 2\omega_6\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 + 2\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2 + \omega_6\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2 -$
$\omega_6^2\omega_{13}^2\omega_{14}\omega_5^2\omega_9^2\omega_{12}^2 - \omega_6^2v_1^2\omega_{13}^2\omega_{14}\omega_5\omega_9^2\omega_{12}^2 + \omega_6^2v_1^2\omega_{13}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 - \omega_6v_1^2\omega_{13}^2\omega_{14}\omega_5^2\omega_9^2\omega_{12}^2 - \omega_6^2\omega_{13}^2\omega_5\omega_9^3\omega_{12}^2 - 3\omega_6c_s^2\omega_{13}\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}^2 +$
$6\omega_6^2c_s^2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 + \omega_6^2\omega_{13}\omega_{14}\omega_8\omega_9^3\omega_{12} - \omega_6^2v_1^2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2 + \omega_6^2\omega_{13}\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2 - 3\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^3 +$
$3\omega_6^2c_s^2\omega_{13}^2\omega_5\omega_9^3\omega_{12}^2 - 3\omega_6^2c_s^2\omega_{13}\omega_8\omega_5^2\omega_9^3\omega_{12}^2 - \omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^3 - \omega_6^2v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12} - \omega_6^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2 + \omega_6^2v_1^2\omega_{13}^2\omega_8\omega_5^2\omega_9^3\omega_{12}^2 +$
$\omega_6^2\omega_{13}^2\omega_8\omega_5\omega_9^3\omega_{12}^2 + \omega_6^2v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2 - 3\omega_6c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12} + 3\omega_6^2c_s^2\omega_{13}^2\omega_8\omega_5^2\omega_9^2\omega_{12} + 6\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12} +$
$3\omega_6c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 - \omega_6v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2 + \omega_6\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12} + \omega_6\omega_{13}^2\omega_{14}\omega_5^2\omega_9^2\omega_{12}^2 - \omega_6^2v_1^2\omega_{13}\omega_8\omega_5^2\omega_9^3\omega_{12}^2 + \omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2 +$
$\omega_6^2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 - \omega_6^2v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^3 - \omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_9^2\omega_{12}^2 + \omega_6v_1^2\omega_{13}^2\omega_5^2\omega_9^3\omega_{12}^2 + \omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12} + \omega_6^2v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 -$
$3\omega_6c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2 + \omega_6^2v_1^2\omega_{13}^2\omega_8\omega_5^2\omega_9^2\omega_{12} + 6\omega_6c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2 + 3\omega_6^2c_s^2\omega_{13}^2\omega_8\omega_5^2\omega_9^3\omega_{12}^2 - 2\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_{12}^2)\frac{v_3v_2v_1}{\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z\rho} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z\rho}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z\rho} = 0$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z\rho} = 0$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z\rho} = 0$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z\rho} = (-18c_s^2\omega_1\omega_2^3 + 6v_3^2\omega_1^2\omega_2^2 + 6\omega_1\omega_2^3 - 4v_1^2\omega_2^3 - 12v_1^2\omega_1^2\omega_2 - 3v_3^2\omega_1^3\omega_2 + 36c_s^2\omega_1\omega_2^2 - 12\omega_1\omega_2^2 - 3v_2^2\omega_1\omega_2^3 - 12\omega_1^3 - 6v_3^2\omega_1^2\omega_2 +$
$4v_1^2\omega_1^3 + 4v_2^2\omega_1^3 + 12v_1^2\omega_1\omega_2^2 + 6v_2^2\omega_1^2\omega_2^2 + 2v_3^2\omega_2^3 + 24\omega_1^2\omega_2 + 36c_s^2\omega_1^3 - 3v_2^2\omega_1^3\omega_2 - 72c_s^2\omega_1^2\omega_2 - 3v_3^2\omega_1\omega_2^3 + 36c_s^2\omega_1^2\omega_2^2 + 4v_3^2\omega_1^3 - 12\omega_1^2\omega_2^2 +$
$2v_2^2\omega_2^3 - 18c_s^2\omega_1^3\omega_2 - 6v_2^2\omega_1^2\omega_2 + 6\omega_1^3\omega_2)\frac{v_3v_2v_1}{6\omega_1^3\omega_2^3}$

coefficient $C^{(1)}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_1}$ **at** $\frac{\partial^4 v_1}{\partial x_1^2\partial x_2\partial x_3}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_1} = 0$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_1} =$

$$(-\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2-\omega_6^2c_s^2\omega_{13}^2\omega_9^3\omega_{12}^2+3\omega_6^2v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^3+3v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2-2\omega_6^2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2+\omega_6c_s^2\omega_{13}\omega_8\omega_5^2\omega_9^3\omega_{12}^2-$$
$$3\omega_6^2v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_9^3\omega_{12}+3\omega_6^2v_1^2\omega_{13}\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}^2+\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_9^2\omega_{12}^2+2\omega_6c_s^2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2-\omega_6^2c_s^2\omega_{13}\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2-$$
$$2\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}+\omega_6c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}-3\omega_6v_1^2\omega_{13}^2\omega_8\omega_5^2\omega_9^3\omega_{12}^2+2\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_{12}^2+6\omega_6^2v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2+$$
$$3\omega_6^2v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2-3\omega_6v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}-9\omega_6^2v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2-3\omega_6^2v_1^2\omega_{13}^2\omega_8\omega_5\omega_9^3\omega_{12}^2-\omega_6^2\omega_{13}^2\omega_8\omega_5^2\omega_9^3\omega_{12}^2-$$
$$\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2+3\omega_6^2v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_9^2\omega_{12}^2+\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2-\omega_6^2c_s^2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2-\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_9^3\omega_{12}+\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^3+$$
$$3\omega_6v_1^2\omega_{13}\omega_8\omega_5^2\omega_9^3\omega_{12}^2+\omega_6^2\omega_{13}\omega_8\omega_5^2\omega_9^3\omega_{12}^2+\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^3-3\omega_6^2v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2-2\omega_6c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2-\omega_6^2c_s^2\omega_{13}^2\omega_8\omega_5\omega_9^3\omega_{12}^2+$$
$$\omega_6^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2-\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}+6\omega_6^2v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_{12}^2-6\omega_6^2v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2-\omega_6c_s^2\omega_{13}^2\omega_8\omega_5^2\omega_9^3\omega_{12}^2-$$
$$\omega_6^2\omega_{13}^2\omega_8\omega_5^2\omega_9^2\omega_{12}-3v_1^2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2-3\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2-\omega_6\omega_{13}^2\omega_5^2\omega_9^3\omega_{12}^2+2\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}+\omega_6^2c_s^2\omega_{13}^2\omega_8\omega_5\omega_9^3\omega_{12}-$$
$$\omega_6c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}+\omega_6^2\omega_{13}^2\omega_8\omega_5^2\omega_9^2\omega_{12}^2+3\omega_6v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2-3\omega_6^2v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2+\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}-\omega_6\omega_{13}\omega_8\omega_5^2\omega_9^3\omega_{12}^2-$$
$$\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2-\omega_6\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2+\omega_6\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}+6\omega_6v_1^2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2-3\omega_6^2v_1^2\omega_{13}\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2+$$
$$\omega_6^2c_s^2\omega_{13}\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}^2+\omega_6\omega_{13}\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}^2+\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_5^2\omega_9^2\omega_{12}^2+3\omega_6^2v_1^2\omega_{13}^2\omega_5\omega_9^3\omega_{12}^2+c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2+\omega_6^2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2-$$
$$\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2-c_s^2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2-2\omega_6\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2+\omega_6c_s^2\omega_{13}^2\omega_5^2\omega_9^3\omega_{12}^2-\omega_6^2c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2-2\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2-$$
$$3\omega_6^2v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}+\omega_6^2\omega_{13}^2\omega_8\omega_5^2\omega_9^3\omega_{12}+3\omega_6^2v_1^2\omega_{13}^2\omega_8\omega_5\omega_9^3\omega_{12}-6\omega_6v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2+\omega_6^2\omega_{13}^2\omega_5^2\omega_9^3\omega_{12}^2+\omega_6^2\omega_{13}^2\omega_{14}\omega_5\omega_9^2\omega_{12}^2+$$
$$3\omega_6^2v_1^2\omega_{13}^2\omega_{14}\omega_5^2\omega_9^2\omega_{12}^2-\omega_6^2\omega_{13}\omega_8\omega_5^2\omega_9^2\omega_{12}^2+\omega_6\omega_{13}^2\omega_8\omega_5^2\omega_9^3\omega_{12}^2-3\omega_6^2v_1^2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2-\omega_6\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}-2\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}+$$
$$3\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2+3\omega_6v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2-3\omega_6^2v_1^2\omega_{13}^2\omega_8\omega_5^2\omega_9^2\omega_{12}^2-3\omega_6v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}+\omega_6^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2+$$
$$6\omega_6^2v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}+\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2-\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}-\omega_6^2c_s^2\omega_{13}^2\omega_8\omega_5^2\omega_9^3\omega_{12}-\omega_6c_s^2\omega_{13}^2\omega_{14}\omega_5^2\omega_9^2\omega_{12}^2-$$
$$\omega_6^2\omega_{13}\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}^2-2\omega_6\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2+\omega_6^2c_s^2\omega_{13}\omega_8\omega_5^2\omega_9^2\omega_{12}^2-\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_5\omega_9^2\omega_{12}^2-3\omega_6^2v_1^2\omega_{13}^2\omega_5^2\omega_9^3\omega_{12}^2-\omega_6^2c_s^2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2-$$
$$3\omega_6v_1^2\omega_{13}\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}^2+6\omega_6^2v_1^2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2-\omega_6^2\omega_{13}^2\omega_8\omega_5^2\omega_9^3\omega_{12}+6\omega_6v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}+6\omega_6v_1^2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2-$$
$$\omega_6^2c_s^2\omega_{13}^2\omega_8\omega_5^2\omega_9^2\omega_{12}^2+\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_5^2\omega_9^2\omega_{12}^2-3\omega_6^2v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2-2\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_{12}^2)\frac{v_3v_2\rho}{\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2}$$

$$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_1}=C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_1}$$

$$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_1}=0$$

$$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_1}=0$$

$$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_1}=0$$

$$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_1}=$$
$$(-36\omega_3^2c_s^2\omega_4\omega_1^2\omega_2+18\omega_3^2c_s^2\omega_1^2\omega_2^3+20\omega_3^2\omega_4\omega_1^2\omega_2+\omega_3v_3^2\omega_4\omega_1\omega_2^3-4\omega_3^2\omega_4\omega_2^3-4\omega_3^2v_3^2\omega_4\omega_1\omega_2^2+18\omega_3c_s^2\omega_4\omega_1^3\omega_2^2+3v_3^2\omega_4\omega_1^2\omega_2^3-3\omega_3^2v_3^2\omega_4\omega_1\omega_2^3-$$
$$3\omega_3^2v_3^2\omega_1\omega_2^3-3\omega_3^2v_2^2\omega_1^3\omega_2^2-2\omega_3\omega_4\omega_1\omega_2^3+3\omega_3v_3^2\omega_1^3\omega_2^2+18\omega_3^2c_s^2\omega_1^2\omega_2^2+\omega_3v_2^2\omega_4\omega_1\omega_2^3-12\omega_3^2v_1^2\omega_4\omega_2^3-4\omega_3^2v_2^2\omega_4\omega_1\omega_2^2+4\omega_3^2v_3^2\omega_4\omega_1^3+3v_2^2\omega_4\omega_1^2\omega_2^3-$$
$$6\omega_3\omega_1^3\omega_2^2-3\omega_3^2v_3^2\omega_4\omega_1\omega_2^3+6\omega_3c_s^2\omega_4\omega_1^2\omega_2^2-36\omega_3^2v_1^2\omega_4\omega_1^2\omega_2-3v_2^2\omega_4\omega_1^3\omega_2^2+6\omega_3\omega_1^2\omega_2^3+6\omega_3^2\omega_4\omega_1^3\omega_2+3\omega_3^2v_2^2\omega_1^2\omega_2^3+4\omega_3^2v_3^2\omega_4\omega_2^3+12\omega_3^2v_1^2\omega_4\omega_1^3-$$
$$18\omega_3^2c_s^2\omega_4\omega_1^3\omega_2-3\omega_3v_3^2\omega_1^2\omega_2^3+6\omega_3^2\omega_1\omega_2^3-12\omega_3c_s^2\omega_4\omega_1^3\omega_2-3v_3^2\omega_4\omega_1^3\omega_2^2-18\omega_3c_s^2\omega_4\omega_1^2\omega_2^3-18\omega_3^2c_s^2\omega_1^3\omega_2^2+36\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^2-12\omega_3^2\omega_4\omega_1^3+$$
$$3\omega_3^2v_2^2\omega_1^2\omega_2^2-12\omega_3^2\omega_4\omega_1^2\omega_2^2-6\omega_3^2\omega_1^2\omega_2^3-4\omega_3^2v_3^2\omega_4\omega_1^2\omega_2+6\omega_3c_s^2\omega_4\omega_1\omega_2^3-12\omega_3^2c_s^2\omega_4\omega_1\omega_2^2+20\omega_3^2c_s^2\omega_4\omega_2^3+3\omega_3v_3^2\omega_4\omega_1^3\omega_2^2-4\omega_3^2\omega_4\omega_1\omega_2^2+$$
$$18c_s^2\omega_4\omega_1^2\omega_2^3-18\omega_3c_s^2\omega_1^2\omega_2^3+4\omega_3^2v_2^2\omega_4\omega_1^3-4\omega_3^2v_2^2\omega_4\omega_1^2\omega_2-6\omega_3^2\omega_1^2\omega_2^2-3\omega_3^2v_3^2\omega_1^3\omega_2^2+6\omega_3^2\omega_4\omega_1\omega_2^3-3\omega_3^2v_2^2\omega_1\omega_2^3-6\omega_4\omega_1^2\omega_2^3-18\omega_3^2c_s^2\omega_4\omega_1\omega_2^3-$$
$$6\omega_3\omega_4\omega_1^3\omega_2^2+3\omega_3v_2^2\omega_1^3\omega_2^2+3\omega_3v_2^2\omega_4\omega_1^3\omega_2^2+6\omega_4\omega_1^3\omega_2^2+\omega_3v_3^2\omega_4\omega_1^2\omega_2^2+3\omega_3^2v_3^2\omega_1^2\omega_2^3+4\omega_3^2v_2^2\omega_4\omega_2^3+4\omega_3\omega_4\omega_1^3\omega_2-3\omega_3v_2^2\omega_4\omega_1^2\omega_2^3-3\omega_3v_2^2\omega_1^2\omega_2^3-$$
$$2\omega_3v_2^2\omega_4\omega_1^3\omega_2+6\omega_3\omega_4\omega_1^2\omega_2^3+6\omega_3^2v_2^2\omega_4\omega_1^2\omega_2^2-3\omega_3^2v_3^2\omega_4\omega_1^3\omega_2+36\omega_3^2v_1^2\omega_4\omega_1\omega_2^2-18\omega_3^2c_s^2\omega_1\omega_2^3-2\omega_3\omega_4\omega_1^2\omega_2^2+\omega_3v_2^2\omega_4\omega_1^2\omega_2^2+18\omega_3c_s^2\omega_1^3\omega_2^2-$$
$$18c_s^2\omega_4\omega_1^3\omega_2^2-2\omega_3v_3^2\omega_4\omega_1^3\omega_2+3\omega_3^2v_3^2\omega_1^2\omega_2^2-3\omega_3v_3^2\omega_4\omega_1^2\omega_2^3+6\omega_3^2v_3^2\omega_4\omega_1^2\omega_2^2+28\omega_3^2c_s^2\omega_4\omega_1^3+6\omega_3^2\omega_1^3\omega_2^2-3\omega_3^2v_2^2\omega_4\omega_1^3\omega_2)\frac{v_3v_2\rho}{6\omega_3^2\omega_4\omega_1^3\omega_2^2}$$

coefficient $C^{(1)}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_2}$ **at** $\frac{\partial^4 v_2}{\partial x_1^2\partial x_2\partial x_3}$**:**

$$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_2}=0$$

$$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_2}=(2\omega_6\omega_{13}^2\omega_7\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2+4c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^3\omega_9^3\omega_{12}^2+2\omega_6c_s^2\omega_{13}^2\omega_7\omega_8\omega_5^3\omega_9^3\omega_{12}^2+$$
$$2\omega_6^2\omega_{13}^2\omega_7\omega_8^2\omega_5^2\omega_9^3\omega_{12}-2\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2+4\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_{12}^2-2\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_{12}+4\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2-$$
$$\omega_6^2v_1^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2-9\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2-2\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3-6\omega_6^2c_s^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}^2-$$
$$2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_{12}-2\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}-4\omega_6^2c_s^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2+4\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}+$$
$$15\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12}^2+\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2+2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_8^2\omega_5^3\omega_9^2\omega_{12}-2\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_8^2\omega_5^3\omega_9^3\omega_{12}+2\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}+$$
$$3\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2+2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_8\omega_5^2\omega_9^3\omega_{12}^2-4c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2-4\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}-2\omega_6v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}-$$
$$2\omega_6^2v_1^2\omega_{13}\omega_7\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2-2\omega_6v_1^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2-4\omega_6c_s^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12}^2+4\omega_6c_s^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2+2\omega_6^2c_s^2\omega_{13}\omega_7\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2+$$
$$2\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_{12}-2\omega_6^2c_s^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3-2\omega_6^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2+2\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^3+3\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2+$$
$$3\omega_6v_1^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2+\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^3\omega_9^3\omega_{12}^2-8\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_9^3\omega_{12}^2+\omega_6v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2+$$

$$4\omega_6^2c_s^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 - 4\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}^2 + 2\omega_6v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}^2 + 3\omega_6^2v_1^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2 -$$
$$13\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2 - 2\omega_6^2c_s^2\omega_{13}\omega_{14}\omega_8\omega_5^3\omega_9^3\omega_{12}^2 - 2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2 + 4\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12} - 2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2 +$$
$$12\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_{12}^2 - 2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2 + 2\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 + 5\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12} - 6c_s^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2 +$$
$$2\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2 + 2\omega_6^2\omega_{13}^2\omega_7\omega_8\omega_5^3\omega_9^3\omega_{12}^2 + 2\omega_6v_1^2\omega_{13}^2\omega_7\omega_8\omega_5^3\omega_9^3\omega_{12}^2 + \omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 + 2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^3 -$$
$$2\omega_6\omega_{13}\omega_7\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2 - 2\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12} + 2\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 - 5\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}^2 - 2\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3 +$$
$$2\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2 + 2\omega_6^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2 + 2\omega_6^2v_1^2\omega_{13}\omega_7\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2 - 2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12} - \omega_6v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^3\omega_9^3\omega_{12}^2 -$$
$$2\omega_6^2c_s^2\omega_{13}\omega_7\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 - 6\omega_6c_s^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2 - 4\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}^2 - 2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_5^3\omega_9^3\omega_{12}^2 - \omega_6^2v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 -$$
$$\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^3\omega_9^3\omega_{12}^2 + 2\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_8\omega_5^2\omega_9^3\omega_{12}^2 + 2\omega_6^2\omega_{13}^2\omega_7\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 - 2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_8^2\omega_5^3\omega_9\omega_{12} - 3\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2 +$$
$$2v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2 + 2\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_8^2\omega_5^3\omega_9^2\omega_{12} + 9\omega_6c_s^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2 + \omega_6^2v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2 + 2\omega_6v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_{12} +$$
$$6\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}^2 + 8\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 + 2\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^3 + 4\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^3\omega_9^2\omega_{12}^2 - 2\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12} -$$
$$2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_8\omega_5^3\omega_9^3\omega_{12}^2 - \omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12}^2 + 2\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_8^2\omega_5^2\omega_9^3\omega_{12} + 2\omega_6^2\omega_{13}^2\omega_7\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2 - 4\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_{12}^2 +$$
$$2\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_{12} - 2\omega_6\omega_{13}^2\omega_7\omega_8\omega_5^3\omega_9^3\omega_{12}^2 + 2\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}^2 - 2\omega_6c_s^2\omega_{13}^2\omega_7\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2 + 4\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12} -$$
$$6\omega_6^2c_s^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2 + \omega_6^2v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12}^2 - 8\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 + 2\omega_6v_1^2\omega_{13}\omega_7\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2 + 2\omega_6^2v_1^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2 -$$
$$2\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^3 - 4\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^3\omega_9^2\omega_{12}^2 - 2\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12}^2 - 2\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_{12} + 2\omega_6^2\omega_{13}\omega_7\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2 -$$
$$2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12} - 3\omega_6v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2 - 3\omega_6^2c_s^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2 - 2\omega_6^2v_1^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2 -$$
$$\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2 - 3\omega_6\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2 + 2\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12} + 2\omega_6^2\omega_{13}^2\omega_7\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2 - 2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2 -$$
$$2\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}^2 - 2\omega_6v_1^2\omega_{13}^2\omega_7\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2 - 4\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12} + \omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2 + 6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2 -$$
$$\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 + 2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_8^2\omega_5^2\omega_9^3\omega_{12} - 2\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_8\omega_5^3\omega_9^2\omega_{12}^2 - 2\omega_6^2\omega_{13}^2\omega_7\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2 - 2\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12} -$$
$$11\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^3\omega_9^3\omega_{12}^2 - 8\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 - 15\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}^2 + 2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_5^2\omega_9^3\omega_{12}^2 + 2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2 -$$
$$2\omega_6v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12} + 2\omega_6c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^3\omega_9^3\omega_{12}^2 - 2\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 - 2\omega_6^2\omega_{13}^2\omega_7\omega_8\omega_5^2\omega_9^3\omega_{12}^2 + 2\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12} +$$
$$\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^3\omega_9^3\omega_{12}^2 - 2\omega_6^2\omega_{13}^2\omega_7\omega_8^2\omega_5^3\omega_9^2\omega_{12} - 2v_1^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2 - 2\omega_6^2\omega_{13}\omega_7\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2 + 4\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12} -$$
$$2\omega_6c_s^2\omega_{13}^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 + 6\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12}^2 + 9\omega_6c_s^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2 - \omega_6^2v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2 + 2\omega_6\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2 +$$
$$2\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_5^3\omega_9^3\omega_{12}^2 + 2\omega_6c_s^2\omega_{13}\omega_7\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2 + 6\omega_6^2c_s^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 + 2\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3 + 8\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^3\omega_9^3\omega_{12}^2 +$$
$$2\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2 - 2\omega_6^2v_1^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2 + 11\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2)\frac{v_3v_1\rho}{2\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^3\omega_{12}^2}$$

$$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_2} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_2}$$

$$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_2} = 0$$

$$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_2} = 0$$

$$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_2} = 0$$

$$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_2} = (-108\omega_3\omega_4^2\omega_1^2\omega_2^3 + 189\omega_3^2c_s^2\omega_4\omega_1^3\omega_2^3 + 48\omega_3\omega_4^2\omega_1^3\omega_2 + 324c_s^2\omega_4^2\omega_1^3\omega_2^3 + 72\omega_4^2\omega_1^3\omega_2^2 + 12\omega_3v_1^2\omega_4^2\omega_1\omega_2^3 - 63\omega_3^2\omega_4\omega_1^3\omega_2^3 -$$
$$60\omega_3v_3^2\omega_4^2\omega_1^2\omega_2^2 - 20\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2^3 - 48\omega_3^2v_1^2\omega_4^2\omega_1\omega_2^2 - 72\omega_3^2v_3^2\omega_4^2\omega_1^3\omega_2 + 336\omega_3^2c_s^2\omega_4^2\omega_1^3 + 36\omega_3^2v_1^2\omega_4\omega_1^2\omega_2^3 + 216\omega_3^2v_2^2\omega_4^2\omega_1^2\omega_2^2 - 72v_1^2\omega_4^2\omega_1^2\omega_2^3 +$$
$$216\omega_3c_s^2\omega_4\omega_1^3\omega_2^2 + 72\omega_3^2\omega_4\omega_1^3\omega_2^2 - 108\omega_4^2\omega_1^3\omega_2^3 + 72\omega_3^2v_2^2\omega_4^2\omega_2^3 + 144\omega_3v_3^2\omega_4^2\omega_1^2\omega_2^2 - 216c_s^2\omega_4^2\omega_1^3\omega_2^2 + 180\omega_3v_1^2\omega_4\omega_1^2\omega_2^3 - 24\omega_3v_3^2\omega_4^2\omega_1^3\omega_2 -$$
$$216\omega_3^2c_s^2\omega_4\omega_1^3\omega_2^2 + 48\omega_3\omega_4^2\omega_1^2\omega_2^2 - 108\omega_3^2v_2^2\omega_4^2\omega_1^3\omega_2 - 324\omega_3c_s^2\omega_4\omega_1^3\omega_2^3 + 36\omega_3^2v_1^2\omega_4\omega_1^2\omega_2^2 + 72\omega_3^2v_3^2\omega_4\omega_1\omega_2^3 - 36\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2^2 -$$
$$36\omega_3^2v_1^2\omega_4^2\omega_1\omega_2^3 + 54v_1^2\omega_4^2\omega_1^3\omega_2^3 - 36\omega_3c_s^2\omega_4^2\omega_1\omega_2^3 + 144\omega_3^2v_2^2\omega_4^2\omega_1^3 + 24\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2 + 36\omega_3v_1^2\omega_4\omega_1^3\omega_2^2 + 24\omega_3^2\omega_4^2\omega_1\omega_2^2 - 432c_s^2\omega_4^2\omega_1^2\omega_2^3 +$$
$$72\omega_3v_3^2\omega_4^2\omega_1^3\omega_2^2 + 144\omega_3^2\omega_4\omega_1^2\omega_2^3 - 72\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^2 + 63\omega_3\omega_4^2\omega_1^3\omega_2^3 - 432\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^3 - 36\omega_3^2v_1^2\omega_4\omega_1^3\omega_2^2 + 20\omega_3^2v_3^2\omega_4^2\omega_1^3\omega_2^2 - 216\omega_3^2v_2^2\omega_4^2\omega_1^2\omega_2 +$$
$$432\omega_3c_s^2\omega_4\omega_1^2\omega_2^3 - 36v_1^2\omega_4^2\omega_1^3\omega_2^2 + 216\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^2 - 120\omega_3^2c_s^2\omega_4^2\omega_2^3 - 108\omega_3\omega_4^2\omega_1^3\omega_2^2 + 180\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^3 - 63\omega_3v_3^2\omega_4^2\omega_1^3\omega_2^3 + 144\omega_4^2\omega_1^2\omega_2^3 -$$
$$72\omega_3^2\omega_4\omega_1^2\omega_2^2 - 36\omega_3^2\omega_4^2\omega_1\omega_2^3 - 108\omega_3v_1^2\omega_4\omega_1^3\omega_2^3 + 63\omega_3^2v_3^2\omega_4\omega_1^3\omega_2^3 - 48\omega_3^2v_1^2\omega_4^2\omega_1^2\omega_2 + 54v_3^2\omega_4^2\omega_1^3\omega_2^3 - 144\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^2 - 144\omega_3^2\omega_4^2\omega_1^3 -$$
$$60\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^3 + 108\omega_3\omega_4\omega_1^3\omega_2^3 - 360\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2 + 36\omega_3v_3^2\omega_4\omega_1^3\omega_2^2 + 20\omega_3^2\omega_4^2\omega_1^2\omega_2^3 + 36\omega_3v_1^2\omega_4^2\omega_1^3\omega_2^2 - 54\omega_3^2v_3^2\omega_1^3\omega_2^3 + 144\omega_3^2\omega_4^2\omega_1^3\omega_2 +$$
$$324\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^3 - 108\omega_3^2v_1^2\omega_1^2\omega_2^3 - 144\omega_3c_s^2\omega_4^2\omega_1^3\omega_2 - 36v_3^2\omega_4^2\omega_1^3\omega_2^2 - 36\omega_3^2v_3^2\omega_4\omega_1^3\omega_2^2 - 36\omega_3^2\omega_4\omega_1\omega_2^3 + 48\omega_3^2v_1^2\omega_4^2\omega_1^3 - 96\omega_3^2v_3^2\omega_4^2\omega_2^3 -$$
$$108\omega_3^2\omega_4^2\omega_1^2\omega_2^2 + 108\omega_3^2c_s^2\omega_4\omega_1\omega_2^3 - 72\omega_3\omega_4\omega_1^3\omega_2^3 + 180\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^2 + 96\omega_3^2\omega_4^2\omega_1^2\omega_2 - 24\omega_3v_3^2\omega_4^2\omega_1\omega_2^3 + 108\omega_3^2v_3^2\omega_1^2\omega_2^3 + 12\omega_3v_1^2\omega_4^2\omega_1^2\omega_2^2 -$$
$$144\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2 - 144\omega_3\omega_4\omega_1^2\omega_2^3 - 72v_3^2\omega_4^2\omega_1^2\omega_2^3 - 108\omega_3^2v_2^2\omega_4^2\omega_1\omega_2^3 + 48\omega_3^2v_3^2\omega_4^2\omega_1^3 + 48\omega_3^2v_1^2\omega_4^2\omega_2^3 + 324\omega_3c_s^2\omega_4^2\omega_1^3\omega_2^2 + 24\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2^2 -$$
$$180\omega_3^2v_3^2\omega_4\omega_1^2\omega_2^3 - 36\omega_3^2v_1^2\omega_4^2\omega_1^3\omega_2 + 60\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2^2 + 12\omega_3\omega_4^2\omega_1\omega_2^3 - 36\omega_3v_1^2\omega_4^2\omega_1^2\omega_2^3 - 20\omega_3^2\omega_4^2\omega_1^3\omega_2^2 - 24\omega_3v_1^2\omega_4^2\omega_1^3\omega_2 - 36\omega_3v_3^2\omega_4\omega_1^2\omega_2^3 +$$
$$36\omega_3^2v_3^2\omega_4\omega_1^2\omega_2^2 - 36\omega_3^2v_1^2\omega_4\omega_1\omega_2^3 + 72\omega_3^2v_1^2\omega_4^2\omega_1^2\omega_2^2 + 24\omega_3^2\omega_4^2\omega_2^3 + 108\omega_3^2v_3^2\omega_4^2\omega_1\omega_2^3 + 54\omega_3^2v_1^2\omega_1^3\omega_2^3 - 189\omega_3c_s^2\omega_4^2\omega_1^3\omega_2^3)\frac{v_3v_1\rho}{72\omega_3^2\omega_4^2\omega_1^3\omega_2^3}$$

coefficient $C^{(1)}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_3}$ **at** $\frac{\partial^4 v_3}{\partial x_1^2\partial x_2\partial x_3}$**:**

$$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_3} = 0$$

$$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_3} = (2\omega_6\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 - 6\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^3 + 2\omega_6^3v_1^2\omega_{13}\omega_7\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 - 2\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_5^2\omega_9^3\omega_{12}^2 -$$
$$2\omega_6^3c_s^2\omega_{13}\omega_7\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 - 2\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_8^2\omega_5^2\omega_9^3\omega_{12} + 4\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 - 4\omega_6^3\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 - 2\omega_6^2v_1^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 +$$
$$2\omega_6^3v_1^2\omega_{13}^2\omega_7\omega_8^2\omega_5^2\omega_9^2\omega_{12} + 3\omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}^2 - 2\omega_6^3\omega_{13}^2\omega_7\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 + 4\omega_6^2c_s^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 - \omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2 -$$
$$3\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12} - 2\omega_6^3v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} + 6\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12}^2 - 2\omega_6^3v_1^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 -$$
$$2\omega_6^3\omega_{13}\omega_7\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 - 2\omega_6^3c_s^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}^2 + 11\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12}^2 - 2\omega_6^3c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2 + 2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_8\omega_5^2\omega_9^3\omega_{12}^2 -$$
$$2\omega_6^3\omega_{13}\omega_7\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 - 8c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 + 3\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 - 4\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12}^2 - 2\omega_6c_s^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 +$$
$$2\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_8\omega_5\omega_9^3\omega_{12}^2 - 2\omega_6^3c_s^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}^2 - 2\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 + 5\omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}^2 + 2\omega_6^3v_1^2\omega_{13}^2\omega_7\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 -$$

$$11\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}^2 - 3\omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12} - 2\omega_6^3\omega_{13}^2\omega_7\omega_8^2\omega_5^2\omega_9^2\omega_{12} - 3\omega_6^3v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}^2 - 4\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_9^3\omega_{12}^2 -$$
$$2\omega_6^3\omega_{13}^2\omega_7\omega_8\omega_5\omega_9^3\omega_{12}^2 + \omega_6v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 + 9\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12} - 8\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}^2 + 4\omega_6^3v_1^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 -$$
$$13\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2 + 2\omega_6^3\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 + 2\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_8^2\omega_5^2\omega_9^2\omega_{12} - 2\omega_6^2c_s^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 + 2\omega_6^3\omega_{13}^2\omega_7\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 -$$
$$2\omega_6^3v_1^2\omega_{13}^2\omega_7\omega_8^2\omega_5^2\omega_9^3\omega_{12} + \omega_6^3v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2 + 2\omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} + 4\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_9^3\omega_{12}^2 - 2\omega_6^3v_1^2\omega_{13}\omega_7\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 +$$
$$2\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12}^2 + 2\omega_6^3c_s^2\omega_{13}\omega_7\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 + \omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 - 2\omega_6^3v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^3 + 2\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 +$$
$$2\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 + 4\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}^2 + 2\omega_6^3\omega_{13}^2\omega_7\omega_8^2\omega_5^2\omega_9^3\omega_{12} + 6\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2 - 2\omega_6^3v_1^2\omega_{13}^2\omega_7\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 +$$
$$3\omega_6^3v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12} + 2\omega_6^3v_1^2\omega_{13}^2\omega_7\omega_8\omega_5\omega_9^3\omega_{12}^2 - 2\omega_6^2v_1^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12}^2 - 5\omega_6^3v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}^2 +$$
$$2\omega_6^3c_s^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12}^2 + 4\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12} - 4\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}^2 - \omega_6^2v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 +$$
$$2\omega_6^3\omega_{13}\omega_7\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 + 2\omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^3 + 2\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_8\omega_5^2\omega_9^3\omega_{12}^2 + 2\omega_6^2\omega_{13}^2\omega_7\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 - \omega_6^3v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}^2 +$$
$$2\omega_6^3v_1^2\omega_{13}^2\omega_7\omega_8^2\omega_5\omega_9^3\omega_{12} + 2\omega_6^2v_1^2\omega_{13}\omega_7\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 - 2\omega_6^3\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12}^2 + 2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}^2 - 2\omega_6v_1^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 +$$
$$8\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 + 4\omega_6^3v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_{12}^2 + 2\omega_6^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 - 2\omega_6^3v_1^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}^2 + \omega_6^3v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 +$$
$$2\omega_6^3\omega_{13}^2\omega_7\omega_8\omega_5^2\omega_9^3\omega_{12}^2 - \omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12}^2 + 2\omega_6^3c_s^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 - 2\omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3 - 2\omega_6^3v_1^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 -$$
$$2\omega_6^3v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2 - 4\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 + 2\omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_9^3\omega_{12} + 2\omega_6^3v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_9^2\omega_{12}^2 - 4\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12} -$$
$$2\omega_6^3c_s^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 - 2\omega_6^3v_1^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}^2 - 4\omega_6^3\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_{12}^2 + \omega_6^2v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12}^2 -$$
$$4\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 + 4\omega_6^2v_1^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 - 2\omega_6^3v_1^2\omega_{13}^2\omega_7\omega_8\omega_5^2\omega_9^3\omega_{12}^2 - \omega_6^3v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12} -$$
$$6\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} + 2\omega_6^3v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12}^2 - 2\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12}^2 - 2\omega_6^3\omega_{13}^2\omega_7\omega_8^2\omega_5\omega_9^3\omega_{12} - 3\omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12} -$$
$$4\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 - 2\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_8^2\omega_5\omega_9^3\omega_{12}^2 - 2\omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_9^2\omega_{12}^2 - 2\omega_6^3v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_9^3\omega_{12} + 2\omega_6^3v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3 +$$
$$2\omega_6^3\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 + 2\omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2 - 2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 + \omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2 + 6\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_9^2\omega_{12}^2 +$$
$$2\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_5\omega_9^3\omega_{12}^2 - 2\omega_6^3c_s^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 - 6\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^2 - \omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 + 2\omega_6^3v_1^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 +$$
$$2\omega_6^3v_1^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12}^2 - 8\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 + \omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}^2 + 9\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12} -$$
$$2\omega_6^2c_s^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12}^2 - 15\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}^2 + 12\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_{12}^2 + 2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_5^2\omega_9^3\omega_{12}^2 + 2\omega_6^2c_s^2\omega_{13}\omega_7\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 +$$
$$2\omega_6^3\omega_{13}^2\omega_7\omega_8^2\omega_5\omega_9^3\omega_{12}^2 - \omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 + 2\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_8^2\omega_5\omega_9^3\omega_{12} + 2\omega_6^3\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}^2 - 2\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 -$$
$$2\omega_6^2\omega_{13}^2\omega_7\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 - 2\omega_6^3\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 + 6\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3 - 6\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_9^3\omega_{12} + 2\omega_6^3c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}^2 -$$
$$2\omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12}^2 - 2\omega_6^3v_1^2\omega_{13}^2\omega_7\omega_8^2\omega_5\omega_9^3\omega_{12}^2 - 2\omega_6c_s^2\omega_{13}^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 + 8\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2 + \omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12} -$$
$$\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 + 2\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 - 2\omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3 + 2\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 - 2\omega_6^3v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 -$$
$$2\omega_6^3c_s^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 - 2\omega_6^3v_1^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}^2 - 4\omega_6^3\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_{12}^2 + \omega_6^2v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12}^2 -$$
$$4\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 + 4\omega_6^2v_1^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 - 2\omega_6^3v_1^2\omega_{13}^2\omega_7\omega_8\omega_5^2\omega_9^3\omega_{12}^2 - \omega_6^3v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12} -$$
$$6\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} + 2\omega_6^3v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12}^2 - 2\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12}^2 - 2\omega_6^3\omega_{13}^2\omega_7\omega_8^2\omega_5\omega_9^3\omega_{12} - 3\omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12} -$$
$$4\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 - 2\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_8^2\omega_5\omega_9^3\omega_{12}^2 - 2\omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_9^2\omega_{12}^2 - 2\omega_6^3v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_9^3\omega_{12} + 2\omega_6^3v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3 +$$
$$2\omega_6^3\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 + 2\omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2 - 2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 + \omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2 + 6\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_9^2\omega_{12}^2 +$$
$$2\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_5\omega_9^3\omega_{12}^2 - 2\omega_6^3c_s^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 - 6\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^2 - \omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 + 2\omega_6^3v_1^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 +$$
$$2\omega_6^3v_1^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12}^2 - 8\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 + \omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}^2 + 9\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12} -$$
$$2\omega_6^2c_s^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^3\omega_{12}^2 - 15\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}^2 + 12\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_{12}^2 + 2\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_5^2\omega_9^3\omega_{12}^2 + 2\omega_6^2c_s^2\omega_{13}\omega_7\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 +$$
$$2\omega_6^3\omega_{13}^2\omega_7\omega_8^2\omega_5\omega_9^3\omega_{12}^2 - \omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 + 2\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_8^2\omega_5\omega_9^3\omega_{12} + 2\omega_6^3\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}^2 - 2\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 -$$
$$2\omega_6^2\omega_{13}^2\omega_7\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 - 2\omega_6^3\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 + 6\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9 - 6\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_9^3\omega_{12} + 2\omega_6^3c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^3\omega_{12}^2 -$$
$$2\omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12}^2 - 2\omega_6^3v_1^2\omega_{13}^2\omega_7\omega_8^2\omega_5\omega_9^3\omega_{12}^2 - 2\omega_6c_s^2\omega_{13}^2\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 + 8\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2 + \omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12} -$$
$$\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2 + 2\omega_6^3\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12} - 360\omega_6^3c_s^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 + 36\omega_6^3v_1^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 + 144\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 -$$
$$9\omega_6^3c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}^2 + 2\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5^2\omega_9^3\omega_{12}^2 + 15\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2 + 3\omega_6^3v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12})\frac{v_2v_1\rho}{2\omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^3\omega_{12}^2}$$

$$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_3} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_3}$$

$$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_3} = 0$$

$$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_3} = 0$$

$$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_3} = 0$$

$$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_3} = (-24\omega_3v_2^2\omega_4^2\omega_1^3\omega_2 - 108\omega_3\omega_4^2\omega_1^2\omega_2^3 + 189\omega_3^2c_s^2\omega_4\omega_1^3\omega_2^2 + 48\omega_3\omega_4^2\omega_1^3\omega_2 + 144\omega_3v_2^2\omega_4^2\omega_1^2\omega_2^3 + 324c_s^2\omega_4^2\omega_1^3\omega_2^3 + 72\omega_4^2\omega_1^3\omega_2^2 +$$
$$12\omega_3v_1^2\omega_4^2\omega_1\omega_2^3 - 63\omega_3^2\omega_4\omega_1^3\omega_2^3 - 54\omega_3^2v_2^2\omega_1^3\omega_2^3 - 48\omega_3^2v_1^2\omega_4^2\omega_1\omega_2^2 - 108\omega_3^2v_3^2\omega_4^2\omega_1^3\omega_2 + 336\omega_3^2c_s^2\omega_4^2\omega_1^3 + 36\omega_3^2v_1^2\omega_4\omega_1^2\omega_2^3 - 36\omega_3^2v_2^2\omega_4^2\omega_1^2\omega_2^2 -$$
$$72v_1^2\omega_4^2\omega_1^2\omega_2^3 + 216\omega_3c_s^2\omega_4\omega_1^3\omega_2^2 + 72\omega_3^2v_2^2\omega_4\omega_1\omega_2^3 + 72\omega_3^2\omega_4\omega_1^3\omega_2^2 - 108\omega_4^2\omega_1^3\omega_2^3 - 96\omega_3^2v_2^2\omega_4^2\omega_2^3 - 216c_s^2\omega_4^2\omega_1^3\omega_2^2 + 180\omega_3v_1^2\omega_4\omega_1^2\omega_2^3 -$$
$$216\omega_3^2c_s^2\omega_4\omega_1^3\omega_2^2 - 60\omega_3v_2^2\omega_4^2\omega_1^2\omega_2^2 + 48\omega_3\omega_4^2\omega_1^2\omega_2^2 - 72\omega_3^2v_2^2\omega_4^2\omega_1^3\omega_2 - 20\omega_3^2v_2^2\omega_4^2\omega_1^2\omega_2^3 - 324\omega_3c_s^2\omega_4\omega_1^3\omega_2^3 + 36\omega_3^2v_1^2\omega_4\omega_1^2\omega_2^2 +$$
$$216\omega_3^2v_2^2\omega_4^2\omega_1^2\omega_2^2 - 36\omega_3^2v_1^2\omega_4^2\omega_1\omega_2^3 + 54v_1^2\omega_4^2\omega_1^3\omega_2^3 + 20\omega_3^2v_2^2\omega_4^2\omega_1^3\omega_2^2 - 36\omega_3c_s^2\omega_4^2\omega_1\omega_2^3 + 48\omega_3^2v_2^2\omega_4^2\omega_1^3 - 216\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2 + 36\omega_3v_1^2\omega_4\omega_1^3\omega_2^2 +$$
$$24\omega_3^2\omega_4^2\omega_1\omega_2^2 - 432c_s^2\omega_4^2\omega_1^2\omega_2^3 + 108\omega_3^2v_2^2\omega_1^2\omega_2^3 + 144\omega_3\omega_4\omega_1^2\omega_2^3 - 72\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^2 + 63\omega_3\omega_4^2\omega_1^3\omega_2^3 - 63\omega_3v_2^2\omega_4^2\omega_1^3\omega_2^3 - 432\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^3 -$$
$$36\omega_3^2v_1^2\omega_4\omega_1^3\omega_2^2 + 24\omega_3^2v_2^2\omega_4^2\omega_1^2\omega_2 + 432\omega_3c_s^2\omega_4\omega_1^2\omega_2^3 - 36v_1^2\omega_4^2\omega_1^3\omega_2^2 + 72\omega_3v_2^2\omega_4^2\omega_1^3\omega_2^2 + 216\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^2 - 120\omega_3^2c_s^2\omega_4^2\omega_2^3 - 108\omega_3\omega_4^2\omega_1^3\omega_2^2 +$$
$$180\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^3 + 144\omega_4^2\omega_1^2\omega_2^3 - 72\omega_3^2\omega_4\omega_1^2\omega_2^2 - 36\omega_3^2\omega_4^2\omega_1\omega_2^3 - 108\omega_3v_1^2\omega_4\omega_1^3\omega_2^3 - 36v_2^2\omega_4^2\omega_1^3\omega_2^2 - 48\omega_3^2v_1^2\omega_4^2\omega_2^2\omega_2 - 144\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^2 -$$
$$36\omega_3^2v_2^2\omega_4\omega_1^3\omega_2^2 - 144\omega_3^2\omega_4^2\omega_1^3 - 60\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^3 + 108\omega_3\omega_4\omega_1^3\omega_2^3 - 360\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2 + 20\omega_3^2\omega_4^2\omega_1^2\omega_2^3 + 36\omega_3v_1^2\omega_4^2\omega_1^3\omega_2^2 + 144\omega_3^2\omega_4^2\omega_1^3\omega_2 +$$
$$324\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^3 - 108\omega_3^2v_1^2\omega_1^2\omega_2^3 + 63\omega_3^2v_2^2\omega_4\omega_1^3\omega_2^3 - 144\omega_3c_s^2\omega_4^2\omega_1^3\omega_2 + 54v_2^2\omega_4^2\omega_1^3\omega_2^3 - 36\omega_3^2\omega_4\omega_1\omega_2^3 + 48\omega_3^2v_1^2\omega_4^2\omega_1^3 + 72\omega_3^2v_3^2\omega_4^2\omega_2^3 -$$
$$108\omega_3^2\omega_4^2\omega_1^2\omega_2^2 + 108\omega_3^2c_s^2\omega_4\omega_1\omega_2^3 - 72\omega_3\omega_4\omega_1^3\omega_2^2 + 36\omega_3v_2^2\omega_4\omega_1^3\omega_2^2 + 180\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^2 + 96\omega_3^2\omega_4^2\omega_1^2\omega_2 + 12\omega_3v_1^2\omega_4^2\omega_1^2\omega_2^2 - 36\omega_3v_2^2\omega_4\omega_1^2\omega_2^3 -$$
$$144\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2 - 144\omega_3\omega_4\omega_1^2\omega_2^3 + 108\omega_3^2v_2^2\omega_4^2\omega_1\omega_2^2 + 36\omega_3^2v_2^2\omega_4\omega_1^2\omega_2^2 + 144\omega_3^2v_3^2\omega_4^2\omega_1^3 + 48\omega_3^2v_1^2\omega_4^2\omega_2^3 + 324\omega_3c_s^2\omega_4^2\omega_1^3\omega_2^2 - 36\omega_3^2v_1^2\omega_4^2\omega_1^3\omega_2 -$$
$$24\omega_3v_2^2\omega_4^2\omega_1\omega_2^3 + 60\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2^2 + 12\omega_3\omega_4^2\omega_1\omega_2^3 - 36\omega_3v_1^2\omega_4^2\omega_1^2\omega_2^2 - 20\omega_3^2\omega_4^2\omega_1^3\omega_2^2 - 24\omega_3v_1^2\omega_4^2\omega_1^3\omega_2 - 36\omega_3^2v_1^2\omega_4\omega_1\omega_2^3 - 72v_3^2\omega_4^2\omega_1^2\omega_2^3 +$$
$$72\omega_3^2v_1^2\omega_4^2\omega_1^2\omega_2^2 + 24\omega_3^2\omega_4^2\omega_2^3 - 108\omega_3^2v_3^2\omega_4^2\omega_1\omega_2^3 - 180\omega_3^2v_2^2\omega_4\omega_1^2\omega_2^3 + 54\omega_3^2v_1^2\omega_1^3\omega_2^3 - 189\omega_3c_s^2\omega_4^2\omega_1^3\omega_2^3 + 24\omega_3^2v_2^2\omega_4^2\omega_1\omega_2^2)\frac{v_2v_1\rho}{72\omega_3^2\omega_4^2\omega_1^3\omega_2^3}$$

coefficient $C^{(1)}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z\rho}$ **at** $\frac{\partial^4\rho}{\partial x_1\partial x_2^2\partial x_3}$**:**

$$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z\rho} = 0$$

$$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z\rho} =$$
$$(2\omega_6\omega_8^2\omega_5^2 + \omega_6^2\omega_8\omega_5^3 + \omega_6\omega_5^3 - 2\omega_6^2\omega_8\omega_5^2 + \omega_6^2\omega_8\omega_5 - \omega_8^2\omega_5^2 - \omega_6\omega_8^2\omega_5 + \omega_8\omega_5^3 + 3\omega_6^2\omega_8^2\omega_5 + \omega_6^2\omega_5^2 - 2\omega_6\omega_8\omega_5^3 - \omega_6^2\omega_8^2\omega_5^2 - 2\omega_6^2\omega_8^2 - \omega_6^2\omega_5^3)\frac{2v_3c_s^4}{\omega_6^2\omega_8^2\omega_5^3}$$

$$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z\rho} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z\rho}$$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z\rho} = 0$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z\rho} = 0$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z\rho} = 0$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z\rho} = (48\omega_3^2v_2^4\omega_4^2\omega_1^3 - 27\omega_3^2c_s^2\omega_4\omega_1^3\omega_2^3 - 56\omega_3v_3^2c_s^2\omega_4^2\omega_1\omega_2^3 - 84v_3^2c_s^2\omega_4^2\omega_1^2\omega_2^3 + 192\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^2 - 108\omega_3^2c_s^2\omega_1^2\omega_2^3 - 54c_s^2\omega_4^2\omega_1^3\omega_2^3 + 864\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^2\omega_2^2 + 120\omega_3^2v_3^2v_2^2\omega_4^2\omega_1^2\omega_2^2 + 27\omega_3^2v_3^2c_s^2\omega_4\omega_1^3\omega_2^3 + 8\omega_3^2v_3^2\omega_4^2\omega_1^3\omega_2 - 104\omega_3^2c_s^2\omega_4^2\omega_1^3 - 192\omega_3^2v_2^2\omega_4^2\omega_1^2\omega_2^2 - 30\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^3 - 162\omega_3^2c_s^4\omega_1^3\omega_2^3 - 168\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2 - 96\omega_3^2v_2^2\omega_4^2\omega_2^3 - 432\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^3\omega_2 + 24c_s^2\omega_4^2\omega_1^3\omega_2^2 - 60\omega_3^2v_3^2v_2^2\omega_4^2\omega_1^3\omega_2 + 432\omega_3^2c_s^2v_2^2\omega_4^2\omega_2^3 + 324\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^3 - 24\omega_3c_s^4\omega_4^2\omega_1^3\omega_2 + 96\omega_3^2v_2^2\omega_4^2\omega_1^3\omega_2 + 192\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^2 + 144\omega_3^2c_s^4\omega_4^2\omega_2^3 - 16\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2^2 + 324\omega_3^2c_s^4\omega_1^2\omega_2^3 - 72\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2 + 56\omega_3c_s^2\omega_4^2\omega_1\omega_2^3 - 96\omega_3^2v_2^2\omega_4^2\omega_1^3 - 108\omega_3^2v_3^2c_s^2\omega_4\omega_1^2\omega_2^3 + 432\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^3 - 56\omega_3^2v_3^2c_s^2\omega_4^2\omega_1\omega_2^2 + 8\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2 + 144\omega_3^2c_s^4\omega_4^2\omega_1^3 - 8\omega_3^2\omega_4^2\omega_1\omega_2^2 + 84c_s^2\omega_4^2\omega_1^2\omega_2^3 + 128\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^2 - 36\omega_3^2v_2^4\omega_4^2\omega_1\omega_2^3 + 54v_3^2c_s^2\omega_4^2\omega_1^3\omega_2^3 + 54\omega_3^2c_s^2\omega_1^3\omega_2^3 + 108\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^3 + 8\omega_3^2v_3^2c_s^2\omega_4^2\omega_1\omega_2^3 + 24\omega_3^2v_2^4\omega_4^2\omega_2^3 + 96\omega_3^2v_2^2\omega_4^2\omega_1^2\omega_2 + 30\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^2 - 81\omega_3c_s^4\omega_4^2\omega_1^3\omega_2^3 - 24v_3^2c_s^2\omega_4^2\omega_1^3\omega_2^2 - 104\omega_3^2c_s^2\omega_4^2\omega_2^3 + 64\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^3 - 432\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^2\omega_2 - 8\omega_3^2\omega_4^2\omega_1\omega_2^3 - 24\omega_3^2v_3^2v_2^2\omega_4^2\omega_1^2\omega_2 - 40\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^3\omega_2 + 162c_s^4\omega_4^2\omega_1^3\omega_2^3 - 10\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^2\omega_2^3 + 108\omega_3^2v_3^2c_s^2\omega_1^2\omega_2^3 - 64\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^2 + 81\omega_3^2c_s^4\omega_4\omega_1^3\omega_2^3 + 8\omega_3^2\omega_4^2\omega_1^3 + 72\omega_3^2v_2^4\omega_4^2\omega_1^2\omega_2^2 + 10\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^3 + 112\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2 - 8\omega_3^2\omega_4^2\omega_1^3\omega_2 + 32\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^3 - 108\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^3 + 8\omega_3c_s^2\omega_4^2\omega_1^3\omega_2 + 32\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^2\omega_2^2 + 72\omega_3^2v_3^2v_2^2\omega_4^2\omega_2^3 - 72c_s^4\omega_4^2\omega_1^3\omega_2^2 - 8\omega_3^2v_3^2\omega_4^2\omega_2^3 + 16\omega_3^2\omega_4^2\omega_1^2\omega_2^2 - 36\omega_3^2v_2^4\omega_4^2\omega_1^3\omega_2 - 27\omega_3v_3^2c_s^2\omega_4^2\omega_1^3\omega_2^3 - 176\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^2 - 432\omega_3^2c_s^2v_2^2\omega_4^2\omega_1\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^2\omega_2 - 60\omega_3^2v_3^2v_2^2\omega_4^2\omega_1\omega_2^3 - 168\omega_3c_s^4\omega_4^2\omega_1\omega_2^3 + 48\omega_3^2v_3^2v_2^2\omega_4^2\omega_1^3 + 64\omega_3v_3^2c_s^2\omega_4^2\omega_1^2\omega_2^2 + 80\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2 - 216\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^2 + 96\omega_3^2v_2^2\omega_4^2\omega_1\omega_2^3 - 324\omega_3^2c_s^4\omega_4\omega_1^2\omega_2^3 - 8\omega_3^2v_3^2\omega_4^2\omega_1^3 - 54\omega_3^2v_3^2c_s^2\omega_1^3\omega_2^3 - 252c_s^4\omega_4^2\omega_1^2\omega_2^3 + 8\omega_3^2v_3^2\omega_4^2\omega_1\omega_2^2 - 8\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^2\omega_2 - 72\omega_3^2v_2^4\omega_4^2\omega_1^2\omega_2 + 108\omega_3v_3^2c_s^2\omega_4^2\omega_1^2\omega_2^3 - 10\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2^2 - 8\omega_3v_3^2c_s^2\omega_4^2\omega_1^3\omega_2 - 96\omega_3^2v_3^2v_2^2\omega_4^2\omega_1\omega_2^2 - 432\omega_3^2c_s^2v_2^2\omega_4^2\omega_1\omega_2^2 + 10\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^3\omega_2^2 + 8\omega_3^2\omega_4^2\omega_2^3 + 8\omega_3^2v_3^2\omega_4^2\omega_1\omega_2^3 + 32\omega_3^2v_3^2c_s^2\omega_4^2\omega_2^3 + 27\omega_3c_s^2\omega_4^2\omega_1^3\omega_2^3 + 96\omega_3^2v_2^2\omega_4^2\omega_1\omega_2^2 - 24\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^3)\frac{v_3}{72\omega_3^2\omega_4^2\omega_1^3\omega_2^2}$

coefficient $C^{(1)}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_1}$ **at** $\frac{\partial^4 v_1}{\partial x_1\partial x_2^2\partial x_3}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_1} = 0$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_1} = (12\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}^2 - 4\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^3\omega_9\omega_{12}^2 + 2\omega_6^2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 + 4\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12} + 4\omega_6^2\omega_{13}\omega_7\omega_8^2\omega_5^3\omega_9\omega_{12}^2 + 4\omega_6\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 - 4\omega_6\omega_7\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2 + 4\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^3\omega_9^2\omega_{12}^2 + 2\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_5^2\omega_9^2\omega_{12}^2 + 4\omega_6\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12} + 8\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}^2 - 4\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 - 4\omega_6^2\omega_{13}\omega_7\omega_8^2\omega_5^2\omega_9^2\omega_{12} + 4\omega_6^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}^2 + 4\omega_6\omega_{13}\omega_7\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2 + 4\omega_6^2\omega_{13}\omega_7\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 - 2\omega_6^2\omega_{13}\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}^2 - 10\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 - 2\omega_6\omega_{13}\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 + 8\omega_6\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 + 2\omega_6\omega_{13}\omega_7\omega_{14}\omega_5^3\omega_9^2\omega_{12}^2 - 4\omega_6^2\omega_{13}\omega_7\omega_8^2\omega_5^3\omega_9\omega_{12} + 4\omega_6^2\omega_{13}\omega_7\omega_8\omega_5^3\omega_9^2\omega_{12}^2 + 4\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12} - 8\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^3\omega_9^2\omega_{12}^2 + 4\omega_6\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12} + 2\omega_6\omega_{13}\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2 + 4\omega_6^2\omega_7\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2 + 4\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_{12} + 4\omega_6^2\omega_{13}\omega_7\omega_8^2\omega_5^3\omega_9\omega_{12} + 4\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^3\omega_9\omega_{12}^2 - 2\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_5^3\omega_9^2\omega_{12}^2 - 4\omega_6\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}^2 + 6\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2 - 4\omega_6^2\omega_7\omega_8^2\omega_5^3\omega_9\omega_{12}^2 + 4\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9 + 2\omega_6^2\omega_{13}\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 - 4\omega_6\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12} - 4\omega_6\omega_{13}\omega_7\omega_8\omega_5^3\omega_9^2\omega_{12}^2 - 4\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_{12}^2 - 2\omega_6^2\omega_{13}\omega_{14}\omega_8\omega_5^3\omega_9^2\omega_{12}^2 + 4\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 + 4\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2 - 8\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_9^2\omega_{12}^2 - 8\omega_6\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}^2 - 8\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} + 2\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 - 5\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 - 4\omega_6^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 - 4\omega_6^2\omega_{13}\omega_7\omega_8\omega_5^2\omega_9^2\omega_{12}^2 + 5\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^3\omega_9^2\omega_{12}^2 - 4\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12}^2 - 8\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12} - 4\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2 - 4\omega_6^2\omega_{13}\omega_7\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2)\frac{v_3c_s^2v_1\rho}{2\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_9^2\omega_{12}^2}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_1}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_1} = 0$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_1} = 0$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_1} = 0$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_1} = (9\omega_4\omega_1\omega_2 + 27\omega_3c_s^2\omega_1\omega_2 - 27c_s^2\omega_4\omega_1\omega_2 + 6\omega_3c_s^2\omega_4\omega_1 - 6\omega_3c_s^2\omega_4\omega_2 + 2\omega_3\omega_4\omega_2 - 2\omega_3v_3^2\omega_4\omega_2 - 9v_3^2\omega_4\omega_1\omega_2 - 2\omega_3\omega_4\omega_1 + 9\omega_3v_3^2\omega_1\omega_2 + 2\omega_3v_3^2\omega_4\omega_1 - 9\omega_3\omega_1\omega_2)\frac{v_3v_1\rho}{72\omega_3\omega_4\omega_1\omega_2}$

coefficient $C^{(1)}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_2}$ **at** $\frac{\partial^4 v_2}{\partial x_1\partial x_2^2\partial x_3}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_2} = 0$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_2} = (\omega_6^2\omega_8^2\omega_5^3\omega_{15} + 2\omega_6\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 4\omega_6^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_6^2\omega_8^2\omega_5^2\omega_{15}^2 - 2\omega_6\omega_8\omega_5^3\omega_{15}^2 - \omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - \omega_6\omega_{17}\omega_8^2\omega_5^3\omega_{15} -$

$2\omega_6^2\omega_8^2\omega_5^2\omega_{15} - \omega_6^2\omega_{17}\omega_8^2\omega_5^3 - \omega_6^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + \omega_6\omega_{17}\omega_5^3\omega_{15}^2 + 2\omega_6^2\omega_{17}\omega_8^2\omega_5^2 + 2\omega_6\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - \omega_6^2\omega_8^2\omega_5^3\omega_{15}^2 + 3\omega_6^2\omega_{17}\omega_8\omega_5\omega_{15}^2 + \omega_6^2\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 3\omega_6\omega_{17}\omega_8^2\omega_5\omega_{15}^2 - 4\omega_6^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + \omega_6^2\omega_{17}\omega_5^2\omega_{15}^2 + 2\omega_6\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 2\omega_6^2\omega_8\omega_5^3\omega_{15}^2 + 5\omega_6^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 - \omega_6^2\omega_{17}\omega_5^3\omega_{15}^2 + \omega_6^2\omega_{17}\omega_8\omega_5^3\omega_{15}^2 + 2\omega_6^2\omega_{17}\omega_8^2\omega_5\omega_{15} - 4\omega_6^2\omega_{17}\omega_8^2\omega_{15}^2 + \omega_{17}\omega_8\omega_5^3\omega_{15}^2 + \omega_6\omega_8^2\omega_5^3\omega_{15}^2 - 2\omega_6^2\omega_8\omega_5^2\omega_{15}^2 - 2\omega_6\omega_{17}\omega_8\omega_5^3\omega_{15}^2)\frac{v_3 c_s^2 v_2 \rho}{\omega_6^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z\, v_2} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z\, v_2}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z\, v_2} = 0$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z\, v_2} = 0$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z\, v_2} = 0$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z\, v_2} = (-6c_s^2\omega_1\omega_2^3 - 4\omega_3 v_3^2\omega_1^2\omega_2 - 4\omega_3 v_2^2\omega_1\omega_2^2 + 4v_3^2\omega_1^2\omega_2^2 + 14\omega_3\omega_1^2\omega_2 + 28\omega_3 c_s^2\omega_1^3 + 4\omega_3 v_3^2\omega_2^3 + 2\omega_1\omega_2^3 - 2v_3^2\omega_1^3\omega_2 - 13\omega_3 v_2^2\omega_1\omega_2^3 + 16\omega_3 v_2^2\omega_1^3 + 10\omega_3\omega_1^3\omega_2 - 24\omega_3 c_s^2\omega_1\omega_2^2 - 3\omega_3 v_3^2\omega_1^3\omega_2 + 10\omega_3 v_2^2\omega_2^3 - 20\omega_3\omega_1^2\omega_2^2 + 6\omega_3 v_3^2\omega_1^2\omega_2^2 + 4\omega_3 v_3^2\omega_1^3 + 26\omega_3 c_s^2\omega_2^3 - 24\omega_3 c_s^2\omega_1\omega_2^3 + 8\omega_3\omega_1\omega_2^2 - 22\omega_3 v_2^2\omega_1^2\omega_2 - 4\omega_3 v_3^2\omega_1\omega_2^2 - 24\omega_3 c_s^2\omega_1^3\omega_2 - 10\omega_3\omega_2^3 + 10\omega_3\omega_1\omega_2^3 + 48\omega_3 c_s^2\omega_1^2\omega_2^2 - 3\omega_3 v_3^2\omega_1\omega_2^3 - 2v_3^2\omega_1\omega_2^3 - 30\omega_3 c_s^2\omega_1^2\omega_2 - 13\omega_3 v_2^2\omega_1^3\omega_2 + 12c_s^2\omega_1^2\omega_2^2 - 4\omega_1^2\omega_2^2 + 26\omega_3 v_2^2\omega_1^2\omega_2^2 - 6c_s^2\omega_1^3\omega_2 + 2\omega_1^3\omega_2 - 12\omega_3\omega_1^3)\frac{v_3 v_2 \rho}{6\omega_3\omega_1^3\omega_2^3}$

coefficient $C^{(1)}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z\, v_3}$ **at** $\frac{\partial^4 v_3}{\partial x_1 \partial x_2^2 \partial x_3}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z\, v_3} = (-36 - \omega^3 - 16\omega^2 + 54\omega)\frac{c_s^4\rho}{12\omega^3}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z\, v_3} = (-12\omega_6^3 c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_{15}\omega_9\omega_{12} + 12\omega_6^2 c_s^2\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12} - 48\omega_6^2 v_1^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12} - 24\omega_6^3 v_1^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12} - 12\omega_6^3 v_1^2\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12} + 12\omega_6^3 v_1^2\omega_{13}\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_{12} - 12\omega_6^3 c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} - 12\omega_6^3 c_s^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12} - 24\omega_6 v_1^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12} - 24\omega_6^3 c_s^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_{15}\omega_9\omega_{12} + 24\omega_6^3 v_1^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^2\omega_{15}\omega_9\omega_{12} + 12\omega_6^3 v_1^2\omega_{13}\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_9 + 12\omega_6^3 v_1^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8\omega_5^2\omega_{15}\omega_9\omega_{12} - 12\omega_6^2 c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12} - 12\omega_6^2 c_s^2\omega_{13}\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_9 + 12\omega_6^2 v_2^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^2\omega_{15}\omega_9\omega_{12} - \omega_6^3 c_s^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12} - 24\omega_6^2 v_1^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12} + 36\omega_6^3 v_1^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_{15}\omega_9\omega_{12} - 12\omega_6^3 c_s^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12} + 6\omega_6^2 c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12} + 24\omega_6^2 v_2^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_{15}\omega_9\omega_{12} - 12\omega_6^3 c_s^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9 + 12\omega_6^3 c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_{15}\omega_9\omega_{12} - 6\omega_6^2 v_2^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12} + 12\omega_6^2 c_s^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5\omega_{15}\omega_9\omega_{12} - 12\omega_6^3 v_1^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_5^3\omega_{15}\omega_9\omega_{12} + 12\omega_6^3 v_1^2\omega_{13}\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12} - 6\omega_6^2 v_2^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12} + 12\omega_6^3 c_s^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5\omega_{15}\omega_9\omega_{12} + 12\omega_6^2 c_s^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} + 12\omega_6^2 v_1^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_5^3\omega_{15}\omega_9\omega_{12} - 18\omega_6^3 v_1^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12} - 12\omega_6^3 v_1^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9 - 12\omega_6^2 v_1^2\omega_{13}\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12} - 2\omega_6^3 c_s^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_{15}\omega_9\omega_{12} + 12\omega_6^3 c_s^2\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12} - 18\omega_6^2 c_s^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12} + 12\omega_6^3 v_1^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12} - 12\omega_6^3 v_1^2\omega_{13}\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_{15}\omega_9\omega_{12} - 12\omega_6^2 c_s^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12} + 12\omega_6^3 v_1^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_5^2\omega_{15}\omega_9\omega_{12} + 12\omega_6^3 v_1^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12} - 6\omega_6^3 c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12} + 24\omega_6^3 v_2^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5\omega_{15}\omega_9\omega_{12} - 12\omega_6^3 v_2^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12} + 12\omega_6^3 c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12} - 12\omega_6^3 c_s^2\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12} - 24\omega_6^2 v_2^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12} - 6\omega_6 c_s^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12} - 12\omega_6^3 v_1^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12} + 24\omega_6^2 v_1^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12} + 12\omega_6^2 v_1^2\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12} + 12\omega_6^3 c_s^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15} + 12\omega_6^3 c_s^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^2\omega_{15}\omega_9\omega_{12} - 12\omega_6^3 c_s^2\omega_{13}\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12} + 12\omega_6^2 v_2^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} + 12\omega_6^3 c_s^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_9 - 12\omega_6^3 c_s^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_{12} + 12\omega_6^2 v_1^2\omega_{13}\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12} - 12\omega_6^3 v_2^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_5^3\omega_{15}\omega_9\omega_{12} + 48\omega_6^3 v_1^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^2\omega_{15}\omega_9\omega_{12} + 12\omega_6^3 v_2^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12} + 12\omega_6^3 v_1^2\omega_{13}\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_9\omega_{12} + 12\omega_6^2 v_1^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12} - 12\omega_6 v_2^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_{15}\omega_9\omega_{12} - 6\omega_6^3 v_2^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12} - 12\omega_6^3 v_1^2\omega_{13}\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_9 - 12\omega_6^3 v_1^2\omega_{13}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_9\omega_{12} + 36\omega_6^2 v_1^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12} - 12v_2^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12} + 12\omega_6^3 c_s^2\omega_{13}\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_9 + 12\omega_6^3 v_2^2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12} - 18\omega_6^2 c_s^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_{15}\omega_9\omega_{12} - 12\omega_6^3 c_s^2\omega_{13}\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 24\omega_6 v_1^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12} + 24\omega_6^3 v_1^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^2\omega_{15}\omega_{12} + 12\omega_6^3 c_s^2\omega_{13}\omega_7^2\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12} - 24\omega_6^3 v_1^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5\omega_{15}\omega_9\omega_{12} - 24\omega_6^2 v_2^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5\omega_{15}\omega_9\omega_{12} + 12\omega_6^3 c_s^2\omega_{13}\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_{12} + 10\omega_6^3 c_s^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12} - 12\omega_6^2 v_1^2\omega_{13}\omega_7^2\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12} + 6\omega_6^3 c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12} - 12\omega_6^3 v_2^2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_{15}\omega_9\omega_{12} - 12\omega_6^2 c_s^2\omega_{13}\omega_7^2\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12} + 12\omega_6^3 v_1^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15} + 12\omega_6 v_2^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12} + 6\omega_6^2 c_s^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12} + 12\omega_6^3 v_1^2\omega_{13}\omega_7^2\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12} + 24\omega_6^3 c_s^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5\omega_{15}\omega_9\omega_{12} - 12\omega_6^3 v_1^2\omega_7\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_{12} - 18\omega_6^3 c_s^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_{15}\omega_9\omega_{12} - 12\omega_6^2 v_2^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12} + 30\omega_6^3 v_1^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12} + 12\omega_6^3 v_2^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_5^2\omega_{15}\omega_9\omega_{12} - 24\omega_6^3 v_1^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_{15}\omega_{12} - 12\omega_6^2 v_1^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12} + 12\omega_6 c_s^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12} + 12\omega_6^3 c_s^2\omega_{13}\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}\omega_9\omega_{12} + 6\omega_6^2 v_2^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12} - 12\omega_6^3 v_1^2\omega_{13}\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 12\omega_6^2 c_s^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12} + 12\omega_6^2 c_s^2\omega_{13}\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12} + 12\omega_6^3 v_1^2\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12} + 12\omega_6^3 v_2^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_{15}\omega_9\omega_{12} - 6\omega_6^2 c_s^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12} + 18\omega_6 v_2^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12} - 12\omega_6^3 v_1^2\omega_{13}\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12} - 36\omega_6^3 v_2^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^2\omega_{15}\omega_9\omega_{12} + 12\omega_6^3 v_1^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2\omega_5^2\omega_{15}\omega_9 + 12\omega_6^2 v_2^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_5^3\omega_{15}\omega_9\omega_{12})\frac{c_s^2\rho}{12\omega_6^3\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_9\omega_{12}}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z\, v_3} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z\, v_3}$

$$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_3} = (6\omega_6\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12} - 12\omega_6^2\omega_{13}\omega_7\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12} + 10\omega_6^2\omega_{13}\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12} -$$
$$12\omega_6^2\omega_{13}\omega_7\omega_{17}\omega_5^2\omega_{15}\omega_9\omega_{12} + 12\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_5^3\omega_{15}\omega_9\omega_{12} - 12\omega_6^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12} + 12\omega_6\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12} -$$
$$24\omega_6^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8\omega_{15}\omega_9\omega_{12} + 12\omega_6^2\omega_7\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12} - 18\omega_6\omega_{13}\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12} - 2\omega_6^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8\omega_5^2\omega_{15}\omega_9\omega_{12} +$$
$$12\omega_6\omega_{13}\omega_7\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12} + 12\omega_6^2\omega_{13}\omega_7\omega_{17}\omega_5^3\omega_{15}\omega_9\omega_{12} - 12\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_5^2\omega_{15}\omega_9\omega_{12} - 12\omega_6^2\omega_{13}\omega_7\omega_{17}\omega_8\omega_5^3\omega_{15} -$$
$$\omega_6^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12} + 12\omega_6^2\omega_{13}\omega_7\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_9 - 12\omega_6^2\omega_7\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_{12} + 12\omega_6^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12} -$$
$$12\omega_6^2\omega_{13}\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9 - 18\omega_6\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8\omega_5^2\omega_{15}\omega_9\omega_{12} - 18\omega_6^2\omega_{13}\omega_{17}\omega_{14}\omega_8\omega_5^2\omega_{15}\omega_9\omega_{12} + 6\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^3\omega_9\omega_{12} -$$
$$12\omega_6^2\omega_{13}\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12} + 12\omega_6^2\omega_{13}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_9\omega_{12} + 12\omega_6^2\omega_{13}\omega_7\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_{12} + 12\omega_6^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_5^2\omega_{15}\omega_9\omega_{12} -$$
$$6\omega_6\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_9\omega_{12} + 12\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_{15}\omega_9\omega_{12} + 24\omega_6^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8\omega_5\omega_{15}\omega_9\omega_{12} - 6\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12} +$$
$$12\omega_6\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12} - 12\omega_6\omega_{13}\omega_7\omega_{14}\omega_5^3\omega_{15}\omega_9\omega_{12} - 12\omega_6\omega_7\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12} - 12\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12} +$$
$$12\omega_6\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_5^3\omega_{15}\omega_9\omega_{12} - 6\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12} + 12\omega_6^2\omega_{13}\omega_{17}\omega_{14}\omega_8\omega_5^2\omega_{15}\omega_9 - 12\omega_6^2\omega_{13}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_9 +$$
$$12\omega_6^2\omega_{13}\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15} - 12\omega_6\omega_{13}\omega_7\omega_{17}\omega_5^3\omega_{15}\omega_9\omega_{12} + 12\omega_{13}\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12} + 6\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12} +$$
$$12\omega_6^2\omega_{13}\omega_{17}\omega_{14}\omega_8\omega_5\omega_{15}\omega_9\omega_{12} - 12\omega_6^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_5^3\omega_{15}\omega_9\omega_{12} + 12\omega_6\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8\omega_5\omega_{15}\omega_9\omega_{12})\frac{c_s^4\rho}{12\omega_6^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_9\omega_{12}}$$

$$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_3} = C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_3}$$

$$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_3} = (-12\omega_3\omega_1^2\omega_2 + 12\omega_{13}\omega_1\omega_2^2 + 12\omega_3\omega_{13}\omega_1\omega_2 - 12\omega_3\omega_1^3\omega_2^2 + 24\omega_3\omega_1^3\omega_2 + 24\omega_3\omega_{13}\omega_1\omega_2^2 - 24\omega_3\omega_{13}\omega_2^2 + 12\omega_3\omega_1^2\omega_2^2 + 12\omega_1^3\omega_2^2 -$$
$$2\omega_{13}\omega_1^3\omega_2^2 + 12\omega_{13}\omega_1^3 - 2\omega_3\omega_{13}\omega_1^2\omega_2^2 - 6\omega_{13}\omega_1^2\omega_2^2 - 6\omega_3\omega_{13}\omega_1^2\omega_2 - 12\omega_1^2\omega_2^2 - \omega_3\omega_{13}\omega_1^3\omega_2^2 - 6\omega_{13}\omega_1^3\omega_2 - 12\omega_1^3\omega_2 - 12\omega_3\omega_1^3)\frac{c_s^4\rho}{12\omega_3\omega_{13}\omega_1^3\omega_2^2}$$

$$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_3} =$$
$$(-2\omega_3^2v_1^4\omega_4^2\omega_1^2\omega_5\omega_2^3 - 288\omega_3^2v_3^2v_2^2\omega_4^2\omega_1\omega_5\omega_2^2 - 348\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^3\omega_5\omega_2 - 48\omega_3^2v_2^2\omega_4^2\omega_1\omega_5\omega_2^3 - 24\omega_3^2c_s^2v_2^2\omega_4^2\omega_1\omega_5\omega_2^2 - 54\omega_3v_2^4\omega_4^2\omega_1^3\omega_5\omega_2^3 -$$
$$180\omega_3^2v_3^2v_2^2\omega_4^2\omega_1^3\omega_5\omega_2 + 4\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_5\omega_2^2 - 16\omega_3c_s^2\omega_4^2\omega_1^3\omega_5\omega_2 + 288\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_5\omega_2^3 + 108\omega_3c_s^2v_2^2\omega_4^2\omega_1^2\omega_5\omega_2^2 - 108\omega_3^2v_2^2\omega_1^2\omega_5\omega_2^3 +$$
$$2\omega_3^2v_1^2\omega_4^2\omega_1^2\omega_5\omega_2^3 + 108\omega_3^2v_2^4\omega_4^2\omega_1\omega_5\omega_2^3 - 288\omega_3^2c_s^2\omega_4\omega_1^2\omega_5\omega_2^3 + 288\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^3 - 4\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_5\omega_2^2 + 16\omega_3c_s^4\omega_4^2\omega_1^3\omega_5\omega_2 + 27\omega_3^2c_s^2v_1^2\omega_4\omega_1^3\omega_5\omega_2^3 +$$
$$324\omega_3^2c_s^2v_2^2\omega_1^2\omega_5\omega_2^3 + 54\omega_3v_2^2\omega_4^2\omega_1^3\omega_5\omega_2^3 - 108\omega_3c_s^2v_2^2\omega_4\omega_1^3\omega_5\omega_2^2 - 6\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_5\omega_2^3 - 72\omega_3c_s^2v_2^2\omega_4^2\omega_1^2\omega_5\omega_2^3 + 132\omega_3^2v_2^2\omega_4^2\omega_1^3\omega_5\omega_2 +$$
$$300\omega_3^2c_s^2v_2^2\omega_4^2\omega_1\omega_5\omega_2^3 + 72\omega_3v_2^4\omega_4^2\omega_1^3\omega_5\omega_2^2 + 36\omega_3v_2^4\omega_4\omega_1^2\omega_5\omega_2^3 - 160\omega_3c_s^2\omega_4^2\omega_1\omega_5\omega_2^3 + 72\omega_3^2v_2^2\omega_4^2\omega_1\omega_5\omega_2^2 - 180\omega_3^2v_3^2v_2^2\omega_4^2\omega_1\omega_5\omega_2^3 +$$
$$9\omega_3^2v_1^4\omega_4\omega_1^3\omega_5\omega_2^3 - 36\omega_3v_2^2\omega_4\omega_1^2\omega_5\omega_2^3 - 54\omega_3^2v_2^4\omega_1^3\omega_5\omega_2^3 - 6\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^2\omega_5\omega_2^3 - 72\omega_3^2v_2^4\omega_4^2\omega_1^3\omega_5\omega_2 - 72\omega_3v_2^2\omega_4^2\omega_1^3\omega_5\omega_2^2 + 648\omega_3^2v_3^2c_s^2\omega_4\omega_1^2\omega_5\omega_2^3 +$$
$$6\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^3\omega_5\omega_2^2 - 9\omega_3^2v_1^2\omega_4\omega_1^3\omega_5\omega_2^3 + 24\omega_3^2v_2^4\omega_4^2\omega_1\omega_5\omega_2^2 + 160\omega_3c_s^4\omega_4^2\omega_1\omega_5\omega_2^3 + 18\omega_3^2v_2^4\omega_4^2\omega_1^3\omega_5\omega_2^2 + 24\omega_3v_2^2\omega_4^2\omega_1^3\omega_5\omega_2 -$$
$$144\omega_3^2v_2^4\omega_4\omega_1^2\omega_5\omega_2^3 - 88\omega_3^2c_s^2\omega_4^2\omega_5\omega_2^3 - 72\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^3 + 72\omega_3c_s^4\omega_4^2\omega_1^3\omega_5\omega_2^3 - 12\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^3\omega_5\omega_2 + 48\omega_3^2v_2^4\omega_4^2\omega_1^3\omega_5 + 24\omega_3^2v_3^2\omega_4^2\omega_1\omega_5\omega_2^3 +$$
$$8\omega_3^2\omega_4^2\omega_5\omega_2^3 + 264\omega_3v_3^2c_s^2\omega_4^2\omega_1^2\omega_5\omega_2^2 - 168\omega_3^2v_3^2c_s^2\omega_4^2\omega_1\omega_5\omega_2^2 + 36\omega_3^2c_s^2\omega_4^2\omega_1\omega_5\omega_2^3 + 72v_2^2\omega_4^2\omega_1^2\omega_5\omega_2^3 - 27\omega_3c_s^2v_1^2\omega_4^2\omega_1^3\omega_5\omega_2^3 - 72\omega_3c_s^2\omega_4^2\omega_1^3\omega_5\omega_2^3 +$$
$$144\omega_3^2v_2^2\omega_4\omega_1^2\omega_5\omega_2^3 + 240\omega_3^2v_3^2c_s^2\omega_4^2\omega_5\omega_2^3 - 18\omega_3^2v_2^2\omega_4^2\omega_1^3\omega_5\omega_2^2 - 24\omega_3v_2^4\omega_4^2\omega_1^3\omega_5\omega_2 - 72v_2^4\omega_4^2\omega_1^2\omega_5\omega_2^3 + 162c_s^2v_2^2\omega_4^2\omega_1^3\omega_5\omega_2^3 + 8\omega_3^2c_s^4\omega_4^2\omega_1\omega_5\omega_2^3 -$$
$$108\omega_3^2c_s^2v_2^2\omega_4\omega_1^2\omega_5\omega_2^2 - 8\omega_3^2\omega_4^2\omega_1\omega_5\omega_2^3 + 64\omega_3^2c_s^2\omega_4^2\omega_1\omega_5\omega_2^2 - 120\omega_3^2v_3^2c_s^2\omega_4^2\omega_1\omega_5\omega_2^3 + 8\omega_3^2\omega_4^2\omega_1^3\omega_5 - 12\omega_3v_2^2\omega_4^2\omega_1\omega_5\omega_2^3 + 24\omega_3^2v_3^2\omega_4^2\omega_1\omega_5\omega_2^2 -$$
$$468\omega_3v_3^2c_s^2\omega_4^2\omega_1^2\omega_5\omega_2^3 + 36\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_5\omega_2 - 72\omega_3c_s^4\omega_4^2\omega_1^3\omega_5\omega_2^2 - 40\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_5 + 24\omega_3^2v_3^2\omega_4^2\omega_1^3\omega_5\omega_2 - 96\omega_3^2v_2^4\omega_4^2\omega_5\omega_2^3 - 36\omega_3^2v_2^4\omega_4\omega_1^2\omega_5\omega_2^2 -$$
$$216\omega_3^2c_s^2v_2^2\omega_4\omega_1^2\omega_5\omega_2^3 + 12\omega_3v_2^4\omega_4^2\omega_1\omega_5\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1\omega_5\omega_2^2 + 60\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^3\omega_5\omega_2^2 - 56\omega_3^2c_s^4\omega_4^2\omega_1\omega_5\omega_2^2 - 108c_s^2v_2^2\omega_4^2\omega_1^3\omega_5\omega_2^2 + 36\omega_3^2v_2^2\omega_4\omega_1^2\omega_5\omega_2^2 -$$
$$8\omega_3^2\omega_4^2\omega_1^3\omega_5\omega_2 + 24\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^3\omega_5 - 28\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_5\omega_2 + 72\omega_3c_s^2\omega_4^2\omega_1^3\omega_5\omega_2^2 + 4\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_5\omega_2^3 + 132\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^2\omega_5\omega_2^2 - 162\omega_3^2v_3^2c_s^2\omega_4\omega_1^3\omega_5\omega_2^3 +$$
$$108\omega_3^2v_2^4\omega_1^2\omega_5\omega_2^3 - 12\omega_3v_2^2\omega_4^2\omega_1^2\omega_5\omega_2^2 + 24\omega_3^2v_2^4\omega_4^2\omega_1^2\omega_5\omega_2 - 2\omega_3^2v_1^2\omega_4^2\omega_1^3\omega_5\omega_2^2 + 36\omega_3^2v_2^4\omega_4\omega_1\omega_5\omega_2^3 + 48\omega_3v_3^2c_s^2\omega_4^2\omega_1^3\omega_5\omega_2 + 12\omega_3v_2^4\omega_4^2\omega_1^2\omega_5\omega_2^2 -$$
$$108\omega_3c_s^2v_2^2\omega_4^2\omega_1^3\omega_5\omega_2^3 - 28\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_5\omega_2^3 - 36\omega_3^2v_2^2\omega_4\omega_1\omega_5\omega_2^3 + 2\omega_3^2v_1^4\omega_4^2\omega_1^3\omega_5\omega_2^2 - 48\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_5\omega_2^2 - 36\omega_3v_2^2\omega_4^2\omega_1^2\omega_5\omega_2^3 +$$
$$6\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^3\omega_5\omega_2^2 + 36\omega_3v_2^2\omega_4\omega_1^3\omega_5\omega_2^2 - 162\omega_3^2c_s^2v_2^2\omega_1^3\omega_5\omega_2^3 + 336\omega_3v_3^2c_s^2\omega_4^2\omega_1\omega_5\omega_2^3 - 6\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^2\omega_5\omega_2^3 - 72\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_5\omega_2^2 +$$
$$72\omega_3^2c_s^2\omega_4\omega_1^3\omega_5\omega_2^3 - 24\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^2\omega_5\omega_2 - 72\omega_3^2c_s^4\omega_4\omega_1^3\omega_5\omega_2^3 + 54\omega_3^2v_2^2\omega_1^3\omega_5\omega_2^3 + 180\omega_3c_s^2v_2^2\omega_4^2\omega_1^3\omega_5\omega_2^2 + 56\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_5\omega_2^2 +$$
$$108\omega_3c_s^2v_2^2\omega_4\omega_1^2\omega_5\omega_2^3 - 36\omega_3v_2^4\omega_4\omega_1^3\omega_5\omega_2^2 - 108\omega_3^2c_s^2v_2^2\omega_4\omega_1\omega_5\omega_2^3 - 72\omega_3^2v_3^2v_2^2\omega_4^2\omega_1^2\omega_5\omega_2 + 36\omega_3v_2^4\omega_4^2\omega_1^2\omega_5\omega_2^3 + 16\omega_3^2\omega_4^2\omega_1^2\omega_5\omega_2^2 -$$
$$24\omega_3^2v_3^2\omega_4^2\omega_5\omega_2^3 - 36v_2^4\omega_4^2\omega_1^3\omega_5\omega_2^2 - 288\omega_3^2c_s^4\omega_4\omega_1\omega_5\omega_2^3 + 48\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^2\omega_5\omega_2^2 + 9\omega_3v_1^2\omega_4^2\omega_1^3\omega_5\omega_2^3 + 108\omega_3^2c_s^2v_2^2\omega_4\omega_1^3\omega_5\omega_2^3 + 152\omega_3^2c_s^4\omega_4^2\omega_5\omega_2^3 -$$
$$112\omega_3c_s^2\omega_4^2\omega_1^2\omega_5\omega_2^2 - 56\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_5\omega_2 - 72\omega_3c_s^2v_2^2\omega_4^2\omega_1^3\omega_5\omega_2 - 96\omega_3^2v_2^2\omega_4^2\omega_1^3\omega_5 + 18\omega_3^2v_2^2\omega_4^2\omega_1^2\omega_5\omega_2^3 + 360\omega_3^2v_3^2v_2^2\omega_4^2\omega_1^2\omega_5\omega_2^2 - 8\omega_3^2\omega_4^2\omega_1^2\omega_5\omega_2 -$$
$$36\omega_3^2v_2^2\omega_4\omega_1^3\omega_5\omega_2^2 + 162\omega_3v_3^2c_s^2\omega_4^2\omega_1^3\omega_5\omega_2^3 - 9\omega_3v_1^4\omega_4^2\omega_1^3\omega_5\omega_2^3 + 36v_2^2\omega_4^2\omega_1^3\omega_5\omega_2^2 + 288\omega_3^2c_s^2\omega_4\omega_1\omega_5\omega_2^3 + 36\omega_3^2v_2^4\omega_4\omega_1^3\omega_5\omega_2^2 - 18\omega_3^2v_3^4\omega_4^2\omega_1^2\omega_5\omega_2^3 +$$
$$24\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_5\omega_2 + 144\omega_3^2v_3^2v_2^2\omega_4^2\omega_1^3\omega_5 + 112\omega_3c_s^4\omega_4^2\omega_1^2\omega_5\omega_2^2 + 264\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^3\omega_5 + 64\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_5\omega_2 + 32\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_5 - 84\omega_3^2v_2^2\omega_4^2\omega_1^2\omega_5\omega_2^2 -$$
$$54\omega_3^2v_2^2\omega_4\omega_1^3\omega_5\omega_2^3 + 216\omega_3c_s^2\omega_4^2\omega_1^2\omega_5\omega_2^3 + 24\omega_3^2v_2^2\omega_4^2\omega_5\omega_2^3 - 60\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^2\omega_5\omega_2^3 - 24\omega_3^2v_3^2\omega_4^2\omega_1^3\omega_5 + 108\omega_3^2c_s^2v_2^2\omega_4\omega_1^3\omega_5\omega_2^2 - 216c_s^2v_2^2\omega_4^2\omega_1^2\omega_5\omega_2^3 +$$
$$180\omega_3c_s^2v_2^2\omega_4^2\omega_1\omega_5\omega_2^3 + 54v_2^4\omega_4^2\omega_1^3\omega_5\omega_2^3 - 96\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^2\omega_5\omega_2 - 216\omega_3c_s^4\omega_4^2\omega_1^2\omega_5\omega_2^3 + 216\omega_3^2v_3^2v_2^2\omega_4^2\omega_5\omega_2^3 + 54\omega_3^2v_2^4\omega_4\omega_1^3\omega_5\omega_2^3 -$$
$$36\omega_3^2v_2^2\omega_4^2\omega_1^2\omega_5\omega_2^2 - 216\omega_3^2c_s^2v_2^2\omega_4^2\omega_5\omega_2^3 - 648\omega_3^2v_3^2c_s^2\omega_4\omega_1\omega_5\omega_2^3 - 54v_2^2\omega_4^2\omega_1^3\omega_5\omega_2^3 - 180\omega_3v_3^2c_s^2\omega_4^2\omega_1^3\omega_5\omega_2^2 - 288\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^3)\frac{\rho}{72\omega_3^2\omega_4^2\omega_1^3\omega_5\omega_2^3}$$

coefficient $C^{(1)}_{\mathrm{D}_y^3\mathrm{D}_z\rho}$ at $\frac{\partial^4\rho}{\partial x_2^3\partial x_3}$:

$$C^{(1),\mathrm{SRT}}_{\mathrm{D}_y^3\mathrm{D}_z\rho} = 0$$

$$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y^3\mathrm{D}_z\rho} = (4\omega_{10}^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 12\omega_6c_s^2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_5^2\omega_{15}^2 + 4\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_6\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 12\omega_6c_s^2\omega_{10}^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 +$$
$$12\omega_6c_s^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 - 4\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 + 12\omega_6c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_5\omega_{15}^2 - 6\omega_6c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5^2\omega_{15} + 4\omega_6\omega_{16}\omega_{10}\omega_{17}\omega_8\omega_5^2\omega_{15}^2 -$$
$$4\omega_6\omega_{16}v_2^2\omega_{10}\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 4\omega_6v_2^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 + 6\omega_6c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2 + 4\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_5^2\omega_{15}^2 - 4\omega_6\omega_{16}v_2^2\omega_{10}^2\omega_7\omega_8\omega_5\omega_{15}^2 +$$
$$4\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5\omega_{15}^2 - 4\omega_6\omega_{16}v_2^2\omega_{10}^2\omega_7\omega_5^2\omega_{15}^2 - 4\omega_6\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_{15}^2 + 4\omega_6\omega_{16}v_2^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_{15}^2 - 6c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5^2\omega_{15}^2 -$$
$$4\omega_6\omega_{16}\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 - 4v_2^2\omega_{10}^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 4\omega_6\omega_{16}v_2^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 - 6\omega_6c_s^2\omega_{16}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 4\omega_6v_2^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 -$$
$$24\omega_6c_s^2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 - 2\omega_{16}v_2^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 4\omega_{16}v_2^2\omega_{10}\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 12c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_5^2\omega_{15}^2 + 24\omega_6c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15} +$$
$$2\omega_{16}v_2^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15} + 6\omega_6c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5^2\omega_{15}^2 - 12\omega_6c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5 - 4\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_5\omega_{15}^2 - 4\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5\omega_{15} +$$
$$12\omega_6c_s^2\omega_{16}\omega_{10}\omega_{17}\omega_8\omega_5\omega_{15}^2 - 4\omega_6\omega_{10}^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 4\omega_6\omega_{16}v_2^2\omega_{10}^2\omega_7\omega_8\omega_5\omega_{15} + 8\omega_6\omega_{16}v_2^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15} + 6c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15} -$$

$8\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15} + 3\omega_6\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 4\omega_6 v_2^2\omega_{10}^2\omega_{17}\omega_8\omega_5\omega_{15}^2 - 12c_s^2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_5^2\omega_{15}^2 + 8\omega_6\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 - 12\omega_6 c_s^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 - 8\omega_6\omega_{16}v_2^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 - 6c_s^2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 4\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_{15} - 4\omega_6\omega_{16}v_2^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_{15} + 4\omega_6\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_5\omega_{15}^2 - 4\omega_6\omega_{16}v_2^2\omega_{10}\omega_7\omega_{17}\omega_5\omega_{15}^2 + 2\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5^2\omega_{15}^2 + 2\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15} - 2\omega_6\omega_{16}v_2^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15} + 4\omega_{16}v_2^2\omega_{10}^2\omega_7\omega_5^2\omega_{15}^2 - 12c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15} + 4\omega_6 v_2^2\omega_{10}^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 4\omega_6\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 + 3\omega_6\omega_{16}v_2^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 12c_s^2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 - 3\omega_6\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 4\omega_{16}\omega_{10}\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 6\omega_6 c_s^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 6c_s^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 4\omega_6\omega_{16}v_2^2\omega_{10}\omega_7\omega_{17}\omega_5^2\omega_{15}^2 - 4\omega_6\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_5^2\omega_{15}^2 + 9\omega_6 c_s^2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 2\omega_{16}v_2^2\omega_{10}^2\omega_7\omega_8\omega_5^2\omega_{15}^2 + 4\omega_{16}v_2^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 + 2\omega_6 v_2^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 12c_s^2\omega_{10}^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 12\omega_6 c_s^2\omega_{16}\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 + 2v_2^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 12\omega_6 c_s^2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_{15}^2 + 4\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_5^2\omega_{15}^2 - 12\omega_6 c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5\omega_{15}^2 - 6\omega_6 c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15} - 4\omega_{16}v_2^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15} + 4\omega_6\omega_{10}^2\omega_{17}\omega_8\omega_5\omega_{15}^2 - 2\omega_6\omega_{16}v_2^2\omega_{10}^2\omega_7\omega_8\omega_5^2\omega_{15} + 2\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5^2\omega_{15} - 12\omega_6 c_s^2\omega_{16}\omega_{10}\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 2\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2 + 2\omega_6\omega_{16}v_2^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2 - 3\omega_6 v_2^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 4\omega_6\omega_{16}v_2^2\omega_{10}\omega_{17}\omega_8\omega_5\omega_{15}^2 + 12\omega_6 c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5\omega_{15} - 4\omega_6\omega_{16}\omega_{10}\omega_{17}\omega_8\omega_5\omega_{15}^2 - 2\omega_6\omega_{16}\omega_{10}^3\omega_7\omega_8\omega_5^2\omega_{15}^2 + 2\omega_6\omega_{16}v_2^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 2\omega_6\omega_{16}v_2^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 4\omega_6\omega_{16}v_2^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5 + 4\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5 + 12c_s^2\omega_{16}\omega_{10}\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 4\omega_6\omega_{16}v_2^2\omega_{10}^2\omega_7\omega_5\omega_{15}^2 - 2\omega_6\omega_{16}v_2^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 2\omega_6\omega_{16}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 12\omega_6 c_s^2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_5\omega_{15}^2 - 2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15} + 4\omega_6\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 - 4\omega_{16}\omega_{10}^2\omega_7\omega_5^2\omega_{15}^2 - 12\omega_6 c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_{15} - 9\omega_6 c_s^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 12\omega_6 c_s^2\omega_{10}^2\omega_{17}\omega_8\omega_5\omega_{15}^2 - 4\omega_{16}v_2^2\omega_{10}\omega_7\omega_{17}\omega_5^2\omega_{15}^2 - 12\omega_6 c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_5^2\omega_{15}^2 + 2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2)\frac{v_3 v_2 v_1}{4\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_y^3\mathrm{D}_z\rho} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y^3\mathrm{D}_z\rho}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_y^3\mathrm{D}_z\rho} = 0$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_y^3\mathrm{D}_z\rho} = 0$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_y^3\mathrm{D}_z\rho} = 0$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_y^3\mathrm{D}_z\rho} = (-\omega_1 + v_3^2\omega_1 - 3c_s^2\omega_2 + \omega_2 + 3c_s^2\omega_1 - v_3^2\omega_2)\frac{v_3 v_2 v_1}{12\omega_1\omega_2}$

coefficient $C^{(1)}_{\mathrm{D}_y^3\mathrm{D}_z v_1}$ **at** $\frac{\partial^4 v_1}{\partial x_2^3\partial x_3}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_y^3\mathrm{D}_z v_1} = 0$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y^3\mathrm{D}_z v_1} = (6\omega_6^2 c_s^2\omega_{17}\omega_8\omega_5\omega_{15}^2 + \omega_6 v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - \omega_6^2 c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 2\omega_6^2 c_s^2\omega_8^2\omega_5^2\omega_{15}^2 + 2\omega_6 v_2^2\omega_8\omega_5^3\omega_{15}^2 + 4\omega_6^2 v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + \omega_6^2\omega_8^2\omega_5^3\omega_{15} + 2\omega_6\omega_{17}\omega_8^2\omega_5^2\omega_{15} - \omega_6^2 c_s^2\omega_8^2\omega_5^3\omega_{15} - 4\omega_6^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} + \omega_6 v_2^2\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 5\omega_6^2 c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 2\omega_6^2\omega_8^2\omega_5^2\omega_{15}^2 - 2\omega_6 c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_6\omega_8\omega_5^3\omega_{15}^2 - 2\omega_6^2 v_2^2\omega_8\omega_5^3\omega_{15}^2 - \omega_6\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 2\omega_6^2\omega_8^2\omega_5^2\omega_{15} - \omega_6^2\omega_{17}\omega_8^2\omega_5^3 + 7\omega_6 c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - \omega_6^2 v_2^2\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 2\omega_6^2 c_s^2\omega_{17}\omega_8^2\omega_5^2 + \omega_6^2 c_s^2\omega_8^2\omega_5^3\omega_{15}^2 + 4\omega_6^2 c_s^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} + \omega_6^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + \omega_6 c_s^2\omega_{17}\omega_8^2\omega_5^3\omega_{15} - \omega_6^2 v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - \omega_6 c_s^2\omega_8^2\omega_5^3\omega_{15}^2 + 2\omega_6^2 v_2^2\omega_8\omega_5^2\omega_{15}^2 + 2\omega_6^2\omega_{17}\omega_8^2\omega_5^2 - \omega_6\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - \omega_6^2\omega_8^2\omega_5^3\omega_{15}^2 - 2\omega_6 v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} + \omega_6^2\omega_{17}\omega_8^2\omega_5^3\omega_{15} + \omega_6^2 c_s^2\omega_{17}\omega_8^2\omega_5^3 + 2\omega_6^2 c_s^2\omega_8^2\omega_5^2\omega_{15} - \omega_6^2 v_2^2\omega_8^2\omega_5^3\omega_{15} + \omega_6^2 v_2^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 + 4\omega_6 c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 2c_s^2\omega_{17}\omega_8\omega_5^3\omega_{15}^2 - \omega_6 v_2^2\omega_{17}\omega_8\omega_5^3\omega_{15}^2 + \omega_6^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 2\omega_6^2 c_s^2\omega_8\omega_5^3\omega_{15}^2 + 2\omega_6^2\omega_8\omega_5^3\omega_{15}^2 + 2\omega_6^2 c_s^2\omega_{17}\omega_5^2\omega_{15}^2 + 2\omega_6 c_s^2\omega_8\omega_5^3\omega_{15}^2 - 2\omega_6^2 v_2^2\omega_8^2\omega_5^2\omega_{15}^2 - 6\omega_6 c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 - \omega_6^2 v_2^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - \omega_6^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 + 5\omega_6^2 c_s^2\omega_{17}\omega_8\omega_5^3\omega_{15}^2 - 2\omega_6^2 c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15} + 2\omega_6^2 c_s^2\omega_8\omega_5^2\omega_{15}^2 - \omega_6 v_2^2\omega_8^2\omega_5^3\omega_{15}^2 - \omega_6^2\omega_{17}\omega_8\omega_5^3\omega_{15}^2 + 13\omega_6^2 c_s^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 + 2\omega_6^2\omega_{17}\omega_8^2\omega_5\omega_{15} + 2\omega_6 c_s^2\omega_{17}\omega_5^3\omega_{15}^2 + \omega_6^2 v_2^2\omega_{17}\omega_8^2\omega_5^3 + 2\omega_6^2 v_2^2\omega_8^2\omega_5^2\omega_{15} - 7\omega_6 c_s^2\omega_{17}\omega_8\omega_5^3\omega_{15}^2 - 11\omega_6^2 c_s^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 8\omega_6^2 c_s^2\omega_{17}\omega_8^2\omega_{15}^2 + \omega_6^2 v_2^2\omega_8^2\omega_5^3\omega_{15}^2 + \omega_6^2 v_2^2\omega_{17}\omega_8\omega_5^3\omega_{15}^2 - 2\omega_6^2 v_2^2\omega_{17}\omega_8^2\omega_5^2 + \omega_6\omega_8^2\omega_5^3\omega_{15}^2 - 2\omega_6^2 v_2^2\omega_{17}\omega_8^2\omega_5\omega_{15} - 2\omega_6^2\omega_8\omega_5^2\omega_{15}^2 + \omega_6\omega_{17}\omega_8\omega_5^3\omega_{15}^2 - 2\omega_6^2 c_s^2\omega_{17}\omega_5^3\omega_{15}^2)\frac{v_3 v_2\rho}{2\omega_6^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_y^3\mathrm{D}_z v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y^3\mathrm{D}_z v_1}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_y^3\mathrm{D}_z v_1} = 0$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_y^3\mathrm{D}_z v_1} = 0$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_y^3\mathrm{D}_z v_1} = 0$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_y^3\mathrm{D}_z v_1} = (2\omega_3\omega_4^2\omega_1 + 18\omega_3 c_s^2\omega_4^2 - 2\omega_3 v_3^2\omega_4^2\omega_1 - 2\omega_3^2\omega_4\omega_1 - 18\omega_3 c_s^2\omega_4\omega_1 + 12\omega_4^2 + 12\omega_3 v_2^2\omega_4 + 6\omega_3 v_3^2\omega_4^2 - 6\omega_3 v_2^2\omega_4\omega_1 + 3v_3^2\omega_4^2\omega_1 + 2\omega_3^2 v_3^2\omega_4\omega_1 + 36\omega_3 c_s^2\omega_4 + 6\omega_3^2\omega_4 - 6v_2^2\omega_4^2 + 6\omega_3^2 v_3^2 - 12\omega_3\omega_4 + 3\omega_3^2 v_2^2\omega_1 + 18c_s^2\omega_4^2\omega_1 + 6\omega_3^2 c_s^2\omega_4\omega_1 - 6\omega_3^2 v_2^2 - 36c_s^2\omega_4^2 - 18\omega_3^2 c_s^2\omega_4 - 6\omega_4^2\omega_1 - 6\omega_3 c_s^2\omega_4^2\omega_1 - 6v_3^2\omega_4^2 - 6\omega_3^2 v_3^2\omega_4 - 3\omega_3^2 v_3^2\omega_1 + 6\omega_3\omega_4\omega_1 - 6\omega_3\omega_4^2 + 3v_2^2\omega_4^2\omega_1)\frac{v_3 v_2\rho}{8\omega_3^2\omega_4^2\omega_1}$

coefficient $C^{(1)}_{\mathrm{D}_y^3\mathrm{D}_z v_2}$ **at** $\frac{\partial^4 v_2}{\partial x_2^3\partial x_3}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_y^3\mathrm{D}_z v_2} = 0$

$$C^{(1),\mathrm{MRT1}}_{\mathrm{D}^3_y\mathrm{D}_z v_2} = (4\omega_{10}^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 4\omega_6 c_s^2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_5^2\omega_{15}^2 + 4\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_6\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 4\omega_6 c_s^2\omega_{10}^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 +$$
$$4\omega_6 c_s^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 - 4\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 + 4\omega_6 c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_5\omega_{15}^2 - 2\omega_6 c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5^2\omega_{15} + 4\omega_6\omega_{16}\omega_{10}\omega_{17}\omega_8\omega_5^2\omega_{15}^2 -$$
$$12\omega_6\omega_{16}v_2^2\omega_{10}\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 12\omega_6 v_2^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 + 2\omega_6 c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2 + 4\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_5^2\omega_{15}^2 - 12\omega_6\omega_{16}v_2^2\omega_{10}^2\omega_7\omega_8\omega_5\omega_{15}^2 +$$
$$4\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5\omega_{15}^2 - 12\omega_6\omega_{16}v_2^2\omega_{10}^2\omega_7\omega_5^2\omega_{15}^2 - 4\omega_6\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_{15}^2 + 12\omega_6\omega_{16}v_2^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_{15}^2 - 2c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5^2\omega_{15}^2 -$$
$$4\omega_6\omega_{16}\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 - 12v_2^2\omega_{10}^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 12\omega_6\omega_{16}v_2^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 - 2\omega_6 c_s^2\omega_{16}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 12\omega_6 v_2^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 -$$
$$8\omega_6 c_s^2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 - 6\omega_{16}v_2^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 12\omega_{16}v_2^2\omega_{10}\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 4c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_5^2\omega_{15}^2 + 8\omega_6 c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15} +$$
$$6\omega_{16}v_2^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15} + 2\omega_6 c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5^2\omega_{15}^2 - 4\omega_6 c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5 - 4\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_5\omega_{15}^2 - 4\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5\omega_{15} +$$
$$4\omega_6 c_s^2\omega_{16}\omega_{10}\omega_{17}\omega_8\omega_5\omega_{15}^2 - 4\omega_6\omega_{10}^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 12\omega_6\omega_{16}v_2^2\omega_{10}^2\omega_7\omega_8\omega_5\omega_{15} + 24\omega_6\omega_{16}v_2^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15} + 2c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15} -$$
$$8\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15} + 3\omega_6\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 12\omega_6 v_2^2\omega_{10}^2\omega_{17}\omega_8\omega_5\omega_{15}^2 - 4c_s^2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_5^2\omega_{15}^2 + 8\omega_6\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 -$$
$$4\omega_6 c_s^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 - 24\omega_6\omega_{16}v_2^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 - 2c_s^2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 4\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_{15} -$$
$$12\omega_6\omega_{16}v_2^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_{15} + 4\omega_6\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_5\omega_{15}^2 - 12\omega_6\omega_{16}v_2^2\omega_{10}\omega_7\omega_{17}\omega_5\omega_{15}^2 + 2\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5^2\omega_{15}^2 + 2\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15} -$$
$$6\omega_6\omega_{16}v_2^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15} + 12\omega_{16}v_2^2\omega_{10}^2\omega_7\omega_5^2\omega_{15}^2 - 4c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15} + 12\omega_6 v_2^2\omega_{10}^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 4\omega_6\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 +$$
$$9\omega_6\omega_{16}v_2^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 4c_s^2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 - 3\omega_6\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 4\omega_{16}\omega_{10}\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 2\omega_6 c_s^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 +$$
$$2c_s^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 12\omega_6\omega_{16}v_2^2\omega_{10}\omega_7\omega_{17}\omega_5^2\omega_{15}^2 - 4\omega_6\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_5^2\omega_{15}^2 + 3\omega_6 c_s^2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 6\omega_{16}v_2^2\omega_{10}^2\omega_7\omega_8\omega_5^2\omega_{15}^2 +$$
$$12\omega_{16}v_2^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 + 6\omega_6 v_2^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 4c_s^2\omega_{10}^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 4\omega_6 c_s^2\omega_{16}\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 + 6v_2^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 +$$
$$4\omega_6 c_s^2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_{15}^2 + 4\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_5^2\omega_{15}^2 - 4\omega_6 c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5\omega_{15}^2 - 2\omega_6 c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15} - 12\omega_{16}v_2^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15} +$$
$$4\omega_6\omega_{10}^2\omega_{17}\omega_8\omega_5\omega_{15}^2 - 6\omega_6\omega_{16}v_2^2\omega_{10}^2\omega_7\omega_8\omega_5^2\omega_{15} + 2\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5^2\omega_{15} - 4\omega_6 c_s^2\omega_{16}\omega_{10}\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 2\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2 +$$
$$6\omega_6\omega_{16}v_2^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2 - 9\omega_6 v_2^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 12\omega_6\omega_{16}v_2^2\omega_{10}\omega_{17}\omega_8\omega_5\omega_{15}^2 + 4\omega_6 c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5\omega_{15} - 4\omega_6\omega_{16}\omega_{10}\omega_{17}\omega_8\omega_5\omega_{15}^2 -$$
$$2\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5^2\omega_{15}^2 + 6\omega_6\omega_{16}v_2^2\omega_{10}^2\omega_7\omega_8\omega_5^2\omega_{15}^2 - 12\omega_6\omega_{16}v_2^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5 + 4\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5 + 4c_s^2\omega_{16}\omega_{10}\omega_{17}\omega_8\omega_5^2\omega_{15}^2 +$$
$$12\omega_6\omega_{16}v_2^2\omega_{10}^2\omega_7\omega_5\omega_{15}^2 - 6\omega_6\omega_{16}v_2^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 2\omega_6\omega_{16}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 4\omega_6 c_s^2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_5\omega_{15}^2 -$$
$$2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15} + 4\omega_6\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 - 4\omega_{16}\omega_{10}^2\omega_7\omega_5^2\omega_{15}^2 - 4\omega_6 c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_{15} - 3\omega_6 c_s^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 -$$
$$4\omega_6 c_s^2\omega_{10}^2\omega_{17}\omega_8\omega_5\omega_{15}^2 - 12\omega_{16}v_2^2\omega_{10}\omega_7\omega_{17}\omega_5^2\omega_{15}^2 - 4\omega_6 c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_5^2\omega_{15}^2 + 2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2)\frac{v_3 v_1\rho}{4\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2}$$

$$C^{(1),\mathrm{MRT2}}_{\mathrm{D}^3_y\mathrm{D}_z v_2} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}^3_y\mathrm{D}_z v_2}$$

$$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}^3_y\mathrm{D}_z v_2} = 0$$

$$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}^3_y\mathrm{D}_z v_2} = 0$$

$$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}^3_y\mathrm{D}_z v_2} = 0$$

$$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}^3_y\mathrm{D}_z v_2} = (-\omega_1 + v_3^2\omega_1 - 3c_s^2\omega_2 + \omega_2 + 3c_s^2\omega_1 - v_3^2\omega_2)\frac{v_3 v_1\rho}{36\omega_1\omega_2}$$

coefficient $C^{(1)}_{\mathrm{D}^3_y\mathrm{D}_z v_3}$ **at** $\frac{\partial^4 v_3}{\partial x_2^3\partial x_3}$**:**

$$C^{(1),\mathrm{SRT}}_{\mathrm{D}^3_y\mathrm{D}_z v_3} = (2 - \omega + v_2^2\omega + 3c_s^2\omega - 6c_s^2 - 2v_2^2)\frac{v_2 v_1\rho}{12\omega}$$

$$C^{(1),\mathrm{MRT1}}_{\mathrm{D}^3_y\mathrm{D}_z v_3} = (12\omega_6^2 c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_8^2\omega_5\omega_{15} - 6\omega_6 c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_8^2\omega_5^2\omega_{15}^2 - 36\omega_6^2 c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_{15} - 12\omega_6^2\omega_{16}\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 +$$
$$42\omega_6 c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 6\omega_6^2\omega_{16}v_2^2\omega_{10}^2\omega_7^2\omega_8^2\omega_5^2\omega_{15}^2 - 6\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2 - 18\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15} - 12\omega_6 v_2^2\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 +$$
$$6\omega_6 c_s^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 12\omega_6^2 c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 - 6\omega_6^2\omega_{16}v_2^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}^2 + 12\omega_6 c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}^2 +$$
$$3\omega_6^2 c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 6\omega_6^2\omega_{16}v_2^2\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 18\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 - 12\omega_6^2 c_s^2\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 +$$
$$12c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 12\omega_6^2\omega_{16}v_2^2\omega_{10}^2\omega_7^2\omega_8\omega_5\omega_{15}^2 - 12\omega_6^2\omega_{16}v_2^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5 + 6\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2\omega_8^2\omega_5^2\omega_{15} + \omega_6^2\omega_{16}v_2^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 -$$
$$36\omega_6^2 c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 18\omega_6^2 c_s^2\omega_{16}\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 12\omega_6^2 v_2^2\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 - 24\omega_6^2 c_s^2\omega_{16}\omega_{10}^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 -$$
$$12\omega_6^2 c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_5^2\omega_{15}^2 - 6\omega_6^2\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 6\omega_6\omega_{16}v_2^2\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 12\omega_6 c_s^2\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 -$$
$$6\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 54\omega_6^2 c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}^2 + 6\omega_6 v_2^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 4\omega_6^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 +$$
$$12\omega_6^2 c_s^2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 24\omega_6 c_s^2\omega_{16}\omega_{10}^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 36\omega_6^2 c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_{15}^2 - 12\omega_6^2 c_s^2\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5\omega_{15}^2 -$$
$$6\omega_6^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5\omega_{15}^2 + 12\omega_6^2 v_2^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 - 12\omega_6\omega_{16}\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15}^2 + 12\omega_6\omega_{16}v_2^2\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15}^2 - 6\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 -$$
$$3\omega_6^2\omega_{16}v_2^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 12\omega_6^2\omega_{16}v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 - 12\omega_6^2 c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 6\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2\omega_8^2\omega_5^2\omega_{15}^2 +$$
$$6\omega_6^2\omega_{16}v_2^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2 - 12\omega_6^2 c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15}^2 + 9\omega_6^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 9\omega_6^2 c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 12\omega_6^2\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 +$$
$$12\omega_6^2 c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 12\omega_6^2 c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_8^2\omega_5\omega_{15}^2 + 12\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5 - 6\omega_6^2\omega_{16}v_2^2\omega_{10}^2\omega_7^2\omega_8^2\omega_5^2\omega_{15} - 12\omega_6^2 v_2^2\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5\omega_{15}^2 -$$
$$12\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2\omega_8\omega_5\omega_{15}^2 + 12\omega_6^2 c_s^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 - 12\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_{15}^2 + 54\omega_6^2 c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15} + 12\omega_6^2\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5\omega_{15}^2 +$$
$$6\omega_6^2 c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_8^2\omega_5^2\omega_{15}^2 + 24\omega_6^2 c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_{15}^2 - 6\omega_6\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 54\omega_6^2 c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 - 9\omega_6^2 c_s^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 -$$
$$\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 12\omega_6^2 v_2^2\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 12\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15}^2 + 12\omega_6^2\omega_{16}v_2^2\omega_{10}^2\omega_7^2\omega_8^2\omega_5\omega_{15} + 6\omega_6\omega_{16}\omega_{10}^2\omega_7^2\omega_8^2\omega_5^2\omega_{15}^2 -$$
$$12\omega_6^2\omega_{16}v_2^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_{15} - 6\omega_6\omega_{16}v_2^2\omega_{10}^2\omega_7^2\omega_8^2\omega_5^2\omega_{15}^2 - 24\omega_6^2 c_s^2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8^2\omega_5\omega_{15}^2 - 18\omega_6^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 +$$
$$12\omega_6\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 9\omega_6^2 v_2^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 12\omega_6^2 c_s^2\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 6\omega_6^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 12\omega_6 c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_5^2\omega_{15}^2 -$$
$$6\omega_6^2\omega_{16}v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 24\omega_6^2 c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5\omega_{15} + 18\omega_6^2\omega_{16}v_2^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15} + 12\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2\omega_8^2\omega_5\omega_{15}^2 +$$
$$6\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}^2 - 12\omega_6^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 + 12\omega_6^2 c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_8\omega_5\omega_{15}^2 - 36\omega_6^2 c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5 + 12\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_{15} -$$
$$12\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2\omega_8^2\omega_5\omega_{15} + 6\omega_6\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 54\omega_6^2 c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 12\omega_6 c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 -$$

$12\omega_6^2\omega_{16}v_2^2\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15}^2 - 6\omega_6\omega_{16}v_2^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 12\omega_6c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15}^2 + 6\omega_6^2v_2^2\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 +$
$18\omega_6^2c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2 + 36\omega_6^2c_s^2\omega_{16}\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 + 24\omega_6^2c_s^2\omega_{16}\omega_{10}^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 30\omega_6^2c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 -$
$12c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 12\omega_6^2\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 + 12\omega_6^2c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_5\omega_{15}^2 + 12\omega_6^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_{15}^2 - 6\omega_6^2c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_8^2\omega_5^2\omega_{15} +$
$6\omega_6^2\omega_{16}v_2^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 12\omega_6^2c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 3\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 24\omega_6^2c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_{15}^2 +$
$6\omega_6^2\omega_{16}\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 12\omega_6^2\omega_{16}v_2^2\omega_{10}^2\omega_7^2\omega_8^2\omega_5\omega_{15}^2 - 12\omega_6c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5\omega_{15}^2 + 6\omega_6^2\omega_{16}v_2^2\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5\omega_{15}^2 -$
$42\omega_6c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 4\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 6\omega_6^2c_s^2\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2)\frac{v_2v_1\rho}{12\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_y^3\mathrm{D}_z v_3} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y^3\mathrm{D}_z v_3}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_y^3\mathrm{D}_z v_3} = (\omega_{16}v_2^2\omega_{10} - \omega_{16} + 3\omega_{10} + 3c_s^2\omega_{16}\omega_{10} - \omega_{16}\omega_{10} + 3c_s^2\omega_{16} - 9c_s^2\omega_{10} - 3v_2^2\omega_{10} + \omega_{16}v_2^2)\frac{v_2v_1\rho}{12\omega_{16}\omega_{10}}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_y^3\mathrm{D}_z v_3} = C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_y^3\mathrm{D}_z v_3}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_y^3\mathrm{D}_z v_3} = (3c_s^2\omega_{11}\omega_5 + v_2^2\omega_{11} - \omega_{11}\omega_5 + 3c_s^2\omega_{11} - 3v_2^2\omega_5 + v_2^2\omega_{11}\omega_5 - 9c_s^2\omega_5 - \omega_{11} + 3\omega_5)\frac{v_2v_1\rho}{12\omega_{11}\omega_5}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_y^3\mathrm{D}_z v_3} = (4\omega_3v_2^2\omega_4\omega_2 + 9\omega_4\omega_1\omega_2 - 27\omega_3c_s^2\omega_1\omega_2 - 27c_s^2\omega_4\omega_1\omega_2 + 12\omega_3c_s^2\omega_4\omega_1 + 6\omega_3c_s^2\omega_4\omega_2 + 2\omega_3v_2^2\omega_4\omega_1 + 6\omega_3v_2^2\omega_4\omega_1\omega_2 -$
$9\omega_3v_2^2\omega_1\omega_2 - 6\omega_3\omega_4\omega_1\omega_2 - 9v_2^2\omega_4\omega_1\omega_2 + 2\omega_3\omega_4\omega_2 - 18\omega_3v_3^2\omega_4\omega_2 + 18\omega_3c_s^2\omega_4\omega_1\omega_2 - 8\omega_3\omega_4\omega_1 + 18\omega_3v_3^2\omega_4\omega_1 + 9\omega_3\omega_1\omega_2)\frac{v_2v_1\rho}{72\omega_3\omega_4\omega_1\omega_2}$

coefficient $C^{(1)}_{\mathrm{D}_x^2\mathrm{D}_z^2\rho}$ **at** $\frac{\partial^4\rho}{\partial x_1^2\partial x_3^2}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_z^2\rho} = (24 - 24v_1^2 + 36v_1^2\omega - 14v_1^2\omega^2 - \omega^3 + 14\omega^2 + v_1^2\omega^3 - 36\omega - 46c_s^2\omega^2 + 5c_s^2\omega^3 + 108c_s^2\omega - 72c_s^2)\frac{c_s^2v_1}{12\omega^3}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_z^2\rho} = (-6\omega_6^3c_s^2v_1^2\omega_{13}^2\omega_9^3 - 36\omega_6^2\omega_{22}v_3^2\omega_{13}\omega_{18}\omega_9^3 + 36\omega_6^2c_s^4\omega_{13}^2\omega_9^3 + 36\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}^2\omega_{18} + 6\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}^2\omega_9^2 - 36\omega_6^3v_3^2c_s^2\omega_{13}\omega_{18}\omega_9^3 +$
$12\omega_6\omega_{22}c_s^2\omega_{13}^2\omega_{18}\omega_9^2 + 12\omega_6^2\omega_{22}v_3^2\omega_{13}^2\omega_9^2 - 42\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_{18}\omega_9^3 + 12\omega_6^2c_s^2\omega_{13}^2\omega_{18}\omega_9^3 - 36\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}\omega_{18}\omega_9 - 36\omega_6^2\omega_{22}v_3^2c_s^2\omega_{18}\omega_9^3 -$
$36\omega_6^2\omega_{22}v_3^2c_s^2\omega_{13}\omega_{18}\omega_9^2 - 6\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_9^2 + 12\omega_6^2\omega_{22}c_s^4\omega_{18}\omega_9^3 + 72\omega_6\omega_{22}v_3^2c_s^2\omega_{13}^2\omega_{18}\omega_9^2 - 12\omega_6^3\omega_{22}v_3^2v_1^2\omega_{13}\omega_{18}\omega_9^3 - 18\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_{18}\omega_9^2 -$
$6\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_{18}\omega_9^3 + 12\omega_6^3\omega_{22}v_3^2v_1^2\omega_{18}\omega_9^3 + 12\omega_6^3c_s^2\omega_{13}\omega_{18}\omega_9^3 + 18\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}^2\omega_9^2 + 12\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}^2\omega_{18} + 18\omega_6^3\omega_{22}v_3^2\omega_{13}^2\omega_{18}\omega_9 -$
$18\omega_6^3v_3^2c_s^2\omega_{13}^2\omega_9^3 - 12\omega_6\omega_{22}c_s^2\omega_{13}^2\omega_{18}\omega_9^3 + 6\omega_6^3c_s^2\omega_{13}^2\omega_9^3 + 36\omega_6^3v_3^2c_s^2\omega_{13}\omega_{18}\omega_9^2 - 12\omega_6^2\omega_{22}c_s^2v_1^2\omega_{18}\omega_9^3 + 12\omega_6^2\omega_{22}v_3^2\omega_{13}\omega_{18}\omega_9^2 -$
$36\omega_6^3\omega_{22}c_s^4\omega_{13}^2\omega_{18}\omega_9 + 18\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_{18}\omega_9^2 - 12\omega_6^2\omega_{22}v_3^2v_1^2\omega_{13}^2\omega_9^2 - 12\omega_6^3c_s^2\omega_{13}\omega_{18}\omega_9^2 - 12\omega_6^3\omega_{22}v_3^2v_1^2\omega_{18}\omega_9^2 - 12\omega_6^2c_s^2v_1^2\omega_{13}^2\omega_{18}\omega_9^3 +$
$6\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_{18}\omega_9^3 + 24\omega_6^3\omega_{22}v_3^2v_1^2\omega_{13}\omega_{18}\omega_9^2 - 12\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_{18} - 12\omega_6^2v_3^2v_1^2\omega_{13}^2\omega_{18}\omega_9^3 + 108\omega_6^2\omega_{22}v_3^2c_s^2\omega_{13}\omega_{18}\omega_9^3 - 12\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_{18}\omega_9 -$
$12\omega_6^2v_3^2\omega_{13}\omega_{18}\omega_9^3 - 12\omega_6^3\omega_{22}v_3^2v_1^2\omega_{13}\omega_{18}\omega_9 - 12\omega_6^2c_s^2\omega_{13}^2\omega_9^3 - 12\omega_6^3c_s^2v_1^2\omega_{13}\omega_{18}\omega_9^3 - 12\omega_6^3\omega_{22}v_3^2\omega_{18}\omega_9^3 - 12\omega_6^3v_3^2v_1^2\omega_{13}\omega_{18}\omega_9^3 +$
$36\omega_6^2c_s^4\omega_{13}\omega_{18}\omega_9^3 + 12\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_{18}\omega_9^3 - 6\omega_6^3v_3^2\omega_{13}^2\omega_{18}\omega_9^3 - 36\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}\omega_{18}\omega_9^3 + 12\omega_6^2\omega_{22}c_s^2\omega_{18}\omega_9^3 + 18\omega_6^3\omega_{22}c_s^4\omega_{13}^2\omega_9^2 -$
$6\omega_6^3\omega_{22}v_3^2\omega_{13}^2\omega_{18}\omega_9^2 + 12\omega_6^2v_3^2v_1^2\omega_{13}^2\omega_9^3 + 18\omega_6^3c_s^4\omega_{13}^2\omega_{18}\omega_9^3 - 12\omega_6\omega_{22}c_s^2v_1^2\omega_{13}^2\omega_{18}\omega_9^2 - 12\omega_6^2\omega_{22}v_3^2v_1^2\omega_{13}\omega_{18}\omega_9^2 + 24\omega_6\omega_{22}v_3^2v_1^2\omega_{13}^2\omega_{18}\omega_9^2 -$
$6\omega_6^3\omega_{22}c_s^4\omega_{13}^2\omega_{18}\omega_9^2 + 12\omega_6^3v_3^2v_1^2\omega_{13}\omega_{18}\omega_9^2 - 18\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_{18}\omega_9^2 + 12\omega_6^3\omega_{22}v_3^2\omega_{18}\omega_9^2 + 24\omega_6\omega_{22}v_3^2\omega_{13}\omega_{18}\omega_9^3 + 12\omega_6^3c_s^2v_1^2\omega_{13}\omega_{18}\omega_9^2 +$
$12\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_{18}\omega_9 + 12\omega_6\omega_{22}c_s^4\omega_{13}\omega_{18}\omega_9^3 - 18\omega_6^3c_s^4\omega_{13}^2\omega_9^3 + 36\omega_6^3\omega_{22}c_s^4\omega_{13}^2\omega_{18} + 18\omega_6^2\omega_{22}c_s^2v_1^2\omega_{13}\omega_{18}\omega_9^3 + 5\omega_6^3\omega_{22}c_s^4\omega_{13}^2\omega_{18}\omega_9^3 +$
$12\omega_6\omega_{22}c_s^2v_1^2\omega_{13}^2\omega_{18}\omega_9^3 - 18\omega_6^3c_s^4\omega_{13}^2\omega_{18}\omega_9^2 + 36\omega_6^2\omega_{22}v_3^2v_1^2\omega_{13}\omega_{18}\omega_9^3 - 36\omega_6^2v_3^2c_s^2\omega_{13}^2\omega_{18}\omega_9^3 + 6\omega_6^3v_3^2\omega_{13}^2\omega_{18}\omega_9^2 + 72\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}\omega_{18}\omega_9^2 +$
$6\omega_6^3v_3^2v_1^2\omega_{13}^2\omega_{18}\omega_9^3 - 36\omega_6^2c_s^4\omega_{13}^2\omega_{18}\omega_9^3 - 18\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{18}\omega_9^3 - 6\omega_6^3v_3^2v_1^2\omega_{13}^2\omega_9^3 + 6\omega_6^3\omega_{22}v_3^2v_1^2\omega_{13}^2\omega_9^2 + 6\omega_6^3c_s^2v_1^2\omega_{13}\omega_{18}\omega_9^3 -$
$24\omega_6\omega_{22}v_3^2\omega_{13}^2\omega_{18}\omega_9^2 - 12\omega_6^2v_3^2\omega_{13}^2\omega_9^3 - 12\omega_6^3\omega_{22}c_s^2\omega_{18}\omega_9^3 - 18\omega_6^3\omega_{22}v_3^2v_1^2\omega_{13}^2\omega_{18}\omega_9 + 12\omega_6^2v_3^2\omega_{13}^2\omega_{18}\omega_9^3 - 84\omega_6\omega_{22}c_s^4\omega_{13}^2\omega_{18}\omega_9^2 -$
$36\omega_6^2\omega_{22}c_s^4\omega_{13}^2\omega_9^2 - 12\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}^2\omega_{18}\omega_9 + 12\omega_6^2\omega_{22}v_3^2\omega_{18}\omega_9^3 + 18\omega_6^2\omega_{22}c_s^2v_1^2\omega_{13}^2\omega_{18}\omega_9^2 - 42\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_{18}\omega_9^2 - 12\omega_6^2\omega_{22}v_3^2\omega_{13}^2\omega_{18}\omega_9 -$
$36\omega_6^3c_s^4\omega_{13}\omega_{18}\omega_9^3 - 24\omega_6^2\omega_{22}v_3^2v_1^2\omega_{13}^2\omega_{18}\omega_9^2 - 36\omega_6^3\omega_{22}v_3^2c_s^2\omega_{18}\omega_9^2 - 36\omega_6^2\omega_{22}v_3^2c_s^2\omega_{13}^2\omega_9^2 - 48\omega_6^2\omega_{22}c_s^4\omega_{13}^2\omega_{18}\omega_9 - 24\omega_6^3\omega_{22}v_3^2\omega_{13}\omega_{18}\omega_9^2 +$
$12\omega_6^3\omega_{22}c_s^2v_1^2\omega_{18}\omega_9^3 + 12\omega_6^3v_3^2\omega_{13}\omega_{18}\omega_9^3 + 12\omega_6^3\omega_{22}v_3^2v_1^2\omega_{13}^2\omega_{18} + 180\omega_6\omega_{22}c_s^4\omega_{13}^2\omega_{18}\omega_9^3 + 12\omega_6^3\omega_{22}c_s^2\omega_{18}\omega_9^3 + 12\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_{18}\omega_9 -$
$12\omega_6^2\omega_{22}v_3^2v_1^2\omega_{18}\omega_9^3 - 6\omega_6^3c_s^2v_1^2\omega_{13}^2\omega_{18}\omega_9^2 - 6\omega_6^3v_3^2v_1^2\omega_{13}^2\omega_{18}\omega_9^2 + 36\omega_6^2\omega_{22}v_3^2c_s^2\omega_{13}^2\omega_{18}\omega_9 + 36\omega_6^2v_3^2c_s^2\omega_{13}\omega_{18}\omega_9^3 - 12\omega_6^3v_3^2\omega_{13}\omega_{18}\omega_9^2 -$
$12\omega_6^2\omega_{22}c_s^2v_1^2\omega_{13}^2\omega_9^2 - 12\omega_6^3\omega_{22}c_s^2v_1^2\omega_{18}\omega_9^2 + 18\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}^2\omega_{18}\omega_9^2 + 12\omega_6^3\omega_{22}v_3^2\omega_{13}\omega_{18}\omega_9^3 + 36\omega_6^3c_s^4\omega_{13}\omega_{18}\omega_9^2 - 12\omega_6\omega_{22}c_s^2v_1^2\omega_{13}\omega_{18}\omega_9^3 +$
$36\omega_6^3\omega_{22}v_3^2c_s^2\omega_{18}\omega_9^3 - 24\omega_6\omega_{22}v_3^2v_1^2\omega_{13}\omega_{18}\omega_9^3 + 30\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_{18}\omega_9^3 - 12\omega_6^2\omega_{22}c_s^2v_1^2\omega_{13}^2\omega_{18}\omega_9^3 - 54\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}^2\omega_{18}\omega_9 -$
$88\omega_6^2\omega_{22}c_s^4\omega_{13}^2\omega_{18}\omega_9^3 - 12\omega_6^2c_s^2\omega_{13}\omega_{18}\omega_9^3 + 12\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_9^2 + 18\omega_6^3v_3^2c_s^2\omega_{13}\omega_{18}\omega_9^3 - 12\omega_6^3\omega_{22}c_s^4\omega_{18}\omega_9^3 + \omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}^2\omega_{18}\omega_9^3 -$
$6\omega_6^3c_s^2\omega_{13}^2\omega_{18}\omega_9^3 - 6\omega_6^3\omega_{22}v_3^2\omega_{13}^2\omega_9^2 + 2\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_{18}\omega_9^2 + 12\omega_6^2c_s^2v_1^2\omega_{13}^2\omega_9^3 - 72\omega_6^2\omega_{22}v_3^2c_s^2\omega_{13}^2\omega_{18}\omega_9^2 + 24\omega_6^2\omega_{22}v_3^2\omega_{13}^2\omega_{18}\omega_9^2 +$
$12\omega_6^3\omega_{22}c_s^4\omega_{18}\omega_9^2 + 12\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_{18}\omega_9 + 12\omega_6^2\omega_{22}v_3^2v_1^2\omega_{13}^2\omega_{18}\omega_9 - 18\omega_6^3v_3^2c_s^2\omega_{13}^2\omega_{18}\omega_9^2 + 12\omega_6\omega_{22}c_s^2\omega_{13}\omega_{18}\omega_9^3 + 12\omega_6^3\omega_{22}v_3^2\omega_{13}\omega_{18}\omega_9 +$
$150\omega_6^2\omega_{22}c_s^4\omega_{13}^2\omega_{18}\omega_9^2 + 6\omega_6^3v_3^2\omega_{13}^2\omega_9^3 - 12\omega_6^3\omega_{22}v_3^2\omega_{13}^2\omega_{18} - 72\omega_6\omega_{22}v_3^2c_s^2\omega_{13}\omega_{18}\omega_9^3 + 6\omega_6^3\omega_{22}v_3^2v_1^2\omega_{13}^2\omega_{18}\omega_9^2 - \omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_{18}\omega_9^3 -$
$96\omega_{22}c_s^4\omega_{13}^2\omega_{18}\omega_9^3 + 12\omega_6^2v_3^2v_1^2\omega_{13}\omega_{18}\omega_9^3 - 2\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}^2\omega_{18}\omega_9^2 + 36\omega_6^2v_3^2c_s^2\omega_{13}^2\omega_9^3 + 12\omega_6^2c_s^2v_1^2\omega_{13}\omega_{18}\omega_9^3 + 6\omega_6^3c_s^2\omega_{13}^2\omega_{18}\omega_9^2)\frac{v_1}{12\omega_6^3\omega_{22}\omega_{13}^2\omega_{18}\omega_9^3}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_z^2\rho} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_z^2\rho}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_z^2\rho} = (12\omega_6^2\omega_{22}\omega_{13}\omega_{18}\omega_9 + \omega_6^2\omega_{22}v_1^2\omega_{13}^2\omega_{18}\omega_9^3 + 54\omega_6\omega_{22}c_s^2\omega_{13}^2\omega_{18}\omega_9^2 + 18\omega_6^2c_s^2\omega_{13}^2\omega_{18}\omega_9^3 + 12\omega_6^2\omega_{22}\omega_{18}\omega_9^2 -$
$36\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_{18}\omega_9 - 12\omega_{22}v_1^2\omega_{13}^2\omega_{18}\omega_9^2 - 12\omega_6\omega_{13}^2\omega_9^3 + 6\omega_6^2\omega_{13}^2\omega_{18}\omega_9^2 - 18\omega_6^2c_s^2\omega_{13}^2\omega_{18}\omega_9^2 - 2\omega_6^2\omega_{22}v_1^2\omega_{13}^2\omega_{18}\omega_9^2 - 40\omega_6\omega_{22}c_s^2\omega_{13}^2\omega_{18}\omega_9^3 -$
$6\omega_6^2\omega_{13}^2\omega_{18}\omega_9^3 - 36\omega_6c_s^2\omega_{13}^2\omega_{18}\omega_9^3 + 12\omega_{22}v_1^2\omega_{13}^2\omega_{18}\omega_9^3 - 12\omega_6^2\omega_{22}\omega_{18}\omega_9^3 + 12\omega_6\omega_{22}\omega_{13}^2\omega_9^2 + 12\omega_{22}\omega_{13}\omega_{18}\omega_9^3 + 6\omega_6^2v_1^2\omega_{13}^2\omega_{18}\omega_9^3 -$
$18\omega_6^2c_s^2\omega_{13}^2\omega_9^3 + 12\omega_6^2\omega_{22}v_1^2\omega_{13}^2\omega_{18} + 18\omega_6\omega_{22}v_1^2\omega_{13}^2\omega_{18}\omega_9^2 + 5\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_{18}\omega_9^3 + 36\omega_6^2\omega_{22}c_s^2\omega_{18}\omega_9^3 - 12\omega_6^2\omega_{22}v_1^2\omega_{13}^2\omega_{18}\omega_9 -$
$36\omega_{22}c_s^2\omega_{13}^2\omega_{18}\omega_9^2 - 12\omega_6\omega_{22}v_1^2\omega_{13}^2\omega_9^2 + 6\omega_6^2\omega_{22}\omega_{13}\omega_{18}\omega_9^3 - 12\omega_6\omega_{22}v_1^2\omega_{13}^2\omega_{18}\omega_9^3 - 36\omega_6\omega_{22}c_s^2\omega_{18}\omega_9^3 - 6\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_{18}\omega_9^2 -$
$12\omega_6\omega_{13}\omega_{18}\omega_9^3 - 18\omega_6\omega_{22}\omega_{13}\omega_{18}\omega_9^3 + 6\omega_6^2\omega_{22}v_1^2\omega_{13}^2\omega_9^2 - 6\omega_6^2v_1^2\omega_{13}^2\omega_{18}\omega_9^2 + 36\omega_{22}c_s^2\omega_{13}^2\omega_{18}\omega_9^3 - 12\omega_6v_1^2\omega_{13}^2\omega_{18}\omega_9^3 - 18\omega_6^2\omega_{22}\omega_{13}\omega_{18}\omega_9^2 +$
$12\omega_6v_1^2\omega_{13}^2\omega_9^3 - 36\omega_6^2\omega_{22}c_s^2\omega_{18}\omega_9^2 - 18\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{18}\omega_9^3 - 12\omega_6^2\omega_{22}\omega_{13}^2\omega_{18} - 18\omega_6\omega_{22}\omega_{13}^2\omega_{18}\omega_9^2 - 12\omega_{22}\omega_{13}^2\omega_{18}\omega_9^3 - 12\omega_6^2v_1^2\omega_{13}\omega_{18}\omega_9^3 -$

$\omega_6^2\omega_{22}\omega_{13}^2\omega_{18}\omega_9^3 - 12\omega_6^2\omega_{22}v_1^2\omega_{13}\omega_{18}\omega_9 + 12\omega_{22}\omega_{13}^2\omega_{18}\omega_9^2 + 12\omega_6\omega_{22}\omega_{13}^2\omega_{18}\omega_9^3 + 12\omega_6^2v_1^2\omega_{13}\omega_{18}\omega_9^2 + 12\omega_6\omega_{22}\omega_{18}\omega_9^3 - 6\omega_6^2\omega_{22}\omega_{13}^2\omega_9^2 +$
$12\omega_6\omega_{13}^2\omega_{18}\omega_9^3 + 18\omega_6\omega_{22}v_1^2\omega_{13}\omega_{18}\omega_9^3 + 54\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{18}\omega_9^2 - 36\omega_{22}c_s^2\omega_{13}\omega_{18}\omega_9^3 + 12\omega_6v_1^2\omega_{13}\omega_{18}\omega_9^3 + 2\omega_6^2\omega_{22}\omega_{13}^2\omega_{18}\omega_9^2 -$
$12\omega_6\omega_{22}v_1^2\omega_{18}\omega_9^3 - 36\omega_6^2c_s^2\omega_{13}\omega_{18}\omega_9^3 - 6\omega_6^2\omega_{22}v_1^2\omega_{13}\omega_{18}\omega_9^3 + 18\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_9^2 + 12\omega_6^2\omega_{22}\omega_{13}^2\omega_{18}\omega_9 - 12\omega_6^2\omega_{13}\omega_{18}\omega_9^2 - 12\omega_6^2\omega_{22}v_1^2\omega_{18}\omega_9^2 +$
$6\omega_6^2\omega_{13}^2\omega_9^3 - 36\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{18}\omega_9 + 36\omega_6c_s^2\omega_{13}^2\omega_9^3 - 6\omega_6^2v_1^2\omega_{13}^2\omega_9^3 + 18\omega_6^2\omega_{22}v_1^2\omega_{13}\omega_{18}\omega_9^2 + 54\omega_6\omega_{22}c_s^2\omega_{13}\omega_{18}\omega_9^3 + 36\omega_6^2c_s^2\omega_{13}\omega_{18}\omega_9^2 +$
$36\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_{18} + 12\omega_6^2\omega_{22}v_1^2\omega_{18}\omega_9^3 + 36\omega_6c_s^2\omega_{13}\omega_{18}\omega_9^3 - 12\omega_{22}v_1^2\omega_{13}\omega_{18}\omega_9^3 - 36\omega_6\omega_{22}c_s^2\omega_{13}^2\omega_9^2 + 12\omega_6^2\omega_{13}\omega_{18}\omega_9^3)\frac{c_s^2v_1}{12\omega_6^2\omega_{22}\omega_{13}^2\omega_{18}\omega_9^3}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_z^2\rho} = C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_z^2\rho}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_z^2\rho} = (12v_1^2\omega_4^2\omega_2\omega_{12} - 6\omega_4^2\omega_2\omega_{12}^2 - 54c_s^2\omega_4\omega_2^2\omega_{12}^2 - 12v_1^2\omega_4^2\omega_2^2 - 18c_s^2\omega_4^3\omega_2^2\omega_{12} + v_1^2\omega_4^3\omega_2^2\omega_{12}^2 + 12v_1^2\omega_4^3\omega_{12}^2 - 12v_1^2\omega_4^3\omega_2 + 6\omega_4^3\omega_2^2\omega_{12} +$
$18c_s^2\omega_4^2\omega_2\omega_{12}^2 + 18\omega_4\omega_2^2\omega_{12}^2 + 12v_1^2\omega_4^3\omega_2^2 - \omega_4^3\omega_2^2\omega_{12}^2 + 36c_s^2\omega_4^2\omega_2\omega_{12} - 6v_1^2\omega_4^3\omega_2^2\omega_{12} - 12v_1^2\omega_4^3\omega_{12} - 18v_1^2\omega_4\omega_2^2\omega_{12}^2 - 12\omega_4^2\omega_2\omega_{12} + 5c_s^2\omega_4^3\omega_2^2\omega_{12}^2 +$
$36c_s^2\omega_2^2\omega_{12}^2 - 12v_1^2\omega_4^2\omega_{12}^2 + 6v_1^2\omega_4^2\omega_2\omega_{12}^2 - 12\omega_2^2\omega_{12}^2 - 6\omega_4^2\omega_2^2\omega_{12} + 12\omega_4^3\omega_2 - 40c_s^2\omega_4^3\omega_2\omega_{12}^2 + 36c_s^2\omega_4^3\omega_{12}^2 + 4v_1^2\omega_4^2\omega_2^2\omega_{12}^2 - 36c_s^2\omega_4^3\omega_2 -$
$12\omega_4^3\omega_{12}^2 + 12\omega_4^3\omega_2\omega_{12}^2 + 18c_s^2\omega_4^2\omega_2^2\omega_{12} + 12\omega_4^2\omega_2^2 + 18v_1^2\omega_4^3\omega_2\omega_{12} - 36c_s^2\omega_4^2\omega_2^2 - 12v_1^2\omega_4^3\omega_2\omega_{12}^2 + 12\omega_4^2\omega_{12}^2 + 12v_1^2\omega_2^2\omega_{12}^2 - 18\omega_4^3\omega_2\omega_{12} -$
$36c_s^2\omega_4^2\omega_{12}^2 + 12c_s^2\omega_4^2\omega_2^2\omega_{12}^2 + 6v_1^2\omega_4^2\omega_2^2\omega_{12} + 36c_s^2\omega_4^3\omega_2^2 + 12\omega_4^3\omega_{12} - 12\omega_4^3\omega_2^2 - 4\omega_4^2\omega_2^2\omega_{12}^2 + 54c_s^2\omega_4^3\omega_2\omega_{12} - 36c_s^2\omega_4^3\omega_{12})\frac{c_s^2v_1}{12\omega_4^3\omega_2^2\omega_{12}^2}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_z^2\rho} = (-28\omega_3^2c_s^2v_1^2\omega_4^2\omega_1\omega_2^2 + 9\omega_3^2c_s^2\omega_4\omega_1^3\omega_2^3 - 48\omega_3^2v_3^2v_1^2\omega_4^2\omega_1\omega_2^2 + 36\omega_3^2c_s^2v_1^2\omega_4\omega_1^2\omega_2^3 + 96\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^2 + 36\omega_3^2c_s^2\omega_1^2\omega_2^3 - 18c_s^2\omega_4^2\omega_1^3\omega_2^3 +$
$27\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2^3 + 18c_s^2v_1^2\omega_4^2\omega_1^3\omega_2^3 + 4\omega_3^2v_1^2\omega_4^2\omega_1\omega_2^2 + 66\omega_3^2v_3^2\omega_4^2\omega_1^3\omega_2 - 52\omega_3^2c_s^2\omega_4^2\omega_1^3 - 119\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^3 + 54\omega_3^2c_s^4\omega_1^3\omega_2^3 - 102\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2 +$
$12c_s^2\omega_4^2\omega_1^3\omega_2^2 - 30\omega_3^2v_3^2v_1^2\omega_4^2\omega_1\omega_2^3 + 108\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^3 + 4\omega_3^2c_s^2v_1^2\omega_4^2\omega_1\omega_2^3 - 12\omega_3c_s^4\omega_4^2\omega_1^3\omega_2 + 24\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^2 + 24\omega_3^2v_3^2v_1^2\omega_4^2\omega_1^3 - 24\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2^2 +$
$4\omega_3^2v_1^2\omega_4^2\omega_1\omega_2^3 - 12c_s^2v_1^2\omega_4^2\omega_1^3\omega_2^2 - 108\omega_3^2c_s^4\omega_1^2\omega_2^3 + 15\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^2 + 28\omega_3c_s^2\omega_4^2\omega_1\omega_2^3 - 24c_s^2v_1^2\omega_4^2\omega_1^2\omega_2^3 - 28\omega_3c_s^2v_1^2\omega_4^2\omega_1\omega_2^2 + 12\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2 +$
$36\omega_3^2v_3^4\omega_4^2\omega_1\omega_2^2 + 72\omega_3^2c_s^4\omega_4^2\omega_1^3 - 4\omega_3^2\omega_4^2\omega_1\omega_2^2 + 24c_s^2\omega_4^2\omega_1^2\omega_2^3 + 28\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^2 + 36\omega_3^2v_3^2v_1^2\omega_4^2\omega_2^3 - 18\omega_3^2c_s^2\omega_1^3\omega_2^3 - 9\omega_3^2c_s^2v_1^2\omega_4\omega_1^3\omega_2^3 -$
$36\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^3 + 324\omega_3^2v_3^2c_s^2\omega_4\omega_1\omega_2^3 - 27\omega_3^2v_3^2\omega_4^2\omega_1^3\omega_2^2 + 35\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^2 - 27\omega_3c_s^4\omega_4^2\omega_1^3\omega_2^3 + 20\omega_3^2c_s^2\omega_4^2\omega_2^3 - 58\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^3 + 72\omega_3^2v_3^4\omega_4^2\omega_1\omega_2^3 -$
$4\omega_3^2\omega_4^2\omega_1\omega_2^3 - 324\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^3\omega_2 + 32\omega_3c_s^2v_1^2\omega_4^2\omega_1^2\omega_2^2 + 54c_s^4\omega_4^2\omega_1^3\omega_2^3 - 138\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^2\omega_2^3 + 4\omega_3^2v_1^2\omega_4^2\omega_1^2\omega_2 - 32\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^2 -$
$27\omega_3^2c_s^4\omega_4\omega_1^3\omega_2^2 + 4\omega_3^2\omega_4^2\omega_1^3 + 24\omega_3^2v_3^4\omega_4^2\omega_1^3 - 12\omega_3^2v_3^2v_1^2\omega_4^2\omega_1^2\omega_2 + 3\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^3\omega_2^2 + 49\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^3 - 4\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^2\omega_2 + 74\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2 -$
$27\omega_3^2v_3^4\omega_4^2\omega_1^2\omega_2^3 - 36\omega_3^2v_3^4\omega_4^2\omega_1^3\omega_2 - 4\omega_3^2\omega_4^2\omega_1^3\omega_2 + 216\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^3 - 36\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^3 + 4\omega_3c_s^2\omega_4^2\omega_1^3\omega_2 - 4\omega_3c_s^2v_1^2\omega_4^2\omega_1^3\omega_2 - 36\omega_3^2c_s^2v_1^2\omega_1^2\omega_2^3 -$
$36c_s^4\omega_4^2\omega_1^3\omega_2^2 + 36\omega_3c_s^2v_1^2\omega_4^2\omega_1^2\omega_2^3 - 4\omega_3^2v_1^2\omega_4^2\omega_1^3 + 24\omega_3^2v_3^2\omega_4^2\omega_2^3 + 8\omega_3^2\omega_4^2\omega_1^2\omega_2^2 - 36\omega_3^2v_3^4\omega_4^2\omega_1^2\omega_2^2 + 16\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^3 + 8\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^3\omega_2^2 -$
$16\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^2 - 4\omega_3^2\omega_4^2\omega_1^2\omega_2 - 3\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2^3 - 32\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^2\omega_2^3 - 30\omega_3^2v_3^2v_1^2\omega_4^2\omega_1^3\omega_2 - 84\omega_3c_s^4\omega_4^2\omega_1\omega_2^3 + 4\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2 - 20\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^3\omega_2 -$
$72\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^2 + 108\omega_3^2c_s^4\omega_4\omega_1^2\omega_2^3 - 48\omega_3^2v_3^2\omega_4^2\omega_1^3 - 4\omega_3^2v_1^2\omega_4^2\omega_2^3 - 72c_s^4\omega_4^2\omega_1^2\omega_2^2 + 12\omega_3^2v_3^2\omega_4^2\omega_1\omega_2^2 + 4\omega_3^2v_1^2\omega_4^2\omega_1^3\omega_2 + 16\omega_3^2c_s^2v_1^2\omega_4^2\omega_2^3 +$
$60\omega_3^2v_3^2v_1^2\omega_4^2\omega_1^2\omega_2^2 - 25\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2^2 + 16\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^2\omega_2^2 + 27\omega_3^2v_3^4\omega_4^2\omega_1^3\omega_2^2 + 18\omega_3^2c_s^2v_1^2\omega_1^3\omega_2^3 + 138\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^3\omega_2^2 - 9\omega_3c_s^2v_1^2\omega_4^2\omega_1^3\omega_2^3 -$
$8\omega_3^2v_1^2\omega_4^2\omega_1^2\omega_2^2 - 60\omega_3^2v_3^4\omega_4^2\omega_2^3 + 4\omega_3^2\omega_4^2\omega_2^3 - 42\omega_3^2v_3^2\omega_4^2\omega_1\omega_2^3 - 216\omega_3^2v_3^2c_s^2\omega_4^2\omega_2^3 + 9\omega_3c_s^2\omega_4^2\omega_1^3\omega_2^3 + 78\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^3)\frac{v_1}{36\omega_3^2\omega_4^2\omega_1^3\omega_2^3}$

coefficient $C^{(1)}_{\mathrm{D}_x^2\mathrm{D}_z^2v_1}$ **at** $\frac{\partial^4 v_1}{\partial x_1^2\partial x_3^2}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_z^2v_1} = (-24 + 72v_1^2 - 108v_1^2\omega + 36v_1^2\omega^2 - 12\omega^2 + 36\omega + 8c_s^2\omega^2 - c_s^2\omega^3 - 18c_s^2\omega + 12c_s^2)\frac{c_s^2\rho}{12\omega^3}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_z^2v_1} = (-18\omega_6^3c_s^2v_1^2\omega_{13}^2\omega_9^3 - 36\omega_6^2\omega_{22}v_3^2\omega_{13}\omega_{18}\omega_9^3 + 12\omega_6^2c_s^4\omega_{13}^2\omega_9^3 + 12\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}^2\omega_{18} + 18\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}^2\omega_9^2 - 12\omega_6^3v_3^2c_s^2\omega_{13}\omega_{18}\omega_9^3 +$
$12\omega_6\omega_{22}c_s^2\omega_{13}^2\omega_{18}\omega_9^2 + 12\omega_6^2\omega_{22}v_3^2\omega_{13}^2\omega_9^2 - 24\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_{18}\omega_9^3 + 12\omega_6^2c_s^2\omega_{13}^2\omega_{18}\omega_9^3 - 12\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}\omega_{18}\omega_9 - 12\omega_6^2\omega_{22}v_3^2c_s^2\omega_{18}\omega_9^3 +$
$12\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_{18}\omega_9 - 12\omega_6^2\omega_{22}v_3^2c_s^2\omega_{13}\omega_{18}\omega_9^2 - 6\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_9^2 + 24\omega_6\omega_{22}v_3^2c_s^2\omega_{13}^2\omega_9^2 - 36\omega_6^3\omega_{22}v_3^2v_1^2\omega_{13}\omega_{18}\omega_9^3 + 12\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_{18}\omega_9^2 +$
$78\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_{18}\omega_9^3 + 36\omega_6^3\omega_{22}v_3^2v_1^2\omega_{18}\omega_9^3 + 12\omega_6^3c_s^2\omega_{13}\omega_{18}\omega_9^3 + 6\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}^2\omega_9^2 + 18\omega_6^3\omega_{22}v_3^2\omega_{13}^2\omega_{18}\omega_9 + 12\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_{18}\omega_9^2 -$
$6\omega_6^3v_3^2c_s^2\omega_{13}^2\omega_9^3 + 6\omega_6^3c_s^2\omega_{13}^2\omega_9^3 + 12\omega_6^3v_3^2c_s^2\omega_{13}\omega_{18}\omega_9^2 + 24\omega_6^2\omega_{22}c_s^2v_1^2\omega_{18}\omega_9^3 + 12\omega_6^2\omega_{22}v_3^2\omega_{13}\omega_{18}\omega_9^2 + 6\omega_6^3\omega_{22}c_s^4\omega_{13}^2\omega_{18}\omega_9 -$
$144\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_{18}\omega_9^2 - 36\omega_6^2\omega_{22}v_3^2v_1^2\omega_{13}^2\omega_9^2 - 12\omega_6^3c_s^2\omega_{13}\omega_{18}\omega_9^2 - 36\omega_6^3\omega_{22}v_3^2v_1^2\omega_{18}\omega_9^2 - 36\omega_6^2c_s^2v_1^2\omega_{13}^2\omega_{18}\omega_9^3 - 12\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_{18}\omega_9^3 +$
$72\omega_6^3\omega_{22}v_3^2v_1^2\omega_{13}\omega_{18}\omega_9^2 - 36\omega_6^2v_3^2v_1^2\omega_{13}^2\omega_{18}\omega_9^3 + 36\omega_6^2\omega_{22}v_3^2c_s^2\omega_{13}\omega_{18}\omega_9^3 + 72\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_{18}\omega_9 - 12\omega_6^2v_3^2\omega_{13}\omega_{18}\omega_9^3 - 36\omega_6^3\omega_{22}v_3^2v_1^2\omega_{13}\omega_{18}\omega_9 -$
$12\omega_6^2c_s^2\omega_{13}^2\omega_9^3 - 36\omega_6^3c_s^2v_1^2\omega_{13}\omega_{18}\omega_9^3 - 12\omega_6^3\omega_{22}v_3^2\omega_{18}\omega_9^3 - 36\omega_6^3v_3^2v_1^2\omega_{13}\omega_{18}\omega_9^3 + 12\omega_6^2c_s^4\omega_{13}\omega_{18}\omega_9^3 - 6\omega_6^3v_3^2\omega_{13}^2\omega_{18}\omega_9^3 - 12\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}\omega_{18}\omega_9^3 +$
$6\omega_6^3\omega_{22}c_s^4\omega_{13}^2\omega_9^2 - 6\omega_6^3\omega_{22}v_3^2\omega_{13}^2\omega_{18}\omega_9^2 + 36\omega_6^2v_3^2v_1^2\omega_{13}^2\omega_9^3 + 6\omega_6^3c_s^4\omega_{13}^2\omega_{18}\omega_9^3 - 84\omega_6\omega_{22}c_s^2v_1^2\omega_{13}^2\omega_{18}\omega_9^2 - 36\omega_6^2\omega_{22}v_3^2v_1^2\omega_{13}\omega_{18}\omega_9^2 +$
$72\omega_6\omega_{22}v_3^2v_1^2\omega_{13}^2\omega_{18}\omega_9^2 - 6\omega_6^3\omega_{22}c_s^4\omega_{13}^2\omega_{18}\omega_9^2 + 60\omega_6^2\omega_{22}c_s^2v_1^2\omega_{13}\omega_{18}\omega_9^2 + 36\omega_6^3v_3^2v_1^2\omega_{13}\omega_{18}\omega_9^2 - 24\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_{18}\omega_9^2 + 12\omega_6^3\omega_{22}v_3^2\omega_{18}\omega_9^2 +$
$24\omega_6\omega_{22}v_3^2\omega_{13}\omega_{18}\omega_9^3 + 36\omega_6^3c_s^2v_1^2\omega_{13}\omega_{18}\omega_9^2 + 12\omega_6\omega_{22}c_s^4\omega_{13}\omega_{18}\omega_9^3 - 6\omega_6^3c_s^4\omega_{13}^2\omega_9^3 - 132\omega_6^2\omega_{22}c_s^2v_1^2\omega_{13}\omega_{18}\omega_9^3 - \omega_6^3\omega_{22}c_s^4\omega_{13}^2\omega_{18}\omega_9^3 +$
$84\omega_6\omega_{22}c_s^2v_1^2\omega_{13}^2\omega_{18}\omega_9^3 - 6\omega_6^3c_s^4\omega_{13}^2\omega_{18}\omega_9^2 + 108\omega_6^2\omega_{22}v_3^2v_1^2\omega_{13}\omega_{18}\omega_9^3 - 12\omega_6^2v_3^2c_s^2\omega_{13}^2\omega_{18}\omega_9^3 + 6\omega_6^3v_3^2\omega_{13}^2\omega_{18}\omega_9^2 + 24\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}\omega_{18}\omega_9^2 +$
$18\omega_6^3v_3^2v_1^2\omega_{13}^2\omega_{18}\omega_9^3 - 12\omega_6^2c_s^4\omega_{13}^2\omega_{18}\omega_9^3 + 24\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{18}\omega_9^3 - 18\omega_6^3v_3^2v_1^2\omega_{13}^2\omega_9^3 + 18\omega_6^3\omega_{22}v_3^2v_1^2\omega_{13}^2\omega_9^2 + 18\omega_6^3c_s^2v_1^2\omega_{13}^2\omega_{18}\omega_9^3 -$
$24\omega_6\omega_{22}v_3^2\omega_{13}^2\omega_{18}\omega_9^2 - 12\omega_6^2v_3^2\omega_{13}^2\omega_9^3 - 54\omega_6^3\omega_{22}v_3^2v_1^2\omega_{13}^2\omega_{18}\omega_9 + 12\omega_6^2v_3^2\omega_{13}^2\omega_{18}\omega_9^3 - 12\omega_6\omega_{22}c_s^4\omega_{13}^2\omega_{18}\omega_9^2 - 12\omega_6^2\omega_{22}c_s^4\omega_{13}^2\omega_9^2 +$
$18\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}^2\omega_{18}\omega_9 + 12\omega_6^2\omega_{22}v_3^2\omega_{18}\omega_9^3 + 180\omega_6^2\omega_{22}c_s^2v_1^2\omega_{13}\omega_{18}\omega_9^2 - 12\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_{18}\omega_9^2 - 12\omega_6^2\omega_{22}v_3^2\omega_{13}^2\omega_{18}\omega_9 - 12\omega_6^3c_s^4\omega_{13}\omega_{18}\omega_9^3 -$
$72\omega_6^2\omega_{22}v_3^2v_1^2\omega_{13}^2\omega_{18}\omega_9^2 - 12\omega_6^3\omega_{22}v_3^2c_s^2\omega_{18}\omega_9^2 - 12\omega_6^2\omega_{22}v_3^2c_s^2\omega_{13}^2\omega_9^2 - 12\omega_6^2\omega_{22}c_s^4\omega_{13}^2\omega_{18}\omega_9 - 24\omega_6^3\omega_{22}v_3^2\omega_{13}\omega_{18}\omega_9^2 - 24\omega_6^3\omega_{22}c_s^2v_1^2\omega_{18}\omega_9^3 +$
$12\omega_6^3v_3^2\omega_{13}\omega_{18}\omega_9^3 + 36\omega_6^3\omega_{22}v_3^2v_1^2\omega_{13}^2\omega_{18} + 18\omega_6\omega_{22}c_s^4\omega_{13}^2\omega_{18}\omega_9^3 - 6\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_{18}\omega_9 - 36\omega_6^2\omega_{22}v_3^2v_1^2\omega_{18}\omega_9^3 - 18\omega_6^3c_s^2v_1^2\omega_{13}^2\omega_{18}\omega_9^2 -$
$18\omega_6^3v_3^2v_1^2\omega_{13}^2\omega_{18}\omega_9^2 - 12\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{18}\omega_9^2 + 12\omega_6^2\omega_{22}v_3^2c_s^2\omega_{13}^2\omega_{18}\omega_9 + 12\omega_6^2v_3^2c_s^2\omega_{13}\omega_{18}\omega_9^3 - 12\omega_6^3v_3^2\omega_{13}\omega_{18}\omega_9^2 - 36\omega_6^2\omega_{22}c_s^2v_1^2\omega_{13}^2\omega_9^2 +$
$24\omega_6^3\omega_{22}c_s^2v_1^2\omega_{18}\omega_9^2 + 6\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}^2\omega_{18}\omega_9^2 + 12\omega_6^3\omega_{22}v_3^2\omega_{13}\omega_{18}\omega_9^3 + 12\omega_6^3c_s^4\omega_{13}\omega_{18}\omega_9^2 + 60\omega_6\omega_{22}c_s^2v_1^2\omega_{13}\omega_{18}\omega_9^3 + 12\omega_6^3\omega_{22}v_3^2c_s^2\omega_{18}\omega_9^3 -$
$72\omega_6\omega_{22}v_3^2v_1^2\omega_{13}\omega_{18}\omega_9^3 + 12\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_{18}\omega_9^3 - 42\omega_6^2\omega_{22}c_s^2v_1^2\omega_{13}\omega_{18}\omega_9^3 - 18\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}^2\omega_{18}\omega_9 - 48\omega_{22}c_s^2v_1^2\omega_{13}\omega_{18}\omega_9^3 - 4\omega_6^2\omega_{22}c_s^4\omega_{13}^2\omega_{18}\omega_9^3 -$
$12\omega_6^2c_s^2\omega_{13}\omega_{18}\omega_9^3 + 12\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_9^2 + 6\omega_6^3v_3^2c_s^2\omega_{13}^2\omega_{18}\omega_9^3 - 6\omega_6^3c_s^2\omega_{13}^2\omega_{18}\omega_9^3 - 6\omega_6^3\omega_{22}v_3^2\omega_{13}^2\omega_9^2 + 6\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_{18}\omega_9^2 + 36\omega_6^2c_s^2v_1^2\omega_{13}^2\omega_9^3 -$
$24\omega_6^2\omega_{22}v_3^2c_s^2\omega_{13}^2\omega_{18}\omega_9^2 + 24\omega_6^2\omega_{22}v_3^2\omega_{13}^2\omega_{18}\omega_9^2 - 108\omega_6^2\omega_{22}c_s^2v_1^2\omega_{13}^2\omega_{18}\omega_9 + 36\omega_6^2\omega_{22}v_3^2v_1^2\omega_{13}^2\omega_{18}\omega_9 - 6\omega_6^3v_3^2c_s^2\omega_{13}^2\omega_{18}\omega_9^2 - 12\omega_6\omega_{22}c_s^2\omega_{13}\omega_{18}\omega_9^3 +$
$12\omega_6^3\omega_{22}v_3^2\omega_{13}\omega_{18}\omega_9 + 24\omega_6^2\omega_{22}c_s^4\omega_{13}^2\omega_{18}\omega_9^2 + 6\omega_6^3v_3^2\omega_{13}^2\omega_9^3 - 12\omega_6^3\omega_{22}v_3^2\omega_{13}^2\omega_{18} - 24\omega_6\omega_{22}v_3^2c_s^2\omega_{13}\omega_{18}\omega_9^3 + 18\omega_6^3\omega_{22}v_3^2v_1^2\omega_{13}^2\omega_{18}\omega_9^2 -$
$12\omega_{22}c_s^4\omega_{13}^2\omega_{18}\omega_9^3 + 36\omega_6^2v_3^2v_1^2\omega_{13}\omega_{18}\omega_9^3 - 18\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}^2\omega_{18}\omega_9^2 + 12\omega_6^2v_3^2c_s^2\omega_{13}^2\omega_9^3 + 36\omega_6^2c_s^2v_1^2\omega_{13}\omega_{18}\omega_9^3 + 6\omega_6^3c_s^2\omega_{13}^2\omega_{18}\omega_9^2)\frac{\rho}{12\omega_6^3\omega_{22}\omega_{13}^2\omega_{18}\omega_9^3}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_z^2 v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_z^2 v_1}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_z^2 v_1} = (-24\omega_6^2\omega_{22}\omega_{13}\omega_{18}\omega_9 + 36\omega_6^3\omega_{22}v_1^2\omega_{18}\omega_9^2 - 6\omega_6^3\omega_{22}\omega_{13}\omega_{18} - 12\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{18} - 18\omega_6^3v_1^2\omega_{13}\omega_{18}\omega_9 + 12\omega_6^2\omega_{22}c_s^2\omega_{18}\omega_9 + 12\omega_6^3\omega_{22}\omega_{18}\omega_9 - 12\omega_6^2\omega_{13}\omega_9^2 + 24\omega_6^2\omega_{22}\omega_{18}\omega_9^2 - 36\omega_6^3v_1^2\omega_{18}\omega_9^2 - \omega_6^3\omega_{22}c_s^2\omega_{13}\omega_{18}\omega_9^2 - 18\omega_6^3\omega_{22}v_1^2\omega_{13}\omega_{18}\omega_9 + 18\omega_6^3\omega_{22}v_1^2\omega_{13}\omega_9 + 36\omega_6^2v_1^2\omega_{13}\omega_9^2 + 12\omega_6^2\omega_{22}\omega_{13}\omega_9 + 12\omega_{6\omega_{22}\omega_{13}\omega_{18}\omega_9} + 6\omega_6^3c_s^2\omega_{13}\omega_{18}\omega_9^2 - 6\omega_6^3c_s^2\omega_{13}\omega_{18}\omega_9 - 12\omega_6^2\omega_{18}\omega_9^2 - 18\omega_6^3v_1^2\omega_{13}\omega_9^2 + 12\omega_{6\omega_{22}c_s^2\omega_{18}\omega_9^2} - 12\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_9 - 6\omega_6^3\omega_{22}\omega_{13}\omega_9 - 12\omega_6^2\omega_{22}\omega_{18}\omega_9 + 12\omega_6^2\omega_{22}\omega_{13}\omega_{18} + 36\omega_6^3v_1^2\omega_{18}\omega_9 - 6\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_{18}\omega_9 - 36\omega_6^3\omega_{22}v_1^2\omega_{18}\omega_9 + 18\omega_6^3\omega_{22}v_1^2\omega_{13}\omega_{18} + 36\omega_6^2v_1^2\omega_{18}\omega_9^2 + 18\omega_6^3v_1^2\omega_{13}\omega_{18}\omega_9^2 - 12\omega_6^3\omega_{22}\omega_{18}\omega_9^2 - 24\omega_6^2\omega_{22}c_s^2\omega_{18}\omega_9^2 - 12\omega_6^3\omega_{18}\omega_9 + 6\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_9 - 12\omega_{6\omega_{22}\omega_{18}\omega_9^2} + 12\omega_6^2c_s^2\omega_{13}\omega_9^2 - 12\omega_{22}c_s^2\omega_{13}\omega_{18}\omega_9^2 + 72\omega_6^2\omega_{22}v_1^2\omega_{13}\omega_{18}\omega_9 - 36\omega_6^2v_1^2\omega_{13}\omega_{18}\omega_9^2 + 12\omega_6^3\omega_{22}c_s^2\omega_{18}\omega_9^2 + 6\omega_6^3\omega_{13}\omega_9^2 + 36\omega_6^2\omega_{22}v_1^2\omega_{18}\omega_9 - 4\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{18}\omega_9^2 - 36\omega_6^2\omega_{22}v_1^2\omega_{13}\omega_{18} - 12\omega_6^3c_s^2\omega_{18}\omega_9^2 - 12\omega_{6\omega_{22}c_s^2\omega_{13}\omega_{18}\omega_9} - 6\omega_6^3\omega_{13}\omega_{18}\omega_9^2 + 12\omega_6^3c_s^2\omega_{18}\omega_9 + 18\omega_{6\omega_{22}c_s^2\omega_{13}\omega_{18}\omega_9^2} + 6\omega_6^3\omega_{13}\omega_{18}\omega_9 + 12\omega_6^2\omega_{13}\omega_{18}\omega_9^2 + 6\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_{18} - 12\omega_6^3\omega_{22}c_s^2\omega_{18}\omega_9 - 72\omega_6^2\omega_{22}v_1^2\omega_{18}\omega_9^2 + 6\omega_6^3\omega_{22}\omega_{13}\omega_{18}\omega_9 + 12\omega_6^2c_s^2\omega_{18}\omega_9^2 + 24\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{18}\omega_9 - 6\omega_6^3c_s^2\omega_{13}\omega_9^2 - 12\omega_6^2c_s^2\omega_{13}\omega_{18}\omega_9^2 + 36\omega_{6\omega_{22}v_1^2\omega_{18}\omega_9^2} - 36\omega_{6\omega_{22}v_1^2\omega_{13}\omega_{18}\omega_9} + 12\omega_6^3\omega_{18}\omega_9^2 - 36\omega_6^2\omega_{22}v_1^2\omega_{13}\omega_9)\frac{c_s^2\rho}{12\omega_6^3\omega_{22}\omega_{13}\omega_{18}\omega_9^2}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_z^2 v_1} = C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_z^2 v_1}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_z^2 v_1} = (12\omega_2^2\omega_{12} + 36v_1^2\omega_3^2 - 72v_1^2\omega_4^2\omega_2^2 - 12c_s^2\omega_2^2\omega_{12} + 36v_1^2\omega_4\omega_2^2\omega_{12} + 36v_1^2\omega_4^2\omega_3^2 - 12\omega_3^2 - 24\omega_4\omega_2^2 - 12\omega_4\omega_2^2\omega_{12} + 18c_s^2\omega_4^2\omega_2\omega_{12} + 24c_s^2\omega_4\omega_2^2 + 24\omega_4\omega_2^3 + 12c_s^2\omega_4\omega_2^2\omega_{12} + 36v_1^2\omega_4^2\omega_2 - 24c_s^2\omega_4\omega_2^3 - 12c_s^2\omega_4\omega_2\omega_{12} - 12\omega_4^2\omega_2^3 + 12c_s^2\omega_4^2\omega_2^3 - 12c_s^2\omega_4^2\omega_{12} - 4c_s^2\omega_4^2\omega_2^2\omega_{12} + 24\omega_4^2\omega_2^2 + 12\omega_4\omega_2\omega_{12} - 36v_1^2\omega_2^2\omega_{12} - 24c_s^2\omega_4^2\omega_2^2 - 36v_1^2\omega_4\omega_2\omega_{12} + 12c_s^2\omega_2^3 + 12c_s^2\omega_4^2\omega_2 - 72v_1^2\omega_4\omega_2^3 - 12\omega_4^2\omega_2 - c_s^2\omega_4^2\omega_2^3\omega_{12} + 72v_1^2\omega_4\omega_2^2)\frac{c_s^2\rho}{12\omega_4^2\omega_2^3\omega_{12}}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_z^2 v_1} = (8\omega_3c_s^4\omega_4\omega_1\omega_2^3 + 32\omega_3^2c_s^2\omega_4\omega_1^2\omega_2 + 54\omega_3v_3^2c_s^2\omega_4\omega_1^2\omega_2^2 - 6\omega_3^2c_s^2v_1^2\omega_4\omega_1^3\omega_2 - 6\omega_3^2c_s^2v_1^2\omega_4\omega_1^2\omega_2^3 - 90\omega_3^2v_3^2v_1^2\omega_4\omega_1^3\omega_2 + 72\omega_3^2c_s^2\omega_1^2\omega_2^3 - 4\omega_3^2\omega_4\omega_1^2\omega_2 + 12\omega_3^2v_3^4\omega_4\omega_1^2\omega_2 - 6\omega_3v_3^2\omega_4\omega_1\omega_2^3 - 48\omega_3^2v_3^4\omega_4\omega_2^3 + 4\omega_3^2\omega_4\omega_2^3 + 12\omega_3^2v_1^2\omega_4\omega_1^3\omega_2 + 36\omega_3v_3^4\omega_4\omega_1^3\omega_2^2 + \omega_3^2v_1^2\omega_4\omega_1^2\omega_2^3 - 90\omega_3c_s^2v_1^2\omega_4\omega_1^3\omega_2^2 + 36\omega_3^2v_3^2\omega_4\omega_1\omega_2^2 - 12\omega_3^2v_3^2c_s^2\omega_4\omega_1^2\omega_2 + 18\omega_3^2c_s^4\omega_1^3\omega_2^3 + 18\omega_3v_3^4\omega_1^2\omega_2^3 + 36\omega_3c_s^2\omega_4\omega_1^3\omega_2^2 - 18v_3^2\omega_4\omega_1^2\omega_2^3 - 108\omega_3^2v_3^2c_s^2\omega_4\omega_2^3 - 28\omega_3^2c_s^4\omega_4\omega_1\omega_2^2 + 9\omega_3^2v_3^4\omega_4\omega_1^3\omega_2^2 - 18\omega_3^2v_3^2\omega_1\omega_2^3 + 18\omega_3v_3^2\omega_1^3\omega_2^2 - 36\omega_3v_3^2c_s^2\omega_4\omega_1^3\omega_2 - 2\omega_3^2c_s^2\omega_4\omega_1^3\omega_2^2 + 66\omega_3^2c_s^2v_1^2\omega_4\omega_1^2\omega_2^2 - 90\omega_3v_3^2c_s^2\omega_4\omega_1^2\omega_2^3 + 180\omega_3^2v_3^2v_1^2\omega_4\omega_1^2\omega_2^2 - 12\omega_3^2v_1^2\omega_4\omega_2^3 + 76\omega_3^2c_s^4\omega_4\omega_1\omega_2^3 - 48\omega_3^2v_3^2\omega_4\omega_1^3 - 18\omega_3c_s^2\omega_4\omega_1^3\omega_2^3 - 96\omega_3^2c_s^2v_1^2\omega_4\omega_2^3 + 54\omega_3c_s^2v_1^2\omega_4\omega_1^3\omega_2^3 - 24\omega_3^2v_1^2\omega_4\omega_1^2\omega_2^2 - 24\omega_3^2v_3^2\omega_4\omega_1\omega_2^3 + 30\omega_3^2v_3^2c_s^2\omega_4\omega_1^3\omega_2^2 - 56\omega_3c_s^2\omega_4\omega_1^2\omega_2^2 - 72\omega_3^2c_s^4\omega_1^2\omega_2^3 + 6\omega_3v_3^4\omega_4\omega_1^2\omega_2^2 - 30\omega_3^2v_3^2c_s^2\omega_4\omega_1^2\omega_2^3 + 12\omega_3^2v_1^2\omega_4\omega_1^2\omega_2 - 174\omega_3^2v_3^2c_s^2\omega_4\omega_1^3\omega_2 + 216\omega_3^2c_s^2v_1^2\omega_1\omega_2^3 + 132\omega_3c_s^2v_1^2\omega_4\omega_1^2\omega_2^2 - 36\omega_3^2v_3^4\omega_4\omega_1^3\omega_2 - 4\omega_3^2\omega_4\omega_1^3\omega_2 + 12\omega_3^2v_3^2\omega_4\omega_2^3 - 9\omega_3^2v_3^4\omega_4\omega_1^2\omega_2^3 - 12\omega_3^2v_1^2\omega_4\omega_1^3 - 48\omega_3^2c_s^2v_1^2\omega_4\omega_1^2\omega_2 + 90\omega_3v_3^2c_s^2\omega_4\omega_1^3\omega_2^2 + 18\omega_3^2c_s^2\omega_4\omega_1^3\omega_2 - 18\omega_3^2c_s^2\omega_1^3\omega_2^3 - 36\omega_3^2v_3^2v_1^2\omega_4\omega_1^2\omega_2 + 12\omega_3^2c_s^2v_1^2\omega_4\omega_1^3 + 2\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^3 - 18\omega_3v_3^2\omega_1^2\omega_2^3 - 12\omega_3v_3^4\omega_4\omega_1^3\omega_2 - \omega_3^2v_1^2\omega_4\omega_1^3\omega_2^2 - 126\omega_3c_s^2v_1^2\omega_4\omega_1^2\omega_2^3 + 24\omega_3^2v_3^2c_s^2\omega_4\omega_1^2\omega_2^2 - 36\omega_3v_3^4\omega_4\omega_1^2\omega_2^3 + 18\omega_3^2v_3^4\omega_1\omega_2^3 + 24\omega_3c_s^2v_1^2\omega_4\omega_1^3\omega_2 - 8\omega_3c_s^2\omega_4\omega_1^3\omega_2 + 18v_3^2\omega_4\omega_1^3\omega_2^2 + 54\omega_3^2v_3^2c_s^2\omega_1\omega_2^3 - 18\omega_3v_3^4\omega_1^3\omega_2^2 + 36\omega_3c_s^2\omega_4\omega_1^2\omega_2^3 + 6\omega_3^2c_s^2v_1^2\omega_4\omega_1^3\omega_2^2 - 36\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^2 + 4\omega_3^2\omega_4\omega_1^3 + 24\omega_3^2v_3^4\omega_4\omega_1^3 + 132\omega_3^2v_3^2c_s^2\omega_4\omega_1^3 + 8\omega_3^2\omega_4\omega_1^2\omega_2^2 - 18\omega_3^2v_3^4\omega_4\omega_1^2\omega_2^2 - 12\omega_3^2v_3^2c_s^2\omega_4\omega_1\omega_2^2 + 6\omega_3v_3^4\omega_4\omega_1\omega_2^3 - 18\omega_3^2v_3^4\omega_1^2\omega_2^3 + 60\omega_3c_s^2v_1^2\omega_4\omega_1\omega_2^3 - 28\omega_3^2c_s^4\omega_4\omega_1^2\omega_2 - 8\omega_3c_s^2\omega_4\omega_1\omega_2^3 - 54\omega_3^2v_3^2c_s^2\omega_1^2\omega_2^3 - 3\omega_3^2c_s^4\omega_4\omega_1^3\omega_2^3 - 36\omega_3c_s^4\omega_4\omega_1^3\omega_2^2 + 32\omega_3^2c_s^2\omega_4\omega_1\omega_2^2 + 28\omega_3^2c_s^2\omega_4\omega_2^3 + 18v_3^4\omega_4\omega_1^2\omega_2^3 - 36\omega_3v_3^2\omega_4\omega_1^3\omega_2^2 + 12\omega_3^2v_3^4\omega_4\omega_1\omega_2^2 - 4\omega_3^2\omega_4\omega_1\omega_2^2 - \omega_3^2v_1^4\omega_4\omega_1^2\omega_2^3 - 54\omega_3^2v_3^2c_s^2\omega_1^2\omega_2^2 + 2\omega_3^2c_s^4\omega_4\omega_1^3\omega_2^2 + 72\omega_3^2c_s^4\omega_1\omega_2^2 - 216\omega_3^2c_s^2v_1^2\omega_1^2\omega_2^3 - 9\omega_3^2v_3^2\omega_4\omega_1^3\omega_2^2 - 18\omega_3^2v_3^4\omega_1^2\omega_2^2 + 150\omega_3^2v_3^2c_s^2\omega_4\omega_1\omega_2^3 - 18\omega_3^2v_3^2\omega_1^3\omega_2^2 + 54\omega_3^2v_3^4\omega_4\omega_1\omega_2^2 - 4\omega_3^2\omega_4\omega_1\omega_2^3 + 16\omega_3^2c_s^4\omega_4\omega_1^3 - 18\omega_3^2c_s^2\omega_4\omega_1\omega_2^3 + 108\omega_3^2v_3^2v_1^2\omega_4\omega_2^3 - 54v_3^2c_s^2\omega_4\omega_1^3\omega_2^2 + 18\omega_3c_s^4\omega_4\omega_1^3\omega_2^3 + 54\omega_3v_3^2c_s^2\omega_1^2\omega_2^3 - 6\omega_3v_3^2\omega_4\omega_1^2\omega_2^2 + 18\omega_3^2v_3^2\omega_1^2\omega_2^3 - 54\omega_3v_3^2c_s^2\omega_1^3\omega_2^2 - 144\omega_3^2v_3^2v_1^2\omega_4\omega_1\omega_2^2 - 18\omega_3v_3^2c_s^2\omega_4\omega_1\omega_2^3 + 56\omega_3c_s^4\omega_4\omega_1^2\omega_2^2 + 54v_3^2c_s^2\omega_4\omega_1^2\omega_2^3 - 84\omega_3^2c_s^2v_1^2\omega_4\omega_1\omega_2^2 - 68\omega_3^2c_s^4\omega_4\omega_2^3 - 14\omega_3^2c_s^4\omega_4\omega_1^3\omega_2 - 14\omega_3^2c_s^4\omega_4\omega_1^2\omega_2^3 + 66\omega_3^2v_3^2\omega_4\omega_1^3\omega_2 + 72\omega_3^2v_3^2v_1^2\omega_4\omega_1^3 + 9\omega_3^2v_3^2\omega_4\omega_1^2\omega_2^3 + 12\omega_3^2v_1^2\omega_4\omega_1\omega_2^2 + 48\omega_3^2c_s^2v_1^2\omega_4\omega_1\omega_2^3 - 18v_3^4\omega_4\omega_1^3\omega_2^2 - 72\omega_3^2c_s^2\omega_1\omega_2^3 + 8\omega_3c_s^4\omega_4\omega_1^3\omega_2 - 90\omega_3^2v_3^2v_1^2\omega_4\omega_1\omega_2^3 - 36\omega_3c_s^4\omega_4\omega_1^2\omega_2^3 + \omega_3^2v_1^4\omega_4\omega_1^3\omega_2^2 + 12\omega_3v_3^2\omega_4\omega_1^3\omega_2 + 18\omega_3^2v_3^2\omega_1^2\omega_2^2 + 36\omega_3v_3^2\omega_4\omega_1^2\omega_2^3 + 54\omega_3^2c_s^2v_1^2\omega_1^3\omega_2^3 - 42\omega_3^2v_3^2\omega_4\omega_1^2\omega_2^2 + 12\omega_3^2v_1^2\omega_4\omega_1\omega_2^3 - 20\omega_3^2c_s^2\omega_4\omega_1^3 + 18\omega_3^2v_3^4\omega_1^3\omega_2^2 + 28\omega_3^2c_s^4\omega_4\omega_1^2\omega_2^2 + 54\omega_3^2v_3^2c_s^2\omega_1^3\omega_2^2)\frac{\rho}{36\omega_3^2\omega_4^3\omega_1^3\omega_2^2}$

coefficient $C^{(1)}_{\mathrm{D}_x^2\mathrm{D}_z^2 v_3}$ **at** $\frac{\partial^4 v_3}{\partial x_1^2\partial x_3^2}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_z^2 v_3} = 0$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_z^2 v_3} = (2\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18}^2\omega_9^2 - 3\omega_6^2\omega_{22}v_1^2\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^2 + \omega_6^2\omega_{22}\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^3 - 7\omega_6^3\omega_{22}\omega_{13}\omega_{11}\omega_{18}^2\omega_9^2 + 4\omega_6^3\omega_{13}\omega_{11}\omega_{18}^2\omega_9^3 - 4\omega_6^3c_s^2\omega_{13}\omega_{11}\omega_{18}^2\omega_9^3 - 8\omega_6^3\omega_{22}c_s^2\omega_{11}\omega_{18}^2\omega_9^2 - 5\omega_6^3\omega_{22}v_1^2\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9 - 4\omega_6^3\omega_{22}\omega_{13}^2\omega_{11}\omega_{18}^2 - 4\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2 - 8\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18}^2\omega_9 + 2\omega_6^3v_1^2\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^3 - 4\omega_6^3\omega_{13}\omega_{11}\omega_{18}^2\omega_9^2 + 3\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^3 - \omega_6^2\omega_{22}v_1^2\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^3 + 3\omega_6^3\omega_{22}\omega_{13}\omega_{11}\omega_{18}^2\omega_9^3 + 11\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18}^2\omega_9^3 + 4\omega_6^2v_1^2\omega_{13}\omega_{11}\omega_{18}^2\omega_9^3 - 2\omega_6^3v_1^2\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^2 + 8\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9^3 + 8\omega_6^3\omega_{22}c_s^2\omega_{11}\omega_{18}^2\omega_9^3 + 4\omega_6^3c_s^2\omega_{13}\omega_{11}\omega_{18}^2\omega_9^2 - 4\omega_6^2c_s^2\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^3 - 2\omega_6\omega_{22}\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^3 - 5\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18}^2\omega_9^3 + 4\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9 - 2\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9 - \omega_6^3\omega_{22}\omega_{13}^2\omega_{11}\omega_{18}\omega_9^3 - 4\omega_6^3\omega_{22}v_1^2\omega_{11}\omega_{18}^2\omega_9^2 + \omega_6^3\omega_{22}v_1^2\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^2 + 13\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18}^2\omega_9^2 + 4\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_9^3 - 2\omega_6\omega_{22}\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^3 - 2\omega_6^3c_s^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9^3 + 2\omega_6^3\omega_{13}\omega_{11}\omega_{18}\omega_9^3 + 4\omega_6^3\omega_{22}v_1^2\omega_{11}\omega_{18}^2\omega_9^3 - 6\omega_6\omega_{22}v_1^2\omega_{13}\omega_{11}\omega_{18}^2\omega_9^3 + 26\omega_6\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^3 + 4\omega_6^3\omega_{22}\omega_{13}\omega_{11}\omega_{18}^2\omega_9 + 8\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2 + 2\omega_6^2\omega_{22}v_1^2\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9 - 15\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9 - 4\omega_6^3v_1^2\omega_{13}\omega_{11}\omega_{18}^2\omega_9^3 + 2\omega_6^3c_s^2\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^3 - 8\omega_6^2\omega_{22}c_s^2\omega_{11}\omega_{18}^2\omega_9^3 - 4\omega_6^3\omega_{22}v_1^2\omega_{13}\omega_{11}\omega_{18}^2\omega_9 - 4\omega_6^3\omega_{22}\omega_{11}\omega_{18}^2\omega_9^3 - 9\omega_6^2\omega_{22}\omega_{13}\omega_{11}\omega_{18}^2\omega_9^3 - 2\omega_6^2\omega_{22}v_1^2\omega_{13}\omega_{11}\omega_{18}^2\omega_9^3 - \omega_6^3\omega_{22}\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^2 - 2\omega_6^3\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^3 + 12\omega_{6\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18}\omega_9^3} - \omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^2 + 4\omega_6^3\omega_{22}\omega_{11}\omega_{18}^2\omega_9^2 - 2\omega_6^3c_s^2\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^2 + 12\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_{18}^2 + 4\omega_6^2c_s^2\omega_{13}\omega_{11}\omega_{18}^2\omega_9^3 - 4\omega_6^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9^3 + 4\omega_6^2v_1^2\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^3 + 2\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^3 + 2\omega_6^2\omega_{22}v_1^2\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^3 - 2\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^3 - 2\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^3 + 2\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^3 + 3\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^2 + 6\omega_{6\omega_{22}\omega_{13}\omega_{11}\omega_{18}^2\omega_9^3} - 2\omega_6^3v_1^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9^3 - 2\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9^3 + 7\omega_6^3\omega_{22}v_1^2\omega_{13}\omega_{11}\omega_{18}^2\omega_9^2)\frac{v_3v_1\rho}{2\omega_6^3\omega_{22}\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^3}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_z^2 v_3} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_z^2 v_3}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_z^2 v_3} = 0$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_z^2 v_3} = 0$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_z^2 v_3} = 0$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_z^2 v_3} =$
$(-18c_s^2\omega_1\omega_2^3+6\omega_3v_3^2\omega_1^2\omega_2+6\omega_3\omega_1^2\omega_2+84\omega_3c_s^2\omega_1^3-114\omega_3v_3^2\omega_2^3+6\omega_1\omega_2^3+18\omega_3v_1^2\omega_1^2\omega_2^2+50\omega_3v_3^2\omega_1^3\omega_2^2-23\omega_3\omega_1^3\omega_2^2-9\omega_3v_1^2\omega_1^3\omega_2-6v_1^2\omega_1^3\omega_2+$
$48\omega_3\omega_1^3\omega_2+23\omega_3\omega_1^2\omega_2^3-75\omega_3v_3^2\omega_1^3\omega_2-50\omega_3v_3^2\omega_1^2\omega_2^3+12\omega_3\omega_1^2\omega_2^2-12\omega_3v_1^2\omega_1^2\omega_2+12v_1^2\omega_1^2\omega_2^2-66\omega_3v_3^2\omega_1^2\omega_2^2+48\omega_3v_3^2\omega_1^3-66\omega_3c_s^2\omega_2^3+$
$108\omega_3c_s^2\omega_1\omega_2^3-12\omega_3\omega_1\omega_2^2+60\omega_3v_3^2\omega_1\omega_2^2-108\omega_3c_s^2\omega_1^3\omega_2+42\omega_3\omega_2^3-42\omega_3c_s^2\omega_1^2\omega_2^3-6v_1^2\omega_1\omega_2^3+12\omega_3v_1^2\omega_2^3-60\omega_3\omega_1\omega_2^3+141\omega_3v_3^2\omega_1\omega_2^3-$
$18\omega_3c_s^2\omega_1^2\omega_2+12\omega_3v_1^2\omega_1^3+36c_s^2\omega_1^2\omega_2^2-9\omega_3v_1^2\omega_1\omega_2^3-12\omega_1^2\omega_2^2-18c_s^2\omega_1^3\omega_2+42\omega_3c_s^2\omega_1^3\omega_2^2-12\omega_3v_1^2\omega_1\omega_2^2+6\omega_1^3\omega_2-36\omega_3\omega_1^3)\frac{v_3v_1\rho}{18\omega_3\omega_1^3\omega_2^3}$

coefficient $C^{(1)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2\rho}$ **at** $\frac{\partial^4\rho}{\partial x_1\partial x_2\partial x_3^2}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2\rho} = (-36v_3^2v_2v_1^2\omega-14v_3^2c_s^2v_1\omega^2+24c_s^2v_2v_1^2+v_3^2c_s^2v_1\omega^3+36v_3^2v_2^2v_1\omega-v_3^2v_2v_1^2\omega^3-14v_3^2v_2^2v_1\omega^2-24v_3^2c_s^2v_1+v_3^2v_2^2v_1\omega^3+$
$14v_3^2v_2v_1^2\omega^2+36v_3^2c_s^2v_1\omega-24v_3^2v_2^2v_1-36c_s^2v_2v_1^2\omega-36v_3^2c_s^2v_2\omega+24v_3^2c_s^2v_2-24c_s^2v_2^2v_1+36c_s^2v_2^2v_1\omega-v_3^2c_s^2v_2\omega^3-c_s^2v_2v_1^2\omega^3-$
$14c_s^2v_2^2v_1\omega^2+c_s^2v_2^2v_1\omega^3+14c_s^2v_2v_1^2\omega^2+14v_3^2c_s^2v_2\omega^2+24v_3^2v_2v_1^2)\frac{1}{2\omega^3}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2\rho} = (-2\omega_6^3\omega_{22}v_3^2c_s^2v_2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}-2\omega_6^3\omega_{22}v_3^2v_2^2v_1\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18}+\omega_6^3\omega_{22}v_3^2v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9+$
$\omega_6^3\omega_{22}v_3^2c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9\omega_{12}-2\omega_6^3\omega_{22}c_s^2v_2v_1^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}-2\omega_6^3\omega_{22}v_3^2v_2^2v_1\omega_{13}\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_9-$
$\omega_6^3v_3^2c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}+\omega_6^3\omega_{22}c_s^2v_2v_1^2\omega_{13}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}+2\omega_6^2\omega_{22}v_3^2c_s^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}-$
$2\omega_6^3v_3^2v_2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}-\omega_6^3\omega_{22}v_3^2v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}+2\omega_6^2\omega_{22}v_3^2v_2v_1^2\omega_{13}\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}+$
$2\omega_6^3\omega_{22}v_3^2c_s^2v_2\omega_{13}\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_9-\omega_6^3\omega_{22}v_3^2v_2v_1^2\omega_{13}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9\omega_{12}-\omega_6^3v_3^2v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}-$
$2\omega_6^2\omega_{22}c_s^2v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}+2\omega_6^2\omega_{22}v_3^2c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}+2\omega_6^3\omega_{22}v_3^2v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}-$
$2\omega_6^3\omega_{22}v_3^2v_2^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}+2\omega_6^3\omega_{22}v_3^2v_2^2v_1\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}-8\omega_6^2\omega_{22}c_s^4v_2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}+$
$2\omega_6^2\omega_{22}c_s^2v_2^2v_1\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}+2\omega_6^3\omega_{22}c_s^2v_2v_1^2\omega_{13}\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_9+2\omega_6^2\omega_{22}v_3^2c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}+$
$2\omega_6^3\omega_{22}v_3^2c_s^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}-2\omega_6^3\omega_{22}c_s^2v_2^2v_1\omega_{13}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}+\omega_6^3\omega_{22}v_3^2c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}-$
$2\omega_6^3\omega_{22}v_3^2c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}+2\omega_6^2\omega_{22}v_3^2v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}+2\omega_6^2\omega_{22}v_3^2v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}+$
$\omega_6^3v_3^2v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}-\omega_6^3\omega_{22}c_s^2v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9\omega_{12}-2\omega_6^2\omega_{22}v_3^2c_s^2v_1\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}+$
$2\omega_6^3\omega_{22}v_3^2v_2^2v_1\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}+2\omega_6^3\omega_{22}v_3^2c_s^2v_1\omega_{13}\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_9\omega_{12}+\omega_6^3\omega_{22}v_3^2v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}-$
$2\omega_6^3\omega_{22}v_3^2c_s^2v_2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}-2\omega_6^2\omega_{22}v_3^2c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}-2\omega_6^2v_3^2c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}+$
$2\omega_6^3c_s^2v_2^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}+2\omega_6^2\omega_{22}v_3^2c_s^2v_2\omega_{13}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}-2\omega_6^2\omega_{22}c_s^2v_2^2v_1\omega_{13}\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}+$
$\omega_6^3\omega_{22}c_s^2v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}-4\omega_6^2\omega_{22}c_s^4v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}+\omega_6^3c_s^2v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}+$
$\omega_6^3\omega_{22}c_s^2v_2^2v_1\omega_{13}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9\omega_{12}-2\omega_6^3\omega_{22}c_s^2v_2^2v_1\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18}+\omega_6^3\omega_{22}v_3^2c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}+$
$2\omega_6^3\omega_{22}c_s^2v_2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}+2\omega_6^2\omega_{22}v_3^2c_s^2v_1\omega_{13}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}-4\omega_6^3\omega_{22}c_s^4v_2\omega_{13}\omega_{20}\omega_{14}\omega_5^2\omega_{18}\omega_9\omega_{12}+$
$2\omega_6^3\omega_{22}c_s^2v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}-2\omega_6^2\omega_{22}v_3^2v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}-\omega_6^3\omega_{22}c_s^2v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9-$
$2\omega_6^2\omega_{22}v_3^2v_2^2v_1\omega_{13}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}-\omega_6^3\omega_{22}c_s^2v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}-2\omega_6^3\omega_{22}v_3^2c_s^2v_1\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}-$
$\omega_6^3\omega_{22}v_3^2v_2^2v_1\omega_{13}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}-\omega_6^3c_s^2v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}-2\omega_6^3\omega_{22}v_3^2c_s^2v_1\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18}+$
$\omega_6^3\omega_{22}v_3^2c_s^2v_2\omega_{13}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}-2\omega_6^3\omega_{22}c_s^2v_2v_1^2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}-2\omega_6^3\omega_{22}v_3^2c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}-$
$\omega_6^3\omega_{22}v_3^2c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}-2\omega_6^3\omega_{22}c_s^2v_2^2v_1\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{12}-2\omega_6^2\omega_{22}v_3^2v_2v_1^2\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}+$
$2\omega_6^2\omega_{22}c_s^2v_2^2v_1\omega_{13}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}+\omega_6^3\omega_{22}v_3^2v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}-\omega_6^3\omega_{22}v_3^2v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9\omega_{12}+$
$2\omega_6^2\omega_{22}c_s^2v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}+2\omega_6^3\omega_{22}v_3^2v_2v_1^2\omega_{13}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}+2\omega_6^2c_s^2v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}+$
$12\omega_6\omega_{22}c_s^4v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}+2\omega_6^2\omega_{22}v_3^2c_s^2v_1\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}-2\omega_6^3\omega_{22}v_3^2v_2^2v_1\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}-$
$2\omega_6^3\omega_{22}v_3^2c_s^2v_1\omega_{13}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}+\omega_6^3\omega_{22}v_3^2v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9\omega_{12}+2\omega_6^2v_3^2c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}-$
$2\omega_6^2\omega_{22}c_s^2v_2^2v_1\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}-2\omega_6^2c_s^2v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}-2\omega_6^2\omega_{22}c_s^2v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}-$
$2\omega_6^2\omega_{22}v_3^2c_s^2v_1\omega_{13}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}-2\omega_6^3\omega_{22}c_s^2v_2^2v_1\omega_{13}\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_9+2\omega_6^2v_3^2c_s^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}-2\omega_6^3\omega_{22}v_3^2v_2v_1^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}-$
$2\omega_6^3\omega_{22}v_3^2c_s^2v_1\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{12}+2\omega_6^3\omega_{22}c_s^2v_2^2v_1\omega_{13}\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_9\omega_{12}-8\omega_6^3\omega_{22}c_s^4v_2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}-$
$2\omega_6^2v_3^2v_2^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}-2\omega_6^2\omega_{22}v_3^2v_2v_1^2\omega_{13}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}+2\omega_6^3\omega_{22}v_3^2v_2v_1^2\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}-$
$2\omega_6^2v_3^2v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}+2\omega_6^3\omega_{22}v_3^2v_2v_1^2\omega_{13}\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_9+\omega_6^3\omega_{22}v_3^2c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}+2\omega_6^3\omega_{22}c_s^2v_2^2v_1\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}+$
$2\omega_6^3\omega_{22}v_3^2c_s^2v_2\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}-2\omega_6^3\omega_{22}c_s^2v_2^2v_1\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{12}+2\omega_6^2\omega_{22}c_s^2v_2^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}-$
$\omega_6^3\omega_{22}c_s^2v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9-2\omega_6^3\omega_{22}c_s^2v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}+2\omega_6^2\omega_{22}c_s^2v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}+$
$2\omega_6^2\omega_{22}v_3^2v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}-2\omega_6^3\omega_{22}c_s^2v_2v_1^2\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}-\omega_6^3v_3^2c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}+$
$2\omega_6^2\omega_{22}v_3^2v_2v_1^2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}-\omega_6^3\omega_{22}v_3^2c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}-\omega_6^3\omega_{22}v_3^2c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}+$
$2\omega_6^3\omega_{22}v_3^2c_s^2v_1\omega_{13}\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_9-2\omega_6^2\omega_{22}c_s^2v_2^2v_1\omega_{13}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}-2\omega_6^3\omega_{22}v_3^2v_2v_1^2\omega_{13}\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_9\omega_{12}-$
$\omega_6^3\omega_{22}v_3^2c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9-2\omega_6^3\omega_{22}v_3^2c_s^2v_2\omega_{13}\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}-2\omega_6^2\omega_{22}v_3^2v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}+$
$2\omega_6^3\omega_{22}c_s^2v_2v_1^2\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}-2\omega_6^2v_3^2c_s^2v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}+\omega_6^3\omega_{22}c_s^2v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9\omega_{12}-$
$2\omega_6^2\omega_{22}v_3^2c_s^2v_1\omega_{13}\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_{12}+2\omega_6^3\omega_{22}c_s^2v_2^2v_1\omega_{13}\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_9\omega_{12}-8\omega_6^3\omega_{22}c_s^4v_2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}-$
$2\omega_6^2v_3^2v_2^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}-2\omega_6^2\omega_{22}v_3^2v_2v_1^2\omega_{13}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}+2\omega_6^3\omega_{22}v_3^2v_2v_1^2\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}-$
$2\omega_6^2v_3^2v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}+2\omega_6^3\omega_{22}v_3^2v_2v_1^2\omega_{13}\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_9+\omega_6^3\omega_{22}v_3^2c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}+2\omega_6^3\omega_{22}c_s^2v_2^2v_1\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}+$
$2\omega_6^3\omega_{22}v_3^2c_s^2v_2\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}-2\omega_6^3\omega_{22}c_s^2v_2^2v_1\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{12}+2\omega_6^2\omega_{22}c_s^2v_2^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}-$
$\omega_6^3\omega_{22}c_s^2v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9-2\omega_6^3\omega_{22}c_s^2v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}+2\omega_6^2\omega_{22}c_s^2v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}+$
$2\omega_6^2\omega_{22}v_3^2v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}-2\omega_6^3\omega_{22}c_s^2v_2v_1^2\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}-\omega_6^3v_3^2c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}+$
$2\omega_6^2\omega_{22}v_3^2v_2v_1^2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}-\omega_6^3\omega_{22}v_3^2c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}-\omega_6^3\omega_{22}v_3^2c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}+$
$2\omega_6^3\omega_{22}v_3^2c_s^2v_1\omega_{13}\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_9-2\omega_6^2\omega_{22}c_s^2v_2^2v_1\omega_{13}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}-2\omega_6^3\omega_{22}v_3^2v_2v_1^2\omega_{13}\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_9\omega_{12}-$
$\omega_6^3\omega_{22}v_3^2c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9-2\omega_6^3\omega_{22}v_3^2c_s^2v_2\omega_{13}\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}-2\omega_6^2\omega_{22}v_3^2v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}+$
$2\omega_6^3\omega_{22}c_s^2v_2v_1^2\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}-2\omega_6^2v_3^2v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}+\omega_6^3\omega_{22}c_s^2v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9\omega_{12}-$
$2\omega_6^2\omega_{22}v_3^2c_s^2v_1\omega_{13}\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_{12}+2\omega_6^3\omega_{22}c_s^2v_2^2v_1\omega_{13}\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_9\omega_{12}-8\omega_6^3\omega_{22}c_s^4v_2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}-$
$2\omega_6^2v_3^2v_2^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}-2\omega_6^2\omega_{22}v_3^2v_2v_1^2\omega_{13}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}+2\omega_6^3\omega_{22}v_3^2v_2v_1^2\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}-$
$2\omega_6^2v_3^2v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}+2\omega_6^3\omega_{22}v_3^2v_2v_1^2\omega_{13}\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_9+\omega_6^3\omega_{22}v_3^2c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}+2\omega_6^3\omega_{22}c_s^2v_2^2v_1\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}+$
$2\omega_6^3\omega_{22}v_3^2c_s^2v_2\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}-2\omega_6^3\omega_{22}c_s^2v_2^2v_1\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{12}+2\omega_6^2\omega_{22}c_s^2v_2^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}-$
$\omega_6^3\omega_{22}c_s^2v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9-2\omega_6^3\omega_{22}c_s^2v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}+2\omega_6^2\omega_{22}c_s^2v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}+$
$2\omega_6^2\omega_{22}v_3^2v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}-2\omega_6^3\omega_{22}c_s^2v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}-\omega_6^3\omega_{22}v_3^2c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}+$
$2\omega_6^2\omega_{22}v_3^2v_2v_1^2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}-\omega_6^3\omega_{22}v_3^2c_s^2v_1\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{12}+\omega_6^2\omega_{22}c_s^2v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}+$
$2\omega_6^3\omega_{22}v_3^2c_s^2v_1\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}+\omega_6^3\omega_{22}c_s^2v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}+2\omega_6^3\omega_{22}v_3^2c_s^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}+$

$$4\omega_6\omega_{22}c_s^4v_2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12} + \omega_6^3\omega_{22}v_3^2v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9 + \omega_6^3v_3^2c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} +$$
$$\omega_6^3\omega_{22}v_3^2c_s^2v_1\omega_{13}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9\omega_{12} + 2\omega_6^3\omega_{22}v_3^2v_2^2v_1\omega_{13}\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12} - 2\omega_6^2\omega_{22}v_3^2v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} +$$
$$2\omega_6^2c_s^2v_2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} + 2\omega_6^2\omega_{22}c_s^2v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} - \omega_6^3\omega_{22}v_3^2c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 +$$
$$2\omega_6^2\omega_{22}c_s^2v_2^2v_1\omega_{13}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} - 2\omega_6^3\omega_{22}v_3^2v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} + 2\omega_6^2c_s^2v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} -$$
$$2\omega_6^3\omega_{22}c_s^2v_2^2v_1\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} - 2\omega_6^3\omega_{22}v_3^2v_2^2v_1\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{12} + 2\omega_6^3\omega_{22}c_s^2v_2^2v_1\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9 +$$
$$2\omega_6^2\omega_{22}v_3^2c_s^2v_1\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} + \omega_6^3\omega_{22}c_s^2v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} - \omega_6^3\omega_{22}v_3^2c_s^2v_1\omega_{13}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} +$$
$$2\omega_6^3\omega_{22}v_3^2c_s^2v_1\omega_{13}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} + \omega_6^3\omega_{22}c_s^2v_2^2v_1\omega_{13}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} + 2\omega_6^3\omega_{22}v_3^2c_s^2v_2\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18} +$$
$$4\omega_6^3\omega_{22}c_s^4v_2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_{18}\omega_9\omega_{12} - 2\omega_6^3\omega_{22}v_3^2v_2v_1^2\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{12} + \omega_6^3c_s^2v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12} +$$
$$2\omega_6^3\omega_{22}c_s^2v_2v_1^2\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18} + \omega_6^3c_s^2v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} + \omega_6^3\omega_{22}c_s^2v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12} +$$
$$2\omega_6^3\omega_{22}v_3^2c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} + 2\omega_6^3\omega_{22}c_s^2v_2^2v_1\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12} + \omega_6^3\omega_{22}c_s^2v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 +$$
$$2\omega_6^3\omega_{22}v_3^2c_s^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12} - 2\omega_6^2v_3^2c_s^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} - \omega_6^3\omega_{22}v_3^2v_2v_1^2\omega_{13}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} - 2\omega_6^2v_3^2c_s^2v_1\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} +$$
$$\omega_6^3\omega_{22}v_3^2v_2v_1^2\omega_{13}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} - 2\omega_6^3\omega_{22}v_3^2v_2v_1^2\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9 - 2\omega_6^2v_3^2c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} -$$
$$2\omega_6^3\omega_{22}v_3^2v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12} + 2\omega_6^2v_3^2c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} + 2\omega_6^2\omega_{22}v_3^2c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12} +$$
$$2\omega_6^2\omega_{22}c_s^2v_2v_1^2\omega_{13}\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12} + 2\omega_6^3\omega_{22}v_3^2c_s^2v_2\omega_{13}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} - \omega_6^3\omega_{22}c_s^2v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} -$$
$$2\omega_6^3c_s^2v_2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} - 2\omega_6^3\omega_{22}c_s^2v_2^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} - \omega_6^3\omega_{22}v_3^2c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} +$$
$$2\omega_6^3\omega_{22}c_s^2v_2^2v_1\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{12} - 2\omega_6^2\omega_{22}v_3^2c_s^2v_2\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} - \omega_6^3c_s^2v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} +$$
$$2\omega_6^3c_s^2v_2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} - 2\omega_6^3\omega_{22}c_s^2v_2^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} - \omega_6^3\omega_{22}v_3^2c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} +$$
$$2\omega_6^3\omega_{22}c_s^2v_2^2v_1\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{12} - 2\omega_6^2\omega_{22}v_3^2c_s^2v_2\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} - \omega_6^3\omega_{22}c_s^2v_2^2v_1\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{12} +$$
$$\omega_6^3c_s^2v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} + 2\omega_6^3v_3^2c_s^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12} - \omega_6^3v_3^2v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12} - \omega_6^3\omega_{22}v_3^2v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12} +$$
$$\omega_6^3\omega_{22}v_3^2v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} + \omega_6^3\omega_{22}v_3^2c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 - 2\omega_6^3\omega_{22}v_3^2v_2v_1^2\omega_{13}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} +$$
$$2\omega_6^3\omega_{22}v_3^2c_s^2v_1\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9 - 2\omega_6^2\omega_{22}v_3^2c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} + \omega_6^3v_3^2v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} -$$
$$\omega_6^3v_3^2c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} - \omega_6^3\omega_{22}v_3^2c_s^2v_2\omega_{13}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9\omega_{12} - 2\omega_6^2\omega_{22}c_s^2v_2v_1^2\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} -$$
$$2\omega_6^3\omega_{22}v_3^2v_2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12} + 2\omega_6^3\omega_{22}c_s^2v_2v_1^2\omega_{13}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} + 2\omega_6^2\omega_{22}v_3^2c_s^2v_2\omega_{13}\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12} +$$
$$2\omega_6^2\omega_{22}v_3^2v_2v_1^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} - 2\omega_6^3v_3^2c_s^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} + 2\omega_6^3\omega_{22}v_3^2c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} -$$
$$2\omega_6^3v_3^2v_2^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12} + \omega_6^3\omega_{22}v_3^2c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} + 2\omega_6^3\omega_{22}v_3^2c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} -$$
$$\omega_6^3v_3^2c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} - \omega_6^3\omega_{22}v_3^2c_s^2v_2\omega_{13}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9\omega_{12} - 2\omega_6^2\omega_{22}c_s^2v_2v_1^2\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} -$$
$$2\omega_6^3\omega_{22}v_3^2v_2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12} + 2\omega_6^3\omega_{22}c_s^2v_2v_1^2\omega_{13}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} + 2\omega_6^2\omega_{22}v_3^2c_s^2v_2\omega_{13}\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12} +$$
$$2\omega_6^2\omega_{22}v_3^2v_2v_1^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} - 2\omega_6^3v_3^2c_s^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} + 2\omega_6^3\omega_{22}v_3^2c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} -$$
$$2\omega_6^3v_3^2v_2^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12} + \omega_6^3\omega_{22}v_3^2c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} + 2\omega_6^3\omega_{22}v_3^2c_s^2v_2\omega_{13}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} +$$
$$2\omega_6^2\omega_{22}v_3^2c_s^2v_2\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} + \omega_6^3\omega_{22}v_3^2c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12} + 2\omega_6^3\omega_{22}c_s^2v_2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} -$$
$$\omega_6^3\omega_{22}v_3^2c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} + 4\omega_6^2\omega_{22}c_s^4v_2\omega_{13}\omega_{20}\omega_{14}\omega_5^2\omega_{18}\omega_9\omega_{12} - 2\omega_6^3\omega_{22}v_3^2v_2v_1^2\omega_{13}\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12} +$$
$$2\omega_6^2\omega_{22}v_3^2v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} - \omega_6^3\omega_{22}v_3^2v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9 - 2\omega_6^3\omega_{22}v_3^2c_s^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} -$$
$$2\omega_6^3v_3^2c_s^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12} + \omega_6^3\omega_{22}v_3^2v_2^2v_1\omega_{13}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} + 2\omega_6^3\omega_{22}v_3^2v_2v_1^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{12} - \omega_6^3\omega_{22}v_3^2v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} -$$
$$2\omega_6^2\omega_{22}v_3^2c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} - 2\omega_6^2\omega_{22}v_3^2c_s^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} + 2\omega_6^3\omega_{22}v_3^2v_2^2v_1\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{12} -$$
$$2\omega_6^3\omega_{22}c_s^2v_2^2v_1\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} + 4\omega_6^3\omega_{22}c_s^4v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9\omega_{12} - 4\omega_6\omega_{22}c_s^4v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9\omega_{12} +$$
$$\omega_6^3v_3^2c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12} - 2\omega_6^3\omega_{22}v_3^2c_s^2v_2\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{12} - \omega_6^3\omega_{22}c_s^2v_2v_1^2\omega_{13}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} -$$
$$2\omega_6^2\omega_{22}v_3^2v_2^2v_1\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12} + 2\omega_6^3\omega_{22}v_3^2c_s^2v_1\omega_{13}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} + 2\omega_6^3\omega_{22}v_3^2v_2^2v_1\omega_{13}\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_9\omega_{12} -$$
$$2\omega_6^3\omega_{22}c_s^2v_2v_1^2\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9 - \omega_6^3v_3^2v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} - 2\omega_6^2\omega_{22}c_s^2v_2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} +$$
$$2\omega_6^3\omega_{22}v_3^2v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12} - 2\omega_6^2\omega_{22}c_s^2v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} + 2\omega_6^3\omega_{22}c_s^2v_2^2v_1\omega_{13}\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12} -$$
$$2\omega_6^3\omega_{22}c_s^2v_2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12} - 2\omega_6^3c_s^2v_2^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12} + \omega_6^3\omega_{22}c_s^2v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9 +$$
$$\omega_6^3v_3^2c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} + 2\omega_6^2\omega_{22}c_s^2v_2v_1^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} + 2\omega_6^2\omega_{22}v_3^2v_2^2v_1\omega_{13}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} +$$
$$2\omega_6^2v_3^2v_2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} - 8\omega_{22}c_s^4v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} - 2\omega_6^3\omega_{22}v_3^2v_2^2v_1\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} -$$
$$\omega_6^3\omega_{22}v_3^2c_s^2v_1\omega_{13}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} + 2\omega_6^2v_3^2v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} + 2\omega_6^3\omega_{22}v_3^2v_2^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12} +$$
$$2\omega_6^3\omega_{22}v_3^2c_s^2v_2\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} + 2\omega_6^3v_3^2v_2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12} - 2\omega_6^2\omega_{22}c_s^2v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} -$$
$$2\omega_6^2\omega_{22}v_3^2v_2^2v_1\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} + 2\omega_6^3\omega_{22}c_s^2v_2v_1^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{12} - 2\omega_6^3\omega_{22}c_s^2v_2v_1^2\omega_{13}\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_9\omega_{12} -$$
$$2\omega_6^2\omega_{22}v_3^2c_s^2v_2\omega_{13}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} - \omega_6^3\omega_{22}c_s^2v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} - \omega_6^3c_s^2v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} +$$
$$2\omega_6^3\omega_{22}v_3^2c_s^2v_2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{12} - 4\omega_6^2\omega_{22}c_s^4v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_{18}\omega_9\omega_{12} + 2\omega_6^2\omega_{22}v_3^2c_s^2v_2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} -$$
$$2\omega_6^3\omega_{22}v_3^2c_s^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12} + 2\omega_6^3\omega_{22}v_3^2v_2v_1^2\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12})\frac{1}{2\omega_6^3\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12}}$$

$$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2\rho} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2\rho}$$

$$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2\rho} =$$
$$(2v_3^2c_s^2v_2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} - 2\omega_6\omega_{22}v_3^2v_2^2v_1\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} - 2\omega_6\omega_{22}v_3^2v_2^2v_1\omega_{20}\omega_8\omega_5\omega_{18}\omega_{12} - \omega_6v_3^2c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12} -$$
$$2\omega_6\omega_{22}v_3^2v_2^2v_1\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18} - 2\omega_{22}v_3^2c_s^2v_1\omega_{13}\omega_{20}\omega_5\omega_{18}\omega_9\omega_{12} + 2\omega_6\omega_{22}v_3^2v_2^2v_1\omega_{13}\omega_{20}\omega_8\omega_{18}\omega_9\omega_{12} - 2\omega_{22}v_3^2c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12} +$$
$$\omega_6\omega_{22}c_s^2v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18} - 2v_3^2v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} + \omega_6\omega_{22}c_s^2v_2v_1^2\omega_{13}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} -$$
$$\omega_6v_3^2v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_9\omega_{12} - 2\omega_6\omega_{22}v_3^2c_s^2v_2\omega_{13}\omega_{20}\omega_8\omega_{18}\omega_9\omega_{12} + 2\omega_6\omega_{22}v_3^2v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12} -$$
$$\omega_6\omega_{22}c_s^2v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_{18}\omega_9\omega_{12} - 2\omega_6\omega_{22}c_s^2v_2v_1^2\omega_{13}\omega_{20}\omega_8\omega_{18}\omega_9\omega_{12} - \omega_6\omega_{22}c_s^2v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} +$$
$$2\omega_6\omega_{22}v_3^2v_2v_1^2\omega_{13}\omega_{20}\omega_{18}\omega_9\omega_{12} - 2\omega_{22}v_3^2v_2v_1^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} + 2\omega_{22}v_3^2v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12} -$$
$$\omega_6\omega_{22}v_3^2v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18} - 2\omega_{22}v_3^2v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} + 2\omega_6\omega_{22}v_3^2c_s^2v_2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} -$$

$$2v_3^2v_2^2v_1\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}+\omega_6v_3^2v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}+2\omega_{22}c_s^2v_2^2v_1\omega_{13}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}-\omega_6\omega_{22}v_3^2v_2^2v_1\omega_{13}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}+$$
$$\omega_6\omega_{22}v_3^2c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}+\omega_6c_s^2v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_9\omega_{12}+2\omega_{22}v_3^2c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}-$$
$$2v_3^2c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_9\omega_{12}-2\omega_6\omega_{22}c_s^2v_2v_1^2\omega_{13}\omega_{20}\omega_5\omega_{18}\omega_9\omega_{12}-2\omega_6\omega_{22}c_s^2v_2^2v_1\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18}-2\omega_6\omega_{22}c_s^2v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}-$$
$$2\omega_6\omega_{22}c_s^2v_2^2v_1\omega_{20}\omega_8\omega_5\omega_{18}\omega_{12}+2\omega_{22}v_3^2c_s^2v_1\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}+2\omega_6\omega_{22}c_s^2v_2v_1^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}-2\omega_{22}c_s^2v_2^2v_1\omega_{13}\omega_{20}\omega_5\omega_{18}\omega_9\omega_{12}-$$
$$2c_s^2v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}-2\omega_{22}c_s^2v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}-\omega_6\omega_{22}v_3^2v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}-$$
$$2\omega_6\omega_{22}v_3^2c_s^2v_1\omega_{20}\omega_8\omega_5\omega_{18}\omega_{12}-2\omega_6\omega_{22}v_3^2c_s^2v_1\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18}+2\omega_6\omega_{22}v_3^2v_2^2v_1\omega_{13}\omega_{20}\omega_5\omega_{18}\omega_9\omega_{12}+2\omega_6\omega_{22}c_s^2v_2v_1^2\omega_{13}\omega_{20}\omega_{18}\omega_9\omega_{12}+$$
$$2c_s^2v_2v_1^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}-2\omega_{22}v_3^2v_2v_1^2\omega_{13}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}-\omega_6c_s^2v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}+$$
$$\omega_6\omega_{22}v_3^2v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_{18}\omega_9\omega_{12}+2\omega_{22}v_3^2v_2v_1^2\omega_{13}\omega_{20}\omega_5\omega_{18}\omega_9\omega_{12}-\omega_6\omega_{22}v_3^2c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_9\omega_{12}-$$
$$2\omega_{22}c_s^2v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}+\omega_6\omega_{22}v_3^2c_s^2v_2\omega_{13}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}-2\omega_6\omega_{22}v_3^2c_s^2v_2\omega_{13}\omega_{20}\omega_5\omega_{18}\omega_9\omega_{12}+$$
$$2\omega_6\omega_{22}v_3^2c_s^2v_2\omega_{13}\omega_{20}\omega_{18}\omega_9\omega_{12}+2\omega_{22}c_s^2v_2^2v_1\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}+\omega_6\omega_{22}v_3^2v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_9\omega_{12}+\omega_6\omega_{22}v_3^2v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}-$$
$$\omega_6\omega_{22}v_3^2c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_{18}\omega_9\omega_{12}-2v_3^2c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}+\omega_6\omega_{22}v_3^2c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}+$$
$$2\omega_6\omega_{22}v_3^2v_2v_1^2\omega_{13}\omega_{20}\omega_8\omega_{18}\omega_9-2\omega_6\omega_{22}c_s^2v_2^2v_1\omega_{13}\omega_{14}\omega_{18}\omega_9\omega_{12}+\omega_6\omega_{22}v_3^2c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}-\omega_6\omega_{22}v_3^2v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9-$$
$$2\omega_{22}v_3^2c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_9\omega_{12}-2\omega_6\omega_{22}v_3^2v_2^2v_1\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}+2\omega_6v_3^2v_2^2v_1\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}+$$
$$2\omega_6\omega_{22}c_s^2v_2^2v_1\omega_{13}\omega_{20}\omega_8\omega_{18}\omega_9\omega_{12}+2\omega_{22}v_3^2c_s^2v_1\omega_{13}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}+2\omega_{22}c_s^2v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}-$$
$$\omega_6\omega_{22}v_3^2c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}-\omega_6v_3^2c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}+2\omega_6\omega_{22}v_3^2c_s^2v_1\omega_{13}\omega_{20}\omega_5\omega_{18}\omega_9\omega_{12}-2\omega_6\omega_{22}v_3^2c_s^2v_1\omega_{13}\omega_{14}\omega_{18}\omega_9\omega_{12}-$$
$$\omega_6\omega_{22}v_3^2v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}-\omega_6\omega_{22}c_s^2v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}+\omega_6\omega_{22}v_3^2c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9+$$
$$2\omega_{22}v_3^2v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_9\omega_{12}+2\omega_6\omega_{22}v_3^2c_s^2v_2\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}-2\omega_6v_3^2c_s^2v_2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}-$$
$$2\omega_6\omega_{22}v_3^2v_2v_1^2\omega_{13}\omega_{20}\omega_8\omega_{18}\omega_9\omega_{12}+2c_s^2v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}+2v_3^2v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_9\omega_{12}-2\omega_{22}v_3^2v_2v_1^2\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}+$$
$$\omega_6\omega_{22}c_s^2v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9+\omega_6\omega_{22}c_s^2v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}-2\omega_6c_s^2v_2v_1^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}+$$
$$2\omega_6\omega_{22}c_s^2v_2v_1^2\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}-2\omega_6\omega_{22}v_3^2v_2^2v_1\omega_{13}\omega_{14}\omega_{18}\omega_9\omega_{12}+2\omega_6\omega_{22}c_s^2v_2v_1^2\omega_{13}\omega_{20}\omega_8\omega_{18}\omega_9-2\omega_{22}v_3^2v_2^2v_1\omega_{13}\omega_{20}\omega_5\omega_{18}\omega_9\omega_{12}+$$
$$2\omega_6\omega_{22}v_3^2c_s^2v_1\omega_{13}\omega_{20}\omega_8\omega_{18}\omega_9\omega_{12}+2\omega_{22}v_3^2v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}-\omega_6\omega_{22}c_s^2v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_9\omega_{12}+$$
$$2\omega_{22}v_3^2c_s^2v_2\omega_{13}\omega_{20}\omega_5\omega_{18}\omega_9\omega_{12}+2\omega_{22}v_3^2c_s^2v_1\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}+2\omega_6\omega_{22}v_3^2c_s^2v_2\omega_{13}\omega_{20}\omega_8\omega_{18}\omega_9-2\omega_6\omega_{22}v_3^2v_2v_1^2\omega_{13}\omega_{20}\omega_5\omega_{18}\omega_9\omega_{12}+$$
$$2\omega_{22}c_s^2v_2v_1^2\omega_{13}\omega_{20}\omega_5\omega_{18}\omega_9\omega_{12}+\omega_6v_3^2c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_9\omega_{12}+2\omega_{22}c_s^2v_2^2v_1\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}-2c_s^2v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_9\omega_{12}-$$
$$2\omega_6\omega_{22}v_3^2c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}+2\omega_6\omega_{22}c_s^2v_2^2v_1\omega_{13}\omega_{20}\omega_5\omega_{18}\omega_9\omega_{12}-\omega_6\omega_{22}v_3^2c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}+$$
$$\omega_6\omega_{22}c_s^2v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}+2v_3^2v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}-2\omega_{22}c_s^2v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_9\omega_{12}+$$
$$\omega_6\omega_{22}c_s^2v_2^2v_1\omega_{13}\omega_{14}\omega_8\omega_5\omega_9\omega_{12}-\omega_6\omega_{22}v_3^2v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_{18}\omega_9\omega_{12}+\omega_6c_s^2v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}-$$
$$2\omega_{22}c_s^2v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}+2\omega_{22}v_3^2c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_9\omega_{12}-2\omega_{22}c_s^2v_2^2v_1\omega_{13}\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}-\omega_6c_s^2v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_9\omega_{12}+$$
$$\omega_6\omega_{22}v_3^2v_2v_1^2\omega_{13}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}+2\omega_6\omega_{22}v_3^2c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_{18}\omega_9\omega_{12}+2\omega_{22}v_3^2c_s^2v_1\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}-\omega_6\omega_{22}v_3^2c_s^2v_2\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18}\omega_{12}+$$
$$2\omega_6\omega_{22}v_3^2c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_9\omega_{12}+\omega_6\omega_{22}v_3^2c_s^2v_1\omega_{13}\omega_{14}\omega_8\omega_{18}\omega_9\omega_{12}+2\omega_{22}v_3^2v_2^2v_1\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}+2\omega_{22}v_3^2c_s^2v_1\omega_{20}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}+$$
$$2\omega_6\omega_{22}v_3^2c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_9\omega_{12}+\omega_6\omega_{22}v_3^2c_s^2v_1\omega_{13}\omega_{14}\omega_8\omega_{18}\omega_9\omega_{12}-2\omega_{22}v_3^2v_2^2v_1\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}+2\omega_6\omega_{22}v_3^2c_s^2v_1\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18}\omega_9+$$
$$\omega_6v_3^2c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_9\omega_{12}+2\omega_6\omega_{22}v_3^2c_s^2v_1\omega_{20}\omega_8\omega_5\omega_{18}\omega_{12}+2\omega_{22}v_3^2v_2^2v_1\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}+2\omega_6\omega_{22}v_3^2c_s^2v_1\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18}\omega_9+$$
$$\omega_6v_3^2v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_9\omega_{12}+\omega_6\omega_{22}v_3^2v_2^2v_1\omega_{13}\omega_{14}\omega_8\omega_{18}\omega_9\omega_{12}-2\omega_{22}v_3^2v_2^2v_1\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}-2\omega_6\omega_{22}v_3^2c_s^2v_1\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18}\omega_9+$$
$$2\omega_6\omega_{22}v_3^2v_2^2v_1\omega_{13}\omega_{14}\omega_{18}\omega_9\omega_{12}-2\omega_{22}c_s^2v_2v_1^2\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}+2\omega_6\omega_{22}v_3^2c_s^2v_1\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18}\omega_9+2\omega_6\omega_{22}c_s^2v_2^2v_1\omega_{13}\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}+$$
$$2c_s^2v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_9\omega_{12}+\omega_6\omega_{22}v_3^2c_s^2v_1\omega_{13}\omega_{14}\omega_8\omega_{18}\omega_9\omega_{12}-2\omega_{22}v_3^2v_2^2v_1\omega_{13}\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}-\omega_6v_3^2v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}+$$
$$2\omega_6\omega_{22}v_3^2v_2^2v_1\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18}\omega_{12}-2\omega_6v_3^2v_2^2v_1\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}+\omega_6\omega_{22}c_s^2v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_9\omega_{12}-2\omega_{22}c_s^2v_2^2v_1\omega_{13}\omega_{14}\omega_8\omega_5\omega_9\omega_{12}+$$
$$2\omega_6\omega_{22}c_s^2v_2^2v_1\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}+2\omega_6c_s^2v_2^2v_1\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}-2\omega_6\omega_{22}v_3^2c_s^2v_1\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18}\omega_9+$$
$$2\omega_{22}v_3^2c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}-2\omega_6\omega_{22}v_3^2v_2v_1^2\omega_{13}\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}-2\omega_6\omega_{22}c_s^2v_2v_1^2\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18}\omega_9-$$
$$\omega_6\omega_{22}c_s^2v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9-\omega_6\omega_{22}c_s^2v_2v_1^2\omega_{13}\omega_{14}\omega_8\omega_5\omega_9\omega_{12}-2\omega_6\omega_{22}v_3^2c_s^2v_2\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18}\omega_{12}+2\omega_6v_3^2c_s^2v_2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}-$$
$$2v_3^2c_s^2v_1\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}+\omega_6v_3^2c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}+2\omega_{22}v_3^2c_s^2v_2\omega_{13}\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}-2\omega_{22}v_3^2c_s^2v_1\omega_{20}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}-$$
$$\omega_6\omega_{22}v_3^2c_s^2v_1\omega_{13}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}+2\omega_{22}v_3^2c_s^2v_1\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}+\omega_6\omega_{22}v_3^2c_s^2v_2\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18}\omega_{12}-2\omega_6\omega_{22}v_3^2c_s^2v_1\omega_{20}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}+$$
$$\omega_6\omega_{22}v_3^2c_s^2v_1\omega_{13}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}+2\omega_6\omega_{22}v_3^2c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}+\omega_6\omega_{22}v_3^2c_s^2v_2\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18}\omega_9+2\omega_6\omega_{22}c_s^2v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}+$$
$$2\omega_6\omega_{22}v_3^2c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}-2\omega_{22}v_3^2c_s^2v_1\omega_{20}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}-\omega_6\omega_{22}v_3^2c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}+\omega_6\omega_{22}c_s^2v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9+$$
$$2\omega_6\omega_{22}v_3^2c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}-2\omega_{22}v_3^2c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}-2\omega_6\omega_{22}v_3^2c_s^2v_1\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}+$$
$$2\omega_{22}v_3^2c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}-2\omega_6\omega_{22}v_3^2v_2v_1^2\omega_{13}\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}-2\omega_6\omega_{22}c_s^2v_2v_1^2\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18}\omega_9-$$
$$\omega_6\omega_{22}c_s^2v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9-\omega_6\omega_{22}c_s^2v_2v_1^2\omega_{13}\omega_{14}\omega_8\omega_5\omega_9\omega_{12}-2\omega_6\omega_{22}v_3^2c_s^2v_2\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18}\omega_{12}+2\omega_6v_3^2c_s^2v_2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}-$$
$$2v_3^2c_s^2v_1\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}+\omega_6v_3^2c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}+2\omega_{22}v_3^2c_s^2v_2\omega_{13}\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}-2\omega_{22}v_3^2c_s^2v_1\omega_{20}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}-$$
$$\omega_6\omega_{22}v_3^2c_s^2v_1\omega_{13}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}+2\omega_{22}v_3^2v_2^2v_1\omega_{20}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}-2\omega_6\omega_{22}c_s^2v_2v_1^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}+\omega_6\omega_{22}c_s^2v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9+$$
$$2\omega_6\omega_{22}v_3^2c_s^2v_2\omega_{13}\omega_{14}\omega_{18}\omega_9\omega_{12}-2v_3^2v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_9\omega_{12}+\omega_6\omega_{22}v_3^2c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_9\omega_{12}+2\omega_6\omega_{22}v_3^2c_s^2v_1\omega_{13}\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12}+$$
$$2\omega_{22}v_3^2v_2^2v_1\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}-2\omega_6\omega_{22}v_3^2c_s^2v_2\omega_{20}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}+\omega_6v_3^2c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}+2\omega_6\omega_{22}c_s^2v_2v_1^2\omega_{13}\omega_{14}\omega_{18}\omega_9\omega_{12}-$$
$$2\omega_6\omega_{22}v_3^2v_2^2v_1\omega_{13}\omega_{20}\omega_8\omega_{18}\omega_9+2\omega_6\omega_{22}v_3^2v_2^2v_1\omega_{20}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}-2\omega_{22}v_3^2v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_9\omega_{12}-\omega_6\omega_{22}v_3^2v_2v_1^2\omega_{13}\omega_{14}\omega_8\omega_{18}\omega_9\omega_{12}-$$
$$2\omega_6\omega_{22}c_s^2v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_{18}\omega_9\omega_{12}+\omega_6\omega_{22}v_3^2v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12}-2\omega_6v_3^2v_2v_1^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}+$$

$2\omega_6\omega_{22}v_3^2v_2v_1^2\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} + \omega_6\omega_{22}v_3^2v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9 - 2\omega_6\omega_{22}v_3^2c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_{18}\omega_9\omega_{12} +$
$2\omega_6\omega_{22}v_3^2v_2^2v_1\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12} - 2\omega_{22}c_s^2v_2^2v_1\omega_{20}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} - \omega_6c_s^2v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} - \omega_6\omega_{22}v_3^2v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_{18}\omega_9 -$
$2\omega_6\omega_{22}v_3^2c_s^2v_2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12} + \omega_6\omega_{22}c_s^2v_2^2v_1\omega_{13}\omega_{14}\omega_8\omega_{18}\omega_9\omega_{12} - \omega_6\omega_{22}v_3^2v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_9\omega_{12} +$
$2v_3^2c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_9\omega_{12} + 2\omega_6\omega_{22}v_3^2v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_{18}\omega_9\omega_{12} - 2\omega_{22}v_3^2c_s^2v_2\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} -$
$2\omega_6\omega_{22}c_s^2v_2v_1^2\omega_{20}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} + 2v_3^2c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} - 2\omega_{22}v_3^2c_s^2v_1\omega_{13}\omega_{14}\omega_8\omega_5\omega_9\omega_{12})\frac{1}{2\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2\rho} = C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2\rho}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2\rho} = 0$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2\rho} = (-27\omega_3^2c_s^2\omega_4\omega_1^3\omega_2^3 - 54\omega_3^2c_s^2v_2^2\omega_1^3\omega_2^3 + 192\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^2 - 108\omega_3^2c_s^2\omega_1^2\omega_2^3 - 54c_s^2\omega_4^2\omega_1^3\omega_2^3 + 32\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^2\omega_2^2 +$
$120\omega_3^2v_3^2v_2^2\omega_4^2\omega_1^2\omega_2^2 + 96\omega_3^2v_3^2\omega_4^2\omega_1^3\omega_2 - 104\omega_3^2c_s^2\omega_4^2\omega_1^3 - 16\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2^2 - 30\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^3 - 162\omega_3^2c_s^4\omega_1^3\omega_2^3 - 27\omega_3c_s^2v_2^2\omega_4^2\omega_1^3\omega_2^3 -$
$168\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2 - 8\omega_3^2v_2^2\omega_4^2\omega_2^3 - 40\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^3\omega_2 + 24c_s^2\omega_4^2\omega_1^3\omega_2^2 - 60\omega_3^2v_3^2v_2^2\omega_4^2\omega_1^3\omega_2 - 10\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^2\omega_2^3 + 32\omega_3^2c_s^2v_2^2\omega_4^2\omega_2^3 +$
$324\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^3 - 24\omega_3c_s^4\omega_4^2\omega_1^3\omega_2 + 8\omega_3^2v_2^2\omega_4^2\omega_1^3\omega_2 + 192\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^2 + 144\omega_3^2c_s^4\omega_4^2\omega_2^3 - 192\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2^2 + 108\omega_3c_s^2v_2^2\omega_4^2\omega_1^2\omega_2^3 +$
$324\omega_3^2c_s^4\omega_1^2\omega_2^3 - 72\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2 + 56\omega_3c_s^2\omega_4^2\omega_1\omega_2^3 - 8\omega_3^2v_2^2\omega_4^2\omega_1^3 - 8\omega_3c_s^2v_2^2\omega_4^2\omega_1^3\omega_2 + 32\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^3 - 432\omega_3^2v_3^2c_s^2\omega_4^2\omega_1\omega_2^2 + 96\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2 +$
$144\omega_3^2c_s^4\omega_4^2\omega_1^3 + 10\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^3\omega_2^2 - 8\omega_3^2\omega_4^2\omega_1\omega_2^2 + 84c_s^2\omega_4^2\omega_1^2\omega_2^3 + 128\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^2 + 54\omega_3^2c_s^2\omega_1^3\omega_2^3 + 108\omega_3^2c_s^2v_2^2\omega_1^2\omega_2^3 + 108\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^3 -$
$432\omega_3^2v_3^2c_s^2\omega_4^2\omega_1\omega_2^3 + 8\omega_3^2v_2^2\omega_4^2\omega_1^2\omega_2 + 30\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^2 + 64\omega_3c_s^2v_2^2\omega_4^2\omega_1^2\omega_2^2 - 81\omega_3c_s^4\omega_4^2\omega_1^3\omega_2^3 - 104\omega_3^2c_s^2\omega_4^2\omega_2^3 + 64\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^3 -$
$8\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^2\omega_2 - 36\omega_3^2v_3^4\omega_4^2\omega_1\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1\omega_2^3 - 24\omega_3^2v_3^2v_2^2\omega_4^2\omega_1^2\omega_2 - 432\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^3\omega_2 + 162c_s^4\omega_4^2\omega_1^3\omega_2^3 - 64\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^2 + 81\omega_3^2c_s^4\omega_4\omega_1^3\omega_2^3 +$
$8\omega_3^2\omega_4^2\omega_1^3 + 48\omega_3^2v_3^4\omega_4^2\omega_1^3 + 10\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^3 + 112\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2 - 36\omega_3^2v_3^4\omega_4^2\omega_1^3\omega_2 - 8\omega_3^2\omega_4^2\omega_1^3\omega_2 + 432\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^3 - 108\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^3 -$
$56\omega_3c_s^2v_2^2\omega_4^2\omega_1\omega_2^3 + 8\omega_3c_s^2\omega_4^2\omega_1^3\omega_2 - 84c_s^2v_2^2\omega_4^2\omega_2^3 + 864\omega_3^2v_3^2c_s^2\omega_4^2\omega_2^2 + 72\omega_3^2v_3^2v_2^2\omega_4^2\omega_2^3 - 72c_s^4\omega_4^2\omega_1^3\omega_2^2 + 27\omega_3^2c_s^2v_2^2\omega_4\omega_1^3\omega_2^3 - 96\omega_3^2v_3^2\omega_4^2\omega_2^3 +$
$16\omega_3^2\omega_4^2\omega_1^2\omega_2^2 + 72\omega_3^2v_3^4\omega_4^2\omega_1^2\omega_2^2 - 176\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^2 + 8\omega_3^2c_s^2v_2^2\omega_4^2\omega_1\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^2\omega_2 - 72\omega_3^2v_3^4\omega_4^2\omega_1^2\omega_2 - 60\omega_3^2v_3^2v_2^2\omega_4^2\omega_1\omega_2^3 - 168\omega_3c_s^4\omega_4^2\omega_1\omega_2^3 +$
$48\omega_3^2v_3^2v_2^2\omega_4^2\omega_1^3 + 80\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2 - 24c_s^2v_2^2\omega_4^2\omega_1^3\omega_2^2 - 216\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^2 + 8\omega_3^2v_2^2\omega_4^2\omega_1\omega_2^3 - 324\omega_3^2c_s^4\omega_4\omega_1^2\omega_2^3 - 96\omega_3^2v_3^2\omega_4^2\omega_1^3 - 252c_s^4\omega_4^2\omega_1^2\omega_2^3 +$
$96\omega_3^2v_3^2\omega_4^2\omega_1\omega_2^2 - 432\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^2\omega_2 - 10\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2^2 - 96\omega_3^2v_3^2v_2^2\omega_4^2\omega_1\omega_2^2 - 108\omega_3^2c_s^2v_2^2\omega_4\omega_1^2\omega_2^3 - 56\omega_3^2c_s^2v_2^2\omega_4^2\omega_1\omega_2^2 + 24\omega_3^2v_3^4\omega_4^2\omega_2^3 +$
$8\omega_3^2\omega_4^2\omega_2^3 + 96\omega_3^2v_3^2\omega_4^2\omega_1\omega_2^3 + 432\omega_3^2v_3^2c_s^2\omega_4^2\omega_2^3 + 27\omega_3c_s^2\omega_4^2\omega_1^3\omega_2^3 + 8\omega_3^2v_2^2\omega_4^2\omega_1\omega_2^2 + 54c_s^2v_2^2\omega_4^2\omega_1^3\omega_2^3 - 24\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^3)\frac{v_2}{72\omega_3^2\omega_4^2\omega_1^3\omega_2^3}$

coefficient $C^{(1)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_1}$ **at** $\frac{\partial^4 v_1}{\partial x_1\partial x_2\partial x_3^2}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_1} = (28c_s^2v_2v_1\omega^2 - 24c_s^2v_2^2 + 36v_3^2v_2^2\omega - 2c_s^2v_2v_1\omega^3 + 36v_3^2c_s^2\omega - 14v_3^2c_s^2\omega^2 + v_3^2v_2^2\omega^3 + 48c_s^2v_2v_1 - 24v_3^2v_2^2 - 14v_3^2v_2^2\omega^2 +$
$v_3^2c_s^2\omega^3 - 72c_s^2v_2v_1\omega - 24v_3^2c_s^2 + 28v_3^2v_2v_1\omega^2 + c_s^2v_2^2\omega^3 + 48v_3^2v_2v_1 - 14c_s^2v_2^2\omega^2 - 2v_3^2v_2v_1\omega^3 + 36c_s^2v_2^2\omega - 72v_3^2v_2v_1\omega)\frac{\rho}{2\omega^3}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_1} = (-\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} - 2\omega_6^3\omega_{22}v_3^2v_2^2\omega_{13}^2\omega_7\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9 + 2\omega_6^3\omega_{22}c_s^2v_2v_1\omega_{13}^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9^2\omega_{12} -$
$2\omega_6^2\omega_{22}v_3^2v_2^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12} + \omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9^2\omega_{12} + \omega_6^3v_3^2c_s^2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12} +$
$2\omega_6^3\omega_{22}v_3^2v_2^2\omega_{13}^2\omega_7\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9^2\omega_{12} + 2\omega_6^3c_s^2v_2v_1\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12} - 2\omega_6^2\omega_{22}v_3^2c_s^2\omega_{13}^2\omega_7\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9^2\omega_{12} +$
$\omega_6^3\omega_{22}c_s^2v_2^2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9^2 - 4\omega_6^3\omega_{22}v_3^2v_2v_1\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9^2\omega_{12} - 2\omega_6^3\omega_{22}c_s^2v_2^2\omega_{13}^2\omega_7\omega_{20}\omega_8\omega_5\omega_{18}\omega_9^2\omega_{12} -$
$4\omega_6^2\omega_{22}c_s^2v_2v_1\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_{18}\omega_9^2\omega_{12} - 4\omega_6^3\omega_{22}c_s^2v_2v_1\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12} + 8\omega_6^2\omega_{22}c_s^2v_2v_1\omega_{13}^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} +$
$2\omega_6^2\omega_{22}c_s^2v_2^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12} + 2\omega_6^3\omega_{22}c_s^2v_2v_1\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 + 4\omega_6^2\omega_{22}v_3^2v_2v_1\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12} +$
$2\omega_6^3\omega_{22}v_3^2v_2v_1\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12} + 2\omega_6^3\omega_{22}c_s^2v_2v_1\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} + 2\omega_6^3\omega_{22}c_s^2v_2v_1\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12} -$
$4\omega_6^3\omega_{22}v_3^2v_2v_1\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9^2\omega_{12} + 2\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}^2\omega_7\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 + 2\omega_6^3\omega_{22}c_s^2v_2v_1\omega_{13}^2\omega_7\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9 +$
$\omega_6^3v_3^2v_2^2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12} - 2\omega_6^2v_3^2v_2^2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12} - 4\omega_6^3\omega_{22}c_s^2v_2v_1\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9^2\omega_{12} +$
$2\omega_6^3\omega_{22}v_3^2v_2v_1\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9^2\omega_{12} - 4\omega_6^3\omega_{22}c_s^2v_2v_1\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} + 2\omega_6^2\omega_{22}c_s^2v_2v_1\omega_{13}^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12} +$
$2\omega_6^2\omega_{22}c_s^2v_2^2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12} + \omega_6^3\omega_{22}v_3^2v_2^2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 + 2\omega_6^3\omega_{22}c_s^2v_2v_1\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_5\omega_{18}\omega_9^2\omega_{12} +$
$2\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} + 4\omega_6^3\omega_{22}v_3^2v_2v_1\omega_{13}\omega_7\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} - 4\omega_6^3c_s^2v_2v_1\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} +$
$2\omega_6^2v_3^2v_2^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12} - 2\omega_6^3\omega_{22}v_3^2v_2^2\omega_{13}^2\omega_7\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12} - 2\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_{18}\omega_9^2\omega_{12} +$
$2\omega_6^3\omega_{22}c_s^2v_2^2\omega_{13}\omega_7\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12} + 2\omega_6^3\omega_{22}v_3^2v_2v_1\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12} + 2\omega_6^3\omega_{22}c_s^2v_2v_1\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12} +$
$2\omega_6^2\omega_{22}v_3^2c_s^2\omega_{13}^2\omega_7\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12} + 2\omega_6^3\omega_{22}v_3^2v_2v_1\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 + 4\omega_6^3\omega_{22}v_3^2v_2v_1\omega_{13}^2\omega_7\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9 +$
$2\omega_6^3\omega_{22}c_s^2v_2^2\omega_{13}^2\omega_7\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 + 2\omega_6^2\omega_{22}c_s^2v_2v_1\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_5^2\omega_{18}\omega_9^2\omega_{12} + 2\omega_6^3\omega_{22}c_s^2v_2^2\omega_{13}^2\omega_7\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_9^2\omega_{12} -$
$\omega_6^3c_s^2v_2^2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12} - 2\omega_6^2\omega_{22}c_s^2v_2^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9^2\omega_{12} + 4\omega_6^2\omega_{22}c_s^2v_2v_1\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12} -$
$12\omega_6^3\omega_{22}c_s^2v_2v_1\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} - 2\omega_6^3\omega_{22}v_3^2v_2^2\omega_{13}\omega_7\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} + \omega_6^3\omega_{22}c_s^2v_2^2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12} -$
$4\omega_6^3\omega_{22}c_s^2v_2v_1\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9^2\omega_{12} + 2\omega_6^2\omega_{22}c_s^2v_2v_1\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9^2\omega_{12} - 2\omega_6^3\omega_{22}v_3^2v_2v_1\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 -$
$4\omega_6^3\omega_{22}v_3^2v_2v_1\omega_{13}^2\omega_7\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 + 2\omega_6^3\omega_{22}c_s^2v_2^2\omega_{13}^2\omega_7\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} - 2\omega_6^3\omega_{22}c_s^2v_2v_1\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12} +$
$2\omega_6^2\omega_{22}v_3^2c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12} + 4\omega_6^2\omega_{22}v_3^2v_2v_1\omega_{13}\omega_7\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12} - 2\omega_6^3\omega_{22}c_s^2v_2^2\omega_{13}^2\omega_7\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9 -$
$2\omega_6^3\omega_{22}v_3^2v_2^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12} - 2\omega_6^2\omega_{22}c_s^2v_2^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12} - 2\omega_6^3c_s^2v_2v_1\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12} +$
$2\omega_6^3v_3^2v_2v_1\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12} + 4\omega_6\omega_{22}c_s^2v_2v_1\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12} + 2\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9^2\omega_{12} +$
$\omega_6^3\omega_{22}c_s^2v_2^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9^2\omega_{12} + \omega_6^3c_s^2v_2^2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12} + 6\omega_6\omega_{22}c_s^2v_2v_1\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9^2\omega_{12} +$
$4\omega_6^2\omega_{22}c_s^2v_2v_1\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9^2 - 2\omega_6^3\omega_{22}v_3^2v_2^2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9^2\omega_{12} + \omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9^2 -$
$2\omega_6^3v_3^2c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} - 2\omega_6^2\omega_{22}c_s^2v_2^2\omega_{13}^2\omega_7\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9^2\omega_{12} - \omega_6^3\omega_{22}v_3^2v_2^2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 -$
$2\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}^2\omega_7\omega_{20}\omega_8\omega_5\omega_{18}\omega_9^2\omega_{12} - \omega_6^3\omega_{22}v_3^2v_2^2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 - 12\omega_6^3\omega_{22}c_s^2v_2v_1\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9^2\omega_{12} + 2\omega_6^2\omega_{22}v_3^2c_s^2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12} +$
$2\omega_6^2v_3^2c_s^2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12} - 4\omega_6^2\omega_{22}c_s^2v_2v_1\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12} + 4\omega_6^3\omega_{22}v_3^2v_2v_1\omega_{13}^2\omega_7\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12} + 2\omega_6^3\omega_{22}v_3^2v_2v_1\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} +$

$$12\omega_6\omega_{22}c_s^2v_2v_1\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12} - 2\omega_6^2\omega_{22}v_3^2v_2^2\omega_{13}\omega_7\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12} - 4\omega_6^3v_3^2v_2v_1\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12} -$$
$$2\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}^2\omega_7\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9 - 2\omega_6^3\omega_{22}c_s^2v_2^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_{18}\omega_9^2\omega_{12} - 2\omega_6^2\omega_{22}v_3^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12} -$$
$$2\omega_6^3\omega_{22}c_s^2v_2v_1\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 + 2\omega_6^2\omega_{22}c_s^2v_2^2\omega_{13}^2\omega_7\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12} + \omega_6^3\omega_{22}v_3^2v_2^2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12} +$$
$$2\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}\omega_7\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12} + 2\omega_6^3\omega_{22}v_3^2v_2^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9^2\omega_{12} + 2\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}^2\omega_7\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_9^2\omega_{12} -$$
$$2\omega_6^2\omega_{22}v_3^2c_s^2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12} - 2\omega_6^3v_3^2v_2v_1\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12} - 4\omega_6^3\omega_{22}v_3^2v_2v_1\omega_{13}^2\omega_7\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9^2\omega_{12} -$$
$$2\omega_6^3\omega_{22}c_s^2v_2^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12} + 2\omega_6^3\omega_{22}c_s^2v_2v_1\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9^2\omega_{12} - 2\omega_6^2\omega_{22}v_3^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9^2\omega_{12} +$$
$$8\omega_6^2\omega_{22}c_s^2v_2v_1\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9^2\omega_{12} - 4\omega_6^3\omega_{22}v_3^2v_2v_1\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} - 2\omega_6^3\omega_{22}c_s^2v_2^2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9^2\omega_{12} +$$
$$2\omega_6^3\omega_{22}v_3^2v_2^2\omega_{13}^2\omega_7\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 - 2\omega_6^2v_3^2c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12} + 2\omega_6^2\omega_{22}v_3^2c_s^2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12} +$$
$$\omega_6^3v_3^2c_s^2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} - \omega_6^3\omega_{22}v_3^2v_2^2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12} - \omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9^2\omega_{12} -$$
$$\omega_6^3\omega_{22}v_3^2v_2^2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} + \omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12} - 2\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}\omega_7\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} +$$
$$4\omega_6^2\omega_{22}c_s^2v_2v_1\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12} + 4\omega_6^2\omega_{22}c_s^2v_2v_1\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12} + 4\omega_6^3v_3^2v_2v_1\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} -$$
$$4\omega_6\omega_{22}c_s^2v_2v_1\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} + 4\omega_6^2\omega_{22}v_3^2v_2v_1\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9^2\omega_{12} + 4\omega_6^3\omega_{22}v_3^2v_2v_1\omega_{13}^2\omega_7\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_9^2 +$$
$$4\omega_6^3\omega_{22}v_3^2v_2v_1\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9^2\omega_{12} - 4\omega_6^2\omega_{22}v_3^2v_2v_1\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12} - 2\omega_6^3\omega_{22}c_s^2v_2v_1\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} +$$
$$4\omega_6^2\omega_{22}c_s^2v_2v_1\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12} + 2\omega_6^3\omega_{22}c_s^2v_2^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} - 4\omega_6^2c_s^2v_2v_1\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12} +$$
$$2\omega_6^3\omega_{22}c_s^2v_2^2\omega_{13}^2\omega_7\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9^2\omega_{12} + 4\omega_6^3\omega_{22}v_3^2v_2v_1\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12} + \omega_6^3\omega_{22}v_3^2v_2^2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 -$$
$$4\omega_6^2\omega_{22}v_3^2v_2v_1\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9^2\omega_{12} - 8\omega_6^2\omega_{22}c_s^2v_2v_1\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9\omega_{12} - 2\omega_6^3\omega_{22}c_s^2v_2v_1\omega_{13}^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9^2\omega_{12} -$$
$$\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 - 2\omega_6^3\omega_{22}v_3^2v_2^2\omega_{13}^2\omega_7\omega_{20}\omega_8\omega_5\omega_{18}\omega_9^2\omega_{12} - \omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12} -$$
$$\omega_6^3v_3^2c_s^2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12} + 2\omega_6^2\omega_{22}v_3^2v_2^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12} - 4\omega_6^2\omega_{22}c_s^2v_2v_1\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12} +$$
$$4\omega_6^2\omega_{22}v_3^2v_2v_1\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9^2\omega_{12} - 4\omega_6^2\omega_{22}v_3^2v_2v_1\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12} - 4\omega_6^2\omega_{22}c_s^2v_2v_1\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2 +$$
$$4\omega_6^2c_s^2v_2v_1\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12} - 2\omega_6^2\omega_{22}v_3^2c_s^2\omega_{13}\omega_7\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12} - 2\omega_6^3\omega_{22}c_s^2v_2^2\omega_{13}^2\omega_7\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12} +$$
$$4\omega_6^3\omega_{22}c_s^2v_2v_1\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9\omega_{12} + 2\omega_6^3\omega_{22}v_3^2v_2^2\omega_{13}\omega_7\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12} + 4\omega_6^2\omega_{22}v_3^2v_2v_1\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12} -$$
$$\omega_6^3\omega_{22}c_s^2v_2^2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} + 2\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9^2\omega_{12} + 2\omega_6^3\omega_{22}v_3^2v_2^2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12} -$$
$$\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12} - \omega_6^3\omega_{22}c_s^2v_2^2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12} + 2\omega_6^2c_s^2v_2^2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12} +$$
$$2\omega_6^2\omega_{22}c_s^2v_2^2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9^2\omega_{12} - \omega_6^3\omega_{22}v_3^2v_2^2\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12})\frac{\rho}{2\omega_6^3\omega_{22}\omega_{13}^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9^2\omega_{12}}$$

$$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_1}$$

$$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_1} = (2\omega_6\omega_{22}v_3^2v_2^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12} + 2\omega_6\omega_{22}c_s^2v_2^2\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18}\omega_{12} - 4c_s^2v_2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} -$$
$$2v_3^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} + 4\omega_6\omega_{22}c_s^2v_2v_1\omega_{13}\omega_{20}\omega_8\omega_{18}\omega_9 + 2\omega_6\omega_{22}v_3^2c_s^2\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18}\omega_9 + 4\omega_{22}v_3^2v_2v_1\omega_{13}\omega_{14}\omega_8\omega_5\omega_9\omega_{12} +$$
$$2\omega_{22}c_s^2v_2^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_9\omega_{12} + 4\omega_6\omega_{22}c_s^2v_2v_1\omega_{13}\omega_{20}\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12} - 2\omega_6\omega_{22}c_s^2v_2^2\omega_{13}\omega_{14}\omega_{18}\omega_9\omega_{12} - 2\omega_6\omega_{22}v_3^2c_s^2\omega_{13}\omega_{20}\omega_8\omega_{18}\omega_9 +$$
$$2\omega_6\omega_{22}v_3^2v_2v_1\omega_{13}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} - 4\omega_6\omega_{22}c_s^2v_2v_1\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18}\omega_{12} + 4\omega_6c_s^2v_2v_1\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12} + 2\omega_6\omega_{22}v_3^2v_2^2\omega_{13}\omega_{20}\omega_{14}\omega_{18}\omega_9\omega_{12} -$$
$$\omega_6\omega_{22}v_3^2c_s^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_{18}\omega_9\omega_{12} + \omega_6\omega_{22}v_3^2c_s^2\omega_{13}\omega_{14}\omega_8\omega_5\omega_9\omega_{12} + 4\omega_{22}c_s^2v_2v_1\omega_{13}\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12} + 2\omega_{22}v_3^2v_2^2\omega_{13}\omega_{20}\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12} +$$
$$\omega_6\omega_{22}c_s^2v_2^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} - 2\omega_6c_s^2v_2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_9\omega_{12} - 2\omega_6\omega_{22}c_s^2v_2^2\omega_{13}\omega_{20}\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12} -$$
$$4\omega_6\omega_{22}v_3^2v_2v_1\omega_{13}\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12} - 4\omega_6\omega_{22}c_s^2v_2v_1\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18}\omega_9 - 4\omega_{22}c_s^2v_2v_1\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} - 2\omega_6v_3^2v_2^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12} +$$
$$2c_s^2v_2^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} + 2\omega_6\omega_{22}v_3^2c_s^2\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18}\omega_{12} - \omega_6v_3^2c_s^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} - \omega_6\omega_{22}v_3^2v_2^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_9\omega_{12} -$$

$2\omega_6\omega_{22}c_s^2v_2v_1\omega_{13}\omega_{14}\omega_8\omega_5\omega_9\omega_{12} - 2\omega_6\omega_{22}v_3^2v_2^2\omega_{13}\omega_{14}\omega_{18}\omega_9\omega_{12} + \omega_6\omega_{22}c_s^2v_2^2\omega_{13}\omega_{14}\omega_8\omega_5\omega_9\omega_{12} + 2\omega_6\omega_{22}c_s^2v_2^2\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18}\omega_9 -$
$2\omega_6\omega_{22}v_3^2v_2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} + 2\omega_6\omega_{22}v_3^2v_2^2\omega_{20}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} + 2\omega_{22}v_3^2c_s^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_9\omega_{12} + 4\omega_6\omega_{22}v_3^2v_2v_1\omega_{13}\omega_{20}\omega_8\omega_{18}\omega_9 -$
$2\omega_6v_3^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12} + 2\omega_6\omega_{22}c_s^2v_2^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12} - 4v_3^2v_2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} - 4\omega_6\omega_{22}c_s^2v_2v_1\omega_{13}\omega_{20}\omega_{14}\omega_{18}\omega_9\omega_{12} +$
$2\omega_6\omega_{22}v_3^2v_2^2\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18}\omega_{12} - 2\omega_6\omega_{22}v_3^2v_2v_1\omega_{13}\omega_{14}\omega_8\omega_{18}\omega_9\omega_{12} - \omega_6\omega_{22}c_s^2v_2^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_{18}\omega_9\omega_{12} + 2\omega_6\omega_{22}c_s^2v_2^2\omega_{13}\omega_{20}\omega_{14}\omega_{18}\omega_9\omega_{12} -$
$4\omega_6\omega_{22}c_s^2v_2v_1\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12} + 4\omega_{22}v_3^2v_2v_1\omega_{20}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} - 2c_s^2v_2^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} + 4\omega_6\omega_{22}v_3^2v_2v_1\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} +$
$2\omega_6\omega_{22}v_3^2c_s^2\omega_{20}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} - 2\omega_{22}v_3^2v_2^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} + 2\omega_6\omega_{22}v_3^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12} + 4v_3^2v_2v_1\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} -$
$2\omega_6v_3^2v_2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12} + \omega_6v_3^2v_2^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_9\omega_{12} - 4\omega_{22}c_s^2v_2v_1\omega_{13}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} - 4\omega_{22}v_3^2v_2v_1\omega_{13}\omega_{20}\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12} -$
$4\omega_6\omega_{22}c_s^2v_2v_1\omega_{20}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} - 2\omega_6c_s^2v_2^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12} + 2\omega_6\omega_{22}v_3^2v_2^2\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18}\omega_9 - 2\omega_6\omega_{22}v_3^2c_s^2\omega_{13}\omega_{20}\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12} -$
$2\omega_6\omega_{22}c_s^2v_2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} + 2\omega_6\omega_{22}c_s^2v_2^2\omega_{20}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} - 2\omega_6\omega_{22}v_3^2v_2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_{18}\omega_9 +$
$2\omega_6\omega_{22}v_3^2c_s^2\omega_{13}\omega_{20}\omega_{14}\omega_{18}\omega_9\omega_{12} + 2\omega_6\omega_{22}c_s^2v_2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_{18}\omega_9\omega_{12} + \omega_6\omega_{22}v_3^2v_2^2\omega_{13}\omega_{14}\omega_8\omega_5\omega_9\omega_{12} + 2v_3^2c_s^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} +$
$2\omega_{22}v_3^2v_2^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_9\omega_{12} + 4\omega_{22}c_s^2v_2v_1\omega_{13}\omega_{14}\omega_8\omega_5\omega_9\omega_{12} + 2\omega_6\omega_{22}v_3^2c_s^2\omega_{13}\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12} - 4\omega_6\omega_{22}v_3^2v_2v_1\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18}\omega_{12} +$
$4\omega_6v_3^2v_2v_1\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12} + 2\omega_6\omega_{22}c_s^2v_2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_9\omega_{12} - \omega_6c_s^2v_2^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} +$
$4\omega_{22}v_3^2v_2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} + \omega_6\omega_{22}v_3^2v_2^2\omega_{13}\omega_{14}\omega_8\omega_{18}\omega_9\omega_{12} + 2\omega_{22}c_s^2v_2^2\omega_{13}\omega_{20}\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12} +$
$4\omega_{22}v_3^2v_2v_1\omega_{13}\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12} - 2\omega_{22}c_s^2v_2^2\omega_{13}\omega_{20}\omega_5\omega_{18}\omega_9\omega_{12} + \omega_6v_3^2c_s^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_9\omega_{12} + 2\omega_6\omega_{22}c_s^2v_2^2\omega_{13}\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12} +$
$4\omega_6\omega_{22}c_s^2v_2v_1\omega_{13}\omega_{20}\omega_{18}\omega_9\omega_{12} - 4\omega_{22}c_s^2v_2v_1\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} - 4\omega_6\omega_{22}v_3^2v_2v_1\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18}\omega_9 - 4\omega_6\omega_{22}c_s^2v_2v_1\omega_{13}\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12} -$
$2\omega_6\omega_{22}v_3^2v_2^2\omega_{13}\omega_{20}\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12} + 4c_s^2v_2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_9\omega_{12} - 2\omega_6\omega_{22}v_3^2c_s^2\omega_{13}\omega_{20}\omega_{18}\omega_9\omega_{12} + \omega_6\omega_{22}v_3^2c_s^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} +$
$\omega_6\omega_{22}v_3^2v_2^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_{18}\omega_9 - 2\omega_6\omega_{22}v_3^2v_2v_1\omega_{13}\omega_{14}\omega_8\omega_5\omega_9\omega_{12} - \omega_6\omega_{22}c_s^2v_2^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_9\omega_{12} - 2\omega_{22}v_3^2c_s^2\omega_{13}\omega_{20}\omega_5\omega_{18}\omega_9\omega_{12} -$
$4\omega_6\omega_{22}v_3^2v_2v_1\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12} + 4\omega_{22}c_s^2v_2v_1\omega_{20}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} + 4\omega_{22}c_s^2v_2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} +$
$\omega_6\omega_{22}c_s^2v_2^2\omega_{13}\omega_{14}\omega_8\omega_{18}\omega_9\omega_{12} - 2v_3^2v_2^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} + 2\omega_6\omega_{22}v_3^2v_2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9 + 4\omega_6\omega_{22}v_3^2v_2v_1\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} -$
$4\omega_6v_3^2v_2v_1\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} - 2\omega_6\omega_{22}c_s^2v_2^2\omega_{20}\omega_8\omega_5\omega_{18}\omega_{12} - 2\omega_6\omega_{22}c_s^2v_2^2\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18} + \omega_6\omega_{22}v_3^2c_s^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_{18}\omega_9 -$
$4\omega_6\omega_{22}v_3^2v_2v_1\omega_{13}\omega_{20}\omega_{14}\omega_{18}\omega_9\omega_{12} - \omega_6\omega_{22}v_3^2v_2^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_{18}\omega_9\omega_{12} + 2\omega_{22}v_3^2c_s^2\omega_{13}\omega_{20}\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12} - 2\omega_{22}v_3^2v_2^2\omega_{13}\omega_{20}\omega_5\omega_{18}\omega_9\omega_{12} -$
$2\omega_6\omega_{22}c_s^2v_2v_1\omega_{13}\omega_{14}\omega_8\omega_{18}\omega_9\omega_{12} + 2\omega_6\omega_{22}v_3^2v_2^2\omega_{13}\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12} + 4\omega_6\omega_{22}v_3^2v_2v_1\omega_{13}\omega_{20}\omega_{18}\omega_9\omega_{12} - 2\omega_6\omega_{22}c_s^2v_2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_{18}\omega_9 +$
$\omega_6\omega_{22}v_3^2c_s^2\omega_{13}\omega_{14}\omega_8\omega_{18}\omega_9\omega_{12} - \omega_6\omega_{22}v_3^2c_s^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_9\omega_{12} + 2\omega_6\omega_{22}v_3^2v_2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_{18}\omega_{12} + \omega_6\omega_{22}c_s^2v_2^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_{18}\omega_9 -$
$4\omega_6\omega_{22}v_3^2v_2v_1\omega_{13}\omega_{20}\omega_{14}\omega_{18}\omega_9\omega_{12} - \omega_6\omega_{22}v_3^2v_2^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_{18}\omega_9\omega_{12} + 2\omega_{22}v_3^2c_s^2\omega_{13}\omega_{20}\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12} - 2\omega_{22}v_3^2v_2^2\omega_{13}\omega_{20}\omega_5\omega_{18}\omega_9\omega_{12} -$
$2\omega_6\omega_{22}c_s^2v_2v_1\omega_{13}\omega_{14}\omega_8\omega_{18}\omega_9\omega_{12} + 2\omega_6\omega_{22}v_3^2v_2^2\omega_{13}\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12} + 4\omega_6\omega_{22}v_3^2v_2v_1\omega_{13}\omega_{20}\omega_{18}\omega_9\omega_{12} - 2\omega_6\omega_{22}c_s^2v_2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_{18}\omega_9 +$
$\omega_6\omega_{22}v_3^2c_s^2\omega_{13}\omega_{14}\omega_8\omega_{18}\omega_9\omega_{12} - \omega_6\omega_{22}v_3^2c_s^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_9\omega_{12} + 2\omega_6\omega_{22}v_3^2v_2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12} + \omega_6\omega_{22}c_s^2v_2^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_{18}\omega_9 -$
$2\omega_6\omega_{22}v_3^2v_2^2\omega_{20}\omega_8\omega_5\omega_{18}\omega_{12} - 2\omega_6\omega_{22}v_3^2v_2^2\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18} - 4\omega_{22}v_3^2v_2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_9\omega_{12} + \omega_6c_s^2v_2^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_9\omega_{12} -$
$4\omega_6\omega_{22}v_3^2v_2v_1\omega_{20}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} + 2v_3^2v_2^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} - 2\omega_6\omega_{22}c_s^2v_2^2\omega_{13}\omega_{20}\omega_8\omega_{18}\omega_9 - 2\omega_6\omega_{22}v_3^2c_s^2\omega_{13}\omega_{14}\omega_{18}\omega_9\omega_{12} -$
$4\omega_{22}v_3^2v_2v_1\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} + 2\omega_6c_s^2v_2^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} - 2\omega_{22}v_3^2c_s^2\omega_{20}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} - \omega_6\omega_{22}c_s^2v_2^2\omega_{13}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} +$
$\omega_6\omega_{22}v_3^2c_s^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} + 2\omega_6\omega_{22}c_s^2v_2^2\omega_{20}\omega_8\omega_5\omega_{18}\omega_{12} - 2\omega_{22}c_s^2v_2^2\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18} + 2\omega_{22}v_3^2c_s^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} +$
$2\omega_{22}v_3^2c_s^2\omega_{13}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} + \omega_6v_3^2c_s^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12} - 2\omega_{22}c_s^2v_2^2\omega_{13}\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12})\frac{\rho}{2\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_1} = C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_1}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_1} = 0$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_1} = (-2\omega_3v_2^2\omega_4\omega_2 + 9\omega_4\omega_1\omega_2 + 27\omega_3c_s^2\omega_1\omega_2 - 27c_s^2\omega_4\omega_1\omega_2 + 6\omega_3c_s^2\omega_4\omega_1 - 6\omega_3c_s^2\omega_4\omega_2 + 2\omega_3v_2^2\omega_4\omega_1 + 9\omega_3v_2^2\omega_1\omega_2 -$
$9v_2^2\omega_4\omega_1\omega_2 + 2\omega_3\omega_4\omega_2 - 2\omega_3\omega_4\omega_1 - 9\omega_3\omega_1\omega_2)\frac{v_2v_1\rho}{72\omega_3\omega_4\omega_1\omega_2}$

coefficient $C^{(1)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_2}$ **at** $\frac{\partial^4 v_2}{\partial x_1\partial x_2\partial x_3^2}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_2} = (-168c_s^2v_2v_1\omega^2 - c_s^4\omega^3 - 216c_s^2v_1^2\omega + 12c_s^2v_2v_1\omega^3 - 216v_3^2c_s^2\omega - 16c_s^4\omega^2 - 36c_s^4 + 84v_3^2c_s^2\omega^2 + 54c_s^4\omega + 84c_s^2v_1^2\omega^2 -$

$288c_s^2v_2v_1 - 6v_3^2c_s^2\omega^3 + 432c_s^2v_2v_1\omega - 6c_s^2v_1^2\omega^3 + 144v_3^2c_s^2 - 168v_3^2v_2v_1\omega^2 + 84v_3^2v_1^2\omega^2 + 144v_3^2v_1^2 - 288v_3^2v_2v_1 + 12v_3^2v_2v_1\omega^3 - 6v_3^2v_1^2\omega^3 - 216v_3^2v_1^2\omega + 432v_3^2v_2v_1\omega + 144c_s^2v_1^2)\frac{\rho}{12\omega^3}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_2} = (12\omega_6^3\omega_{22}v_3^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12} - 12\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_5^3\omega_{18}\omega_9\omega_{12} + 6\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9 -$
$6\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12} - 12\omega_6^3\omega_{22}v_3^2c_s^2\omega_7^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12} - 24\omega_6^2\omega_{22}c_s^2v_2v_1\omega_7^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12} -$
$18\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} + 12\omega_6^3\omega_{22}c_s^2v_1^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_{12} - 6\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} -$
$12\omega_6^3\omega_{22}v_3^2v_1^2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12} + 12\omega_6^2c_s^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12} + 24\omega_6^2\omega_{22}v_3^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12} +$
$12\omega_6^2\omega_{22}v_3^2c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12} + 12\omega_6^3\omega_{22}v_3^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5^3\omega_{18} - 24\omega_6^3\omega_{22}c_s^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9 +$
$24\omega_6\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12} - 12\omega_6^2\omega_{22}v_3^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12} - 6\omega_6^3v_3^2c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12} -$
$12\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9 + 12\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} - 24\omega_6^2\omega_{22}c_s^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12} +$
$12\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12} - 12\omega_6^2\omega_{22}c_s^2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12} - 24\omega_6^3\omega_{22}c_s^2v_2v_1\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12} +$
$12\omega_6^3\omega_{22}v_3^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12} - 12\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12} + 36\omega_6^2\omega_{22}c_s^2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12} +$
$12\omega_6^3\omega_{22}v_3^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 - 12\omega_6^3\omega_{22}v_3^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12} + 6\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_{12} +$
$24\omega_6^2\omega_{22}c_s^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12} - 12\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9 + 12\omega_6^2\omega_{22}v_3^2v_1^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12} +$
$12\omega_6^2\omega_{22}c_s^2v_1^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12} - 12\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12} + 18\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9\omega_{12} -$
$12\omega_6^2\omega_{22}v_3^2v_1^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12} - 12\omega_6^3v_3^2c_s^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12} - 6\omega_6^3\omega_{22}v_3^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12} +$
$12\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12} + 12\omega_6^3\omega_{22}v_3^2v_2v_1\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12} + 12\omega_6^2\omega_{22}c_s^2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12} +$
$12\omega_6^2\omega_{22}v_3^2c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_5^3\omega_{18}\omega_9\omega_{12} + 12\omega_6^3\omega_{22}c_s^4\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_{12} + 12\omega_6^2c_s^2v_1^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12} +$
$24\omega_6^3\omega_{22}v_3^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9 - 12\omega_6^3c_s^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12} + 12\omega_6^3\omega_{22}v_3^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} +$
$24\omega_6^3\omega_{22}v_3^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_{12} - 12\omega_6^3\omega_{22}v_3^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} + 42\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12} -$
$24\omega_6^3\omega_{22}v_3^2v_2v_1\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12} + 6\omega_6^3\omega_{22}v_3^2v_1^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12} + 24\omega_6^2\omega_{22}v_3^2c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} -$
$24\omega_6^2\omega_{22}v_3^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12} - 12\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5^3\omega_{18} + 10\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12} -$
$12\omega_6^3\omega_{22}v_3^2c_s^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_{12} - 12\omega_6^3\omega_{22}c_s^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12} - 24\omega_6^3\omega_{22}c_s^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5^3\omega_{18} +$
$12\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_{12} + 12\omega_6^3\omega_{22}c_s^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_9 + 10\omega_6^3c_s^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12} -$
$12\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_{12} + 12\omega_6^3\omega_{22}c_s^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9 + 12\omega_6^3c_s^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12} -$
$24\omega_6^3c_s^2v_2v_1\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_{12} - 12\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12} - 12\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} +$
$6\omega_6^3\omega_{22}v_3^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} - 6\omega_6^3c_s^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_{12} + 24\omega_6^2\omega_{22}c_s^2v_2v_1\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12} +$
$24\omega_6^3v_3^2v_2v_1\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12} + 12\omega_6^2\omega_{22}c_s^2v_1^2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12} + 12\omega_6^2\omega_{22}c_s^4\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12} -$
$18\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} + 24\omega_6^3\omega_{22}v_3^2v_2v_1\omega_7^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12} + 12\omega_6^2\omega_{22}v_3^2c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12} +$
$6\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12} - 6\omega_6^3\omega_{22}v_3^2v_1^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} + 12\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5^3\omega_{18} -$
$6\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9\omega_{12} + 12\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} + 12\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12} -$
$12\omega_6^2\omega_{22}v_3^2c_s^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12} + 6\omega_6^3v_3^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12} - 6\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 -$
$24\omega_6^2\omega_{22}v_3^2v_2v_1\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12} + 12\omega_6^2\omega_{22}v_3^2v_1^2\omega_7^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12} - 60\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12} -$
$12\omega_6^3v_3^2v_1^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12} + 12\omega_6^3\omega_{22}v_3^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12} - 12\omega_6^2\omega_{22}c_s^2v_1^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12} -$
$24\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9\omega_{12} - 12\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_{12} + 6\omega_6^3\omega_{22}v_3^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_{12} -$
$6\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} + 12\omega_6^3v_3^2c_s^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_{12} + 12\omega_6^3v_3^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12} +$
$12\omega_6\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} + 12\omega_6^2\omega_{22}c_s^2v_1^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12} - 2\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12} +$
$24\omega_6^3c_s^2v_2v_1\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12} - 12\omega_6^2v_3^2c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12} - 12\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_{12} -$
$48\omega_6^2\omega_{22}v_3^2c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12} + 12\omega_6^3\omega_{22}v_3^2v_1^2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12} + 6\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} +$
$24\omega_6^2\omega_{22}v_3^2v_2v_1\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12} + 24\omega_6^3\omega_{22}v_3^2v_2v_1\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_{12} - 12\omega_6^3\omega_{22}v_3^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12} +$
$12\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_5^3\omega_{18}\omega_9\omega_{12} - 24\omega_6^2\omega_{22}c_s^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12} + 12\omega_6^2\omega_{22}c_s^2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12} +$
$24\omega_6^3\omega_{22}v_3^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9 - 12\omega_6^3\omega_{22}v_3^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9 - 12\omega_6^2\omega_{22}v_3^2c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12} -$
$6\omega_6^3v_3^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12} - 12\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9 + 6\omega_6^3\omega_{22}v_3^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9 +$
$24\omega_6\omega_{22}c_s^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12} - 12\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9 + 12\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12} +$
$12\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12} - 24\omega_6^2\omega_{22}c_s^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9 - 12\omega_6^3\omega_{22}v_3^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9 +$
$6\omega_6^3c_s^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12} - 12\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9 + 12\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12} +$
$12\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12} - 24\omega_6^2\omega_{22}c_s^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9 - 12\omega_6^3\omega_{22}v_3^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9 +$
$24\omega_6^3\omega_{22}c_s^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12} - 24\omega_6^3\omega_{22}c_s^2v_2v_1\omega_7^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_{12} + 12\omega_6^2v_3^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12} -$
$12\omega_6^3\omega_{22}c_s^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_{12} - 12\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12} + 12\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9 -$
$24\omega_6^2\omega_{22}v_3^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12} - 18\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12} - 12\omega_6^2\omega_{22}v_3^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12} -$
$12\omega_6^3\omega_{22}c_s^4\omega_7^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_{12} + 24\omega_6^3\omega_{22}c_s^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12} - 24\omega_6^3\omega_{22}v_3^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_9 -$
$12\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12} + 12\omega_6^3\omega_{22}v_3^2c_s^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12} - 12\omega_6^2v_3^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12} -$
$24\omega_6^3\omega_{22}c_s^2v_2v_1\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12} - 12\omega_6^2\omega_{22}v_3^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12} - 12\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12} +$
$24\omega_6^2\omega_{22}c_s^2v_2v_1\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12} + 6\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} + 12\omega_6\omega_{22}c_s^4\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12} +$
$24\omega_6^3\omega_{22}c_s^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12} - 12\omega_6^2\omega_{22}c_s^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12} - 6\omega_6^3v_3^2c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_{12} +$
$6\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12} + 24\omega_6^3\omega_{22}c_s^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_{12} - 24\omega_6^2v_3^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_9\omega_{12} +$
$12\omega_6^3\omega_{22}c_s^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18} + 24\omega_6^2\omega_{22}v_3^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12} - 12\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12} +$
$12\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_9 + 6\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12} - 24\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12} +$
$12\omega_6^3\omega_{22}v_3^2v_1^2\omega_7^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_{12} + 24\omega_6^2\omega_{22}c_s^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{18}\omega_{12} + 12\omega_6^2\omega_{22}v_3^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12} +$
$12\omega_6^3\omega_{22}c_s^2v_2v_1\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} + 12\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12} + 12\omega_6^2\omega_{22}v_3^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_8\omega_5^3\omega_{18}\omega_9\omega_{12} -$

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

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_2} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_2}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_2} = (-6\omega_6^3c_s^2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12} + 12\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}\omega_7\omega_{20}\omega_5\omega_{18}\omega_9\omega_{12} - 12\omega_6^3c_s^2v_1^2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12} -$
$24\omega_6^2\omega_{22}v_3^2v_2v_1\omega_7\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12} + 12\omega_6^2v_3^2c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12} - 24\omega_6^2\omega_{22}v_3^2v_2v_1\omega_{13}\omega_7\omega_{20}\omega_5^2\omega_{18}\omega_9\omega_{12} +$
$12\omega_6^3c_s^2v_2v_1\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12} + 12\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_7\omega_{20}\omega_8\omega_5\omega_{18}\omega_9 + 12\omega_6^3\omega_{22}v_3^2v_1^2\omega_{13}\omega_7\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12} +$
$12\omega_6^2v_3^2c_s^2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12} - 12\omega_6^2\omega_{22}v_3^2v_1^2\omega_{13}\omega_7\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12} - 12\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12} +$
$6\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9 + 12\omega_6^3\omega_{22}c_s^2v_2v_1\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12} - 24\omega_6^2\omega_{22}c_s^2v_2v_1\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12} +$
$6\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12} + 12\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_5^2\omega_{18}\omega_9\omega_{12} + 24\omega_6^3\omega_{22}c_s^2v_2v_1\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12} -$
$24\omega_6^3\omega_{22}v_3^2v_2v_1\omega_{13}\omega_7\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12} - 6\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12} - 12\omega_6^2\omega_{22}v_3^2c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12} -$
$12\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7\omega_{20}\omega_8\omega_5\omega_{18}\omega_9 + 12\omega_6^2\omega_{22}c_s^2v_1^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12} + 12\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18} -$
$12\omega_6^3\omega_{22}v_3^2v_1^2\omega_{13}\omega_7\omega_{20}\omega_5^2\omega_{18}\omega_9\omega_{12} - 6\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5\omega_9\omega_{12} - 6\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9 -$
$12\omega_6^3\omega_{22}v_3^2v_1^2\omega_7\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12} - 12\omega_6^3\omega_{22}c_s^2v_1^2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12} + 12\omega_6^3\omega_{22}v_3^2v_1^2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12} -$
$12\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}\omega_7\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12} - 6\omega_6^3\omega_{22}v_3^2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18} + 12\omega_6^3v_3^2v_2v_1\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12} -$
$24\omega_6^2\omega_{22}c_s^2v_2v_1\omega_{13}\omega_7\omega_{14}\omega_5^2\omega_{18}\omega_9\omega_{12} - 12\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}\omega_7\omega_{14}\omega_5^2\omega_{18}\omega_9\omega_{12} + 6\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12} -$
$12\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_7\omega_{20}\omega_5^2\omega_{18}\omega_9\omega_{12} - 6\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12} + 12\omega_6^3\omega_{22}v_3^2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_5^2\omega_{18}\omega_9\omega_{12} -$
$24\omega_6^3v_3^2v_2v_1\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12} - 24\omega_6^2\omega_{22}c_s^2v_2v_1\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12} + 12\omega_6^2\omega_{22}c_s^2v_1^2\omega_{13}\omega_7\omega_{14}\omega_5^2\omega_{18}\omega_9\omega_{12} -$
$18\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} - 6\omega_6^3\omega_{22}v_3^2v_1^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} - 24\omega_6^3\omega_{22}c_s^2v_2v_1\omega_{13}\omega_7\omega_{20}\omega_8\omega_5\omega_{18}\omega_9 -$
$12\omega_6^2\omega_{22}c_s^4\omega_7\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12} - 24\omega_6^3\omega_{22}c_s^2v_2v_1\omega_{13}\omega_7\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12} + 24\omega_6^2v_3^2v_2v_1\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12} -$
$6\omega_6^3v_3^2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12} + 12\omega_6^3v_3^2v_1^2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12} - 12\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12} -$
$18\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12} + 12\omega_6^3\omega_{22}v_3^2v_2v_1\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12} - 24\omega_6^2v_3^2v_2v_1\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12} -$
$6\omega_6^3v_3^2c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} + 12\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_7\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12} + 12\omega_6^3\omega_{22}v_3^2v_1^2\omega_{13}\omega_7\omega_{20}\omega_8\omega_5\omega_{18}\omega_9 -$
$6\omega_6^3v_3^2c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12} - 18\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} - 24\omega_6^2v_3^2v_2v_1\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12} +$
$12\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7\omega_{20}\omega_5^2\omega_{18}\omega_9\omega_{12} + 12\omega_6^2\omega_{22}c_s^2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12} + 12\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9 +$
$24\omega_6^2\omega_{22}c_s^2v_2v_1\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_5^2\omega_{18}\omega_9\omega_{12} - 12\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12} - 12\omega_6^2\omega_{22}c_s^2v_1^2\omega_{13}\omega_7\omega_{14}\omega_5^2\omega_{18}\omega_9\omega_{12} +$
$12\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12} + 36\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} -$
$24\omega_6^3\omega_{22}c_s^2v_2v_1\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_{12})\frac{\rho}{12\omega_6^3\omega_{22}\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{18}\omega_9\omega_{12}}$

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

$12\omega_6^3\omega_{22}v_3^2v_2v_1\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12} + 6\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12} - 12\omega_6^3c_s^2v_2v_1\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12} +$
$12\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}\omega_7\omega_{20}\omega_8\omega_5^2\omega_{18} - 24\omega_6^3\omega_{22}v_3^2v_2v_1\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12} + 6\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} +$
$12\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}\omega_7\omega_{20}\omega_8\omega_5\omega_{18}\omega_9 + 6\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12})\frac{\rho}{12\omega_6^3\omega_{22}\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12}}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_2} = C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_2}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_2} = (-6\omega_{13}\omega_1\omega_2^3 - 12\omega_1\omega_2^3 + 12\omega_3\omega_{13}\omega_1\omega_2 - 24\omega_3\omega_{13}\omega_1^2 - 12\omega_3\omega_1^2\omega_2^3 - 6\omega_3\omega_{13}\omega_1\omega_2^2 + 12\omega_3\omega_1^2\omega_2^2 - 12\omega_3\omega_1\omega_2^2 - \omega_3\omega_{13}\omega_1^2\omega_2^3 -$
$12\omega_3\omega_2^3 + 24\omega_3\omega_1\omega_2^3 + 12\omega_{13}\omega_1^2\omega_2 - 2\omega_3\omega_{13}\omega_1^2\omega_2^2 - 6\omega_{13}\omega_1^2\omega_2^2 + 24\omega_3\omega_{13}\omega_1^2\omega_2 + 12\omega_{13}\omega_2^3 - 12\omega_1^2\omega_2^2 - 2\omega_{13}\omega_1^2\omega_2^3 + 12\omega_1^2\omega_2^3)\frac{c_s^4\rho}{12\omega_3\omega_{13}\omega_1^2\omega_2^3}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_2} = (-2\omega_3^2v_1^4\omega_4^2\omega_1^2\omega_5\omega_2^3 - 288\omega_3^2v_3^2v_2^2\omega_4^2\omega_1\omega_5\omega_2^2 - 12\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^3\omega_5\omega_2 + 24\omega_3^2v_2^2\omega_4^2\omega_1\omega_5\omega_2^3 + 72v_3^2\omega_4^2\omega_1^2\omega_5\omega_2^3 +$
$24\omega_3v_3^2\omega_4^2\omega_1^3\omega_5\omega_2 - 168\omega_3^2c_s^2v_2^2\omega_4^2\omega_1\omega_5\omega_2^2 - 180\omega_3^2v_3^2v_2^2\omega_4^2\omega_1^3\omega_5\omega_2 + 18\omega_3^2v_3^4\omega_4^2\omega_1^3\omega_5\omega_2^2 - 162\omega_3^2v_3^2c_s^2\omega_1^3\omega_5\omega_2^3 - 144\omega_3^2v_3^4\omega_4\omega_1^2\omega_5\omega_2^3 +$
$4\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_5\omega_2^2 - 16\omega_3c_s^2\omega_4^2\omega_1^3\omega_5\omega_2 + 288\omega_3^2c_s^4\omega_4\omega_1^2\omega_5\omega_2^3 + 264\omega_3c_s^2v_2^2\omega_4^2\omega_1^2\omega_5\omega_2^2 - 72v_3^4\omega_4^2\omega_1^2\omega_5\omega_2^3 - 54\omega_3^2v_3^4\omega_1^3\omega_5\omega_2^3 + 2\omega_3^2v_1^2\omega_4^2\omega_1^2\omega_5\omega_2^3 -$
$288\omega_3^2c_s^2\omega_4\omega_1^2\omega_5\omega_2^3 + 288\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^3 - 108\omega_3^2v_3^2c_s^2\omega_4\omega_1^2\omega_5\omega_2^2 - 4\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_5\omega_2^2 + 16\omega_3c_s^4\omega_4^2\omega_1^3\omega_5\omega_2 + 144\omega_3^2v_3^2\omega_4\omega_1^2\omega_5\omega_2^3 +$
$27\omega_3^2c_s^2v_1^2\omega_4\omega_1^3\omega_5\omega_2^3 + 162v_3^2c_s^2\omega_4^2\omega_1^3\omega_5\omega_2^3 - 24\omega_3v_3^4\omega_4^2\omega_1^3\omega_5\omega_2 - 18\omega_3^2v_3^2\omega_4^2\omega_1^3\omega_5\omega_2^2 - 6\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_5\omega_2^3 - 468\omega_3c_s^2v_2^2\omega_4^2\omega_1^2\omega_5\omega_2^3 +$
$24\omega_3^2v_2^2\omega_4^2\omega_1^3\omega_5\omega_2 - 120\omega_3^2c_s^2v_2^2\omega_4^2\omega_1\omega_5\omega_2^3 - 36\omega_3^2v_3^4\omega_4\omega_1^2\omega_5\omega_2^2 - 160\omega_3c_s^2\omega_4^2\omega_1\omega_5\omega_2^3 - 108\omega_3^2v_3^2\omega_1^2\omega_5\omega_2^3 + 24\omega_3^2v_2^2\omega_4^2\omega_1\omega_5\omega_2^2 -$
$180\omega_3^2v_3^2v_2^2\omega_4^2\omega_1\omega_5\omega_2^3 - 12\omega_3v_3^2\omega_4^2\omega_1\omega_5\omega_2^3 + 9\omega_3^2v_1^4\omega_4\omega_1^3\omega_5\omega_2^3 + 36\omega_3^2v_3^2\omega_4\omega_1^2\omega_5\omega_2^2 - 6\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^2\omega_5\omega_2^3 - 108v_3^2c_s^2\omega_4^2\omega_1^3\omega_5\omega_2^2 -$
$216\omega_3^2v_3^2c_s^2\omega_4\omega_1^2\omega_5\omega_2^3 + 60\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^3\omega_5\omega_2^2 - 9\omega_3^2v_1^2\omega_4\omega_1^3\omega_5\omega_2^3 + 12\omega_3v_3^4\omega_4^2\omega_1\omega_5\omega_2^3 + 160\omega_3c_s^4\omega_4^2\omega_1\omega_5\omega_2^3 - 54\omega_3v_3^4\omega_4^2\omega_1^3\omega_5\omega_2^3 -$
$88\omega_3^2c_s^2\omega_4^2\omega_5\omega_2^3 - 72\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^3 + 72\omega_3c_s^4\omega_4^2\omega_1^3\omega_5\omega_2^3 - 348\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^3\omega_5\omega_2 - 48\omega_3^2v_3^2\omega_4^2\omega_1\omega_5\omega_2^3 + 8\omega_3^2\omega_4^2\omega_5\omega_2^3 - 96\omega_3^2v_3^4\omega_4^2\omega_5\omega_2^3 +$
$108\omega_3v_3^2c_s^2\omega_4^2\omega_1^2\omega_5\omega_2^2 - 24\omega_3^2v_3^2c_s^2\omega_4^2\omega_1\omega_5\omega_2^2 + 36\omega_3^2c_s^2\omega_4^2\omega_1\omega_5\omega_2^3 - 27\omega_3c_s^2v_1^2\omega_4^2\omega_1^3\omega_5\omega_2^3 - 72\omega_3c_s^2\omega_4^2\omega_1^3\omega_5\omega_2^3 - 216\omega_3^2v_3^2c_s^2\omega_4^2\omega_5\omega_2^3 +$
$54\omega_3v_3^2\omega_4^2\omega_1^3\omega_5\omega_2^3 + 8\omega_3^2c_s^4\omega_4^2\omega_1\omega_5\omega_2^3 + 108\omega_3^2v_3^4\omega_4^2\omega_1\omega_5\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1\omega_5\omega_2^3 + 64\omega_3^2c_s^2\omega_4^2\omega_1\omega_5\omega_2^2 + 300\omega_3^2v_3^2c_s^2\omega_4^2\omega_1\omega_5\omega_2^3 + 8\omega_3^2\omega_4^2\omega_1^3\omega_5 +$
$48\omega_3^2v_3^4\omega_4^2\omega_1^3\omega_5 + 72\omega_3^2v_3^2\omega_4^2\omega_1\omega_5\omega_2^2 - 108\omega_3v_3^2c_s^2\omega_4\omega_1^3\omega_5\omega_2^2 - 72\omega_3v_3^2c_s^2\omega_4^2\omega_1^2\omega_5\omega_2^3 + 36\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_5\omega_2 - 72\omega_3c_s^4\omega_4^2\omega_1^3\omega_5\omega_2^2 -$
$40\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_5 + 72\omega_3v_3^4\omega_4^2\omega_1^3\omega_5\omega_2^2 + 132\omega_3^2v_3^2\omega_4^2\omega_1^3\omega_5\omega_2 + 36\omega_3v_3^4\omega_4\omega_1^2\omega_5\omega_2^3 + 648\omega_3^2c_s^2v_2^2\omega_4\omega_1^2\omega_5\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1\omega_5\omega_2^2 + 6\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^3\omega_5\omega_2^2 +$
$24\omega_3^2v_3^4\omega_4^2\omega_1\omega_5\omega_2^2 - 56\omega_3^2c_s^4\omega_4^2\omega_1\omega_5\omega_2^2 - 36\omega_3v_3^2\omega_4\omega_1^2\omega_5\omega_2^3 - 72\omega_3v_3^2\omega_4^2\omega_1^3\omega_5\omega_2^2 - 8\omega_3^2\omega_4^2\omega_1^3\omega_5\omega_2 - 72\omega_3^2v_3^4\omega_4^2\omega_1^3\omega_5\omega_2 + 264\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^3\omega_5 -$
$28\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_5\omega_2 + 72\omega_3c_s^2\omega_4^2\omega_1^3\omega_5\omega_2^2 + 4\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_5\omega_2^3 + 48\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^2\omega_5\omega_2^2 + 108\omega_3^2v_3^2c_s^2\omega_4\omega_1^3\omega_5\omega_2^3 + 18\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_5\omega_2^3 -$
$36\omega_3^2v_3^2\omega_4\omega_1^3\omega_5\omega_2^2 - 36v_3^4\omega_4^2\omega_1^3\omega_5\omega_2^2 - 2\omega_3^2v_1^2\omega_4^2\omega_1^3\omega_5\omega_2^2 - 72\omega_3v_3^2c_s^2\omega_4^2\omega_1^3\omega_5\omega_2 + 36\omega_3^2v_3^4\omega_4\omega_1^3\omega_5\omega_2^2 - 18\omega_3^2v_3^4\omega_4^2\omega_1^2\omega_5\omega_2^3 + 24\omega_3^2v_2^2\omega_4^2\omega_1^2\omega_5\omega_2 +$
$162\omega_3c_s^2v_2^2\omega_4^2\omega_1^3\omega_5\omega_2^3 - 28\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_5\omega_2^3 + 2\omega_3^2v_1^4\omega_4^2\omega_1^3\omega_5\omega_2^2 + 36v_3^2\omega_4^2\omega_1^3\omega_5\omega_2^2 + 54\omega_3^2v_3^2\omega_1^3\omega_5\omega_2^3 + 108\omega_3^2v_3^4\omega_1^2\omega_5\omega_2^3 + 54v_3^4\omega_4^2\omega_1^3\omega_5\omega_2^3 -$
$84\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_5\omega_2^2 - 216v_3^2c_s^2\omega_4^2\omega_1^2\omega_5\omega_2^3 + 6\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^3\omega_5\omega_2^2 - 54\omega_3^2v_3^2\omega_4\omega_1^3\omega_5\omega_2^3 + 180\omega_3v_3^2c_s^2\omega_4^2\omega_1\omega_5\omega_2^3 - 60\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^2\omega_5\omega_2^3 -$
$72\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_5\omega_2^2 + 108\omega_3^2v_3^2c_s^2\omega_4\omega_1^3\omega_5\omega_2^2 + 72\omega_3^2c_s^2\omega_4\omega_1^3\omega_5\omega_2^3 - 54v_3^2\omega_4^2\omega_1^3\omega_5\omega_2^3 - 96\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^2\omega_5\omega_2 - 72\omega_3^2c_s^4\omega_4\omega_1^3\omega_5\omega_2^3 -$
$180\omega_3c_s^2v_2^2\omega_4^2\omega_1^3\omega_5\omega_2^2 + 56\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_5\omega_2^2 + 54\omega_3^2v_3^4\omega_4\omega_1^3\omega_5\omega_2^3 - 648\omega_3^2c_s^2v_2^2\omega_4\omega_1\omega_5\omega_2^3 - 36\omega_3^2v_3^4\omega_4^2\omega_1^2\omega_5\omega_2^2 - 72\omega_3^2v_3^2v_2^2\omega_4^2\omega_1^2\omega_5\omega_2 +$
$16\omega_3^2\omega_4^2\omega_1^2\omega_5\omega_2^2 + 324\omega_3^2v_3^2c_s^2\omega_1^2\omega_5\omega_2^3 + 24\omega_3^2v_3^2\omega_4^2\omega_5\omega_2^3 - 288\omega_3^2c_s^4\omega_4\omega_1\omega_5\omega_2^3 + 132\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^2\omega_5\omega_2^2 + 9\omega_3v_1^2\omega_4^2\omega_1^3\omega_5\omega_2^3 + 36\omega_3^2v_3^4\omega_4\omega_1\omega_5\omega_2^3 -$
$162\omega_3^2c_s^2v_2^2\omega_4\omega_1^3\omega_5\omega_2^3 + 152\omega_3^2c_s^4\omega_4^2\omega_5\omega_2^3 - 112\omega_3c_s^2\omega_4^2\omega_1^2\omega_5\omega_2^2 - 56\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_5\omega_2 + 48\omega_3c_s^2v_2^2\omega_4^2\omega_1^3\omega_5\omega_2 + 24\omega_3^2v_3^4\omega_4^2\omega_1^2\omega_5\omega_2 -$
$24\omega_3^2v_2^2\omega_4^2\omega_1^3\omega_5 + 360\omega_3^2v_3^2v_2^2\omega_4^2\omega_1^2\omega_5\omega_2^2 - 12\omega_3v_3^2\omega_4^2\omega_1^2\omega_5\omega_2^2 - 8\omega_3^2\omega_4^2\omega_1^2\omega_5\omega_2 - 36\omega_3^2v_3^2\omega_4\omega_1\omega_5\omega_2^3 - 108\omega_3v_3^2c_s^2\omega_4^2\omega_1^3\omega_5\omega_2^3 - 9\omega_3v_1^4\omega_4^2\omega_1^3\omega_5\omega_2^3 +$
$288\omega_3^2c_s^2\omega_4\omega_1\omega_5\omega_2^3 + 144\omega_3^2v_3^2v_2^2\omega_4^2\omega_1^3\omega_5 + 12\omega_3v_3^4\omega_4^2\omega_1^2\omega_5\omega_2^2 + 112\omega_3c_s^4\omega_4^2\omega_1^2\omega_5\omega_2^2 + 24\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^3\omega_5 + 64\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_5\omega_2 + 32\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_5 -$
$36\omega_3v_3^2\omega_4^2\omega_1^2\omega_5\omega_2^3 - 48\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_5\omega_2^2 + 36\omega_3v_3^2\omega_4\omega_1^3\omega_5\omega_2^2 + 216\omega_3c_s^2\omega_4^2\omega_1^2\omega_5\omega_2^3 - 24\omega_3^2v_3^2\omega_4^2\omega_5\omega_2^3 - 6\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^2\omega_5\omega_2^3 - 96\omega_3^2v_3^2\omega_4^2\omega_1^3\omega_5 +$
$336\omega_3c_s^2v_2^2\omega_4^2\omega_1\omega_5\omega_2^3 - 24\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^2\omega_5\omega_2 - 216\omega_3c_s^4\omega_4^2\omega_1^2\omega_5\omega_2^3 + 216\omega_3^2v_3^2v_2^2\omega_4^2\omega_5\omega_2^3 - 36\omega_3v_3^4\omega_4\omega_1^3\omega_5\omega_2^2 + 36\omega_3v_3^4\omega_4^2\omega_1^2\omega_5\omega_2^3 +$
$240\omega_3^2c_s^2v_2^2\omega_4^2\omega_5\omega_2^3 - 108\omega_3^2v_3^2c_s^2\omega_4\omega_1\omega_5\omega_2^3 + 180\omega_3v_3^2c_s^2\omega_4^2\omega_1^3\omega_5\omega_2^2 + 108\omega_3v_3^2c_s^2\omega_4\omega_1^2\omega_5\omega_2^3 - 288\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^3)\frac{\rho}{72\omega_3^2\omega_4^2\omega_1^3\omega_5\omega_2^3}$

coefficient $C^{(1)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_3}$ **at** $\frac{\partial^4 v_3}{\partial x_1\partial x_2\partial x_3^2}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_3} = (24v_2v_1^2 - 36c_s^2v_2\omega + 14c_s^2v_2\omega^2 - c_s^2v_2\omega^3 + 24c_s^2v_2 - 24c_s^2v_1 + 36v_2^2v_1\omega + c_s^2v_1\omega^3 - 24v_2^2v_1 - 14c_s^2v_1\omega^2 - 36v_2v_1^2\omega +$
$36c_s^2v_1\omega + v_2^2v_1\omega^3 + 14v_2v_1^2\omega^2 - v_2v_1^2\omega^3 - 14v_2^2v_1\omega^2)\frac{v_3\rho}{\omega^3}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_3} =$
$(2\omega_6^3\omega_{22}v_2v_1^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_{12} - 2\omega_6^3\omega_{22}v_2v_1^2\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_{12} + \omega_6^3c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_{12} - 2\omega_6^3\omega_{22}v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}^2\omega_9\omega_{12} +$
$2\omega_6^3\omega_{22}c_s^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12} + 2\omega_6^3c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12} + 2\omega_6^3\omega_{22}c_s^2v_1\omega_{13}\omega_{20}\omega_8^2\omega_5\omega_{18}^2\omega_9\omega_{12} +$
$2\omega_6^3\omega_{22}v_2^2v_1\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_{18}^2\omega_9\omega_{12} - 2\omega_6^3\omega_{22}v_2v_1^2\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12} + \omega_6^3v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12} -$
$6\omega_6^2\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}^2\omega_9\omega_{12} - \omega_6^3\omega_{22}v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} - 2\omega_6^2\omega_{22}v_2^2v_1\omega_{13}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} +$
$\omega_6^3\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_5\omega_{18}^2\omega_9\omega_{12} + 2\omega_6^2\omega_{22}c_s^2v_1\omega_{13}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12} - \omega_6^3\omega_{22}v_2v_1^2\omega_{13}\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_9\omega_{12} +$
$2\omega_6^3\omega_{22}c_s^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_{12} - 2\omega_6^3\omega_{22}v_2^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12} - 2\omega_6^2\omega_{22}v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12} -$
$2\omega_6^3\omega_{22}v_2v_1^2\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_9 + \omega_6^3\omega_{22}v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_{12} + 2\omega_6^3\omega_{22}c_s^2v_1\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_9 + \omega_6^3\omega_{22}v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 -$
$2\omega_6^3\omega_{22}v_2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_{12} + \omega_6^2\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12} + \omega_6^3c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} + 2\omega_6^2c_s^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12} -$
$\omega_6^3\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 + 2\omega_6^3\omega_{22}c_s^2v_2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_{12} + 2\omega_6^3\omega_{22}v_2v_1^2\omega_{13}\omega_{14}\omega_8\omega_5\omega_{18}^2\omega_9\omega_{12} - 2\omega_6^2\omega_{22}c_s^2v_1\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_{18}^2\omega_9\omega_{12} +$
$2\omega_6^2\omega_{22}v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}^2\omega_9\omega_{12} + 2\omega_6^3\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} + 2\omega_6^2\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} +$
$\omega_6^3\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_{18}^2\omega_9\omega_{12} - 2\omega_6^2v_2^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12} + \omega_6^3\omega_{22}v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_9\omega_{12} +$
$\omega_6^3\omega_{22}c_s^2v_1\omega_{13}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} + 2\omega_6^2\omega_{22}c_s^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12} + 2\omega_6^2\omega_{22}v_2v_1^2\omega_{13}\omega_{20}\omega_8\omega_5^2\omega_{18}^2\omega_9\omega_{12} -$
$\omega_6^3\omega_{22}v_2^2v_1\omega_{13}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12} - 2\omega_6^3\omega_{22}c_s^2v_1\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18}^2\omega_9\omega_{12} + \omega_6^3\omega_{22}v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9 + 2\omega_6^3\omega_{22}c_s^2v_1\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_{12} +$
$2\omega_6^2v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} - 2\omega_6^2\omega_{22}c_s^2v_1\omega_{13}\omega_{20}\omega_8\omega_5^2\omega_{18}^2\omega_9\omega_{12} + 2\omega_6^3\omega_{22}v_2v_1^2\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18}^2\omega_9\omega_{12} -$
$\omega_6^3\omega_{22}v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12} - 2\omega_6^2\omega_{22}v_2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12} + 2\omega_6^3\omega_{22}v_2^2v_1\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_9 - 2\omega_6^3\omega_{22}v_2^2v_1\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2 +$
$5\omega_6\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12} + 2\omega_6^3v_2^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12} + \omega_6^3\omega_{22}c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 -$

$\omega_6^3\omega_{22}c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9 - 4\omega_6^3\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}^2\omega_9\omega_{12} + \omega_6^3\omega_{22}v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_9 -$
$2\omega_6^2v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} - \omega_6^3\omega_{22}v_2v_1^2\omega_{13}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} + 2\omega_6^3\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12} -$
$2\omega_6^3\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_9 - 2\omega_6^3\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_{12} - 2\omega_6^3c_s^2v_1\omega_{13}\omega_{14}\omega_8\omega_5\omega_{18}^2\omega_9\omega_{12} - 2\omega_6^3\omega_{22}v_2^2v_1\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12} +$
$2\omega_6^2\omega_{22}v_2v_1^2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_{18}^2\omega_9\omega_{12} + 2\omega_6^2\omega_{22}c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} - \omega_6^2\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_{18}^2\omega_9\omega_{12} -$
$\omega_6^3\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_9 - 2\omega_6^2\omega_{22}v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_9\omega_{12} + \omega_6^3\omega_{22}c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} -$
$2\omega_6^3c_s^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12} - \omega_6^3\omega_{22}c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_{12} + \omega_6^3c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12} + 2\omega_6^3\omega_{22}v_2^2v_1\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_{12} +$
$\omega_6^3\omega_{22}v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} + \omega_6^2\omega_{22}c_s^2v_1\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12} + \omega_6^2\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9\omega_{12} +$
$2\omega_6^3\omega_{22}v_2^2v_1\omega_{13}\omega_{20}\omega_8\omega_5^2\omega_{18}^2\omega_9\omega_{12} + \omega_6^3\omega_{22}c_s^2v_1\omega_{13}\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_9\omega_{12} - \omega_6^3v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12} +$
$2\omega_6^2\omega_{22}v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12} - 2\omega_6^3\omega_{22}c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}^2\omega_9\omega_{12} + 2\omega_6^3\omega_{22}v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}^2\omega_9\omega_{12} -$
$2\omega_6^3\omega_{22}v_2v_1^2\omega_{13}\omega_{20}\omega_8^2\omega_5\omega_{18}^2\omega_9\omega_{12} + 2\omega_6^2\omega_{22}c_s^2v_1\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12} + 2\omega_6^2\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9\omega_{12} +$
$2\omega_6^2c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} - 2\omega_6^3\omega_{22}c_s^2v_1\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2 - 2\omega_6^3\omega_{22}c_s^2v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_{12} + 3\omega_6\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}^2\omega_9\omega_{12} +$
$\omega_6^3\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_9\omega_{12} + 2\omega_6^3\omega_{22}v_2^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_{12} - \omega_6^3\omega_{22}v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2 - \omega_6^3v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_{12} -$
$2\omega_6^3\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_8\omega_5^2\omega_{18}^2\omega_9\omega_{12} - 2\omega_6^2\omega_{22}v_2^2v_1\omega_{13}\omega_{20}\omega_8\omega_5^2\omega_{18}^2\omega_9\omega_{12} + \omega_6^3\omega_{22}v_2v_1^2\omega_{13}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12} + 2\omega_6^3\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_8^2\omega_5\omega_{18}^2\omega_9 -$
$\omega_6^3\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_5^2\omega_{18}^2\omega_9\omega_{12} + 2\omega_6^3c_s^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12} + \omega_6^3\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_{12} + 2\omega_6^2v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12} -$
$\omega_6^3\omega_{22}v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9 + 2\omega_6\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} + 2\omega_6^3v_2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_{12} + \omega_6^3\omega_{22}c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9 +$
$2\omega_6^2\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}^2\omega_9\omega_{12} + 2\omega_6^2v_2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12} - 2\omega_6^3\omega_{22}v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12} - \omega_6^3\omega_{22}c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} -$
$\omega_6^3\omega_{22}v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_{12} + \omega_6^3\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9 + 2\omega_6^2\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_8\omega_5^2\omega_{18}^2\omega_9\omega_{12} + 2\omega_6^2\omega_{22}v_2v_1^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12} -$
$2\omega_6^2\omega_{22}c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12} - 2\omega_6^3\omega_{22}c_s^2v_1\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_{12} + 2\omega_6^2\omega_{22}v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}^2\omega_9\omega_{12} +$
$2\omega_6^3\omega_{22}v_2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12} - 2\omega_6^2\omega_{22}c_s^2v_1\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12} + 2\omega_6^3\omega_{22}c_s^2v_1\omega_{13}\omega_{20}\omega_8\omega_5^2\omega_{18}^2\omega_9\omega_{12} +$
$\omega_6^3\omega_{22}v_2^2v_1\omega_{13}\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_9\omega_{12} - 2\omega_6^2\omega_{22}v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} + \omega_6^3v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} +$
$2\omega_6^2\omega_{22}c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}^2\omega_9\omega_{12} - \omega_6^3\omega_{22}v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12} - 2\omega_6^2\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12} -$
$2\omega_6^3\omega_{22}v_2^2v_1\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_{12} + 2\omega_6^2\omega_{22}v_2v_1^2\omega_{13}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} + 2\omega_6^3\omega_{22}v_2^2v_1\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12} - 2\omega_6^3\omega_{22}v_2v_1^2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_{18}^2\omega_9\omega_{12} +$
$2\omega_6^2\omega_{22}v_2^2v_1\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12} - 2\omega_6^3c_s^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_{12} - \omega_6^3\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9\omega_{12} - 2\omega_6^3\omega_{22}c_s^2v_2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12} +$
$2\omega_6^2\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_9\omega_{12} - 2\omega_6^2c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12} - \omega_6^3\omega_{22}c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_9\omega_{12} -$
$2\omega_6^2\omega_{22}v_2^2v_1\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12} + 2\omega_6^3\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2 + \omega_6^3v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_{12} + 2\omega_6^3\omega_{22}v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9 +$
$2\omega_6^2\omega_{22}v_2^2v_1\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12} - 2\omega_6^3c_s^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_{12} - \omega_6^3\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_9\omega_{12} - 2\omega_6^3\omega_{22}c_s^2v_2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12} +$
$2\omega_6^2\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_9\omega_{12} - 2\omega_6^2c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12} - \omega_6^3\omega_{22}c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_9\omega_{12} -$
$2\omega_6^2\omega_{22}v_2^2v_1\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12} + 2\omega_6^3\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2 + \omega_6^3v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_{12} + 2\omega_6^3\omega_{22}v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}^2\omega_9\omega_{12} +$
$2\omega_6^3\omega_{22}c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12} - 2\omega_6^2\omega_{22}c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12} + 2\omega_6^2\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12} -$
$4\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12} - 6\omega_6^2\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} + 2\omega_6^3\omega_{22}v_2v_1^2\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2 +$
$2\omega_6^3\omega_{22}v_2v_1^2\omega_{13}\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12} - 2\omega_6^3\omega_{22}v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18}^2\omega_9\omega_{12} - 2\omega_6^2\omega_{22}v_2^2v_1\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_{18}^2\omega_9\omega_{12} -$
$2\omega_6^3\omega_{22}v_2v_1^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12} - 2\omega_6^3\omega_{22}c_s^2v_1\omega_{13}\omega_{20}\omega_8^2\omega_5\omega_{18}^2\omega_9 - \omega_6^3\omega_{22}v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}^2\omega_9 + 2\omega_6^3\omega_{22}c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}^2\omega_9\omega_{12} -$
$2\omega_6^2v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12} - 2\omega_6^2c_s^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12} + \omega_6^3\omega_{22}v_2^2v_1\omega_{13}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_9\omega_{12} + 2\omega_6^2\omega_{22}v_2^2v_1\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12} -$
$\omega_6^3\omega_{22}c_s^2v_1\omega_{13}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12} - 2\omega_6^3\omega_{22}v_2^2v_1\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18}^2\omega_9\omega_{12} - 2\omega_6^3v_2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12})\frac{v_3\rho}{\omega_6^3\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}^2\omega_9\omega_{12}}$

$$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_3} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_3}$$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_3} = (-2\omega_6\omega_{22}c_s^2v_1\omega_{13}\omega_{20}\omega_{18}\omega_9\omega_{12} + 2v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} + 2\omega_{22}v_2v_1^2\omega_{20}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} +$
$2\omega_6v_2^2v_1\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} - \omega_6\omega_{22}v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18} + 2\omega_{22}c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12} + 2\omega_6\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18} +$
$2\omega_6\omega_{22}c_s^2v_2\omega_{20}\omega_8\omega_5\omega_{18}\omega_{12} - \omega_6\omega_{22}v_2^2v_1\omega_{13}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} + 2\omega_6\omega_{22}v_2^2v_1\omega_{13}\omega_{20}\omega_8\omega_{18}\omega_9\omega_{12} + \omega_6\omega_{22}c_s^2v_2\omega_{13}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} -$
$2\omega_{22}c_s^2v_1\omega_{13}\omega_{14}\omega_8\omega_5\omega_9\omega_{12} - \omega_6\omega_{22}c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_9\omega_{12} + \omega_6\omega_{22}v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_{18}\omega_9\omega_{12} - 2\omega_6c_s^2v_2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} +$
$2v_2v_1^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} + \omega_6\omega_{22}v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} - 2\omega_6\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_8\omega_{18}\omega_9\omega_{12} +$
$2\omega_6\omega_{22}v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12} - \omega_6\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} + 2\omega_6\omega_{22}v_2^2v_1\omega_{13}\omega_{20}\omega_5\omega_{18}\omega_9\omega_{12} +$
$\omega_6v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} + 2\omega_6\omega_{22}v_2v_1^2\omega_{20}\omega_8\omega_5\omega_{18}\omega_{12} + 2\omega_6\omega_{22}v_2v_1^2\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18} + 2\omega_{22}v_2v_1^2\omega_{13}\omega_{14}\omega_8\omega_5\omega_9\omega_{12} -$
$2\omega_6\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_5\omega_{18}\omega_9\omega_{12} - 2\omega_6\omega_{22}v_2^2v_1\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} - 2\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} + \omega_6c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_9\omega_{12} +$
$2\omega_{22}v_2^2v_1\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} - 2\omega_6\omega_{22}v_2^2v_1\omega_{13}\omega_{20}\omega_{18}\omega_9\omega_{12} + 2\omega_6\omega_{22}c_s^2v_2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} - 2\omega_{22}c_s^2v_1\omega_{20}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} +$
$2\omega_{22}c_s^2v_2\omega_{13}\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12} + \omega_6\omega_{22}c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18} - 2\omega_{22}c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} - 2\omega_{22}v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_9\omega_{12} -$
$2\omega_{22}v_2^2v_1\omega_{13}\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12} - 2c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} - \omega_6c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12} + 2\omega_{22}c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_9\omega_{12} -$
$2\omega_{22}c_s^2v_2\omega_{13}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} + 2\omega_6\omega_{22}c_s^2v_1\omega_{13}\omega_{20}\omega_5\omega_{18}\omega_9\omega_{12} + 2\omega_6\omega_{22}v_2v_1^2\omega_{13}\omega_{14}\omega_{18}\omega_9\omega_{12} + 2c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_9\omega_{12} -$
$\omega_6v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_9\omega_{12} - 2\omega_6\omega_{22}v_2v_1^2\omega_{13}\omega_{20}\omega_8\omega_{18}\omega_9\omega_{12} - \omega_6v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} - 2\omega_6\omega_{22}c_s^2v_1\omega_{13}\omega_{20}\omega_8\omega_{18}\omega_9 -$
$2\omega_{22}v_2^2v_1\omega_{20}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} + \omega_6\omega_{22}v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18} - \omega_6\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18} + 2\omega_{22}v_2^2v_1\omega_{13}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} -$
$2\omega_6\omega_{22}c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12} - 2v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_9\omega_{12} + 2\omega_{22}c_s^2v_2\omega_{20}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} - 2\omega_{22}c_s^2v_1\omega_{13}\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12} +$
$\omega_6v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12} - 2c_s^2v_1\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} - 2\omega_6\omega_{22}v_2^2v_1\omega_{13}\omega_{20}\omega_8\omega_{18}\omega_9 - 2\omega_6\omega_{22}v_2^2v_1\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} -$
$2\omega_{22}c_s^2v_2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} + 2\omega_{22}v_2v_1^2\omega_{13}\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12} - \omega_6\omega_{22}v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9 + \omega_6\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12} +$
$\omega_6c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} - \omega_6\omega_{22}c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_{18}\omega_9\omega_{12} + 2\omega_6\omega_{22}c_s^2v_2\omega_{13}\omega_{14}\omega_{18}\omega_9\omega_{12} + \omega_6\omega_{22}v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_9\omega_{12} -$
$\omega_6\omega_{22}v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} + 2\omega_6\omega_{22}c_s^2v_1\omega_{13}\omega_{20}\omega_8\omega_{18}\omega_9\omega_{12} - 2v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} - 2\omega_{22}v_2^2v_1\omega_{13}\omega_{14}\omega_8\omega_5\omega_9\omega_{12} -$
$2\omega_{22}v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12} - 2\omega_6\omega_{22}v_2v_1^2\omega_{13}\omega_{20}\omega_5\omega_{18}\omega_9\omega_{12} + 2\omega_{22}v_2^2v_1\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} + 2\omega_6\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} +$
$2\omega_{22}c_s^2v_2\omega_{13}\omega_{14}\omega_8\omega_5\omega_9\omega_{12} + \omega_6\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9 - \omega_6\omega_{22}v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12} + 2\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_5\omega_{18}\omega_9\omega_{12} +$

$2\omega_6\omega_{22}c_s^2v_1\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12} - \omega_6\omega_{22}v_2v_1^2\omega_{13}\omega_{14}\omega_8\omega_5\omega_9\omega_{12} + 2\omega_{22}v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_9\omega_{12} - 2\omega_6\omega_{22}v_2v_1^2\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18}\omega_9 +$
$2\omega_6\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12} + 2c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} - 2\omega_{22}v_2v_1^2\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} - 2\omega_6\omega_{22}v_2^2v_1\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18} -$
$2\omega_6\omega_{22}v_2^2v_1\omega_{20}\omega_8\omega_5\omega_{18}\omega_{12} + 2\omega_6\omega_{22}c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_{18}\omega_9\omega_{12} - 2\omega_{22}v_2^2v_1\omega_{13}\omega_{20}\omega_5\omega_{18}\omega_9\omega_{12} + 2\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} +$
$2\omega_6\omega_{22}v_2^2v_1\omega_{13}\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12} - 2\omega_6c_s^2v_1\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12} + 2\omega_6\omega_{22}v_2v_1^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} + 2\omega_{22}c_s^2v_1\omega_{13}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} -$
$2\omega_6\omega_{22}v_2v_1^2\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18}\omega_{12} - 2\omega_6\omega_{22}v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12} + \omega_6\omega_{22}c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} - 2c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_9\omega_{12} +$
$2\omega_6\omega_{22}v_2v_1^2\omega_{13}\omega_{20}\omega_{18}\omega_9\omega_{12} + \omega_6c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12} + 2\omega_6\omega_{22}c_s^2v_1\omega_{20}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} - 2\omega_6\omega_{22}c_s^2v_2\omega_{13}\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12} -$
$2\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_9\omega_{12} - 2v_2^2v_1\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} - 2\omega_6\omega_{22}v_2v_1^2\omega_{20}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} - 2\omega_6\omega_{22}c_s^2v_1\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} +$
$2\omega_6\omega_{22}c_s^2v_1\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18}\omega_{12} - \omega_6\omega_{22}c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9 + \omega_6\omega_{22}v_2^2v_1\omega_{13}\omega_{14}\omega_8\omega_{18}\omega_9\omega_{12} - \omega_6\omega_{22}c_s^2v_2\omega_{13}\omega_{14}\omega_8\omega_{18}\omega_9\omega_{12} -$
$\omega_6\omega_{22}v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_{18}\omega_9\omega_{12} + 2\omega_6v_2v_1^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12} - 2\omega_6\omega_{22}v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_{18}\omega_9\omega_{12} + \omega_6\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_{18}\omega_9\omega_{12} -$
$2\omega_6v_2v_1^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} - \omega_6\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_{18}\omega_9 + \omega_6\omega_{22}v_2v_1^2\omega_{13}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} + 2\omega_6\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_{18}\omega_9\omega_{12} -$
$2\omega_{22}v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} + 2\omega_{22}c_s^2v_1\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} - 2\omega_6\omega_{22}c_s^2v_1\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18} + 2\omega_6\omega_{22}c_s^2v_1\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18}\omega_9 -$
$2\omega_6\omega_{22}c_s^2v_1\omega_{20}\omega_8\omega_5\omega_{18}\omega_{12} - \omega_6\omega_{22}c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12} - 2\omega_6\omega_{22}v_2v_1^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12} + 2c_s^2v_2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} +$
$\omega_6\omega_{22}v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_{18}\omega_9 + \omega_6\omega_{22}c_s^2v_1\omega_{13}\omega_{14}\omega_8\omega_5\omega_9\omega_{12} + \omega_6\omega_{22}v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12} - 2\omega_{22}v_2v_1^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} +$
$2\omega_{22}v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} + 2\omega_6\omega_{22}v_2^2v_1\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18}\omega_{12} + \omega_6\omega_{22}c_s^2v_1\omega_{13}\omega_{14}\omega_8\omega_{18}\omega_9\omega_{12} + \omega_6\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_9\omega_{12} -$
$2\omega_6\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18}\omega_{12} + 2\omega_6c_s^2v_1\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} + 2\omega_{22}v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12} + 2\omega_6\omega_{22}v_2v_1^2\omega_{13}\omega_{20}\omega_8\omega_{18}\omega_9 -$
$2\omega_6\omega_{22}v_2v_1^2\omega_{13}\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12} - \omega_6\omega_{22}c_s^2v_1\omega_{13}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} - 2\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12} - \omega_6\omega_{22}c_s^2v_2\omega_{13}\omega_{14}\omega_8\omega_5\omega_9\omega_{12} -$
$\omega_6c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} + 2\omega_{22}v_2v_1^2\omega_{13}\omega_{20}\omega_5\omega_{18}\omega_9\omega_{12} - \omega_6\omega_{22}v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_9\omega_{12} - 2\omega_6\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18}\omega_9 -$
$2\omega_6\omega_{22}c_s^2v_1\omega_{13}\omega_{14}\omega_{18}\omega_9\omega_{12} + 2\omega_6\omega_{22}v_2^2v_1\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18}\omega_9 + \omega_6\omega_{22}v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9 + \omega_6\omega_{22}c_s^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_{18}\omega_9 +$
$2\omega_6\omega_{22}v_2v_1^2\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} + \omega_6\omega_{22}v_2^2v_1\omega_{13}\omega_{14}\omega_8\omega_5\omega_9\omega_{12} - \omega_6\omega_{22}v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_{18}\omega_9 + 2v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_9\omega_{12} +$
$2\omega_6\omega_{22}v_2^2v_1\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12} - 2\omega_6\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_{18}\omega_9\omega_{12} - 2\omega_{22}v_2v_1^2\omega_{13}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} - \omega_6v_2v_1^2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12} +$
$2\omega_6\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_8\omega_{18}\omega_9 - 2\omega_6\omega_{22}v_2^2v_1\omega_{13}\omega_{14}\omega_{18}\omega_9\omega_{12} - \omega_6c_s^2v_2\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_9\omega_{12} + 2\omega_6\omega_{22}v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_{18}\omega_9\omega_{12} -$
$2\omega_{22}c_s^2v_1\omega_{13}\omega_{20}\omega_5\omega_{18}\omega_9\omega_{12} - 2\omega_6\omega_{22}c_s^2v_1\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} - 2\omega_6\omega_{22}c_s^2v_2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12} + \omega_6v_2^2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_9\omega_{12} -$
$2\omega_6\omega_{22}c_s^2v_2\omega_{20}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} + 2\omega_6\omega_{22}c_s^2v_1\omega_{13}\omega_{14}\omega_5\omega_{18}\omega_9\omega_{12} + 2\omega_{22}c_s^2v_1\omega_{13}\omega_{20}\omega_8\omega_5\omega_{18}\omega_9\omega_{12} - 2\omega_6v_2^2v_1\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12} -$
$\omega_6\omega_{22}v_2v_1^2\omega_{13}\omega_{14}\omega_8\omega_{18}\omega_9\omega_{12} + 2\omega_6c_s^2v_2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12} + 2\omega_6\omega_{22}v_2^2v_1^2\omega_{20}\omega_8\omega_5\omega_{18}\omega_9\omega_{12})\frac{v_3\rho}{\omega_6\omega_{22}\omega_{13}\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18}\omega_9\omega_{12}}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_3} = C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_3}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_3} = 0$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_3} = (-6c_s^2\omega_1\omega_2^3 - 22\omega_3v_3^2\omega_1^2\omega_2 - 4\omega_3v_2^2\omega_1\omega_2^2 + 14\omega_3\omega_1^2\omega_2 + 28\omega_3c_s^2\omega_1^3 + 10\omega_3v_3^2\omega_2^3 + 2\omega_1\omega_2^3 - 3\omega_3v_2^2\omega_1\omega_2^3 + 4\omega_3v_2^2\omega_1^3 +$
$10\omega_3\omega_1^3\omega_2 - 2v_2^2\omega_1\omega_2^3 - 24\omega_3c_s^2\omega_1\omega_2^2 - 13\omega_3v_3^2\omega_1^3\omega_2 + 4\omega_3v_2^2\omega_2^3 - 20\omega_3\omega_1^2\omega_2^2 + 26\omega_3v_3^2\omega_1^2\omega_2^2 + 16\omega_3v_3^2\omega_1^3 + 26\omega_3c_s^2\omega_2^3 - 24\omega_3c_s^2\omega_1\omega_2^3 +$
$8\omega_3\omega_1\omega_2^2 - 4\omega_3v_2^2\omega_1^2\omega_2 - 4\omega_3v_3^2\omega_1\omega_2^2 + 4v_2^2\omega_1^2\omega_2^2 - 24\omega_3c_s^2\omega_1^3\omega_2 - 10\omega_3\omega_2^3 + 10\omega_3\omega_1\omega_2^3 - 2v_2^2\omega_1^3\omega_2 + 48\omega_3c_s^2\omega_1^2\omega_2^2 - 13\omega_3v_3^2\omega_1\omega_2^3 -$
$30\omega_3c_s^2\omega_1^2\omega_2 - 3\omega_3v_2^2\omega_1^3\omega_2 + 12c_s^2\omega_1^2\omega_2^2 - 4\omega_1^2\omega_2^2 + 6\omega_3v_2^2\omega_1^2\omega_2^2 - 6c_s^2\omega_1^3\omega_2 + 2\omega_1^3\omega_2 - 12\omega_3\omega_1^3)\frac{v_3v_2\rho}{6\omega_3\omega_1^3\omega_2^3}$

coefficient $C^{(1)}_{\mathrm{D}_y^2\mathrm{D}_z^2\rho}$ **at** $\frac{\partial^4\rho}{\partial x_2^2\partial x_3^2}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_y^2\mathrm{D}_z^2\rho} = (108v_3c_s^2v_1^2\omega - 72v_3c_s^2v_2^2 + 3v_3v_2^2v_1^2\omega^3 + 42v_3^2c_s^2v_1\omega^2 - 3v_3^2c_s^2v_1\omega^3 - 42v_3v_2^2v_1^2\omega^2 - 108v_3^2v_2^2v_1\omega + 108v_3v_2^2v_1^2\omega + 42v_3^2v_2^2v_1\omega^2 +$
$3v_3c_s^2v_1^2\omega^3 + 72v_3^2c_s^2v_1 - 42v_3c_s^2v_1^2\omega^2 - 3v_3^2v_2^2v_1\omega^3 - 108v_3^2c_s^2v_1\omega + 72v_3^2v_2^2v_1 - 42v_3c_s^2v_2^2\omega^2 + 3v_3c_s^2v_2^2\omega^3 + 72c_s^2v_2^2v_1 - 108c_s^2v_2^2v_1\omega -$
$72v_3v_2^2v_1^2 + 42c_s^2v_2^2v_1\omega^2 + 2c_s^4v_1\omega^3 - 3c_s^2v_2^2v_1\omega^3 + 108v_3c_s^2v_2^2\omega - 72v_3c_s^2v_1^2 - 4c_s^4v_1\omega^2)\frac{1}{12\omega^3}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z^2\rho} = (-12\omega_6v_3v_2^2v_1^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} - 12\omega_6v_3^2c_s^2v_1\omega_7^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} - 6\omega_6^2v_3^2v_2^2v_1\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} +$
$6\omega_6^2v_3c_s^2v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15} - 12\omega_6^2v_3^2c_s^2v_1\omega_7^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15} + 24\omega_6c_s^4v_1\omega_7^2\omega_{20}\omega_{17}\omega_5^2\omega_{18}\omega_{15} + 6\omega_6^2v_3c_s^2v_2^2\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18} +$
$3\omega_6^2v_3^2v_2^2v_1\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} + 6\omega_6^2v_3v_2^2v_1^2\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18} + 3\omega_6^2v_3^2c_s^2v_1\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 6\omega_6^2v_3v_2^2v_1^2\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15} -$
$12\omega_6v_3c_s^2v_2^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} + 12\omega_6v_3v_2^2v_1^2\omega_7^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} + 12\omega_6v_3c_s^2v_2^2\omega_7^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} + 12\omega_6^2v_3c_s^2v_1\omega_7^2\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} -$
$6\omega_6^2v_3c_s^2v_2^2\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{15} - 12\omega_6^2v_3v_2^2v_1^2\omega_7^2\omega_{20}\omega_8^2\omega_5\omega_{18} + 24\omega_6^2c_s^4v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} - 6\omega_6^2v_3v_2^2v_1^2\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{15} -$
$12\omega_6^2v_3^2c_s^2v_1\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 6\omega_6v_3c_s^2v_1^2\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 3\omega_6^2c_s^2v_2^2v_1\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 6\omega_6^2v_3^2v_2^2v_1\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15} -$
$48\omega_6c_s^4v_1\omega_7^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} + 6\omega_6^2v_3^2v_2^2v_1\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} - 6\omega_6^2c_s^2v_2^2v_1\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} + 3\omega_6^2v_3v_2^2v_1^2\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} -$
$12\omega_6^2v_3c_s^2v_1^2\omega_7^2\omega_{20}\omega_8^2\omega_5\omega_{18} - 3\omega_6^2v_3^2c_s^2v_1\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} - 24\omega_6^2c_s^4v_1\omega_7^2\omega_{20}\omega_{17}\omega_5^2\omega_{18}\omega_{15} - 6\omega_6^2v_3c_s^2v_1^2\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15} -$
$12\omega_6^2c_s^2v_2^2v_1\omega_7^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15} - 28\omega_6^2c_s^4v_1\omega_7\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} - 12\omega_6^2v_3c_s^2v_1^2\omega_7^2\omega_{20}\omega_8\omega_5\omega_{18}\omega_{15} - 12\omega_6^2c_s^2v_2^2v_1\omega_7^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} -$
$12\omega_6^2v_3^2v_2^2v_1\omega_7^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_{15} - 6\omega_6^2v_3^2c_s^2v_1\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6c_s^4v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} - 6\omega_6v_3^2v_2^2v_1\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$12\omega_6c_s^2v_2^2v_1\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 12\omega_6^2v_3c_s^2v_1^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} + 12\omega_6^2c_s^2v_2^2v_1\omega_7^2\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} + 3\omega_6^2v_3c_s^2v_2^2\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} +$
$12\omega_6v_3^2v_2^2v_1\omega_7^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15} - 12\omega_6^2v_3c_s^2v_2^2\omega_7^2\omega_{20}\omega_8\omega_5\omega_{18}\omega_{15} + 3\omega_6^2c_s^2v_2^2v_1\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} + 6\omega_6v_3v_2^2v_1^2\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{15} +$
$6\omega_6^2v_3^2c_s^2v_1\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 6\omega_6^2v_3c_s^2v_1^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 6\omega_6v_3c_s^2v_2^2\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{15} - 12\omega_6^2v_3v_2^2v_1^2\omega_7^2\omega_{20}\omega_8\omega_5\omega_{18}\omega_{15} -$
$12\omega_6^2v_3^2c_s^2v_1\omega_7^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_{15} - 12\omega_6c_s^2v_2^2v_1\omega_7^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} - 12\omega_6v_3v_2^2v_1^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 6\omega_6v_3^2c_s^2v_1\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$12\omega_6^2v_3c_s^2v_2^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} - 6\omega_6v_3c_s^2v_1^2\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 12\omega_6^2v_3v_2^2v_1^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} + 6\omega_6v_3^2v_2^2v_1\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} +$
$12\omega_6^2v_3^2c_s^2v_1\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{15} - 12\omega_6v_3c_s^2v_1^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} - 12\omega_6^2v_3^2v_2^2v_1\omega_7^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15} - 12\omega_6^2v_3c_s^2v_1\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$3\omega_6^2v_3^2c_s^2v_1\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} + 6\omega_6^2v_3c_s^2v_1^2\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18} + 3\omega_6^2v_3^2v_2^2v_1\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 6\omega_6^2v_3c_s^2v_1^2\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15} +$
$12\omega_6^2v_3c_s^2v_2^2\omega_7^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} + 6\omega_6^2c_s^2v_2^2v_1\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 12\omega_6^2v_3^2v_2^2v_1\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$12\omega_6^2v_3^2v_2^2v_1^2\omega_7^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} + 12\omega_6^2v_3^2v_2^2v_1\omega_7^2\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} + 12\omega_6c_s^2v_2^2v_1\omega_7^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15} + 6\omega_6v_3c_s^2v_2^2\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} +$
$48\omega_6c_s^4v_1\omega_7\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} - 12\omega_6^2c_s^2v_2^2v_1\omega_7^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_{15} + 6\omega_6^2v_3v_2^2v_1^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 3\omega_6^2c_s^2v_2^2v_1\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} -$

$6\omega_6^2 v_3 c_s^2 v_1^2 \omega_7^2 \omega_{20} \omega_8^2 \omega_5^2 \omega_{18} \omega_{15} - 6\omega_6 c_s^2 v_2^2 v_1 \omega_7^2 \omega_{20} \omega_{17} \omega_8^2 \omega_5^2 \omega_{15} - 12\omega_6^2 v_3^2 c_s^2 v_1 \omega_7^2 \omega_{20} \omega_{17} \omega_8 \omega_5 \omega_{18} \omega_{15} + 24\omega_6^2 c_s^4 v_1 \omega_7^2 \omega_{20} \omega_{17} \omega_8 \omega_5^2 \omega_{18} \omega_{15} +$
$24\omega_6^2 c_s^4 v_1 \omega_7^2 \omega_{20} \omega_{17} \omega_8 \omega_{18} \omega_{15} - 12\omega_6 v_3^2 v_2^2 v_1 \omega_7^2 \omega_{17} \omega_8^2 \omega_5^2 \omega_{18} \omega_{15} - 12\omega_6^2 v_3 c_s^2 v_1^2 \omega_7^2 \omega_{20} \omega_{17} \omega_8 \omega_5^2 \omega_{18} \omega_{15} + 12\omega_6 c_s^2 v_2^2 v_1 \omega_7^2 \omega_{17} \omega_8^2 \omega_5^2 \omega_{15} +$
$12\omega_6^2 v_3 v_2^2 v_1^2 \omega_7^2 \omega_{20} \omega_8 \omega_5^2 \omega_{18} \omega_{15} - 3\omega_6^2 v_3 c_s^2 v_2^2 \omega_7^2 \omega_{20} \omega_{17} \omega_8^2 \omega_5^2 \omega_{15} + 12\omega_6 v_3 c_s^2 v_1 \omega_7^2 \omega_{17} \omega_8 \omega_5^2 \omega_{18} \omega_{15} - 3\omega_6^2 v_3 v_2^2 v_1^2 \omega_7^2 \omega_{20} \omega_{17} \omega_8^2 \omega_5^2 \omega_{15} -$
$6\omega_6^2 v_3^2 c_s^2 v_1 \omega_7^2 \omega_{17} \omega_8^2 \omega_5 \omega_{18} \omega_{15} - 6\omega_6^2 v_3^2 v_2^2 v_1 \omega_7^2 \omega_{17} \omega_8^2 \omega_5^2 \omega_{15} - 6\omega_6 v_3 c_s^2 v_2^2 \omega_7^2 \omega_{20} \omega_{17} \omega_8^2 \omega_5^2 \omega_{18} \omega_{15} + 12\omega_6^2 v_3 c_s^2 v_2^2 \omega_7^2 \omega_{20} \omega_8 \omega_5^2 \omega_{18} \omega_{15} -$
$6\omega_6^2 v_3^2 c_s^2 v_1 \omega_7^2 \omega_{20} \omega_{17} \omega_8^2 \omega_5 \omega_{18} + 24 c_s^4 v_1 \omega_7^2 \omega_{20} \omega_{17} \omega_8 \omega_5^2 \omega_{18} \omega_{15} - 3\omega_6^2 v_3 c_s^2 v_1^2 \omega_7^2 \omega_{20} \omega_{17} \omega_8^2 \omega_5^2 \omega_{18} - 12\omega_6^2 v_3 c_s^2 v_2^2 \omega_7^2 \omega_{20} \omega_8^2 \omega_5 \omega_{18} -$
$12\omega_6^2 v_3 v_2^2 v_1^2 \omega_7^2 \omega_{17} \omega_8 \omega_5 \omega_{18} \omega_{15} - 6\omega_6 v_3 v_2^2 v_1^2 \omega_7^2 \omega_{20} \omega_{17} \omega_8^2 \omega_5^2 \omega_{18} \omega_{15} + 12\omega_6 v_3^2 c_s^2 v_1 \omega_7^2 \omega_{17} \omega_8^2 \omega_5^2 \omega_{15} + 12\omega_6 v_3 c_s^2 v_2^2 \omega_7^2 \omega_{17} \omega_8^2 \omega_5^2 \omega_{18} \omega_{15} +$
$6\omega_6 v_3^2 c_s^2 v_1 \omega_7^2 \omega_{20} \omega_{17} \omega_8^2 \omega_5^2 \omega_{18} \omega_{15} + 12\omega_6 v_3 v_2^2 v_1^2 \omega_7^2 \omega_{17} \omega_8^2 \omega_5^2 \omega_{18} \omega_{15} - 12\omega_6^2 v_3 c_s^2 v_2^2 \omega_7^2 \omega_{17} \omega_8 \omega_5 \omega_{18} \omega_{15} + 6\omega_6^2 v_3^2 c_s^2 v_1 \omega_7^2 \omega_{20} \omega_8^2 \omega_5^2 \omega_{18} \omega_{15} -$
$6\omega_6^2 v_3 c_s^2 v_1^2 \omega_7^2 \omega_{17} \omega_8^2 \omega_5^2 \omega_{18} \omega_{15} - 12\omega_6^2 v_3 c_s^2 v_2^2 \omega_7^2 \omega_{20} \omega_{17} \omega_8 \omega_5^2 \omega_{18} \omega_{15} - 6\omega_6^2 c_s^2 v_2^2 v_1 \omega_7^2 \omega_{17} \omega_8^2 \omega_5 \omega_{18} \omega_{15} - 6\omega_6 v_3^2 v_2^2 v_1 \omega_7^2 \omega_{20} \omega_8^2 \omega_5^2 \omega_{18} \omega_{15} +$
$12\omega_6 v_3^2 v_2^2 v_1 \omega_7^2 \omega_{17} \omega_8^2 \omega_5^2 \omega_{15} - 6\omega_6^2 c_s^2 v_2^2 v_1 \omega_7^2 \omega_{20} \omega_{17} \omega_8^2 \omega_5 \omega_{18} + 12\omega_6^2 v_3^2 v_2^2 v_1 \omega_7^2 \omega_{20} \omega_8 \omega_5 \omega_{18} \omega_{15} - 6\omega_6^2 c_s^2 v_2^2 v_1 \omega_7^2 \omega_{17} \omega_8^2 \omega_5^2 \omega_{15} +$
$12\omega_6 c_s^2 v_2^2 v_1 \omega_7^2 \omega_{17} \omega_8 \omega_5^2 \omega_{18} \omega_{15} + 12\omega_6^2 v_3^2 c_s^2 v_1 \omega_7^2 \omega_{20} \omega_{17} \omega_8 \omega_5^2 \omega_{18} \omega_{15} - 48\omega_6^2 c_s^4 v_1 \omega_7^2 \omega_{20} \omega_{17} \omega_8 \omega_5 \omega_{18} \omega_{15} + 12\omega_6^2 v_3 c_s^2 v_1^2 \omega_7^2 \omega_{20} \omega_{17} \omega_8 \omega_5 \omega_{18} \omega_{15} +$
$6\omega_6 v_3 c_s^2 v_1^2 \omega_7^2 \omega_{20} \omega_{17} \omega_8^2 \omega_5^2 \omega_{15} + 6\omega_6^2 c_s^2 v_2^2 v_1 \omega_7^2 \omega_{20} \omega_8^2 \omega_5^2 \omega_{18} \omega_{15} + 12\omega_6^2 v_3 c_s^2 v_1^2 \omega_7^2 \omega_{20} \omega_8^2 \omega_5 \omega_{18} \omega_{15} + 6\omega_6^2 c_s^2 v_2^2 v_1 \omega_7^2 \omega_{20} \omega_{17} \omega_8^2 \omega_5 \omega_{18} \omega_{15} -$
$6\omega_6^2 v_3^2 c_s^2 v_1 \omega_7^2 \omega_{17} \omega_8^2 \omega_5^2 \omega_{15} - 12\omega_6 v_3 c_s^2 v_1^2 \omega_7^2 \omega_{20} \omega_8 \omega_5^2 \omega_{18} \omega_{15} - 12\omega_6^2 v_3^2 v_2^2 v_1 \omega_7^2 \omega_{20} \omega_{17} \omega_8 \omega_5 \omega_{18} \omega_{15} - 12\omega_6^2 v_3 v_2^2 v_1^2 \omega_7^2 \omega_{20} \omega_{17} \omega_8 \omega_5^2 \omega_{18} \omega_{15} -$
$12\omega_6^2 v_3^2 v_2^2 v_1 \omega_7^2 \omega_{17} \omega_8 \omega_5^2 \omega_{18} \omega_{15} + 12\omega_6^2 c_s^2 v_2^2 v_1 \omega_7^2 \omega_{20} \omega_8^2 \omega_5 \omega_{18} - 12\omega_6 v_3^2 v_2^2 v_1 \omega_7^2 \omega_{20} \omega_{17} \omega_8 \omega_5^2 \omega_{18} \omega_{15} - 6\omega_6^2 v_3 v_2^2 v_1^2 \omega_7^2 \omega_{17} \omega_8^2 \omega_5^2 \omega_{18} \omega_{15} +$
$6\omega_6^2 v_3 c_s^2 v_1^2 \omega_7^2 \omega_{20} \omega_8^2 \omega_5^2 \omega_{18} - 6\omega_6 v_3^2 c_s^2 v_1 \omega_7^2 \omega_{20} \omega_8^2 \omega_5^2 \omega_{18} \omega_{15} + 12\omega_6^2 v_3^2 c_s^2 v_1 \omega_7^2 \omega_{20} \omega_8 \omega_5 \omega_{18} \omega_{15} + 6\omega_6 c_s^2 v_2^2 v_1 \omega_7^2 \omega_{20} \omega_{17} \omega_8^2 \omega_5^2 \omega_{18} \omega_{15} -$
$6\omega_6^2 v_3 c_s^2 v_2^2 \omega_7^2 \omega_{17} \omega_8^2 \omega_5^2 \omega_{18} \omega_{15} + 12\omega_6 v_3 c_s^2 v_1^2 \omega_7^2 \omega_{20} \omega_{17} \omega_8 \omega_5^2 \omega_{18} \omega_{15} - 12\omega_6 v_3 c_s^2 v_2^2 \omega_7^2 \omega_{20} \omega_{17} \omega_8^2 \omega_5^2 \omega_{15} + 6\omega_6 v_3 v_2^2 v_1^2 \omega_7^2 \omega_{20} \omega_{17} \omega_8^2 \omega_5^2 \omega_{15} +$
$12\omega_6^2 v_3^2 c_s^2 v_1 \omega_7^2 \omega_{20} \omega_8^2 \omega_5 \omega_{18} - 24\omega_6^2 c_s^4 v_1 \omega_7 \omega_{20} \omega_{17} \omega_8^2 \omega_{18} \omega_{15} - 12\omega_6 v_3 c_s^2 v_2^2 \omega_7^2 \omega_{20} \omega_8 \omega_5^2 \omega_{18} \omega_{15} - 24\omega_6^2 c_s^4 v_1 \omega_{20} \omega_{17} \omega_8^2 \omega_5 \omega_{18} \omega_{15} +$
$12\omega_6^2 v_3 v_2^2 v_1^2 \omega_7^2 \omega_{20} \omega_8^2 \omega_5 \omega_{18} \omega_{15} + 12\omega_6^2 v_3 c_s^2 v_2^2 \omega_7^2 \omega_{20} \omega_8^2 \omega_5 \omega_{18} \omega_{15} - 12\omega_6 v_3 v_2^2 v_1^2 \omega_7^2 \omega_{20} \omega_8 \omega_5^2 \omega_{18} \omega_{15} - 24 c_s^4 v_1 \omega_7 \omega_{20} \omega_{17} \omega_8^2 \omega_5^2 \omega_{18} \omega_{15} +$
$6\omega_6 v_3 c_s^2 v_2^2 \omega_7^2 \omega_{20} \omega_{17} \omega_8^2 \omega_5^2 \omega_{15} - 12\omega_6^2 v_3^2 c_s^2 v_1 \omega_7^2 \omega_{17} \omega_8 \omega_5^2 \omega_{18} \omega_{15} - 3\omega_6^2 v_3 c_s^2 v_2^2 \omega_7^2 \omega_{20} \omega_{17} \omega_8^2 \omega_5^2 \omega_{18} + 12\omega_6^2 c_s^2 v_2^2 v_1 \omega_7^2 \omega_{20} \omega_8 \omega_5 \omega_{18} \omega_{15} +$
$12\omega_6^2 c_s^2 v_2^2 v_1 \omega_7^2 \omega_{20} \omega_{17} \omega_8 \omega_5^2 \omega_{18} \omega_{15} + 12\omega_6^2 v_3 c_s^2 v_1^2 \omega_7^2 \omega_{20} \omega_8 \omega_5^2 \omega_{18} \omega_{15} + 48\omega_6^2 c_s^4 v_1 \omega_7 \omega_{20} \omega_{17} \omega_8^2 \omega_5 \omega_{18} \omega_{15} + 2\omega_6^2 c_s^4 v_1 \omega_7^2 \omega_{20} \omega_{17} \omega_8^2 \omega_5^2 \omega_{18} \omega_{15} +$
$12\omega_6^2 v_3^2 v_2^2 v_1 \omega_7^2 \omega_{20} \omega_8^2 \omega_5 \omega_{18} + 6\omega_6^2 v_3^2 c_s^2 v_1 \omega_7^2 \omega_{20} \omega_{17} \omega_8^2 \omega_5 \omega_{18} \omega_{15} + 24\omega_6^2 c_s^4 v_1 \omega_7^2 \omega_{20} \omega_{17} \omega_5 \omega_{18} \omega_{15} + 3\omega_6^2 v_3 c_s^2 v_1^2 \omega_7^2 \omega_{20} \omega_{17} \omega_8^2 \omega_5^2 \omega_{18} \omega_{15} +$
$12\omega_6 v_3^2 v_2^2 v_1 \omega_7^2 \omega_{17} \omega_8 \omega_5^2 \omega_{18} \omega_{15} - 3\omega_6^2 v_3^2 v_2^2 v_1 \omega_7^2 \omega_{20} \omega_{17} \omega_8^2 \omega_5^2 \omega_{18} \omega_{15} - 3\omega_6^2 v_3 c_s^2 v_1^2 \omega_7^2 \omega_{20} \omega_{17} \omega_8^2 \omega_5^2 \omega_{15} - 6\omega_6^2 v_3^2 v_2^2 v_1 \omega_7^2 \omega_{17} \omega_8^2 \omega_5 \omega_{18} \omega_{15} -$
$6\omega_6^2 v_3 v_2^2 v_1^2 \omega_7^2 \omega_{20} \omega_{17} \omega_8^2 \omega_5 \omega_{18} \omega_{15} - 6\omega_6 c_s^2 v_2^2 v_1 \omega_7^2 \omega_{20} \omega_8^2 \omega_5^2 \omega_{18} \omega_{15} - 6\omega_6^2 v_3^2 v_2^2 v_1 \omega_7^2 \omega_{20} \omega_{17} \omega_8^2 \omega_5 \omega_{18} - 3\omega_6^2 v_3 v_2^2 v_1^2 \omega_7^2 \omega_{20} \omega_{17} \omega_8^2 \omega_5^2 \omega_{18} +$
$6\omega_6^2 v_3 v_2^2 v_1^2 \omega_7^2 \omega_{20} \omega_8^2 \omega_5^2 \omega_{18} - 12\omega_6^2 v_3 c_s^2 v_1^2 \omega_7^2 \omega_{17} \omega_8 \omega_5 \omega_{18} \omega_{15} - 12\omega_6^2 c_s^2 v_2^2 v_1 \omega_7^2 \omega_{17} \omega_8 \omega_5^2 \omega_{18} \omega_{15} - 6\omega_6^2 v_3 c_s^2 v_2^2 \omega_7^2 \omega_{20} \omega_{17} \omega_8^2 \omega_5^2 \omega_{18} \omega_{15} +$
$12\omega_6 v_3 c_s^2 v_1^2 \omega_7^2 \omega_{17} \omega_8^2 \omega_5^2 \omega_{18} \omega_{15} + 6\omega_6^2 v_3^2 v_2^2 v_1 \omega_7^2 \omega_{20} \omega_8^2 \omega_5^2 \omega_{18} \omega_{15} + 6\omega_6^2 v_3 c_s^2 v_2^2 \omega_7^2 \omega_{17} \omega_8^2 \omega_5^2 \omega_{15}) \frac{1}{12\omega_6^2 \omega_7^2 \omega_{20} \omega_{17} \omega_8^2 \omega_5^2 \omega_{18} \omega_{15}}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_y^2 \mathrm{D}_z^2 \rho} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y^2 \mathrm{D}_z^2 \rho}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_y^2 \mathrm{D}_z^2 \rho} = (12\omega_6 v_3 c_s^2 v_2^2 \omega_7 \omega_{20} \omega_5 \omega_{18} \omega_{15} + 12 v_3 v_2^2 v_1^2 \omega_7 \omega_{17} \omega_8 \omega_5 \omega_{18} \omega_{15} - 6\omega_6 v_3^2 v_2^2 v_1 \omega_7 \omega_{17} \omega_8 \omega_{18} \omega_{15} + 6 c_s^2 v_2^2 v_1 \omega_7 \omega_{20} \omega_{17} \omega_8 \omega_5 \omega_{18} \omega_{15} -$
$6\omega_6 v_3^2 c_s^2 v_1 \omega_7 \omega_{20} \omega_8 \omega_5 \omega_{18} - 3\omega_6 v_3^2 c_s^2 v_1 \omega_7 \omega_{20} \omega_{17} \omega_8 \omega_5 \omega_{18} \omega_{15} + 6\omega_6 c_s^2 v_2^2 v_1 \omega_7 \omega_{17} \omega_8 \omega_5 \omega_{18} \omega_{15} + 3\omega_6 v_3 v_2^2 v_1^2 \omega_7 \omega_{20} \omega_{17} \omega_8 \omega_5 \omega_{18} \omega_{15} +$
$12 v_3 c_s^2 v_2^2 \omega_7 \omega_{17} \omega_8 \omega_5 \omega_{18} \omega_{15} + 12\omega_6 c_s^2 v_2^2 v_1 \omega_7 \omega_{20} \omega_{18} \omega_{15} - 12\omega_6 v_3 v_2^2 v_1^2 \omega_7 \omega_{17} \omega_{18} \omega_{15} + 12 v_3 v_2^2 v_1^2 \omega_7 \omega_{20} \omega_{17} \omega_5 \omega_{18} \omega_{15} -$
$6\omega_6 v_3 c_s^2 v_1^2 \omega_7 \omega_{20} \omega_8 \omega_5 \omega_{18} \omega_{15} - 6\omega_6 c_s^2 v_2^2 v_1 \omega_7 \omega_{20} \omega_8 \omega_5 \omega_{18} + 12\omega_6 v_3^2 c_s^2 v_1 \omega_7 \omega_{20} \omega_8 \omega_{18} + 3\omega_6 v_3 c_s^2 v_2^2 \omega_7 \omega_{20} \omega_{17} \omega_8 \omega_5 \omega_{18} \omega_{15} +$
$12\omega_6 c_s^2 v_2^2 v_1 \omega_7 \omega_{20} \omega_{17} \omega_5 \omega_{18} \omega_{15} + 3\omega_6 v_3^2 c_s^2 v_1 \omega_7 \omega_{20} \omega_{17} \omega_8 \omega_5 \omega_{15} + 12\omega_6 v_3 v_2^2 v_1^2 \omega_7 \omega_{20} \omega_8 \omega_{18} \omega_{15} + 12 v_3 c_s^2 v_2^2 \omega_7 \omega_{20} \omega_{17} \omega_5 \omega_{18} \omega_{15} -$
$12 v_3 c_s^2 v_2^2 \omega_7 \omega_{17} \omega_8 \omega_5 \omega_{15} - 6\omega_6 v_3^2 v_2^2 v_1 \omega_7 \omega_{20} \omega_{17} \omega_8 \omega_{18} + 3\omega_6 v_3^2 v_2^2 v_1 \omega_7 \omega_{20} \omega_{17} \omega_8 \omega_5 \omega_{18} + 12\omega_6 v_3^2 v_2^2 v_1 \omega_7 \omega_{20} \omega_{18} \omega_{15} -$
$6\omega_6 v_3 v_2^2 v_1^2 \omega_7 \omega_{20} \omega_{17} \omega_8 \omega_{18} \omega_{15} + 2\omega_6 c_s^4 v_1 \omega_7 \omega_{20} \omega_{17} \omega_8 \omega_5 \omega_{18} \omega_{15} - 6\omega_6 c_s^2 v_2^2 v_1 \omega_7 \omega_{17} \omega_8 \omega_{18} \omega_{15} + 12\omega_6 v_3 c_s^2 v_1^2 \omega_7 \omega_{20} \omega_8 \omega_{18} \omega_{15} +$
$6\omega_6 v_3^2 c_s^2 v_1 \omega_7 \omega_{17} \omega_8 \omega_5 \omega_{18} \omega_{15} - 6\omega_6 v_3 c_s^2 v_2^2 \omega_7 \omega_{20} \omega_{17} \omega_8 \omega_{18} \omega_{15} - 6\omega_6 v_3^2 c_s^2 v_1 \omega_7 \omega_{20} \omega_{17} \omega_8 \omega_{18} - 12\omega_6 v_3 c_s^2 v_2^2 \omega_7 \omega_{20} \omega_8 \omega_{18} -$
$6\omega_6 v_3^2 c_s^2 v_1 \omega_7 \omega_{17} \omega_8 \omega_{18} \omega_{15} + 3\omega_6 c_s^2 v_2^2 v_1 \omega_7 \omega_{20} \omega_{17} \omega_8 \omega_5 \omega_{15} - 6\omega_6 v_3^2 v_2^2 v_1 \omega_7 \omega_{20} \omega_8 \omega_5 \omega_{18} + 6 v_3 v_2^2 v_1^2 \omega_7 \omega_{20} \omega_{17} \omega_8 \omega_5 \omega_{15} -$
$12 v_3 c_s^2 v_2^2 \omega_7 \omega_{17} \omega_5 \omega_{18} \omega_{15} + 6 v_3 c_s^2 v_2^2 \omega_7 \omega_{20} \omega_{17} \omega_8 \omega_5 \omega_{15} - 6\omega_6 c_s^2 v_2^2 v_1 \omega_7 \omega_{20} \omega_{17} \omega_8 \omega_{18} + 12\omega_6 v_3^2 c_s^2 v_1 \omega_7 \omega_{20} \omega_{17} \omega_5 \omega_{18} \omega_{15} -$
$6 v_3^2 v_2^2 v_1 \omega_7 \omega_{20} \omega_8 \omega_5 \omega_{18} \omega_{15} - 6\omega_6 v_3 c_s^2 v_1^2 \omega_7 \omega_{20} \omega_{17} \omega_8 \omega_{18} \omega_{15} - 6 v_3 c_s^2 v_2^2 \omega_7 \omega_{20} \omega_{17} \omega_8 \omega_5 \omega_{18} \omega_{15} + 6\omega_6 v_3 c_s^2 v_2^2 \omega_7 \omega_{20} \omega_8 \omega_5 \omega_{18} -$
$12\omega_6 v_3^2 c_s^2 v_1 \omega_7 \omega_{20} \omega_5 \omega_{18} \omega_{15} + 12\omega_6 v_3 c_s^2 v_1^2 \omega_7 \omega_{20} \omega_{17} \omega_{18} \omega_{15} + 12 v_3^2 v_2^2 v_1 \omega_7 \omega_{17} \omega_5 \omega_{18} \omega_{15} + 6\omega_6 v_3 v_2^2 v_1^2 \omega_7 \omega_{17} \omega_8 \omega_5 \omega_{15} +$
$6\omega_6 v_3^2 v_2^2 v_1 \omega_7 \omega_{17} \omega_8 \omega_5 \omega_{18} \omega_{15} + 12 c_s^2 v_2^2 v_1 \omega_7 \omega_{17} \omega_8 \omega_5 \omega_{15} - 12\omega_6 c_s^2 v_2^2 v_1 \omega_7 \omega_{20} \omega_5 \omega_{18} \omega_{15} + 6 v_3^2 c_s^2 v_1 \omega_7 \omega_{20} \omega_{17} \omega_8 \omega_5 \omega_{18} \omega_{15} -$
$12 v_3 v_2^2 v_1^2 \omega_7 \omega_{20} \omega_5 \omega_{18} \omega_{15} - 12\omega_6 v_3 c_s^2 v_2^2 \omega_7 \omega_{17} \omega_{18} \omega_{15} - 3\omega_6 c_s^2 v_2^2 v_1 \omega_7 \omega_{20} \omega_{17} \omega_8 \omega_5 \omega_{18} \omega_{15} + 3\omega_6 c_s^2 v_2^2 v_1 \omega_7 \omega_{20} \omega_{17} \omega_8 \omega_5 \omega_{18} +$
$6 v_3 c_s^2 v_1^2 \omega_7 \omega_{20} \omega_{17} \omega_8 \omega_5 \omega_{15} + 12\omega_6 v_3 c_s^2 v_1^2 \omega_7 \omega_{17} \omega_5 \omega_{18} \omega_{15} + 12 v_3^2 c_s^2 v_1 \omega_7 \omega_{17} \omega_8 \omega_5 \omega_{15} + 12\omega_6 v_3^2 v_2^2 v_1 \omega_7 \omega_{20} \omega_{17} \omega_5 \omega_{18} \omega_{15} -$
$6 v_3 v_2^2 v_1^2 \omega_7 \omega_{20} \omega_{17} \omega_8 \omega_5 \omega_{18} \omega_{15} - 6 v_3^2 c_s^2 v_1 \omega_7 \omega_{20} \omega_8 \omega_5 \omega_{18} \omega_{15} - 4\omega_6 c_s^4 v_1 \omega_{20} \omega_{17} \omega_8 \omega_5 \omega_{18} \omega_{15} + 12 v_3 c_s^2 v_1^2 \omega_7 \omega_{17} \omega_8 \omega_5 \omega_{18} \omega_{15} -$
$12 v_3 c_s^2 v_1^2 \omega_7 \omega_{20} \omega_5 \omega_{18} \omega_{15} + 12 c_s^2 v_2^2 v_1 \omega_7 \omega_{17} \omega_5 \omega_{18} \omega_{15} + 12\omega_6 v_3 v_2^2 v_1^2 \omega_7 \omega_{17} \omega_5 \omega_{18} \omega_{15} + 12 v_3^2 v_2^2 v_1 \omega_7 \omega_{17} \omega_8 \omega_5 \omega_{15} + 6\omega_6 v_3 c_s^2 v_2^2 \omega_7 \omega_{20} \omega_{17} \omega_8 \omega_{18} +$
$12 v_3 c_s^2 v_1^2 \omega_7 \omega_{20} \omega_{17} \omega_5 \omega_{18} \omega_{15} + 12\omega_6 v_3^2 c_s^2 v_1 \omega_7 \omega_{17} \omega_{18} \omega_{15} - 6\omega_6 v_3 v_2^2 v_1^2 \omega_7 \omega_{20} \omega_8 \omega_5 \omega_{18} \omega_{15} - 12\omega_6 v_3 v_2^2 v_1^2 \omega_7 \omega_{20} \omega_8 \omega_{18} -$
$12\omega_6 v_3^2 v_2^2 v_1 \omega_7 \omega_{20} \omega_5 \omega_{18} \omega_{15} + 6\omega_6 v_3 c_s^2 v_2^2 \omega_7 \omega_{17} \omega_8 \omega_{18} \omega_{15} - 6 c_s^2 v_2^2 v_1 \omega_7 \omega_{20} \omega_8 \omega_5 \omega_{18} \omega_{15} + 12\omega_6 v_3 v_2^2 v_1^2 \omega_7 \omega_{20} \omega_{17} \omega_{18} \omega_{15} +$
$3\omega_6 v_3^2 v_2^2 v_1 \omega_7 \omega_{20} \omega_{17} \omega_8 \omega_5 \omega_{15} - 6\omega_6 v_3 c_s^2 v_2^2 \omega_7 \omega_{20} \omega_8 \omega_5 \omega_{18} \omega_{15} + 12 v_3^2 c_s^2 v_1 \omega_7 \omega_{17} \omega_5 \omega_{18} \omega_{15} + 6\omega_6 v_3 c_s^2 v_1^2 \omega_7 \omega_{17} \omega_8 \omega_5 \omega_{15} -$
$12\omega_6 v_3 c_s^2 v_1^2 \omega_7 \omega_{20} \omega_{18} \omega_{15} + 3\omega_6 v_3^2 c_s^2 v_1 \omega_7 \omega_{20} \omega_{17} \omega_8 \omega_5 \omega_{18} + 12 c_s^2 v_2^2 v_1 \omega_7 \omega_{20} \omega_5 \omega_{18} \omega_{15} - 12 v_3^2 c_s^2 v_1 \omega_7 \omega_{17} \omega_8 \omega_5 \omega_{18} \omega_{15} +$
$12\omega_6 v_3 v_2^2 v_1^2 \omega_7 \omega_{20} \omega_5 \omega_{18} \omega_{15} + 12\omega_6 v_3^2 c_s^2 v_1 \omega_7 \omega_{20} \omega_{18} \omega_{15} - 12\omega_6 v_3 c_s^2 v_1^2 \omega_7 \omega_{17} \omega_{18} \omega_{15} + 12\omega_6 v_3^2 v_2^2 v_1 \omega_7 \omega_{20} \omega_8 \omega_{18} - 12\omega_6 v_3^2 v_2^2 v_1 \omega_7 \omega_{20} \omega_{17} \omega_{18} \omega_{15} -$
$6\omega_6 v_3^2 c_s^2 v_1 \omega_7 \omega_{17} \omega_8 \omega_5 \omega_{15} + 6\omega_6 c_s^2 v_2^2 v_1 \omega_7 \omega_{20} \omega_{17} \omega_8 \omega_{18} \omega_{15} - 12 v_3 c_s^2 v_1^2 \omega_7 \omega_{17} \omega_5 \omega_{18} \omega_{15} + 6 v_3^2 v_2^2 v_1 \omega_7 \omega_{20} \omega_{17} \omega_8 \omega_5 \omega_{18} \omega_{15} +$
$12 v_3^2 c_s^2 v_1 \omega_7 \omega_{20} \omega_5 \omega_{18} \omega_{15} - 3\omega_6 v_3 c_s^2 v_2^2 \omega_7 \omega_{20} \omega_{17} \omega_8 \omega_5 \omega_{15} + 6\omega_6 v_3^2 v_2^2 v_1 \omega_7 \omega_{20} \omega_8 \omega_5 \omega_{18} \omega_{15} - 12 v_3^2 c_s^2 v_1 \omega_7 \omega_{20} \omega_{17} \omega_5 \omega_{18} \omega_{15} -$
$6 c_s^2 v_2^2 v_1 \omega_7 \omega_{20} \omega_{17} \omega_8 \omega_5 \omega_{15} - 12 v_3 v_2^2 v_1^2 \omega_7 \omega_{17} \omega_8 \omega_5 \omega_{15} - 3\omega_6 v_3 c_s^2 v_1^2 \omega_7 \omega_{20} \omega_{17} \omega_8 \omega_5 \omega_{18} + 12\omega_6 c_s^2 v_2^2 v_1 \omega_7 \omega_{20} \omega_8 \omega_{18} -$
$12\omega_6 v_3^2 v_2^2 v_1 \omega_7 \omega_{17} \omega_5 \omega_{18} \omega_{15} - 6\omega_6 c_s^2 v_2^2 v_1 \omega_7 \omega_{17} \omega_8 \omega_5 \omega_{15} + 12\omega_6 v_3 c_s^2 v_2^2 \omega_7 \omega_{20} \omega_8 \omega_{18} \omega_{15} - 3\omega_6 v_3 v_2^2 v_1^2 \omega_7 \omega_{20} \omega_{17} \omega_8 \omega_5 \omega_{15} -$
$6 v_3 c_s^2 v_1^2 \omega_7 \omega_{20} \omega_{17} \omega_8 \omega_5 \omega_{18} \omega_{15} + 12 v_3^2 v_2^2 v_1 \omega_7 \omega_{20} \omega_5 \omega_{18} \omega_{15} - 12\omega_6 v_3 c_s^2 v_2^2 \omega_7 \omega_{20} \omega_{18} \omega_{15} + 6\omega_6 v_3^2 c_s^2 v_1 \omega_7 \omega_{20} \omega_{17} \omega_8 \omega_{18} \omega_{15} -$
$6\omega_6 v_3 c_s^2 v_2^2 \omega_7 \omega_{17} \omega_8 \omega_5 \omega_{18} \omega_{15} - 12 v_3 c_s^2 v_1^2 \omega_7 \omega_{17} \omega_8 \omega_5 \omega_{15} - 12\omega_6 v_3^2 c_s^2 v_1 \omega_7 \omega_{17} \omega_5 \omega_{18} \omega_{15} - 6\omega_6 v_3 v_2^2 v_1^2 \omega_7 \omega_{17} \omega_8 \omega_5 \omega_{18} \omega_{15} -$
$12 c_s^2 v_2^2 v_1 \omega_7 \omega_{17} \omega_8 \omega_5 \omega_{18} \omega_{15} - 12\omega_6 c_s^2 v_2^2 v_1 \omega_7 \omega_{20} \omega_{17} \omega_{18} \omega_{15} - 6 v_3^2 c_s^2 v_1 \omega_7 \omega_{20} \omega_{17} \omega_8 \omega_5 \omega_{15} - 12\omega_6 v_3 c_s^2 v_2^2 \omega_7 \omega_{20} \omega_{17} \omega_5 \omega_{18} \omega_{15} +$
$12\omega_6 v_3 c_s^2 v_1^2 \omega_7 \omega_{20} \omega_5 \omega_{18} \omega_{15} + 6 v_3 c_s^2 v_1^2 \omega_7 \omega_{20} \omega_8 \omega_5 \omega_{18} \omega_{15} - 12\omega_6 c_s^2 v_2^2 v_1 \omega_7 \omega_{20} \omega_8 \omega_{18} \omega_{15} - 12\omega_6 v_3^2 c_s^2 v_1 \omega_7 \omega_{20} \omega_{17} \omega_8 \omega_{18} \omega_{15} -$

$12v_3^2v_2^2v_1\omega_7\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} - 12\omega_6v_3v_2^2v_1^2\omega_7\omega_{20}\omega_{18}\omega_{15} + 12\omega_6v_3^2v_2^2v_1\omega_7\omega_{17}\omega_{18}\omega_{15} - 12\omega_6v_3c_s^2v_1^2\omega_7\omega_{20}\omega_8\omega_{18} + 6\omega_6v_3v_2^2v_1^2\omega_7\omega_{20}\omega_{17}\omega_8\omega_{18} +$
$12\omega_6v_3c_s^2v_2^2\omega_7\omega_{17}\omega_5\omega_{18}\omega_{15} - 12\omega_6v_3^2v_2^2v_1\omega_7\omega_{20}\omega_8\omega_{18}\omega_{15} + 6\omega_6v_3v_2^2v_1^2\omega_7\omega_{17}\omega_8\omega_{18}\omega_{15} + 6\omega_6v_3^2c_s^2v_1\omega_7\omega_{20}\omega_8\omega_5\omega_{18}\omega_{15} +$
$6\omega_6v_3c_s^2v_1^2\omega_7\omega_{20}\omega_8\omega_5\omega_{18} - 12v_3^2v_2^2v_1\omega_7\omega_{20}\omega_{17}\omega_5\omega_{18}\omega_{15} - 3\omega_6v_3c_s^2v_2^2\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18} - 3\omega_6v_3v_2^2v_1^2\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18} +$
$12\omega_6c_s^2v_2^2v_1\omega_7\omega_{17}\omega_{18}\omega_{15} - 3\omega_6v_3c_s^2v_1^2\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 12\omega_6v_3c_s^2v_2^2\omega_7\omega_{20}\omega_{17}\omega_{18}\omega_{15})\frac{1}{12\omega_6\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_y^2\mathrm{D}_z^2\rho} = C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z^2\rho}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z^2\rho} = (-2+\omega_3)\frac{c_s^4v_1}{6\omega_3}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_y^2\mathrm{D}_z^2\rho} = (6c_s^2\omega_1\omega_2 - 2\omega_1 + 3v_3^2\omega_1 - 14c_s^2\omega_2 - 3v_2^2\omega_2 + 2\omega_2 + 3v_2^2\omega_1 + 2c_s^2\omega_1 - 3v_3^2\omega_2)\frac{c_s^2v_1}{36\omega_1\omega_2}$

coefficient $C^{(1)}_{\mathrm{D}_y^2\mathrm{D}_z^2v_1}$ **at** $\frac{\partial^4v_1}{\partial x_2^2\partial x_3^2}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_y^2\mathrm{D}_z^2v_1} = (24c_s^2v_2^2 - 36v_3^2v_2^2\omega - 36v_3^2c_s^2\omega - 4c_s^4\omega^2 - 8c_s^4 + 14v_3^2c_s^2\omega^2 + 12c_s^4\omega - v_3^2v_2^2\omega^3 + 24v_3^2v_2^2 + 14v_3^2v_2^2\omega^2 - v_3^2c_s^2\omega^3 + 24v_3^2c_s^2 -$
$28v_3c_s^2v_1\omega^2 - c_s^2v_2^2\omega^3 - 48v_3c_s^2v_1 + 72v_3v_2^2v_1\omega + 2v_3c_s^2v_1\omega^3 + 14c_s^2v_2^2\omega^2 - 48v_3v_2^2v_1 - 28v_3v_2^2v_1\omega^2 - 36c_s^2v_2^2\omega + 72v_3c_s^2v_1\omega + 2v_3v_2^2v_1\omega^3)\frac{\rho}{4\omega^3}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z^2v_1} = (-\omega_6^3c_s^2v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_{15} - 4\omega_6^2v_3^2v_2^2\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{18}\omega_{15} - 4\omega_6^2v_3v_2^2v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_{15} - 4\omega_6^3v_3v_2^2v_1\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_{15} +$
$4\omega_6^3v_3^2c_s^2\omega_{20}\omega_{17}\omega_5^2\omega_{18}\omega_{15} - 2\omega_6^3c_s^2v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} - 4\omega_6^3v_3^2v_2^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} + \omega_6^3v_3^2v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 4\omega_6^3v_3c_s^2v_1\omega_{20}\omega_8^2\omega_5^3\omega_{18} -$
$2\omega_6^3v_3^2c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_{18} + 4\omega_6c_s^2v_2^2\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{18}\omega_{15} + 8\omega_6^2c_s^2v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 4\omega_6^2c_s^4\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_{15} - 4\omega_6^2c_s^4\omega_{17}\omega_8^2\omega_5^3\omega_{15} +$
$4\omega_6^3c_s^4\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 2\omega_6^3v_3c_s^2v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_{15} + 4\omega_6^2v_3^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - \omega_6^3v_3^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_{15} - 8\omega_6^2v_3c_s^2v_1\omega_{17}\omega_8\omega_5^3\omega_{18}\omega_{15} +$
$8\omega_6v_3^2c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{18}\omega_{15} + \omega_6^3c_s^2v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 4\omega_6^3c_s^4\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{18}\omega_{15} + 8\omega_6^2v_3^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} -$
$8\omega_6^3v_3c_s^2v_1\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} + 4\omega_6^3v_3v_2^2v_1\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 4\omega_6^2v_3v_2^2v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 2\omega_6^3v_3^2v_2^2\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 4\omega_6^3v_3^2v_2^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} -$
$12\omega_6^2c_s^2v_2^2\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{18}\omega_{15} - 4\omega_6c_s^2v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} - \omega_6^3v_3^2v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_{15} - 8\omega_6^2v_3v_2^2v_1\omega_{17}\omega_8\omega_5^3\omega_{18}\omega_{15} +$
$4\omega_6^2c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15} - 4\omega_6^3c_s^2v_2^2\omega_{17}\omega_8\omega_5^3\omega_{18}\omega_{15} - 2\omega_6^3c_s^2v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} - 8\omega_6^3v_3v_2^2v_1\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} + 4\omega_6^2v_3c_s^2v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} +$
$2\omega_6^3c_s^4\omega_{20}\omega_8^2\omega_5^3\omega_{18} - 16\omega_6^3c_s^2v_2^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} - 2\omega_6^2v_3^2c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_{15} + 4\omega_6^2v_3^2v_2^2\omega_{20}\omega_8\omega_5^3\omega_{18}\omega_{15} - 4\omega_6^3v_3^2v_2^2\omega_{17}\omega_8\omega_5^3\omega_{18}\omega_{15} -$
$16\omega_6^2v_3^2c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{18}\omega_{15} - 4\omega_6^3v_3c_s^2v_1\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_{15} - 2\omega_6^3v_3^2v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} - 4\omega_6^3c_s^2v_2^2\omega_{20}\omega_{17}\omega_5^3\omega_{18}\omega_{15} +$
$2\omega_6^3c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} - 8\omega_6v_3^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 8\omega_6^3v_3c_s^2v_1\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} - 12\omega_6^3v_3^2c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} +$
$4\omega_6^2c_s^4\omega_{20}\omega_8\omega_5^3\omega_{18}\omega_{15} - 4c_s^2v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_{15} + 8\omega_6^3v_3v_2^2v_1\omega_{20}\omega_8\omega_5^3\omega_{18}\omega_{15} - 2\omega_6^3v_3^2v_2^2\omega_{20}\omega_8^2\omega_5^3\omega_{18} - 2\omega_6^2v_3^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} +$
$4\omega_6^3v_3^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} - 8\omega_6^3v_3c_s^2v_1\omega_{20}\omega_8^2\omega_5^2\omega_{18} - 4\omega_6^3c_s^4\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} - 4\omega_6^2c_s^4\omega_{20}\omega_8\omega_5^3\omega_{18}\omega_{15} + 4\omega_6^2v_3c_s^2v_1\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_{15} +$
$8\omega_6^3v_3c_s^2v_1\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{15} - 4\omega_6^3v_3^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 4\omega_6^3v_3^2v_2^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15} + 8\omega_6^3v_3v_2^2v_1\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} -$
$8\omega_6^2v_3c_s^2v_1\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 2\omega_6^2c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_{15} - 4\omega_6^2c_s^2v_2^2\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_{15} + 4\omega_6^2v_3^2c_s^2\omega_{20}\omega_{17}\omega_5^3\omega_{18}\omega_{15} - 4\omega_6^2c_s^2v_2^2\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_{15} +$
$4\omega_6^2v_3v_2^2v_1\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_{15} + 8\omega_6^3v_3v_2^2v_1\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 6\omega_6^3v_3^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15} + \omega_6^3v_3^2v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{18} - 4\omega_6^2v_3^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_{15} +$
$2\omega_6^3v_3v_2^2v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_{15} - 4\omega_6^3c_s^4\omega_{20}\omega_8^2\omega_5^2\omega_{18} + 2\omega_6^3v_3^2v_2^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_{15} + 8\omega_6^3v_3c_s^2v_1\omega_{20}\omega_8\omega_5^3\omega_{18}\omega_{15} - 4\omega_6^3v_3^2c_s^2\omega_{20}\omega_8\omega_5^3\omega_{18}\omega_{15} +$
$\omega_6^3c_s^2v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{18} - 2\omega_6^3c_s^4\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_{15} + 4\omega_6c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 4\omega_6^3v_3^2v_2^2\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} + 4\omega_6^3c_s^2v_2^2\omega_{20}\omega_{17}\omega_5^2\omega_{18}\omega_{15} -$
$2\omega_6^3c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 4\omega_6^3v_3c_s^2v_1\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 4\omega_6^3v_3c_s^2v_1\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 4\omega_6^2v_3^2c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} + 4\omega_6^2c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} -$
$4\omega_6^2c_s^4\omega_{17}\omega_8\omega_5^3\omega_{18}\omega_{15} - 4\omega_6^3c_s^4\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15} + 8\omega_6^2v_3c_s^2v_1\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_{15} + 8\omega_6^3v_3^2c_s^2\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{18}\omega_{15} - 8\omega_6^3v_3c_s^2v_1\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{18}\omega_{15} +$
$4\omega_6^2c_s^2v_2^2\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} + 2\omega_6^3v_3^2v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} - 4\omega_6^3v_3^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_{18}\omega_{15} - 2\omega_6^3v_3c_s^2v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + \omega_6^3v_3^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} +$
$4\omega_6^3v_3v_2^2v_1\omega_{20}\omega_8^2\omega_5^3\omega_{18} + 6\omega_6c_s^2v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_{15} + 4\omega_6^2c_s^2v_2^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} + 8\omega_6^3c_s^2v_2^2\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{18}\omega_{15} +$
$8\omega_6^3v_3v_2^2v_1\omega_{17}\omega_8\omega_5^3\omega_{18}\omega_{15} + 2\omega_6^2v_3^2v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_{15} + 8\omega_6^2v_3v_2^2v_1\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{18}\omega_{15} + 4\omega_6^3v_3v_2^2v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} -$
$2\omega_6^2c_s^2v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{18} + 4\omega_6^2v_3^2v_2^2\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 4\omega_6^3v_3c_s^2v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} - 2\omega_6^3v_3^2v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 2\omega_6^3c_s^4\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_{15} +$
$2\omega_6^3c_s^4\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 4\omega_6^2c_s^2v_2^2\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 2\omega_6^2v_3^2v_2^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_{15} + 4\omega_6^2v_3^2c_s^2\omega_{20}\omega_8\omega_5^3\omega_{18}\omega_{15} + 8\omega_6^3v_3c_s^2v_1\omega_{17}\omega_8\omega_5^3\omega_{18}\omega_{15} +$
$2\omega_6^2v_3^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 4\omega_6^3c_s^4\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} + 4\omega_6^2v_3^2v_2^2\omega_{17}\omega_8\omega_5^3\omega_{18}\omega_{15} + 4\omega_6^2c_s^2v_2^2\omega_{20}\omega_{17}\omega_5^3\omega_{18}\omega_{15} - 12\omega_6^2c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} +$
$4\omega_6^2c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 8\omega_6^3v_3v_2^2v_1\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{18}\omega_{15} + 2\omega_6^3v_3^2c_s^2\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_{15} - 4\omega_6^3v_3c_s^2v_1\omega_{20}\omega_8^2\omega_5^3\omega_{18}\omega_{15} - 4\omega_6^3v_3^2v_2^2\omega_{20}\omega_8\omega_5^3\omega_{18}\omega_{15} -$
$8\omega_6^3v_3v_2^2v_1\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15} + \omega_6^3v_3^2c_s^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{18} - 2\omega_6^3v_3c_s^2v_1\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{18} + 4\omega_6^3v_3^2c_s^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} - 2\omega_6^3c_s^4\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15} +$
$4\omega_6^2c_s^2v_2^2\omega_{17}\omega_8\omega_5^3\omega_{18}\omega_{15} + 4\omega_6^2c_s^2v_2^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} + 8\omega_6^2v_3c_s^2v_1\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{18}\omega_{15} - 8\omega_6^2v_3v_2^2v_1\omega_{20}\omega_8\omega_5^3\omega_{18}\omega_{15})\frac{\rho}{4\omega_6^3\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{18}\omega_{15}}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_y^2\mathrm{D}_z^2v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z^2v_1}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z^2v_1} =$
$(-2\omega_6c_s^2v_2^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15} - 4\omega_6c_s^4\omega_{20}\omega_5^2\omega_{18}\omega_{15} - 8\omega_6^2v_3c_s^2v_1\omega_{17}\omega_5\omega_{18}\omega_{15} - 2\omega_6^2v_3^2c_s^2\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} + 4\omega_6c_s^4\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} +$
$2\omega_6^2c_s^4\omega_{20}\omega_8\omega_5^2\omega_{18} + 4\omega_6^2v_3v_2^2v_1\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18} - 4\omega_6v_3c_s^2v_1\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} - 2\omega_6v_3^2v_2^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15} + 4\omega_6^2c_s^2v_2^2\omega_{20}\omega_5\omega_{18}\omega_{15} +$

$4\omega_6 c_s^2 v_2^2 \omega_{20}\omega_5^2\omega_{18}\omega_{15} + 4\omega_6^2 v_3^2 c_s^2 \omega_{20}\omega_8\omega_5\omega_{18} - 4\omega_6^2 v_3^2 c_s^2 \omega_{20}\omega_{17}\omega_5\omega_{18}\omega_{15} + 4\omega_6^2 v_3^2 v_2^2 \omega_{20}\omega_5\omega_{18}\omega_{15} + 2\omega_6^2 v_3^2 c_s^2 \omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15} +$
$4\omega_6 v_3^2 v_2^2 \omega_{20}\omega_5^2\omega_{18}\omega_{15} + \omega_6^2 v_3^2 v_2^2 \omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18} - 8\omega_6 v_3 v_2^2 v_1 \omega_{20}\omega_5^2\omega_{18}\omega_{15} + 8\omega_6^2 v_3 c_s^2 v_1 \omega_{20}\omega_5^2\omega_{18}\omega_{15} + 4\omega_6^2 c_s^4 \omega_{20}\omega_8\omega_5\omega_{18}\omega_{15} -$
$12\omega_6 c_s^4 \omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} + 2\omega_6^2 v_3 v_2^2 v_1 \omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} - 4\omega_6^2 c_s^4 \omega_{20}\omega_{17}\omega_5^2\omega_{18}\omega_{15} + 2\omega_6 c_s^4 \omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15} - 4\omega_6^2 c_s^2 v_2^2 \omega_{17}\omega_5^2\omega_{18}\omega_{15} -$
$2\omega_6^2 v_3^2 v_2^2 \omega_{17}\omega_8\omega_5^2\omega_{15} + \omega_6^2 c_s^2 v_2^2 \omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18} - 4\omega_6^2 v_3^2 v_2^2 \omega_{17}\omega_5^2\omega_{18}\omega_{15} - 8\omega_6^2 v_3 v_2^2 v_1 \omega_{20}\omega_8\omega_5\omega_{18} - 2\omega_6^2 c_s^4 \omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} +$
$4\omega_6^2 v_3 c_s^2 v_1 \omega_{20}\omega_{17}\omega_8\omega_5\omega_{18} - 2\omega_6^2 c_s^2 v_2^2 \omega_{17}\omega_8\omega_5^2\omega_{15} + \omega_6^2 v_3^2 v_2^2 \omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} + 4\omega_6^2 v_3 c_s^2 v_1 \omega_{20}\omega_8\omega_5^2\omega_{18} + 4c_s^4 \omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} -$
$4\omega_6 v_3^2 c_s^2 \omega_{20}\omega_{17}\omega_5^2\omega_{18}\omega_{15} - 4\omega_6^2 c_s^4 \omega_{17}\omega_5\omega_{18}\omega_{15} - 4\omega_6^2 v_3 v_2^2 v_1 \omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15} - 4\omega_6^2 v_3^2 v_2^2 \omega_{20}\omega_8\omega_5\omega_{18}\omega_{15} + 2\omega_6^2 v_3 c_s^2 v_1 \omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} +$
$2\omega_6^2 c_s^2 v_2^2 \omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} + 8\omega_6^2 v_3 v_2^2 v_1 \omega_{20}\omega_{17}\omega_5\omega_{18}\omega_{15} + 4\omega_6^2 v_3^2 v_2^2 \omega_{20}\omega_{17}\omega_5^2\omega_{18}\omega_{15} - 2\omega_6 v_3^2 c_s^2 \omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} + 2\omega_6^2 v_3^2 c_s^2 \omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} -$
$4\omega_6 v_3^2 c_s^2 \omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} + 4\omega_6^2 v_3 v_2^2 v_1 \omega_{17}\omega_8\omega_5^2\omega_{15} + 4\omega_6^2 c_s^2 v_2^2 \omega_{20}\omega_8\omega_5\omega_{18} + 4\omega_6 v_3^2 c_s^2 \omega_{20}\omega_5^2\omega_{18}\omega_{15} + \omega_6^2 c_s^2 v_2^2 \omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} -$
$8\omega_6 v_3 c_s^2 v_1 \omega_{17}\omega_5^2\omega_{18}\omega_{15} + 4\omega_6 v_3 c_s^2 v_1 \omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15} + 4\omega_6^2 v_3^2 c_s^2 \omega_{20}\omega_5\omega_{18}\omega_{15} + 4\omega_6^2 v_3^2 v_2^2 \omega_{20}\omega_8\omega_5\omega_{18} - 2\omega_6^2 v_3^2 c_s^2 \omega_{20}\omega_{17}\omega_8\omega_5\omega_{18} +$
$2\omega_6^2 c_s^2 v_2^2 \omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} - 4\omega_6^2 c_s^2 v_2^2 \omega_{20}\omega_8\omega_5\omega_{18}\omega_{15} + 8\omega_6^2 v_3 v_2^2 v_1 \omega_{17}\omega_5^2\omega_{18}\omega_{15} + 2\omega_6^2 v_3^2 v_2^2 \omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} + 4\omega_6^2 v_3 v_2^2 v_1 \omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} -$
$8\omega_6 v_3 c_s^2 v_1 \omega_{17}\omega_8\omega_5^2\omega_{15} + 4\omega_6^2 c_s^2 v_2^2 \omega_{20}\omega_{17}\omega_5^2\omega_{18}\omega_{15} + 4\omega_6 v_3 v_2^2 v_1 \omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15} + 4\omega_6^2 c_s^4 \omega_{20}\omega_5^2\omega_{18}\omega_{15} + 4\omega_6 c_s^4 \omega_{20}\omega_{17}\omega_8\omega_5\omega_{18} +$
$4\omega_6^2 v_3 c_s^2 v_1 \omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} - 4\omega_6 v_3 v_2^2 v_1 \omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} - 4\omega_6^2 v_3^2 c_s^2 \omega_{17}\omega_5^2\omega_{18}\omega_{15} - 4\omega_6^2 v_3 c_s^2 v_1 \omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15} - 2\omega_6^2 v_3^2 c_s^2 \omega_{17}\omega_8\omega_5^2\omega_{15} -$
$2\omega_6^2 c_s^4 \omega_{20}\omega_{17}\omega_8\omega_{18}\omega_{15} - 8\omega_6^2 v_3 v_2^2 v_1 \omega_{20}\omega_5\omega_{18}\omega_{15} + 8\omega_6^2 v_3 c_s^2 v_1 \omega_{20}\omega_{17}\omega_5\omega_{18}\omega_{15} + 2\omega_6^2 v_3^2 v_2^2 \omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} - 2\omega_6^2 c_s^2 v_2^2 \omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} -$
$8\omega_6^2 v_3 v_2^2 v_1 \omega_{20}\omega_{17}\omega_5^2\omega_{18}\omega_{15} - 4\omega_6^2 v_3^2 v_2^2 \omega_{20}\omega_{17}\omega_5\omega_{18}\omega_{15} - \omega_6^2 v_3^2 c_s^2 \omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} + 8\omega_6^2 v_3 v_2^2 v_1 \omega_{20}\omega_8\omega_5\omega_{18}\omega_{15} + 2\omega_6^2 v_3^2 v_2^2 \omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15} +$
$2\omega_6^2 c_s^4 \omega_{17}\omega_8\omega_5^2\omega_{15} - 4\omega_6^2 v_3 c_s^2 v_1 \omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} - 2\omega_6 v_3^2 c_s^2 \omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15} + 4\omega_6^2 c_s^4 \omega_{17}\omega_5^2\omega_{18}\omega_{15} - 2c_s^4 \omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} -$
$2\omega_6^2 v_3 v_2^2 v_1 \omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} + 8\omega_6 v_3 c_s^2 v_1 \omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} - 2\omega_6 c_s^4 \omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18} + 4\omega_6 v_3 c_s^2 v_1 \omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} - 8\omega_6^2 v_3 v_2^2 v_1 \omega_{17}\omega_5\omega_{18}\omega_{15} -$
$2\omega_6^2 v_3^2 v_2^2 \omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} - 4\omega_6^2 v_3 v_2^2 v_1 \omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} - 4\omega_6^2 c_s^2 v_2^2 \omega_{20}\omega_{17}\omega_5\omega_{18}\omega_{15} + 2\omega_6^2 c_s^2 v_2^2 \omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15} - \omega_6^2 c_s^2 v_2^2 \omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} -$
$4\omega_6^2 v_3^2 c_s^2 \omega_{20}\omega_5^2\omega_{18}\omega_{15} + 8\omega_6 v_3 c_s^2 v_1 \omega_{20}\omega_{17}\omega_5^2\omega_{18}\omega_{15} + 2\omega_6 v_3^2 v_2^2 \omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} + 4\omega_6 v_3 v_2^2 v_1 \omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} - 4\omega_6^2 v_3 c_s^2 v_1 \omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} -$
$8\omega_6^2 v_3 c_s^2 v_1 \omega_{20}\omega_8\omega_5\omega_{18} - 4\omega_6^2 c_s^4 \omega_{20}\omega_5\omega_{18}\omega_{15} + 8\omega_6 v_3 v_2^2 v_1 \omega_{20}\omega_{17}\omega_5^2\omega_{18}\omega_{15} + 2\omega_6 v_3^2 c_s^2 \omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} + 8\omega_6^2 v_3 v_2^2 v_1 \omega_{20}\omega_5^2\omega_{18}\omega_{15} +$
$4\omega_6 c_s^4 \omega_{20}\omega_{17}\omega_8\omega_{18}\omega_{15} + 4\omega_6 v_3^2 c_s^2 \omega_{17}\omega_8\omega_5^2\omega_{15} - 8\omega_6^2 v_3 c_s^2 v_1 \omega_{20}\omega_{17}\omega_5^2\omega_{18}\omega_{15} - \omega_6^2 v_3^2 v_2^2 \omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} + 8\omega_6^2 v_3 c_s^2 v_1 \omega_{20}\omega_8\omega_5\omega_{18}\omega_{15} -$
$2\omega_6^2 c_s^2 v_2^2 \omega_{20}\omega_8\omega_5^2\omega_{18} + 2\omega_6 c_s^2 v_2^2 \omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} + 4\omega_6^2 v_3^2 c_s^2 \omega_{17}\omega_5\omega_{18}\omega_{15} + 2\omega_6^2 c_s^4 \omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} + 4\omega_6 v_3^2 c_s^2 \omega_{17}\omega_5^2\omega_{18}\omega_{15} -$
$2\omega_6^2 v_3 c_s^2 v_1 \omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} + \omega_6^2 v_3^2 c_s^2 \omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18} - 2\omega_6^2 v_3^2 v_2^2 \omega_{20}\omega_8\omega_5^2\omega_{18} - 8\omega_6 v_3 c_s^2 v_1 \omega_{20}\omega_5^2\omega_{18}\omega_{15} + 8\omega_6 v_3 v_2^2 v_1 \omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} -$
$2\omega_6^2 v_3^2 v_2^2 \omega_{20}\omega_{17}\omega_8\omega_5\omega_{18} - 2\omega_6 c_s^2 v_2^2 \omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} + 8\omega_6^2 v_3 c_s^2 v_1 \omega_{17}\omega_5^2\omega_{18}\omega_{15} + 2\omega_6^2 v_3^2 c_s^2 \omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} - 8\omega_6 v_3 v_2^2 v_1 \omega_{17}\omega_8\omega_5^2\omega_{15} -$
$2\omega_6^2 c_s^4 \omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 4\omega_6 v_3^2 v_2^2 \omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} + 4\omega_6^2 v_3 c_s^2 v_1 \omega_{17}\omega_8\omega_5^2\omega_{15} - 4\omega_6 c_s^2 v_2^2 \omega_{20}\omega_{17}\omega_5^2\omega_{18}\omega_{15} - 8\omega_6 v_3 v_2^2 v_1 \omega_{17}\omega_5^2\omega_{18}\omega_{15} -$
$2\omega_6^2 c_s^2 v_2^2 \omega_{20}\omega_{17}\omega_8\omega_5\omega_{18} - 4\omega_6^2 v_3^2 c_s^2 \omega_{20}\omega_8\omega_5\omega_{18}\omega_{15} + 4\omega_6^2 v_3^2 c_s^2 \omega_{20}\omega_{17}\omega_5^2\omega_{18}\omega_{15} - 2\omega_6 v_3^2 v_2^2 \omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} - 4\omega_6^2 v_3^2 v_2^2 \omega_{20}\omega_5^2\omega_{18}\omega_{15} +$
$\omega_6^2 v_3^2 c_s^2 \omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} + 4\omega_6^2 v_3 v_2^2 v_1 \omega_{20}\omega_8\omega_5^2\omega_{18} - 2\omega_6^2 v_3 c_s^2 v_1 \omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18} - 4\omega_6 c_s^2 v_2^2 \omega_{17}\omega_8\omega_5^2\omega_{15} - 4\omega_6^2 v_3^2 v_2^2 \omega_{20}\omega_{17}\omega_5^2\omega_{18}\omega_{15} -$
$4\omega_6^2 c_s^2 v_2^2 \omega_{20}\omega_5^2\omega_{18}\omega_{15} + 4\omega_6^2 c_s^4 \omega_{20}\omega_{17}\omega_5\omega_{18}\omega_{15} - 2\omega_6^2 c_s^4 \omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15} - 8\omega_6^2 v_3 c_s^2 v_1 \omega_{20}\omega_5\omega_{18}\omega_{15} -$
$4\omega_6 v_3 v_2^2 v_1 \omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} + 2\omega_6 c_s^4 \omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15} + 4\omega_6^2 c_s^4 \omega_{20}\omega_{17}\omega_5^2\omega_{18}\omega_{15} - 4\omega_6^2 c_s^4 \omega_{20}\omega_5\omega_{18}\omega_{15} + 2\omega_6^2 v_3 c_s^2 v_1 \omega_{20}\omega_8\omega_5\omega_{18} -$
$4\omega_6^2 v_3^2 c_s^2 \omega_{17}\omega_5^2\omega_{18}\omega_{15} + 4\omega_6^2 v_3^2 v_2^2 \omega_{17}\omega_5\omega_{18}\omega_{15} + 4\omega_6 c_s^2 v_2^2 \omega_{17}\omega_5^2\omega_{18}\omega_{15} + 4\omega_6^2 v_3^2 v_2^2 \omega_{17}\omega_8\omega_5^2\omega_{15} + 4\omega_6^2 c_s^2 v_2^2 \omega_{17}\omega_5\omega_{18}\omega_{15}) \frac{\rho}{4\omega_6^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15}}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_1} = C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_1}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_1} = (-\omega_2^2 + 2\omega_1\omega_2^2 - 2\omega_1\omega_2 - \omega_{13}\omega_1\omega_2 - \omega_1^2 + \omega_{13}\omega_2 + 2\omega_1^2\omega_2 - \omega_1^2\omega_2^2 + \omega_{13}\omega_1) \frac{c_s^4\rho}{\omega_{13}\omega_1^2\omega_2^2}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_1} = (-3\omega_3^2 v_2^2\omega_4\omega_1^3\omega_5 + 8\omega_3 c_s^2\omega_4^2\omega_1^2\omega_5 - 18c_s^2 v_2^2\omega_4^2\omega_1^2\omega_5 + 12\omega_3 c_s^2 v_2^2\omega_4^2\omega_1\omega_5 + 6\omega_3 v_3^4\omega_4^2\omega_1^2\omega_5 - 3v_2^2\omega_4^2\omega_1^3\omega_5 - 12\omega_3^2 v_3^2 c_s^2\omega_4\omega_1\omega_5 -$
$32\omega_3^2 c_s^4\omega_4^2\omega_1 + 6\omega_3^2 c_s^2 v_2^2\omega_4\omega_1^3\omega_5 - 6\omega_3 v_3^2 c_s^2\omega_4^2\omega_1^3\omega_5 + 8\omega_3^2 c_s^2\omega_4\omega_1\omega_5 + 6\omega_3^2 v_3^4\omega_1^2\omega_5 - 3\omega_3^2 v_3^2\omega_4\omega_1^3\omega_5 - 3v_3^2\omega_4^2\omega_1^3\omega_5 - 2\omega_3^2 c_s^4\omega_4\omega_1^3\omega_5 +$
$18\omega_3^2 v_3^2 c_s^2\omega_1^2\omega_5 + 6\omega_3 v_2^4\omega_4^2\omega_1^2\omega_5 + 3\omega_3^2 v_3^2\omega_1^3\omega_5 + 6\omega_3 v_3^2 c_s^2\omega_4^2\omega_1^2\omega_5 - 6\omega_3^2 c_s^2 v_2^2\omega_4\omega_1^2\omega_5 - 3\omega_3 v_3^4\omega_4^2\omega_1^3\omega_5 - 8\omega_3^2 c_s^4\omega_4^2\omega_1^3 + 6v_2^2\omega_4^2\omega_1^2\omega_5 -$
$2\omega_3 c_s^2\omega_4^2\omega_1^3\omega_5 + 6\omega_3^2 v_2^2\omega_4\omega_1^2\omega_5 - 8\omega_3^2 c_s^4\omega_4^2\omega_1\omega_5 + 9c_s^2 v_2^2\omega_4^2\omega_1^3\omega_5 - 6\omega_3^2 v_3^2\omega_1^2\omega_5 + 8\omega_3 c_s^4\omega_4^2\omega_1\omega_5 + 6v_3^2\omega_4^2\omega_1^2\omega_5 - 9\omega_3^2 v_3^2 c_s^2\omega_1^2\omega_5 -$
$3\omega_3 v_2^4\omega_4^2\omega_1^3\omega_5 + 8\omega_3^2 c_s^4\omega_4\omega_1^2\omega_5 - 3\omega_3^2 v_3^4\omega_1^3\omega_5 + 32\omega_3^2 c_s^4\omega_4^2\omega_1^2 + 6\omega_3^2 v_3^2\omega_4\omega_1^2\omega_5 - 6\omega_3 v_3^2\omega_4^2\omega_1^2\omega_5 + 3v_2^4\omega_4^2\omega_1^3\omega_5 - 8\omega_3 c_s^4\omega_4^2\omega_1^2\omega_5 +$
$3\omega_3^2 v_2^2\omega_4\omega_1^3\omega_5 - 8\omega_3^2 c_s^4\omega_4\omega_1\omega_5 + 16\omega_3^2 c_s^4\omega_4^2\omega_5 + 3v_3^4\omega_4^2\omega_1^3\omega_5 - 6\omega_3 v_2^2\omega_4^2\omega_1^2\omega_5 - 18v_3^2 c_s^2\omega_4^2\omega_1^2\omega_5 + 12\omega_3 v_3^2 c_s^2\omega_4^2\omega_1\omega_5 - 9\omega_3^2 c_s^2 v_2^2\omega_1^3\omega_5 +$
$2\omega_3^2 c_s^2\omega_4\omega_1^3\omega_5 + 3\omega_3^2 v_2^2\omega_1^3\omega_5 - 12\omega_3^2 c_s^2 v_2^2\omega_4\omega_1\omega_5 + 3\omega_3^2 v_3^4\omega_4\omega_1^3\omega_5 + 6\omega_3^2 v_3^2 c_s^2\omega_4\omega_1^3\omega_5 + 6\omega_3^2 v_2^4\omega_4^2\omega_1^2\omega_5 - 6\omega_3 c_s^2 v_2^2\omega_4^2\omega_1^2\omega_5 - 6\omega_3^2 v_2^4\omega_4\omega_1^2\omega_5 +$
$2\omega_3 c_s^4\omega_4^2\omega_1^3\omega_5 + 3\omega_3 v_3^2\omega_4^2\omega_1^3\omega_5 - 6v_2^4\omega_4^2\omega_1^2\omega_5 + 6\omega_3 c_s^2 v_2^2\omega_4^2\omega_1^2\omega_5 - 8\omega_3 c_s^2\omega_4^2\omega_1\omega_5 - 3\omega_3^2 v_2^4\omega_1^3\omega_5 - 6\omega_3^2 v_3^2 c_s^2\omega_4\omega_1^2\omega_5 - 6\omega_3^2 v_3^4\omega_4\omega_1^2\omega_5 -$
$6\omega_3^2 v_2^2\omega_1^2\omega_5 - 6v_3^4\omega_4^2\omega_1^2\omega_5 - 8\omega_3^2 c_s^2\omega_4\omega_1^2\omega_5 + 18\omega_3^2 c_s^2 v_2^2\omega_1^2\omega_5 + 9v_3^2 c_s^2\omega_4^2\omega_1^3\omega_5 + 3\omega_3 v_2^2\omega_4^2\omega_1^3\omega_5) \frac{\rho}{8\omega_3^2\omega_4^2\omega_1^3\omega_5}$

coefficient $C^{(1)}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_2}$ **at** $\frac{\partial^4 v_2}{\partial x_2^2 \partial x_3^2}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_2} = (-36v_3^2 v_1\omega + 36v_3 v_1^2\omega - v_3^2 v_1\omega^3 - 14v_3 v_1^2\omega^2 - 24v_3 v_1^2 + v_3 v_1^2\omega^3 + 14v_3^2 v_1\omega^2 + 24c_s^2 v_1 - 14v_3 c_s^2\omega^2 - 24v_3 c_s^2 - c_s^2 v_1\omega^3 +$
$v_3 c_s^2\omega^3 + 14c_s^2 v_1\omega^2 - 36c_s^2 v_1\omega + 24v_3^2 v_1 + 36v_3 c_s^2\omega) \frac{v_2\rho}{2\omega^3}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_2} = (4\omega_6^2 v_3\omega_{16} v_1^2\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} + 2\omega_6^2 v_3^2\omega_{16} v_1\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15} - 4\omega_6 v_3^2\omega_{16} v_1\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} +$
$2\omega_6^2 v_3 c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18} + \omega_6^2 c_s^2\omega_{16} v_1\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} + 2\omega_6^2 v_3 c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15} +$
$4\omega_6 c_s^2\omega_{16} v_1\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} + 2\omega_6 v_3\omega_{16} v_1^2\omega_{10}\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{15} - 8\omega_6 c_s^2\omega_{16} v_1\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} -$
$4\omega_6^2 v_3 c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_8^2\omega_5\omega_{18} - 2\omega_6^2 v_3 c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 2\omega_6 c_s^2\omega_{16} v_1\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_5^2\omega_{18}\omega_{15} -$
$4\omega_6 v_3 c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_6^2 c_s^2\omega_{16} v_1\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15} - 3\omega_6^2 c_s^2\omega_{16} v_1\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} +$
$2\omega_6^2 c_s^2\omega_{16} v_1\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 2\omega_6^2 v_3\omega_{16} v_1^2\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} + \omega_6^2 v_3 c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} -$
$2\omega_6 c_s^2 v_1\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} - 4\omega_6^2 v_3\omega_{16} v_1^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} - 4\omega_6 c_s^2\omega_{16} v_1\omega_{10}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} -$
$4\omega_6^2 v_3^2\omega_{16} v_1\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} - 4\omega_6 v_3 c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15} - 4\omega_6 v_3^2\omega_{16} v_1\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} -$
$\omega_6^2 v_3\omega_{16} v_1^2\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_6 v_3\omega_{16} v_1^2\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 4\omega_6^2 v_3^2\omega_{16} v_1\omega_{10}\omega_7^2\omega_{20}\omega_8\omega_5\omega_{18}\omega_{15} +$

$$4\omega_6^2 v_3\omega_{16}v_1^2\omega_{10}\omega_7^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15} + 2\omega_6 v_3 c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_6 v_3 c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} +$$
$$4\omega_6 v_3^2\omega_{16}v_1\omega_{10}\omega_7^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15} + 4\omega_6 c_s^2\omega_{16}v_1\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} - 2\omega_6^2 v_3^2\omega_{16}v_1\omega_{10}\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} -$$
$$4\omega_6^2 v_3\omega_{16}v_1^2\omega_{10}\omega_7^2\omega_{20}\omega_8^2\omega_5\omega_{18} - 2\omega_6 v_3^2\omega_{16}v_1\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 4\omega_6^2 c_s^2 v_1\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15} - 4\omega_6^2 v_3 c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_8\omega_5\omega_{18}\omega_{15} -$$
$$4\omega_6 v_3\omega_{16}v_1^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} + 4\omega_6^2 v_3^2\omega_{16}v_1\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} - 4\omega_6^2 c_s^2\omega_{16}v_1\omega_{10}\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15} -$$
$$4\omega_6^2 c_s^2\omega_{16}v_1\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8^2\omega_{18}\omega_{15} + \omega_6^2 v_3\omega_{16}v_1^2\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} - \omega_6^2 v_3\omega_{16}v_1^2\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} +$$
$$4\omega_6^2 v_3 c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} - 4\omega_6^2 c_s^2 v_1\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15} - 4\omega_6^2 c_s^2 v_1\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} +$$
$$2\omega_6^2 c_s^2\omega_{16}v_1\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_5\omega_{18}\omega_{15} + 2\omega_6^2 v_3^2\omega_{16}v_1\omega_{10}\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{15} - 2\omega_6^2 c_s^2\omega_{16}v_1\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} +$$
$$\omega_6^2 c_s^2\omega_{16}v_1\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 4\omega_6^2 v_3\omega_{16}v_1^2\omega_{10}\omega_7^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_{15} + 4\omega_6^2 c_s^2\omega_{16}v_1\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} +$$
$$4\omega_6 v_3 c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 2\omega_6^2 c_s^2\omega_{16}v_1\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} + 4\omega_6^2 v_3 c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} +$$
$$6\omega_6^2 c_s^2\omega_{16}v_1\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} + 2\omega_6^2 c_s^2\omega_{16}v_1\omega_7\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} - 2\omega_6^2 v_3\omega_{16}v_1^2\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} +$$
$$2\omega_6^2 v_3 c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_6^2 v_3^2\omega_{16}v_1\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15} - 4\omega_6 v_3\omega_{16}v_1^2\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_6^2 v_3^2\omega_{16}v_1\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18} -$$
$$2\omega_6^2 c_s^2 v_1\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 2\omega_6 v_3\omega_{16}v_1^2\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 4\omega_6^2 v_3 c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15} +$$
$$4\omega_6^2 c_s^2\omega_{16}v_1\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18} - \omega_6^2 v_3 c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_6^2 c_s^2\omega_{16}v_1\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 4\omega_6 v_3\omega_{16}v_1^2\omega_{10}\omega_7^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15} -$$
$$2\omega_6 c_s^2\omega_{16}v_1\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15} + 2\omega_6 c_s^2\omega_{16}v_1\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 4\omega_6^2 c_s^2 v_1\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15} -$$
$$4\omega_6^2 v_3 c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} - 4\omega_6 c_s^2\omega_{16}v_1\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 3\omega_6^2 c_s^2 v_1\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} -$$
$$2\omega_6^2 v_3\omega_{16}v_1^2\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15} + \omega_6^2 v_3^2\omega_{16}v_1\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} + 4\omega_6 v_3^2\omega_{16}v_1\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$$
$$4\omega_6^2 c_s^2\omega_{16}v_1\omega_{10}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} - 4\omega_6^2 v_3^2\omega_{16}v_1\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} + 4\omega_6 v_3^2\omega_{16}v_1\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} -$$
$$4\omega_6^2 v_3^2\omega_{16}v_1\omega_{10}\omega_7^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_{15} - 2\omega_6^2 v_3\omega_{16}v_1^2\omega_{10}\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 2\omega_6 v_3 c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{15} +$$
$$2\omega_6 v_3^2\omega_{16}v_1\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 4\omega_6^2 v_3^2\omega_{16}v_1\omega_{10}\omega_7^2\omega_{20}\omega_8^2\omega_5\omega_{18} + 2\omega_6^2 v_3\omega_{16}v_1^2\omega_{10}\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} -$$
$$2\omega_6^2 c_s^2\omega_{16}v_1\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_5^2\omega_{18}\omega_{15} + 4\omega_6 v_3\omega_{16}v_1^2\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} + 2\omega_6^2 v_3\omega_{16}v_1^2\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} +$$
$$2\omega_6^2 v_3\omega_{16}v_1^2\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15} + 2\omega_6^2 v_3^2\omega_{16}v_1\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 2c_s^2\omega_{16}v_1\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} -$$
$$4\omega_6^2 c_s^2\omega_{16}v_1\omega_7\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15} - 10\omega_6^2 c_s^2\omega_{16}v_1\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} - 2\omega_6^2 c_s^2\omega_{16}v_1\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} -$$
$$4\omega_6^2 c_s^2\omega_{16}v_1\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} - 4\omega_6^2 v_3 c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} - 2\omega_6^2 v_3 c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} -$$
$$2\omega_6^2 v_3^2\omega_{16}v_1\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} - \omega_6^2 v_3^2\omega_{16}v_1\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 4\omega_6 v_3\omega_{16}v_1^2\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} -$$
$$4\omega_6^2 v_3\omega_{16}v_1^2\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15} + 4\omega_6 c_s^2\omega_{16}v_1\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 4\omega_6^2 v_3 c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_8^2\omega_5\omega_{18}\omega_{15} +$$
$$2\omega_6 c_s^2\omega_{16}v_1\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} - 2\omega_6 v_3^2\omega_{16}v_1\omega_{10}\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 4\omega_6 v_3 c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} +$$
$$2\omega_6 c_s^2\omega_{16}v_1\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} - 2\omega_6 c_s^2\omega_{16}v_1\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 4\omega_6^2 v_3\omega_{16}v_1^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} +$$
$$4\omega_6^2 v_3^2\omega_{16}v_1\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} - 2\omega_6^2 c_s^2\omega_{16}v_1\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15} + 6\omega_6^2 c_s^2\omega_{16}v_1\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15} -$$
$$4\omega_6 v_3 c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{18}\omega_{15} - 2\omega_6^2 v_3 c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18}\omega_{15} - 2c_s^2\omega_{16}v_1\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} +$$
$$4\omega_6 c_s^2 v_1\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} - 2\omega_6^2 c_s^2\omega_{16}v_1\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18} - \omega_6^2 c_s^2\omega_{16}v_1\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} -$$
$$\omega_6^2 v_3 c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} + 2\omega_6^2 v_3 c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} - 4\omega_6^2 v_3^2\omega_{16}v_1\omega_{10}\omega_7^2\omega_{20}\omega_8\omega_5^2\omega_{18}\omega_{15} -$$
$$4\omega_6^2 v_3\omega_{16}v_1^2\omega_{10}\omega_7^2\omega_{20}\omega_8\omega_5\omega_{18}\omega_{15} + 4\omega_6^2 c_s^2\omega_{16}v_1\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8\omega_{18}\omega_{15} + \omega_6^2 v_3^2\omega_{16}v_1\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15})\frac{v_2\rho}{2\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15}}$$

$$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_2} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_2}$$

$$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_2} = (4v_3 v_1^2\omega_{20}\omega_{17}\omega_5\omega_{18}\omega_{15} + 2\omega_6 v_3 v_1^2\omega_{20}\omega_{17}\omega_8\omega_{18} - \omega_6 v_3 c_s^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18} + 2c_s^2 v_1\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} + 4\omega_6 v_3 c_s^2\omega_{20}\omega_{17}\omega_{18}\omega_{15} +$$
$$2v_3 c_s^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_6 v_3^2 v_1\omega_{20}\omega_8\omega_5\omega_{18}\omega_{15} - 4v_3 v_1^2\omega_{17}\omega_8\omega_5\omega_{15} - 4\omega_6 v_3 v_1^2\omega_{20}\omega_{18}\omega_{15} + 4v_3 v_1^2\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} + 4\omega_6 v_3 c_s^2\omega_{17}\omega_5\omega_{18}\omega_{15} +$$
$$2\omega_6 v_3 v_1^2\omega_{17}\omega_8\omega_{18}\omega_{15} + 2\omega_6 c_s^2 v_1\omega_{20}\omega_8\omega_5\omega_{18}\omega_{15} - 2v_3 c_s^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} + 2v_3^2 v_1\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} + 2v_3 v_1^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} -$$
$$\omega_6 v_3 v_1^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18} + 4\omega_6 c_s^2 v_1\omega_{20}\omega_8\omega_{18} + 4\omega_6 v_3^2 v_1\omega_{20}\omega_8\omega_{18} + 2\omega_6 v_3 v_1^2\omega_{20}\omega_8\omega_5\omega_{18} + 4v_3 c_s^2\omega_{20}\omega_{17}\omega_5\omega_{18}\omega_{15} - 4\omega_6 c_s^2 v_1\omega_{20}\omega_5\omega_{18}\omega_{15} +$$
$$2\omega_6 v_3 c_s^2\omega_{17}\omega_8\omega_5\omega_{15} - 4v_3 v_1^2\omega_{17}\omega_5\omega_{18}\omega_{15} - 4\omega_6 v_3^2 v_1\omega_{20}\omega_5\omega_{18}\omega_{15} + 4v_3 c_s^2\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} - 4\omega_6 v_3 c_s^2\omega_{20}\omega_{17}\omega_5\omega_{18}\omega_{15} +$$
$$4v_3^2 v_1\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_6 c_s^2 v_1\omega_{17}\omega_8\omega_{18}\omega_{15} + 4\omega_6 c_s^2 v_1\omega_{17}\omega_{18}\omega_{15} - \omega_6 v_3 v_1^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_6 c_s^2 v_1\omega_{20}\omega_{17}\omega_8\omega_{18}\omega_{15} -$$
$$4v_3 c_s^2\omega_{20}\omega_5\omega_{18}\omega_{15} - 2\omega_6 v_3^2 v_1\omega_{17}\omega_8\omega_{18}\omega_{15} + 4c_s^2 v_1\omega_{17}\omega_8\omega_5\omega_{15} + 4\omega_6 v_3^2 v_1\omega_{17}\omega_{18}\omega_{15} - 2\omega_6 v_3^2 v_1\omega_{20}\omega_{17}\omega_8\omega_{18} - 2\omega_6 v_3 c_s^2\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} -$$
$$4\omega_6 v_3 c_s^2\omega_{20}\omega_{18}\omega_{15} - 2\omega_6 c_s^2 v_1\omega_{20}\omega_{17}\omega_8\omega_{18} + 2\omega_6 v_3^2 v_1\omega_{20}\omega_{17}\omega_8\omega_{18}\omega_{15} + 4v_3^2 v_1\omega_{17}\omega_5\omega_{18}\omega_{15} - \omega_6 v_3 c_s^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} +$$
$$4\omega_6 v_3 c_s^2\omega_{20}\omega_8\omega_{18}\omega_{15} - 2v_3^2 v_1\omega_{20}\omega_8\omega_5\omega_{18}\omega_{15} + 4c_s^2 v_1\omega_{17}\omega_5\omega_{18}\omega_{15} - 4\omega_6 v_3 v_1^2\omega_{20}\omega_{17}\omega_5\omega_{18}\omega_{15} + 4\omega_6 v_3 v_1^2\omega_{20}\omega_5\omega_{18}\omega_{15} -$$
$$2\omega_6 c_s^2 v_1\omega_{20}\omega_8\omega_5\omega_{18} - 2c_s^2 v_1\omega_{20}\omega_8\omega_5\omega_{18}\omega_{15} - 2\omega_6 v_3 v_1^2\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} - 2\omega_6 v_3^2 v_1\omega_{20}\omega_8\omega_5\omega_{18} - 2v_3 v_1^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} +$$
$$4\omega_6 v_3 v_1^2\omega_{17}\omega_5\omega_{18}\omega_{15} + 4c_s^2 v_1\omega_{20}\omega_5\omega_{18}\omega_{15} - 4\omega_6 v_3 v_1^2\omega_{20}\omega_8\omega_{18} - 4v_3 c_s^2\omega_{17}\omega_8\omega_5\omega_{15} + \omega_6 v_3^2 v_1\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18} - 2v_3^2 v_1\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} -$$
$$2\omega_6 v_3 c_s^2\omega_{20}\omega_8\omega_5\omega_{18}\omega_{15} + 4v_3^2 v_1\omega_{20}\omega_5\omega_{18}\omega_{15} + 2\omega_6 v_3 c_s^2\omega_{17}\omega_8\omega_{18}\omega_{15} + 4\omega_6 v_3 v_1^2\omega_{20}\omega_{17}\omega_{18}\omega_{15} + 2\omega_6 v_3 c_s^2\omega_{20}\omega_{17}\omega_8\omega_{18} +$$
$$\omega_6 c_s^2 v_1\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18} - 2c_s^2 v_1\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 4v_3 c_s^2\omega_{17}\omega_5\omega_{18}\omega_{15} - 4\omega_6 v_3^2 v_1\omega_{20}\omega_8\omega_{18}\omega_{15} - 2\omega_6 v_3 v_1^2\omega_{20}\omega_8\omega_5\omega_{18}\omega_{15} +$$
$$2\omega_6 v_3 v_1^2\omega_{17}\omega_8\omega_5\omega_{15} - 4\omega_6 c_s^2 v_1\omega_{20}\omega_8\omega_{18}\omega_{15} + \omega_6 v_3 v_1^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} - 4c_s^2 v_1\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} - 4\omega_6 v_3 c_s^2\omega_{17}\omega_{18}\omega_{15} -$$
$$4v_3^2 v_1\omega_{20}\omega_{17}\omega_5\omega_{18}\omega_{15} + 4\omega_6 v_3^2 v_1\omega_{20}\omega_{18}\omega_{15} + 2\omega_6 v_3 c_s^2\omega_{20}\omega_8\omega_5\omega_{18} - 4v_3^2 v_1\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} + 4\omega_6 c_s^2 v_1\omega_{20}\omega_{18}\omega_{15} - 4c_s^2 v_1\omega_{20}\omega_{17}\omega_5\omega_{18}\omega_{15} +$$
$$2\omega_6 c_s^2 v_1\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} + 4\omega_6 v_3^2 v_1\omega_{20}\omega_{17}\omega_5\omega_{18}\omega_{15} - 4\omega_6 v_3^2 v_1\omega_{20}\omega_{17}\omega_{18}\omega_{15} + 2v_3 v_1^2\omega_{20}\omega_8\omega_5\omega_{18}\omega_{15} - 4\omega_6 v_3 c_s^2\omega_{20}\omega_8\omega_{18} -$$
$$4\omega_6 c_s^2 v_1\omega_{20}\omega_{17}\omega_{18}\omega_{15} - \omega_6 c_s^2 v_1\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} - 4\omega_6 v_3^2 v_1\omega_{17}\omega_5\omega_{18}\omega_{15} + 2\omega_6 v_3^2 v_1\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} + 4\omega_6 c_s^2 v_1\omega_{20}\omega_{17}\omega_5\omega_{18}\omega_{15} -$$
$$4v_3 v_1^2\omega_{20}\omega_5\omega_{18}\omega_{15} - 4\omega_6 c_s^2 v_1\omega_{17}\omega_5\omega_{18}\omega_{15} - 2\omega_6 v_3 c_s^2\omega_{20}\omega_{17}\omega_8\omega_{18}\omega_{15} + \omega_6 v_3^2 v_1\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 4\omega_6 v_3 v_1^2\omega_{17}\omega_{18}\omega_{15} +$$
$$2v_3 c_s^2\omega_{20}\omega_8\omega_5\omega_{18}\omega_{15} - 2\omega_6 v_3 v_1^2\omega_{20}\omega_{17}\omega_8\omega_{18}\omega_{15} + \omega_6 c_s^2 v_1\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_6 v_3^2 v_1\omega_{17}\omega_8\omega_5\omega_{15} + 4\omega_6 v_3 v_1^2\omega_{20}\omega_8\omega_{18}\omega_{15} +$$
$$\omega_6 v_3 c_s^2\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} - \omega_6 v_3^2 v_1\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15} + 4\omega_6 v_3 c_s^2\omega_{20}\omega_5\omega_{18}\omega_{15} - 2\omega_6 c_s^2 v_1\omega_{17}\omega_8\omega_5\omega_{15})\frac{v_2\rho}{2\omega_6\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18}\omega_{15}}$$

$$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_2} = C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_2}$$

$$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_2} = 0$$

$$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_2} = (-\omega_1 - 3c_s^2\omega_2 - v_2^2\omega_2 + \omega_2 + v_2^2\omega_1 + 3c_s^2\omega_1)\frac{v_2 v_1\rho}{36\omega_1\omega_2}$$

coefficient $C^{(1)}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_3}$ **at** $\frac{\partial^4 v_3}{\partial x_2^2 \partial x_3^2}$**:**

$$C^{(1),\mathrm{SRT}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_3} = (-14v_2^2v_1^2\omega^2 - 24c_s^2v_2^2 + 36c_s^2v_1^2\omega + v_2^2v_1^2\omega^3 - 14c_s^2v_1^2\omega^2 + 36v_2^2v_1^2\omega + c_s^2v_1^2\omega^3 + 28v_3c_s^2v_1\omega^2 + c_s^2v_2^2\omega^3 + 48v_3c_s^2v_1 - 72v_3v_2^2v_1\omega - 2v_3c_s^2v_1\omega^3 - 14c_s^2v_2^2\omega^2 + 48v_3v_2^2v_1 + 28v_3v_2^2v_1\omega^2 + 36c_s^2v_2^2\omega - 24v_2^2v_1^2 - 24c_s^2v_1^2 - 72v_3c_s^2v_1\omega - 2v_3v_2^2v_1\omega^3)\frac{\rho}{4\omega^3}$$

$$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_3} = (-4\omega_6^2\omega_{19}v_3c_s^2v_1\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} + 2\omega_6^2\omega_{19}v_2^2v_1^2\omega_7^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{15} - 2\omega_6\omega_{19}v_2^2v_1^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 4\omega_6^2\omega_{19}c_s^2v_2^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15} + 2\omega_6\omega_{19}c_s^2v_2^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{15} - 4\omega_6\omega_{19}c_s^2v_2^2\omega_7^2\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15} - 8\omega_6\omega_{19}v_3c_s^2v_1\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15} - \omega_6^2\omega_{19}c_s^2v_1^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 4\omega_6^2\omega_{19}c_s^2v_2^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{15} - 4\omega_6\omega_{19}v_3v_2^2v_1\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 2\omega_6^2\omega_{19}c_s^2v_2^2\omega_7^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{15} - 4\omega_6^2\omega_{19}v_3c_s^2v_1\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}\omega_{15} - 4\omega_6^2\omega_{19}c_s^2v_1^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{15} + 4\omega_6^2\omega_{19}v_3c_s^2v_1\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}\omega_{15} - 4\omega_6^2v_3c_s^2v_1\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_{15} - 4\omega_6^2\omega_{19}v_3v_2^2v_1\omega_7^2\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_{15} + 4\omega_6\omega_{19}c_s^2v_1^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15} + 2\omega_6\omega_{19}v_2^2v_1^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{15} - 4\omega_6\omega_{19}v_2^2v_1^2\omega_7^2\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15} + 4\omega_6^2\omega_{19}v_2^2v_1^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15} + 4\omega_6\omega_{19}v_3c_s^2v_1\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_5^2\omega_{18}\omega_{15} + 8\omega_6\omega_{19}v_3v_2^2v_1\omega_7^2\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15} - 4\omega_6\omega_{19}v_3v_2^2v_1\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{15} + 2\omega_6^2\omega_{19}v_3v_2^2v_1\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 8\omega_6\omega_{19}v_3c_s^2v_1\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{15} + 2\omega_6^2\omega_{19}v_2^2v_1^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} + 8\omega_6\omega_{19}v_3c_s^2v_2^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 8\omega_6^2\omega_{19}v_3v_2^2v_1\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 8\omega_6^2\omega_{19}v_3v_2^2v_1\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15} - 2\omega_6^2\omega_{19}c_s^2v_2^2\omega_7^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 8\omega_6v_3c_s^2v_1\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15} - 2\omega_6^2\omega_{19}c_s^2v_1^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_{15} - 8\omega_6\omega_{19}v_3c_s^2v_1\omega_7\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18}\omega_{15} - 2\omega_6^2\omega_{19}v_2^2v_1^2\omega_7^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 8\omega_{19}v_3c_s^2v_1\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15} - 2\omega_6^2\omega_{19}v_3c_s^2v_1\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15} - 8\omega_6^2\omega_{19}v_3c_s^2v_1\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15} + 4\omega_6^2\omega_{19}v_2^2v_1^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{15} + 2\omega_6^2\omega_{19}c_s^2v_2^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} + 2\omega_6\omega_{19}v_2^2v_1^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 8\omega_6^2\omega_{19}v_3v_2^2v_1\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{15} - 2\omega_6\omega_{19}c_s^2v_2^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15} - 4\omega_6\omega_{19}c_s^2v_1^2\omega_7^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{15} - 4\omega_6^2\omega_{19}c_s^2v_1^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18} - 4\omega_6^2\omega_{19}v_3c_s^2v_1\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15} + 2\omega_6^2\omega_{19}c_s^2v_1^2\omega_7^2\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_{15} - 8\omega_{19}v_3c_s^2v_1\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 4\omega_6\omega_{19}c_s^2v_1^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15} - 4\omega_6^2\omega_{19}v_3c_s^2v_1\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 2\omega_6^2\omega_{19}c_s^2v_1\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 4\omega_6^2\omega_{19}v_2^2v_1^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{15} + 2\omega_6^2\omega_{19}c_s^2v_2^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} + 2\omega_6\omega_{19}v_2^2v_1^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 8\omega_6^2\omega_{19}v_3v_2^2v_1\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{15} - 2\omega_6\omega_{19}c_s^2v_2^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15} - 4\omega_6\omega_{19}c_s^2v_1^2\omega_7^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{15} - 4\omega_6^2\omega_{19}c_s^2v_1^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18} - 4\omega_6^2\omega_{19}v_3c_s^2v_1\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15} + 2\omega_6^2\omega_{19}c_s^2v_1^2\omega_7^2\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15} - 8\omega_{19}v_3c_s^2v_1\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 4\omega_6\omega_{19}c_s^2v_1^2\omega_7^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15} - 4\omega_6^2\omega_{19}v_3c_s^2v_1\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_5^2\omega_{18}\omega_{15} - 2\omega_6^2\omega_{19}c_s^2v_1^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 2\omega_6^2\omega_{19}c_s^2v_2^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} + 4\omega_6^2\omega_{19}v_3c_s^2v_1\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15} - 2\omega_6\omega_{19}c_s^2v_2^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15} - 4\omega_6\omega_{19}c_s^2v_1^2\omega_7^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{15} - 4\omega_6\omega_{19}c_s^2v_1^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18} - 4\omega_6^2\omega_{19}v_3c_s^2v_1\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15} + 2\omega_6^2\omega_{19}c_s^2v_1^2\omega_7^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15} - 8\omega_{19}v_3c_s^2v_1\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 4\omega_6\omega_{19}c_s^2v_1^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15} - 4\omega_6^2\omega_{19}v_3c_s^2v_1\omega_7^2\omega_{20}\omega_{17}\omega_5^2\omega_{18}\omega_{15} - 2\omega_6^2\omega_{19}c_s^2v_1^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 8\omega_6^2\omega_{19}v_3v_2^2v_1\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{15} - 2\omega_6^2\omega_{19}c_s^2v_2^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 4\omega_6\omega_{19}c_s^2v_1^2\omega_7^2\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15} + 4\omega_6^2\omega_{19}v_3c_s^2v_1\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15} - 4\omega_6^2\omega_{19}v_3c_s^2v_1\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 8\omega_6^2\omega_{19}v_3c_s^2v_1\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15} + 4\omega_6^2\omega_{19}v_2^2v_1^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15} + 2\omega_6^2\omega_{19}v_2^2v_1^2\omega_7^2\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_{15} + 4\omega_6^2\omega_{19}v_3c_s^2v_1\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{15})\frac{\rho}{4\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{15}}$$

$$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_3} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_3}$$

$$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_3} = (4\omega_6v_2^2v_1^2\omega_{20}\omega_8\omega_{18}\omega_{15} + 4\omega_6c_s^2v_1^2\omega_{20}\omega_5\omega_{18}\omega_{15} - 4\omega_6v_3c_s^2v_1\omega_{17}\omega_8\omega_{18}\omega_{15} - 4\omega_6c_s^2v_2^2\omega_{20}\omega_{17}\omega_5\omega_{18}\omega_{15} -$$

$8\omega_6 v_3 v_2^2 v_1 \omega_{17} \omega_5 \omega_{18} \omega_{15} + 8\omega_6 v_3 c_s^2 v_1 \omega_{20} \omega_8 \omega_{18} + 2c_s^2 v_1^2 \omega_{20} \omega_8 \omega_5 \omega_{18} \omega_{15} + 2\omega_6 c_s^2 v_2^2 \omega_{17} \omega_8 \omega_5 \omega_{15} + 2\omega_6 v_3 c_s^2 v_1 \omega_{20} \omega_{17} \omega_8 \omega_5 \omega_{18} -$
$8\omega_6 v_3 v_2^2 v_1 \omega_{20} \omega_{17} \omega_{18} \omega_{15} + 4v_3 v_2^2 v_1 \omega_{20} \omega_{17} \omega_8 \omega_5 \omega_{18} \omega_{15} - 2\omega_6 c_s^2 v_2^2 \omega_{17} \omega_8 \omega_5 \omega_{18} \omega_{15} + 8v_3 c_s^2 v_1 \omega_{20} \omega_5 \omega_{18} \omega_{15} - 2\omega_6 v_2^2 v_1^2 \omega_{20} \omega_{17} \omega_8 \omega_{18} \omega_{15} +$
$\omega_6 c_s^2 v_1^2 \omega_{20} \omega_{17} \omega_8 \omega_5 \omega_{18} \omega_{15} - 4\omega_6 v_3 c_s^2 v_1 \omega_{20} \omega_{17} \omega_8 \omega_{18} + 2v_2^2 v_1^2 \omega_{20} \omega_8 \omega_5 \omega_{18} \omega_{15} - 4\omega_6 v_3 v_2^2 v_1 \omega_{17} \omega_8 \omega_5 \omega_{15} - \omega_6 c_s^2 v_2^2 \omega_{20} \omega_{17} \omega_8 \omega_5 \omega_{15} +$
$2\omega_6 v_3 v_2^2 v_1 \omega_{20} \omega_{17} \omega_8 \omega_5 \omega_{18} - 4\omega_6 c_s^2 v_1^2 \omega_{20} \omega_{18} \omega_{15} + 8\omega_6 v_3 v_2^2 v_1 \omega_{17} \omega_{18} \omega_{15} + 4\omega_6 c_s^2 v_2^2 \omega_{20} \omega_{17} \omega_{18} \omega_{15} - 2\omega_6 c_s^2 v_1^2 \omega_{20} \omega_{17} \omega_8 \omega_{18} \omega_{15} -$
$4v_2^2 v_1^2 \omega_{20} \omega_5 \omega_{18} \omega_{15} - 4\omega_6 v_3 c_s^2 v_1 \omega_{20} \omega_8 \omega_5 \omega_{18} + 4\omega_6 c_s^2 v_2^2 \omega_{17} \omega_5 \omega_{18} \omega_{15} - 4\omega_6 c_s^2 v_2^2 \omega_{17} \omega_{18} \omega_{15} + 2\omega_6 c_s^2 v_1^2 \omega_{20} \omega_8 \omega_5 \omega_{18} +$
$4\omega_6 v_3 c_s^2 v_1 \omega_{17} \omega_8 \omega_5 \omega_{18} \omega_{15} + 4\omega_6 c_s^2 v_2^2 \omega_{20} \omega_8 \omega_{18} \omega_{15} + 8\omega_6 v_3 v_2^2 v_1 \omega_{20} \omega_8 \omega_{18} + 2\omega_6 v_3 v_2^2 v_1 \omega_{20} \omega_{17} \omega_8 \omega_5 \omega_{15} - \omega_6 c_s^2 v_2^2 \omega_{20} \omega_{17} \omega_8 \omega_5 \omega_{18} +$
$2c_s^2 v_2^2 \omega_{20} \omega_{17} \omega_8 \omega_5 \omega_{15} + 8v_3 v_2^2 v_1 \omega_{17} \omega_8 \omega_5 \omega_{15} - 2\omega_6 v_2^2 v_1^2 \omega_{20} \omega_8 \omega_5 \omega_{18} \omega_{15} - 4v_3 c_s^2 v_1 \omega_{20} \omega_8 \omega_5 \omega_{18} \omega_{15} + 8\omega_6 v_3 c_s^2 v_1 \omega_{20} \omega_{17} \omega_5 \omega_{18} \omega_{15} +$
$2\omega_6 v_2^2 v_1^2 \omega_{17} \omega_8 \omega_5 \omega_{15} - 4c_s^2 v_1^2 \omega_{17} \omega_5 \omega_{18} \omega_{15} - 4\omega_6 c_s^2 v_2^2 \omega_{20} \omega_8 \omega_{18} + 8\omega_6 v_3 v_2^2 v_1 \omega_{20} \omega_{17} \omega_5 \omega_{18} \omega_{15} + 4\omega_6 v_2^2 v_1^2 \omega_{20} \omega_{17} \omega_{18} \omega_{15} +$
$2\omega_6 c_s^2 v_1^2 \omega_{20} \omega_{17} \omega_8 \omega_{18} - 4\omega_6 v_2^2 v_1^2 \omega_{20} \omega_{18} \omega_{15} + 8\omega_6 v_3 c_s^2 v_1 \omega_{17} \omega_{18} \omega_{15} + 8v_3 v_2^2 v_1 \omega_{17} \omega_5 \omega_{18} \omega_{15} - 4c_s^2 v_2^2 \omega_{20} \omega_5 \omega_{18} \omega_{15} + 4c_s^2 v_2^2 \omega_{20} \omega_{17} \omega_5 \omega_{18} \omega_{15} -$
$8\omega_6 v_3 v_2^2 v_1 \omega_{20} \omega_8 \omega_{18} \omega_{15} - 8\omega_6 v_3 c_s^2 v_1 \omega_{20} \omega_5 \omega_{18} \omega_{15} + 4\omega_6 v_3 v_2^2 v_1 \omega_{17} \omega_8 \omega_5 \omega_{18} \omega_{15} + 2\omega_6 c_s^2 v_1^2 \omega_{17} \omega_8 \omega_{18} \omega_{15} + 4v_3 c_s^2 v_1 \omega_{20} \omega_{17} \omega_8 \omega_5 \omega_{18} \omega_{15} +$
$4\omega_6 v_2^2 v_1^2 \omega_{17} \omega_5 \omega_{18} \omega_{15} + 2\omega_6 v_3 c_s^2 v_1 \omega_{20} \omega_{17} \omega_8 \omega_5 \omega_{15} + \omega_6 c_s^2 v_2^2 \omega_{20} \omega_{17} \omega_8 \omega_5 \omega_{18} \omega_{15} + \omega_6 v_2^2 v_1^2 \omega_{20} \omega_{17} \omega_8 \omega_5 \omega_{18} \omega_{15} - 2\omega_6 c_s^2 v_1^2 \omega_{20} \omega_8 \omega_5 \omega_{18} \omega_{15} -$
$4c_s^2 v_1^2 \omega_{17} \omega_8 \omega_5 \omega_{15} + 4c_s^2 v_2^2 \omega_{17} \omega_8 \omega_5 \omega_{18} \omega_{15} - 4v_3 v_2^2 v_1 \omega_{20} \omega_8 \omega_5 \omega_{18} \omega_{15} + 8v_3 v_2^2 v_1 \omega_{20} \omega_5 \omega_{18} \omega_{15} - 4c_s^2 v_2^2 \omega_{17} \omega_5 \omega_{18} \omega_{15} - 4\omega_6 v_3 v_2^2 v_1 \omega_{20} \omega_{17} \omega_8 \omega_{18} -$
$4\omega_6 v_2^2 v_1^2 \omega_{20} \omega_{17} \omega_5 \omega_{18} \omega_{15} - 8v_3 c_s^2 v_1 \omega_{20} \omega_{17} \omega_5 \omega_{18} \omega_{15} - 8\omega_6 v_3 c_s^2 v_1 \omega_{20} \omega_{17} \omega_{18} \omega_{15} - 2\omega_6 v_2^2 v_1^2 \omega_{17} \omega_8 \omega_5 \omega_{18} \omega_{15} - 4v_3 v_2^2 v_1 \omega_{20} \omega_{17} \omega_8 \omega_5 \omega_{15} -$
$\omega_6 c_s^2 v_1^2 \omega_{20} \omega_{17} \omega_8 \omega_5 \omega_{15} - 8v_3 c_s^2 v_1 \omega_{17} \omega_8 \omega_5 \omega_{18} \omega_{15} + 4\omega_6 c_s^2 v_1^2 \omega_{20} \omega_8 \omega_{18} \omega_{15} + 4\omega_6 v_3 c_s^2 v_1 \omega_{20} \omega_8 \omega_5 \omega_{18} \omega_{15} + 2\omega_6 c_s^2 v_2^2 \omega_{20} \omega_8 \omega_5 \omega_{18} +$
$4\omega_6 v_2^2 v_1^2 \omega_{20} \omega_5 \omega_{18} \omega_{15} + 8\omega_6 v_3 c_s^2 v_1 \omega_{20} \omega_{18} \omega_{15} - 4\omega_6 v_3 v_2^2 v_1 \omega_{17} \omega_8 \omega_{18} \omega_{15} - 2\omega_6 c_s^2 v_2^2 \omega_{20} \omega_{17} \omega_8 \omega_{18} \omega_{15} - 4\omega_6 v_2^2 v_1^2 \omega_{17} \omega_{18} \omega_{15} -$
$8\omega_6 v_3 c_s^2 v_1 \omega_{17} \omega_5 \omega_{18} \omega_{15} - 2\omega_6 c_s^2 v_1^2 \omega_{17} \omega_8 \omega_5 \omega_{18} \omega_{15} - 2c_s^2 v_2^2 \omega_{20} \omega_{17} \omega_8 \omega_5 \omega_{18} \omega_{15} - 4v_3 c_s^2 v_1 \omega_{20} \omega_{17} \omega_8 \omega_5 \omega_{15} - \omega_6 v_2^2 v_1^2 \omega_{20} \omega_{17} \omega_8 \omega_5 \omega_{15} +$
$2c_s^2 v_2^2 \omega_{20} \omega_8 \omega_5 \omega_{18} \omega_{15} - 8v_3 v_2^2 v_1 \omega_{17} \omega_8 \omega_5 \omega_{18} \omega_{15} - 4c_s^2 v_2^2 \omega_{17} \omega_8 \omega_5 \omega_{15} - 4\omega_6 v_3 v_2^2 v_1 \omega_{20} \omega_8 \omega_5 \omega_{18} + 4\omega_6 v_3 v_2^2 v_1 \omega_{20} \omega_8 \omega_5 \omega_{18} \omega_{15} -$
$2v_2^2 v_1^2 \omega_{20} \omega_{17} \omega_8 \omega_5 \omega_{18} \omega_{15} + 2\omega_6 c_s^2 v_2^2 \omega_{17} \omega_8 \omega_{18} \omega_{15} - 4\omega_6 c_s^2 v_1^2 \omega_{20} \omega_8 \omega_{18} - 4\omega_6 c_s^2 v_1^2 \omega_{20} \omega_{17} \omega_5 \omega_{18} \omega_{15} + 2\omega_6 c_s^2 v_2^2 \omega_{20} \omega_{17} \omega_8 \omega_{18} -$
$8v_3 v_2^2 v_1 \omega_{20} \omega_{17} \omega_5 \omega_{18} \omega_{15} - 4c_s^2 v_1^2 \omega_{20} \omega_5 \omega_{18} \omega_{15} - 4\omega_6 v_3 c_s^2 v_1 \omega_{17} \omega_8 \omega_5 \omega_{15} - 2\omega_6 v_3 v_2^2 v_1 \omega_{20} \omega_{17} \omega_8 \omega_5 \omega_{18} \omega_{15} - \omega_6 v_2^2 v_1^2 \omega_{20} \omega_{17} \omega_8 \omega_5 \omega_{18} -$
$4v_2^2 v_1^2 \omega_{17} \omega_5 \omega_{18} \omega_{15} + 2\omega_6 c_s^2 v_1^2 \omega_{17} \omega_8 \omega_5 \omega_{15} - 4\omega_6 c_s^2 v_2^2 \omega_{20} \omega_{18} \omega_{15} + 4\omega_6 v_3 c_s^2 v_1 \omega_{20} \omega_{17} \omega_8 \omega_{18} \omega_{15} + 4c_s^2 v_1^2 \omega_{17} \omega_8 \omega_5 \omega_{18} \omega_{15} -$
$2c_s^2 v_1^2 \omega_{20} \omega_{17} \omega_8 \omega_5 \omega_{18} \omega_{15} - 2\omega_6 c_s^2 v_2^2 \omega_{20} \omega_8 \omega_5 \omega_{18} \omega_{15} + 2v_2^2 v_1^2 \omega_{20} \omega_{17} \omega_8 \omega_5 \omega_{15} + 8\omega_6 v_3 v_2^2 v_1 \omega_{20} \omega_{18} \omega_{15} + 8v_3 c_s^2 v_1 \omega_{17} \omega_8 \omega_5 \omega_{15} -$
$4\omega_6 c_s^2 v_1^2 \omega_{17} \omega_{18} \omega_{15} + 4c_s^2 v_1^2 \omega_{20} \omega_{17} \omega_5 \omega_{18} \omega_{15} + 4\omega_6 c_s^2 v_2^2 \omega_{20} \omega_5 \omega_{18} \omega_{15} + 2\omega_6 v_2^2 v_1^2 \omega_{20} \omega_8 \omega_5 \omega_{18} - 2\omega_6 v_3 c_s^2 v_1 \omega_{20} \omega_{17} \omega_8 \omega_5 \omega_{18} \omega_{15} -$
$4v_2^2 v_1^2 \omega_{17} \omega_8 \omega_5 \omega_{15} + 4v_2^2 v_1^2 \omega_{20} \omega_{17} \omega_5 \omega_{18} \omega_{15} - 8\omega_6 v_3 c_s^2 v_1 \omega_{20} \omega_8 \omega_{18} \omega_{15} - 8\omega_6 v_3 v_2^2 v_1 \omega_{20} \omega_5 \omega_{18} \omega_{15} + 2\omega_6 v_2^2 v_1^2 \omega_{17} \omega_8 \omega_{18} \omega_{15} +$
$4\omega_6 c_s^2 v_1^2 \omega_{17} \omega_5 \omega_{18} \omega_{15} + 2\omega_6 v_2^2 v_1^2 \omega_{20} \omega_{17} \omega_8 \omega_{18} - \omega_6 c_s^2 v_1^2 \omega_{20} \omega_{17} \omega_8 \omega_5 \omega_{18} + 8v_3 c_s^2 v_1 \omega_{17} \omega_5 \omega_{18} \omega_{15} + 4\omega_6 v_3 v_2^2 v_1 \omega_{20} \omega_{17} \omega_8 \omega_{18} \omega_{15} +$
$4v_2^2 v_1^2 \omega_{17} \omega_8 \omega_5 \omega_{18} \omega_{15} - 4\omega_6 v_2^2 v_1^2 \omega_{20} \omega_8 \omega_{18} + 4\omega_6 c_s^2 v_1^2 \omega_{20} \omega_{17} \omega_{18} \omega_{15} + 2c_s^2 v_1^2 \omega_{20} \omega_{17} \omega_8 \omega_5 \omega_{15}) \frac{\rho}{4\omega_6 \omega_{20} \omega_{17} \omega_8 \omega_5 \omega_{18} \omega_{15}}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_y^2 \mathrm{D}_z^2 v_3} = C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_y^2 \mathrm{D}_z^2 v_3}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_y^2 \mathrm{D}_z^2 v_3} = 0$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_y^2 \mathrm{D}_z^2 v_3} = (-\omega_1 + v_3^2 \omega_1 - 3c_s^2 \omega_2 + \omega_2 + 3c_s^2 \omega_1 - v_3^2 \omega_2) \frac{v_3 v_1 \rho}{36\omega_1 \omega_2}$

coefficient $C^{(1)}_{\mathrm{D}_x \mathrm{D}_z^3 \rho}$ **at** $\frac{\partial^4 \rho}{\partial x_1 \partial x_3^3}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x \mathrm{D}_z^3 \rho} = (24 - \omega^3 + 14\omega^2 - 36\omega + 36v_3^2 \omega - 42c_s^2 \omega^2 + 3c_s^2 \omega^3 + v_3^2 \omega^3 - 24v_3^2 + 108c_s^2 \omega - 72c_s^2 - 14v_3^2 \omega^2) \frac{v_3 c_s^2}{12\omega^3}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x \mathrm{D}_z^3 \rho} = (24\omega_6^2 \omega_{22} v_1^2 \omega_{13} \omega_{11}^2 \omega_{18} + 72\omega_6 \omega_{22} c_s^2 v_1^2 \omega_{13} \omega_{11} \omega_{18}^2 \omega_9 + 24\omega_6 \omega_{22} v_1^2 \omega_{13} \omega_{11}^2 \omega_{18} \omega_9 + 12\omega_6^3 \omega_{22} v_3^2 c_s^2 \omega_{11} \omega_{18}^2 \omega_9 +$
$12\omega_6^2 \omega_{22} v_1^2 \omega_{13} \omega_{11} \omega_{18} \omega_9 + 18\omega_6^2 \omega_{22} v_3^2 c_s^2 \omega_{13} \omega_{11} \omega_{18}^2 \omega_9 + 24\omega_6 \omega_{22} v_3^2 v_1^2 \omega_{13} \omega_{11} \omega_{18}^2 \omega_9 + 36\omega_6^3 c_s^2 v_1^2 \omega_{11}^2 \omega_{18}^2 - 15\omega_6^3 \omega_{22} c_s^4 \omega_{13} \omega_{11} \omega_{18}^2 \omega_9 +$
$6\omega_6^3 \omega_{22} v_3^2 c_s^2 \omega_{13} \omega_{11} \omega_{18}^2 - 36\omega_6^3 c_s^4 \omega_{11}^2 \omega_{18}^2 \omega_9 - 12\omega_6^2 v_1^2 \omega_{11}^2 \omega_{18}^2 \omega_9 - 6\omega_6^3 v_1^2 \omega_{13} \omega_{11}^2 \omega_{18}^2 \omega_9 + \omega_6^3 \omega_{22} v_3^2 c_s^2 \omega_{13} \omega_{11}^2 \omega_{18}^2 \omega_9 + 5\omega_6^3 \omega_{22} c_s^2 \omega_{13} \omega_{11} \omega_{18}^2 \omega_9 +$
$12\omega_6^2 \omega_{22} c_s^2 \omega_{13} \omega_{11}^2 \omega_9 + 18\omega_6^2 \omega_{22} v_3^2 c_s^2 \omega_{13} \omega_{11}^2 \omega_{18} \omega_9 - 6\omega_6^3 \omega_{22} c_s^4 \omega_{13} \omega_{11}^2 \omega_9 - 24\omega_6 \omega_{22} v_3^2 v_1^2 \omega_{13} \omega_{11}^2 \omega_{18} \omega_9 - 12\omega_6^2 \omega_{22} v_3^2 v_1^2 \omega_{11} \omega_{18}^2 \omega_9 +$
$6\omega_6^3 \omega_{22} v_1^2 \omega_{13} \omega_{11} \omega_{18}^2 - 36\omega_6^2 c_s^4 \omega_{13} \omega_{11}^2 \omega_{18}^2 \omega_9 - 36\omega_6^2 \omega_{22} c_s^2 v_1^2 \omega_{11} \omega_{18}^2 \omega_9 + 6\omega_6^3 v_3^2 v_1^2 \omega_{13} \omega_{11}^2 \omega_{18}^2 \omega_9 + 15\omega_6^3 \omega_{22} c_s^4 \omega_{13} \omega_{11}^2 \omega_{18} \omega_9 - 12\omega_6^3 c_s^2 \omega_{11}^2 \omega_{18}^2 -$
$72\omega_6 \omega_{22} c_s^2 v_1^2 \omega_{13} \omega_{11}^2 \omega_{18} \omega_9 - 12\omega_6^3 \omega_{22} v_1^2 \omega_{11} \omega_{18}^2 \omega_9 - 24\omega_6 \omega_{22} v_1^2 \omega_{13} \omega_{11} \omega_{18}^2 \omega_9 + 12\omega_6^2 v_3^2 c_s^2 \omega_{11}^2 \omega_{18}^2 \omega_9 + 12\omega_6^3 v_3^2 c_s^2 \omega_{11}^2 \omega_{18}^2 +$
$24\omega_6^2 \omega_{22} v_3^2 v_1^2 \omega_{13} \omega_{11} \omega_{18}^2 + 18\omega_6^3 c_s^2 v_1^2 \omega_{13} \omega_{11}^2 \omega_{18}^2 \omega_9 + 72\omega_6^2 \omega_{22} c_s^2 v_1^2 \omega_{13} \omega_{11} \omega_{18}^2 - 18\omega_6^3 c_s^4 \omega_{13} \omega_{11}^2 \omega_{18}^2 + 3\omega_6^3 \omega_{22} c_s^2 \omega_{13} \omega_{11}^2 \omega_{18} \omega_9 +$
$12\omega_6^2 c_s^2 \omega_{13} \omega_{11}^2 \omega_{18}^2 \omega_9 + 12\omega_6^2 v_3^2 c_s^2 \omega_{13} \omega_{11}^2 \omega_{18} \omega_9 - 36\omega_6^2 c_s^2 v_1^2 \omega_{13} \omega_{11}^2 \omega_{18}^2 \omega_9 + 9\omega_6^3 \omega_{22} v_3^2 v_1^2 \omega_{13} \omega_{11} \omega_{18}^2 \omega_9 - 18\omega_6^3 \omega_{22} c_s^2 v_1^2 \omega_{13} \omega_{11} \omega_{18}^2 -$
$12\omega_6^3 \omega_{22} v_3^2 v_1^2 \omega_{11} \omega_{18}^2 - 12\omega_6^2 v_1^2 \omega_{13} \omega_{11}^2 \omega_{18} \omega_9 - 6\omega_6^3 \omega_{22} v_3^2 v_1^2 \omega_{13} \omega_{11} \omega_{18}^2 - 12\omega_6^2 v_3^2 v_1^2 \omega_{13} \omega_{11}^2 \omega_{18}^2 \omega_9 + 27\omega_6^3 \omega_{22} c_s^2 v_1^2 \omega_{13} \omega_{11} \omega_{18}^2 \omega_9 -$
$42\omega_6^2 \omega_{22} c_s^4 \omega_{13} \omega_{11}^2 \omega_{18} \omega_9 + 36\omega_6^3 \omega_{22} c_s^2 v_1^2 \omega_{11} \omega_{18}^2 \omega_9 + 12\omega_6^3 \omega_{22} v_3^2 v_1^2 \omega_{11} \omega_{18}^2 \omega_9 + 12\omega_6 \omega_{22} v_3^2 c_s^2 \omega_{13} \omega_{11}^2 \omega_{18}^2 \omega_9 + 12\omega_6^2 \omega_{22} v_1^2 \omega_{13} \omega_{11}^2 \omega_9 -$
$6\omega_6^3 v_3^2 c_s^2 \omega_{13} \omega_{11}^2 \omega_{18} \omega_9 - 36\omega_6^2 \omega_{22} c_s^4 \omega_{11} \omega_{18}^2 \omega_9 - 18\omega_6^2 \omega_{22} c_s^2 \omega_{13} \omega_{11}^2 \omega_{18} \omega_9 - 12\omega_6^2 c_s^2 \omega_{11}^2 \omega_{18}^2 \omega_9 + 12\omega_6^2 v_3^2 v_1^2 \omega_{11}^2 \omega_{18}^2 \omega_9 - 45\omega_6^3 \omega_{22} c_s^2 v_1^2 \omega_{13} \omega_{11}^2 \omega_{18} \omega_9 +$
$36\omega_6^3 c_s^4 \omega_{11}^2 \omega_{18}^2 - 12\omega_6^3 \omega_{22} c_s^2 \omega_{11} \omega_{18}^2 \omega_9 + 54\omega_6^2 \omega_{22} c_s^4 \omega_{13} \omega_{11} \omega_{18}^2 \omega_9 + 156\omega_6 \omega_{22} c_s^4 \omega_{13} \omega_{11}^2 \omega_{18}^2 \omega_9 + 6\omega_6^3 c_s^2 \omega_{13} \omega_{11}^2 \omega_{18} \omega_9 + 36\omega_6^2 c_s^2 v_1^2 \omega_{11}^2 \omega_{18}^2 \omega_9 -$
$6\omega_6^3 \omega_{22} c_s^2 \omega_{13} \omega_{11} \omega_{18}^2 - 6\omega_6^3 \omega_{22} v_1^2 \omega_{13} \omega_{11} \omega_{18} \omega_9 - 12\omega_6^2 \omega_{22} v_3^2 c_s^2 \omega_{11} \omega_{18}^2 \omega_9 - 15\omega_6^3 \omega_{22} v_3^2 v_1^2 \omega_{13} \omega_{11}^2 \omega_{18} \omega_9 - 12\omega_6^2 \omega_{22} v_1^2 \omega_{13} \omega_{18}^2 \omega_9 +$
$12\omega_6^3 \omega_{22} v_1^2 \omega_{11} \omega_{18}^2 - 12\omega_6 \omega_{22} c_s^2 \omega_{13} \omega_{11}^2 \omega_{18}^2 \omega_9 - 18\omega_6^3 c_s^4 \omega_{13} \omega_{11}^2 \omega_{18} \omega_9 - 36\omega_6^2 \omega_{22} c_s^2 v_1^2 \omega_{13} \omega_{11} \omega_{18} \omega_9 - 18\omega_6^2 \omega_{22} c_s^2 \omega_{13} \omega_{11} \omega_{18}^2 \omega_9 -$
$12\omega_6^2 \omega_{22} v_3^2 v_1^2 \omega_{13} \omega_{11} \omega_{18} \omega_9 - 12\omega_6^3 v_1^2 \omega_{11}^2 \omega_{18}^2 + 12\omega_6 \omega_{22} c_s^4 \omega_{13} \omega_{11}^2 \omega_{18} \omega_9 - 6\omega_6^3 c_s^2 \omega_{13} \omega_{11}^2 \omega_{18}^2 \omega_9 + 18\omega_6^3 \omega_{22} c_s^2 v_1^2 \omega_{13} \omega_{11}^2 \omega_9 + 12\omega_6^3 c_s^2 \omega_{11}^2 \omega_{18}^2 \omega_9 +$
$6\omega_6^3 \omega_{22} v_3^2 v_1^2 \omega_{13} \omega_{11}^2 \omega_9 - 9\omega_6^3 \omega_{22} v_1^2 \omega_{13} \omega_{11} \omega_{18}^2 \omega_9 + 12\omega_6^3 v_3^2 v_1^2 \omega_{11}^2 \omega_{18}^2 - 36\omega_6^3 \omega_{22} c_s^4 \omega_{11} \omega_{18}^2 + 12\omega_6 \omega_{22} c_s^2 \omega_{13} \omega_{11}^2 \omega_{18} \omega_9 -$
$108\omega_6^2 \omega_{22} c_s^2 v_1^2 \omega_{13} \omega_{11} \omega_{18}^2 \omega_9 - 24\omega_6^2 \omega_{22} v_1^2 \omega_{13} \omega_{11} \omega_{18}^2 + 18\omega_6^3 c_s^4 \omega_{13} \omega_{11}^2 \omega_{18}^2 \omega_9 + 12\omega_6^2 \omega_{22} c_s^4 \omega_{13} \omega_{11}^2 \omega_9 - 12\omega_6 \omega_{22} v_3^2 c_s^2 \omega_{13} \omega_{11} \omega_{18}^2 \omega_9 -$
$12\omega_6^3 v_3^2 c_s^2 \omega_{11}^2 \omega_{18}^2 \omega_9 - 36\omega_6^2 \omega_{22} v_3^2 v_1^2 \omega_{13} \omega_{11} \omega_{18}^2 \omega_9 + 12\omega_6^2 \omega_{22} v_1^2 \omega_{11} \omega_{18}^2 \omega_9 - 6\omega_6^3 \omega_{22} v_3^2 v_1^2 \omega_{13} \omega_{18}^2 \omega_9 + 12\omega_6^2 v_1^2 \omega_{13} \omega_{11}^2 \omega_{18}^2 \omega_9 -$
$12\omega_6^2 \omega_{22} v_3^2 c_s^2 \omega_{13} \omega_{11}^2 \omega_9 + 6\omega_6^3 c_s^2 \omega_{13} \omega_{11}^2 \omega_{18}^2 - 18\omega_6^3 \omega_{22} c_s^2 v_1^2 \omega_{13} \omega_{18}^2 \omega_9 + 15\omega_6^3 \omega_{22} v_1^2 \omega_{13} \omega_{11}^2 \omega_{18} \omega_9 + 6\omega_6^3 \omega_{22} v_3^2 v_1^2 \omega_{13} \omega_{11} \omega_{18} \omega_9 +$
$36\omega_6^2 c_s^2 v_1^2 \omega_{13} \omega_{11}^2 \omega_{18} \omega_9 - 36\omega_6 \omega_{22} c_s^4 \omega_{13} \omega_{11} \omega_{18}^2 \omega_9 - 6\omega_6^3 \omega_{22} c_s^2 \omega_{13} \omega_{11}^2 \omega_9 + 18\omega_6^3 \omega_{22} c_s^2 v_1^2 \omega_{13} \omega_{11} \omega_{18} \omega_9 + 12\omega_6^2 v_3^2 v_1^2 \omega_{13} \omega_{11}^2 \omega_{18} \omega_9 -$
$60\omega_6^2 \omega_{22} c_s^4 \omega_{13} \omega_{11}^2 \omega_{18}^2 \omega_9 + 6\omega_6^3 v_3^2 c_s^2 \omega_{13} \omega_{11}^2 \omega_{18}^2 \omega_9 - 12\omega_6^3 \omega_{22} v_1^2 \omega_{13} \omega_{11}^2 \omega_{18} - 12\omega_6 \omega_{22} v_3^2 c_s^2 \omega_{13} \omega_{11}^2 \omega_{18} \omega_9 + 48\omega_6^2 \omega_{22} v_3^2 v_1^2 \omega_{13} \omega_{11}^2 \omega_{18} \omega_9 +$
$12\omega_6^2 \omega_{22} c_s^2 \omega_{13} \omega_{11}^2 \omega_{18}^2 \omega_9 - 72\omega_6^2 \omega_{22} c_s^2 v_1^2 \omega_{13} \omega_{11}^2 \omega_{18} - 6\omega_6^3 v_3^2 c_s^2 \omega_{13} \omega_{11}^2 \omega_{18}^2 - 24\omega_6^2 \omega_{22} v_3^2 v_1^2 \omega_{13} \omega_{11}^2 \omega_{18} + 144\omega_6^2 \omega_{22} c_s^2 v_1^2 \omega_{13} \omega_{11}^2 \omega_{18} \omega_9 +$
$12\omega_6 \omega_{22} c_s^2 \omega_{13} \omega_{11} \omega_{18}^2 \omega_9 - 36\omega_6^3 \omega_{22} c_s^2 v_1^2 \omega_{11} \omega_{18}^2 - 6\omega_6^3 v_3^2 v_1^2 \omega_{13} \omega_{11}^2 \omega_{18} \omega_9 + 3\omega_6^3 \omega_{22} c_s^4 \omega_{13} \omega_{11}^2 \omega_{18}^2 \omega_9 + 36\omega_6^2 c_s^4 \omega_{13} \omega_{11}^2 \omega_{18} \omega_9 -$
$12\omega_6^2 \omega_{22} v_3^2 c_s^2 \omega_{13} \omega_{11}^2 \omega_{18}^2 \omega_9 + 6\omega_6^3 \omega_{22} v_1^2 \omega_{13} \omega_{18}^2 \omega_9 - 48\omega_6^2 \omega_{22} v_1^2 \omega_{13} \omega_{11}^2 \omega_{18} \omega_9 - 18\omega_6^3 c_s^2 v_1^2 \omega_{13} \omega_{11}^2 \omega_{18} \omega_9 + 36\omega_6^2 \omega_{22} c_s^2 v_1^2 \omega_{13} \omega_{18}^2 \omega_9 +$

$6\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}\omega_{11}^2\omega_9 + 12\omega_6^3v_1^2\omega_{11}^2\omega_{18}^2\omega_9 + 12\omega_6^2\omega_{22}v_3^2v_1^2\omega_{13}\omega_{18}^2\omega_9 + 12\omega_6^3\omega_{22}v_3^2v_1^2\omega_{13}\omega_{11}^2\omega_{18} - 96\omega_{22}c_s^4\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9 - 36\omega_6^3c_s^2v_1^2\omega_{11}^2\omega_{18}^2\omega_9 -$
$12\omega_6^2c_s^2\omega_{13}\omega_{11}^2\omega_{18}\omega_9 + 36\omega_6^2c_s^4\omega_{11}^2\omega_{18}^2\omega_9 + 36\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_{11}^2\omega_{18} + 12\omega_6^3\omega_{22}c_s^2\omega_{11}\omega_{18}^2 + 12\omega_6^2\omega_{22}c_s^2\omega_{11}\omega_{18}^2\omega_9 - 5\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}\omega_{11}\omega_{18}^2\omega_9 -$
$12\omega_6^3v_3^2v_1^2\omega_{11}^2\omega_{18}^2\omega_9 - \omega_6^3\omega_{22}c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9 - 12\omega_6^2v_3^2c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9 - 6\omega_6^3\omega_{22}v_1^2\omega_{13}\omega_{11}^2\omega_9 + 36\omega_6^2\omega_{22}v_1^2\omega_{13}\omega_{11}\omega_{18}^2\omega_9 +$
$18\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_{11}\omega_{18}^2 - 12\omega_6^3\omega_{22}v_3^2c_s^2\omega_{11}\omega_{18}^2 - 12\omega_6^2\omega_{22}v_3^2v_1^2\omega_{13}\omega_{11}^2\omega_9 + 36\omega_6^3\omega_{22}c_s^4\omega_{11}\omega_{18}^2\omega_9 - 36\omega_6^2\omega_{22}c_s^2v_1^2\omega_{13}\omega_{11}^2\omega_9 +$
$6\omega_6^3v_1^2\omega_{13}\omega_{11}^2\omega_{18}^2 - 18\omega_6^3c_s^2v_1^2\omega_{13}\omega_{11}^2\omega_{18}^2 + 6\omega_6^3v_1^2\omega_{13}\omega_{11}^2\omega_{18}\omega_9 - 6\omega_6^3v_3^2v_1^2\omega_{13}\omega_{11}^2\omega_{18}^2 - 3\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}\omega_{11}^2\omega_{18}\omega_9)\frac{v_3}{12\omega_6^3\omega_{22}\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_z^3\rho} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^3\rho}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_z^3\rho} = (-36\omega_{22}c_s^2\omega_{13}\omega_{18}^2\omega_9 + 36\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18}^2\omega_9 + 12\omega_{22}v_3^2\omega_{13}\omega_{11}\omega_{18}^2\omega_9 - 36\omega_6^2\omega_{22}c_s^2\omega_{18}^2 - 12\omega_6^2v_3^2\omega_{11}\omega_{18}^2\omega_9 +$
$12\omega_6\omega_{22}\omega_{13}\omega_{11}\omega_9 - 6\omega_6^2\omega_{22}\omega_{13}\omega_{18}^2 + 12\omega_{22}\omega_{13}\omega_{11}\omega_{18}\omega_9 - 12\omega_6\omega_{22}v_3^2\omega_{18}^2\omega_9 - 6\omega_6^2v_3^2\omega_{13}\omega_{11}\omega_{18}^2 - 6\omega_6^2v_3^2\omega_{13}\omega_{11}\omega_{18}\omega_9 + 12\omega_6\omega_{22}\omega_{18}^2\omega_9 -$
$12\omega_6\omega_{22}v_3^2\omega_{13}\omega_{11}\omega_9 - 18\omega_6^2c_s^2\omega_{13}\omega_{11}\omega_{18}\omega_9 + 12\omega_6v_3^2\omega_{11}\omega_{18}^2\omega_9 - 6\omega_6^2\omega_{22}\omega_{13}\omega_{11}\omega_9 + 12\omega_6^2\omega_{22}\omega_{18}^2 + 3\omega_6^2\omega_{22}\omega_{13}\omega_{11}\omega_{18}\omega_9 +$
$12\omega_6^2\omega_{22}v_3^2\omega_{18}^2\omega_9 - 12\omega_6^2\omega_{11}\omega_{18}^2 - 12\omega_6\omega_{11}\omega_{18}^2\omega_9 - 15\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{18}^2\omega_9 - 18\omega_6\omega_{22}\omega_{13}\omega_{11}\omega_{18}\omega_9 + 54\omega_6\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18}\omega_9 +$
$18\omega_6\omega_{22}v_3^2\omega_{13}\omega_{11}\omega_{18}\omega_9 - 12\omega_6\omega_{13}\omega_{11}\omega_{18}\omega_9 + 54\omega_6\omega_{22}c_s^2\omega_{13}\omega_{18}^2\omega_9 + 12\omega_6^2v_3^2\omega_{11}\omega_{18}^2 + 6\omega_6^2\omega_{13}\omega_{11}\omega_{18}\omega_9 - 12\omega_6^2\omega_{22}v_3^2\omega_{18}^2 +$
$\omega_6^2\omega_{22}v_3^2\omega_{13}\omega_{11}\omega_{18}^2\omega_9 + 3\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18}^2\omega_9 + 18\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{18}^2 + 6\omega_6^2\omega_{22}v_3^2\omega_{13}\omega_{11}\omega_9 + 36\omega_6c_s^2\omega_{13}\omega_{11}\omega_{18}\omega_9 + 12\omega_6v_3^2\omega_{13}\omega_{11}\omega_{18}\omega_9 -$
$12\omega_6^2\omega_{22}\omega_{18}^2\omega_9 - 12\omega_{22}v_3^2\omega_{13}\omega_{18}^2\omega_9 - 6\omega_6^2\omega_{13}\omega_{11}\omega_{18}^2\omega_9 - 36\omega_6^2c_s^2\omega_{11}\omega_{18}^2\omega_9 - 9\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18}\omega_9 - 3\omega_6^2\omega_{22}v_3^2\omega_{13}\omega_{11}\omega_{18}\omega_9 -$
$12\omega_6v_3^2\omega_{13}\omega_{11}\omega_{18}^2\omega_9 - 18\omega_6^2c_s^2\omega_{13}\omega_{11}\omega_{18}^2 - 36\omega_6c_s^2\omega_{13}\omega_{11}\omega_{18}^2\omega_9 - 36\omega_6\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_9 + 36\omega_6c_s^2\omega_{11}\omega_{18}^2\omega_9 + 6\omega_6^2\omega_{13}\omega_{11}\omega_{18}^2 +$
$12\omega_6\omega_{22}\omega_{13}\omega_{11}\omega_{18}^2\omega_9 + 12\omega_6^2\omega_{11}\omega_{18}^2\omega_9 + 36\omega_6^2c_s^2\omega_{11}\omega_{18}^2 + 6\omega_6^2\omega_{22}v_3^2\omega_{13}\omega_{18}^2 - 5\omega_6^2\omega_{22}v_3^2\omega_{13}\omega_{18}^2\omega_9 + 12\omega_6\omega_{13}\omega_{11}\omega_{18}^2\omega_9 -$
$12\omega_6\omega_{22}v_3^2\omega_{13}\omega_{11}\omega_{18}^2\omega_9 - 36\omega_6\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18}^2\omega_9 - \omega_6^2\omega_{22}\omega_{13}\omega_{11}\omega_{18}^2\omega_9 - 18\omega_6\omega_{22}\omega_{13}\omega_{18}^2\omega_9 - 36\omega_6\omega_{22}c_s^2\omega_{18}^2\omega_9 + 18\omega_6\omega_{22}v_3^2\omega_{13}\omega_{18}^2\omega_9 +$
$5\omega_6^2\omega_{22}\omega_{13}\omega_{18}^2\omega_9 - 12\omega_{22}v_3^2\omega_{13}\omega_{11}\omega_{18}\omega_9 + 36\omega_6^2\omega_{22}c_s^2\omega_{18}^2\omega_9 - 36\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18}\omega_9 - 12\omega_{22}\omega_{13}\omega_{11}\omega_{18}^2\omega_9 + 18\omega_6^2c_s^2\omega_{13}\omega_{11}\omega_{18}^2\omega_9 +$
$12\omega_{22}\omega_{13}\omega_{18}^2\omega_9 + 18\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_9 + 6\omega_6^2v_3^2\omega_{13}\omega_{11}\omega_{18}^2\omega_9)\frac{v_3c_s^2}{12\omega_6^2\omega_{22}\omega_{13}\omega_{11}\omega_{18}^2\omega_9}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_z^3\rho} = C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_z^3\rho}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_z^3\rho} = (-3\omega_6v_3^2\omega_8\omega_2^2 + 6v_3^2\omega_8^2\omega_2 - 36\omega_6c_s^2\omega_8 + 3\omega_6\omega_8\omega_2^2 - 12\omega_6\omega_8^2 + 12\omega_6v_3^2\omega_8^2 + 36c_s^2\omega_8\omega_2 + 3\omega_6c_s^2\omega_8^2\omega_2^2 - 12\omega_8\omega_2 - 36c_s^2\omega_8^2 +$
$6\omega_8\omega_2^2 - 36\omega_6c_s^2\omega_8^2\omega_2 - 18c_s^2\omega_8\omega_2^2 - 12v_3^2\omega_8^2 + 12\omega_6\omega_8 - 12\omega_6v_3^2\omega_8 + v_3^2\omega_8^2\omega_2^2 + 18\omega_6v_3^2\omega_8\omega_2 + 36\omega_6c_s^2\omega_8^2 - 18\omega_6\omega_8\omega_2 - 12\omega_6v_3^2\omega_8^2\omega_2 -$
$6v_3^2\omega_8\omega_2^2 + 12\omega_6\omega_8^2\omega_2 - \omega_8^2\omega_2^2 + 18\omega_6c_s^2\omega_2^2 + 3c_s^2\omega_8^2\omega_2^2 + 54\omega_6c_s^2\omega_8\omega_2 + 12\omega_6\omega_2 - 12\omega_6v_3^2\omega_2 - 9\omega_6c_s^2\omega_8\omega_2^2 + 18c_s^2\omega_8^2\omega_2 - 6\omega_6\omega_2^2 + 12\omega_8^2 +$
$6\omega_6v_3^2\omega_2^2 - 6\omega_8^2\omega_2 - 36\omega_6c_s^2\omega_2 + 12v_3^2\omega_8\omega_2 + \omega_6v_3^2\omega_8^2\omega_2^2 - \omega_6\omega_8^2\omega_2^2)\frac{v_3c_s^2}{12\omega_6\omega_8^2\omega_2^2}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_z^3\rho} = (9\omega_3^2c_s^2\omega_4\omega_1^3\omega_2^3 - 56\omega_3v_3^2c_s^2\omega_4^2\omega_1\omega_2^3 - 36v_3^2c_s^2\omega_4^2\omega_1^2\omega_2^3 + 120\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^2 + 36\omega_3^2c_s^2\omega_1^2\omega_2^3 - 18c_s^2\omega_4^2\omega_1^3\omega_2^3 + 92\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2^3 -$
$9\omega_3^2v_3^2c_s^2\omega_4\omega_1^3\omega_2^3 + 152\omega_3^2v_3^2\omega_4^2\omega_1^3\omega_2 - 104\omega_3^2c_s^2\omega_4^2\omega_1^3 - 342\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^3 + 54\omega_3^2c_s^4\omega_1^3\omega_2^3 - 276\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2 + 6\omega_3^2v_1^4\omega_4^2\omega_1^3\omega_2^2 + 216\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^3 +$
$48\omega_3c_s^4\omega_4^2\omega_1^3\omega_2 + 12\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^2 - 288\omega_3^2c_s^4\omega_4^2\omega_2^3 + 104\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2^2 - 108\omega_3^2c_s^4\omega_1^2\omega_2^3 + 18\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^3 + 72\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2 + 56\omega_3c_s^2\omega_4^2\omega_1\omega_2^3 +$
$36\omega_3^2v_3^2c_s^2\omega_4\omega_1^2\omega_2^3 - 56\omega_3^2v_3^2c_s^2\omega_4^2\omega_1\omega_2^2 - 136\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2 - 24\omega_3^2v_3^4\omega_4^2\omega_1\omega_2^2 + 144\omega_3^2c_s^4\omega_4^2\omega_1^3 - 8\omega_3^2\omega_4^2\omega_1\omega_2^2 + 36c_s^2\omega_4^2\omega_1^2\omega_2^3 - 6\omega_3^2v_1^4\omega_4^2\omega_1^2\omega_2^3 +$
$56\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^2 + 18v_3^2c_s^2\omega_4^2\omega_1^3\omega_2^3 - 18\omega_3^2c_s^2\omega_1^3\omega_2^3 - 108\omega_3c_s^4\omega_4^2\omega_1^3\omega_2^2 - 36\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^3 + 1232\omega_3^2v_3^2c_s^2\omega_4^2\omega_1\omega_2^3 - 92\omega_3^2v_3^2\omega_4^2\omega_1^3\omega_2^2 +$
$144\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^2 - 27\omega_3c_s^4\omega_4^2\omega_1^3\omega_2^3 + 208\omega_3^2c_s^2\omega_4^2\omega_2^3 - 368\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^3 + 228\omega_3^2v_3^4\omega_4^2\omega_1\omega_2^3 + 28\omega_3^2\omega_4^2\omega_1\omega_2^3 - 712\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^3\omega_2 + 54c_s^4\omega_4^2\omega_4^3\omega_2^3 -$
$460\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^2\omega_2^3 - 36\omega_3^2v_3^2c_s^2\omega_1^2\omega_2^3 - 40\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^2 - 27\omega_3^2c_s^4\omega_4\omega_1^3\omega_2^3 + 8\omega_3^2\omega_4^2\omega_1^3 + 48\omega_3^2v_3^4\omega_4^2\omega_1^3 + 184\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^3 + 208\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2 -$
$36\omega_3v_3^2c_s^2\omega_4^2\omega_1^3\omega_2^2 - 14\omega_3^2\omega_4^2\omega_1^2\omega_2^3 - 78\omega_3^2v_3^4\omega_4^2\omega_1^2\omega_2^3 - 132\omega_3^2v_3^4\omega_4^2\omega_1^3\omega_2 - 20\omega_3^2\omega_4^2\omega_1^3\omega_2 + 320\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^3 - 72\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^3 - 16\omega_3c_s^2\omega_4^2\omega_1^3\omega_2 -$
$412\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^2\omega_2^2 - 6\omega_3^2v_1^2\omega_4^2\omega_1^3\omega_2^2 + 160\omega_3^2v_3^2\omega_4^2\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^2\omega_2^2 - 96\omega_3^2v_3^4\omega_4^2\omega_1^2\omega_2^2 - 9\omega_3v_3^2c_s^2\omega_4^2\omega_1^3\omega_2^3 + 18\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^3\omega_2^2 + 52\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^2 +$
$16\omega_3^2\omega_4^2\omega_1^2\omega_2 + 120\omega_3^2v_3^4\omega_4^2\omega_1^2\omega_2 - 6\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2^3 - 18\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^2\omega_2^3 - 168\omega_3c_s^4\omega_4^2\omega_1\omega_2^3 + 40\omega_3v_3^2c_s^2\omega_4^2\omega_1^2\omega_2^2 - 88\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2 -$
$144\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^2 + 108\omega_3^2c_s^4\omega_4\omega_1^2\omega_2^3 - 56\omega_3^2v_3^2\omega_4^2\omega_1^3 + 36\omega_3c_s^2\omega_4^2\omega_1^3\omega_2^2 + 18\omega_3^2v_3^2c_s^2\omega_1^3\omega_2^3 + 6\omega_3^2v_1^2\omega_4^2\omega_1^2\omega_2^3 - 108c_s^4\omega_4^2\omega_1^2\omega_2^3 + 32\omega_3^2v_3^2\omega_4^2\omega_1\omega_2^2 +$
$448\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^2\omega_2 + 6\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^3\omega_2^3 + 72\omega_3v_3^2c_s^2\omega_4^2\omega_1^2\omega_2^3 - 118\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2^2 + 16\omega_3v_3^2c_s^2\omega_4^2\omega_1^3\omega_2 + 78\omega_3^2v_3^4\omega_4^2\omega_1^3\omega_2^2 + 14\omega_3^2\omega_4^2\omega_1^3\omega_2^2 +$
$394\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^3\omega_2^2 - 144\omega_3^2v_3^4\omega_4^2\omega_2^3 - 16\omega_3^2\omega_4^2\omega_2^3 - 256\omega_3^2v_3^2\omega_4^2\omega_1\omega_2^3 - 784\omega_3^2v_3^2c_s^2\omega_4^2\omega_2^3 + 9\omega_3c_s^2\omega_4^2\omega_1^3\omega_2^3 + 588\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^3)\frac{v_3}{72\omega_3^2\omega_4^2\omega_1^3\omega_2^3}$

coefficient $C^{(1)}_{\mathrm{D}_x\mathrm{D}_z^3v_1}$ **at** $\frac{\partial^4 v_1}{\partial x_1\partial x_3^3}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_z^3v_1} = (2 - \omega + v_3^2\omega - 2v_3^2 + 3c_s^2\omega - 6c_s^2)\frac{v_3v_1\rho}{12\omega}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^3v_1} = (72\omega_6\omega_{22}c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9^2 + 12\omega_6^2\omega_{22}v_3^2\omega_{13}^2\omega_{18}^2\omega_9^2 + 12\omega_6^3\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9 - 66\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9^2 + 6\omega_6^3\omega_{22}v_3^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2 +$
$24\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_{11}^2\omega_9^2 + 6\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2 - 12\omega_6^3c_s^2\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9 - 12\omega_6^3v_3^2\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9 + 84\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9 -$
$24\omega_6^2\omega_{22}v_3^2\omega_{13}^2\omega_{11}^2\omega_9^2 + 12\omega_6^2\omega_{22}v_3^2\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9 + 18\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^2 - 96\omega_{22}c_s^2\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2 - 18\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_{18}^2\omega_9^2 -$
$24\omega_6^2\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9^2 + 24\omega_6^2c_s^2\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9^2 + \omega_6^3\omega_{22}v_3^2\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2 + 24\omega_6^2v_3^2\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9^2 + 3\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2 - 12\omega_6\omega_{22}\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^2 +$
$24\omega_6^2v_3^2\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9^2 + 24\omega_6^2c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9^2 - 24\omega_6^2\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9^2 + 12\omega_6\omega_{22}v_3^2\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^2 - 66\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2 +$
$12\omega_6\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^2 - 12\omega_6^2\omega_{22}v_3^2\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2 - 12\omega_6^2\omega_{22}\omega_{13}^2\omega_{18}^2\omega_9^2 - \omega_6^3\omega_{22}\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2 + 12\omega_6^3c_s^2\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2 + 24\omega_6^2\omega_{22}c_s^2\omega_{11}^2\omega_{18}^2\omega_9^2 +$
$36\omega_6\omega_{22}\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9^2 + 12\omega_6^3v_3^2\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2 + 12\omega_6^2\omega_{22}\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9^2 - 12\omega_6^3\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2 - 6\omega_6^3\omega_{22}\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2 - 12\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^2 -$
$36\omega_6\omega_{22}v_3^2\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9^2 + 24\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9 - 12\omega_6^2\omega_{22}v_3^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2 - 36\omega_6\omega_{22}c_s^2\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9^2 + 24\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}^2\omega_9^2 +$
$6\omega_6^3\omega_{22}\omega_{13}^2\omega_{18}^2\omega_9^2 + 24\omega_6^3c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9 + 36\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_{18}^2\omega_9^2 + 24\omega_6^3v_3^2\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9 - 12\omega_6^3v_3^2\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9^2 - 12\omega_6\omega_{22}\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2 +$
$24\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2 - 12\omega_6^3c_s^2\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9^2 - 4\omega_6^3\omega_{22}\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9^2 + 12\omega_6^3\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9^2 + 12\omega_6^3\omega_{22}v_3^2\omega_{13}^2\omega_{11}^2\omega_9^2 + 156\omega_6\omega_{22}c_s^2\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2 -$
$18\omega_6^2\omega_{22}v_3^2\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^2 - 12\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9 + 12\omega_6\omega_{22}v_3^2\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2 - 42\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^2 - 24\omega_6^3\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9 +$
$12\omega_6^3\omega_{22}v_3^2\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9^2 - 48\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_{11}^2\omega_9^2 + 60\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9^2 - 12\omega_6^3\omega_{22}\omega_{13}^2\omega_{11}^2\omega_9^2 + 12\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9 +$

$12\omega_6^3\omega_{22}v_3^2\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9+24\omega_6^2\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2+24\omega_6^3\omega_{22}c_s^2\omega_{11}^2\omega_{18}^2\omega_9-6\omega_6^3\omega_{22}v_3^2\omega_{13}^2\omega_{18}^2\omega_9^2+66\omega_6^2\omega_{22}v_3^2\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9^2+12\omega_6^3\omega_{22}\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9+$
$90\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9^2+18\omega_6^3\omega_{22}\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9^2+48\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9-24\omega_6^2\omega_{22}v_3^2\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9-$
$12\omega_6^3\omega_{22}\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9^2-24\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9-12\omega_6^3\omega_{22}\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9-132\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9^2-12\omega_6^2\omega_{22}v_3^2\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9^2-$
$12\omega_6^3\omega_{22}v_3^2\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9-84\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9-24\omega_6^2v_3^2\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2-24\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2-24\omega_6^3\omega_{22}c_s^2\omega_{11}^2\omega_{18}^2\omega_9^2-$
$24\omega_6^2c_s^2\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2-18\omega_6^3\omega_{22}v_3^2\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9^2+12\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2-72\omega_6\omega_{22}c_s^2\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9+24\omega_6^3\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9^2+$
$12\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^2-24\omega_6^3c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9^2+4\omega_6^3\omega_{22}v_3^2\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^2-24\omega_6^3v_3^2\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9^2-24\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_{11}^2\omega_{18}^2)\frac{v_3v_1\rho}{12\omega_6^3\omega_{22}\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_z^3v_1}=C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^3v_1}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_z^3v_1}=(v_3^2\omega_{11}\omega_{18}-9c_s^2\omega_{11}-3v_3^2\omega_{11}+3\omega_{11}+3c_s^2\omega_{18}-\omega_{11}\omega_{18}+3c_s^2\omega_{11}\omega_{18}+v_3^2\omega_{18}-\omega_{18})\frac{v_3v_1\rho}{12\omega_{11}\omega_{18}}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_z^3v_1}=C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_z^3v_1}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_z^3v_1}=(-3\omega_6v_3^2+3\omega_6+3\omega_6c_s^2\omega_8+v_3^2\omega_8-9\omega_6c_s^2+3c_s^2\omega_8-\omega_6\omega_8+\omega_6v_3^2\omega_8-\omega_8)\frac{v_3v_1\rho}{12\omega_6\omega_8}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_z^3v_1}=(9\omega_4\omega_1\omega_2-27\omega_3c_s^2\omega_1\omega_2-27c_s^2\omega_4\omega_1\omega_2+12\omega_3c_s^2\omega_4\omega_1+6\omega_3c_s^2\omega_4\omega_2+6\omega_3v_3^2\omega_4\omega_1\omega_2-6\omega_3\omega_4\omega_1\omega_2+2\omega_3\omega_4\omega_2+$
$18\omega_3v_1^2\omega_4\omega_1+4\omega_3v_3^2\omega_4\omega_2-9v_3^2\omega_4\omega_1\omega_2+18\omega_3c_s^2\omega_4\omega_1\omega_2-8\omega_3\omega_4\omega_1-9\omega_3v_3^2\omega_1\omega_2+2\omega_3v_3^2\omega_4\omega_1-18\omega_3v_1^2\omega_4\omega_2+9\omega_3\omega_1\omega_2)\frac{v_3v_1\rho}{72\omega_3\omega_4\omega_1\omega_2}$

coefficient $C^{(1)}_{\mathrm{D}_x\mathrm{D}_z^3v_3}$ **at** $\frac{\partial^4v_3}{\partial x_1\partial x_3^3}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_z^3v_3}=(-12-6\omega^2+18\omega-54v_3^2\omega+2c_s^2\omega^2-c_s^2\omega^3+36v_3^2+18v_3^2\omega^2)\frac{c_s^2\rho}{12\omega^3}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^3v_3}=(24\omega_6^2\omega_{22}v_1^2\omega_{13}\omega_{11}^2\omega_{18}+24\omega_6\omega_{22}c_s^2v_1^2\omega_{13}\omega_{11}\omega_{18}^2\omega_9+24\omega_6\omega_{22}v_1^2\omega_{13}\omega_{11}^2\omega_{18}\omega_9+36\omega_6^3\omega_{22}v_3^2c_s^2\omega_{11}\omega_{18}^2\omega_9+$
$12\omega_6^2\omega_{22}v_1^2\omega_{13}\omega_{11}\omega_{18}\omega_9+54\omega_6^2\omega_{22}v_3^2c_s^2\omega_{13}\omega_{11}\omega_{18}^2\omega_9+72\omega_6\omega_{22}v_3^2v_1^2\omega_{13}\omega_{11}\omega_{18}^2\omega_9+12\omega_6^3c_s^2v_1^2\omega_{11}^2\omega_{18}^2-5\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_{11}\omega_{18}^2\omega_9+$
$18\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}\omega_{11}\omega_{18}^2-12\omega_6^3c_s^4\omega_{11}^2\omega_{18}^2\omega_9-12\omega_6^2v_1^2\omega_{11}^2\omega_{18}^2\omega_9-6\omega_6^3v_1^2\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9+5\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18}^2\omega_9-$
$102\omega_6^2\omega_{22}v_3^2c_s^2\omega_{13}\omega_{11}^2\omega_{18}\omega_9-72\omega_6\omega_{22}v_3^2v_1^2\omega_{13}\omega_{11}^2\omega_{18}\omega_9-36\omega_6^2\omega_{22}v_3^2v_1^2\omega_{11}\omega_{18}^2\omega_9+6\omega_6^3\omega_{22}v_1^2\omega_{13}\omega_{11}\omega_{18}^2-12\omega_6^2c_s^4\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9-$
$12\omega_6^2\omega_{22}c_s^2v_1^2\omega_{11}\omega_{18}^2\omega_9+18\omega_6^3v_3^2v_1^2\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9+6\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_{11}^2\omega_{18}\omega_9-12\omega_6^3c_s^2\omega_{11}^2\omega_{18}^2-24\omega_6\omega_{22}c_s^2v_1^2\omega_{13}\omega_{11}^2\omega_{18}\omega_9-$
$12\omega_6^3\omega_{22}v_1^2\omega_{11}\omega_{18}^2\omega_9-24\omega_6\omega_{22}v_1^2\omega_{13}\omega_{11}\omega_{18}^2\omega_9+36\omega_6^2v_3^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9+36\omega_6^3v_3^2c_s^2\omega_{11}^2\omega_{18}^2+72\omega_6^2\omega_{22}v_3^2v_1^2\omega_{13}\omega_{11}\omega_{18}^2+6\omega_6^3c_s^2v_1^2\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9+$
$24\omega_6^2\omega_{22}c_s^2v_1^2\omega_{13}\omega_{11}\omega_{18}^2-6\omega_6^3c_s^4\omega_{13}\omega_{11}^2\omega_{18}^2-6\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_{11}^2\omega_{18}\omega_9+12\omega_6^2c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9+36\omega_6^2v_3^2c_s^2\omega_{13}\omega_{11}^2\omega_{18}\omega_9-$
$48\omega_{22}v_3^2c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9-12\omega_6^2c_s^2v_1^2\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9+27\omega_6^3\omega_{22}v_3^2v_1^2\omega_{13}\omega_{11}\omega_{18}^2\omega_9-6\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_{11}\omega_{18}^2-36\omega_6^3\omega_{22}v_3^2v_1^2\omega_{11}\omega_{18}^2-$
$12\omega_6^2v_1^2\omega_{13}\omega_{11}^2\omega_{18}\omega_9-18\omega_6^3\omega_{22}v_3^2v_1^2\omega_{13}\omega_{11}\omega_{18}^2-36\omega_6^2v_3^2v_1^2\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9+9\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_{11}\omega_{18}^2\omega_9-18\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_{11}^2\omega_{18}\omega_9+$
$12\omega_6^3\omega_{22}c_s^2v_1^2\omega_{11}\omega_{18}^2\omega_9+36\omega_6^3\omega_{22}v_3^2v_1^2\omega_{11}\omega_{18}^2\omega_9+60\omega_6\omega_{22}v_3^2c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9+12\omega_6^2\omega_{22}v_1^2\omega_{13}\omega_{11}^2\omega_9-18\omega_6^3v_3^2c_s^2\omega_{13}\omega_{11}^2\omega_{18}\omega_9-$
$12\omega_6^2\omega_{22}c_s^4\omega_{11}\omega_{18}^2\omega_9+18\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{11}^2\omega_{18}\omega_9-12\omega_6^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9+36\omega_6^2v_3^2v_1^2\omega_{11}^2\omega_{18}^2\omega_9-15\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_{11}^2\omega_{18}\omega_9+12\omega_6^3c_s^4\omega_{11}^2\omega_{18}^2-$
$12\omega_6^3\omega_{22}c_s^2\omega_{11}\omega_{18}^2\omega_9+18\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_{11}\omega_{18}^2\omega_9+18\omega_6\omega_{22}c_s^4\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9+6\omega_6^3c_s^2\omega_{13}\omega_{11}^2\omega_{18}\omega_9+12\omega_6^2c_s^2v_1^2\omega_{11}^2\omega_{18}^2\omega_9-6\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18}^2-$
$6\omega_6^3\omega_{22}v_1^2\omega_{13}\omega_{11}\omega_{18}\omega_9-36\omega_6^2\omega_{22}v_3^2c_s^2\omega_{11}\omega_{18}^2\omega_9-45\omega_6^3\omega_{22}v_3^2v_1^2\omega_{13}\omega_{11}^2\omega_{18}\omega_9-12\omega_6^2\omega_{22}v_1^2\omega_{13}\omega_{18}^2\omega_9+12\omega_6^3\omega_{22}v_1^2\omega_{11}\omega_{18}^2-$
$6\omega_6^3c_s^4\omega_{13}\omega_{11}^2\omega_{18}\omega_9-12\omega_6^2\omega_{22}c_s^2v_1^2\omega_{13}\omega_{11}\omega_{18}\omega_9-18\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18}^2\omega_9-36\omega_6^2\omega_{22}v_3^2v_1^2\omega_{13}\omega_{11}\omega_{18}\omega_9-12\omega_6^3v_1^2\omega_{11}^2\omega_{18}^2+$
$12\omega_6\omega_{22}c_s^4\omega_{13}\omega_{11}^2\omega_{18}\omega_9-6\omega_6^3c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9+6\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_{11}^2\omega_9+12\omega_6^3c_s^2\omega_{11}^2\omega_{18}^2\omega_9+18\omega_6^3\omega_{22}v_3^2v_1^2\omega_{13}\omega_{11}^2\omega_9-9\omega_6^3\omega_{22}v_1^2\omega_{13}\omega_{11}\omega_{18}^2\omega_9+$
$36\omega_6^3v_3^2v_1^2\omega_{11}^2\omega_{18}^2-12\omega_6^3\omega_{22}c_s^4\omega_{11}\omega_{18}^2-12\omega_6\omega_{22}c_s^2\omega_{13}\omega_{11}^2\omega_{18}\omega_9-36\omega_6^2\omega_{22}c_s^2v_1^2\omega_{13}\omega_{11}\omega_{18}^2\omega_9-24\omega_6^2\omega_{22}v_1^2\omega_{13}\omega_{11}\omega_{18}^2+6\omega_6^3c_s^4\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9-$
$36\omega_6\omega_{22}v_3^2c_s^2\omega_{13}\omega_{11}\omega_{18}^2\omega_9-36\omega_6^3v_3^2c_s^2\omega_{11}^2\omega_{18}^2\omega_9-108\omega_6^2\omega_{22}v_3^2v_1^2\omega_{13}\omega_{11}\omega_{18}^2\omega_9+12\omega_6^2\omega_{22}v_1^2\omega_{11}\omega_{18}^2\omega_9-18\omega_6^3\omega_{22}v_3^2v_1^2\omega_{13}\omega_{18}^2\omega_9+$
$12\omega_6^2v_1^2\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9+24\omega_6^2\omega_{22}v_3^2c_s^2\omega_{13}\omega_{11}^2\omega_9+6\omega_6^3c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2-6\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_{18}^2\omega_9+15\omega_6^3\omega_{22}v_1^2\omega_{13}\omega_{11}^2\omega_{18}\omega_9+$
$18\omega_6^3\omega_{22}v_3^2v_1^2\omega_{13}\omega_{11}\omega_{18}\omega_9+12\omega_6^2c_s^2v_1^2\omega_{13}\omega_{11}^2\omega_{18}\omega_9-12\omega_6\omega_{22}c_s^4\omega_{13}\omega_{11}\omega_{18}^2\omega_9+6\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_{11}\omega_{18}\omega_9+36\omega_6^2v_3^2v_1^2\omega_{13}\omega_{11}^2\omega_{18}\omega_9-$
$5\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9+18\omega_6^3v_3^2c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9-12\omega_6^3\omega_{22}v_1^2\omega_{13}\omega_{11}^2\omega_{18}+60\omega_6\omega_{22}v_3^2c_s^2\omega_{13}\omega_{11}^2\omega_{18}\omega_9+144\omega_6^2\omega_{22}v_3^2v_1^2\omega_{13}\omega_{11}^2\omega_{18}\omega_9+$
$\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9-24\omega_6^2\omega_{22}c_s^2v_1^2\omega_{13}\omega_{11}^2\omega_{18}-18\omega_6^3v_3^2c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2-72\omega_6^2\omega_{22}v_3^2v_1^2\omega_{13}\omega_{11}^2\omega_{18}+48\omega_6^2\omega_{22}c_s^2v_1^2\omega_{13}\omega_{11}^2\omega_{18}\omega_9+$
$12\omega_6\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18}^2\omega_9-12\omega_6^3\omega_{22}c_s^2v_1^2\omega_{11}\omega_{18}^2-18\omega_6^3v_3^2v_1^2\omega_{13}\omega_{11}^2\omega_{18}\omega_9-\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9+12\omega_6^2c_s^4\omega_{13}\omega_{11}^2\omega_{18}\omega_9-$
$15\omega_6^2\omega_{22}v_3^2c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9+6\omega_6^3\omega_{22}v_1^2\omega_{13}\omega_{18}^2\omega_9-48\omega_6^2\omega_{22}v_1^2\omega_{13}\omega_{11}^2\omega_{18}\omega_9-6\omega_6^3c_s^2v_1^2\omega_{13}\omega_{11}^2\omega_{18}\omega_9+12\omega_6^2\omega_{22}c_s^2v_1^2\omega_{13}\omega_{18}^2\omega_9-$
$12\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}\omega_{11}^2\omega_9+12\omega_6^3v_1^2\omega_{11}^2\omega_{18}^2\omega_9+36\omega_6^2\omega_{22}v_3^2v_1^2\omega_{13}\omega_{18}^2\omega_9+36\omega_6^3\omega_{22}v_3^2v_1^2\omega_{13}\omega_{11}^2\omega_{18}-12\omega_{22}c_s^4\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9-$
$12\omega_6^3c_s^2v_1^2\omega_{11}^2\omega_{18}^2\omega_9-12\omega_6^2c_s^2\omega_{13}\omega_{11}^2\omega_{18}\omega_9+12\omega_6^2c_s^4\omega_{11}^2\omega_{18}^2\omega_9+12\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_{11}^2\omega_{18}+12\omega_6^3\omega_{22}c_s^2\omega_{11}\omega_{18}^2+12\omega_6^2\omega_{22}c_s^2\omega_{11}\omega_{18}^2\omega_9-$
$15\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}\omega_{11}\omega_{18}^2\omega_9-36\omega_6^3v_3^2v_1^2\omega_{11}^2\omega_{18}^2\omega_9-36\omega_6^2v_3^2c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9-6\omega_6^3\omega_{22}v_1^2\omega_{13}\omega_{11}^2\omega_9+36\omega_6^2\omega_{22}v_1^2\omega_{13}\omega_{11}\omega_{18}^2\omega_9+$
$6\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_{11}\omega_{18}^2-36\omega_6^3\omega_{22}v_3^2c_s^2\omega_{11}\omega_{18}^2-36\omega_6^2\omega_{22}v_3^2v_1^2\omega_{13}\omega_{11}^2\omega_9+12\omega_6^3\omega_{22}c_s^4\omega_{11}\omega_{18}^2\omega_9-12\omega_6^2\omega_{22}c_s^2v_1^2\omega_{13}\omega_{11}^2\omega_9+6\omega_6^3v_1^2\omega_{13}\omega_{11}^2\omega_{18}^2-$
$6\omega_6^3c_s^2v_1^2\omega_{13}\omega_{11}^2\omega_{18}^2+6\omega_6^3v_1^2\omega_{13}\omega_{11}^2\omega_{18}\omega_9-18\omega_6^3v_3^2v_1^2\omega_{13}\omega_{11}^2\omega_{18}^2+30\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}\omega_{11}^2\omega_{18}\omega_9)\frac{\rho}{12\omega_6^3\omega_{22}\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_z^3v_3}=C^{(1),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^3v_3}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_z^3v_3}=(-18\omega_6^2\omega_{22}\omega_{13}\omega_{18}\omega_9-6\omega_6^3\omega_{22}\omega_{13}\omega_{18}-12\omega_6^2\omega_{22}c_s^2\omega_{18}\omega_9-12\omega_6^3\omega_{22}c_s^2\omega_{18}-12\omega_6^3\omega_{22}\omega_{18}\omega_9+18\omega_6^3\omega_{22}v_3^2\omega_{13}\omega_{18}-$
$12\omega_6\omega_{22}\omega_{13}\omega_{11}\omega_9+36\omega_6^3\omega_{22}v_3^2\omega_{18}\omega_9-36\omega_6^2v_3^2\omega_{13}\omega_{11}\omega_{18}\omega_9+36\omega_6\omega_{22}v_3^2\omega_{13}\omega_{11}\omega_9-12\omega_6^2c_s^2\omega_{13}\omega_{11}\omega_{18}\omega_9+12\omega_6^3\omega_{11}\omega_{18}\omega_9+$
$18\omega_6^2\omega_{22}\omega_{13}\omega_{11}\omega_9+\omega_6^2\omega_{22}\omega_{13}\omega_{11}\omega_{18}\omega_9-36\omega_6^3v_3^2\omega_{11}\omega_{18}\omega_9-6\omega_6^3c_s^2\omega_{13}\omega_{11}\omega_{18}+12\omega_6\omega_{22}\omega_{13}\omega_{18}\omega_9-36\omega_6\omega_{22}v_3^2\omega_{13}\omega_{18}\omega_9+$
$36\omega_6^2v_3^2\omega_{13}\omega_{11}\omega_9+6\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_9-12\omega_6^2\omega_{11}\omega_{18}\omega_9+18\omega_6\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18}\omega_9+54\omega_6^2\omega_{22}v_3^2\omega_{13}\omega_{18}\omega_9+12\omega_6^2\omega_{22}\omega_{18}\omega_9-$
$6\omega_6^3c_s^2\omega_{13}\omega_{11}\omega_9-5\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_{18}\omega_9-36\omega_6^3\omega_{22}v_3^2\omega_{18}+12\omega_6^2\omega_{13}\omega_{11}\omega_{18}\omega_9+36\omega_6^3v_3^2\omega_{11}\omega_{18}+12\omega_6^2c_s^2\omega_{11}\omega_{18}\omega_9-54\omega_6^2\omega_{22}v_3^2\omega_{13}\omega_{11}\omega_9-$

$12\omega_6^2\omega_{13}\omega_{11}\omega_9 - 5\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18}\omega_9 - 3\omega_6^2\omega_{22}v_3^2\omega_{13}\omega_{11}\omega_{18}\omega_9 + 12\omega_6\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_9 + 6\omega_6^3c_s^2\omega_{13}\omega_{11}\omega_{18}\omega_9 + 18\omega_6^3v_3^2\omega_{13}\omega_{11}\omega_{18}\omega_9 - 12\omega_6^3c_s^2\omega_{11}\omega_{18}\omega_9 + 12\omega_6^3c_s^2\omega_{11}\omega_{18} - 18\omega_6^3v_3^2\omega_{13}\omega_{11}\omega_{18} - 6\omega_6^3\omega_{13}\omega_{11}\omega_{18}\omega_9 - 12\omega_6\omega_{22}c_s^2\omega_{13}\omega_{18}\omega_9 + 12\omega_6^2c_s^2\omega_{13}\omega_{11}\omega_9 + 6\omega_6^3\omega_{13}\omega_{11}\omega_{18} - 36\omega_6^2\omega_{22}v_3^2\omega_{18}\omega_9 + 18\omega_6^3\omega_{22}v_3^2\omega_{13}\omega_{11}\omega_9 + 6\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_{18} + 12\omega_6^3\omega_{22}c_s^2\omega_{18}\omega_9 + 5\omega_6^3\omega_{22}\omega_{13}\omega_{18}\omega_9 + 18\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{18}\omega_9 + 12\omega_6^3\omega_{22}\omega_{18} - 18\omega_6^3v_3^2\omega_{13}\omega_{11}\omega_9 + 6\omega_6^3\omega_{13}\omega_{11}\omega_9 - 15\omega_6^3\omega_{22}v_3^2\omega_{13}\omega_{18}\omega_9 - 12\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18}\omega_9 - 12\omega_6^3\omega_{11}\omega_{18} + 36\omega_6^2v_3^2\omega_{11}\omega_{18}\omega_9 - 18\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_9 - 6\omega_6^3\omega_{22}\omega_{13}\omega_{11}\omega_9 - \omega_6^3\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18}\omega_9)\frac{c_s^2\rho}{12\omega_6^3\omega_{22}\omega_{13}\omega_{11}\omega_{18}\omega_9}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_z^3v_3} = C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_z^3v_3}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_z^3v_3} = (-3\omega_6v_3^2\omega_8\omega_2^2 - 12\omega_6c_s^2\omega_8 + \omega_6\omega_8\omega_2^2 - 12\omega_2^2 - 12c_s^2\omega_8\omega_2 + 12\omega_8\omega_2 + 6\omega_2^3 - 6\omega_8\omega_2^2 + 6c_s^2\omega_8\omega_2^2 - \omega_8\omega_2^3 + c_s^2\omega_8\omega_2^3 + 6\omega_6c_s^2\omega_2^3 + 36v_3^2\omega_2^2 + 18v_3^2\omega_8\omega_2^2 - 18v_3^2\omega_2^3 - 18\omega_6c_s^2\omega_2^2 + 18\omega_6c_s^2\omega_8\omega_2 - 12\omega_6\omega_2 + 3v_3^2\omega_8\omega_2^3 + 36\omega_6v_3^2\omega_2 - 5\omega_6c_s^2\omega_8\omega_2^2 - 6c_s^2\omega_2^3 + 18\omega_6\omega_2^2 - 54\omega_6v_3^2\omega_2^2 + 12\omega_6c_s^2\omega_2 + 18\omega_6v_3^2\omega_2^3 + 12c_s^2\omega_2^2 - 36v_3^2\omega_8\omega_2 - 6\omega_6\omega_2^3 - \omega_6c_s^2\omega_8\omega_2^3)\frac{c_s^2\rho}{12\omega_6\omega_8\omega_2^3}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_z^3v_3} = (94\omega_3c_s^4\omega_4\omega_1\omega_2^3 - 90\omega_3v_3^2c_s^2\omega_4\omega_1^2\omega_2^2 - 4\omega_3\omega_4\omega_1\omega_2^2 - 222\omega_3v_3^2\omega_4\omega_1\omega_2^3 + 40\omega_3c_s^2\omega_4\omega_2^3 + 8c_s^4\omega_4\omega_1^3\omega_2 + 138\omega_3v_3^4\omega_4\omega_1^3\omega_2^2 - 18c_s^4\omega_4\omega_1^2\omega_2^3 + 3\omega_3c_s^2v_1^2\omega_4\omega_1^3\omega_2^2 - 24\omega_3c_s^2\omega_4\omega_1^3\omega_2^2 + 12\omega_3v_3^2\omega_4\omega_1\omega_2^2 + \omega_3v_1^2\omega_4\omega_1^2\omega_2^3 + 14\omega_3\omega_4\omega_1\omega_2^3 - 288\omega_3v_3^2c_s^2\omega_4\omega_1^3\omega_2 - 153\omega_3v_3^2c_s^2\omega_4\omega_1^2\omega_2^3 - 28\omega_3c_s^4\omega_4\omega_1\omega_2^2 - 312\omega_3v_3^2c_s^2\omega_4\omega_2^3 + 24v_3^2c_s^2\omega_4\omega_1\omega_2^3 + 16\omega_3c_s^4\omega_4\omega_1^3 - 16\omega_3c_s^2\omega_4\omega_1^2\omega_2 + 20c_s^4\omega_4\omega_1^2\omega_2^2 + 192\omega_3v_3^4\omega_4\omega_1^2\omega_2 + 36\omega_3c_s^4\omega_1\omega_2^3 - 6\omega_3c_s^2\omega_4\omega_1^2\omega_2^2 - 68\omega_3c_s^4\omega_4\omega_2^3 - 168\omega_3v_3^4\omega_4\omega_1^2\omega_2^2 + 144\omega_3v_3^2c_s^2\omega_4\omega_1^3 + 9c_s^4\omega_4\omega_1^3\omega_2^3 - \omega_3v_1^2\omega_4\omega_1^3\omega_2^2 + 108\omega_3v_3^2c_s^2\omega_1\omega_2^3 + 153\omega_3v_3^2c_s^2\omega_4\omega_1^3\omega_2^2 - 240\omega_3v_3^4\omega_4\omega_1^3\omega_2 - 3\omega_3c_s^2v_1^2\omega_4\omega_1^2\omega_2^3 - 18c_s^4\omega_4\omega_1^3\omega_2^2 - 138\omega_3v_3^4\omega_4\omega_1^2\omega_2^3 + 42\omega_3c_s^2\omega_4\omega_1^3\omega_2 - 20\omega_3c_s^2\omega_4\omega_1^3 + 24\omega_3c_s^2\omega_4\omega_1^2\omega_2^3 + 120\omega_3v_3^2c_s^2\omega_4\omega_1^2\omega_2 - 8c_s^2\omega_4\omega_1\omega_2^3 - 36\omega_3c_s^2\omega_1\omega_2^3 + 9\omega_3c_s^4\omega_1^3\omega_2^3 + 408\omega_3v_3^4\omega_4\omega_1\omega_2^3 - 264\omega_3v_3^4\omega_4\omega_2^3 - 54\omega_3c_s^2\omega_4\omega_1\omega_2^3 + 17\omega_3c_s^4\omega_4\omega_1^3\omega_2^2 + 27v_3^2c_s^2\omega_4\omega_1^3\omega_2^3 + 8\omega_3\omega_4\omega_1^2\omega_2 - 81\omega_3v_3^2\omega_4\omega_1^3\omega_2^2 - 8c_s^2\omega_4\omega_1^3\omega_2 + 18c_s^2\omega_4\omega_1^2\omega_2^3 + 36\omega_3c_s^2\omega_1^2\omega_2^3 + 32\omega_3c_s^2\omega_4\omega_1\omega_2^2 - 60\omega_3v_3^2\omega_4\omega_1^3 - \omega_3v_1^4\omega_4\omega_1^2\omega_2^3 - 24\omega_3v_3^4\omega_4\omega_1\omega_2^2 - 96\omega_3v_3^2\omega_4\omega_1^2\omega_2 - 20c_s^2\omega_4\omega_1^2\omega_2^2 + 8\omega_3c_s^4\omega_4\omega_1^2\omega_2 + 7\omega_3\omega_4\omega_1^3\omega_2^2 + 4\omega_3\omega_4\omega_1^3 - 54v_3^2c_s^2\omega_4\omega_1^3\omega_2^2 - 3\omega_3c_s^4\omega_4\omega_1^3\omega_2^3 - 108\omega_3v_3^2c_s^2\omega_1^2\omega_2^3 + 84\omega_3v_3^2\omega_4\omega_1^2\omega_2^2 - 9c_s^2\omega_4\omega_1^3\omega_2^3 - 9\omega_3c_s^2\omega_1^3\omega_2^3 + 432\omega_3v_3^2c_s^2\omega_4\omega_1\omega_2^3 - 10\omega_3\omega_4\omega_1^3\omega_2 + 10\omega_3c_s^4\omega_4\omega_1^2\omega_2^2 - 54v_3^2c_s^2\omega_4\omega_1^2\omega_2^3 + 144\omega_3v_3^2\omega_4\omega_2^3 + 24v_3^2c_s^2\omega_4\omega_1^3\omega_2 - 7\omega_3\omega_4\omega_1^2\omega_2^3 - 36\omega_3c_s^4\omega_1^2\omega_2^3 + \omega_3v_1^4\omega_4\omega_1^3\omega_2^2 - 8\omega_3\omega_4\omega_2^3 - 4\omega_3\omega_4\omega_1^2\omega_2^2 - 32\omega_3c_s^4\omega_4\omega_1^3\omega_2 + 27\omega_3v_3^2c_s^2\omega_1^3\omega_2^3 + 60v_3^2c_s^2\omega_4\omega_1^2\omega_2^2 - 29\omega_3c_s^4\omega_4\omega_1^2\omega_2^3 - 60\omega_3v_3^2c_s^2\omega_4\omega_1\omega_2^2 + 18c_s^2\omega_4\omega_1^3\omega_2^2 + 138\omega_3v_3^2\omega_4\omega_1^3\omega_2 + 96\omega_3v_3^4\omega_4\omega_1^3 + 81\omega_3v_3^2\omega_4\omega_1^2\omega_2^3 + 8c_s^4\omega_4\omega_1\omega_2^3)\frac{\rho}{36\omega_3\omega_4\omega_1^3\omega_2^3}$

coefficient $C^{(1)}_{\mathrm{D}_y\mathrm{D}_z^3\rho}$ **at** $\frac{\partial^4\rho}{\partial x_2\partial x_3^3}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_y\mathrm{D}_z^3\rho} = 0$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^3\rho} = (-4\omega_6\omega_{19}\omega_7\omega_{20}\omega_8\omega_5\omega_{18}^2 + 8\omega_6\omega_{19}v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} - 3\omega_6^2v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 - 4\omega_6v_3^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 + 2\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} - 4\omega_6\omega_{19}v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18} - 4\omega_6^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 + 24\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} - 9\omega_6^2c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 - 4\omega_6\omega_{19}\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 - 12\omega_6c_s^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 - 4\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 - 12\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18} - 4\omega_6^2\omega_{19}\omega_7\omega_{11}^2\omega_{18}^2 - 4\omega_6\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 + 4\omega_6^2\omega_{19}v_3^2\omega_7\omega_{11}^2\omega_{18}^2 - 2\omega_6^2\omega_{19}v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 12\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 + 2\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18}^2 - 2\omega_6^2\omega_{19}\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18}^2 + 6\omega_6^2\omega_{19}c_s^2\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18}^2 - 6\omega_6^2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18}^2 - 4\omega_6v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 - 4\omega_6^2\omega_{19}\omega_{20}\omega_{11}\omega_8\omega_{18}^2 + 12\omega_6^2\omega_{19}c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2 + 2\omega_6^2\omega_{19}v_3^2\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18}^2 - 6\omega_6^2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 4\omega_{19}v_3^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 - 2\omega_6^2\omega_{19}v_3^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18}^2 + 4\omega_6^2\omega_{19}v_3^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2 + 4\omega_6\omega_{19}v_3^2\omega_7\omega_{11}^2\omega_5\omega_{18}^2 - 6\omega_6^2\omega_{19}c_s^2\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18} + 12\omega_6\omega_{19}c_s^2\omega_7\omega_{11}^2\omega_5\omega_{18}^2 + 12\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 - 2\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 - 2\omega_6^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 - 2\omega_6^2\omega_{19}v_3^2\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18} + 4\omega_6\omega_{19}v_3^2\omega_7\omega_{20}\omega_8\omega_5\omega_{18}^2 + 6\omega_6^2c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 + 12\omega_6\omega_{19}c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 + 6\omega_6^2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5 + 2\omega_6^2v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 + 4\omega_6\omega_{19}v_3^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 + 2\omega_6^2\omega_{19}\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18} + 2\omega_6^2\omega_{19}v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5 + 4\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18} - 4\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_5\omega_{18}^2 + 8\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 + 4\omega_6^2\omega_{19}v_3^2\omega_7\omega_{20}\omega_{11}\omega_5\omega_{18}^2 + 4\omega_6\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 + 12\omega_6^2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}\omega_5\omega_{18}^2 + 12\omega_6c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 + 4\omega_6^2\omega_{19}\omega_7\omega_{11}^2\omega_5\omega_{18}^2 + 4\omega_6\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 + 4\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5 + 2\omega_6^2\omega_{19}v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18} - 4\omega_6^2\omega_{19}v_3^2\omega_7\omega_{11}^2\omega_5\omega_{18}^2 + 6\omega_6^2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18} + 6\omega_6^2c_s^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 - 12\omega_6^2\omega_{19}c_s^2\omega_7\omega_{11}^2\omega_5\omega_{18}^2 - 4\omega_6\omega_{19}\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18} + 4\omega_6\omega_{19}v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 - 2\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18} - 8\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 2\omega_6^2v_3^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 + 12\omega_6^2\omega_{19}c_s^2\omega_7\omega_{11}^2\omega_{18}^2 - 12\omega_6^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 + 12\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18}^2 - 4\omega_6^2v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - 12\omega_6\omega_{19}c_s^2\omega_7\omega_{11}^2\omega_5\omega_{18}^2 + 4\omega_6\omega_{19}v_3^2\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18}^2 - 4\omega_6\omega_{19}v_3^2\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18}^2 - 2\omega_6^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 + 3\omega_6^2\omega_{19}v_3^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 - 6\omega_6^2\omega_{19}c_s^2\omega_7\omega_{11}^2\omega_8\omega_{18}^2 - 12\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} - 12\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5 - 2\omega_6^2\omega_{19}v_3^2\omega_7\omega_{11}^2\omega_8\omega_{18}^2 - 12\omega_6^2\omega_{19}c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 + 2\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_8\omega_5\omega_{18}^2 - 4\omega_6\omega_{19}v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5 - 4\omega_6^2\omega_{19}v_3^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 + 2\omega_6^2\omega_{19}\omega_7\omega_{11}^2\omega_8\omega_{18}^2 + 9\omega_6^2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 + 3\omega_6^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 - 6\omega_6^2\omega_{19}c_s^2\omega_7\omega_{20}\omega_8\omega_5\omega_{18}^2 - 4\omega_{19}v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 4\omega_6^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 + 12\omega_6\omega_{19}c_s^2\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18} - 2\omega_6^2\omega_{19}v_3^2\omega_7\omega_{20}\omega_8\omega_5\omega_{18}^2 + 4\omega_6\omega_{19}v_3^2\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18} + 4\omega_6^2\omega_{19}\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 - 4\omega_6\omega_{19}v_3^2\omega_7\omega_{20}\omega_{11}\omega_5\omega_{18}^2 + 4\omega_6\omega_{19}\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18}^2 - 4\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - 12\omega_6^2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}\omega_{18}^2 - 3\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 - 4\omega_6\omega_{19}\omega_7\omega_{11}^2\omega_5\omega_{18}^2 + 4\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_{18}^2 - 12\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}\omega_5\omega_{18}^2 - 8\omega_6\omega_{19}v_3^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 + 4\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 12\omega_6^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 + 4\omega_6^2v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 - 24\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2)\frac{v_3v_2v_1}{4\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_y\mathrm{D}_z^3\rho} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^3\rho}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_y\mathrm{D}_z^3\rho} = 0$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_y\mathrm{D}_z^3\rho} = 0$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_y\mathrm{D}_z^3\rho} = 0$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_y\mathrm{D}_z^3\rho} = (-\omega_1 - 3c_s^2\omega_2 - v_2^2\omega_2 + \omega_2 + v_2^2\omega_1 + 3c_s^2\omega_1)\frac{v_3v_2v_1}{12\omega_1\omega_2}$

coefficient $C^{(1)}_{\mathrm{D}_y\mathrm{D}_z^3 v_1}$ **at** $\frac{\partial^4 v_1}{\partial x_2 \partial x_3^3}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_y\mathrm{D}_z^3 v_1} = 0$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^3 v_1} = (2\omega_6^3c_s^2\omega_{20}\omega_5\omega_{18}^2 + 6\omega_6c_s^2\omega_{20}\omega_8\omega_5^2\omega_{18}^2 - 2\omega_6^3\omega_8\omega_5\omega_{18}^2 + \omega_6^2\omega_{20}\omega_8\omega_5^2\omega_{18}^2 + 2\omega_6^2c_s^2\omega_8^2\omega_5^2\omega_{18} + 2\omega_6^3v_3^2\omega_8\omega_5\omega_{18}^2 - 2\omega_6^2\omega_8^2\omega_5^2\omega_{18} - 6\omega_6c_s^2\omega_{20}\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^2v_3^2\omega_{20}\omega_8^2\omega_5^2 + 2\omega_6^2v_3^2\omega_8\omega_5^2\omega_{18}^2 + \omega_6^3\omega_{20}\omega_8\omega_5\omega_{18}^2 + \omega_6^3v_3^2\omega_8^2\omega_5^2\omega_{18}^2 - \omega_6^2\omega_{20}\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^2c_s^2\omega_{20}\omega_8^2\omega_5\omega_{18} - 2\omega_6^2v_3^2\omega_{20}\omega_8^2\omega_5\omega_{18} + 2\omega_6^2c_s^2\omega_{20}\omega_5^2\omega_{18}^2 - 7\omega_6^3c_s^2\omega_{20}\omega_8\omega_5\omega_{18}^2 - \omega_6^3\omega_8^2\omega_5^2\omega_{18}^2 - \omega_6^3v_3^2\omega_{20}\omega_8\omega_5\omega_{18}^2 + 7\omega_6^2c_s^2\omega_{20}\omega_8^2\omega_5\omega_{18}^2 - \omega_6^3v_3^2\omega_8^2\omega_5^2\omega_{18} + 2\omega_6^2\omega_{20}\omega_8^2\omega_5\omega_{18} + \omega_6^2v_3^2\omega_{20}\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^3c_s^2\omega_{20}\omega_8\omega_{18}^2 + \omega_6^3\omega_8^2\omega_5^2\omega_{18} + 2\omega_6^2\omega_8^2\omega_5^2\omega_{18}^2 - \omega_6^3c_s^2\omega_5\omega_{18}^2 - \omega_6^3c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} - 2\omega_6^2c_s^2\omega_8^2\omega_5^2\omega_{18}^2 - 11\omega_6^2c_s^2\omega_{20}\omega_8\omega_5^2\omega_{18}^2 - \omega_6^2v_3^2\omega_{20}\omega_8\omega_5^2\omega_{18}^2 - 2\omega_6^2c_s^2\omega_{20}\omega_8^2\omega_{18}^2 + \omega_6^3\omega_{20}\omega_8^2\omega_5^2\omega_{18} - 2\omega_6^3c_s^2\omega_8\omega_5^2\omega_{18}^2 + \omega_6^3c_s^2\omega_{20}\omega_8^2\omega_5^2 + \omega_6^3v_3^2\omega_{20}\omega_8^2\omega_5\omega_{18} + \omega_6^3c_s^2\omega_{20}\omega_8^2\omega_5\omega_{18} + 4\omega_6^2c_s^2\omega_{20}\omega_8\omega_5^2\omega_{18}^2 + 2\omega_6\omega_{20}\omega_8^2\omega_5^2\omega_{18} - \omega_6^3\omega_{20}\omega_8^2\omega_5\omega_{18} - 8c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2 + 2\omega_6^3c_s^2\omega_8\omega_5^2\omega_{18}^2 + 2\omega_6^2v_3^2\omega_8^2\omega_5^2\omega_{18} + 2\omega_6^2\omega_{20}\omega_8^2\omega_5^2 - 2\omega_6^2\omega_8\omega_5^2\omega_{18}^2 - \omega_6^2v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2 - 2\omega_6^2c_s^2\omega_{20}\omega_8^2\omega_5^2 + 2\omega_6^2c_s^2\omega_8\omega_5^2\omega_{18}^2 - 4\omega_6^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} - 5\omega_6^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2 - 2\omega_6c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} + \omega_6^3c_s^2\omega_8^2\omega_5^2\omega_{18}^2 - 2\omega_6v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} - \omega_6^3c_s^2\omega_8^2\omega_5^2\omega_{18} - \omega_6^3\omega_{20}\omega_8\omega_5^2\omega_{18}^2 + 13\omega_6c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2 + \omega_6v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2 + 4\omega_6^2v_3^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} + 4\omega_6^2c_s^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} - \omega_6^3v_3^2\omega_8^2\omega_5\omega_{18}^2 + \omega_6^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2 + \omega_6^3v_3^2\omega_{20}\omega_8\omega_5^2\omega_{18}^2 + \omega_6^3\omega_8^2\omega_5\omega_{18}^2 + 5\omega_6^3c_s^2\omega_{20}\omega_8\omega_5^2\omega_{18}^2 - \omega_6\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2 - 2\omega_6^2v_3^2\omega_8^2\omega_5^2\omega_{18}^2 - 2\omega_6^3c_s^2\omega_{20}\omega_5^2\omega_{18}^2 + 2\omega_6^3\omega_8\omega_5^2\omega_{18}^2 - \omega_6^3\omega_{20}\omega_8^2\omega_5^2 - 2\omega_6^3v_3^2\omega_8\omega_5^2\omega_{18}^2 + \omega_6^3v_3^2\omega_{20}\omega_8^2\omega_5^2)\frac{v_3v_2\rho}{2\omega_6^3\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_y\mathrm{D}_z^3 v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^3 v_1}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_y\mathrm{D}_z^3 v_1} = 0$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_y\mathrm{D}_z^3 v_1} = 0$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_y\mathrm{D}_z^3 v_1} = 0$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_y\mathrm{D}_z^3 v_1} = (2\omega_3\omega_4^2\omega_1 + 18\omega_3c_s^2\omega_4^2 + 12\omega_3v_3^2\omega_4 - 2\omega_3^2\omega_4\omega_1 + 6\omega_3v_2^2\omega_4^2 - 18\omega_3c_s^2\omega_4\omega_1 + 12\omega_4^2 + 3v_3^2\omega_4^2\omega_1 + 36\omega_3c_s^2\omega_4 + 6\omega_3^2\omega_4 - 2\omega_3v_2^2\omega_4^2\omega_1 - 6v_2^2\omega_4^2 - 6\omega_3^2v_2^2\omega_4 - 6\omega_3^2v_3^2 - 12\omega_3\omega_4 - 3\omega_3^2v_2^2\omega_1 + 18c_s^2\omega_4^2\omega_1 + 6\omega_3^2c_s^2\omega_4\omega_1 + 6\omega_3^2v_2^2 - 36c_s^2\omega_4^2 - 18\omega_3^2c_s^2\omega_4 - 6\omega_4^2\omega_1 - 6\omega_3c_s^2\omega_4^2\omega_1 - 6v_3^2\omega_4^2 + 3\omega_3^2v_3^2\omega_1 + 6\omega_3\omega_4\omega_1 - 6\omega_3\omega_4^2 - 6\omega_3v_3^2\omega_4\omega_1 + 3v_2^2\omega_4^2\omega_1 + 2\omega_3^2v_2^2\omega_4\omega_1)\frac{v_3v_2\rho}{8\omega_3^2\omega_4^2\omega_1}$

coefficient $C^{(1)}_{\mathrm{D}_y\mathrm{D}_z^3 v_2}$ **at** $\frac{\partial^4 v_2}{\partial x_2 \partial x_3^3}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_y\mathrm{D}_z^3 v_2} = (2 - \omega + v_3^2\omega - 2v_3^2 + 3c_s^2\omega - 6c_s^2)\frac{v_3v_1\rho}{12\omega}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^3 v_2} = (12\omega_6\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 + 12\omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{11}^2\omega_8\omega_5\omega_{18}^2 + 3\omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2 - 6\omega_6^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2 + 12\omega_6^2\omega_{19}v_3^2\omega_7^2\omega_{11}^2\omega_8\omega_5\omega_{18}^2 - 12\omega_6^2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} + \omega_6^2\omega_{19}v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2 - 12\omega_6^2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_{18}^2 - 12\omega_6^2\omega_{19}\omega_7^2\omega_{11}^2\omega_8\omega_5\omega_{18}^2 - 12\omega_6\omega_{19}\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2 + 6\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 + 12\omega_6^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 + 6\omega_6^2\omega_{19}v_3^2\omega_7^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2 + 12\omega_6\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2 + 6\omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2 - 42\omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 + 12\omega_6^2v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2 - \omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2 + 12\omega_6\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2 + 24\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2 - 6\omega_6^2\omega_{19}\omega_7^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2 - 12\omega_6\omega_{19}\omega_7^2\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2 + 24\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2 - 6\omega_6^2\omega_{19}v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 + 18\omega_6\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2 + 6\omega_6^2\omega_{19}\omega_7^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} + 3\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} - 12\omega_6v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2 + 12\omega_6^2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 - 9\omega_6^2v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2 + 18\omega_6\omega_{19}v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} + 54\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2 - 6\omega_6^2\omega_{19}v_3^2\omega_7^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} - 12\omega_6\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2 - 12\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2 + 6\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2 + 12\omega_6\omega_{19}v_3^2\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2 - 12\omega_6c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2 - 9\omega_6^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2 + 54\omega_6\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} - 6\omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} + 6\omega_6\omega_{19}v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2 + 36\omega_6\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2 - 36\omega_6\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2 - 36\omega_6^2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2 + 36\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2 - 12\omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_5^2\omega_{18}^2 - 3\omega_6^2\omega_{19}v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} + 6\omega_6\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2 - 12\omega_6\omega_{19}v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2 - 6\omega_6^2\omega_{19}v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2 + 12\omega_6\omega_{19}c_s^2\omega_7^2\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2 + 24\omega_6^2\omega_{19}c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2 + 12\omega_{19}v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2 - 9\omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} - 6\omega_6^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 + 12\omega_6\omega_{19}v_3^2\omega_7^2\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2 + 12\omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_5\omega_{18}^2 + 12\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2 + 42\omega_6^2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 12\omega_6\omega_{19}\omega_7^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} - 36\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} + 4\omega_6^2\omega_{19}v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2 - 24\omega_6^2\omega_{19}c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 + 6\omega_6^2\omega_{19}v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 24\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2 - 12\omega_{19}v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2 + 9\omega_6^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2 - 18\omega_6\omega_{19}v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2 - 4\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2 - 12\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 12\omega_6c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2 + 6\omega_6^2v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 12\omega_6^2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_{18}^2 - 54\omega_6\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2 - 6\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 12\omega_6\omega_{19}v_3^2\omega_7^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2 - 12\omega_6v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2 + 6\omega_6^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 12\omega_6\omega_{19}c_s^2\omega_7^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2 + 12\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} - 6\omega_6^2\omega_{19}v_3^2\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2 + 6\omega_6^2c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2 - 6\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2 + 12\omega_6\omega_{19}v_3^2\omega_7^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} - 6\omega_6^2\omega_{19}v_3^2\omega_7^2\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 12\omega_6^2v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 18\omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2 + 30\omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2 + 12\omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 + 12\omega_6\omega_{19}c_s^2\omega_7^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} + 12\omega_6\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2 - 6\omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 + 12\omega_6c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2 +$

$6\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{18}^2 + 6\omega_6^2v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2 + 6\omega_6^2\omega_{19}\omega_7^2\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 18\omega_6\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} - 24\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2 +$
$6\omega_6^2\omega_{19}v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2 - 12\omega_6^2c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 + 12\omega_6v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2 - 24\omega_6\omega_{19}c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2 -$
$12\omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2 - 54\omega_6\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2 - 12\omega_6^2\omega_{19}v_3^2\omega_7^2\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2 - 6\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2 +$
$12\omega_6\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_5^2\omega_{18}^2 + 18\omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2 - 6\omega_6\omega_{19}v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2 + 12\omega_6\omega_{19}\omega_7^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2 - 12\omega_6^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2 +$
$12\omega_6^2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}^2 - 6\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2 + 6\omega_6^2\omega_{19}v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2 + 12\omega_6^2\omega_{19}\omega_7^2\omega_{11}^2\omega_8\omega_5^2\omega_{18}^2)\frac{v_3v_1\rho}{12\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}^2}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_y\mathrm{D}_z^3v_2} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^3v_2}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_y\mathrm{D}_z^3v_2} = (\omega_{19}v_3^2\omega_{11} - 9c_s^2\omega_{11} - \omega_{19} - 3v_3^2\omega_{11} + 3\omega_{19}c_s^2\omega_{11} + \omega_{19}v_3^2 - \omega_{19}\omega_{11} + 3\omega_{11} + 3\omega_{19}c_s^2)\frac{v_3v_1\rho}{12\omega_{19}\omega_{11}}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_y\mathrm{D}_z^3v_2} = C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_y\mathrm{D}_z^3v_2}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_y\mathrm{D}_z^3v_2} = (-3\omega_6v_3^2 + 3\omega_6 - 9\omega_6c_s^2 - \omega_{10} + 3c_s^2\omega_{10} + \omega_6v_3^2\omega_{10} - \omega_6\omega_{10} + 3\omega_6c_s^2\omega_{10} + v_3^2\omega_{10})\frac{v_3v_1\rho}{12\omega_6\omega_{10}}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_y\mathrm{D}_z^3v_2} = (-18\omega_3v_2^2\omega_4\omega_2 + 9\omega_4\omega_1\omega_2 - 27\omega_3c_s^2\omega_1\omega_2 - 27c_s^2\omega_4\omega_1\omega_2 + 12\omega_3c_s^2\omega_4\omega_1 + 6\omega_3c_s^2\omega_4\omega_2 + 6\omega_3v_3^2\omega_4\omega_1\omega_2 + 18\omega_3v_2^2\omega_4\omega_1 -$
$6\omega_3\omega_4\omega_1\omega_2 + 2\omega_3\omega_4\omega_2 + 4\omega_3v_3^2\omega_4\omega_2 - 9v_3^2\omega_4\omega_1\omega_2 + 18\omega_3c_s^2\omega_4\omega_1\omega_2 - 8\omega_3\omega_4\omega_1 - 9\omega_3v_3^2\omega_1\omega_2 + 2\omega_3v_3^2\omega_4\omega_1 + 9\omega_3\omega_1\omega_2)\frac{v_3v_1\rho}{72\omega_3\omega_4\omega_1\omega_2}$

coefficient $C^{(1)}_{\mathrm{D}_y\mathrm{D}_z^3v_3}$ **at** $\frac{\partial^4 v_3}{\partial x_2\partial x_3^3}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}_y\mathrm{D}_z^3v_3} = 0$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^3v_3} = (-4\omega_6\omega_{19}\omega_7\omega_{20}\omega_8\omega_5\omega_{18}^2 + 24\omega_6\omega_{19}v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} - 9\omega_6^2v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 - 12\omega_6v_3^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 +$
$2\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} - 12\omega_6\omega_{19}v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18} - 4\omega_6^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 + 8\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} - 3\omega_6^2c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 -$
$4\omega_6\omega_{19}\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 - 4\omega_6c_s^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 - 4\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 - 4\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18} - 4\omega_6^2\omega_{19}\omega_7\omega_{11}^2\omega_{18}^2 -$
$4\omega_6\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 + 12\omega_6^2\omega_{19}v_3^2\omega_7\omega_{11}^2\omega_{18}^2 - 6\omega_6^2\omega_{19}v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 4\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 + 2\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18}^2 -$
$2\omega_6^2\omega_{19}\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18}^2 + 2\omega_6^2\omega_{19}c_s^2\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18}^2 - 2\omega_6^2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18}^2 - 12\omega_6v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 - 4\omega_6^2\omega_{19}\omega_{20}\omega_{11}\omega_8\omega_{18}^2 +$
$4\omega_6^2\omega_{19}c_s^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2 + 6\omega_6^2\omega_{19}v_3^2\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18}^2 - 2\omega_6^2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} - 4\omega_6c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 + 12\omega_{19}v_3^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 -$
$6\omega_6^2\omega_{19}v_3^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18}^2 + 12\omega_6^2\omega_{19}v_3^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2 + 12\omega_6\omega_{19}v_3^2\omega_7\omega_{11}^2\omega_5\omega_{18}^2 - 2\omega_6^2\omega_{19}c_s^2\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18} + 4\omega_6\omega_{19}c_s^2\omega_7\omega_{11}^2\omega_5\omega_{18}^2 +$
$4\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_8\omega_5\omega_{18}^2 - 2\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5 - 2\omega_6^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 - 6\omega_6^2\omega_{19}v_3^2\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18} + 12\omega_6\omega_{19}v_3^2\omega_7\omega_{20}\omega_8\omega_5\omega_{18}^2 +$
$2\omega_6^2c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 + 4\omega_6\omega_{19}c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 + 2\omega_6^2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5 + 6\omega_6^2v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 + 12\omega_6\omega_{19}v_3^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 +$
$2\omega_6^2\omega_{19}\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18} + 6\omega_6^2\omega_{19}v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5 + 4\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18} - 4\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_5\omega_{18}^2 + 8\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 +$
$12\omega_6^2\omega_{19}v_3^2\omega_7\omega_{20}\omega_{11}\omega_5\omega_{18}^2 + 4\omega_6\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 + 4\omega_6^2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}\omega_5\omega_{18}^2 + 4\omega_6c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 + 4\omega_6^2\omega_{19}\omega_7\omega_{11}^2\omega_5\omega_{18}^2 +$
$4\omega_6\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 + 4\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5 + 6\omega_6^2\omega_{19}v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18} - 12\omega_6^2\omega_{19}v_3^2\omega_7\omega_{11}^2\omega_5\omega_{18}^2 + 2\omega_6^2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18} +$
$2\omega_6^2c_s^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 - 4\omega_6^2\omega_{19}c_s^2\omega_7\omega_{11}^2\omega_5\omega_{18}^2 - 4\omega_6\omega_{19}\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18} + 12\omega_6v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 - 2\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18} -$
$8\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 6\omega_6^2v_3^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 + 4\omega_6^2\omega_{19}c_s^2\omega_7\omega_{11}^2\omega_{18}^2 - 4\omega_6^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 + 4\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18}^2 -$
$12\omega_6^2v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - 4\omega_6\omega_{19}c_s^2\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18}^2 + 12\omega_6\omega_{19}v_3^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18}^2 + 4\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_5\omega_{18}^2 - 12\omega_6\omega_{19}v_3^2\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18}^2 -$
$2\omega_6^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 + 9\omega_6^2\omega_{19}v_3^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 - 2\omega_6^2\omega_{19}c_s^2\omega_7\omega_{11}^2\omega_8\omega_{18}^2 - 4\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} - 4\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5 -$
$6\omega_6^2\omega_{19}v_3^2\omega_7\omega_{11}^2\omega_8\omega_{18}^2 - 4\omega_6^2\omega_{19}c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 + 2\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_8\omega_5\omega_{18}^2 - 12\omega_6\omega_{19}v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5 - 12\omega_6^2\omega_{19}v_3^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 +$
$2\omega_6^2\omega_{19}\omega_7\omega_{11}^2\omega_8\omega_{18}^2 + 3\omega_6^2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 + 3\omega_6^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 - 2\omega_6^2\omega_{19}c_s^2\omega_7\omega_{20}\omega_8\omega_5\omega_{18}^2 - 12\omega_{19}v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} +$
$4\omega_6^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 + 4\omega_6\omega_{19}c_s^2\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18} - 6\omega_6^2\omega_{19}v_3^2\omega_7\omega_{20}\omega_8\omega_5\omega_{18}^2 + 12\omega_6\omega_{19}v_3^2\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18} + 4\omega_6^2\omega_{19}\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 -$
$12\omega_6\omega_{19}v_3^2\omega_7\omega_{20}\omega_{11}\omega_5\omega_{18}^2 + 4\omega_6\omega_{19}\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18}^2 - 12\omega_6^2\omega_{19}v_3^2\omega_7\omega_{20}\omega_{11}\omega_{18}^2 - 4\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18}^2 - 4\omega_6^2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}\omega_{18}^2 -$
$3\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 - 4\omega_6\omega_{19}\omega_7\omega_{11}^2\omega_5\omega_{18}^2 + 4\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_{18}^2 - 4\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}\omega_5\omega_{18}^2 - 24\omega_6\omega_{19}v_3^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2 +$
$4\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 4\omega_6^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 + 12\omega_6^2v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 - 8\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}^2)\frac{v_2v_1\rho}{4\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}_y\mathrm{D}_z^3v_3} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^3v_3}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}_y\mathrm{D}_z^3v_3} = 0$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}_y\mathrm{D}_z^3v_3} = 0$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}_y\mathrm{D}_z^3v_3} = 0$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}_y\mathrm{D}_z^3v_3} = (-\omega_1 - 3c_s^2\omega_2 - v_2^2\omega_2 + \omega_2 + v_2^2\omega_1 + 3c_s^2\omega_1)\frac{v_2v_1\rho}{36\omega_1\omega_2}$

coefficient $C^{(1)}_{\mathrm{D}_z^4\rho}$ **at** $\frac{\partial^4\rho}{\partial x_3^4}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}^4_z\rho} = (6v_3^4 - 3v_3^4\omega - 12v_3^2c_s^2\omega + 2c_s^4 - c_s^4\omega + 24v_3^2c_s^2 + 3v_3^2\omega - 6v_3^2 + c_s^2\omega - 2c_s^2)\frac{v_1}{24\omega}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}^4_z\rho} =$
$(216v_3^2c_s^2\omega_{11}\omega_{18}^2 - \omega_6^2c_s^4\omega_{11}^2\omega_{18}^2 + 12\omega_6^2v_3^4\omega_{11}^2 - 144\omega_6v_3^2c_s^2\omega_{11}^2 + 150\omega_6^2v_3^2c_s^2\omega_{11}\omega_{18}^2 - 144\omega_6^2v_3^2c_s^2\omega_{18}^2 + 24\omega_6c_s^2\omega_{11}^2 - 24\omega_6^2v_3^2\omega_{11}\omega_{18} + 36\omega_6^2v_3^2\omega_{18}^2 -$
$432\omega_6v_3^2c_s^2\omega_{11}\omega_{18}^2 + 96\omega_6v_3^4\omega_{11}^2\omega_{18} + 48v_3^4\omega_{11}\omega_{18}^2 + 36\omega_6^2v_3^4\omega_{11}\omega_{18}^2 + 24\omega_6c_s^4\omega_{18}^2 + 48\omega_6c_s^2\omega_{11}\omega_{18}^2 + 24c_s^2\omega_{11}^2\omega_{18} + 12\omega_6^2c_s^2\omega_{11}^2\omega_{18} + 12\omega_6^2c_s^2\omega_{18}^2 +$
$\omega_6^2c_s^2\omega_{11}^2\omega_{18}^2 + 72\omega_6v_3^4\omega_{18}^2 - 144\omega_6v_3^2c_s^2\omega_{11}\omega_{18} + 24\omega_6^2v_3^4\omega_{11}\omega_{18} - 96\omega_6v_3^2\omega_{11}^2\omega_{18} - 48v_3^2\omega_{11}\omega_{18}^2 + 72\omega_6^2v_3^2c_s^2\omega_{11}\omega_{18} - 36\omega_6^2v_3^2\omega_{11}\omega_{18}^2 + 12\omega_6^2c_s^4\omega_{11}^2 -$
$48\omega_6c_s^4\omega_{11}\omega_{18}^2 - 24c_s^4\omega_{11}^2\omega_{18} - 12\omega_6^2c_s^4\omega_{11}^2\omega_{18} + 24\omega_6v_3^2\omega_{11}^2 - 126\omega_6^2v_3^2c_s^2\omega_{11}^2\omega_{18} - 36\omega_6^2v_3^4\omega_{18}^2 + 288\omega_6v_3^2c_s^2\omega_{18}^2 + 48\omega_6v_3^2\omega_{11}\omega_{18} + 3\omega_6^2v_3^2\omega_{11}^2\omega_{18}^2 -$
$24\omega_6c_s^2\omega_{18}^2 + 72\omega_6^2v_3^2c_s^2\omega_{11}^2 - 216v_3^2c_s^2\omega_{11}^2\omega_{18} - 48\omega_6c_s^2\omega_{11}^2\omega_{18} - 24c_s^2\omega_{11}\omega_{18}^2 - 14\omega_6^2c_s^2\omega_{11}\omega_{18}^2 + 432\omega_6v_3^2c_s^2\omega_{11}^2\omega_{18} - 96\omega_6v_3^4\omega_{11}\omega_{18}^2 -$
$12\omega_6^2v_3^2\omega_{11}^2 - 48v_3^4\omega_{11}^2\omega_{18} - 24\omega_6c_s^4\omega_{11}^2 - 30\omega_6^2v_3^4\omega_{11}^2\omega_{18} - 48\omega_6v_3^4\omega_{11}\omega_{18} - 3\omega_6^2v_3^4\omega_{11}^2\omega_{18}^2 - 12\omega_6^2c_s^2\omega_{11}^2 - 24\omega_6v_3^4\omega_{11}^2 - 12\omega_6^2c_s^4\omega_{18}^2 +$
$48\omega_6c_s^4\omega_{11}^2\omega_{18} + 24c_s^4\omega_{11}\omega_{18}^2 + 14\omega_6^2c_s^4\omega_{11}\omega_{18}^2 - 72\omega_6v_3^2\omega_{18}^2 - 12\omega_6^2v_3^2c_s^2\omega_{11}^2\omega_{18}^2 + 96\omega_6v_3^2\omega_{11}\omega_{18}^2 + 48v_3^2\omega_{11}^2\omega_{18} + 30\omega_6^2v_3^2\omega_{11}^2\omega_{18})\frac{v_1}{24\omega_6^2\omega_{11}^2\omega_{18}^2}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}^4_z\rho} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}^4_z\rho}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}^4_z\rho} = (6v_3^4 + c_s^2\omega_{11} + 2c_s^4 + 3v_3^2\omega_{11} + 24v_3^2c_s^2 - c_s^4\omega_{11} - 6v_3^2 - 3v_3^4\omega_{11} - 2c_s^2 - 12v_3^2c_s^2\omega_{11})\frac{v_1}{24\omega_{11}}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}^4_z\rho} = C^{(1),\mathrm{CLBM1}}_{\mathrm{D}^4_z\rho}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}^4_z\rho} = (3\omega_6v_3^2 + 6v_3^4 + \omega_6c_s^2 - 12\omega_6v_3^2c_s^2 + 2c_s^4 + 24v_3^2c_s^2 - 3\omega_6v_3^4 - 6v_3^2 - \omega_6c_s^4 - 2c_s^2)\frac{v_1}{24\omega_6}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}^4_z\rho} = (-3c_s^4\omega_1\omega_2 + 24v_3^2c_s^2\omega_1 + 6v_3^4\omega_1 + 4c_s^4\omega_2 + 48v_3^2c_s^2\omega_2 + 2c_s^4\omega_1 + 12v_3^4\omega_2 + 3c_s^2\omega_1\omega_2 - 6v_3^2\omega_1 - 4c_s^2\omega_2 + 9v_3^2\omega_1\omega_2 -$
$9v_3^4\omega_1\omega_2 - 2c_s^2\omega_1 - 36v_3^2c_s^2\omega_1\omega_2 - 12v_3^2\omega_2)\frac{v_1}{72\omega_1\omega_2}$

coefficient $C^{(1)}_{\mathrm{D}^4_z v_1}$ **at** $\frac{\partial^4 v_1}{\partial x_3^4}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}^4_z v_1} = (-72v_3^4 - 3c_s^4\omega^3 + 108v_3^4\omega + 216v_3^2c_s^2\omega + 30c_s^4\omega^2 + 48c_s^4 - 84v_3^2c_s^2\omega^2 - 72c_s^4\omega - 42v_3^4\omega^2 + 6v_3^2c_s^2\omega^3 + 3v_3^4\omega^3 - 144v_3^2c_s^2 -$
$108v_3^2\omega - 14c_s^2\omega^2 + c_s^2\omega^3 - 3v_3^2\omega^3 + 72v_3^2 + 36c_s^2\omega - 24c_s^2 + 42v_3^2\omega^2)\frac{\rho}{24\omega^3}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}^4_z v_1} = (-12\omega_6^3v_3^2c_s^2\omega_{18} - 96v_3^2c_s^2\omega_{18}^2 - 72\omega_6^2v_3^2c_s^2\omega_{18}^2 + 24\omega_6^2v_3^2\omega_{18}^2 + 6\omega_6^3c_s^4\omega_{18} - 48\omega_6c_s^4\omega_{18}^2 + 24\omega_6^2c_s^2\omega_{18} + 3\omega_6^3v_3^4\omega_{18}^2 - 24\omega_6^2v_3^4 -$
$48\omega_6v_3^4\omega_{18} - 8\omega_6^2c_s^2\omega_{18}^2 - 18\omega_6^3v_3^4\omega_{18} + 24\omega_6v_3^4\omega_{18}^2 + 12\omega_6^3v_3^2c_s^2 - 72\omega_6^2v_3^2\omega_{18} - 3\omega_6^3c_s^4\omega_{18}^2 + 24\omega_6c_s^4\omega_{18} + 24c_s^4\omega_{18}^2 + 12\omega_6^3v_3^4 + 48\omega_6^2v_3^2c_s^2\omega_{18} +$
$6\omega_6^3v_3^2c_s^2\omega_{18}^2 - 24\omega_6^2v_3^4\omega_{18}^2 - 6\omega_6^3c_s^2\omega_{18} + 156\omega_6v_3^2c_s^2\omega_{18}^2 + 12\omega_6c_s^2\omega_{18}^2 - 24\omega_6^2c_s^4\omega_{18} - 3\omega_6^3v_3^2\omega_{18}^2 + 48\omega_6v_3^2\omega_{18} - 12\omega_6^3v_3^2 + 24\omega_6^2c_s^4\omega_{18}^2 +$
$18\omega_6^3v_3^2\omega_{18} + 24\omega_6^2v_3^2 - 24\omega_6v_3^2\omega_{18}^2 + 72\omega_6^2v_3^4\omega_{18} - 24\omega_6v_3^2c_s^2\omega_{18} + \omega_6^3c_s^2\omega_{18}^2 - 24\omega_6^2v_3^2c_s^2 - 24\omega_6c_s^2\omega_{18})\frac{\rho}{24\omega_6^3\omega_{18}^2}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}^4_z v_1} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}^4_z v_1}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}^4_z v_1} =$
$(-72\omega_6^3v_3^2c_s^2\omega_{18} - 12\omega_6^2v_3^2c_s^2\omega_{18}^2 + 12\omega_6^2v_3^2\omega_{18}^2 + 6\omega_6^3c_s^4\omega_{18} - 48\omega_6c_s^4\omega_{18}^2 + 24\omega_6^2c_s^2\omega_{18} + 3\omega_6^3v_3^4\omega_{18}^2 - 72\omega_6^2v_3^4 - 8\omega_6^2c_s^2\omega_{18}^2 - 30\omega_6^3v_3^4\omega_{18} + 108\omega_6^3v_3^2c_s^2 -$
$72\omega_6^2v_3^2\omega_{18} - 3\omega_6^3c_s^4\omega_{18}^2 + 24\omega_6c_s^4\omega_{18} + 24c_s^4\omega_{18}^2 + 36\omega_6^3v_3^4 + 144\omega_6^2v_3^2c_s^2\omega_{18} + 6\omega_6^3v_3^2c_s^2\omega_{18}^2 - 12\omega_6^2v_3^4\omega_{18}^2 - 6\omega_6^3c_s^2\omega_{18} - 36\omega_6v_3^2c_s^2\omega_{18}^2 + 12\omega_6c_s^2\omega_{18}^2 -$
$24\omega_6^2c_s^4\omega_{18} - 3\omega_6^3v_3^2\omega_{18}^2 - 36\omega_6^3v_3^2 + 24\omega_6^2c_s^4\omega_{18}^2 + 30\omega_6^3v_3^2\omega_{18} + 72\omega_6^2v_3^2 + 72\omega_6^2v_3^4\omega_{18} + 72\omega_6v_3^2c_s^2\omega_{18} + \omega_6^3c_s^2\omega_{18}^2 - 216\omega_6^2v_3^2c_s^2 - 24\omega_6c_s^2\omega_{18})\frac{\rho}{24\omega_6^3\omega_{18}^2}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}^4_z v_1} = C^{(1),\mathrm{CLBM1}}_{\mathrm{D}^4_z v_1}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}^4_z v_1} = (36v_3^4\omega_2^3 - 24c_s^4\omega_8\omega_2^2 + 3v_3^4\omega_8^2\omega_2^3 - 12v_3^2c_s^2\omega_8^2\omega_2^2 + 108v_3^2c_s^2\omega_2^3 - 24c_s^2\omega_8\omega_2 - 72v_3^4\omega_2^2 - 216v_3^2c_s^2\omega_2^2 - 12v_3^4\omega_8^2\omega_2^2 + 6v_3^2c_s^2\omega_8^2\omega_2^3 +$
$6c_s^4\omega_8\omega_2^3 + 24c_s^2\omega_8\omega_2^2 - 3v_3^2\omega_8^2\omega_2^3 + 24c_s^4\omega_8\omega_2 - 36v_3^2c_s^2\omega_8\omega_2 + 12v_3^2\omega_8^2\omega_2^2 - 6c_s^2\omega_8\omega_2^3 + 72v_3^2\omega_2^2 - 48c_s^4\omega_8^2\omega_2 + 72v_3^2c_s^2\omega_8\omega_2 - 72v_3^2\omega_8\omega_2^2 + 24c_s^4\omega_8^2 +$
$c_s^2\omega_8^2\omega_2^3 - 36v_3^2\omega_2^3 - 8c_s^2\omega_8^2\omega_2^2 + 30v_3^2\omega_8\omega_2^3 + 12c_s^2\omega_8^2\omega_2 - 72v_3^2c_s^2\omega_8\omega_2^3 + 72v_3^4\omega_8\omega_2^2 - 3c_s^4\omega_8^2\omega_2^3 + 24c_s^4\omega_8^2\omega_2^2 + 144v_3^2c_s^2\omega_8\omega_2^2 - 30v_3^4\omega_8\omega_2^3)\frac{\rho}{24\omega_8^2\omega_2^3}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}^4_z v_1} = (-15\omega_3v_3^4\omega_4^2\omega_1^3 - 48\omega_3^2c_s^4\omega_4^2\omega_1 + \omega_3^2c_s^2\omega_4^2\omega_1^3 + 18v_3^2\omega_4^2\omega_1^2 + 9\omega_3^2v_3^4\omega_1^3 - 36\omega_3^2v_3^2\omega_4\omega_1^2 + 36\omega_3v_3^4\omega_4^2\omega_1^2 + 36\omega_3^2v_3^2c_s^2\omega_4\omega_1 -$
$18\omega_3^2v_3^4\omega_1^2 + 15\omega_3^2v_3^2\omega_4\omega_1^3 - 9v_3^2\omega_4^2\omega_1^3 - 8\omega_3^2c_s^2\omega_4^2\omega_1^2 + 12\omega_3^2c_s^2\omega_4^2\omega_1 + 54\omega_3v_3^2c_s^2\omega_4\omega_1^3 + 15\omega_3v_3^2\omega_4^2\omega_1^3 - 3\omega_3^2c_s^4\omega_4^2\omega_1^3 + 72\omega_3^2v_3^2c_s^2\omega_4\omega_1^2 +$
$36\omega_3^2v_3^4\omega_4\omega_1^2 - 18v_3^4\omega_4^2\omega_1^2 + 27v_3^2c_s^2\omega_4^2\omega_1^3 - 36\omega_3v_3^2\omega_4^2\omega_1^2 - 108\omega_3v_3^2c_s^2\omega_4\omega_1^2 + 24\omega_3^2c_s^4\omega_4^2 + 9v_3^4\omega_4^2\omega_1^3 - 54v_3^2c_s^2\omega_4^2\omega_1^2 - 15\omega_3^2v_3^4\omega_4\omega_1^3 -$
$36\omega_3^2v_3^2c_s^2\omega_4\omega_1^3 + 24\omega_3^2c_s^4\omega_4^2\omega_1^2 + 72\omega_3v_3^2c_s^2\omega_4^2\omega_1^2 + 36\omega_3v_3^2\omega_4\omega_1^2 - 3\omega_3c_s^2\omega_4^2\omega_1^3 + 3\omega_3^2v_3^4\omega_4^2\omega_1^3 + 18\omega_3^2v_3^2\omega_1^2 + 12\omega_3c_s^4\omega_4^2\omega_1 - 12\omega_3^2c_s^4\omega_4\omega_1^2 +$
$27\omega_3^2v_3^2c_s^2\omega_1^3 + 6\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^3 + 12\omega_3c_s^2\omega_4^2\omega_1^2 - 18\omega_3v_3^2\omega_4\omega_1^3 - 12\omega_3^2c_s^2\omega_4\omega_1 - 36\omega_3v_3^2c_s^2\omega_4^2\omega_1^3 - 12\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^2 - 54\omega_3^2v_3^2c_s^2\omega_1^2 + 3\omega_3^2c_s^4\omega_4\omega_1^3 -$
$12\omega_3^2v_3^4\omega_4^2\omega_1^2 - 9\omega_3^2v_3^2\omega_1^3 - 36\omega_3^2v_3^2c_s^2\omega_4^2\omega_1 - 36\omega_3v_3^4\omega_4\omega_1^2 + 3\omega_3c_s^4\omega_4^2\omega_1^3 - 12\omega_3c_s^2\omega_4^2\omega_1 - 3\omega_3^2v_3^2\omega_4^2\omega_1^3 + 12\omega_3^2c_s^2\omega_4\omega_1^2 - 12\omega_3c_s^4\omega_4^2\omega_1^2 +$
$12\omega_3^2c_s^4\omega_4\omega_1 + 18\omega_3v_3^4\omega_4\omega_1^3 - 3\omega_3^2c_s^2\omega_4\omega_1^3 + 36\omega_3v_3^2c_s^2\omega_4^2\omega_1 + 12\omega_3^2v_3^2\omega_4^2\omega_1^2)\frac{\rho}{24\omega_3^2\omega_4^2\omega_1^3}$

coefficient $C^{(1)}_{\mathrm{D}^4_z v_3}$ **at** $\frac{\partial^4 v_3}{\partial x_3^4}$**:**

$C^{(1),\mathrm{SRT}}_{\mathrm{D}^4_z v_3} = (-4 + 2\omega - 5v_3^2\omega + 10v_3^2 - 3c_s^2\omega + 6c_s^2)\frac{v_3 v_1 \rho}{12\omega}$

$C^{(1),\mathrm{MRT1}}_{\mathrm{D}^4_z v_3} = (24\omega_6^2\omega_{18}^2 - 48\omega_6 c_s^2\omega_{11}^2 + 36\omega_6^2 v_3^2\omega_{11}\omega_{18} - 60\omega_6^2 v_3^2\omega_{18}^2 + 36\omega_{11}^2\omega_{18} - 25\omega_6^2\omega_{11}\omega_{18}^2 - 120\omega_6 c_s^2\omega_{11}\omega_{18}^2 - 60c_s^2\omega_{11}^2\omega_{18} - 33\omega_6^2 c_s^2\omega_{11}^2\omega_{18} - 36\omega_6^2 c_s^2\omega_{18}^2 - 12\omega_6^2\omega_{11}\omega_{18} - 24\omega_6 c_s^2\omega_{11}\omega_{18} - 3\omega_6^2 c_s^2\omega_{11}^2\omega_{18}^2 + 168\omega_6 v_3^2\omega_{11}^2\omega_{18} + 84v_3^2\omega_{11}\omega_{18}^2 - 72\omega_6\omega_{11}^2\omega_{18} + 61\omega_6^2 v_3^2\omega_{11}\omega_{18}^2 + 24\omega_6\omega_{11}^2 - 48\omega_6 v_3^2\omega_{11}^2 - 72\omega_6 v_3^2\omega_{11}\omega_{18} - 5\omega_6^2 v_3^2\omega_{11}^2\omega_{18}^2 + 72\omega_6 c_s^2\omega_{18}^2 + 24\omega_6\omega_{11}\omega_{18} - 12\omega_6^2\omega_{11}^2 + 120\omega_6 c_s^2\omega_{11}^2\omega_{18} + 60c_s^2\omega_{11}\omega_{18}^2 + 21\omega_6^2\omega_{11}^2\omega_{18} + 39\omega_6^2 c_s^2\omega_{11}\omega_{18}^2 + 24\omega_6^2 v_3^2\omega_{11}^2 - 36\omega_{11}\omega_{18}^2 + 24\omega_6^2 c_s^2\omega_{11}^2 + 2\omega_6^2\omega_{11}^2\omega_{18}^2 + 12\omega_6^2 c_s^2\omega_{11}\omega_{18} - 48\omega_6\omega_{18}^2 + 120\omega_6 v_3^2\omega_{18}^2 - 168\omega_6 v_3^2\omega_{11}\omega_{18}^2 - 84v_3^2\omega_{11}^2\omega_{18} - 51\omega_6^2 v_3^2\omega_{11}\omega_{18}^2 + 72\omega_6\omega_{11}\omega_{18}^2)\frac{v_3 v_1 \rho}{12\omega_6^2\omega_{11}^2\omega_{18}^2}$

$C^{(1),\mathrm{MRT2}}_{\mathrm{D}^4_z v_3} = C^{(1),\mathrm{MRT1}}_{\mathrm{D}^4_z v_3}$

$C^{(1),\mathrm{CLBM1}}_{\mathrm{D}^4_z v_3} = (-4 - 3c_s^2\omega_{11} - 5v_3^2\omega_{11} + 2\omega_{11} + 10v_3^2 + 6c_s^2)\frac{v_3 v_1 \rho}{12\omega_{11}}$

$C^{(1),\mathrm{CLBM2}}_{\mathrm{D}^4_z v_3} = C^{(1),\mathrm{CLBM1}}_{\mathrm{D}^4_z v_3}$

$C^{(1),\mathrm{CuLBM1}}_{\mathrm{D}^4_z v_3} = (-4 - 5\omega_6 v_3^2 + 2\omega_6 - 3\omega_6 c_s^2 + 10v_3^2 + 6c_s^2)\frac{v_3 v_1 \rho}{12\omega_6}$

$C^{(1),\mathrm{CuLBM2}}_{\mathrm{D}^4_z v_3} = (6\omega_1\omega_2 - 9c_s^2\omega_1\omega_2 - 4\omega_1 + 10v_3^2\omega_1 + 12c_s^2\omega_2 - 15v_3^2\omega_1\omega_2 - 8\omega_2 + 6c_s^2\omega_1 + 20v_3^2\omega_2)\frac{v_3 v_1 \rho}{36\omega_1\omega_2}$

3.3 Conservation of momentum: ρv_2

$$v_2\frac{\partial\rho}{\partial t} + \rho\frac{\partial v_2}{\partial t} + v_2 v_1\frac{\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_1} + v_2\rho\frac{\delta_l}{\delta_t}\frac{\partial v_1}{\partial x_1} + v_1\rho\frac{\delta_l}{\delta_t}\frac{\partial v_2}{\partial x_1} + (c_s^2 + v_2^2)\frac{\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_2} + 2v_2\rho\frac{\delta_l}{\delta_t}\frac{\partial v_2}{\partial x_2} + v_3 v_2\frac{\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_3} + v_3\rho\frac{\delta_l}{\delta_t}\frac{\partial v_2}{\partial x_3} +$$
$$v_2\rho\frac{\delta_l}{\delta_t}\frac{\partial v_3}{\partial x_3} + C^{(2)}_{\mathrm{D}_x\rho,\mathrm{D}_x v_2}\frac{\delta_l^2}{\delta_t}\frac{\partial\rho}{\partial x_1}\frac{\partial v_2}{\partial x_1} + C^{(2)}_{\mathrm{D}_x\rho,\mathrm{D}_y v_1}\frac{\delta_l^2}{\delta_t}\frac{\partial\rho}{\partial x_1}\frac{\partial v_1}{\partial x_2} + C^{(2)}_{\mathrm{D}_x v_1,\mathrm{D}_y v_1}\frac{\delta_l^2}{\delta_t}\frac{\partial v_1}{\partial x_1}\frac{\partial v_1}{\partial x_2} + C^{(2)}_{\mathrm{D}_y\rho,\mathrm{D}_x v_1}\frac{\delta_l^2}{\delta_t}\frac{\partial\rho}{\partial x_2}\frac{\partial v_1}{\partial x_1} +$$
$$C^{(2)}_{\mathrm{D}_y\rho,\mathrm{D}_y v_2}\frac{\delta_l^2}{\delta_t}\frac{\partial\rho}{\partial x_2}\frac{\partial v_2}{\partial x_2} + C^{(2)}_{\mathrm{D}_y v_2,\mathrm{D}_y v_2}\frac{\delta_l^2}{\delta_t}\left(\frac{\partial v_2}{\partial x_2}\right)^2 + C^{(2)}_{\mathrm{D}_y\rho,\mathrm{D}_z v_3}\frac{\delta_l^2}{\delta_t}\frac{\partial\rho}{\partial x_2}\frac{\partial v_3}{\partial x_3} + C^{(2)}_{\mathrm{D}_y v_3,\mathrm{D}_z v_3}\frac{\delta_l^2}{\delta_t}\frac{\partial v_3}{\partial x_2}\frac{\partial v_3}{\partial x_3} +$$
$$C^{(2)}_{\mathrm{D}_z\rho,\mathrm{D}_y v_3}\frac{\delta_l^2}{\delta_t}\frac{\partial\rho}{\partial x_3}\frac{\partial v_3}{\partial x_2} + C^{(2)}_{\mathrm{D}_z\rho,\mathrm{D}_z v_2}\frac{\delta_l^2}{\delta_t}\frac{\partial\rho}{\partial x_3}\frac{\partial v_2}{\partial x_3} + C^{(2)}_{\mathrm{D}_x^2 v_2}\frac{\delta_l^2}{\delta_t}\frac{\partial^2 v_2}{\partial x_1^2} + C^{(2)}_{\mathrm{D}_x\mathrm{D}_y\rho}\frac{\delta_l^2}{\delta_t}\frac{\partial^2\rho}{\partial x_1\partial x_2} + C^{(2)}_{\mathrm{D}_x\mathrm{D}_y v_1}\frac{\delta_l^2}{\delta_t}\frac{\partial^2 v_1}{\partial x_1\partial x_2} +$$
$$C^{(2)}_{\mathrm{D}_y^2\rho}\frac{\delta_l^2}{\delta_t}\frac{\partial^2\rho}{\partial x_2^2} + C^{(2)}_{\mathrm{D}_y^2 v_2}\frac{\delta_l^2}{\delta_t}\frac{\partial^2 v_2}{\partial x_2^2} + C^{(2)}_{\mathrm{D}_y\mathrm{D}_z\rho}\frac{\delta_l^2}{\delta_t}\frac{\partial^2\rho}{\partial x_2\partial x_3} + C^{(2)}_{\mathrm{D}_y\mathrm{D}_z v_3}\frac{\delta_l^2}{\delta_t}\frac{\partial^2 v_3}{\partial x_2\partial x_3} + C^{(2)}_{\mathrm{D}_z^2 v_2}\frac{\delta_l^2}{\delta_t}\frac{\partial^2 v_2}{\partial x_3^2} + C^{(2)}_{\mathrm{D}_x^3\rho}\frac{\delta_l^3}{\delta_t}\frac{\partial^3\rho}{\partial x_1^3} +$$
$$C^{(2)}_{\mathrm{D}_x^3 v_1}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_1}{\partial x_1^3} + C^{(2)}_{\mathrm{D}_x^3 v_2}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_2}{\partial x_1^3} + C^{(2)}_{\mathrm{D}_x^2\mathrm{D}_y\rho}\frac{\delta_l^3}{\delta_t}\frac{\partial^3\rho}{\partial x_1^2\partial x_2} + C^{(2)}_{\mathrm{D}_x^2\mathrm{D}_y v_1}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_1}{\partial x_1^2\partial x_2} + C^{(2)}_{\mathrm{D}_x^2\mathrm{D}_y v_2}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_2}{\partial x_1^2\partial x_2} +$$
$$C^{(2)}_{\mathrm{D}_x\mathrm{D}_y^2\rho}\frac{\delta_l^3}{\delta_t}\frac{\partial^3\rho}{\partial x_1\partial x_2^2} + C^{(2)}_{\mathrm{D}_x\mathrm{D}_y^2 v_1}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_1}{\partial x_1\partial x_2^2} + C^{(2)}_{\mathrm{D}_x\mathrm{D}_y^2 v_2}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_2}{\partial x_1\partial x_2^2} + C^{(2)}_{\mathrm{D}_y^3\rho}\frac{\delta_l^3}{\delta_t}\frac{\partial^3\rho}{\partial x_2^3} + C^{(2)}_{\mathrm{D}_y^3 v_2}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_2}{\partial x_2^3} +$$
$$C^{(2)}_{\mathrm{D}_x^2\mathrm{D}_z v_2}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_2}{\partial x_1^2\partial x_3} + C^{(2)}_{\mathrm{D}_x^2\mathrm{D}_z v_3}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_3}{\partial x_1^2\partial x_3} + C^{(2)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z\rho}\frac{\delta_l^3}{\delta_t}\frac{\partial^3\rho}{\partial x_1\partial x_2\partial x_3} + C^{(2)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_1}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_1}{\partial x_1\partial x_2\partial x_3} +$$
$$C^{(2)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_3}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_3}{\partial x_1\partial x_2\partial x_3} + C^{(2)}_{\mathrm{D}_y^2\mathrm{D}_z\rho}\frac{\delta_l^3}{\delta_t}\frac{\partial^3\rho}{\partial x_2^2\partial x_3} + C^{(2)}_{\mathrm{D}_y^2\mathrm{D}_z v_2}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_2}{\partial x_2^2\partial x_3} + C^{(2)}_{\mathrm{D}_y^2\mathrm{D}_z v_3}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_3}{\partial x_2^2\partial x_3} + C^{(2)}_{\mathrm{D}_x\mathrm{D}_z^2 v_1}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_1}{\partial x_1\partial x_3^2} +$$
$$C^{(2)}_{\mathrm{D}_x\mathrm{D}_z^2 v_2}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_2}{\partial x_1\partial x_3^2} + C^{(2)}_{\mathrm{D}_y\mathrm{D}_z^2\rho}\frac{\delta_l^3}{\delta_t}\frac{\partial^3\rho}{\partial x_2\partial x_3^2} + C^{(2)}_{\mathrm{D}_y\mathrm{D}_z^2 v_2}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_2}{\partial x_2\partial x_3^2} + C^{(2)}_{\mathrm{D}_y\mathrm{D}_z^2 v_3}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_3}{\partial x_2\partial x_3^2} + C^{(2)}_{\mathrm{D}_z^3\rho}\frac{\delta_l^3}{\delta_t}\frac{\partial^3\rho}{\partial x_3^3} +$$
$$C^{(2)}_{\mathrm{D}_z^3 v_2}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_2}{\partial x_3^3} + C^{(2)}_{\mathrm{D}_z^3 v_3}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_3}{\partial x_3^3} + C^{(2)}_{\mathrm{D}_x^4\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4\rho}{\partial x_1^4} + C^{(2)}_{\mathrm{D}_x^4 v_1}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_1}{\partial x_1^4} + C^{(2)}_{\mathrm{D}_x^4 v_2}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_2}{\partial x_1^4} + C^{(2)}_{\mathrm{D}_x^3\mathrm{D}_y\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4\rho}{\partial x_1^3\partial x_2} +$$
$$C^{(2)}_{\mathrm{D}_x^3\mathrm{D}_y v_1}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_1}{\partial x_1^3\partial x_2} + C^{(2)}_{\mathrm{D}_x^3\mathrm{D}_y v_2}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_2}{\partial x_1^3\partial x_2} + C^{(2)}_{\mathrm{D}_x^2\mathrm{D}_y^2\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4\rho}{\partial x_1^2\partial x_2^2} + C^{(2)}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_1}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_1}{\partial x_1^2\partial x_2^2} + C^{(2)}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_2}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_2}{\partial x_1^2\partial x_2^2} +$$
$$C^{(2)}_{\mathrm{D}_x\mathrm{D}_y^3\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4\rho}{\partial x_1\partial x_2^3} + C^{(2)}_{\mathrm{D}_x\mathrm{D}_y^3 v_1}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_2^3} + C^{(2)}_{\mathrm{D}_x\mathrm{D}_y^3 v_2}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_2}{\partial x_1\partial x_2^3} + C^{(2)}_{\mathrm{D}_y^4\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4\rho}{\partial x_2^4} + C^{(2)}_{\mathrm{D}_y^4 v_2}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_2}{\partial x_2^4} + C^{(2)}_{\mathrm{D}_x^3\mathrm{D}_z\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4\rho}{\partial x_1^3\partial x_3} +$$
$$C^{(2)}_{\mathrm{D}_x^3\mathrm{D}_z v_1}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_1}{\partial x_1^3\partial x_3} + C^{(2)}_{\mathrm{D}_x^3\mathrm{D}_z v_2}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_2}{\partial x_1^3\partial x_3} + C^{(2)}_{\mathrm{D}_x^3\mathrm{D}_z v_3}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_3}{\partial x_1^3\partial x_3} + C^{(2)}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4\rho}{\partial x_1^2\partial x_2\partial x_3} +$$
$$C^{(2)}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_1}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_1}{\partial x_1^2\partial x_2\partial x_3} + C^{(2)}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_2}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_2}{\partial x_1^2\partial x_2\partial x_3} + C^{(2)}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_3}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_3}{\partial x_1^2\partial x_2\partial x_3} + C^{(2)}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4\rho}{\partial x_1\partial x_2^2\partial x_3} +$$
$$C^{(2)}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_1}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_2^2\partial x_3} + C^{(2)}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_2}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_2}{\partial x_1\partial x_2^2\partial x_3} + C^{(2)}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_3}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_3}{\partial x_1\partial x_2^2\partial x_3} + C^{(2)}_{\mathrm{D}_y^3\mathrm{D}_z\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4\rho}{\partial x_2^3\partial x_3} +$$
$$C^{(2)}_{\mathrm{D}_y^3\mathrm{D}_z v_2}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_2}{\partial x_2^3\partial x_3} + C^{(2)}_{\mathrm{D}_y^3\mathrm{D}_z v_3}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_3}{\partial x_2^3\partial x_3} + C^{(2)}_{\mathrm{D}_x^2\mathrm{D}_z^2\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4\rho}{\partial x_1^2\partial x_3^2} + C^{(2)}_{\mathrm{D}_x^2\mathrm{D}_z^2 v_1}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_1}{\partial x_1^2\partial x_3^2} + C^{(2)}_{\mathrm{D}_x^2\mathrm{D}_z^2 v_2}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_2}{\partial x_1^2\partial x_3^2} +$$
$$C^{(2)}_{\mathrm{D}_x^2\mathrm{D}_z^2 v_3}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_3}{\partial x_1^2\partial x_3^2} + C^{(2)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4\rho}{\partial x_1\partial x_2\partial x_3^2} + C^{(2)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_1}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_2\partial x_3^2} + C^{(2)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_2}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_2}{\partial x_1\partial x_2\partial x_3^2} +$$
$$C^{(2)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_3}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_3}{\partial x_1\partial x_2\partial x_3^2} + C^{(2)}_{\mathrm{D}_y^2\mathrm{D}_z^2\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4\rho}{\partial x_2^2\partial x_3^2} + C^{(2)}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_2}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_2}{\partial x_2^2\partial x_3^2} + C^{(2)}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_3}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_3}{\partial x_2^2\partial x_3^2} + C^{(2)}_{\mathrm{D}_x\mathrm{D}_z^3\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4\rho}{\partial x_1\partial x_3^3} +$$
$$C^{(2)}_{\mathrm{D}_x\mathrm{D}_z^3 v_1}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_3^3} + C^{(2)}_{\mathrm{D}_x\mathrm{D}_z^3 v_2}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_2}{\partial x_1\partial x_3^3} + C^{(2)}_{\mathrm{D}_x\mathrm{D}_z^3 v_3}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_3}{\partial x_1\partial x_3^3} + C^{(2)}_{\mathrm{D}_y\mathrm{D}_z^3\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4\rho}{\partial x_2\partial x_3^3} + C^{(2)}_{\mathrm{D}_y\mathrm{D}_z^3 v_2}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_2}{\partial x_2\partial x_3^3} +$$

$$C^{(2)}_{\mathrm{D}_y\mathrm{D}_z^3 v_3}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_3}{\partial x_2 \partial x_3^3} + C^{(2)}_{\mathrm{D}_z^4 \rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 \rho}{\partial x_3^4} + C^{(2)}_{\mathrm{D}_z^4 v_2}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_2}{\partial x_3^4} + C^{(2)}_{\mathrm{D}_z^4 v_3}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_3}{\partial x_3^4} = 0,$$

where:

coefficient $C^{(2)}_{\mathrm{D}_x\rho,\mathrm{D}_x v_2}$ **at** $\frac{\partial \rho}{\partial x_1}\frac{\partial v_2}{\partial x_1}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x\rho,\mathrm{D}_x v_2} = (-2+\omega)\frac{c_s^2}{2\omega}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\rho,\mathrm{D}_x v_2} = (-2+\omega_5)\frac{c_s^2}{2\omega_5}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x\rho,\mathrm{D}_x v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\rho,\mathrm{D}_x v_2}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x\rho,\mathrm{D}_x v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\rho,\mathrm{D}_x v_2}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x\rho,\mathrm{D}_x v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\rho,\mathrm{D}_x v_2}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x\rho,\mathrm{D}_x v_2} = (-2+\omega_1)\frac{c_s^2}{2\omega_1}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x\rho,\mathrm{D}_x v_2} = C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x\rho,\mathrm{D}_x v_2}$

coefficient $C^{(2)}_{\mathrm{D}_x\rho,\mathrm{D}_y v_1}$ **at** $\frac{\partial \rho}{\partial x_1}\frac{\partial v_1}{\partial x_2}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x\rho,\mathrm{D}_y v_1} = (-2+\omega)\frac{c_s^2}{2\omega}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\rho,\mathrm{D}_y v_1} = (-2+\omega_5)\frac{c_s^2}{2\omega_5}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x\rho,\mathrm{D}_y v_1} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\rho,\mathrm{D}_y v_1}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x\rho,\mathrm{D}_y v_1} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\rho,\mathrm{D}_y v_1}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x\rho,\mathrm{D}_y v_1} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\rho,\mathrm{D}_y v_1}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x\rho,\mathrm{D}_y v_1} = (-2+\omega_1)\frac{c_s^2}{2\omega_1}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x\rho,\mathrm{D}_y v_1} = (6v_1^2\omega_1 - 6v_1^2\omega_2 + 3c_s^2\omega_1\omega_2 - 2\omega_1 - 12c_s^2\omega_2 + 2\omega_2 + 6c_s^2\omega_1)\frac{1}{6\omega_1\omega_2}$

coefficient $C^{(2)}_{\mathrm{D}_x v_1,\mathrm{D}_y v_1}$ **at** $\frac{\partial v_1}{\partial x_1}\frac{\partial v_1}{\partial x_2}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x v_1,\mathrm{D}_y v_1} = 0$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x v_1,\mathrm{D}_y v_1} = 0$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x v_1,\mathrm{D}_y v_1} = 0$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x v_1,\mathrm{D}_y v_1} = 0$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x v_1,\mathrm{D}_y v_1} = 0$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x v_1,\mathrm{D}_y v_1} = 0$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x v_1,\mathrm{D}_y v_1} = (\omega_1-\omega_2)\frac{2v_1\rho}{\omega_1\omega_2}$

coefficient $C^{(2)}_{\mathrm{D}_y\rho,\mathrm{D}_x v_1}$ **at** $\frac{\partial \rho}{\partial x_2}\frac{\partial v_1}{\partial x_1}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_y\rho,\mathrm{D}_x v_1} = 0$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y\rho,\mathrm{D}_x v_1} = 0$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_y\rho,\mathrm{D}_x v_1} = 0$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_y\rho,\mathrm{D}_x v_1} = 0$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_y\rho,\mathrm{D}_x v_1} = 0$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_y\rho,\mathrm{D}_x v_1} = 0$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_y\rho,\mathrm{D}_x v_1} = (3v_1^2\omega_1 - 3v_1^2\omega_2 - \omega_1 - c_s^2\omega_2 + \omega_2 + c_s^2\omega_1)\frac{1}{3\omega_1\omega_2}$

coefficient $C^{(2)}_{\mathrm{D}_y\rho,\mathrm{D}_y v_2}$ **at** $\frac{\partial\rho}{\partial x_2}\frac{\partial v_2}{\partial x_2}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_y\rho,\mathrm{D}_y v_2} = (-2 + \omega - 3v_2^2\omega - 2c_s^2\omega + 4c_s^2 + 6v_2^2)\frac{1}{\omega}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y\rho,\mathrm{D}_y v_2} = (-2 + \omega_{10} - 2c_s^2\omega_{10} - 3v_2^2\omega_{10} + 4c_s^2 + 6v_2^2)\frac{1}{\omega_{10}}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_y\rho,\mathrm{D}_y v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y\rho,\mathrm{D}_y v_2}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_y\rho,\mathrm{D}_y v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y\rho,\mathrm{D}_y v_2}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_y\rho,\mathrm{D}_y v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y\rho,\mathrm{D}_y v_2}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_y\rho,\mathrm{D}_y v_2} = (-2 - 3v_2^2\omega_5 - 2c_s^2\omega_5 + \omega_5 + 4c_s^2 + 6v_2^2)\frac{1}{\omega_5}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_y\rho,\mathrm{D}_y v_2} = (-9v_2^2\omega_1\omega_2 + 3\omega_1\omega_2 - 6c_s^2\omega_1\omega_2 - 2\omega_1 + 8c_s^2\omega_2 + 12v_2^2\omega_2 - 4\omega_2 + 6v_2^2\omega_1 + 4c_s^2\omega_1)\frac{1}{3\omega_1\omega_2}$

coefficient $C^{(2)}_{\mathrm{D}_y v_2,\mathrm{D}_y v_2}$ **at** $\left(\frac{\partial v_2}{\partial x_2}\right)^2$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_y v_2,\mathrm{D}_y v_2} = (2 - \omega)\frac{3v_2\rho}{\omega}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y v_2,\mathrm{D}_y v_2} = (2 - \omega_{10})\frac{3v_2\rho}{\omega_{10}}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_y v_2,\mathrm{D}_y v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y v_2,\mathrm{D}_y v_2}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_y v_2,\mathrm{D}_y v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y v_2,\mathrm{D}_y v_2}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_y v_2,\mathrm{D}_y v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y v_2,\mathrm{D}_y v_2}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_y v_2,\mathrm{D}_y v_2} = (2 - \omega_5)\frac{3v_2\rho}{\omega_5}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_y v_2,\mathrm{D}_y v_2} = (-3\omega_1\omega_2 + 2\omega_1 + 4\omega_2)\frac{v_2\rho}{\omega_1\omega_2}$

coefficient $C^{(2)}_{\mathrm{D}_y\rho,\mathrm{D}_z v_3}$ **at** $\frac{\partial\rho}{\partial x_2}\frac{\partial v_3}{\partial x_3}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_y\rho,\mathrm{D}_z v_3} = 0$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y\rho,\mathrm{D}_z v_3} = 0$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_y\rho,\mathrm{D}_z v_3} = 0$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_y\rho,\mathrm{D}_z v_3} = 0$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_y\rho,\mathrm{D}_z v_3} = 0$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_y\rho,\mathrm{D}_z v_3} = 0$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_y\rho,\mathrm{D}_z v_3} = (-\omega_1 + 3v_3^2\omega_1 - c_s^2\omega_2 + \omega_2 + c_s^2\omega_1 - 3v_3^2\omega_2)\frac{1}{3\omega_1\omega_2}$

coefficient $C^{(2)}_{\mathrm{D}_y v_3,\mathrm{D}_z v_3}$ **at** $\frac{\partial v_3}{\partial x_2}\frac{\partial v_3}{\partial x_3}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_y v_3,\mathrm{D}_z v_3} = 0$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y v_3,\mathrm{D}_z v_3} = 0$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_y v_3,\mathrm{D}_z v_3} = 0$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_y v_3,\mathrm{D}_z v_3} = 0$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_y v_3,\mathrm{D}_z v_3} = 0$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_y v_3,\mathrm{D}_z v_3} = 0$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_y v_3,\mathrm{D}_z v_3} = (\omega_1 - \omega_2)\frac{2v_3\rho}{\omega_1\omega_2}$

coefficient $C^{(2)}_{\mathrm{D}_z\rho,\mathrm{D}_y v_3}$ **at** $\frac{\partial\rho}{\partial x_3}\frac{\partial v_3}{\partial x_2}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_z\rho,\mathrm{D}_y v_3} = (-2+\omega)\frac{c_s^2}{2\omega}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_z\rho,\mathrm{D}_y v_3} = (-2+\omega_7)\frac{c_s^2}{2\omega_7}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_z\rho,\mathrm{D}_y v_3} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_z\rho,\mathrm{D}_y v_3}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_z\rho,\mathrm{D}_y v_3} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_z\rho,\mathrm{D}_y v_3}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_z\rho,\mathrm{D}_y v_3} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_z\rho,\mathrm{D}_y v_3}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_z\rho,\mathrm{D}_y v_3} = (-2+\omega_3)\frac{c_s^2}{2\omega_3}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_z\rho,\mathrm{D}_y v_3} = (3c_s^2\omega_1\omega_2 - 2\omega_1 + 6v_3^2\omega_1 - 12c_s^2\omega_2 + 2\omega_2 + 6c_s^2\omega_1 - 6v_3^2\omega_2)\frac{1}{6\omega_1\omega_2}$

coefficient $C^{(2)}_{\mathrm{D}_z\rho,\mathrm{D}_z v_2}$ **at** $\frac{\partial\rho}{\partial x_3}\frac{\partial v_2}{\partial x_3}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_z\rho,\mathrm{D}_z v_2} = (-2+\omega)\frac{c_s^2}{2\omega}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_z\rho,\mathrm{D}_z v_2} = (-2+\omega_7)\frac{c_s^2}{2\omega_7}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_z\rho,\mathrm{D}_z v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_z\rho,\mathrm{D}_z v_2}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_z\rho,\mathrm{D}_z v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_z\rho,\mathrm{D}_z v_2}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_z\rho,\mathrm{D}_z v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_z\rho,\mathrm{D}_z v_2}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_z\rho,\mathrm{D}_z v_2} = (-2+\omega_3)\frac{c_s^2}{2\omega_3}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_z\rho,\mathrm{D}_z v_2} = (-2+\omega_1)\frac{c_s^2}{2\omega_1}$

coefficient $C^{(2)}_{\mathrm{D}_x^2 v_2}$ **at** $\frac{\partial^2 v_2}{\partial x_1^2}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x^2 v_2} = (-2+\omega)\frac{c_s^2\rho}{2\omega}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x^2 v_2} = (-2+\omega_5)\frac{c_s^2\rho}{2\omega_5}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x^2 v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x^2 v_2}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x^2 v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x^2 v_2}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x^2 v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x^2 v_2}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x^2 v_2} = (-2+\omega_1)\frac{c_s^2\rho}{2\omega_1}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x^2 v_2} = C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x^2 v_2}$

coefficient $C^{(2)}_{\mathrm{D}_x\mathrm{D}_y\rho}$ **at** $\frac{\partial^2\rho}{\partial x_1\partial x_2}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y\rho} = 0$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y\rho} = 0$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y\rho} = 0$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y\rho} = 0$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y\rho} = 0$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y\rho} = 0$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y\rho} = (v_1^2\omega_1 - v_1^2\omega_2 - \omega_1 - 3c_s^2\omega_2 + \omega_2 + 3c_s^2\omega_1)\frac{v_1}{3\omega_1\omega_2}$

coefficient $C^{(2)}_{\mathrm{D}_x\mathrm{D}_y v_1}$ **at** $\frac{\partial^2 v_1}{\partial x_1\partial x_2}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y v_1} = (-2+\omega)\frac{c_s^2\rho}{2\omega}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y v_1} = (-2+\omega_5)\frac{c_s^2\rho}{2\omega_5}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y v_1} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y v_1}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y v_1} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y v_1}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y v_1} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y v_1}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y v_1} = (-2+\omega_1)\frac{c_s^2\rho}{2\omega_1}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y v_1} = (6v_1^2\omega_1 - 6v_1^2\omega_2 + 3c_s^2\omega_1\omega_2 - 2\omega_1 - 8c_s^2\omega_2 + 2\omega_2 + 2c_s^2\omega_1)\frac{\rho}{6\omega_1\omega_2}$

coefficient $C^{(2)}_{\mathrm{D}_y^2\rho}$ **at** $\frac{\partial^2\rho}{\partial x_2^2}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_y^2\rho} = (-2+\omega - v_2^2\omega - 3c_s^2\omega + 6c_s^2 + 2v_2^2)\frac{v_2}{2\omega}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y^2\rho} = (-2+\omega_{10} - 3c_s^2\omega_{10} - v_2^2\omega_{10} + 6c_s^2 + 2v_2^2)\frac{v_2}{2\omega_{10}}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_y^2\rho} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y^2\rho}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_y^2\rho} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y^2\rho}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_y^2\rho} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y^2\rho}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_y^2\rho} = (-2 - v_2^2\omega_5 - 3c_s^2\omega_5 + \omega_5 + 6c_s^2 + 2v_2^2)\frac{v_2}{2\omega_5}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_y^2\rho} = (-3v_2^2\omega_1\omega_2 + 3\omega_1\omega_2 - 9c_s^2\omega_1\omega_2 - 2\omega_1 + 12c_s^2\omega_2 + 4v_2^2\omega_2 - 4\omega_2 + 2v_2^2\omega_1 + 6c_s^2\omega_1)\frac{v_2}{6\omega_1\omega_2}$

coefficient $C^{(2)}_{\mathrm{D}_y^2 v_2}$ **at** $\frac{\partial^2 v_2}{\partial x_2^2}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_y^2 v_2} = (-2 + \omega - 3v_2^2\omega - c_s^2\omega + 2c_s^2 + 6v_2^2)\frac{\rho}{2\omega}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y^2 v_2} = (-2 + \omega_{10} - c_s^2\omega_{10} - 3v_2^2\omega_{10} + 2c_s^2 + 6v_2^2)\frac{\rho}{2\omega_{10}}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_y^2 v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y^2 v_2}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_y^2 v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y^2 v_2}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_y^2 v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y^2 v_2}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_y^2 v_2} = (-2 - 3v_2^2\omega_5 - c_s^2\omega_5 + \omega_5 + 2c_s^2 + 6v_2^2)\frac{\rho}{2\omega_5}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_y^2 v_2} = (-9v_2^2\omega_1\omega_2 + 3\omega_1\omega_2 - 3c_s^2\omega_1\omega_2 - 2\omega_1 + 4c_s^2\omega_2 + 12v_2^2\omega_2 - 4\omega_2 + 6v_2^2\omega_1 + 2c_s^2\omega_1)\frac{\rho}{6\omega_1\omega_2}$

coefficient $C^{(2)}_{\mathrm{D}_y\mathrm{D}_z\rho}$ **at** $\frac{\partial^2 \rho}{\partial x_2 \partial x_3}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_y\mathrm{D}_z\rho} = 0$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z\rho} = 0$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_y\mathrm{D}_z\rho} = 0$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_y\mathrm{D}_z\rho} = 0$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_y\mathrm{D}_z\rho} = 0$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_y\mathrm{D}_z\rho} = 0$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_y\mathrm{D}_z\rho} = (-\omega_1 + v_3^2\omega_1 - 3c_s^2\omega_2 + \omega_2 + 3c_s^2\omega_1 - v_3^2\omega_2)\frac{v_3}{3\omega_1\omega_2}$

coefficient $C^{(2)}_{\mathrm{D}_y\mathrm{D}_z v_3}$ **at** $\frac{\partial^2 v_3}{\partial x_2 \partial x_3}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_y\mathrm{D}_z v_3} = (-2 + \omega)\frac{c_s^2\rho}{2\omega}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z v_3} = (-2 + \omega_7)\frac{c_s^2\rho}{2\omega_7}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_y\mathrm{D}_z v_3} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z v_3}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_y\mathrm{D}_z v_3} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z v_3}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_y\mathrm{D}_z v_3} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z v_3}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_y\mathrm{D}_z v_3} = (-2 + \omega_3)\frac{c_s^2\rho}{2\omega_3}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_y\mathrm{D}_z v_3} = (3c_s^2\omega_1\omega_2 - 2\omega_1 + 6v_3^2\omega_1 - 8c_s^2\omega_2 + 2\omega_2 + 2c_s^2\omega_1 - 6v_3^2\omega_2)\frac{\rho}{6\omega_1\omega_2}$

coefficient $C^{(2)}_{\mathrm{D}_z^2 v_2}$ **at** $\frac{\partial^2 v_2}{\partial x_3^2}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}^2_z v_2} = (-2+\omega)\frac{c_s^2\rho}{2\omega}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}^2_z v_2} = (-2+\omega_7)\frac{c_s^2\rho}{2\omega_7}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}^2_z v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}^2_z v_2}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}^2_z v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}^2_z v_2}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}^2_z v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}^2_z v_2}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}^2_z v_2} = (-2+\omega_3)\frac{c_s^2\rho}{2\omega_3}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}^2_z v_2} = (-2+\omega_1)\frac{c_s^2\rho}{2\omega_1}$

coefficient $C^{(2)}_{\mathrm{D}^3_x \rho}$ at $\frac{\partial^3\rho}{\partial x_1^3}$:

$C^{(2),\mathrm{SRT}}_{\mathrm{D}^3_x \rho} = (-1+v_1^2+3c_s^2)\frac{v_2 v_1}{12}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}^3_x \rho} = (-18c_s^2\omega_5\omega_{12} - 6\omega_5\omega_9 + 6\omega_5\omega_{12} + 18c_s^2\omega_5\omega_9 + 12v_1^2\omega_{12} - 12v_1^2\omega_9 - 6v_1^2\omega_5\omega_{12} + v_1^2\omega_5\omega_9\omega_{12} + 6v_1^2\omega_5\omega_9 - \omega_5\omega_9\omega_{12} - 36c_s^2\omega_9 + 3c_s^2\omega_5\omega_9\omega_{12} + 12\omega_9 - 12\omega_{12} + 36c_s^2\omega_{12})\frac{v_2 v_1}{12\omega_5\omega_9\omega_{12}}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}^3_x \rho} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}^3_x \rho}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}^3_x \rho} = C^{(2),\mathrm{SRT}}_{\mathrm{D}^3_x \rho}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}^3_x \rho} = C^{(2),\mathrm{SRT}}_{\mathrm{D}^3_x \rho}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}^3_x \rho} = C^{(2),\mathrm{SRT}}_{\mathrm{D}^3_x \rho}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}^3_x \rho} = C^{(2),\mathrm{SRT}}_{\mathrm{D}^3_x \rho}$

coefficient $C^{(2)}_{\mathrm{D}^3_x v_1}$ at $\frac{\partial^3 v_1}{\partial x_1^3}$:

$C^{(2),\mathrm{SRT}}_{\mathrm{D}^3_x v_1} = (-1+3v_1^2+c_s^2)\frac{v_2\rho}{12}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}^3_x v_1} = (-6c_s^2\omega_5\omega_{12} - 6\omega_5\omega_9 + 6\omega_5\omega_{12} + 6c_s^2\omega_5\omega_9 + 36v_1^2\omega_{12} - 36v_1^2\omega_9 - 18v_1^2\omega_5\omega_{12} + 3v_1^2\omega_5\omega_9\omega_{12} + 18v_1^2\omega_5\omega_9 - \omega_5\omega_9\omega_{12} - 12c_s^2\omega_9 + c_s^2\omega_5\omega_9\omega_{12} + 12\omega_9 - 12\omega_{12} + 12c_s^2\omega_{12})\frac{v_2\rho}{12\omega_5\omega_9\omega_{12}}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}^3_x v_1} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}^3_x v_1}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}^3_x v_1} = C^{(2),\mathrm{SRT}}_{\mathrm{D}^3_x v_1}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}^3_x v_1} = C^{(2),\mathrm{SRT}}_{\mathrm{D}^3_x v_1}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}^3_x v_1} = C^{(2),\mathrm{SRT}}_{\mathrm{D}^3_x v_1}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}^3_x v_1} = C^{(2),\mathrm{SRT}}_{\mathrm{D}^3_x v_1}$

coefficient $C^{(2)}_{\mathrm{D}^3_x v_2}$ at $\frac{\partial^3 v_2}{\partial x_1^3}$:

$C^{(2),\mathrm{SRT}}_{\mathrm{D}^3_x v_2} = (6-6v_1^2+6v_1^2\omega-v_1^2\omega^2+\omega^2-6\omega-3c_s^2\omega^2+18c_s^2\omega-18c_s^2)\frac{v_1\rho}{6\omega^2}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}^3_x v_2} = (15c_s^2\omega_5\omega_{12} - 3\omega_5\omega_{12} + 3c_s^2\omega_5^2 - v_1^2\omega_5^2\omega_{12} - 6c_s^2\omega_5 + 3v_1^2\omega_5\omega_{12} + 6\omega_5 - 6v_1^2\omega_5 + 3v_1^2\omega_5^2 - 3c_s^2\omega_5^2\omega_{12} - 3\omega_5^2 + \omega_5^2\omega_{12} - 12c_s^2\omega_{12})\frac{v_1\rho}{6\omega_5^2\omega_{12}}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}^3_x v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}^3_x v_2}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}^3_x v_2} = (6 - 3c_s^2\omega_5\omega_{12} - 6v_1^2 + \omega_5\omega_{12} + 3v_1^2\omega_{12} + 9c_s^2\omega_5 - v_1^2\omega_5\omega_{12} - 3\omega_5 + 3v_1^2\omega_5 - 18c_s^2 - 3\omega_{12} + 9c_s^2\omega_{12})\frac{v_1\rho}{6\omega_5\omega_{12}}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}^3_x v_2} = C^{(2),\mathrm{CLBM1}}_{\mathrm{D}^3_x v_2}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}^3_x v_2} = (6 - 6v_1^2 + 3v_1^2\omega_1 - 3c_s^2\omega_1\omega_9 + 3v_1^2\omega_9 + \omega_1\omega_9 - 3\omega_1 - v_1^2\omega_1\omega_9 + 9c_s^2\omega_9 - 18c_s^2 + 9c_s^2\omega_1 - 3\omega_9)\frac{v_1\rho}{6\omega_1\omega_9}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}^3_x v_2} = (-6v_1^2\omega_4 + 6\omega_3 - 6\omega_3c_s^2\omega_4\omega_1 - 18\omega_3c_s^2 + 9\omega_3c_s^2\omega_1 + 9c_s^2\omega_4\omega_1 - 3\omega_4\omega_1 + 6\omega_4 + 18\omega_3c_s^2\omega_4 - 2\omega_3v_1^2\omega_4\omega_1 + 3\omega_3v_1^2\omega_1 - 6\omega_3\omega_4 - 6\omega_3v_1^2 - 3\omega_3\omega_1 + 6\omega_3v_1^2\omega_4 - 18c_s^2\omega_4 + 2\omega_3\omega_4\omega_1 + 3v_1^2\omega_4\omega_1)\frac{v_1\rho}{12\omega_3\omega_4\omega_1}$

coefficient $C^{(2)}_{\mathrm{D}^2_x\mathrm{D}_y\rho}$ **at** $\frac{\partial^3\rho}{\partial x_1^2\partial x_2}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}^2_x\mathrm{D}_y\rho} = (-12 - \omega^2 + 12\omega)\frac{c_s^4}{6\omega^2}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}^2_x\mathrm{D}_y\rho} = (-12 + 12\omega_5 - \omega_5^2)\frac{c_s^4}{6\omega_5^2}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}^2_x\mathrm{D}_y\rho} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}^2_x\mathrm{D}_y\rho}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}^2_x\mathrm{D}_y\rho} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}^2_x\mathrm{D}_y\rho}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}^2_x\mathrm{D}_y\rho} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}^2_x\mathrm{D}_y\rho}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}^2_x\mathrm{D}_y\rho} = (-12 - \omega_1^2 + 12\omega_1)\frac{c_s^4}{6\omega_1^2}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}^2_x\mathrm{D}_y\rho} = (3v_1^2\omega_1^2\omega_2 + 2c_s^4\omega_1^2 - 18c_s^2v_1^2\omega_2^2 - 2c_s^2\omega_1\omega_2^2 - 15c_s^2v_1^2\omega_1^2\omega_2 + 4v_1^2\omega_2^2 + 12c_s^2v_1^2\omega_1^2 - 14c_s^4\omega_2^2 - 2v_1^2\omega_1^2 - 3v_1^4\omega_1^2\omega_2 + 14c_s^4\omega_1\omega_2^2 - 2c_s^2\omega_1^2 - 3v_1^2\omega_1\omega_2^2 - c_s^4\omega_1^2\omega_2^2 - 4v_1^4\omega_2^2 + 15c_s^2v_1^2\omega_1\omega_2^2 + 2c_s^2\omega_1^2\omega_2 + 2v_1^4\omega_1\omega_2 + 3v_1^4\omega_1\omega_2^2 + 6c_s^2v_1^2\omega_1\omega_2 + 2c_s^2\omega_2^2 + 2v_1^4\omega_1^2 - 2v_1^2\omega_1\omega_2 - 2c_s^4\omega_1^2\omega_2)\frac{1}{6\omega_1^2\omega_2^2}$

coefficient $C^{(2)}_{\mathrm{D}^2_x\mathrm{D}_y v_1}$ **at** $\frac{\partial^3 v_1}{\partial x_1^2\partial x_2}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}^2_x\mathrm{D}_y v_1} = 0$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}^2_x\mathrm{D}_y v_1} = (\omega_5\omega_{12} + 2\omega_5 - \omega_5^2 - 2\omega_{12})\frac{c_s^2v_1\rho}{\omega_5^2\omega_{12}}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}^2_x\mathrm{D}_y v_1} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}^2_x\mathrm{D}_y v_1}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}^2_x\mathrm{D}_y v_1} = 0$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}^2_x\mathrm{D}_y v_1} = 0$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}^2_x\mathrm{D}_y v_1} = 0$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}^2_x\mathrm{D}_y v_1} = (6\omega_2^2 - 11v_1^2\omega_1^2\omega_2 + 9c_s^2\omega_1\omega_2^2 - 14v_1^2\omega_2^2 - 5\omega_1\omega_2^2 - 2\omega_1\omega_2 + 8v_1^2\omega_1^2 + 2c_s^2\omega_1\omega_2 - 4\omega_1^2 + 8c_s^2\omega_1^2 + 11v_1^2\omega_1\omega_2^2 + 5\omega_1^2\omega_2 - 9c_s^2\omega_1^2\omega_2 - 10c_s^2\omega_2^2 + 6v_1^2\omega_1\omega_2)\frac{v_1\rho}{6\omega_1^2\omega_2^2}$

coefficient $C^{(2)}_{\mathrm{D}^2_x\mathrm{D}_y v_2}$ **at** $\frac{\partial^3 v_2}{\partial x_1^2\partial x_2}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}^2_x\mathrm{D}_y v_2} = \frac{-c_s^2v_2\rho}{6}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y v_2} = (-12\omega_{10}\omega_5^2 - 12\omega_5\omega_{15} + 12\omega_{10}\omega_5\omega_{15} + 12\omega_{10}\omega_5 - \omega_{10}\omega_5^2\omega_{15} + 12\omega_5^2 - 12\omega_{10}\omega_{15})\frac{c_s^2 v_2\rho}{6\omega_{10}\omega_5^2\omega_{15}}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_y v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y v_2}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y v_2} = C^{(2),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_y v_2}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y v_2} = C^{(2),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_y v_2}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y v_2} = C^{(2),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_y v_2}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y v_2} = C^{(2),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_y v_2}$

coefficient $C^{(2)}_{\mathrm{D}_x\mathrm{D}_y^2\rho}$ **at** $\frac{\partial^3\rho}{\partial x_1\partial x_2^2}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y^2\rho} = 0$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^2\rho} = (\omega_{10}^2 - v_2^2\omega_{10}\omega_5 + 3c_s^2\omega_5\omega_{15} - \omega_5\omega_{15} - 3c_s^2\omega_{10}\omega_5 + \omega_{10}\omega_5\omega_{15} + \omega_{10}\omega_5 + v_2^2\omega_5\omega_{15} - 3c_s^2\omega_{10}\omega_5\omega_{15} + 3c_s^2\omega_{10}^2\omega_5 + v_2^2\omega_{10}\omega_{15} - \omega_{10}^2\omega_5 - v_2^2\omega_{10}^2 - v_2^2\omega_{10}\omega_5\omega_{15} - \omega_{10}\omega_{15} - 3c_s^2\omega_{10}^2 + v_2^2\omega_{10}^2\omega_5 + 3c_s^2\omega_{10}\omega_{15})\frac{v_2 v_1}{\omega_{10}^2\omega_5\omega_{15}}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y^2\rho} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^2\rho}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2\rho} = 0$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y^2\rho} = 0$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2\rho} = 0$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y^2\rho} = (-4v_2^2\omega_1\omega_2 + 2\omega_2^2 - 3v_1^2\omega_1^2\omega_2 + 9c_s^2\omega_1\omega_2^2 - 4v_1^2\omega_2^2 - 3\omega_1\omega_2^2 + 2\omega_1\omega_2 + 2v_1^2\omega_1^2 - 6c_s^2\omega_1\omega_2 - 4\omega_1^2 + 12c_s^2\omega_1^2 + 3v_1^2\omega_1\omega_2^2 + 2v_2^2\omega_1^2 + 3\omega_1^2\omega_2 - 9c_s^2\omega_1^2\omega_2 + 2v_2^2\omega_2^2 - 6c_s^2\omega_2^2 + 2v_1^2\omega_1\omega_2)\frac{v_2 v_1}{6\omega_1^2\omega_2^2}$

coefficient $C^{(2)}_{\mathrm{D}_x\mathrm{D}_y^2 v_1}$ **at** $\frac{\partial^3 v_1}{\partial x_1\partial x_2^2}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y^2 v_1} = (12 + 3\omega^2 - 12\omega - 11c_s^2\omega^2 - 3v_2^2\omega^2 + 12v_2^2\omega + 36c_s^2\omega - 36c_s^2 - 12v_2^2)\frac{v_2\rho}{12\omega^2}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^2 v_1} = (6v_2^2\omega_{10}^2\omega_5\omega_{15} - 24c_s^2\omega_{10}^2\omega_{15} + 12\omega_{10}\omega_5^2 - 12c_s^2\omega_{10}\omega_5^2 - 6v_2^2\omega_{10}\omega_5^2\omega_{15} - 11c_s^2\omega_{10}^2\omega_5^2\omega_{15} - 12v_2^2\omega_{10}\omega_5^2 - 24c_s^2\omega_{10}\omega_5\omega_{15} + 3\omega_{10}^2\omega_5^2\omega_{15} + 12v_2^2\omega_{10}^2\omega_5^2 - 6\omega_{10}^2\omega_5\omega_{15} + 12v_2^2\omega_5^2\omega_{15} - 18c_s^2\omega_{10}\omega_5^2\omega_{15} - 12c_s^2\omega_{10}^2\omega_5 + 12\omega_{10}^2\omega_5 + 42c_s^2\omega_{10}^2\omega_5\omega_{15} + 6\omega_{10}\omega_5^2\omega_{15} - 12\omega_{10}^2\omega_5^2 + 36c_s^2\omega_5^2\omega_{15} + 12c_s^2\omega_{10}^2\omega_5^2 - 12\omega_5^2\omega_{15} - 3v_2^2\omega_{10}^2\omega_5^2\omega_{15} - 12v_2^2\omega_{10}^2\omega_5)\frac{v_2\rho}{12\omega_{10}^2\omega_5^2\omega_{15}}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y^2 v_1} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^2 v_1}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2 v_1} =$
$(12\omega_{10}^2 - 6\omega_{10}^2\omega_{15} - 12v_2^2\omega_{10}\omega_5 - 3v_2^2\omega_{10}^2\omega_5\omega_{15} + 18c_s^2\omega_{10}^2\omega_{15} + 36c_s^2\omega_5\omega_{15} - 12\omega_5\omega_{15} - 36c_s^2\omega_{10}\omega_5 + 6v_2^2\omega_{10}^2\omega_{15} + 6\omega_{10}\omega_5\omega_{15} + 12\omega_{10}\omega_5 + 12v_2^2\omega_5\omega_{15} - 18c_s^2\omega_{10}\omega_5\omega_{15} + 3\omega_{10}^2\omega_5\omega_{15} + 36c_s^2\omega_{10}^2\omega_5 - 12\omega_{10}^2\omega_5 - 11c_s^2\omega_{10}^2\omega_5\omega_{15} - 12v_2^2\omega_{10}^2 - 6v_2^2\omega_{10}\omega_5\omega_{15} - 36c_s^2\omega_{10}^2 + 12v_2^2\omega_{10}^2\omega_5)\frac{v_2\rho}{12\omega_{10}^2\omega_5\omega_{15}}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y^2 v_1} = C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2 v_1}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2 v_1} = (3\omega_7\omega_1\omega_5^2 - 36c_s^2\omega_5^2 - 12v_2^2\omega_5^2 - 11c_s^2\omega_7\omega_1\omega_5^2 + 6v_2^2\omega_7\omega_5^2 - 18c_s^2\omega_7\omega_1\omega_5 + 6\omega_7\omega_1\omega_5 + 18c_s^2\omega_7\omega_5^2 - 6\omega_7\omega_5^2 + 12v_2^2\omega_1\omega_5^2 + 36c_s^2\omega_7\omega_1 - 12\omega_7\omega_1 - 3v_2^2\omega_7\omega_1\omega_5^2 - 36c_s^2\omega_1\omega_5 + 12\omega_1\omega_5 - 12\omega_1\omega_5^2 + 36c_s^2\omega_1\omega_5^2 + 12v_2^2\omega_7\omega_1 - 6v_2^2\omega_7\omega_1\omega_5 + 12\omega_5^2 - 12v_2^2\omega_1\omega_5)\frac{v_2\rho}{12\omega_7\omega_1\omega_5^2}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y^2 v_1} = (2\omega_3 v_2^2\omega_4\omega_1\omega_2^2 - 8\omega_3\omega_4\omega_1\omega_2^2 - 12\omega_3 v_2^2\omega_1\omega_2^2 + 4\omega_3 v_2^2\omega_4\omega_1^2 + 6v_2^2\omega_4\omega_1^2\omega_2^2 + 16\omega_3 c_s^2\omega_4\omega_2^2 - 12\omega_3 c_s^2\omega_4\omega_1^2\omega_2 - 11\omega_3 c_s^2\omega_4\omega_1^2\omega_2^2 + 16\omega_3 c_s^2\omega_4\omega_1^2 - 36\omega_3 c_s^2\omega_1\omega_2^2 - 24c_s^2\omega_4\omega_1\omega_2^2 - 6\omega_3\omega_1^2\omega_2^2 - 4v_2^2\omega_4\omega_1^2\omega_2 + 8\omega_3 v_2^2\omega_4\omega_2^2 - 4\omega_3\omega_4\omega_1\omega_2 - 18\omega_3 v_1^2\omega_4\omega_1^2\omega_2 + 8\omega_4\omega_1\omega_2^2 + 12\omega_3\omega_1\omega_2^2 -$

$24\omega_3 v_1^2\omega_4\omega_2^2 + 8\omega_3\omega_4\omega_1^2\omega_2 - 2\omega_3 v_2^2\omega_4\omega_1^2\omega_2 - 8\omega_3\omega_4\omega_1^2 - 6\omega_4\omega_1^2\omega_2^2 + 12\omega_3 v_1^2\omega_4\omega_1\omega_2 + 12\omega_3 c_s^2\omega_4\omega_1\omega_2^2 + 18\omega_3 c_s^2\omega_1^2\omega_2^2 + 18c_s^2\omega_4\omega_1^2\omega_2^2 - 12c_s^2\omega_4\omega_1^2\omega_2 + 4\omega_3 c_s^2\omega_4\omega_1\omega_2 + 6\omega_3 v_2^2\omega_1^2\omega_2^2 + 3\omega_3\omega_4\omega_1^2\omega_2^2 + 12\omega_3 v_1^2\omega_4\omega_1^2 - 3\omega_3 v_2^2\omega_4\omega_1^2\omega_2^2 + 4\omega_4\omega_1^2\omega_2 + 18\omega_3 v_1^2\omega_4\omega_1\omega_2^2 - 8v_2^2\omega_4\omega_1\omega_2^2)\frac{v_2\rho}{12\omega_3\omega_4\omega_1^2\omega_2^2}$

coefficient $C^{(2)}_{\mathrm{D}_x\mathrm{D}_y^2 v_2}$ **at** $\frac{\partial^3 v_2}{\partial x_1 \partial x_2^2}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y^2 v_2} = 0$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^2 v_2} = (\omega_{10}^2 - 3v_2^2\omega_{10}\omega_5 + c_s^2\omega_5\omega_{15} - \omega_5\omega_{15} - c_s^2\omega_{10}\omega_5 + \omega_{10}\omega_5\omega_{15} + \omega_{10}\omega_5 + 3v_2^2\omega_5\omega_{15} - c_s^2\omega_{10}\omega_5\omega_{15} + c_s^2\omega_{10}^2\omega_5 + 3v_2^2\omega_{10}\omega_{15} - \omega_{10}^2\omega_5 - 3v_2^2\omega_{10}^2 - 3v_2^2\omega_{10}\omega_5\omega_{15} - \omega_{10}\omega_{15} - c_s^2\omega_{10}^2 + 3v_2^2\omega_{10}^2\omega_5 + c_s^2\omega_{10}\omega_{15})\frac{v_1\rho}{\omega_{10}^2\omega_5\omega_{15}}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y^2 v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^2 v_2}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2 v_2} = 0$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y^2 v_2} = 0$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2 v_2} = 0$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y^2 v_2} = (\omega_3\omega_1^2\omega_2 + 6\omega_3 v_2^2\omega_1^2 - 2v_1^2\omega_1^2\omega_2 - 4\omega_3 c_s^2\omega_1\omega_2 + 6c_s^2\omega_1\omega_2^2 - 2\omega_1\omega_2^2 + 8\omega_3 c_s^2\omega_1^2 + 3\omega_3 c_s^2\omega_1\omega_2^2 - 4\omega_3 c_s^2\omega_2^2 - \omega_3 v_1^2\omega_1^2\omega_2 + 6\omega_3 v_2^2\omega_2^2 - 12\omega_3 v_2^2\omega_1\omega_2 - \omega_3\omega_1\omega_2^2 + 2v_1^2\omega_1\omega_2^2 - 2\omega_3 v_1^2\omega_2^2 + 2\omega_1^2\omega_2 - 6c_s^2\omega_1^2\omega_2 - 3\omega_3 c_s^2\omega_1^2\omega_2 - 4\omega_3\omega_1^2 + 2\omega_3 v_1^2\omega_1^2 + \omega_3 v_1^2\omega_1\omega_2^2 + 4\omega_3\omega_1\omega_2)\frac{v_1\rho}{6\omega_3\omega_1^2\omega_2^2}$

coefficient $C^{(2)}_{\mathrm{D}_y^3\rho}$ **at** $\frac{\partial^3\rho}{\partial x_2^3}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_y^3\rho} = (144c_s^2v_2^2 + 7v_2^4\omega^2 + 36v_2^4 + c_s^4\omega^2 + 12c_s^4 - 12c_s^4\omega - 36v_2^4\omega - c_s^2\omega^2 + 24c_s^2v_2^2\omega^2 - 7v_2^2\omega^2 + 36v_2^2\omega - 144c_s^2v_2^2\omega + 12c_s^2\omega - 12c_s^2 - 36v_2^2)\frac{1}{12\omega^2}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y^3\rho} =$
$(144c_s^2v_2^2 - 36v_2^4\omega_{10} - 12c_s^4\omega_{10} + 36v_2^4 + 12c_s^4 + c_s^4\omega_{10}^2 + 7v_2^4\omega_{10}^2 + 12c_s^2\omega_{10} + 36v_2^2\omega_{10} - 144c_s^2v_2^2\omega_{10} + 24c_s^2v_2^2\omega_{10}^2 - 7v_2^2\omega_{10}^2 - 12c_s^2 - c_s^2\omega_{10}^2 - 36v_2^2)\frac{1}{12\omega_{10}^2}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_y^3\rho} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y^3\rho}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_y^3\rho} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y^3\rho}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_y^3\rho} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y^3\rho}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_y^3\rho} =$
$(144c_s^2v_2^2 - c_s^2\omega_5^2 + 24c_s^2v_2^2\omega_5^2 + 36v_2^4 - 7v_2^2\omega_5^2 + 12c_s^4 + 36v_2^2\omega_5 - 144c_s^2v_2^2\omega_5 + 12c_s^2\omega_5 + 7v_2^4\omega_5^2 + c_s^4\omega_5^2 - 12c_s^4\omega_5 - 36v_2^4\omega_5 - 12c_s^2 - 36v_2^2)\frac{1}{12\omega_5^2}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_y^3\rho} = (4v_2^4\omega_1^2 - 16v_2^2\omega_1\omega_2 + 4c_s^4\omega_1^2 + 48c_s^2v_2^2\omega_1\omega_2 + 8c_s^2\omega_1\omega_2^2 - 24v_2^4\omega_1\omega_2^2 + 8c_s^4\omega_2^2 + 16v_2^4\omega_1\omega_2 - 96c_s^2v_2^2\omega_1\omega_2^2 - 8c_s^4\omega_1\omega_2^2 + 16v_2^4\omega_2^2 + 24v_2^2\omega_1\omega_2^2 - 4c_s^2\omega_1^2 + c_s^4\omega_1^2\omega_2^2 - 7v_2^2\omega_1^2\omega_2^2 - 4v_2^2\omega_1^2 - 12v_2^4\omega_1^2\omega_2 + 24c_s^2v_2^2\omega_1^2\omega_2^2 + 4c_s^2\omega_1^2\omega_2 + 24c_s^2v_2^2\omega_1^2 - 48c_s^2v_2^2\omega_1^2\omega_2 - c_s^2\omega_1^2\omega_2^2 - 16v_2^2\omega_2^2 + 72c_s^2v_2^2\omega_2^2 + 7v_2^4\omega_1^2\omega_2^2 - 8c_s^2\omega_2^2 + 12v_2^2\omega_1^2\omega_2 - 4c_s^4\omega_1^2\omega_2)\frac{1}{12\omega_1^2\omega_2^2}$

coefficient $C^{(2)}_{\mathrm{D}_y^3 v_2}$ **at** $\frac{\partial^3 v_2}{\partial x_2^3}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_y^3 v_2} = (-24 - 4\omega^2 + 24\omega + 5c_s^2\omega^2 + 11v_2^2\omega^2 - 60v_2^2\omega - 36c_s^2\omega + 36c_s^2 + 60v_2^2)\frac{v_2\rho}{6\omega^2}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y^3 v_2} = (-24 - 4\omega_{10}^2 + 24\omega_{10} - 36c_s^2\omega_{10} - 60v_2^2\omega_{10} + 11v_2^2\omega_{10}^2 + 36c_s^2 + 5c_s^2\omega_{10}^2 + 60v_2^2)\frac{v_2\rho}{6\omega_{10}^2}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_y^3 v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y^3 v_2}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_y^3 v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y^3 v_2}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}^3_y v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}^3_y v_2}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}^3_y v_2} = (-24 + 5c_s^2\omega_5^2 + 11v_2^2\omega_5^2 - 60v_2^2\omega_5 - 36c_s^2\omega_5 + 24\omega_5 - 4\omega_5^2 + 36c_s^2 + 60v_2^2)\frac{v_2\rho}{6\omega_5^2}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}^3_y v_2} = (24v_2^2\omega_1\omega_2 - 12\omega_2^2 - 24c_s^2\omega_1\omega_2^2 + 16\omega_1\omega_2^2 - 8\omega_1\omega_2 + 8c_s^2\omega_1\omega_2 - 4\omega_1^2 - 40v_2^2\omega_1\omega_2^2 + 8c_s^2\omega_1^2 + 11v_2^2\omega_1^2\omega_2^2 + 8v_2^2\omega_1^2 + 8\omega_1^2\omega_2 - 12c_s^2\omega_1^2\omega_2 + 5c_s^2\omega_1^2\omega_2^2 + 28v_2^2\omega_2^2 - 4\omega_1^2\omega_2^2 + 20c_s^2\omega_2^2 - 20v_2^2\omega_1^2\omega_2)\frac{v_2\rho}{6\omega_1^2\omega_2^2}$

coefficient $C^{(2)}_{\mathrm{D}_x^2\mathrm{D}_z v_2}$ **at** $\frac{\partial^3 v_2}{\partial x_1^2\partial x_3}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_z v_2} = 0$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_z v_2} = (\omega_7\omega_5 + \omega_7\omega_8\omega_5 - \omega_7\omega_8 - \omega_7\omega_5^2 - \omega_8\omega_5 + \omega_5^2)\frac{v_3c_s^2\rho}{\omega_7\omega_8\omega_5^2}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_z v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_z v_2}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_z v_2} = 0$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_z v_2} = 0$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_z v_2} = 0$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_z v_2} = (-2\omega_3 - \omega_3v_3^2\omega_1 + 6\omega_3c_s^2 - 3\omega_3c_s^2\omega_1 + 3c_s^2\omega_4\omega_1 - \omega_4\omega_1 + 2\omega_4 + 2\omega_3v_3^2 + v_3^2\omega_4\omega_1 + \omega_3\omega_1 - 2v_3^2\omega_4 - 6c_s^2\omega_4)\frac{v_3\rho}{4\omega_3\omega_4\omega_1}$

coefficient $C^{(2)}_{\mathrm{D}_x^2\mathrm{D}_z v_3}$ **at** $\frac{\partial^3 v_3}{\partial x_1^2\partial x_3}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_z v_3} = \frac{-c_s^2v_2\rho}{6}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_z v_3} = (6\omega_7\omega_8\omega_5 - 6\omega_7\omega_8 - 6\omega_6\omega_7\omega_5 + 6\omega_6\omega_5 + 6\omega_6\omega_7 - \omega_6\omega_7\omega_8\omega_5 - 6\omega_8\omega_5)\frac{c_s^2v_2\rho}{6\omega_6\omega_7\omega_8\omega_5}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_z v_3} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_z v_3}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_z v_3} = C^{(2),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_z v_3}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_z v_3} = C^{(2),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_z v_3}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_z v_3} = C^{(2),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_z v_3}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_z v_3} = C^{(2),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_z v_3}$

coefficient $C^{(2)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z \rho}$ **at** $\frac{\partial^3 \rho}{\partial x_1\partial x_2\partial x_3}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z \rho} = 0$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z \rho} = 0$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z \rho} = 0$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z \rho} = 0$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z \rho} = 0$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z \rho} = 0$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z\rho} = (-2\omega_2^2 + v_1^2\omega_2^2 + 4\omega_1\omega_2 + v_1^2\omega_1^2 - 12c_s^2\omega_1\omega_2 - 2\omega_1^2 + 6c_s^2\omega_1^2 + v_3^2\omega_2^2 - 2v_3^2\omega_1\omega_2 + v_3^2\omega_1^2 + 6c_s^2\omega_2^2 - 2v_1^2\omega_1\omega_2)\frac{v_3v_1}{3\omega_1^2\omega_2^2}$

coefficient $C^{(2)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_1}$ **at** $\frac{\partial^3 v_1}{\partial x_1\partial x_2\partial x_3}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_1} = 0$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_1} = (\omega_7\omega_5 + \omega_7\omega_8\omega_5 - \omega_7\omega_8 - \omega_7\omega_5^2 - \omega_8\omega_5 + \omega_5^2)\frac{v_3c_s^2\rho}{\omega_7\omega_8\omega_5^2}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_1} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_1}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_1} = 0$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_1} = 0$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_1} = 0$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_1} = (-\omega_3\omega_4\omega_1\omega_2^2 - 4\omega_3c_s^2\omega_4\omega_2^2 + \omega_3v_3^2\omega_4\omega_1\omega_2^2 + 3v_3^2\omega_4\omega_1^2\omega_2^2 - 3\omega_3c_s^2\omega_4\omega_1^2\omega_2 - 2v_3^2\omega_4\omega_1^2\omega_2 + 8\omega_3c_s^2\omega_4\omega_1^2 + 18\omega_3c_s^2\omega_1\omega_2^2 - 12c_s^2\omega_4\omega_1\omega_2^2 + 3\omega_3\omega_1^2\omega_2^2 - 3\omega_3v_3^2\omega_1^2\omega_2^2 + 4\omega_3\omega_4\omega_1\omega_2 + 4\omega_4\omega_1\omega_2^2 - 6\omega_3\omega_1\omega_2^2 + 6\omega_3v_1^2\omega_4\omega_2^2 + 2\omega_3v_3^2\omega_4\omega_1^2 + \omega_3\omega_4\omega_1^2\omega_2 + 6\omega_3v_3^2\omega_1\omega_2^2 - 4\omega_3\omega_4\omega_1^2 - 3\omega_4\omega_1^2\omega_2^2 - 12\omega_3v_1^2\omega_4\omega_1\omega_2 + 3\omega_3c_s^2\omega_4\omega_1\omega_2^2 - \omega_3v_3^2\omega_4\omega_1^2\omega_2 - 9\omega_3c_s^2\omega_1^2\omega_2^2 + 9c_s^2\omega_4\omega_1^2\omega_2^2 - 6c_s^2\omega_4\omega_1^2\omega_2 - 4\omega_3c_s^2\omega_4\omega_1\omega_2 - 4v_3^2\omega_4\omega_1\omega_2^2 - 2\omega_3v_3^2\omega_4\omega_2^2 + 6\omega_3v_1^2\omega_4\omega_1^2 + 2\omega_4\omega_1^2\omega_2)\frac{v_3\rho}{6\omega_3\omega_4\omega_1^2\omega_2^2}$

coefficient $C^{(2)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_3}$ **at** $\frac{\partial^3 v_3}{\partial x_1\partial x_2\partial x_3}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_3} = 0$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_3} = (\omega_7\omega_5 + \omega_7\omega_8\omega_5 + \omega_7^2 - \omega_7\omega_8 - \omega_8\omega_5 - \omega_7^2\omega_5)\frac{c_s^2v_1\rho}{\omega_7^2\omega_8\omega_5}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_3} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_3}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_3} = 0$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_3} = 0$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_3} = 0$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_3} = (-\omega_3\omega_4\omega_1\omega_2^2 - 3\omega_3v_1^2\omega_1^2\omega_2^2 - 4v_1^2\omega_4\omega_1\omega_2^2 - 4\omega_3c_s^2\omega_4\omega_2^2 - 3\omega_3c_s^2\omega_4\omega_1^2\omega_2 + 8\omega_3c_s^2\omega_4\omega_1^2 + 18\omega_3c_s^2\omega_1\omega_2^2 - 12c_s^2\omega_4\omega_1\omega_2^2 - 12\omega_3v_3^2\omega_4\omega_1\omega_2 + 3\omega_3\omega_1^2\omega_2^2 + 4\omega_3\omega_4\omega_1\omega_2 - \omega_3v_1^2\omega_4\omega_1^2\omega_2 + 4\omega_4\omega_1\omega_2^2 - 6\omega_3\omega_1\omega_2^2 - 2\omega_3v_1^2\omega_4\omega_2^2 + 6\omega_3v_3^2\omega_4\omega_1^2 - 2v_1^2\omega_4\omega_1^2\omega_2 + \omega_3\omega_4\omega_1^2\omega_2 - 4\omega_3\omega_4\omega_1^2 - 3\omega_4\omega_1^2\omega_2^2 + 3\omega_3c_s^2\omega_4\omega_1\omega_2^2 - 9\omega_3c_s^2\omega_1^2\omega_2^2 + 9c_s^2\omega_4\omega_1^2\omega_2^2 - 6c_s^2\omega_4\omega_1^2\omega_2 - 4\omega_3c_s^2\omega_4\omega_1\omega_2 + 6\omega_3v_3^2\omega_4\omega_2^2 + 2\omega_3v_1^2\omega_4\omega_1^2 + 2\omega_4\omega_1^2\omega_2 + \omega_3v_1^2\omega_4\omega_1\omega_2^2 + 6\omega_3v_1^2\omega_1\omega_2^2 + 3v_1^2\omega_4\omega_1^2\omega_2^2)\frac{v_1\rho}{6\omega_3\omega_4\omega_1^2\omega_2^2}$

coefficient $C^{(2)}_{\mathrm{D}_y^2\mathrm{D}_z\rho}$ **at** $\frac{\partial^3 \rho}{\partial x_2^2\partial x_3}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_y^2\mathrm{D}_z\rho} = 0$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z\rho} = (\omega_{10}^2 - 3c_s^2\omega_{16}\omega_{10}\omega_7 + \omega_{16}v_2^2\omega_{10} + \omega_{16}\omega_{10}\omega_7 + \omega_{16}v_2^2\omega_7 + v_2^2\omega_{10}^2\omega_7 + 3c_s^2\omega_{16}\omega_{10} - \omega_{16}\omega_{10} + 3c_s^2\omega_{10}^2\omega_7 + 3c_s^2\omega_{16}\omega_7 - \omega_{10}^2\omega_7 - \omega_{16}\omega_7 - 3c_s^2\omega_{10}\omega_7 + \omega_{10}\omega_7 - \omega_{16}v_2^2\omega_{10}\omega_7 - v_2^2\omega_{10}\omega_7 - v_2^2\omega_{10}^2 - 3c_s^2\omega_{10}^2)\frac{v_3v_2}{\omega_{16}\omega_{10}^2\omega_7}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_y^2\mathrm{D}_z\rho} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z\rho}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z\rho} = 0$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_y^2\mathrm{D}_z\rho} = 0$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z\rho} = 0$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_y^2\mathrm{D}_z\rho} = (-4v_2^2\omega_1\omega_2 + 2\omega_2^2 + 9c_s^2\omega_1\omega_2^2 - 3\omega_1\omega_2^2 + 2\omega_1\omega_2 - 6c_s^2\omega_1\omega_2 - 4\omega_1^2 - 3v_3^2\omega_1^2\omega_2 + 12c_s^2\omega_1^2 - 4v_3^2\omega_2^2 + 2v_3^2\omega_1\omega_2 + 2v_2^2\omega_1^2 + 3\omega_1^2\omega_2 - 9c_s^2\omega_1^2\omega_2 + 2v_2^2\omega_2^2 + 2v_3^2\omega_1^2 - 6c_s^2\omega_2^2 + 3v_3^2\omega_1\omega_2^2)\frac{v_3v_2}{6\omega_1^2\omega_2^2}$

coefficient $C^{(2)}_{\mathrm{D}_y^2\mathrm{D}_z v_2}$ **at** $\frac{\partial^3 v_2}{\partial x_2^2\partial x_3}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_y^2\mathrm{D}_z v_2} = 0$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z v_2} = (\omega_{10}^2 - c_s^2\omega_{16}\omega_{10}\omega_7 + 3\omega_{16}v_2^2\omega_{10} + \omega_{16}\omega_{10}\omega_7 + 3\omega_{16}v_2^2\omega_7 + 3v_2^2\omega_{10}^2\omega_7 + c_s^2\omega_{16}\omega_{10} - \omega_{16}\omega_{10} + c_s^2\omega_{10}^2\omega_7 + c_s^2\omega_{16}\omega_7 - \omega_{10}^2\omega_7 - \omega_{16}\omega_7 - c_s^2\omega_{10}\omega_7 + \omega_{10}\omega_7 - 3\omega_{16}v_2^2\omega_{10}\omega_7 - 3v_2^2\omega_{10}\omega_7 - 3v_2^2\omega_{10}^2 - c_s^2\omega_{10}^2)\frac{v_3\rho}{\omega_{16}\omega_{10}^2\omega_7}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_y^2\mathrm{D}_z v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z v_2}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z v_2} = 0$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_y^2\mathrm{D}_z v_2} = 0$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z v_2} = 0$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_y^2\mathrm{D}_z v_2} = (-\omega_3v_3^2\omega_1^2\omega_2 + \omega_3\omega_1^2\omega_2 + 6\omega_3v_2^2\omega_1^2 - 4\omega_3c_s^2\omega_1\omega_2 + 6c_s^2\omega_1\omega_2^2 - 2\omega_1\omega_2^2 - 2\omega_3v_3^2\omega_2^2 + 8\omega_3c_s^2\omega_1^2 + 3\omega_3c_s^2\omega_1\omega_2^2 - 4\omega_3c_s^2\omega_2^2 + 2\omega_3v_3^2\omega_1^2 + 6\omega_3v_2^2\omega_2^2 - 12\omega_3v_2^2\omega_1\omega_2 - 2v_3^2\omega_1^2\omega_2 - \omega_3\omega_1\omega_2^2 + \omega_3v_3^2\omega_1\omega_2^2 + 2\omega_1^2\omega_2 - 6c_s^2\omega_1^2\omega_2 - 3\omega_3c_s^2\omega_1^2\omega_2 - 4\omega_3\omega_1^2 + 2v_3^2\omega_1\omega_2^2 + 4\omega_3\omega_1\omega_2)\frac{v_3\rho}{6\omega_3\omega_1^2\omega_2^2}$

coefficient $C^{(2)}_{\mathrm{D}_y^2\mathrm{D}_z v_3}$ **at** $\frac{\partial^3 v_3}{\partial x_2^2\partial x_3}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_y^2\mathrm{D}_z v_3} = (12 + 3\omega^2 - 12\omega - 11c_s^2\omega^2 - 3v_2^2\omega^2 + 12v_2^2\omega + 36c_s^2\omega - 36c_s^2 - 12v_2^2)\frac{v_2\rho}{12\omega^2}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z v_3} = (-12\omega_{10}^2\omega_7^2 - 12\omega_{16}\omega_7^2 - 24c_s^2\omega_{16}\omega_{10}\omega_7 + 12c_s^2\omega_{10}^2\omega_7^2 + 36c_s^2\omega_{16}\omega_7^2 - 3\omega_{16}v_2^2\omega_{10}^2\omega_7^2 - 12v_2^2\omega_{10}^2\omega_7 - 24c_s^2\omega_{16}\omega_{10}^2 + 12v_2^2\omega_{10}^2\omega_7^2 + 12\omega_{16}v_2^2\omega_7^2 + 6\omega_{16}\omega_{10}\omega_7^2 + 6\omega_{16}v_2^2\omega_{10}^2\omega_7 - 12c_s^2\omega_{10}^2\omega_7 + 12\omega_{10}^2\omega_7 - 18c_s^2\omega_{16}\omega_{10}\omega_7^2 - 11c_s^2\omega_{16}\omega_{10}^2\omega_7^2 - 12v_2^2\omega_{10}\omega_7^2 + 3\omega_{16}\omega_{10}^2\omega_7^2 - 6\omega_{16}\omega_{10}^2\omega_7 - 6\omega_{16}v_2^2\omega_{10}\omega_7^2 + 12\omega_{10}\omega_7^2 + 42c_s^2\omega_{16}\omega_{10}^2\omega_7 - 12c_s^2\omega_{10}\omega_7^2)\frac{v_2\rho}{12\omega_{16}\omega_{10}^2\omega_7^2}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_y^2\mathrm{D}_z v_3} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z v_3}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z v_3} =$
$(12\omega_{10}^2 - 18c_s^2\omega_{16}\omega_{10}\omega_7 - 6\omega_{16}\omega_{10}^2 + 6\omega_{16}\omega_{10}\omega_7 + 12\omega_{16}v_2^2\omega_7 + 12v_2^2\omega_{10}^2\omega_7 + 18c_s^2\omega_{16}\omega_{10}^2 - 3\omega_{16}v_2^2\omega_{10}^2\omega_7 + 36c_s^2\omega_{10}^2\omega_7 + 36c_s^2\omega_{16}\omega_7 + 6\omega_{16}v_2^2\omega_{10}^2 - 12\omega_{10}^2\omega_7 - 12\omega_{16}\omega_7 - 36c_s^2\omega_{10}\omega_7 + 12\omega_{10}\omega_7 - 6\omega_{16}v_2^2\omega_{10}\omega_7 + 3\omega_{16}\omega_{10}^2\omega_7 - 12v_2^2\omega_{10}\omega_7 - 12v_2^2\omega_{10}^2 - 11c_s^2\omega_{16}\omega_{10}^2\omega_7 - 36c_s^2\omega_{10}^2)\frac{v_2\rho}{12\omega_{16}\omega_{10}^2\omega_7}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_y^2\mathrm{D}_z v_3} = C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z v_3}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z v_3} = (-11\omega_3c_s^2\omega_{11}\omega_5^2 - 36c_s^2\omega_5^2 - 6\omega_3v_2^2\omega_{11}\omega_5 + 6v_2^2\omega_{11}\omega_5^2 - 12v_2^2\omega_5^2 + 12\omega_3\omega_5 - 12\omega_3\omega_5^2 - 3\omega_3v_2^2\omega_{11}\omega_5^2 - 6\omega_{11}\omega_5^2 - 12\omega_3\omega_{11} - 18\omega_3c_s^2\omega_{11}\omega_5 + 18c_s^2\omega_{11}\omega_5^2 + 12\omega_3v_2^2\omega_5^2 + 36\omega_3c_s^2\omega_{11} + 36\omega_3c_s^2\omega_5^2 + 6\omega_3\omega_{11}\omega_5 + 12\omega_3v_2^2\omega_{11} + 3\omega_3\omega_{11}\omega_5^2 - 36\omega_3c_s^2\omega_5 + 12\omega_5^2 - 12\omega_3v_2^2\omega_5)\frac{v_2\rho}{12\omega_3\omega_{11}\omega_5^2}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_y^2\mathrm{D}_z v_3} = (2\omega_3v_2^2\omega_4\omega_1\omega_2^2 - 8\omega_3\omega_4\omega_1\omega_2^2 - 12\omega_3v_2^2\omega_1\omega_2^2 + 4\omega_3v_2^2\omega_4\omega_1^2 + 6v_2^2\omega_4\omega_1^2\omega_2^2 + 16\omega_3c_s^2\omega_4\omega_2^2 + 18\omega_3v_3^2\omega_4\omega_1\omega_2^2 - 12\omega_3c_s^2\omega_4\omega_1^2\omega_2 - 11\omega_3c_s^2\omega_4\omega_1^2\omega_2^2 + 16\omega_3c_s^2\omega_4\omega_1^2 - 36\omega_3c_s^2\omega_1\omega_2^2 - 24c_s^2\omega_4\omega_1\omega_2^2 + 12\omega_3v_3^2\omega_4\omega_1\omega_2 - 6\omega_3\omega_1^2\omega_2^2 - 4v_2^2\omega_4\omega_1^2\omega_2 + 8\omega_3v_2^2\omega_4\omega_2^2 - 4\omega_3\omega_4\omega_1\omega_2 + 8\omega_4\omega_1\omega_2^2 + 12\omega_3\omega_1\omega_2^2 + 12\omega_3v_3^2\omega_4\omega_1^2 + 8\omega_3\omega_4\omega_1^2\omega_2 - 2\omega_3v_2^2\omega_4\omega_1^2\omega_2 - 8\omega_3\omega_4\omega_1^2 - 6\omega_4\omega_1^2\omega_2^2 + 12\omega_3c_s^2\omega_4\omega_1\omega_2^2 - 18\omega_3v_3^2\omega_4\omega_1^2\omega_2 + 18\omega_3c_s^2\omega_1^2\omega_2^2 + 18c_s^2\omega_4\omega_1^2\omega_2^2 - 12c_s^2\omega_4\omega_1^2\omega_2 + 4\omega_3c_s^2\omega_4\omega_1\omega_2 + 6\omega_3v_2^2\omega_1^2\omega_2^2 - 24\omega_3v_3^2\omega_4\omega_2^2 + 3\omega_3\omega_4\omega_1^2\omega_2^2 - 3\omega_3v_2^2\omega_4\omega_1^2\omega_2^2 + 4\omega_4\omega_1^2\omega_2 - 8v_2^2\omega_4\omega_1\omega_2^2)\frac{v_2\rho}{12\omega_3\omega_4\omega_1^2\omega_2^2}$

coefficient $C^{(2)}_{\mathrm{D}_x\mathrm{D}_z^2 v_1}$ **at** $\frac{\partial^3 v_1}{\partial x_1\partial x_3^2}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_z^2 v_1} = \frac{-c_s^2v_2\rho}{6}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^2 v_1} = (6\omega_7\omega_8\omega_5 - 6\omega_7\omega_8 - 6\omega_6\omega_7\omega_5 + 6\omega_6\omega_5 + 6\omega_6\omega_7 - \omega_6\omega_7\omega_8\omega_5 - 6\omega_8\omega_5)\frac{c_s^2 v_2 \rho}{6\omega_6\omega_7\omega_8\omega_5}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_z^2 v_1} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^2 v_1}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_z^2 v_1} = C^{(2),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_z^2 v_1}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_z^2 v_1} = C^{(2),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_z^2 v_1}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_z^2 v_1} = C^{(2),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_z^2 v_1}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_z^2 v_1} = C^{(2),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_z^2 v_1}$

coefficient $C^{(2)}_{\mathrm{D}_x\mathrm{D}_z^2 v_2}$ **at** $\frac{\partial^3 v_2}{\partial x_1 \partial x_3^2}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_z^2 v_2} = 0$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^2 v_2} = (\omega_7\omega_5 + \omega_7\omega_8\omega_5 + \omega_7^2 - \omega_7\omega_8 - \omega_8\omega_5 - \omega_7^2\omega_5)\frac{c_s^2 v_1 \rho}{\omega_7^2\omega_8\omega_5}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_z^2 v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^2 v_2}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_z^2 v_2} = 0$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_z^2 v_2} = 0$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_z^2 v_2} = 0$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_z^2 v_2} = (-2v_1^2\omega_4 - 2\omega_3 + 6\omega_3 c_s^2 - 3\omega_3 c_s^2\omega_1 + 3c_s^2\omega_4\omega_1 - \omega_4\omega_1 + 2\omega_4 - \omega_3 v_1^2\omega_1 + 2\omega_3 v_1^2 + \omega_3\omega_1 - 6c_s^2\omega_4 + v_1^2\omega_4\omega_1)\frac{v_1\rho}{4\omega_3\omega_4\omega_1}$

coefficient $C^{(2)}_{\mathrm{D}_y\mathrm{D}_z^2 \rho}$ **at** $\frac{\partial^3 \rho}{\partial x_2 \partial x_3^2}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_y\mathrm{D}_z^2 \rho} = (-12 - \omega^2 + 12\omega)\frac{c_s^4}{6\omega^2}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^2 \rho} = (-12 - \omega_7^2 + 12\omega_7)\frac{c_s^4}{6\omega_7^2}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_y\mathrm{D}_z^2 \rho} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^2 \rho}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_y\mathrm{D}_z^2 \rho} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^2 \rho}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_y\mathrm{D}_z^2 \rho} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^2 \rho}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_y\mathrm{D}_z^2 \rho} = (-12 + 12\omega_3 - \omega_3^2)\frac{c_s^4}{6\omega_3^2}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_y\mathrm{D}_z^2 \rho} = (-15v_3^2c_s^2\omega_1^2\omega_2 + 2c_s^4\omega_1^2 - 4v_3^4\omega_2^2 - 2c_s^2\omega_1\omega_2^2 - 18v_3^2c_s^2\omega_2^2 - 3v_3^4\omega_1^2\omega_2 + 2v_3^4\omega_1^2 - 14c_s^4\omega_2^2 + 12v_3^2c_s^2\omega_1^2 + 14c_s^4\omega_1\omega_2^2 + 3v_3^2\omega_1^2\omega_2 - 2c_s^2\omega_1^2 + 4v_3^2\omega_2^2 + 15v_3^2c_s^2\omega_1\omega_2^2 - c_s^4\omega_1^2\omega_2^2 - 2v_3^2\omega_1\omega_2 + 3v_3^4\omega_1\omega_2^2 + 2c_s^2\omega_1^2\omega_2 + 2v_3^4\omega_1\omega_2 - 2v_3^2\omega_1^2 + 2c_s^2\omega_2^2 - 3v_3^2\omega_1\omega_2^2 + 6v_3^2c_s^2\omega_1\omega_2 - 2c_s^4\omega_1^2\omega_2)\frac{1}{6\omega_1^2\omega_2^2}$

coefficient $C^{(2)}_{\mathrm{D}_y\mathrm{D}_z^2 v_2}$ **at** $\frac{\partial^3 v_2}{\partial x_2 \partial x_3^2}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_y\mathrm{D}_z^2 v_2} = \frac{-c_s^2 v_2 \rho}{6}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^2 v_2} = (12\omega_{16}\omega_{10}\omega_7 + 12\omega_7^2 - 12\omega_{16}\omega_{10} - \omega_{16}\omega_{10}\omega_7^2 - 12\omega_{16}\omega_7 + 12\omega_{10}\omega_7 - 12\omega_{10}\omega_7^2)\frac{c_s^2 v_2 \rho}{6\omega_{16}\omega_{10}\omega_7^2}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_y\mathrm{D}_z^2 v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^2 v_2}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_y\mathrm{D}_z^2 v_2} = C^{(2),\mathrm{SRT}}_{\mathrm{D}_y\mathrm{D}_z^2 v_2}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_y\mathrm{D}_z^2 v_2} = C^{(2),\mathrm{SRT}}_{\mathrm{D}_y\mathrm{D}_z^2 v_2}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_y\mathrm{D}_z^2 v_2} = C^{(2),\mathrm{SRT}}_{\mathrm{D}_y\mathrm{D}_z^2 v_2}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_y\mathrm{D}_z^2 v_2} = C^{(2),\mathrm{SRT}}_{\mathrm{D}_y\mathrm{D}_z^2 v_2}$

coefficient $C^{(2)}_{\mathrm{D}_y\mathrm{D}_z^2 v_3}$ **at** $\frac{\partial^3 v_3}{\partial x_2 \partial x_3^2}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_y\mathrm{D}_z^2 v_3} = 0$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^2 v_3} = (\omega_{19}\omega_7 - 2\omega_{19} - \omega_7^2 + 2\omega_7)\frac{v_3 c_s^2 \rho}{\omega_{19}\omega_7^2}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_y\mathrm{D}_z^2 v_3} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^2 v_3}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_y\mathrm{D}_z^2 v_3} = 0$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_y\mathrm{D}_z^2 v_3} = 0$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_y\mathrm{D}_z^2 v_3} = 0$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_y\mathrm{D}_z^2 v_3} = (6\omega_2^2 + 9c_s^2\omega_1\omega_2^2 - 5\omega_1\omega_2^2 - 2\omega_1\omega_2 + 2c_s^2\omega_1\omega_2 - 4\omega_1^2 - 11v_3^2\omega_1^2\omega_2 + 8c_s^2\omega_1^2 - 14v_3^2\omega_2^2 + 6v_3^2\omega_1\omega_2 + 5\omega_1^2\omega_2 - 9c_s^2\omega_1^2\omega_2 + 8v_3^2\omega_1^2 - 10c_s^2\omega_2^2 + 11v_3^2\omega_1\omega_2^2)\frac{v_3\rho}{6\omega_1^2\omega_2^2}$

coefficient $C^{(2)}_{\mathrm{D}_z^3\rho}$ **at** $\frac{\partial^3 \rho}{\partial x_3^3}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_z^3\rho} = (-1 + v_3^2 + 3c_s^2)\frac{v_3 v_2}{12}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_z^3\rho} = (6\omega_{19}\omega_7 - \omega_{19}\omega_7\omega_{11} + \omega_{19}v_3^2\omega_7\omega_{11} - 36c_s^2\omega_{11} - 12\omega_{19} - 6\omega_7\omega_{11} - 12v_3^2\omega_{11} + 18c_s^2\omega_7\omega_{11} + 12\omega_{19}v_3^2 - 6\omega_{19}v_3^2\omega_7 + 6v_3^2\omega_7\omega_{11} + 12\omega_{11} + 36\omega_{19}c_s^2 + 3\omega_{19}c_s^2\omega_7\omega_{11} - 18\omega_{19}c_s^2\omega_7)\frac{v_3 v_2}{12\omega_{19}\omega_7\omega_{11}}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_z^3\rho} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_z^3\rho}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_z^3\rho} = C^{(2),\mathrm{SRT}}_{\mathrm{D}_z^3\rho}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_z^3\rho} = C^{(2),\mathrm{SRT}}_{\mathrm{D}_z^3\rho}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_z^3\rho} = C^{(2),\mathrm{SRT}}_{\mathrm{D}_z^3\rho}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_z^3\rho} = C^{(2),\mathrm{SRT}}_{\mathrm{D}_z^3\rho}$

coefficient $C^{(2)}_{\mathrm{D}_z^3 v_2}$ **at** $\frac{\partial^3 v_2}{\partial x_3^3}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_z^3 v_2} = (6 + \omega^2 - 6\omega + 6v_3^2\omega - 3c_s^2\omega^2 - 6v_3^2 + 18c_s^2\omega - 18c_s^2 - v_3^2\omega^2)\frac{v_3\rho}{6\omega^2}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_z^3 v_2} = (-3\omega_{19}\omega_7 - 3\omega_7^2 + 6\omega_7 + \omega_{19}\omega_7^2 + 3\omega_{19}v_3^2\omega_7 - 3\omega_{19}c_s^2\omega_7^2 - 6c_s^2\omega_7 - 12\omega_{19}c_s^2 + 3v_3^2\omega_7^2 - 6v_3^2\omega_7 + 3c_s^2\omega_7^2 + 15\omega_{19}c_s^2\omega_7 - \omega_{19}v_3^2\omega_7^2)\frac{v_3\rho}{6\omega_{19}\omega_7^2}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_z^3 v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_z^3 v_2}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}^3_z v_2} = (6 + \omega_{19}\omega_7 - 3\omega_{19} - 3\omega_7 + 3\omega_{19}v_3^2 - \omega_{19}v_3^2\omega_7 + 9c_s^2\omega_7 + 9\omega_{19}c_s^2 + 3v_3^2\omega_7 - 6v_3^2 - 3\omega_{19}c_s^2\omega_7 - 18c_s^2)\frac{v_3\rho}{6\omega_{19}\omega_7}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}^3_z v_2} = C^{(2),\mathrm{CLBM1}}_{\mathrm{D}^3_z v_2}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}^3_z v_2} = (6 - 3\omega_3 - 3\omega_3 c_s^2\omega_{10} - 3\omega_{10} + 9\omega_3 c_s^2 - \omega_3 v_3^2\omega_{10} + 3\omega_3 v_3^2 + 9c_s^2\omega_{10} + \omega_3\omega_{10} - 6v_3^2 + 3v_3^2\omega_{10} - 18c_s^2)\frac{v_3\rho}{6\omega_3\omega_{10}}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}^3_z v_2} = (6\omega_3 v_3^2\omega_4 + 6\omega_3 + 3\omega_3 v_3^2\omega_1 - 6\omega_3 c_s^2\omega_4\omega_1 - 18\omega_3 c_s^2 + 9\omega_3 c_s^2\omega_1 + 9c_s^2\omega_4\omega_1 - 3\omega_4\omega_1 + 6\omega_4 + 18\omega_3 c_s^2\omega_4 - 6\omega_3 v_3^2 + 3v_3^2\omega_4\omega_1 - 6\omega_3\omega_4 - 3\omega_3\omega_1 - 6v_3^2\omega_4 - 18c_s^2\omega_4 + 2\omega_3\omega_4\omega_1 - 2\omega_3 v_3^2\omega_4\omega_1)\frac{v_3\rho}{12\omega_3\omega_4\omega_1}$

coefficient $C^{(2)}_{\mathrm{D}^3_z v_3}$ at $\frac{\partial^3 v_3}{\partial x_3^3}$:

$C^{(2),\mathrm{SRT}}_{\mathrm{D}^3_z v_3} = (-1 + 3v_3^2 + c_s^2)\frac{v_2\rho}{12}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}^3_z v_3} = (6\omega_{19}\omega_7 - \omega_{19}\omega_7\omega_{11} + 3\omega_{19}v_3^2\omega_7\omega_{11} - 12c_s^2\omega_{11} - 12\omega_{19} - 6\omega_7\omega_{11} - 36v_3^2\omega_{11} + 6c_s^2\omega_7\omega_{11} + 36\omega_{19}v_3^2 - 18\omega_{19}v_3^2\omega_7 + 18v_3^2\omega_7\omega_{11} + 12\omega_{11} + 12\omega_{19}c_s^2 + \omega_{19}c_s^2\omega_7\omega_{11} - 6\omega_{19}c_s^2\omega_7)\frac{v_2\rho}{12\omega_{19}\omega_7\omega_{11}}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}^3_z v_3} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}^3_z v_3}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}^3_z v_3} = C^{(2),\mathrm{SRT}}_{\mathrm{D}^3_z v_3}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}^3_z v_3} = C^{(2),\mathrm{SRT}}_{\mathrm{D}^3_z v_3}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}^3_z v_3} = C^{(2),\mathrm{SRT}}_{\mathrm{D}^3_z v_3}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}^3_z v_3} = C^{(2),\mathrm{SRT}}_{\mathrm{D}^3_z v_3}$

coefficient $C^{(2)}_{\mathrm{D}^4_x \rho}$ at $\frac{\partial^4 \rho}{\partial x_1^4}$:

$C^{(2),\mathrm{SRT}}_{\mathrm{D}^4_x \rho} = (-6v_1^2 - 12c_s^2 v_1^2\omega + 3v_1^2\omega + 2c_s^4 - c_s^4\omega - 3v_1^4\omega + 6v_1^4 + c_s^2\omega - 2c_s^2 + 24c_s^2 v_1^2)\frac{v_2}{24\omega}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}^4_x \rho} = (72c_s^2 v_1^2\omega_5^2\omega_9^2 - 30v_1^4\omega_5^2\omega_9^2\omega_{12} - 48c_s^2\omega_5\omega_9^2\omega_{12} + 432c_s^2 v_1^2\omega_5\omega_9^2\omega_{12} - 48c_s^4\omega_5\omega_9\omega_{12}^2 - 48v_1^4\omega_9^2\omega_{12} - 144c_s^2 v_1^2\omega_5^2\omega_{12}^2 - 36v_1^2\omega_5^2\omega_9\omega_{12}^2 + 24c_s^4\omega_9\omega_{12}^2 - 24c_s^4\omega_5\omega_9^2 - 48v_1^4\omega_5\omega_9\omega_{12} - 12v_1^2\omega_5^2\omega_9^2 + 36v_1^2\omega_5^2\omega_{12}^2 + 24c_s^4\omega_5\omega_{12}^2 + 72c_s^2 v_1^2\omega_5^2\omega_9\omega_{12} - c_s^4\omega_5^2\omega_9^2\omega_{12}^2 - 96v_1^2\omega_5\omega_9^2\omega_{12} + 150c_s^2 v_1^2\omega_5^2\omega_9\omega_{12}^2 - 12c_s^4\omega_5^2\omega_9^2\omega_{12} + 48v_1^2\omega_9^2\omega_{12} - 14c_s^2\omega_5^2\omega_9\omega_{12}^2 - 96v_1^4\omega_5\omega_9\omega_{12}^2 - 24c_s^2\omega_9\omega_{12}^2 + 12v_1^4\omega_5^2\omega_9^2 - 24v_1^2\omega_5^2\omega_9\omega_{12} + 24c_s^2\omega_5\omega_9^2 - 24c_s^2\omega_5\omega_{12}^2 - 3v_1^4\omega_5^2\omega_9^2\omega_{12}^2 - 36v_1^4\omega_5^2\omega_{12}^2 - 216c_s^2 v_1^2\omega_9^2\omega_{12} + 48v_1^4\omega_9\omega_{12}^2 + 48c_s^4\omega_5\omega_9^2\omega_{12} - 432c_s^2 v_1^2\omega_5\omega_9\omega_{12}^2 - 12c_s^2\omega_5^2\omega_9^2 + 30v_1^2\omega_5^2\omega_9^2\omega_{12} - 24v_1^4\omega_5\omega_9^2 + 36v_1^4\omega_5^2\omega_9\omega_{12}^2 + 72v_1^4\omega_5\omega_{12}^2 + 12c_s^2\omega_5^2\omega_{12}^2 + 48c_s^2\omega_5\omega_9\omega_{12}^2 + 48v_1^2\omega_5\omega_9\omega_{12} - 12c_s^2 v_1^2\omega_5^2\omega_9^2\omega_{12}^2 - 24c_s^4\omega_9^2\omega_{12} + c_s^2\omega_5^2\omega_9^2\omega_{12}^2 - 48v_1^2\omega_9\omega_{12}^2 + 12c_s^2\omega_5^2\omega_9^2\omega_{12} + 96v_1^4\omega_5\omega_9^2\omega_{12} + 24v_1^2\omega_5\omega_9^2 + 12c_s^4\omega_5^2\omega_9^2 - 12c_s^4\omega_5^2\omega_{12}^2 + 96v_1^2\omega_5\omega_9\omega_{12}^2 - 72v_1^2\omega_5\omega_{12}^2 + 14c_s^4\omega_5^2\omega_9\omega_{12}^2 - 126c_s^2 v_1^2\omega_5^2\omega_9^2\omega_{12} + 24v_1^4\omega_5^2\omega_9\omega_{12} - 144c_s^2 v_1^2\omega_5\omega_9^2 + 216c_s^2 v_1^2\omega_9\omega_{12}^2 + 24c_s^2\omega_9^2\omega_{12} - 144c_s^2 v_1^2\omega_5\omega_9\omega_{12} + 3v_1^2\omega_5^2\omega_9^2\omega_{12}^2 + 288c_s^2 v_1^2\omega_5\omega_{12}^2)\frac{v_2}{24\omega_5^2\omega_9^2\omega_{12}^2}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}^4_x \rho} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}^4_x \rho}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}^4_x \rho} = (-6v_1^2 - 12c_s^2 v_1^2\omega_9 + 3v_1^2\omega_9 + 2c_s^4 - c_s^4\omega_9 - 3v_1^4\omega_9 + 6v_1^4 + c_s^2\omega_9 - 2c_s^2 + 24c_s^2 v_1^2)\frac{v_2}{24\omega_9}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}^4_x \rho} = C^{(2),\mathrm{CLBM1}}_{\mathrm{D}^4_x \rho}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}^4_x \rho} = (-6v_1^2 - 12c_s^2 v_1^2\omega_4 + 3v_1^2\omega_4 + 2c_s^4 - c_s^4\omega_4 - 3v_1^4\omega_4 + c_s^2\omega_4 + 6v_1^4 - 2c_s^2 + 24c_s^2 v_1^2)\frac{v_2}{24\omega_4}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}^4_x \rho} = (-3c_s^4\omega_1\omega_2 - 6v_1^2\omega_1 + 4c_s^4\omega_2 + 24c_s^2 v_1^2\omega_1 - 12v_1^2\omega_2 + 48c_s^2 v_1^2\omega_2 + 2c_s^4\omega_1 + 3c_s^2\omega_1\omega_2 + 6v_1^4\omega_1 - 4c_s^2\omega_2 - 9v_1^4\omega_1\omega_2 - 36c_s^2 v_1^2\omega_1\omega_2 + 12v_1^4\omega_2 - 2c_s^2\omega_1 + 9v_1^2\omega_1\omega_2)\frac{v_2}{72\omega_1\omega_2}$

coefficient $C^{(2)}_{\mathrm{D}^4_x v_1}$ at $\frac{\partial^4 v_1}{\partial x_1^4}$:

$C^{(2),\mathrm{SRT}}_{\mathrm{D}^4_x v_1} = (-4 + 10v_1^2 - 5v_1^2\omega + 2\omega - 3c_s^2\omega + 6c_s^2)\frac{v_2 v_1\rho}{12\omega}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x^4 v_1} =$
$(-12\omega_5^2\omega_9\omega_{12} + 120c_s^2\omega_5\omega_9^2\omega_{12} + 61v_1^2\omega_5^2\omega_9\omega_{12}^2 + 12c_s^2\omega_5^2\omega_9\omega_{12} - 72\omega_5\omega_9^2\omega_{12} + 24v_1^2\omega_5^2\omega_9^2 - 60v_1^2\omega_5^2\omega_{12}^2 + 168v_1^2\omega_5\omega_9^2\omega_{12} - 84v_1^2\omega_9^2\omega_{12} +$
$39c_s^2\omega_5^2\omega_9\omega_{12}^2 + 60c_s^2\omega_9\omega_{12}^2 - 48\omega_5\omega_{12}^2 + 36v_1^2\omega_5^2\omega_9\omega_{12} - 48c_s^2\omega_5\omega_9^2 + 72c_s^2\omega_5\omega_{12}^2 - 36\omega_9\omega_{12}^2 + 24\omega_5\omega_9^2 - 25\omega_5^2\omega_9\omega_{12}^2 + 24\omega_5^2\omega_{12}^2 + 24c_s^2\omega_5^2\omega_9^2 -$
$51v_1^2\omega_5^2\omega_9^2\omega_{12} - 36c_s^2\omega_5^2\omega_{12}^2 - 12\omega_5^2\omega_9^2 + 2\omega_5^2\omega_9^2\omega_{12}^2 - 120c_s^2\omega_5\omega_9\omega_{12}^2 - 72v_1^2\omega_5\omega_9\omega_{12} - 3c_s^2\omega_5^2\omega_9^2\omega_{12}^2 + 72\omega_5\omega_9\omega_{12}^2 + 24\omega_5\omega_9\omega_{12} + 84v_1^2\omega_9\omega_{12}^2 -$
$33c_s^2\omega_5^2\omega_9^2\omega_{12} - 48v_1^2\omega_5\omega_9^2 - 168v_1^2\omega_5\omega_9\omega_{12}^2 + 120v_1^2\omega_5\omega_{12}^2 + 36\omega_9^2\omega_{12} - 24c_s^2\omega_5\omega_9\omega_{12} + 21\omega_5^2\omega_9^2\omega_{12} - 60c_s^2\omega_9^2\omega_{12} - 5v_1^2\omega_5^2\omega_9^2\omega_{12}^2)\frac{v_2 v_1 \rho}{12\omega_5^2\omega_9^2\omega_{12}^2}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x^4 v_1} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x^4 v_1}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x^4 v_1} = (-4 + 10v_1^2 - 5v_1^2\omega_9 - 3c_s^2\omega_9 + 6c_s^2 + 2\omega_9)\frac{v_2 v_1 \rho}{12\omega_9}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x^4 v_1} = C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x^4 v_1}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x^4 v_1} = (-4 + 10v_1^2 - 5v_1^2\omega_4 + 2\omega_4 - 3c_s^2\omega_4 + 6c_s^2)\frac{v_2 v_1 \rho}{12\omega_4}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x^4 v_1} = (10v_1^2\omega_1 + 20v_1^2\omega_2 + 6\omega_1\omega_2 - 9c_s^2\omega_1\omega_2 - 4\omega_1 + 12c_s^2\omega_2 - 8\omega_2 + 6c_s^2\omega_1 - 15v_1^2\omega_1\omega_2)\frac{v_2 v_1 \rho}{36\omega_1\omega_2}$

coefficient $C^{(2)}_{\mathrm{D}_x^4 v_2}$ **at** $\frac{\partial^4 v_2}{\partial x_1^4}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x^4 v_2} = (72v_1^2 - 3c_s^4\omega^3 + 216c_s^2v_1^2\omega + 30c_s^4\omega^2 - 108v_1^2\omega + 48c_s^4 + 42v_1^2\omega^2 - 72c_s^4\omega - 84c_s^2v_1^2\omega^2 - 3v_1^2\omega^3 + 6c_s^2v_1^2\omega^3 + 108v_1^4\omega - 14c_s^2\omega^2 +$
$c_s^2\omega^3 + 3v_1^4\omega^3 - 72v_1^4 + 36c_s^2\omega - 42v_1^4\omega^2 - 24c_s^2 - 144c_s^2v_1^2)\frac{\rho}{24\omega^3}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x^4 v_2} = (-24c_s^2\omega_5\omega_{12} + 72v_1^4\omega_5^2\omega_{12} + 18v_1^2\omega_5^3\omega_{12} - 72c_s^2v_1^2\omega_5^2\omega_{12}^2 + 24c_s^4\omega_{12}^2 + 3v_1^4\omega_5^3\omega_{12}^2 + 24v_1^2\omega_5^2\omega_{12}^2 - 12c_s^2v_1^2\omega_5^3\omega_{12} - 48c_s^4\omega_5\omega_{12}^2 -$
$72v_1^2\omega_5^2\omega_{12} + 6c_s^2v_1^2\omega_5^3\omega_{12}^2 + 24c_s^4\omega_5\omega_{12} + 12v_1^4\omega_5^3 - 96c_s^2v_1^2\omega_{12}^2 - 18v_1^4\omega_5^3\omega_{12} - 24v_1^4\omega_5^2 - 3v_1^2\omega_5^3\omega_{12}^2 + 48c_s^2v_1^2\omega_5^2\omega_{12} + 12c_s^2\omega_5\omega_{12}^2 -$
$24v_1^4\omega_5^2\omega_{12}^2 - 3c_s^4\omega_5^3\omega_{12}^2 - 24c_s^2v_1^2\omega_5\omega_{12} + 24v_1^4\omega_5\omega_{12}^2 - 8c_s^2\omega_5^2\omega_{12}^2 - 24c_s^4\omega_5^2\omega_{12} + 48v_1^2\omega_5\omega_{12} - 6c_s^2\omega_5^3\omega_{12} + 24v_1^2\omega_5^2 + c_s^2\omega_5^3\omega_{12}^2 +$
$24c_s^4\omega_5^2\omega_{12}^2 - 24v_1^2\omega_5\omega_{12}^2 - 24c_s^2v_1^2\omega_5^2 - 48v_1^4\omega_5\omega_{12} + 24c_s^2\omega_5^2\omega_{12} - 12v_1^2\omega_5^3 + 12c_s^2v_1^2\omega_5^3 + 6c_s^4\omega_5^3\omega_{12} + 156c_s^2v_1^2\omega_5\omega_{12}^2)\frac{\rho}{24\omega_5^3\omega_{12}^2}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x^4 v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x^4 v_2}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x^4 v_2} = (-24c_s^2\omega_5\omega_{12} + 72v_1^4\omega_5^2\omega_{12} + 30v_1^2\omega_5^3\omega_{12} - 12c_s^2v_1^2\omega_5^2\omega_{12}^2 + 24c_s^4\omega_{12}^2 + 3v_1^4\omega_5^3\omega_{12}^2 + 12v_1^2\omega_5^2\omega_{12}^2 - 72c_s^2v_1^2\omega_5^3\omega_{12} - 48c_s^4\omega_5\omega_{12}^2 -$
$72v_1^2\omega_5^2\omega_{12} + 6c_s^2v_1^2\omega_5^3\omega_{12}^2 + 24c_s^4\omega_5\omega_{12} + 36v_1^4\omega_5^3 - 30v_1^4\omega_5^3\omega_{12} - 72v_1^4\omega_5^2 - 3v_1^2\omega_5^3\omega_{12}^2 + 144c_s^2v_1^2\omega_5^2\omega_{12} + 12c_s^2\omega_5\omega_{12}^2 - 12v_1^4\omega_5^2\omega_{12}^2 -$
$3c_s^4\omega_5^3\omega_{12}^2 + 72c_s^2v_1^2\omega_5\omega_{12} - 8c_s^2\omega_5^2\omega_{12}^2 - 24c_s^4\omega_5^2\omega_{12} - 6c_s^2\omega_5^3\omega_{12} + 72v_1^2\omega_5^2 + c_s^2\omega_5^3\omega_{12}^2 + 24c_s^4\omega_5^2\omega_{12}^2 - 216c_s^2v_1^2\omega_5^2 + 24c_s^2\omega_5^2\omega_{12} - 36v_1^2\omega_5^3 +$
$108c_s^2v_1^2\omega_5^3 + 6c_s^4\omega_5^3\omega_{12} - 36c_s^2v_1^2\omega_5\omega_{12}^2)\frac{\rho}{24\omega_5^3\omega_{12}^2}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x^4 v_2} = C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x^4 v_2}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x^4 v_2} = (3v_1^4\omega_1^3\omega_9^2 + 12v_1^2\omega_1^2\omega_9^2 - 72c_s^2v_1^2\omega_1^3\omega_9 - 48c_s^4\omega_1\omega_9^2 - 24c_s^2\omega_1\omega_9 + 72v_1^4\omega_1^2\omega_9 + 30v_1^2\omega_1^3\omega_9 + 24c_s^4\omega_9^2 - 12c_s^2v_1^2\omega_1^2\omega_9^2 - 3v_1^2\omega_1^3\omega_9^2 +$
$144c_s^2v_1^2\omega_1^2\omega_9 - 216c_s^2v_1^2\omega_1^2 + 72v_1^2\omega_1^2 + 12c_s^2\omega_1\omega_9^2 - 12v_1^4\omega_1^2\omega_9^2 + 108c_s^2v_1^2\omega_1^3 - 72v_1^2\omega_1^2\omega_9 + 6c_s^2v_1^2\omega_1^3\omega_9^2 + 24c_s^4\omega_1\omega_9 - 30v_1^4\omega_1^3\omega_9 - 36v_1^2\omega_1^3 -$
$24c_s^4\omega_1^2\omega_9 - 6c_s^2\omega_1^3\omega_9 - 3c_s^4\omega_1^3\omega_9^2 + 72c_s^2v_1^2\omega_1\omega_9 - 8c_s^2\omega_1^2\omega_9^2 + 24c_s^2\omega_1^2\omega_9 + 6c_s^4\omega_1^3\omega_9 - 36c_s^2v_1^2\omega_1\omega_9^2 + 36v_1^4\omega_1^3 + c_s^2\omega_1^3\omega_9^2 - 72v_1^4\omega_1^2 + 24c_s^4\omega_1^2\omega_9^2)\frac{\rho}{24\omega_1^3\omega_9^2}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x^4 v_2} = (36\omega_3^2c_s^2v_1^2\omega_4\omega_1 - 36\omega_3v_1^2\omega_4^2\omega_1^2 - 9\omega_3^2v_1^2\omega_1^3 - 48\omega_3^2c_s^4\omega_4^2\omega_1 - 15\omega_3^2v_1^4\omega_4\omega_1^3 + 9v_1^4\omega_4^2\omega_1^3 + \omega_3^2c_s^2\omega_4^2\omega_1^3 + 18\omega_3^2v_1^2\omega_1^2 +$
$15\omega_3v_1^2\omega_4^2\omega_1^3 - 8\omega_3^2c_s^2\omega_4^2\omega_1^2 - 18v_1^4\omega_4^2\omega_1^2 + 36\omega_3^2v_1^4\omega_4\omega_1^2 + 36\omega_3v_1^4\omega_4^2\omega_1^2 - 108\omega_3c_s^2v_1^2\omega_4\omega_1^2 + 12\omega_3^2c_s^2\omega_4^2\omega_1 - 3\omega_3^2c_s^4\omega_4^2\omega_1^3 - 9v_1^2\omega_4^2\omega_1^3 -$
$54c_s^2v_1^2\omega_4^2\omega_1^2 + 15\omega_3^2v_1^2\omega_4\omega_1^3 - 36\omega_3^2c_s^2v_1^2\omega_4\omega_1^3 + 24\omega_3^2c_s^4\omega_4^2 + 54\omega_3c_s^2v_1^2\omega_4\omega_1^3 - 15\omega_3v_1^4\omega_4^2\omega_1^3 + 72\omega_3^2c_s^2v_1^2\omega_4\omega_1^2 + 27c_s^2v_1^2\omega_4^2\omega_1^3 - 36\omega_3^2v_1^2\omega_4\omega_1^2 +$
$18v_1^2\omega_4^2\omega_1^2 + 24\omega_3^2c_s^4\omega_4^2\omega_1^2 - 18\omega_3^2v_1^4\omega_1^2 + 27\omega_3^2c_s^2v_1^2\omega_1^3 - 36\omega_3c_s^2v_1^2\omega_4^2\omega_1^3 + 18\omega_3v_1^4\omega_4\omega_1^3 - 3\omega_3c_s^2\omega_4^2\omega_1^3 - 12\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^2 + 12\omega_3c_s^4\omega_4^2\omega_1 -$
$12\omega_3^2c_s^4\omega_4\omega_1^2 + 12\omega_3^2v_1^2\omega_4^2\omega_1^2 + 12\omega_3c_s^2\omega_4^2\omega_1^2 - 54\omega_3^2c_s^2v_1^2\omega_1^2 - 36\omega_3v_1^4\omega_4\omega_1^2 + 72\omega_3c_s^2v_1^2\omega_4^2\omega_1^2 - 12\omega_3^2c_s^2\omega_4\omega_1 + 9\omega_3^2v_1^4\omega_1^3 - 3\omega_3^2v_1^2\omega_4^2\omega_1^3 +$
$3\omega_3^2c_s^4\omega_4\omega_1^3 + 6\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^3 + 3\omega_3c_s^4\omega_4^2\omega_1^3 - 18\omega_3v_1^2\omega_4\omega_1^3 - 12\omega_3c_s^2\omega_4^2\omega_1 + 36\omega_3c_s^2v_1^2\omega_4^2\omega_1 - 12\omega_3^2v_1^4\omega_4^2\omega_1^2 + 12\omega_3^2c_s^2\omega_4\omega_1^2 + 36\omega_3v_1^2\omega_4\omega_1^2 -$
$12\omega_3c_s^4\omega_4^2\omega_1^2 - 36\omega_3^2c_s^2v_1^2\omega_4^2\omega_1 + 12\omega_3^2c_s^4\omega_4\omega_1 - 3\omega_3^2c_s^2\omega_4\omega_1^3 + 3\omega_3^2v_1^4\omega_4^2\omega_1^3)\frac{\rho}{24\omega_3^2\omega_4^2\omega_1^3}$

coefficient $C^{(2)}_{\mathrm{D}_x^3\mathrm{D}_y \rho}$ **at** $\frac{\partial^4 \rho}{\partial x_1^3 \partial x_2}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x^3\mathrm{D}_y \rho} = (24 - 24v_1^2 + 36v_1^2\omega - 14v_1^2\omega^2 - \omega^3 + 14\omega^2 + v_1^2\omega^3 - 36\omega - 42c_s^2\omega^2 + 3c_s^2\omega^3 + 108c_s^2\omega - 72c_s^2)\frac{c_s^2 v_1}{12\omega^3}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x^3\mathrm{D}_y \rho} =$
$(-12v_2^2v_1^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9^2 - 12c_s^2\omega_5^3\omega_9^2\omega_{12}^2 + 12c_s^2\omega_5^3\omega_{21}\omega_9\omega_{12}^2 - 45c_s^2v_2^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 36c_s^4\omega_{10}\omega_5^2\omega_9^2\omega_{12}^2 + 18c_s^2v_2^2\omega_{10}\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 -$
$12v_2^2v_1^2\omega_{10}\omega_5^3\omega_9^2\omega_{12}^2 - 15v_2^2v_1^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 36c_s^4\omega_{10}\omega_5^2\omega_{21}\omega_9\omega_{12}^2 + 12c_s^4\omega_{10}\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 12c_s^2\omega_{10}\omega_5^2\omega_9^2\omega_{12}^2 - 36c_s^4\omega_5^3\omega_{21}\omega_9\omega_{12}^2 +$

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

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x^3\mathrm{D}_y\rho} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x^3\mathrm{D}_y\rho}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x^3\mathrm{D}_y\rho} = (-6v_1^2\omega_{10}\omega_5^2\omega_{15}\omega_9\omega_{12} + 6v_1^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9 + 18c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_{12}^2 + 12\omega_{10}\omega_5\omega_{21}\omega_{15}\omega_9 - 12\omega_{10}\omega_5\omega_{15}\omega_9\omega_{12} -$
$18c_s^2\omega_5^2\omega_{15}\omega_9\omega_{12}^2 + 12v_1^2\omega_5^2\omega_9\omega_{12}^2 + 18c_s^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9 + 36c_s^2\omega_{10}\omega_5^2\omega_{21}\omega_{12}^2 - 18c_s^2\omega_{10}\omega_5^2\omega_{15}\omega_9\omega_{12} + 12\omega_{10}\omega_{21}\omega_{15}\omega_9\omega_{12} + 36c_s^2\omega_{10}\omega_5\omega_9\omega_{12}^2 -$
$12\omega_{10}\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 15c_s^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_{12}^2 + 6\omega_5^2\omega_{15}\omega_9\omega_{12}^2 + 36c_s^2\omega_5^2\omega_9\omega_{12}^2 - 12v_1^2\omega_{10}\omega_{21}\omega_{15}\omega_{12}^2 - 6\omega_5^2\omega_{21}\omega_{15}\omega_{12}^2 + 18c_s^2\omega_{10}\omega_5^2\omega_{15}\omega_9\omega_{12}^2 -$
$12v_1^2\omega_{10}\omega_5^2\omega_9\omega_{12}^2 + 12\omega_{10}\omega_5\omega_{15}\omega_9\omega_{12}^2 - 12\omega_{10}\omega_5\omega_9\omega_{12}^2 - 5v_1^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_{12}^2 + 6v_1^2\omega_{10}\omega_5^2\omega_{15}\omega_9\omega_{12}^2 - 12v_1^2\omega_{10}\omega_5\omega_{21}\omega_{12}^2 - 12\omega_5^2\omega_9\omega_{12}^2 -$
$12\omega_{10}\omega_5^2\omega_{21}\omega_{12}^2 - 18\omega_{10}\omega_5\omega_{21}\omega_{15}\omega_{12}^2 - 6v_1^2\omega_5^2\omega_{15}\omega_9\omega_{12}^2 - 9c_s^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} + 12\omega_{10}\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 36c_s^2\omega_5^2\omega_{21}\omega_{12}^2 - 6\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9 +$
$6\omega_{10}\omega_5^2\omega_{15}\omega_9\omega_{12} - 36c_s^2\omega_{10}\omega_{21}\omega_{15}\omega_9\omega_{12} + 12v_1^2\omega_{10}\omega_5\omega_{15}\omega_9\omega_{12} + 6v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_{12}^2 + 12\omega_{10}\omega_{21}\omega_{15}\omega_{12}^2 - 12v_1^2\omega_{10}\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}^2 -$
$12v_1^2\omega_{10}\omega_5\omega_{21}\omega_{15}\omega_9 + 12\omega_5^2\omega_{21}\omega_{12}^2 + 12\omega_{10}\omega_5^2\omega_9\omega_{12}^2 + 12v_1^2\omega_{10}\omega_5\omega_9\omega_{12}^2 + v_1^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 54c_s^2\omega_{10}\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12} + 12\omega_{10}\omega_5\omega_{21}\omega_{12}^2 -$
$36c_s^2\omega_{10}\omega_5\omega_{21}\omega_{15}\omega_9 - \omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 36c_s^2\omega_{10}\omega_5\omega_{15}\omega_9\omega_{12} + 12v_1^2\omega_{10}\omega_5^2\omega_{21}\omega_{12}^2 - 12v_1^2\omega_{10}\omega_{21}\omega_{15}\omega_9\omega_{12} - 36c_s^2\omega_{10}\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}^2 -$
$12v_1^2\omega_5^2\omega_{21}\omega_{12}^2 + 3\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} - 36c_s^2\omega_{10}\omega_5\omega_{15}\omega_9\omega_{12}^2 - 36c_s^2\omega_{10}\omega_{21}\omega_{15}\omega_{12}^2 + 12v_1^2\omega_{10}\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 54c_s^2\omega_{10}\omega_5\omega_{21}\omega_{15}\omega_{12}^2 -$
$3v_1^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} - 36c_s^2\omega_{10}\omega_5\omega_{21}\omega_{12}^2 + 36c_s^2\omega_{10}\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 5\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_{12}^2 - 12v_1^2\omega_{10}\omega_5\omega_{15}\omega_9\omega_{12}^2 + 18v_1^2\omega_{10}\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12} +$
$3c_s^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 18v_1^2\omega_{10}\omega_5\omega_{21}\omega_{15}\omega_{12}^2 - 18\omega_{10}\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12} - 36c_s^2\omega_{10}\omega_5^2\omega_9\omega_{12}^2 - 6\omega_{10}\omega_5^2\omega_{15}\omega_9\omega_{12}^2)\frac{c_s^2v_1}{12\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x^3\mathrm{D}_y\rho} = C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x^3\mathrm{D}_y\rho}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x^3\mathrm{D}_y\rho} = (12\omega_4\omega_1\omega_9^2 + 18v_1^2\omega_4\omega_1\omega_9 + v_1^2\omega_1^2\omega_9^2 - 36c_s^2\omega_4\omega_1\omega_9^2 - 6\omega_4\omega_1^2 + 36c_s^2\omega_1\omega_9 + 36c_s^2\omega_4\omega_9^2 - 12\omega_4\omega_9^2 - 12\omega_1\omega_9 + 18c_s^2\omega_4\omega_1^2 -$
$12v_1^2\omega_9^2 + 12\omega_4\omega_9 - 6\omega_1\omega_9^2 - 36c_s^2\omega_4\omega_1 + 54c_s^2\omega_4\omega_1\omega_9 + 12\omega_4\omega_1 + 18c_s^2\omega_1\omega_9^2 - 36c_s^2\omega_4\omega_9 + 12\omega_9^2 - 6v_1^2\omega_1^2\omega_9 - 12v_1^2\omega_4\omega_1\omega_9^2 - 18\omega_4\omega_1\omega_9 +$
$12v_1^2\omega_4\omega_9^2 + v_1^2\omega_4\omega_1^2\omega_9^2 + 12v_1^2\omega_1\omega_9 - 36c_s^2\omega_9^2 + 6v_1^2\omega_4\omega_1^2 + 3\omega_4\omega_1^2\omega_9 - \omega_1^2\omega_9^2 - 9c_s^2\omega_4\omega_1^2\omega_9 + 3c_s^2\omega_1^2\omega_9^2 + 3c_s^2\omega_4\omega_1^2\omega_9^2 - 18c_s^2\omega_1^2\omega_9 + 6\omega_1^2\omega_9 -$
$12v_1^2\omega_4\omega_1 - \omega_4\omega_1^2\omega_9^2 - 12v_1^2\omega_4\omega_9 + 6v_1^2\omega_1\omega_9^2 - 3v_1^2\omega_4\omega_1^2\omega_9)\frac{c_s^2v_1}{12\omega_4\omega_1^2\omega_9^2}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x^3\mathrm{D}_y\rho} = (-56\omega_3^2c_s^2v_1^2\omega_4^2\omega_1\omega_2^2 + 9\omega_3^2c_s^2\omega_4\omega_1^3\omega_2^3 + 36\omega_3^2c_s^2v_1^2\omega_4\omega_1^2\omega_2^3 + 120\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^2 + 36\omega_3^2c_s^2\omega_1^2\omega_2^3 - 18c_s^2\omega_4^2\omega_1^3\omega_2^3 + 120\omega_3^2v_1^4\omega_4^2\omega_1^2\omega_2 +$
$18c_s^2v_1^2\omega_4^2\omega_1^3\omega_2^3 + 32\omega_3^2v_1^2\omega_4^2\omega_1\omega_2^2 - 104\omega_3^2c_s^2\omega_4^2\omega_1^3 - 342\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^3 + 54\omega_3^2c_s^4\omega_1^3\omega_2^3 - 276\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2 + 78\omega_3^2v_1^4\omega_4^2\omega_1^3\omega_2^2 - 18\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^2\omega_2^3 +$
$216\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^3 + 1232\omega_3^2c_s^2v_1^2\omega_4^2\omega_1\omega_2^3 + 48\omega_3c_s^4\omega_4^2\omega_1^3\omega_2 + 12\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^2 + 6\omega_3^2v_2^2\omega_4^2\omega_1^2\omega_2^3 - 288\omega_3^2c_s^4\omega_4^2\omega_2^3 - 256\omega_3^2v_1^2\omega_4^2\omega_1\omega_2^3 -$
$108\omega_3^2c_s^4\omega_1^2\omega_2^3 - 6\omega_3^2v_2^2\omega_4^2\omega_1^3\omega_2^2 + 18\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^3 + 72\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2 + 56\omega_3c_s^2\omega_4^2\omega_1\omega_2^3 - 36c_s^2v_1^2\omega_4^2\omega_1^2\omega_2^3 - 56\omega_3c_s^2v_1^2\omega_4^2\omega_1\omega_2^3 + 144\omega_3^2c_s^4\omega_4^2\omega_1^3 +$
$18\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^3\omega_2^2 - 8\omega_3^2\omega_4^2\omega_1\omega_2^2 + 36c_s^2\omega_4^2\omega_1^2\omega_2^3 - 78\omega_3^2v_1^4\omega_4^2\omega_1^2\omega_2^3 - 132\omega_3^2v_1^4\omega_4^2\omega_1^3\omega_2 + 56\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^2 - 18\omega_3^2c_s^2\omega_1^3\omega_2^3 - 108\omega_3c_s^4\omega_4^2\omega_1^3\omega_2^2 -$
$9\omega_3^2c_s^2v_1^2\omega_4\omega_1^3\omega_2^3 - 36\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^3 + 144\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^2 - 27\omega_3c_s^4\omega_4^2\omega_1^3\omega_2^3 + 208\omega_3^2c_s^2\omega_4^2\omega_2^3 - 368\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^3 + 28\omega_3^2\omega_4^2\omega_1\omega_2^3 - 96\omega_3^2v_1^4\omega_4^2\omega_1^2\omega_2^2 +$
$40\omega_3c_s^2v_1^2\omega_4^2\omega_1^2\omega_2^2 + 54c_s^4\omega_4^2\omega_1^3\omega_2^3 - 136\omega_3^2v_1^2\omega_4^2\omega_1^2\omega_2 - 40\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^2 - 27\omega_3^2c_s^4\omega_4\omega_1^3\omega_2^3 + 8\omega_3^2\omega_4^2\omega_1^3 + 6\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^3\omega_2^3 - 144\omega_3^2v_1^4\omega_4^2\omega_2^3 +$
$184\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^3 + 448\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^2\omega_2 + 208\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2 - 24\omega_3^2v_1^4\omega_4^2\omega_1\omega_2^2 - 14\omega_3^2\omega_4^2\omega_1^2\omega_2^3 - 20\omega_3^2\omega_4^2\omega_1^3\omega_2 - 72\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^3 - 16\omega_3c_s^2\omega_4^2\omega_1^3\omega_2 +$
$16\omega_3c_s^2v_1^2\omega_4^2\omega_1^3\omega_2 - 36\omega_3^2c_s^2v_1^2\omega_1^2\omega_2^3 - 92\omega_3^2v_1^2\omega_4^2\omega_1^3\omega_2^2 + 72\omega_3c_s^2v_1^2\omega_4^2\omega_1^2\omega_2^3 - 56\omega_3^2v_1^2\omega_4^2\omega_1^3 + 228\omega_3^2v_1^4\omega_4^2\omega_1\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^2\omega_2^2 + 320\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^3 +$
$394\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^3\omega_2^2 + 52\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^2 - 6\omega_3^2v_2^4\omega_4^2\omega_1^2\omega_2^3 + 16\omega_3^2\omega_4^2\omega_1^2\omega_2 + 6\omega_3^2v_2^4\omega_4^2\omega_1^3\omega_2^2 - 6\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2^3 - 460\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^2\omega_2^3 - 168\omega_3c_s^4\omega_4^2\omega_1\omega_2^3 -$
$88\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2 - 712\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^3\omega_2 - 144\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^2 + 108\omega_3^2c_s^4\omega_4\omega_1^2\omega_2^3 + 160\omega_3^2v_1^2\omega_4^2\omega_2^3 + 36\omega_3c_s^2\omega_4^2\omega_1^3\omega_2^2 + 92\omega_3^2v_1^2\omega_4^2\omega_1^2\omega_2^3 -$

$36\omega_3 c_s^2 v_1^2\omega_4^2\omega_1^3\omega_2^2 - 108c_s^4\omega_4^2\omega_1^2\omega_2^3 + 152\omega_3^2 v_1^2\omega_4^2\omega_1^3\omega_2 - 784\omega_3^2 c_s^2 v_1^2\omega_4^2\omega_2^3 - 118\omega_3^2 c_s^2\omega_4^2\omega_1^3\omega_2^2 - 412\omega_3^2 c_s^2 v_1^2\omega_4^2\omega_1^2\omega_2^2 + 14\omega_3^2\omega_4^2\omega_1^3\omega_2^2 + 18\omega_3^2 c_s^2 v_1^2\omega_1^3\omega_2^3 - 9\omega_3 c_s^2 v_1^2\omega_4^2\omega_1^3\omega_2^3 + 48\omega_3^2 v_1^4\omega_4^2\omega_1^3 + 104\omega_3^2 v_1^2\omega_4^2\omega_1^2\omega_2^2 - 16\omega_3^2\omega_4^2\omega_2^3 + 9\omega_3 c_s^2\omega_4^2\omega_1^3\omega_2^3 + 588\omega_3^2 c_s^4\omega_4^2\omega_1\omega_2^3)\frac{v_1}{72\omega_3^2\omega_4^2\omega_1^3\omega_2^3}$

coefficient $C^{(2)}_{\mathrm{D}_x^3\mathrm{D}_y v_1}$ **at** $\frac{\partial^4 v_1}{\partial x_1^3\partial x_2}$**:**

$$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x^3\mathrm{D}_y v_1} = (-12 + 36v_1^2 - 54v_1^2\omega + 18v_1^2\omega^2 - 6\omega^2 + 18\omega + 2c_s^2\omega^2 - c_s^2\omega^3)\frac{c_s^2\rho}{12\omega^3}$$

$$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x^3\mathrm{D}_y v_1} = (-36v_2^2 v_1^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9^2 - 12c_s^2\omega_5^3\omega_9^2\omega_{12}^2 + 12c_s^2\omega_5^3\omega_{21}\omega_9\omega_{12}^2 - 15c_s^2 v_2^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 12c_s^4\omega_{10}\omega_5^2\omega_9^2\omega_{12}^2 + 6c_s^2 v_2^2\omega_{10}\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 - 36v_2^2 v_1^2\omega_{10}\omega_5^3\omega_9^2\omega_{12}^2 - 45v_2^2 v_1^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 12c_s^4\omega_{10}\omega_5^2\omega_{21}\omega_9\omega_{12}^2 + 12c_s^4\omega_{10}\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 12c_s^2\omega_{10}\omega_5^2\omega_9^2\omega_{12}^2 - 12c_s^4\omega_5^3\omega_{21}\omega_9\omega_{12}^2 + c_s^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 12c_s^2 v_2^2\omega_{10}\omega_5^2\omega_{15}\omega_9^2\omega_{12} + 36v_2^2 v_1^2\omega_{10}\omega_5^3\omega_{21}\omega_9\omega_{12}^2 - 36c_s^2 v_1^2\omega_{10}\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 36c_s^2 v_1^2\omega_5^3\omega_9^2\omega_{12}^2 - 9v_2^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 36v_2^2 v_1^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_{12}^2 + 12c_s^2\omega_{10}\omega_5^2\omega_{21}\omega_9\omega_{12}^2 + 12v_2^2\omega_{10}\omega_5^2\omega_{15}\omega_9^2\omega_{12}^2 + 6v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 36c_s^2 v_1^2\omega_{10}\omega_5^2\omega_9^2\omega_{12}^2 + 54c_s^2 v_1^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 36c_s^2 v_1^2\omega_{10}\omega_5^3\omega_{21}\omega_9\omega_{12}^2 - 12c_s^4\omega_{10}\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 24c_s^2 v_2^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 5c_s^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 36c_s^2 v_1^2\omega_5^3\omega_{21}\omega_9\omega_{12}^2 - 18v_2^2 v_1^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 + 24c_s^2 v_1^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9^2 - 36v_2^2 v_1^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} - 12c_s^2 v_2^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} + 72v_2^2 v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 18c_s^4\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 6v_2^2\omega_{10}\omega_5^3\omega_{15}\omega_9^2\omega_{12} - 108v_2^2 v_1^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 12c_s^2 v_2^2\omega_{10}\omega_5^3\omega_9^2\omega_{12}^2 + 12v_2^2\omega_5^3\omega_{21}\omega_9\omega_{12}^2 - 36c_s^2 v_1^2\omega_{10}\omega_5^2\omega_{21}\omega_9\omega_{12}^2 - 36c_s^2 v_2^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 6v_2^2\omega_{10}\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 - 12c_s^2\omega_{10}\omega_5^3\omega_{21}\omega_9\omega_{12}^2 - 5c_s^4\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 12v_2^2\omega_{10}\omega_5^2\omega_{15}\omega_9^2\omega_{12} + 36v_2^2 v_1^2\omega_5^3\omega_9^2\omega_{12}^2 - 48v_2^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 12c_s^2\omega_{10}\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 12v_2^2\omega_{10}\omega_5^2\omega_9^2\omega_{12}^2 - 12c_s^2 v_1^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9^2 + 12c_s^4\omega_{10}\omega_5^3\omega_{21}\omega_9\omega_{12}^2 - 12c_s^2 v_2^2\omega_{10}\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 + 18c_s^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 24v_2^2\omega_{10}\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 6c_s^2 v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 6v_2^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} + 30c_s^2 v_1^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 24v_2^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 48c_s^2 v_1^2\omega_{10}\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 18v_2^2 v_1^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9^2 - 5c_s^4\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 6c_s^2 v_2^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 - 18v_2^2 v_1^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_{12}^2 + 36v_2^2 v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 72v_2^2 v_1^2\omega_{10}\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 24c_s^2 v_2^2\omega_{10}\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 36v_2^2 v_1^2\omega_{10}\omega_5^2\omega_{21}\omega_9\omega_{12}^2 - 6c_s^2 v_2^2\omega_{10}\omega_5^3\omega_{15}\omega_9^2\omega_{12} + 18c_s^4\omega_{10}\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 60c_s^2 v_1^2\omega_{10}\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 12c_s^2 v_2^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9^2 + 12c_s^4\omega_5^3\omega_9^2\omega_{12}^2 - 6c_s^4\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 - 6c_s^4\omega_{10}\omega_5^3\omega_{15}\omega_9^2\omega_{12} + 15v_2^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 18v_2^2 v_1^2\omega_{10}\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 + 36v_2^2 v_1^2\omega_{10}\omega_5^2\omega_{15}\omega_9^2\omega_{12} + 9c_s^2 v_2^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 12c_s^2 v_2^2\omega_{10}\omega_5^3\omega_{21}\omega_9\omega_{12}^2 - 36c_s^2 v_1^2\omega_{10}\omega_5^3\omega_9^2\omega_{12}^2 - c_s^4\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 12c_s^4\omega_{10}\omega_5^2\omega_{15}\omega_9^2\omega_{12}^2 + 6c_s^4\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 12c_s^2 v_2^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_{12}^2 - 12c_s^4\omega_{10}\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 6c_s^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 + 27v_2^2 v_1^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 36c_s^2 v_1^2\omega_{10}\omega_5^2\omega_{15}\omega_9^2\omega_{12} - 12v_2^2\omega_5^3\omega_9^2\omega_{12}^2 + 6c_s^2\omega_{10}\omega_5^3\omega_{15}\omega_9^2\omega_{12} + 12c_s^2\omega_{10}\omega_5^3\omega_9^2\omega_{12}^2 - 36v_2^2 v_1^2\omega_5^3\omega_{21}\omega_9\omega_{12}^2 + 18c_s^4\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 18c_s^2 v_1^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 - 6v_2^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9^2 - 72v_2^2 v_1^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 102c_s^2 v_1^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 12c_s^4\omega_{10}\omega_5^3\omega_9^2\omega_{12}^2 + 6v_2^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_{12}^2 + 12v_2^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} - 12v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 12v_2^2\omega_{10}\omega_5^2\omega_{21}\omega_9\omega_{12}^2 + 12c_s^2\omega_{10}\omega_5^2\omega_{15}\omega_9^2\omega_{12}^2 - 6c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 24c_s^2 v_2^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 36v_2^2 v_1^2\omega_{10}\omega_5^2\omega_9^2\omega_{12}^2 - 6c_s^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 18c_s^2 v_1^2\omega_{10}\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 + 36v_2^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 12v_2^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9^2 + 12c_s^2\omega_{10}\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 15c_s^2 v_1^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 12c_s^2\omega_{10}\omega_5^2\omega_{15}\omega_9^2\omega_{12} - 18c_s^2 v_1^2\omega_{10}\omega_5^3\omega_{15}\omega_9^2\omega_{12} + 144v_2^2 v_1^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 18c_s^2 v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 6v_2^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 - 36c_s^2 v_1^2\omega_{10}\omega_5^2\omega_{15}\omega_9^2\omega_{12}^2 - 6c_s^2\omega_{10}\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 - 12v_2^2\omega_{10}\omega_5^3\omega_{21}\omega_9\omega_{12}^2 - 12v_2^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_{12}^2 + 48c_s^2 v_2^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 18v_2^2 v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 72v_2^2 v_1^2\omega_{10}\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 36v_2^2 v_1^2\omega_{10}\omega_5^2\omega_{15}\omega_9^2\omega_{12}^2 + 6c_s^2 v_2^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} + 12c_s^4\omega_{10}\omega_5^2\omega_{15}\omega_9^2\omega_{12} + 6c_s^4\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12} + 6c_s^2 v_2^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9^2 - 12c_s^2 v_2^2\omega_5^3\omega_{21}\omega_9\omega_{12}^2 + 12v_2^2\omega_{10}\omega_5^3\omega_9^2\omega_{12}^2 - 24c_s^2 v_2^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 18v_2^2 v_1^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 60c_s^2 v_1^2\omega_{10}\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 24v_2^2\omega_{10}\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 12c_s^2 v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12} - 6c_s^2 v_2^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_{12}^2 + 12c_s^2 v_2^2\omega_5^3\omega_9^2\omega_{12}^2 + 6c_s^4\omega_{10}\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 - 24v_2^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 12c_s^2 v_2^2\omega_{10}\omega_5^2\omega_{21}\omega_9\omega_{12}^2 - 18v_2^2 v_1^2\omega_{10}\omega_5^3\omega_{15}\omega_9^2\omega_{12} - 15c_s^2 v_1^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 12c_s^2 v_2^2\omega_{10}\omega_5^2\omega_9^2\omega_{12}^2)\frac{\rho}{12\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2}$$

$$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x^3\mathrm{D}_y v_1} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x^3\mathrm{D}_y v_1}$$

$$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x^3\mathrm{D}_y v_1} = (-36v_1^2\omega_{10}\omega_5^2\omega_{15}\omega_9\omega_{12} - 54v_1^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9 - 36v_1^2\omega_5^3\omega_{21}\omega_{12} - 6c_s^2\omega_5^3\omega_{15}\omega_9\omega_{12} + 12\omega_{10}\omega_5\omega_{21}\omega_{15}\omega_{12} + 12\omega_{10}\omega_5^2\omega_{21}\omega_{12} - 12\omega_{10}\omega_5\omega_{21}\omega_{15}\omega_9 + 6c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} + 36v_1^2\omega_{10}\omega_5^2\omega_9\omega_{12} + 54v_1^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_{12} + 6\omega_{10}\omega_5^3\omega_{15}\omega_9 - 18c_s^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9 - 12c_s^2\omega_{10}\omega_5^2\omega_{15}\omega_9\omega_{12} - 12c_s^2\omega_{10}\omega_5^3\omega_9\omega_{12} + 18c_s^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_{12} + 6c_s^2\omega_{10}\omega_5^3\omega_{15}\omega_9\omega_{12} - 6\omega_5^3\omega_{21}\omega_{15}\omega_{12} + 6c_s^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9 - 6c_s^2\omega_{10}\omega_5^3\omega_5\omega_{15}\omega_9 - 12c_s^2\omega_5^3\omega_{21}\omega_{12} - c_s^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12} + 6\omega_5^3\omega_{15}\omega_9\omega_{12} - 5c_s^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_{12} - 12c_s^2\omega_{10}\omega_5^2\omega_{21}\omega_{12} + 12\omega_{10}\omega_5^3\omega_9\omega_{12} + 12\omega_5^3\omega_{21}\omega_{12} + 18v_1^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9 + 36v_1^2\omega_{10}\omega_5^2\omega_{15}\omega_9 + 18v_1^2\omega_{10}\omega_5^3\omega_{15}\omega_9\omega_{12} - 15v_1^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_{12} + 36v_1^2\omega_{10}\omega_5^3\omega_{21}\omega_{12} - 36v_1^2\omega_{10}\omega_5\omega_{21}\omega_{15}\omega_{12} - 5c_s^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} + 12c_s^2\omega_{10}\omega_5^2\omega_9\omega_{12} + 18v_1^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} + 18\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9 + 12\omega_{10}\omega_5^2\omega_{15}\omega_9\omega_{12} - 12c_s^2\omega_{10}\omega_{21}\omega_{15}\omega_9\omega_{12} - 18\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_{12} + 12c_s^2\omega_5^3\omega_9\omega_{12} + 36v_1^2\omega_{10}\omega_5\omega_{21}\omega_{15}\omega_9 - 18v_1^2\omega_5^3\omega_{15}\omega_9\omega_{12} - 36v_1^2\omega_{10}\omega_5^3\omega_9\omega_{12} - 12\omega_{10}\omega_5^2\omega_{15}\omega_9 - 12c_s^2\omega_{10}\omega_5\omega_{21}\omega_{15}\omega_{12} + 18c_s^2\omega_{10}\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12} + 12c_s^2\omega_{10}\omega_5\omega_{21}\omega_{15}\omega_9 - 12\omega_{10}\omega_5^3\omega_{21}\omega_{12} - 12\omega_5^3\omega_9\omega_{12} + \omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} - 36v_1^2\omega_{10}\omega_5^2\omega_{21}\omega_{12} - 12\omega_{10}\omega_5^2\omega_9\omega_{12} - 18v_1^2\omega_{10}\omega_5^3\omega_{15}\omega_9 + 36v_1^2\omega_5^3\omega_9\omega_{12} - 3v_1^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12} - 6\omega_{10}\omega_5^3\omega_{15}\omega_9\omega_{12} - 6\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9 + 12c_s^2\omega_{10}\omega_5^3\omega_{21}\omega_{12} + 5\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_{12} + 12c_s^2\omega_{10}\omega_5^2\omega_{15}\omega_9)\frac{c_s^2\rho}{12\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}}$$

$$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x^3\mathrm{D}_y v_1} = C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x^3\mathrm{D}_y v_1}$$

$$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x^3\mathrm{D}_y v_1} = (-6\omega_4\omega_1^3 + 6c_s^2\omega_4\omega_1^3 + 18\omega_4\omega_1^2 - 12c_s^2\omega_1\omega_9 + 3v_1^2\omega_1^3\omega_9 + 12\omega_1\omega_9 - 18c_s^2\omega_4\omega_1^2 + 12c_s^2\omega_4\omega_1 + 36v_1^2\omega_1^2 + 18c_s^2\omega_4\omega_1\omega_9 - 12\omega_4\omega_1 + 6\omega_1^3 - 12c_s^2\omega_4\omega_9 + 18v_1^2\omega_1^2\omega_9 - 12\omega_1^2 - 18v_1^2\omega_1^3 - \omega_1^3\omega_9 + 12c_s^2\omega_1^2 - 36v_1^2\omega_1\omega_9 + c_s^2\omega_1^3\omega_9 - 54v_1^2\omega_4\omega_1^2 + \omega_4\omega_1^2\omega_9 - 6c_s^2\omega_1^3 - 5c_s^2\omega_4\omega_1^2\omega_9 + 18v_1^2\omega_4\omega_1^3 + 6c_s^2\omega_1^2\omega_9 - 6\omega_1^2\omega_9 + 36v_1^2\omega_4\omega_1 - c_s^2\omega_4\omega_1^3\omega_9 - 3v_1^2\omega_4\omega_1^2\omega_9)\frac{c_s^2\rho}{12\omega_4\omega_1^3\omega_9}$$

$$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x^3\mathrm{D}_y v_1} = (94\omega_3 c_s^4\omega_4\omega_1\omega_2^3 - 4\omega_3\omega_4\omega_1\omega_2^2 - 312\omega_3 c_s^2 v_1^2\omega_4\omega_2^3 + 84\omega_3 v_1^2\omega_4\omega_1^2\omega_2^2 + 40\omega_3 c_s^2\omega_4\omega_2^3 + 8c_s^4\omega_4\omega_1^3\omega_2 - 18c_s^4\omega_4\omega_1^2\omega_2^3 + 153\omega_3 c_s^2 v_1^2\omega_4\omega_1^3\omega_2^2 - 24\omega_3 c_s^2\omega_4\omega_1^3\omega_2^2 + 138\omega_3 v_1^2\omega_4\omega_1^3\omega_2 + 81\omega_3 v_1^2\omega_4\omega_1^2\omega_2^3 + 14\omega_3\omega_4\omega_1\omega_2^3 - 28\omega_3 c_s^4\omega_4\omega_1\omega_2^2 + 16\omega_3 c_s^4\omega_4\omega_1^3 - 16\omega_3 c_s^2\omega_4\omega_1^2\omega_2 +$$

$\omega_3 v_2^4\omega_4\omega_1^3\omega_2^2 + 20c_s^4\omega_4\omega_1^2\omega_2^2 + 36\omega_3 c_s^4\omega_1\omega_2^3 + 120\omega_3 c_s^2 v_1^2\omega_4\omega_1^2\omega_2 - 6\omega_3 c_s^2\omega_4\omega_1^2\omega_2^2 - \omega_3 v_2^4\omega_4\omega_1^2\omega_2^3 - 68\omega_3 c_s^4\omega_4\omega_2^3 + 408\omega_3 v_1^4\omega_4\omega_1\omega_2^3 +$
$9c_s^4\omega_4\omega_1^3\omega_2^3 - 90\omega_3 c_s^2 v_1^2\omega_4\omega_1^2\omega_2^2 - 81\omega_3 v_1^2\omega_4\omega_1^3\omega_2^2 + 24c_s^2 v_1^2\omega_4\omega_1\omega_2^3 - 153\omega_3 c_s^2 v_1^2\omega_4\omega_1^2\omega_2^3 - 18c_s^4\omega_4\omega_1^3\omega_2^2 - 288\omega_3 c_s^2 v_1^2\omega_4\omega_1^3\omega_2 - 24\omega_3 v_1^4\omega_4\omega_1\omega_2^2 +$
$42\omega_3 c_s^2\omega_4\omega_1^3\omega_2 - 20\omega_3 c_s^2\omega_4\omega_1^3 + 144\omega_3 c_s^2 v_1^2\omega_4\omega_1^3 + 24\omega_3 c_s^2\omega_4\omega_1^2\omega_2^2 - 8c_s^2\omega_4\omega_1\omega_2^3 - 96\omega_3 v_1^2\omega_4\omega_1^2\omega_2 - 36\omega_3 c_s^2\omega_1\omega_2^3 + 108\omega_3 c_s^2 v_1^2\omega_1\omega_2^3 +$
$9\omega_3 c_s^4\omega_1^3\omega_2^3 - 168\omega_3 v_1^4\omega_4\omega_1^2\omega_2^2 + 24c_s^2 v_1^2\omega_4\omega_1^3\omega_2 - 54c_s^2 v_1^2\omega_4\omega_1^2\omega_2^3 + 432\omega_3 c_s^2 v_1^2\omega_4\omega_1\omega_2^3 - 54\omega_3 c_s^2\omega_4\omega_1\omega_2^3 + 96\omega_3 v_1^4\omega_4\omega_1^3 - 3\omega_3 c_s^2 v_2^2\omega_4\omega_1^2\omega_2^3 +$
$17\omega_3 c_s^4\omega_4\omega_1^3\omega_2^2 + 8\omega_3\omega_4\omega_1^2\omega_2 - 108\omega_3 c_s^2 v_1^2\omega_1^2\omega_2^3 - 8c_s^2\omega_4\omega_1^3\omega_2 + 18c_s^2\omega_4\omega_1^2\omega_2^3 + 36\omega_3 c_s^2\omega_1^2\omega_2^3 + 32\omega_3 c_s^2\omega_4\omega_1\omega_2^2 + 144\omega_3 v_1^2\omega_4\omega_2^3 -$
$60\omega_3 c_s^2 v_1^2\omega_4\omega_1\omega_2^2 - 240\omega_3 v_1^4\omega_4\omega_1^3\omega_2 + 60c_s^2 v_1^2\omega_4\omega_1^2\omega_2^2 - 138\omega_3 v_1^4\omega_4\omega_1^2\omega_2^3 - 20c_s^2\omega_4\omega_1^2\omega_2^2 + 8\omega_3 c_s^4\omega_4\omega_1^2\omega_2 + 7\omega_3\omega_4\omega_1^3\omega_2^2 + 4\omega_3\omega_4\omega_1^3 -$
$\omega_3 v_2^2\omega_4\omega_1^3\omega_2^2 - 3\omega_3 c_s^4\omega_4\omega_1^3\omega_2^3 - 222\omega_3 v_1^2\omega_4\omega_1\omega_2^3 + 27\omega_3 c_s^2 v_1^2\omega_1^3\omega_2^3 - 9c_s^2\omega_4\omega_1^3\omega_2^3 - 9\omega_3 c_s^2\omega_1^3\omega_2^3 - 10\omega_3\omega_4\omega_1^3\omega_2 + 10\omega_3 c_s^4\omega_4\omega_1^2\omega_2^2 + \omega_3 v_2^2\omega_4\omega_1^2\omega_2^3 -$
$60\omega_3 v_1^2\omega_4\omega_1^3 - 7\omega_3\omega_4\omega_1^2\omega_2^3 - 36\omega_3 c_s^4\omega_1^2\omega_2^3 + 138\omega_3 v_1^4\omega_4\omega_1^3\omega_2^2 - 8\omega_3\omega_4\omega_2^3 + 27c_s^2 v_1^2\omega_4\omega_1^3\omega_2^3 - 4\omega_3\omega_4\omega_1^2\omega_2^2 - 32\omega_3 c_s^4\omega_4\omega_1^3\omega_2 - 29\omega_3 c_s^4\omega_4\omega_1^2\omega_2^3 +$
$18c_s^2\omega_4\omega_1^3\omega_2^2 + 12\omega_3 v_1^2\omega_4\omega_1\omega_2^2 - 264\omega_3 v_1^4\omega_4\omega_2^3 - 54c_s^2 v_1^2\omega_4\omega_1^3\omega_2^2 + 8c_s^4\omega_4\omega_1\omega_2^3 + 192\omega_3 v_1^4\omega_4\omega_1^2\omega_2 + 3\omega_3 c_s^2 v_2^2\omega_4\omega_1^3\omega_2^2)\frac{\rho}{36\omega_3\omega_4\omega_1^3\omega_2^3}$

coefficient $C^{(2)}_{\mathrm{D}_x^3\mathrm{D}_y v_2}$ **at** $\frac{\partial^4 v_2}{\partial x_1^3\partial x_2}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x^3\mathrm{D}_y v_2} = (2 - 2v_1^2 + v_1^2\omega - \omega + 3c_s^2\omega - 6c_s^2)\frac{v_2 v_1\rho}{12\omega}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x^3\mathrm{D}_y v_2} = (12v_1^2\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9^2\omega_{12}^2 - 18v_1^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 + 48c_s^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 24c_s^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} - 12c_s^2\omega_{10}\omega_5^3\omega_{15}^2\omega_9^2\omega_{12}^2 +$
$24v_1^2\omega_{10}^2\omega_5^2\omega_{15}^2\omega_9^2\omega_{12} + 18\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 - \omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 - 24\omega_{10}^2\omega_5^2\omega_{15}\omega_9^2\omega_{12}^2 + 12c_s^2\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9^2\omega_{12}^2 - 12c_s^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} +$
$12v_1^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} - 12v_1^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 12\omega_{10}^2\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 + 24\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2 - 12\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12}^2 + 24c_s^2\omega_{10}^2\omega_5^2\omega_{15}^2\omega_9^2\omega_{12} +$
$12v_1^2\omega_{10}^2\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 + 12\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 12\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} - 12v_1^2\omega_{10}\omega_5^3\omega_{15}^2\omega_9^2\omega_{12}^2 + v_1^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 +$
$72c_s^2\omega_{10}^2\omega_5\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 12\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2 + 24\omega_{10}^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 - 24c_s^2\omega_{10}^2\omega_5^2\omega_{15}^2\omega_9^2\omega_{12}^2 - 18v_1^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} - 24c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 +$
$18\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} - 12c_s^2\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9^2\omega_{12} - 42c_s^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 + 24c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 6\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12}^2 + 3c_s^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 -$
$24v_1^2\omega_{10}^2\omega_5^2\omega_{15}^2\omega_9^2\omega_{12}^2 + 12c_s^2\omega_{10}^2\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 + 12\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 12c_s^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} - 132c_s^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 -$
$12v_1^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 12v_1^2\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9^2\omega_{12} - 24\omega_{10}\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 + 12c_s^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 + 12v_1^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 +$
$12\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 12\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9^2\omega_{12}^2 - 66\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} + 24c_s^2\omega_{10}^2\omega_5^2\omega_{15}\omega_9^2\omega_{12}^2 + 156c_s^2\omega_{10}^2\omega_5\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 - 48c_s^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2 +$
$36c_s^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12}^2 + 66v_1^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} - 12v_1^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 24\omega_{10}^2\omega_5^2\omega_{15}^2\omega_9^2\omega_{12} - 24c_s^2\omega_{10}^2\omega_5^3\omega_{21}\omega_9^2\omega_{12}^2 -$
$12\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 - 36v_1^2\omega_{10}^2\omega_5\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} - 24v_1^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2 + 24v_1^2\omega_{10}^2\omega_5^2\omega_{15}\omega_9^2\omega_{12}^2 + 60c_s^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 -$
$24c_s^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} + 24c_s^2\omega_{10}\omega_5^3\omega_{21}\omega_9^2\omega_{12}^2 + 6v_1^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 6\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 12\omega_{10}\omega_5^3\omega_{15}^2\omega_9^2\omega_{12}^2 + 36\omega_{10}^2\omega_5\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} +$
$12v_1^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12}^2 - 66c_s^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 - 4\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 - 12\omega_{10}^2\omega_5\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 - 24v_1^2\omega_{10}^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 +$
$90c_s^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} - 84c_s^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 + 12v_1^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2 - 6v_1^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12}^2 + 12v_1^2\omega_{10}^2\omega_5\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 +$
$24c_s^2\omega_{10}\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 + 84c_s^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 + 4v_1^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 + 24c_s^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2 - 12v_1^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 +$
$24\omega_{10}^2\omega_5^2\omega_{15}^2\omega_9^2\omega_{12}^2 - 24c_s^2\omega_{10}^2\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 - 72c_s^2\omega_{10}\omega_5\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 + 24\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} - 12\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 +$
$6c_s^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 24c_s^2\omega_{10}^2\omega_5^2\omega_{21}\omega_9^2\omega_{12}^2 + 12v_1^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}\omega_9^2\omega_{12}^2 - 24v_1^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12} + 12\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 -$
$96c_s^2\omega_{10}^2\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2 + 24v_1^2\omega_{10}\omega_5^3\omega_{15}\omega_9^2\omega_{12}^2 + 12\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9^2\omega_{12} - 18c_s^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12}^2 - 36c_s^2\omega_{10}^2\omega_5\omega_{21}\omega_{15}^2\omega_9^2\omega_{12})\frac{v_2 v_1\rho}{12\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9^2\omega_{12}^2}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x^3\mathrm{D}_y v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x^3\mathrm{D}_y v_2}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x^3\mathrm{D}_y v_2} = (-\omega_9\omega_{12} + 3c_s^2\omega_9\omega_{12} + v_1^2\omega_{12} - 3v_1^2\omega_9 + v_1^2\omega_9\omega_{12} - 9c_s^2\omega_9 + 3\omega_9 - \omega_{12} + 3c_s^2\omega_{12})\frac{v_2 v_1\rho}{12\omega_9\omega_{12}}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x^3\mathrm{D}_y v_2} = C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x^3\mathrm{D}_y v_2}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x^3\mathrm{D}_y v_2} = (-3v_1^2\omega_4 + v_1^2\omega_9 - \omega_4\omega_9 + 3c_s^2\omega_4\omega_9 + 3\omega_4 - 9c_s^2\omega_4 + 3c_s^2\omega_9 - \omega_9 + v_1^2\omega_4\omega_9)\frac{v_2 v_1\rho}{12\omega_4\omega_9}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x^3\mathrm{D}_y v_2} = (-18\omega_3 v_2^2\omega_4\omega_2 + 9\omega_4\omega_1\omega_2 - 27\omega_3 c_s^2\omega_1\omega_2 - 27c_s^2\omega_4\omega_1\omega_2 + 12\omega_3 c_s^2\omega_4\omega_1 + 6\omega_3 c_s^2\omega_4\omega_2 + 18\omega_3 v_2^2\omega_4\omega_1 - 9v_1^2\omega_4\omega_1\omega_2 -$
$6\omega_3\omega_4\omega_1\omega_2 + 2\omega_3\omega_4\omega_2 - 9\omega_3 v_1^2\omega_1\omega_2 + 2\omega_3 v_1^2\omega_4\omega_1 + 6\omega_3 v_1^2\omega_4\omega_1\omega_2 + 18\omega_3 c_s^2\omega_4\omega_1\omega_2 - 8\omega_3\omega_4\omega_1 + 4\omega_3 v_1^2\omega_4\omega_2 + 9\omega_3\omega_1\omega_2)\frac{v_2 v_1\rho}{72\omega_3\omega_4\omega_1\omega_2}$

coefficient $C^{(2)}_{\mathrm{D}_x^2\mathrm{D}_y^2\rho}$ **at** $\frac{\partial^4\rho}{\partial x_1^2\partial x_2^2}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_y^2\rho} = (24 - \omega^3 + 14\omega^2 - 36\omega + v_2^2\omega^3 - 46c_s^2\omega^2 + 5c_s^2\omega^3 - 14v_2^2\omega^2 + 36v_2^2\omega + 108c_s^2\omega - 72c_s^2 - 24v_2^2)\frac{c_s^2 v_2}{12\omega^3}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y^2\rho} = (-12v_2^2 v_1^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_{12} + 36c_s^4\omega_{10}^3\omega_5^2\omega_{15}\omega_{12} + 72c_s^2 v_1^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} + 18c_s^2 v_2^2\omega_{10}^3\omega_5^2\omega_{21}\omega_{15}\omega_{12} - 12v_2^2 v_1^2\omega_{10}^3\omega_5^2\omega_{21}\omega_{12} -$
$12c_s^4\omega_{10}^3\omega_5^3\omega_{21}\omega_{12} + 12v_1^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2 - 12v_2^2 v_1^2\omega_{10}^3\omega_5^3\omega_{15}\omega_{12} + 72c_s^2 v_1^2\omega_{10}^2\omega_5\omega_{21}\omega_{15}^2\omega_{12} - 12c_s^2\omega_{10}^3\omega_5^2\omega_{15}\omega_{12} - 88c_s^4\omega_{10}^3\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} +$
$18c_s^2 v_1^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2 + 36c_s^4\omega_{10}^3\omega_5^2\omega_{15}^2 + 12c_s^2 v_2^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} - 18c_s^2 v_1^2\omega_{10}^2\omega_5^3\omega_{15}^2\omega_{12} - 12c_s^2 v_2^2\omega_{10}^3\omega_5^2\omega_{15}^2\omega_{12} - 12c_s^2\omega_{10}^3\omega_5^3\omega_{21}\omega_{12} -$
$24v_2^2 v_1^2\omega_{10}^3\omega_5\omega_{21}\omega_{15}\omega_{12} + 24v_2^2 v_1^2\omega_{10}^2\omega_5\omega_{21}\omega_{15}^2\omega_{12} + 36c_s^2 v_1^2\omega_{10}^3\omega_5^2\omega_{15}\omega_{12} + 12c_s^2 v_2^2\omega_{10}^2\omega_5^3\omega_{15}\omega_{12} + 36c_s^2 v_1^2\omega_{10}^3\omega_5^3\omega_{21}\omega_{12} + 6c_s^2\omega_{10}^2\omega_5^3\omega_{15}^2\omega_{12} +$
$12v_1^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}\omega_{12} - 6c_s^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2 - 72c_s^2 v_1^2\omega_{10}^3\omega_5\omega_{21}\omega_{15}\omega_{12} - 36c_s^2 v_1^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_{12} + 24v_2^2 v_1^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} +$
$12v_1^2\omega_{10}^3\omega_5^3\omega_{15}\omega_{12} - 12v_2^2 v_1^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2 + 12c_s^2\omega_{10}^3\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} + 18c_s^4\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2 + 12v_1^2\omega_{10}^3\omega_5^2\omega_{21}\omega_{12} + 18c_s^2 v_2^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} -$
$6c_s^2 v_2^2\omega_{10}^3\omega_5^3\omega_{15}^2 - 18c_s^4\omega_{10}^2\omega_5^3\omega_{15}\omega_{12} - 18c_s^4\omega_{10}^3\omega_5^3\omega_{15}^2 - 6c_s^2\omega_{10}^3\omega_5^3\omega_{15}^2\omega_{12} - 42c_s^4\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} - 12c_s^2 v_2^2\omega_{10}^3\omega_5^2\omega_{21}\omega_{12} -$
$36c_s^2 v_1^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{12} + 12c_s^2\omega_{10}^3\omega_5\omega_{21}\omega_{15}\omega_{12} - 24v_1^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} - 12c_s^2 v_2^2\omega_{10}^3\omega_5^3\omega_{15}\omega_{12} + 18c_s^4\omega_{10}^3\omega_5^3\omega_{15}\omega_{12} - 2c_s^2 v_2^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} -$
$24v_1^2\omega_{10}^2\omega_5\omega_{21}\omega_{15}^2\omega_{12} - c_s^2\omega_{10}^3\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} - 84c_s^4\omega_{10}^2\omega_5\omega_{21}\omega_{15}^2\omega_{12} - 12v_1^2\omega_{10}^2\omega_5^3\omega_{15}\omega_{12} + 12v_2^2 v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} + 12c_s^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_{12} -$

$$12v_2^2v_1^2\omega_{10}^3\omega_5^2\omega_{15}^2\omega_{12} - 12v_2^2v_1^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}\omega_{12} - 12c_s^2v_2^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} + 12v_2^2v_1^2\omega_{10}^2\omega_5^3\omega_{15}\omega_{12} - 12v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} + 12c_s^2v_2^2\omega_{10}^3\omega_5^2\omega_{15}^2 +$$
$$12v_1^2\omega_{10}^3\omega_5^2\omega_{15}^2\omega_{12} + 12c_s^4\omega_{10}^2\omega_5^3\omega_{21}\omega_{12} + 24v_1^2\omega_{10}^3\omega_5\omega_{21}\omega_{15}\omega_{12} - 18c_s^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} + 12c_s^4\omega_{10}^3\omega_5\omega_{21}\omega_{15}\omega_{12} - 6c_s^2v_2^2\omega_{10}^3\omega_5^3\omega_{21}\omega_{15}\omega_{12} -$$
$$36c_s^2v_1^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}\omega_{12} + 12c_s^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{12} + 18c_s^2v_1^2\omega_{10}^3\omega_5^3\omega_{15}^2\omega_{12} - 12c_s^2v_2^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2 + 12v_1^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_{12} +$$
$$12c_s^4\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_{12} + 5c_s^4\omega_{10}^3\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} + 12c_s^2\omega_{10}^2\omega_5\omega_{21}\omega_{15}^2\omega_{12} + 12c_s^2v_2^2\omega_{10}^3\omega_5\omega_{21}\omega_{15}^2\omega_{12} + 6v_2^2v_1^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2 + 6v_1^2\omega_{10}^3\omega_5^3\omega_{15}^2 -$$
$$12v_1^2\omega_{10}^3\omega_5^2\omega_{15}\omega_{12} - 6v_2^2v_1^2\omega_{10}^2\omega_5^3\omega_{15}^2\omega_{12} + 36v_2^2v_1^2\omega_{10}^3\omega_5^2\omega_{21}\omega_{15}\omega_{12} - 12c_s^2v_2^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_{12} + c_s^2v_2^2\omega_{10}^3\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} + 36c_s^2v_1^2\omega_{10}^3\omega_5^2\omega_{15}^2 -$$
$$72c_s^2v_1^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} - 12v_1^2\omega_{10}^3\omega_5^3\omega_{21}\omega_{12} + 12v_2^2v_1^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} - 36c_s^4\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2 + 180c_s^4\omega_{10}^3\omega_5\omega_{21}\omega_{15}^2\omega_{12} +$$
$$2c_s^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} - 36c_s^4\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} - 12c_s^2\omega_{10}^3\omega_5^2\omega_{15}^2 + 18v_1^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} - 36c_s^2v_1^2\omega_{10}^3\omega_5^3\omega_{15}\omega_{12} + 12c_s^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2 -$$
$$12c_s^2v_2^2\omega_{10}^3\omega_5\omega_{21}\omega_{15}\omega_{12} + 12v_1^2\omega_{10}^3\omega_5^3\omega_{21}\omega_{15}\omega_{12} - 12c_s^2v_2^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{12} - 36c_s^2v_1^2\omega_{10}^3\omega_5^2\omega_{21}\omega_{12} + 30c_s^4\omega_{10}^3\omega_5^3\omega_{21}\omega_{15}\omega_{12} - 6v_2^2v_1^2\omega_{10}^3\omega_5^3\omega_{15}^2 -$$
$$12c_s^2\omega_{10}^3\omega_5\omega_{21}\omega_{15}^2\omega_{12} - 6v_1^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} + 12c_s^2\omega_{10}^3\omega_5^3\omega_{15}\omega_{12} - 6c_s^4\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} - 12c_s^2v_2^2\omega_{10}^2\omega_5\omega_{21}\omega_{15}^2\omega_{12} + 6c_s^2v_2^2\omega_{10}^3\omega_5^3\omega_{15}^2\omega_{12} +$$
$$12c_s^2\omega_{10}^3\omega_5^2\omega_{21}\omega_{12} - 36c_s^2v_1^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2 + 12v_2^2v_1^2\omega_{10}^3\omega_5^3\omega_{21}\omega_{12} + 6c_s^2\omega_{10}^3\omega_5^3\omega_{21}\omega_{15}\omega_{12} - 36c_s^4\omega_{10}^3\omega_5^3\omega_{15}\omega_{12} + 108c_s^2v_1^2\omega_{10}^3\omega_5^2\omega_{21}\omega_{15}\omega_{12} +$$
$$18c_s^2v_2^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} + 12v_2^2v_1^2\omega_{10}^3\omega_5^2\omega_{15}\omega_{12} - 24v_2^2v_1^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} - 96c_s^4\omega_{10}^3\omega_{21}\omega_{15}^2\omega_{12} + 36c_s^2v_1^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} -$$
$$6v_1^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2 + 12c_s^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} + 12c_s^4\omega_{10}^3\omega_5^2\omega_{21}\omega_{12} + 6v_1^2\omega_{10}^2\omega_5^3\omega_{15}^2\omega_{12} + 36c_s^2v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} + 6c_s^2v_2^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2 +$$
$$12v_2^2v_1^2\omega_{10}^3\omega_5^2\omega_{15}^2 - 36c_s^2v_1^2\omega_{10}^3\omega_5^2\omega_{15}^2\omega_{12} - 6c_s^2v_2^2\omega_{10}^2\omega_5^3\omega_{15}^2\omega_{12} + 6c_s^2\omega_{10}^3\omega_5^3\omega_{15}^2 + 24v_1^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} - 12c_s^2\omega_{10}^2\omega_5^3\omega_{15}\omega_{12} +$$
$$150c_s^4\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} - 6v_1^2\omega_{10}^3\omega_5^3\omega_{15}^2\omega_{12} - 18c_s^2v_1^2\omega_{10}^3\omega_5^3\omega_{15}^2 + 6v_2^2v_1^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} - 54c_s^2v_1^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} + 36c_s^4\omega_{10}^2\omega_5^3\omega_{15}\omega_{12} -$$
$$36c_s^2v_1^2\omega_{10}^3\omega_5^3\omega_{21}\omega_{15}\omega_{12} - 12v_1^2\omega_{10}^3\omega_5^2\omega_{15}^2 - 12v_2^2v_1^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{12} - 18c_s^2\omega_{10}^3\omega_5^2\omega_{21}\omega_{15}\omega_{12} + 36c_s^4\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} - 18c_s^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} -$$
$$36c_s^4\omega_{10}^3\omega_5^2\omega_{15}^2\omega_{12} + 18c_s^2v_1^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} - 12c_s^2v_2^2\omega_{10}^3\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} - 18v_2^2v_1^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} + 12v_1^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{12} -$$
$$12v_2^2v_1^2\omega_{10}^3\omega_5^3\omega_{21}\omega_{15}\omega_{12} + 6v_2^2v_1^2\omega_{10}^3\omega_5^3\omega_{15}^2\omega_{12} - 36v_1^2\omega_{10}^3\omega_5^2\omega_{21}\omega_{15}\omega_{12} + 12c_s^2\omega_{10}^3\omega_5^2\omega_{15}^2\omega_{12} - 42c_s^4\omega_{10}^3\omega_5^2\omega_{21}\omega_{15}\omega_{12} + 12c_s^2v_2^2\omega_{10}^3\omega_5^3\omega_{21}\omega_{12} -$$
$$12c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} + 36c_s^2v_1^2\omega_{10}^2\omega_5^3\omega_{15}\omega_{12} + 12c_s^2v_2^2\omega_{10}^3\omega_5^2\omega_{15}\omega_{12} - 48c_s^4\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} - 12v_1^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_{12})\frac{v_2}{12\omega_{10}^3\omega_5^3\omega_{21}^2\omega_{15}^2\omega_{12}}$$

$$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_y^2\rho} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y^2\rho}$$

$$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y^2\rho} = (12\omega_{10}^3\omega_5\omega_{21}\omega_{15}^2\omega_{12} + 54c_s^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}\omega_{12} - 12v_2^2\omega_{10}^3\omega_{21}\omega_{15}\omega_{12} + 12\omega_{10}^2\omega_5\omega_{21}\omega_{15}^2 - 36c_s^2\omega_{10}^3\omega_5^2\omega_{15}\omega_{12} - 12v_2^2\omega_{10}^2\omega_5\omega_{21}\omega_{15}^2 +$$
$$12\omega_{10}^3\omega_{21}\omega_{15}\omega_{12} - 12\omega_{10}^2\omega_5^2\omega_{15}\omega_{12} - 12v_2^2\omega_{10}^3\omega_5\omega_{21}\omega_{12} - 6v_2^2\omega_{10}^3\omega_5^2\omega_{15}^2 + 12v_2^2\omega_{10}^2\omega_5^2\omega_{15}\omega_{12} + 12\omega_{10}^3\omega_5\omega_{21}\omega_{12} - 36c_s^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_{12} +$$
$$5c_s^2\omega_{10}^3\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} - 12v_2^2\omega_{10}^3\omega_5\omega_{21}\omega_{15}^2\omega_{12} - 36c_s^2\omega_{10}^3\omega_5\omega_{15}^2\omega_{12} + 2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} + 12\omega_{10}^3\omega_5^2\omega_{15}\omega_{12} - 6v_2^2\omega_{10}^3\omega_5^2\omega_{21}\omega_{15}\omega_{12} +$$
$$54c_s^2\omega_{10}^3\omega_5\omega_{21}\omega_{15}\omega_{12} - 12v_2^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} - 36c_s^2\omega_{10}^3\omega_{21}\omega_{15}\omega_{12} - 36c_s^2\omega_{10}^2\omega_5\omega_{21}\omega_{15}^2 - 12v_2^2\omega_{10}^3\omega_5^2\omega_{15}\omega_{12} - 12\omega_{10}^3\omega_5\omega_{15}^2 -$$
$$36c_s^2\omega_{10}^3\omega_5\omega_{21}\omega_{12} + 12\omega_{10}^3\omega_5\omega_{15}^2\omega_{12} - 12v_2^2\omega_{10}^3\omega_5\omega_{15}^2\omega_{12} + 12\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} + 36c_s^2\omega_{10}^3\omega_5^2 + 36c_s^2\omega_{10}^2\omega_5^2\omega_{15}\omega_{12} + 54c_s^2\omega_{10}^2\omega_5\omega_{21}\omega_{15}^2\omega_{12} -$$
$$2v_2^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} + 6\omega_{10}^3\omega_5^2\omega_{21}\omega_{15}\omega_{12} - 12\omega_{10}^3\omega_5\omega_{15}\omega_{12} - 12v_2^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{12} - 12v_2^2\omega_{10}^2\omega_{21}\omega_{15}^2\omega_{12} + 12\omega_{10}^2\omega_{21}\omega_{15}^2\omega_{12} - 18c_s^2\omega_{10}^3\omega_5^2\omega_{15}^2 +$$
$$12v_2^2\omega_{10}^3\omega_5\omega_{15}\omega_{12} + 12\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_{12} + 12\omega_{10}^2\omega_5^2\omega_{21}\omega_{12} + 36c_s^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} + 18c_s^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2 - \omega_{10}^3\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} + 18v_2^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}\omega_{12} -$$
$$18c_s^2\omega_{10}^2\omega_5^2\omega_{15}^2\omega_{12} + v_2^2\omega_{10}^3\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} - 40c_s^2\omega_{10}^3\omega_5\omega_{21}\omega_{15}^2\omega_{12} - 6\omega_{10}^3\omega_5^2\omega_{15}^2\omega_{12} - 18\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}\omega_{12} + 36c_s^2\omega_{10}^3\omega_5^2\omega_{21}\omega_{12} +$$
$$36c_s^2\omega_{10}^3\omega_{21}\omega_{15}^2\omega_{12} - 12v_2^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_{12} + 6\omega_{10}^3\omega_5^2\omega_{15}^2 + 6v_2^2\omega_{10}^3\omega_5^2\omega_{15}^2\omega_{12} - 36c_s^2\omega_{10}^2\omega_{21}\omega_{15}^2\omega_{12} - 36c_s^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{12} - 12\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} -$$
$$6\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2 + 6\omega_{10}^2\omega_5^2\omega_{15}^2\omega_{12} - 36c_s^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} + 12v_2^2\omega_{10}^3\omega_5\omega_{15}^2 - 6v_2^2\omega_{10}^2\omega_5^2\omega_{15}^2\omega_{12} + 12v_2^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} + 6v_2^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2 -$$
$$18\omega_{10}^2\omega_5\omega_{21}\omega_{15}^2\omega_{12} + 36c_s^2\omega_{10}^3\omega_5\omega_{15}\omega_{12} - 18c_s^2\omega_{10}^3\omega_5^2\omega_{21}\omega_{15}\omega_{12} + 18v_2^2\omega_{10}^3\omega_5\omega_{21}\omega_{15}\omega_{12} + 12v_2^2\omega_{10}^3\omega_{21}\omega_{15}^2\omega_{12} + 18v_2^2\omega_{10}^2\omega_5\omega_{21}\omega_{15}^2\omega_{12} -$$
$$6c_s^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} - 18\omega_{10}^3\omega_5\omega_{21}\omega_{15}\omega_{12} + 12v_2^2\omega_{10}^3\omega_5^2\omega_{21}\omega_{12} + 18c_s^2\omega_{10}^3\omega_5^2\omega_{15}^2\omega_{12} - 12\omega_{10}^3\omega_5^2\omega_{21}\omega_{12} - 12\omega_{10}^3\omega_{21}\omega_{15}^2\omega_{12})\frac{c_s^2v_2}{12\omega_{10}^3\omega_5^2\omega_{21}^2\omega_{15}^2\omega_{12}}$$

$$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y^2\rho} = C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y^2\rho}$$

$$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y^2\rho} = (-12\omega_7^2\omega_1^2 - 12\omega_1^2\omega_5^3 - 12v_2^2\omega_7\omega_5^3 + 54c_s^2\omega_7\omega_1\omega_5^3 - \omega_7^2\omega_1^2\omega_5^3 + 36c_s^2\omega_7^2\omega_1^2 - 12\omega_7\omega_1\omega_5^2 + 12c_s^2\omega_7^2\omega_1^2\omega_5^2 + 36c_s^2\omega_1^2\omega_5^3 +$$
$$12\omega_1^2\omega_5^2 - 36c_s^2\omega_1^2\omega_5^2 - 18\omega_7\omega_1\omega_5^3 + 5c_s^2\omega_7^2\omega_1^2\omega_5^3 + 36c_s^2\omega_7\omega_1\omega_5^2 - 4\omega_7^2\omega_1^2\omega_5^2 + 12v_2^2\omega_7^2\omega_1^2 - 36c_s^2\omega_7\omega_5^3 + 12v_2^2\omega_1^2\omega_5^3 + 18\omega_7^2\omega_1^2\omega_5 -$$
$$6v_2^2\omega_7\omega_1^2\omega_5^3 + 12\omega_7\omega_5^3 + 6v_2^2\omega_7^2\omega_1\omega_5^2 - 12v_2^2\omega_1^2\omega_5^2 - 54c_s^2\omega_7^2\omega_1^2\omega_5 - 12v_2^2\omega_7^2\omega_1\omega_5^3 + 6v_2^2\omega_7\omega_1^2\omega_5^2 - 36c_s^2\omega_7^2\omega_5^2 + 12v_2^2\omega_7\omega_1\omega_5^2 + v_2^2\omega_7^2\omega_1^2\omega_5^3 +$$
$$12\omega_7^2\omega_5^2 + 36c_s^2\omega_7^2\omega_5^3 - 12v_2^2\omega_1\omega_5^3 + 4v_2^2\omega_7^2\omega_1^2\omega_5^2 - 12\omega_7^2\omega_5^3 + 18v_2^2\omega_7\omega_1\omega_5^3 - 18v_2^2\omega_7^2\omega_1^2\omega_5 - 6\omega_7^2\omega_1\omega_5^2 + 18c_s^2\omega_7\omega_1^2\omega_5^2 - 12v_2^2\omega_7^2\omega_5^2 -$$
$$40c_s^2\omega_7^2\omega_1\omega_5^3 + 6\omega_7\omega_1^2\omega_5^3 + 12\omega_1\omega_5^3 + 18c_s^2\omega_7^2\omega_1\omega_5^2 - 6\omega_7\omega_1^2\omega_5^2 + 12\omega_7^2\omega_1\omega_5^3 + 12v_2^2\omega_7^2\omega_5^3 - 18c_s^2\omega_7\omega_1^2\omega_5^3 - 36c_s^2\omega_1\omega_5^3)\frac{c_s^2v_2}{12\omega_7^2\omega_1^2\omega_5^3}$$

$$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y^2\rho} = (9\omega_3^2c_s^2\omega_4\omega_1^3\omega_2^3 + 18\omega_3^2c_s^2v_2^2\omega_1^3\omega_2^3 + 96\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^2 + 36\omega_3^2c_s^2\omega_1^2\omega_2^3 - 18c_s^2\omega_4^2\omega_1^3\omega_2^3 + 16\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^2\omega_2^2 + 12\omega_3^2v_1^2\omega_4^2\omega_1\omega_2^2 -$$
$$52\omega_3^2c_s^2\omega_4^2\omega_1^3 - 8\omega_3^2v_2^2\omega_4^2\omega_1^2\omega_2^2 - 119\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^3 + 54\omega_3^2c_s^4\omega_1^3\omega_2^3 - 9\omega_3c_s^2v_2^2\omega_4^2\omega_1^3\omega_2^3 - 102\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2 + 24\omega_3^2v_2^2v_1^2\omega_4^2\omega_1^3 - 4\omega_3^2v_2^2\omega_4^2\omega_2^3 -$$
$$20\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^3\omega_2 + 12c_s^2\omega_4^2\omega_1^3\omega_2^2 + 27\omega_3^2v_1^4\omega_4^2\omega_1^3\omega_2^2 - 32\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^2\omega_2^3 + 16\omega_3^2c_s^2v_2^2\omega_4^2\omega_2^3 + 108\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^3 + 324\omega_3^2c_s^2v_1^2\omega_4^2\omega_1\omega_2^3 -$$
$$12\omega_3c_s^4\omega_4^2\omega_1^3\omega_2 + 4\omega_3^2v_2^2\omega_4^2\omega_1^3\omega_2 + 24\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^2 - 42\omega_3^2v_2^2\omega_4^2\omega_1\omega_2^3 + 36\omega_3c_s^2v_2^2\omega_4^2\omega_1^2\omega_2^3 - 108\omega_3^2c_s^4\omega_1^2\omega_2^3 + 15\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^3 + 28\omega_3c_s^2\omega_4^2\omega_1\omega_2^3 -$$
$$4\omega_3^2v_2^2\omega_4^2\omega_1^3 - 4\omega_3c_s^2v_2^2\omega_4^2\omega_1^3\omega_2 - 48\omega_3^2v_2^2v_1^2\omega_4^2\omega_1\omega_2^2 + 16\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^3 + 72\omega_3^2c_s^4\omega_4^2\omega_1^3 + 8\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^3\omega_2^2 - 4\omega_3^2\omega_4^2\omega_1\omega_2^2 + 24c_s^2\omega_4^2\omega_1^2\omega_2^3 -$$
$$27\omega_3^2v_1^4\omega_4^2\omega_1^2\omega_2^3 - 36\omega_3^2v_1^4\omega_4^2\omega_1^3\omega_2 + 28\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^2 - 18\omega_3^2c_s^2\omega_1^3\omega_2^3 - 36\omega_3^2c_s^2v_2^2\omega_1^2\omega_2^3 - 36\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^3 - 30\omega_3^2v_2^2v_1^2\omega_4^2\omega_1\omega_2^3 + 4\omega_3^2v_2^2\omega_4^2\omega_1^2\omega_2 +$$
$$35\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^2 + 32\omega_3c_s^2v_2^2\omega_4^2\omega_1^2\omega_2^2 - 27\omega_3c_s^4\omega_4^2\omega_1^3\omega_2^3 + 20\omega_3^2c_s^2\omega_4^2\omega_2^3 - 58\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^3 + 36\omega_3^2v_2^2v_1^2\omega_4^2\omega_2^3 - 4\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^2\omega_2 - 4\omega_3^2\omega_4^2\omega_1\omega_2^3 +$$
$$3\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^3\omega_2^3 - 36\omega_3^2v_1^4\omega_4^2\omega_1^2\omega_2^2 + 54c_s^4\omega_4^2\omega_1^3\omega_2^3 - 30\omega_3^2v_2^2v_1^2\omega_4^2\omega_1^3\omega_2 + 12\omega_3^2v_1^2\omega_4^2\omega_1^2\omega_2 - 32\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^2 - 27\omega_3^2c_s^4\omega_4\omega_1^3\omega_2^3 + 4\omega_3^2\omega_4^2\omega_1^3 -$$
$$60\omega_3^2v_1^4\omega_4^2\omega_2^3 + 49\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^3 + 74\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2 + 36\omega_3^2v_1^4\omega_4^2\omega_1\omega_2^2 - 4\omega_3^2\omega_4^2\omega_1^3\omega_2 - 36\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^3 - 28\omega_3c_s^2v_2^2\omega_4^2\omega_1\omega_2^3 + 4\omega_3c_s^2\omega_4^2\omega_1^3\omega_2 -$$
$$24c_s^2v_2^2\omega_4^2\omega_1^2\omega_2^3 + 60\omega_3^2v_2^2v_1^2\omega_4^2\omega_1^2\omega_2^2 - 27\omega_3^2v_1^2\omega_4^2\omega_1^3\omega_2^2 - 36c_s^4\omega_4^2\omega_1^3\omega_2^2 - 9\omega_3^2c_s^2v_2^2\omega_4\omega_1^3\omega_2^3 - 48\omega_3^2v_1^2\omega_4^2\omega_1^3 + 72\omega_3^2v_1^4\omega_4^2\omega_1\omega_2^3 + 8\omega_3^2\omega_4^2\omega_1^2\omega_2^2 +$$
$$216\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^3 + 138\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^3\omega_2^2 - 16\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^2 + 4\omega_3^2c_s^2v_2^2\omega_4^2\omega_1\omega_2^3 - 4\omega_3^2\omega_4^2\omega_1^2\omega_2 - 3\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2^3 - 138\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^2\omega_2^3 -$$
$$84\omega_3c_s^4\omega_4^2\omega_1\omega_2^3 + 4\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2 - 324\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^3\omega_2 - 12c_s^2v_2^2\omega_4^2\omega_1^3\omega_2^2 - 72\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^2 + 4\omega_3^2v_2^2\omega_4^2\omega_1\omega_2^3 + 108\omega_3^2c_s^4\omega_4\omega_1^2\omega_2^3 + 24\omega_3^2v_1^2\omega_4^2\omega_2^3 +$$
$$27\omega_3^2v_1^2\omega_4^2\omega_1^2\omega_2^3 - 12\omega_3^2v_2^2v_1^2\omega_4^2\omega_1^2\omega_2 - 72c_s^4\omega_4^2\omega_1^2\omega_2^3 + 66\omega_3^2v_1^2\omega_4^2\omega_1^3\omega_2 - 216\omega_3^2c_s^2v_1^2\omega_4^2\omega_2^3 - 25\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2^2 + 36\omega_3^2c_s^2v_2^2\omega_4\omega_1^2\omega_2^3 -$$
$$28\omega_3^2c_s^2v_2^2\omega_4^2\omega_1\omega_2^2 + 24\omega_3^2v_1^4\omega_4^2\omega_1^3 - 24\omega_3^2v_1^2\omega_4^2\omega_1^2\omega_2^2 + 4\omega_3^2\omega_4^2\omega_2^3 + 9\omega_3c_s^2\omega_4^2\omega_1^3\omega_2^3 + 4\omega_3^2v_2^2\omega_4^2\omega_1\omega_2^2 + 18c_s^2v_2^2\omega_4^2\omega_1^3\omega_2^3 + 78\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^3)\frac{v_2}{36\omega_3^2\omega_4^2\omega_1^3\omega_2^3}$$

coefficient $C^{(2)}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_1}$ **at** $\frac{\partial^4 v_1}{\partial x_1^2\partial x_2^2}$**:**

$$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_1} = 0$$

$$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_1} = (4c_s^2\omega_{10}^2\omega_5^3\omega_{15}\omega_9\omega_{12}^2 - \omega_{10}^3\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 4\omega_{10}^3\omega_5^3\omega_{21}\omega_9\omega_{12}^2 + 4c_s^2\omega_{10}^3\omega_5^2\omega_{15}^2\omega_9\omega_{12} - 7\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 +$$
$$2v_2^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 - 6c_s^2\omega_{10}^3\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 9v_2^2\omega_{10}^3\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 4\omega_{10}^3\omega_5^2\omega_{15}\omega_9\omega_{12}^2 + 2c_s^2\omega_{10}^3\omega_5^3\omega_{15}^2\omega_9\omega_{12}^2 -$$
$$4v_2^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 3\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 - 6v_2^2\omega_{10}^3\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 11c_s^2\omega_{10}^3\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 4c_s^2\omega_{10}^3\omega_5^2\omega_{21}\omega_{15}^2\omega_9 +$$
$$8c_s^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 8c_s^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 2\omega_{10}^2\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 + 4v_2^2\omega_{10}^3\omega_5^2\omega_{15}\omega_9\omega_{12}^2 + 4c_s^2\omega_{10}^3\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} +$$
$$2c_s^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 + 4v_2^2\omega_{10}^3\omega_5^3\omega_{21}\omega_9\omega_{12}^2 - 4v_2^2\omega_{10}^3\omega_5^3\omega_{15}\omega_9\omega_{12}^2 + 8c_s^2\omega_{10}^3\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 2c_s^2\omega_{10}^3\omega_5^3\omega_{21}\omega_{15}^2\omega_9 + 2c_s^2\omega_{10}^3\omega_5^2\omega_{21}\omega_{15}^2\omega_{12}^2 +$$
$$13c_s^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 4v_2^2\omega_{10}^3\omega_5^2\omega_{21}\omega_9\omega_{12}^2 - 2v_2^2\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9\omega_{12}^2 + 6\omega_{10}^3\omega_5\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 2c_s^2\omega_{10}^3\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} - c_s^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 +$$
$$2v_2^2\omega_{10}^2\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 - 2c_s^2\omega_{10}^3\omega_5^3\omega_{15}^2\omega_9\omega_{12} - 9\omega_{10}^3\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 3v_2^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 - 6c_s^2\omega_{10}^2\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 + 4\omega_{10}^3\omega_5^2\omega_{21}\omega_9\omega_{12}^2 +$$
$$2\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9\omega_{12}^2 + 4\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + v_2^2\omega_{10}^3\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 12c_s^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 + 4\omega_{10}^3\omega_5^3\omega_{15}\omega_9\omega_{12}^2 - 2\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 -$$
$$4c_s^2\omega_{10}^3\omega_5^2\omega_{15}^2\omega_9\omega_{12}^2 + 7v_2^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 8c_s^2\omega_{10}^2\omega_5^3\omega_{21}\omega_9\omega_{12}^2 + 3c_s^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 + 2v_2^2\omega_{10}^3\omega_5^3\omega_{15}^2\omega_9\omega_{12}^2 + 4v_2^2\omega_{10}^3\omega_5^2\omega_{15}^2\omega_9\omega_{12} +$$
$$2c_s^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 4v_2^2\omega_{10}^2\omega_5^3\omega_{15}\omega_9\omega_{12}^2 - 2\omega_{10}^3\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 - 24c_s^2\omega_{10}^3\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} - 4\omega_{10}^2\omega_5^3\omega_{15}\omega_9\omega_{12}^2 + 5\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 +$$
$$8c_s^2\omega_{10}^3\omega_5^3\omega_{21}\omega_9\omega_{12}^2 - 2v_2^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + \omega_{10}^3\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 - 4\omega_{10}^3\omega_5^2\omega_{15}^2\omega_9\omega_{12} - 2v_2^2\omega_{10}^3\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 12c_s^2\omega_{10}^3\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12} +$$
$$v_2^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 - 2\omega_{10}^3\omega_5^3\omega_{15}^2\omega_9\omega_{12}^2 + 4c_s^2\omega_{10}^3\omega_5^2\omega_{15}\omega_9\omega_{12}^2 + 3\omega_{10}^3\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 + 2\omega_{10}^3\omega_5^3\omega_{15}^2\omega_9\omega_{12} - 16c_s^2\omega_{10}^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 -$$
$$\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 - 8c_s^2\omega_{10}^3\omega_5^2\omega_{21}\omega_9\omega_{12}^2 - 3v_2^2\omega_{10}^3\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 2c_s^2\omega_{10}^2\omega_5^3\omega_{15}^2\omega_9\omega_{12}^2 + 2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 4c_s^2\omega_{10}^3\omega_5\omega_{21}\omega_{15}^2\omega_{12}^2 -$$
$$4\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 - 5v_2^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 + 2\omega_{10}^3\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12} + 4\omega_{10}^3\omega_5^2\omega_{15}^2\omega_9\omega_{12}^2 - 4c_s^2\omega_{10}^3\omega_5^3\omega_{15}\omega_9\omega_{12}^2 + 26c_s^2\omega_{10}^3\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 +$$
$$4\omega_{10}^2\omega_5^3\omega_{21}\omega_9\omega_{12}^2 - v_2^2\omega_{10}^3\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 - 4v_2^2\omega_{10}^3\omega_5^2\omega_{15}^2\omega_9\omega_{12}^2 - 15c_s^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 - 4v_2^2\omega_{10}^2\omega_5^3\omega_{21}\omega_9\omega_{12}^2 + 2v_2^2\omega_{10}^3\omega_5\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 -$$
$$8c_s^2\omega_{10}^3\omega_5^2\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 + 4v_2^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2 - 4c_s^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12} - 5c_s^2\omega_{10}^3\omega_5^3\omega_{21}\omega_{15}\omega_9\omega_{12}^2 - 2v_2^2\omega_{10}^3\omega_5^3\omega_{15}^2\omega_9\omega_{12})\frac{v_2v_1\rho}{2\omega_{10}^3\omega_5^3\omega_{21}\omega_{15}^2\omega_9\omega_{12}^2}$$

$$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_1} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_1}$$

$$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_1} = 0$$

$$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_1} = 0$$

$$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_1} = 0$$

$$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_1} = (-18c_s^2\omega_1\omega_2^3 - 12\omega_3v_2^2\omega_1\omega_2^2 + 6\omega_3\omega_1^2\omega_2 + 84\omega_3c_s^2\omega_1^3 + 6\omega_1\omega_2^3 - 66\omega_3v_1^2\omega_1^2\omega_2^2 - 9\omega_3v_2^2\omega_1\omega_2^3 - 23\omega_3\omega_1^3\omega_2^2 - 50\omega_3v_1^2\omega_1^2\omega_2^3 +$$
$$12\omega_3v_2^2\omega_1^3 - 75\omega_3v_1^2\omega_1^3\omega_2 + 48\omega_3\omega_1^3\omega_2 + 50\omega_3v_1^2\omega_1^3\omega_2^2 + 23\omega_3\omega_1^2\omega_2^3 - 6v_2^2\omega_1\omega_2^3 + 12\omega_3v_2^2\omega_2^3 + 12\omega_3\omega_1^2\omega_2^2 + 6\omega_3v_1^2\omega_1^2\omega_2 - 66\omega_3c_s^2\omega_2^3 + 108\omega_3c_s^2\omega_1\omega_2^3 -$$
$$12\omega_3\omega_1\omega_2^2 - 12\omega_3v_2^2\omega_1^2\omega_2 + 12v_2^2\omega_1^2\omega_2^2 - 108\omega_3c_s^2\omega_1^3\omega_2 + 42\omega_3\omega_2^3 - 42\omega_3c_s^2\omega_1^2\omega_2^3 - 114\omega_3v_1^2\omega_2^3 - 60\omega_3\omega_1\omega_2^3 - 6v_2^2\omega_1^3\omega_2 - 18\omega_3c_s^2\omega_1^2\omega_2 + 48\omega_3v_1^2\omega_1^3 -$$
$$9\omega_3v_2^2\omega_1^3\omega_2 + 36c_s^2\omega_1^2\omega_2^2 + 141\omega_3v_1^2\omega_1\omega_2^3 - 12\omega_1^2\omega_2^2 + 18\omega_3v_2^2\omega_1^2\omega_2^2 - 18c_s^2\omega_1^3\omega_2 + 42\omega_3c_s^2\omega_1^3\omega_2^2 + 60\omega_3v_1^2\omega_1\omega_2^2 + 6\omega_1^3\omega_2 - 36\omega_3\omega_1^3)\frac{v_2v_1\rho}{18\omega_3\omega_1^3\omega_2^3}$$

coefficient $C^{(2)}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_2}$ **at** $\frac{\partial^4 v_2}{\partial x_1^2\partial x_2^2}$**:**

$$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_2} = (-24 - 12\omega^2 + 36\omega + 8c_s^2\omega^2 - c_s^2\omega^3 + 36v_2^2\omega^2 - 108v_2^2\omega - 18c_s^2\omega + 12c_s^2 + 72v_2^2)\frac{c_s^2\rho}{12\omega^3}$$

$$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_2} = (-36v_2^2v_1^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_{12} + 12c_s^4\omega_{10}^3\omega_5^2\omega_{15}\omega_{12} + 24c_s^2v_1^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} - 132c_s^2v_2^2\omega_{10}^3\omega_5^2\omega_{21}\omega_{15}\omega_{12} -$$
$$12c_s^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}\omega_{12} - 36v_2^2v_1^2\omega_{10}^3\omega_5^2\omega_{21}\omega_{12} - 108c_s^2v_2^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} + 12v_1^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2 - 36v_2^2v_1^2\omega_{10}^3\omega_5^3\omega_{15}\omega_{12} +$$
$$24c_s^2v_1^2\omega_{10}^2\omega_5\omega_{21}\omega_{15}^2\omega_{12} - 12c_s^2\omega_{10}^3\omega_5^2\omega_{15}\omega_{12} - 4c_s^4\omega_{10}^3\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} + 6c_s^2v_1^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2 + 12c_s^4\omega_{10}^3\omega_5^2\omega_{15}^2 - 6c_s^2v_1^2\omega_{10}^3\omega_5^2\omega_{15}^2\omega_{12} -$$
$$36c_s^2v_2^2\omega_{10}^3\omega_5^2\omega_{15}^2\omega_{12} - 72v_2^2v_1^2\omega_{10}^3\omega_5\omega_{21}\omega_{15}\omega_{12} + 72v_2^2v_1^2\omega_{10}^2\omega_5\omega_{21}\omega_{15}^2\omega_{12} + 12c_s^2v_1^2\omega_{10}^3\omega_5^2\omega_{15}\omega_{12} + 36c_s^2v_2^2\omega_{10}^2\omega_5^3\omega_{15}\omega_{12} +$$
$$12c_s^2v_1^2\omega_{10}^3\omega_5^3\omega_{21}\omega_{12} + 6c_s^2\omega_{10}^2\omega_5^3\omega_{15}^2\omega_{12} + 12c_s^4\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}\omega_{12} + 12v_1^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}\omega_{12} - 6c_s^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2 - 24c_s^2v_1^2\omega_{10}^3\omega_5\omega_{21}\omega_{15}\omega_{12} -$$
$$12c_s^2v_1^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_{12} + 72v_2^2v_1^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} + 12v_1^2\omega_{10}^3\omega_5^3\omega_{15}\omega_{12} - 36v_2^2v_1^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2 + 6c_s^4\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2 + 12v_1^2\omega_{10}^3\omega_5^2\omega_{21}\omega_{12} +$$
$$180c_s^2v_2^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} - 18c_s^2v_2^2\omega_{10}^3\omega_5^3\omega_{15}^2 - 6c_s^4\omega_{10}^2\omega_5^3\omega_{15}^2\omega_{12} - 48c_s^2v_2^2\omega_{10}^3\omega_{21}\omega_{15}^2\omega_{12} - 6c_s^4\omega_{10}^3\omega_5^3\omega_{15}^2 - 6c_s^2\omega_{10}^3\omega_5^3\omega_{15}^2\omega_{12} -$$
$$12c_s^4\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} + 24c_s^2v_2^2\omega_{10}^3\omega_5^2\omega_{21}\omega_{12} - 12c_s^2v_1^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{12} - 12c_s^2\omega_{10}^3\omega_5\omega_{21}\omega_{15}\omega_{12} - 24v_1^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} - 36c_s^2v_2^2\omega_{10}^3\omega_5^3\omega_{15}\omega_{12} +$$
$$6c_s^4\omega_{10}^3\omega_5^3\omega_{15}^2\omega_{12} - 18c_s^2v_2^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} - 24v_1^2\omega_{10}^2\omega_5\omega_{21}\omega_{15}^2\omega_{12} - 12c_s^4\omega_{10}^2\omega_5\omega_{21}\omega_{15}^2\omega_{12} - 12v_1^2\omega_{10}^2\omega_5^3\omega_{15}\omega_{12} + 36v_2^2v_1^2\omega_{10}^3\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} -$$
$$36v_2^2v_1^2\omega_{10}^3\omega_5^2\omega_{15}^2\omega_{12} - 36v_2^2v_1^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}\omega_{12} + 18c_s^2v_2^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} + 36v_2^2v_1^2\omega_{10}^2\omega_5^3\omega_{15}\omega_{12} - 12v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} + 36c_s^2v_2^2\omega_{10}^3\omega_5^2\omega_{15}^2 +$$
$$12v_1^2\omega_{10}^3\omega_5^2\omega_{15}^2\omega_{12} + 24v_1^2\omega_{10}^3\omega_5\omega_{21}\omega_{15}\omega_{12} + 12c_s^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} + 12c_s^4\omega_{10}^3\omega_5\omega_{21}\omega_{15}\omega_{12} + 78c_s^2v_2^2\omega_{10}^3\omega_5^3\omega_{21}\omega_{15}\omega_{12} -$$
$$12c_s^2v_1^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}\omega_{12} + 6c_s^2v_1^2\omega_{10}^3\omega_5^3\omega_{15}^2\omega_{12} - 36c_s^2v_2^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2 + 12v_1^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_{12} - c_s^4\omega_{10}^3\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} + 12c_s^2\omega_{10}^2\omega_5\omega_{21}\omega_{15}^2\omega_{12} +$$
$$84c_s^2v_2^2\omega_{10}^3\omega_5\omega_{21}\omega_{15}^2\omega_{12} + 18v_2^2v_1^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2 + 6v_1^2\omega_{10}^3\omega_5^3\omega_{15}^2 - 12v_1^2\omega_{10}^3\omega_5^2\omega_{15}\omega_{12} - 18v_2^2v_1^2\omega_{10}^2\omega_5^3\omega_{15}^2\omega_{12} + 108v_2^2v_1^2\omega_{10}^3\omega_5^2\omega_{21}\omega_{15}\omega_{12} +$$
$$72c_s^2v_2^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_{12} + 12c_s^2v_1^2\omega_{10}^3\omega_5^2\omega_{15}^2 - 24c_s^2v_1^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} - 12v_1^2\omega_{10}^3\omega_5^3\omega_{21}\omega_{12} + 36v_2^2v_1^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} - 12c_s^4\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2 +$$
$$18c_s^4\omega_{10}^3\omega_5\omega_{21}\omega_{15}^2\omega_{12} + 6c_s^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} + 6c_s^4\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} - 12c_s^2\omega_{10}^3\omega_5^2\omega_{15}^2 + 18v_1^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} - 12c_s^2v_1^2\omega_{10}^3\omega_5^3\omega_{15}\omega_{12} +$$
$$12c_s^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2 + 60c_s^2v_2^2\omega_{10}^3\omega_5\omega_{21}\omega_{15}\omega_{12} + 12v_1^2\omega_{10}^3\omega_5^3\omega_{21}\omega_{15}\omega_{12} + 24c_s^2v_2^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{12} - 12c_s^2v_1^2\omega_{10}^3\omega_5^2\omega_{21}\omega_{12} +$$
$$12c_s^4\omega_{10}^3\omega_5^3\omega_{21}\omega_{15}\omega_{12} - 18v_2^2v_1^2\omega_{10}^3\omega_5^3\omega_{15}^2 - 6v_1^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} + 12c_s^2\omega_{10}^3\omega_5^3\omega_{15}\omega_{12} - 6c_s^4\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} - 84c_s^2v_2^2\omega_{10}^2\omega_5\omega_{21}\omega_{15}^2\omega_{12} +$$
$$18c_s^2v_2^2\omega_{10}^3\omega_5^3\omega_{15}^2\omega_{12} - 12c_s^2v_1^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2 + 36v_2^2v_1^2\omega_{10}^3\omega_5^3\omega_{21}\omega_{12} - 12c_s^2\omega_{10}^3\omega_5^3\omega_{21}\omega_{15}\omega_{12} - 12c_s^4\omega_{10}^3\omega_5^3\omega_{15}\omega_{12} + 36c_s^2v_1^2\omega_{10}^3\omega_5^2\omega_{21}\omega_{15}\omega_{12} -$$
$$144c_s^2v_2^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} + 36v_2^2v_1^2\omega_{10}^3\omega_5^2\omega_{15}\omega_{12} - 72v_2^2v_1^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} + 12c_s^4\omega_{10}^3\omega_{21}\omega_{15}^2\omega_{12} + 12c_s^2v_1^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} -$$
$$6v_1^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2 - 6c_s^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} + 6v_1^2\omega_{10}^2\omega_5^3\omega_{15}^2\omega_{12} + 12c_s^2v_1^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} + 18c_s^2v_2^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2 + 36v_2^2v_1^2\omega_{10}^3\omega_5^2\omega_{15}^2 -$$
$$12c_s^2v_1^2\omega_{10}^3\omega_5^2\omega_{15}^2\omega_{12} - 18c_s^2v_2^2\omega_{10}^2\omega_5^3\omega_{15}^2\omega_{12} + 6c_s^2\omega_{10}^3\omega_5^3\omega_{15}^2 + 24v_1^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} - 12c_s^2\omega_{10}^2\omega_5^3\omega_{15}\omega_{12} + 24c_s^4\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} +$$

$12c_s^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} - 6v_1^2\omega_{10}^3\omega_5^3\omega_{15}^2\omega_{12} - 6c_s^2v_1^2\omega_{10}^3\omega_5^3\omega_{15}^2 + 18v_2^2v_1^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} - 18c_s^2v_1^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} +$
$60c_s^2v_2^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}\omega_{12} + 12c_s^4\omega_{10}^2\omega_5^3\omega_{15}\omega_{12} - 12c_s^2v_1^2\omega_{10}^3\omega_5^3\omega_{21}\omega_{15}\omega_{12} - 12v_1^2\omega_{10}^3\omega_5^2\omega_{15}^2 - 36v_2^2v_1^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{12} + 24c_s^2\omega_{10}^3\omega_5^2\omega_{21}\omega_{15}\omega_{12} -$
$24c_s^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} - 12c_s^4\omega_{10}^3\omega_5^2\omega_{15}^2\omega_{12} + 6c_s^2v_1^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} - 42c_s^2v_2^2\omega_{10}^3\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} - 54v_2^2v_1^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}^2\omega_{12} +$
$12v_1^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{12} - 36v_2^2v_1^2\omega_{10}^3\omega_5^3\omega_{21}\omega_{15}\omega_{12} + 18v_2^2v_1^2\omega_{10}^3\omega_5^3\omega_{15}^2\omega_{12} - 36v_1^2\omega_{10}^3\omega_5^2\omega_{21}\omega_{15}\omega_{12} + 12c_s^2\omega_{10}^3\omega_5^2\omega_{15}^2\omega_{12} - 24c_s^4\omega_{10}^3\omega_5^2\omega_{21}\omega_{15}\omega_{12} -$
$24c_s^2v_2^2\omega_{10}^3\omega_5^3\omega_{21}\omega_{12} + 12c_s^2v_1^2\omega_{10}^2\omega_5^3\omega_{15}\omega_{12} + 36c_s^2v_2^2\omega_{10}^3\omega_5^2\omega_{15}\omega_{12} - 12c_s^4\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_{12} - 12v_1^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}^2\omega_{12})\frac{\rho}{12\omega_{10}^3\omega_5^3\omega_{21}\omega_{15}^2\omega_{12}}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_2}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_2} = (-4c_s^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{15}\omega_{12} + 6\omega_{10}\omega_5^3\omega_{15}\omega_{12} + 12c_s^2\omega_{10}^2\omega_5\omega_{21}\omega_{12} + 12\omega_{10}^2\omega_5^3\omega_{12} + 12\omega_{10}\omega_5\omega_{21}\omega_{15}\omega_{12} - 6c_s^2\omega_{10}^2\omega_5^3\omega_{15} -$
$12\omega_{10}\omega_5^2\omega_{21}\omega_{12} + 6c_s^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} + 36v_2^2\omega_{10}\omega_5^2\omega_{21}\omega_{12} - 18v_2^2\omega_{10}\omega_5^3\omega_{15}\omega_{12} + 12\omega_{10}\omega_5^2\omega_{21}\omega_{15} - 12\omega_{10}^2\omega_5^3\omega_{21}\omega_{12} - 12c_s^2\omega_{10}^2\omega_5^3\omega_{12} +$
$6\omega_{10}^2\omega_5^3\omega_{15} - 12c_s^2\omega_{10}^2\omega_{21}\omega_{15}\omega_{12} + 12\omega_{10}^2\omega_5^2\omega_{15}\omega_{12} + 12\omega_5^2\omega_{21}\omega_{15}\omega_{12} - 36v_2^2\omega_5^2\omega_{21}\omega_{15}\omega_{12} - 36v_2^2\omega_{10}^2\omega_5^2\omega_{15}\omega_{12} - 36v_2^2\omega_{10}\omega_5\omega_{21}\omega_{15}\omega_{12} +$
$24c_s^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_{12} + 36v_2^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{12} - 36v_2^2\omega_{10}\omega_5^2\omega_{21}\omega_{15} - 6\omega_5^3\omega_{21}\omega_{15}\omega_{12} + 36v_2^2\omega_{10}^2\omega_5\omega_{21}\omega_{12} + 36v_2^2\omega_{10}\omega_5^3\omega_{12} - 12\omega_{10}^2\omega_5^2\omega_{12} -$
$6c_s^2\omega_{10}\omega_5^3\omega_{15}\omega_{12} + 12c_s^2\omega_{10}^2\omega_5^2\omega_{15} - 6c_s^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_{12} - 12\omega_{10}^2\omega_5\omega_{21}\omega_{12} + 18v_2^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} + 12c_s^2\omega_{10}\omega_5^2\omega_{21}\omega_{12} -$
$c_s^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}\omega_{12} + 12c_s^2\omega_{10}^2\omega_5^3\omega_{21}\omega_{12} - 12c_s^2\omega_{10}\omega_5^2\omega_{21}\omega_{15} + 12c_s^2\omega_{10}^2\omega_5^2\omega_{12} - 12c_s^2\omega_{10}^2\omega_5^2\omega_{15}\omega_{12} - 12\omega_{10}^2\omega_5^2\omega_{15} - 12c_s^2\omega_5^2\omega_{21}\omega_{15}\omega_{12} +$
$18v_2^2\omega_{10}^2\omega_5^3\omega_{15}\omega_{12} - 36v_2^2\omega_{10}^2\omega_5^3\omega_{12} + 18v_2^2\omega_{10}\omega_5^3\omega_{21}\omega_{15} - 72v_2^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{12} - 24\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_{12} + 24\omega_{10}^2\omega_5^2\omega_{21}\omega_{12} - 6\omega_{10}\omega_5^3\omega_{21}\omega_{15} +$
$18c_s^2\omega_{10}^2\omega_5\omega_{21}\omega_{15}\omega_{12} - 6\omega_{10}^2\omega_5^3\omega_{15}\omega_{12} - 36v_2^2\omega_{10}\omega_5^3\omega_{21}\omega_{12} - 18v_2^2\omega_{10}^2\omega_5^3\omega_{15} - 12c_s^2\omega_{10}\omega_5\omega_{21}\omega_{15}\omega_{12} + 72v_2^2\omega_{10}\omega_5^2\omega_{21}\omega_{15}\omega_{12} +$
$12\omega_{10}\omega_5^3\omega_{21}\omega_{12} - 18v_2^2\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_{12} + 6c_s^2\omega_{10}\omega_5^3\omega_{21}\omega_{15} - 24c_s^2\omega_{10}^2\omega_5^2\omega_{21}\omega_{12} - 12\omega_{10}\omega_5^3\omega_{12} + 6c_s^2\omega_{10}^2\omega_5^3\omega_{15}\omega_{12} + 36v_2^2\omega_{10}^2\omega_5^2\omega_{12} -$
$12c_s^2\omega_{10}\omega_5^3\omega_{21}\omega_{12} + 12c_s^2\omega_{10}\omega_5^3\omega_{12} + 36v_2^2\omega_{10}^2\omega_5^2\omega_{15} + 6\omega_{10}\omega_5^3\omega_{21}\omega_{15}\omega_{12})\frac{c_s^2\rho}{12\omega_{10}^2\omega_5^3\omega_{21}\omega_{15}\omega_{12}}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_2} = C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_2}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_2} = (24\omega_1^3\omega_5 + 36v_2^2\omega_7\omega_1^2\omega_5 + 72v_2^2\omega_1^2\omega_5 - 24c_s^2\omega_1^3\omega_5 + 24\omega_1^2\omega_5^2 - 24c_s^2\omega_1^2\omega_5^2 + 18c_s^2\omega_7\omega_1\omega_5^2 + 36v_2^2\omega_1^3\omega_5^2 + 24c_s^2\omega_1^2\omega_5 - 72v_2^2\omega_1^3\omega_5 -$
$12c_s^2\omega_7\omega_1\omega_5 - 24\omega_1^2\omega_5 - 12\omega_1^3 - 72v_2^2\omega_1^2\omega_5^2 + 12\omega_7\omega_1\omega_5 + 12c_s^2\omega_1^3\omega_5^2 - 12c_s^2\omega_7\omega_5^2 - 12\omega_1^3\omega_5^2 - c_s^2\omega_7\omega_1^3\omega_5^2 - 12\omega_7\omega_1^2\omega_5 + 36v_2^2\omega_1\omega_5^2 +$
$36v_2^2\omega_1^3 - 36v_2^2\omega_7\omega_1^2 + 12c_s^2\omega_7\omega_1^2\omega_5 + 12c_s^2\omega_1^3 - 12\omega_1\omega_5^2 + 12c_s^2\omega_1\omega_5^2 - 4c_s^2\omega_7\omega_1^2\omega_5^2 + 12\omega_7\omega_1^2 - 36v_2^2\omega_7\omega_1\omega_5 - 12c_s^2\omega_7\omega_1^2)\frac{c_s^2\rho}{12\omega_7\omega_1^3\omega_5^2}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_2} = (8\omega_3c_s^4\omega_4\omega_1\omega_2^3 + 32\omega_3^2c_s^2\omega_4\omega_1^2\omega_2 + 18\omega_3^2v_1^4\omega_1\omega_2^3 - 174\omega_3^2c_s^2v_1^2\omega_4\omega_1^3\omega_2 + \omega_3^2v_2^4\omega_4\omega_1^3\omega_2^2 + 54\omega_3^2c_s^2v_2^2\omega_1^3\omega_2^3 - 30\omega_3^2c_s^2v_1^2\omega_4\omega_1^2\omega_2^3 +$
$72\omega_3^2c_s^2\omega_1^2\omega_2^3 - 18\omega_3v_1^4\omega_1^3\omega_2^2 - 4\omega_3^2\omega_4\omega_1^2\omega_2 - 6\omega_3v_1^2\omega_4\omega_1^2\omega_2^2 + 48\omega_3^2c_s^2v_2^2\omega_4\omega_1\omega_2^3 + 4\omega_3^2\omega_4\omega_2^3 + 66\omega_3^2v_1^2\omega_4\omega_1^3\omega_2 + 24\omega_3^2v_1^4\omega_4\omega_1^3 -$
$36\omega_3^2v_2^2v_1^2\omega_4\omega_1^2\omega_2 + 9\omega_3^2v_1^2\omega_4\omega_1^2\omega_2^3 + 90\omega_3c_s^2v_1^2\omega_4\omega_1^3\omega_2^2 + 18\omega_3^2c_s^4\omega_1^3\omega_2^3 + 36\omega_3c_s^2\omega_4\omega_1^3\omega_2^2 + 12\omega_3^2v_2^2\omega_4\omega_1\omega_2^3 - 28\omega_3^2c_s^4\omega_4\omega_1\omega_2^2 -$
$84\omega_3^2c_s^2v_2^2\omega_4\omega_1\omega_2^2 + 12\omega_3v_1^2\omega_4\omega_1^3\omega_2 + 36\omega_3v_1^2\omega_4\omega_1^2\omega_2^3 - 18v_1^4\omega_4\omega_1^3\omega_2^2 - 2\omega_3^2c_s^2\omega_4\omega_1^3\omega_2^2 + 24\omega_3^2c_s^2v_1^2\omega_4\omega_1^2\omega_2^2 + 12\omega_3^2v_1^2\omega_4\omega_2^3 + 76\omega_3^2c_s^4\omega_4\omega_1\omega_2^3 +$
$12\omega_3^2v_2^2\omega_4\omega_1\omega_2^2 - 18\omega_3c_s^2\omega_4\omega_1^3\omega_2^3 - 108\omega_3^2c_s^2v_1^2\omega_4\omega_2^3 - 42\omega_3^2v_1^2\omega_4\omega_1^2\omega_2^2 - 18\omega_3v_1^2\omega_1^2\omega_2^3 - 56\omega_3c_s^2\omega_4\omega_1^2\omega_2^2 - 72\omega_3^2c_s^4\omega_1^2\omega_2^3 - 18\omega_3^2v_1^2\omega_1\omega_2^3 +$
$6\omega_3v_1^4\omega_4\omega_1\omega_2^3 + 54\omega_3^2c_s^2v_1^2\omega_1\omega_2^3 + 18\omega_3v_1^2\omega_1^3\omega_2^2 + 54\omega_3c_s^2v_1^2\omega_4\omega_1^2\omega_2^2 - 90\omega_3^2v_2^2v_1^2\omega_4\omega_1^3\omega_2 - 36\omega_3v_1^2\omega_4\omega_1^3\omega_2^2 - 4\omega_3^2\omega_4\omega_1^3\omega_2 + 12\omega_3^2v_1^4\omega_4\omega_1\omega_2^2 -$
$48\omega_3^2v_1^2\omega_4\omega_1^3 - 12\omega_3^2c_s^2v_1^2\omega_4\omega_1^2\omega_2 + 18\omega_3^2c_s^2\omega_4\omega_1^3\omega_2 - 18\omega_3^2c_s^2\omega_1^3\omega_2^3 - 216\omega_3^2c_s^2v_2^2\omega_1^2\omega_2^3 + 132\omega_3^2c_s^2v_1^2\omega_4\omega_1^3 + 18v_1^4\omega_4\omega_1^2\omega_2^3 + 2\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^3 -$
$9\omega_3^2v_1^2\omega_4\omega_1^3\omega_2^2 - 90\omega_3c_s^2v_1^2\omega_4\omega_1^2\omega_2^3 - 36\omega_3c_s^2v_1^2\omega_4\omega_1^3\omega_2 + 180\omega_3^2v_2^2v_1^2\omega_4\omega_1^2\omega_2^2 - 8\omega_3c_s^2\omega_4\omega_1^3\omega_2 + 60\omega_3c_s^2v_2^2\omega_4\omega_1\omega_2^3 + 36\omega_3c_s^2\omega_4\omega_1^2\omega_2^3 +$
$30\omega_3^2c_s^2v_1^2\omega_4\omega_1^3\omega_2^2 - \omega_3^2v_2^4\omega_4\omega_1^2\omega_2^3 - 36\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^2 - 48\omega_3^2v_1^4\omega_4\omega_2^3 + 4\omega_3^2\omega_4\omega_1^3 + 54\omega_3^2v_1^4\omega_4\omega_1\omega_2^3 + 8\omega_3^2\omega_4\omega_1^2\omega_2^2 + 18\omega_3v_1^4\omega_1^2\omega_2^3 +$
$6\omega_3v_1^4\omega_4\omega_1^2\omega_2^2 - 144\omega_3^2v_2^2v_1^2\omega_4\omega_1\omega_2^2 + 54c_s^2v_1^2\omega_4\omega_1^2\omega_2^3 - 18\omega_3c_s^2v_1^2\omega_4\omega_1\omega_2^3 - 54\omega_3^2c_s^2v_1^2\omega_1^2\omega_2^2 - 28\omega_3^2c_s^4\omega_4\omega_1^2\omega_2 + 24\omega_3c_s^2v_2^2\omega_4\omega_1^3\omega_2 -$
$8\omega_3c_s^2\omega_4\omega_1\omega_2^3 - 126\omega_3c_s^2v_2^2\omega_4\omega_1^2\omega_2^3 - 3\omega_3^2c_s^4\omega_4\omega_1^3\omega_2^3 + 18\omega_3^2v_1^2\omega_1^2\omega_2^2 - \omega_3^2v_2^2\omega_4\omega_1^3\omega_2^2 - 36\omega_3c_s^4\omega_4\omega_1^3\omega_2^2 + 18\omega_3^2v_1^4\omega_1^3\omega_2^2 + 32\omega_3^2c_s^2\omega_4\omega_1\omega_2^2 +$
$28\omega_3^2c_s^2\omega_4\omega_2^3 + 54\omega_3c_s^2v_1^2\omega_1^2\omega_2^3 - 36\omega_3^2v_1^4\omega_4\omega_1^3\omega_2 - 4\omega_3^2\omega_4\omega_1\omega_2^2 + 6\omega_3^2c_s^2v_2^2\omega_4\omega_1^3\omega_2^2 + 108\omega_3^2v_2^2v_1^2\omega_4\omega_2^3 - 9\omega_3^2v_1^4\omega_4\omega_1^2\omega_2^3 - 12\omega_3^2v_2^2\omega_4\omega_1^3 +$
$18\omega_3^2v_1^2\omega_1^2\omega_2^3 + 2\omega_3^2c_s^4\omega_4\omega_1^3\omega_2^2 + 18v_1^2\omega_4\omega_1^3\omega_2^2 + 132\omega_3c_s^2v_2^2\omega_4\omega_1^2\omega_2^2 + 72\omega_3^2c_s^4\omega_1\omega_2^3 + 12\omega_3^2v_2^2\omega_4\omega_1^2\omega_2 + 12\omega_3^2c_s^2v_2^2\omega_4\omega_1^3 - 12\omega_3v_1^4\omega_4\omega_1^3\omega_2 -$
$54\omega_3^2c_s^2v_1^2\omega_1^2\omega_2^3 - 90\omega_3^2v_2^2v_1^2\omega_4\omega_1\omega_2^3 - 36\omega_3v_1^4\omega_4\omega_1^2\omega_2^3 - 4\omega_3^2\omega_4\omega_1\omega_2^3 - 18\omega_3^2v_1^4\omega_4\omega_1^2\omega_2^2 - 48\omega_3^2c_s^2v_2^2\omega_4\omega_1^2\omega_2 + 16\omega_3^2c_s^4\omega_1^3 -$
$18\omega_3^2c_s^2\omega_4\omega_1\omega_2^3 + 216\omega_3^2c_s^2v_2^2\omega_1\omega_2^3 + 18\omega_3c_s^4\omega_4\omega_1^3\omega_2^3 - 6\omega_3v_1^2\omega_4\omega_1\omega_2^3 + 12\omega_3^2v_1^4\omega_4\omega_1^2\omega_2 + 66\omega_3^2c_s^2v_2^2\omega_4\omega_1^2\omega_2^2 - 12\omega_3^2v_2^2\omega_4\omega_2^3 - 18\omega_3^2v_1^4\omega_1^2\omega_2^2 +$
$56\omega_3c_s^4\omega_4\omega_1^2\omega_2^2 - 12\omega_3^2c_s^2v_1^2\omega_4\omega_1\omega_2^2 - 96\omega_3^2c_s^2v_2^2\omega_4\omega_2^3 - 68\omega_3^2c_s^4\omega_4\omega_2^3 - 14\omega_3^2c_s^4\omega_4\omega_1^3\omega_2 - 14\omega_3^2c_s^4\omega_4\omega_1^2\omega_2^3 - 24\omega_3^2v_2^2\omega_4\omega_1^2\omega_2^2 - 18\omega_3^2v_1^2\omega_1^3\omega_2^2 -$
$18v_1^2\omega_4\omega_1^2\omega_2^3 + 54\omega_3c_s^2v_2^2\omega_4\omega_1^3\omega_2^3 + 36\omega_3v_1^4\omega_4\omega_1^3\omega_2^2 + 54\omega_3^2c_s^2v_1^2\omega_1^3\omega_2^2 + 36\omega_3^2v_1^2\omega_4\omega_1\omega_2^2 + 150\omega_3^2c_s^2v_1^2\omega_4\omega_1^3\omega_2^3 - 72\omega_3^2c_s^2\omega_1\omega_2^3 +$
$8\omega_3c_s^4\omega_4\omega_1^3\omega_2 - 36\omega_3c_s^4\omega_4\omega_1^2\omega_2^3 - 18\omega_3^2v_1^4\omega_1^2\omega_2^3 + 9\omega_3^2v_1^4\omega_4\omega_1^3\omega_2^2 - 6\omega_3^2c_s^2v_2^2\omega_4\omega_1^2\omega_2^3 - 6\omega_3^2c_s^2v_2^2\omega_4\omega_1^3\omega_2 - 54\omega_3c_s^2v_1^2\omega_1^3\omega_2^2 - 54c_s^2v_1^2\omega_4\omega_1^3\omega_2^2 -$
$24\omega_3^2v_1^2\omega_4\omega_1\omega_2^3 - 20\omega_3^2c_s^2\omega_4\omega_1^3 + 72\omega_3^2v_2^2v_1^2\omega_4\omega_1^3 - 90\omega_3c_s^2v_2^2\omega_4\omega_1^3\omega_2^2 + \omega_3^2v_2^2\omega_4\omega_1^2\omega_2^3 + 28\omega_3^2c_s^4\omega_4\omega_1^2\omega_2^2 + 12\omega_3^2v_2^2\omega_4\omega_1^3\omega_2)\frac{\rho}{36\omega_3^2\omega_4\omega_1^3\omega_2^2}$

coefficient $C^{(2)}_{\mathrm{D}_x\mathrm{D}_y^3\rho}$ **at** $\frac{\partial^4\rho}{\partial x_1\partial x_2^3}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y^3\rho} = 0$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^3\rho} = (-4c_s^4\omega_{10}^3\omega_{15} - 8c_s^2\omega_{10}^3\omega_5\omega_{15} + 13v_2^4\omega_{10}^2\omega_5^2\omega_{15}^2 - 4c_s^2\omega_{10}\omega_5\omega_{15}^2 - 4c_s^4\omega_{10}\omega_5^2\omega_{15} - 51c_s^2v_2^2\omega_{10}^3\omega_5^2\omega_{15} + 8v_2^2\omega_{10}^3\omega_{15} +$
$36c_s^2v_2^2\omega_{10}^2\omega_{15}^2 + 16v_2^2\omega_{10}^2\omega_5\omega_{15} - 144c_s^2v_2^2\omega_{10}\omega_5^2\omega_{15}^2 + 20v_2^4\omega_{10}\omega_5\omega_{15}^2 - 4c_s^2\omega_{10}^2\omega_5^2\omega_{15}^2 + 4c_s^4\omega_{10}^2\omega_{15}^2 + 20v_2^4\omega_{10}^3\omega_5\omega_{15} - 84c_s^2v_2^2\omega_{10}^2\omega_5\omega_{15}^2 +$
$20v_2^2\omega_{10}\omega_5^2\omega_{15} - 8v_2^2\omega_{10}^2\omega_{15}^2 - 36c_s^2v_2^2\omega_{10}^3\omega_{15} + 4c_s^2\omega_{10}^3\omega_{15} - 48c_s^2v_2^2\omega_{10}^2\omega_5\omega_{15} + 13v_2^2\omega_{10}^3\omega_5^2\omega_{15} - 8c_s^4\omega_{10}^2\omega_5\omega_{15}^2 + 36v_2^2\omega_{10}\omega_5^2\omega_{15}^2 -$
$8v_2^4\omega_{10}^3\omega_{15} - 8c_s^2\omega_{10}^2\omega_5^2\omega_{15} - 12c_s^4\omega_{10}\omega_5^2\omega_{15}^2 + 20v_2^2\omega_{10}^2\omega_5\omega_{15}^2 - 4c_s^4\omega_{10}^3\omega_5^2\omega_{15} - 4c_s^2\omega_{10}^2\omega_{15}^2 - 72c_s^2v_2^2\omega_{10}\omega_5^2\omega_{15} + 32v_2^4\omega_{10}^2\omega_5^2\omega_{15} +$
$8v_2^4\omega_{10}^2\omega_{15}^2 - 13v_2^2\omega_{10}^2\omega_5^2\omega_{15}^2 + 4v_2^2\omega_{10}^2\omega_5^2 - 24c_s^2v_2^2\omega_{10}^3\omega_5 + 4c_s^4\omega_{10}\omega_5\omega_{15}^2 - 4c_s^2\omega_{10}^3\omega_5^2 + 8c_s^4\omega_{10}^3\omega_5\omega_{15} - 4c_s^4\omega_{10}^2\omega_5^2 + 4v_2^4\omega_{10}^3\omega_5^2 +$
$4c_s^2\omega_{10}\omega_5^2\omega_{15} - 16v_2^4\omega_{10}^2\omega_5\omega_{15} + 120c_s^2v_2^2\omega_{10}^2\omega_5^2\omega_{15} - 20v_2^2\omega_{10}^3\omega_5\omega_{15} - 20v_2^2\omega_{10}\omega_5\omega_{15}^2 + 4v_2^2\omega_{10}^3\omega_5 + 24v_2^4\omega_5^2\omega_{15}^2 - 24c_s^2v_2^2\omega_{10}^2\omega_5^2 +$
$4c_s^4\omega_{10}^2\omega_5^2\omega_{15}^2 - 20v_2^4\omega_{10}\omega_5^2\omega_{15} - 8c_s^2\omega_5^2\omega_{15}^2 - 4c_s^4\omega_{10}^3\omega_5 + 96c_s^2v_2^2\omega_5^2\omega_{15}^2 - 4v_2^4\omega_{10}^2\omega_5^2 + 8c_s^2\omega_{10}^2\omega_5\omega_{15}^2 - 36v_2^4\omega_{10}\omega_5^2\omega_{15}^2 + 4c_s^4\omega_{10}^3\omega_5^2 -$
$13v_2^4\omega_{10}^3\omega_5^2\omega_{15} + 51c_s^2v_2^2\omega_{10}^2\omega_5^2\omega_{15}^2 + 4c_s^2\omega_{10}^2\omega_5^2 + 8c_s^4\omega_{10}^2\omega_5^2\omega_{15} - 4v_2^2\omega_{10}^3\omega_5^2 + 4c_s^2\omega_{10}^3\omega_5^2\omega_{15} + 12c_s^2\omega_{10}\omega_5^2\omega_{15}^2 - 24v_2^2\omega_5^2\omega_{15}^2 - 4v_2^4\omega_{10}^3\omega_5 -$

$20v_2^4\omega_{10}^2\omega_5\omega_{15}^2 + 84c_s^2v_2^2\omega_{10}^3\omega_5\omega_{15} - 32v_2^2\omega_{10}^2\omega_5^2\omega_{15} + 24c_s^2v_2^2\omega_{10}^3\omega_5^2 + 72c_s^2v_2^2\omega_{10}\omega_5\omega_{15}^2 + 4c_s^2\omega_{10}^3\omega_5 + 8c_s^4\omega_5^2\omega_{15}^2)\frac{v_1}{4\omega_{10}^3\omega_5^2\omega_{15}^2}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D_xD_y^3}\rho} = C^{(2),\mathrm{MRT1}}_{\mathrm{D_xD_y^3}\rho}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D_xD_y^3}\rho} = 0$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D_xD_y^3}\rho} = 0$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D_xD_y^3}\rho} = 0$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D_xD_y^3}\rho} = (56\omega_3^2c_s^2\omega_1^3\omega_2 + 5\omega_3^2c_s^2\omega_1^2\omega_2^3 - 48\omega_3^2v_2^2v_1^2\omega_1^3\omega_2 - 24\omega_3^2v_2^2\omega_1^2\omega_2 - 4\omega_3^2v_1^2\omega_1^3 - 24\omega_3^2v_2^2v_1^2\omega_1^2\omega_2^3 - 36\omega_3^2v_2^4\omega_1^3\omega_2 - 36\omega_3^2c_s^4\omega_2^3 - 12c_s^2v_1^2\omega_1^3\omega_2^2 - 36\omega_3^2c_s^4\omega_1^2\omega_2 + 4\omega_3^2\omega_1^3 - 48\omega_3^2v_2^2v_1^2\omega_1^2\omega_2^2 - 24\omega_3^2v_2^2\omega_1^3\omega_2^2 - 34\omega_3^2c_s^2\omega_1^2\omega_2^2 + 72\omega_3^2c_s^2v_2^2\omega_1^3\omega_2^2 + 48\omega_3^2v_2^4\omega_2^3 + 6\omega_3^2c_s^4\omega_1^3\omega_2^2 + 72\omega_3^2v_2^4\omega_1^2\omega_2^2 + 24\omega_3c_s^4\omega_1\omega_2^3 - 6\omega_3^2c_s^4\omega_1^2\omega_2^3 - 8\omega_3^2v_1^2\omega_1\omega_2^3 - 84\omega_3^2c_s^4\omega_1^3\omega_2 + 8\omega_3^2\omega_1\omega_2^2 + 22\omega_3^2c_s^2v_1^2\omega_1\omega_2^3 + 84\omega_3^2v_2^2\omega_1^3\omega_2 + 24\omega_3^2v_2^2v_1^2\omega_1^2\omega_2 + 24\omega_3^2v_2^2\omega_1^2\omega_2^3 + 24\omega_3^2v_2^4\omega_1^3 - 324\omega_3^2c_s^2v_2^2\omega_1^3\omega_2 + 40\omega_3^2c_s^2\omega_1^2\omega_2 - 72\omega_3^2c_s^2v_2^2\omega_1^2\omega_2^3 + 8\omega_3^2c_s^2v_1^2\omega_1\omega_2^2 + 8\omega_3^2\omega_1\omega_2^3 - 8\omega_3^2v_1^2\omega_1\omega_2^2 + 12c_s^2v_1^2\omega_1^2\omega_2^3 + 8\omega_3^2v_1^2\omega_2^3 + 42\omega_3^2c_s^4\omega_1^2\omega_2^2 + 216\omega_3^2c_s^2v_2^2\omega_1^2\omega_2^2 - 5\omega_3^2c_s^2\omega_1^3\omega_2^2 + 216\omega_3^2c_s^2v_2^2\omega_1^3 - 8\omega_3c_s^2\omega_1\omega_2^3 - 24\omega_3^2v_2^2\omega_1^2\omega_2^2 - 8\omega_3^2\omega_2^3 + 24\omega_3^2v_2^2v_1^2\omega_1^3\omega_2^2 + 72\omega_3^2c_s^4\omega_1^3 + 8\omega_3c_s^2v_1^2\omega_1\omega_2^3 - \omega_3^2\omega_1^2\omega_2^3 - 4\omega_3^2\omega_1^3\omega_2 - 2\omega_3^2c_s^2v_1^2\omega_1^2\omega_2^2 + 16\omega_3^2c_s^2v_1^2\omega_1^3 + 4\omega_3^2v_1^2\omega_1^2\omega_2^2 + 24\omega_3^2v_2^2\omega_2^3 + 12c_s^2\omega_1^3\omega_2^2 - 216\omega_3^2c_s^2v_2^2\omega_1\omega_2^2 - 18\omega_3c_s^2v_1^2\omega_1^2\omega_2^3 + 4\omega_3c_s^2\omega_1^3\omega_2 - 4\omega_3c_s^2v_1^2\omega_1^3\omega_2 + 18\omega_3c_s^2\omega_1^2\omega_2^3 + 48\omega_3^2v_2^2\omega_1\omega_2^2 + \omega_3^2v_1^2\omega_1^2\omega_2^3 + 36c_s^4\omega_1^2\omega_2^3 + 42\omega_3^2c_s^4\omega_1\omega_2^3 + 4\omega_3^2v_1^2\omega_1^3\omega_2 - 2\omega_3^2c_s^2v_1^2\omega_1^2\omega_2^3 + 54\omega_3c_s^4\omega_1^3\omega_2^2 - 4\omega_3^2\omega_1^2\omega_2^2 - 20\omega_3^2c_s^2v_1^2\omega_1^3\omega_2 - 60\omega_3^2v_2^2\omega_1\omega_2^3 + 4\omega_3c_s^2\omega_1^2\omega_2^2 - 4\omega_3c_s^2v_1^2\omega_1^2\omega_2^2 + 20\omega_3^2c_s^2\omega_2^3 + 108\omega_3^2c_s^2v_2^2\omega_1\omega_2^3 - 72\omega_3^2v_2^2v_1^2\omega_2^3 + 24\omega_3^2v_2^2v_1^2\omega_1\omega_2^2 - 8\omega_3^2c_s^2\omega_1\omega_2^2 - 36c_s^4\omega_1^3\omega_2^2 - \omega_3^2v_1^2\omega_1^3\omega_2^2 - 72\omega_3^2v_2^4\omega_1\omega_2^2 - 54\omega_3c_s^4\omega_1^2\omega_2^2 + 24\omega_3^2v_2^2v_1^2\omega_1^3 + 2\omega_3^2c_s^2v_1^2\omega_1^3\omega_2^2 - 4\omega_3^2\omega_1^2\omega_2 - 52\omega_3^2c_s^2\omega_1^3 - 12\omega_3c_s^4\omega_1^3\omega_2 - 22\omega_3^2c_s^2\omega_1\omega_2^3 - 12c_s^2\omega_1^2\omega_2^2 - 18\omega_3c_s^2\omega_1^3\omega_2^2 + 96\omega_3^2v_2^2v_1^2\omega_1\omega_2^3 - 20\omega_3^2c_s^2v_1^2\omega_2^3 + 18\omega_3c_s^2v_1^2\omega_1^3\omega_2^2 - 4\omega_3^2c_s^2v_1^2\omega_1^2\omega_2 + \omega_3^2\omega_1^3\omega_2^2 - 12\omega_3c_s^4\omega_1^2\omega_2^2 - 36\omega_3^2v_2^4\omega_1\omega_2^3 - 48\omega_3^2v_2^2\omega_1^3 + 4\omega_3^2v_1^2\omega_1^2\omega_2)\frac{v_1}{36\omega_3^2\omega_1^3\omega_2^3}$

coefficient $C^{(2)}_{\mathrm{D_xD_y^3}v_1}$ **at** $\frac{\partial^4 v_1}{\partial x_1\partial x_2^3}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D_xD_y^3}v_1} = (-36c_s^2v_2^2 - c_s^4\omega^3 - 26v_2^4\omega^2 - 36v_2^4 + 4v_2^4\omega^3 + 20c_s^4\omega^2 + 36c_s^4 - 54c_s^4\omega + 54v_2^4\omega + 12c_s^2v_2^2\omega^3 - 4v_2^2\omega^3 - 12c_s^2\omega^2 - 42c_s^2v_2^2\omega^2 + 26v_2^2\omega^2 - 54v_2^2\omega + 54c_s^2v_2^2\omega + 36c_s^2\omega - 24c_s^2 + 36v_2^2)\frac{\rho}{12\omega^3}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D_xD_y^3}v_1} = (-12c_s^2\omega_{10}^3\omega_5\omega_{15} + 12v_2^4\omega_{10}^2\omega_5^2\omega_{15}^2 + 6c_s^2\omega_{10}^2\omega_5^3\omega_{15} + 90v_2^2\omega_{10}\omega_5^3\omega_{15}^2 + 30c_s^2v_2^2\omega_{10}^3\omega_5^2\omega_{15} + 13c_s^4\omega_{10}^3\omega_5^2\omega_{15}^2 + 27v_2^2\omega_{10}^3\omega_5^3\omega_{15} - 108c_s^2v_2^2\omega_{10}\omega_5^2\omega_{15}^2 + 60v_2^4\omega_{10}^2\omega_5^3\omega_{15} - 6c_s^2\omega_{10}^2\omega_5^2\omega_{15}^2 - 24v_2^4\omega_{10}^3\omega_5\omega_{15} + 6c_s^4\omega_{10}^3\omega_5^3\omega_{15} + 18v_2^2\omega_{10}^3\omega_5^2\omega_{15}^2 - 48c_s^2v_2^2\omega_{10}^2\omega_5\omega_{15}^2 - 36c_s^2v_2^2\omega_{10}\omega_5^3\omega_{15} - 12c_s^4\omega_{10}\omega_5^3\omega_{15}^2 + 12c_s^2v_2^2\omega_{10}^3\omega_5^3\omega_{15}^2 - c_s^4\omega_{10}^3\omega_5^3\omega_{15}^2 - 306c_s^2v_2^2\omega_{10}\omega_5^3\omega_{15}^2 - 48v_2^2\omega_{10}^3\omega_5^2\omega_{15} - 48c_s^2v_2^2\omega_{10}^3\omega_{15}^2 - 21c_s^2v_2^2\omega_{10}^3\omega_5^3\omega_{15} + 19v_2^4\omega_{10}^2\omega_5^3\omega_{15}^2 - 12c_s^2\omega_{10}^2\omega_5^2\omega_{15} + 12v_2^4\omega_{10}^3\omega_5\omega_{15}^2 - 12c_s^4\omega_{10}\omega_5^2\omega_{15}^2 - 81c_s^2v_2^2\omega_{10}^3\omega_5^2\omega_{15}^2 + 36v_2^2\omega_{10}\omega_5^3\omega_{15} - 18c_s^4\omega_{10}^3\omega_5^2\omega_{15} - 4v_2^2\omega_{10}^3\omega_5^3\omega_{15}^2 + 12c_s^4\omega_{10}^3\omega_{15}^2 + 6c_s^2\omega_{10}^3\omega_5\omega_{15}^2 - 24v_2^4\omega_{10}^2\omega_5^2\omega_{15} - c_s^2\omega_{10}^2\omega_5^3\omega_{15}^2 - 12c_s^2v_2^2\omega_{10}^2\omega_5^3 - 12v_2^2\omega_{10}^2\omega_5^2\omega_{15}^2 + 102c_s^2v_2^2\omega_{10}^3\omega_5\omega_{15}^2 - 6c_s^4\omega_{10}^2\omega_5^3\omega_{15} + 60c_s^2v_2^2\omega_{10}^2\omega_5^3\omega_{15}^2 + 12c_s^4\omega_{10}^3\omega_5\omega_{15} - 5c_s^2\omega_{10}^3\omega_5^2\omega_{15}^2 - 27v_2^4\omega_{10}^3\omega_5^3\omega_{15} - 12v_2^4\omega_{10}^3\omega_5^2 + 252c_s^2v_2^2\omega_5^3\omega_{15}^2 - 90v_2^4\omega_{10}\omega_5^3\omega_{15}^2 - 12c_s^2v_2^2\omega_{10}^2\omega_5^2\omega_{15} + 24v_2^2\omega_{10}^3\omega_5\omega_{15} + 12c_s^4\omega_5^3\omega_{15}^2 + 12v_2^2\omega_{10}^2\omega_5^3 - 60v_2^2\omega_{10}^2\omega_5^3\omega_{15} + 6c_s^4\omega_{10}^2\omega_5^2\omega_{15}^2 - 72v_2^2\omega_5^3\omega_{15}^2 + 12c_s^2\omega_{10}\omega_5^3\omega_{15}^2 + 12v_2^4\omega_{10}^3\omega_5^3 - 6c_s^2\omega_{10}^3\omega_5^3\omega_{15} - 18v_2^4\omega_{10}^3\omega_5^2\omega_{15}^2 + 48v_2^4\omega_{10}^3\omega_5^2\omega_{15} - 12v_2^2\omega_{10}^3\omega_5\omega_{15}^2 + 162c_s^2v_2^2\omega_{10}^2\omega_5^2\omega_{15}^2 - 19v_2^2\omega_{10}^2\omega_5^3\omega_{15}^2 + 12c_s^2v_2^2\omega_{10}^3\omega_5^3 + 12c_s^4\omega_{10}^2\omega_5^2\omega_{15} + 12v_2^2\omega_{10}^3\omega_5^2 + 18c_s^2\omega_{10}^3\omega_5^2\omega_{15} - 12c_s^2\omega_5^3\omega_{15}^2 + 4v_2^4\omega_{10}^3\omega_5^3\omega_{15}^2 + 12c_s^2\omega_{10}\omega_5^2\omega_{15}^2 - 12v_2^4\omega_{10}^2\omega_5^3 - 36v_2^4\omega_{10}\omega_5^3\omega_{15} - 12c_s^2v_2^2\omega_{10}^3\omega_5\omega_{15} + 24v_2^2\omega_{10}^2\omega_5^2\omega_{15} - 12v_2^2\omega_{10}^3\omega_5^3 + c_s^4\omega_{10}^2\omega_5^3\omega_{15}^2 - 12c_s^2v_2^2\omega_{10}^3\omega_5^2 + 72v_2^4\omega_5^3\omega_{15}^2 + 54c_s^2v_2^2\omega_{10}^2\omega_5^3\omega_{15} - 24c_s^4\omega_{10}^3\omega_5\omega_{15}^2)\frac{\rho}{12\omega_{10}^3\omega_5^3\omega_{15}^2}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D_xD_y^3}v_1} = C^{(2),\mathrm{MRT1}}_{\mathrm{D_xD_y^3}v_1}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D_xD_y^3}v_1} =$
$(-12c_s^2\omega_{10}^3\omega_5\omega_{15} + 6c_s^2\omega_{10}^2\omega_5^3\omega_{15} + 90v_2^2\omega_{10}\omega_5^3\omega_{15}^2 + 54c_s^2v_2^2\omega_{10}^3\omega_5^2\omega_{15} + 13c_s^4\omega_{10}^3\omega_5^2\omega_{15}^2 + 39v_2^2\omega_{10}^3\omega_5^3\omega_{15} - 36c_s^2v_2^2\omega_{10}\omega_5^2\omega_{15}^2 + 72v_2^4\omega_{10}^2\omega_5^3\omega_{15} - 6c_s^2\omega_{10}^2\omega_5^2\omega_{15}^2 + 6c_s^4\omega_{10}^3\omega_5^3\omega_{15} + 6v_2^2\omega_{10}^3\omega_5^2\omega_{15}^2 - 108c_s^2v_2^2\omega_{10}\omega_5^3\omega_{15} - 12c_s^4\omega_{10}\omega_5^3\omega_{15}^2 + 12c_s^2v_2^2\omega_{10}^3\omega_5^3\omega_{15}^2 - c_s^4\omega_{10}^3\omega_5^3\omega_{15}^2 - 306c_s^2v_2^2\omega_{10}\omega_5^3\omega_{15}^2 - 36v_2^2\omega_{10}^3\omega_5^2\omega_{15} - 99c_s^2v_2^2\omega_{10}^3\omega_5^3\omega_{15} + 19v_2^4\omega_{10}^2\omega_5^3\omega_{15}^2 - 12c_s^2\omega_{10}^2\omega_5^2\omega_{15} - 12c_s^4\omega_{10}\omega_5^2\omega_{15}^2 - 3c_s^2v_2^2\omega_{10}^3\omega_5^2\omega_{15}^2 + 36v_2^2\omega_{10}\omega_5^3\omega_{15} - 18c_s^4\omega_{10}^3\omega_5^2\omega_{15} - 4v_2^2\omega_{10}^3\omega_5^3\omega_{15}^2 + 12c_s^4\omega_{10}^3\omega_{15}^2 + 6c_s^2\omega_{10}^3\omega_5\omega_{15}^2 - c_s^2\omega_{10}^2\omega_5^3\omega_{15}^2 - 108c_s^2v_2^2\omega_{10}^2\omega_5^3 - 18c_s^2v_2^2\omega_{10}^3\omega_5\omega_{15}^2 - 6c_s^4\omega_{10}^2\omega_5^3\omega_{15} + 60c_s^2v_2^2\omega_{10}^2\omega_5^3\omega_{15}^2 + 12c_s^4\omega_{10}^3\omega_5\omega_{15} - 5c_s^2\omega_{10}^3\omega_5^2\omega_{15}^2 - 39v_2^4\omega_{10}^3\omega_5^3\omega_{15} - 36v_2^4\omega_{10}^3\omega_5^2 + 252c_s^2v_2^2\omega_5^3\omega_{15}^2 - 90v_2^4\omega_{10}\omega_5^3\omega_{15}^2 + 36c_s^2v_2^2\omega_{10}^2\omega_5^2\omega_{15} + 12c_s^4\omega_5^3\omega_{15}^2 + 36v_2^2\omega_{10}^2\omega_5^3 - 72v_2^2\omega_{10}^2\omega_5^3\omega_{15} + 6c_s^4\omega_{10}^2\omega_5^2\omega_{15}^2 - 72v_2^2\omega_5^3\omega_{15}^2 + 12c_s^2\omega_{10}\omega_5^3\omega_{15}^2 + 36v_2^4\omega_{10}^3\omega_5^3 - 6c_s^2\omega_{10}^3\omega_5^3\omega_{15} - 6v_2^4\omega_{10}^3\omega_5^2\omega_{15}^2 + 36v_2^4\omega_{10}^3\omega_5^2\omega_{15} + 18c_s^2v_2^2\omega_{10}^2\omega_5^2\omega_{15}^2 - 19v_2^2\omega_{10}^2\omega_5^3\omega_{15}^2 + 108c_s^2v_2^2\omega_{10}^3\omega_5^3 + 12c_s^4\omega_{10}^2\omega_5^2\omega_{15} + 36v_2^2\omega_{10}^3\omega_5^2 + 18c_s^2\omega_{10}^3\omega_5^2\omega_{15} - 12c_s^2\omega_5^3\omega_{15}^2 + 4v_2^4\omega_{10}^3\omega_5^3\omega_{15}^2 + 12c_s^2\omega_{10}\omega_5^2\omega_{15}^2 - 36v_2^4\omega_{10}^2\omega_5^3 - 36v_2^4\omega_{10}\omega_5^3\omega_{15} + 36c_s^2v_2^2\omega_{10}^3\omega_5\omega_{15} - 36v_2^2\omega_{10}^3\omega_5^3 + c_s^4\omega_{10}^2\omega_5^3\omega_{15}^2 - 108c_s^2v_2^2\omega_{10}^3\omega_5^2 + 72v_2^4\omega_5^3\omega_{15}^2 + 198c_s^2v_2^2\omega_{10}^2\omega_5^3\omega_{15} - 24c_s^4\omega_{10}^3\omega_5\omega_{15}^2)\frac{\rho}{12\omega_{10}^3\omega_5^3\omega_{15}^2}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D_xD_y^3}v_1} = C^{(2),\mathrm{CLBM1}}_{\mathrm{D_xD_y^3}v_1}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D_xD_y^3}v_1} = (54c_s^2v_2^2\omega_7\omega_1^2\omega_5^3 - 108c_s^2v_2^2\omega_7\omega_1^3\omega_5 - 6c_s^4\omega_7\omega_1^3\omega_5^2 + 39v_2^2\omega_7\omega_1^3\omega_5^3 - 36v_2^4\omega_1^2\omega_5^3 - 12c_s^2\omega_7\omega_1\omega_5^3 - 36v_2^2\omega_1^3\omega_5^3 - 90v_2^4\omega_7^2\omega_1^3\omega_5 - 6v_2^4\omega_7^2\omega_1^2\omega_5^3 - 108c_s^2v_2^2\omega_1^3\omega_5^2 - 6c_s^2\omega_7^2\omega_1^2\omega_5^2 - 72v_2^2\omega_7\omega_1^3\omega_5^2 + 6c_s^4\omega_7\omega_1^3\omega_5^3 + 72v_2^4\omega_7^2\omega_1^3 - 18c_s^2v_2^2\omega_7^2\omega_1\omega_5^3 + 36c_s^2v_2^2\omega_7\omega_1^2\omega_5^2 - 5c_s^2\omega_7^2\omega_1^2\omega_5^3 + 108c_s^2v_2^2\omega_1^3\omega_5^3 - 12c_s^2\omega_7^2\omega_1^3 + 36v_2^2\omega_1^3\omega_5^2 + 12c_s^2\omega_7^2\omega_1^3\omega_5 + 252c_s^2v_2^2\omega_7^2\omega_1^3 + 36v_2^2\omega_1^2\omega_5^3 + 4v_2^4\omega_7^2\omega_1^3\omega_5^3 - c_s^2\omega_7^2\omega_1^3\omega_5^2 + 12c_s^4\omega_7\omega_1^2\omega_5^2 - 36v_2^2\omega_7\omega_1^2\omega_5^3 + 36v_2^2\omega_7\omega_1^3\omega_5 - 24c_s^4\omega_7^2\omega_1\omega_5^3 + 36v_2^4\omega_1^3\omega_5^3 - 99c_s^2v_2^2\omega_7\omega_1^3\omega_5^3 - 108c_s^2v_2^2\omega_1^2\omega_5^3 + 19v_2^4\omega_7^2\omega_1^3\omega_5^2 + 12c_s^2\omega_7^2\omega_1^2\omega_5 - 72v_2^2\omega_7^2\omega_1^3 +$

$198c_s^2v_2^2\omega_7\omega_1^3\omega_5^2 - 36v_2^4\omega_1^3\omega_5^2 + 12c_s^4\omega_7^2\omega_1^3 - 18c_s^4\omega_7\omega_1^2\omega_5^3 + 6c_s^2\omega_7\omega_1^3\omega_5^2 - 39v_2^4\omega_7\omega_1^3\omega_5^3 - 36c_s^2v_2^2\omega_7^2\omega_1^2\omega_5 + 12c_s^2v_2^2\omega_7^2\omega_1^3\omega_5^3 + 90v_2^2\omega_7^2\omega_1^3\omega_5 + 12c_s^4\omega_7\omega_1\omega_5^3 + 6v_2^2\omega_7^2\omega_1^2\omega_5^3 + 6c_s^4\omega_7^2\omega_1^2\omega_5^2 + 72v_2^4\omega_7\omega_1^3\omega_5^2 - 6c_s^2\omega_7\omega_1^3\omega_5^3 + 13c_s^4\omega_7^2\omega_1^2\omega_5^3 - 12c_s^4\omega_7^2\omega_1^3\omega_5 + 60c_s^2v_2^2\omega_7^2\omega_1^3\omega_5^2 - 4v_2^2\omega_7^2\omega_1^3\omega_5^3 + c_s^4\omega_7^2\omega_1^3\omega_5^2 - 306c_s^2v_2^2\omega_7^2\omega_1^3\omega_5 - 3c_s^2v_2^2\omega_7^2\omega_1^2\omega_5^3 - 12c_s^2\omega_7\omega_1^2\omega_5^2 + 36v_2^4\omega_7\omega_1^2\omega_5^3 + 6c_s^2\omega_7^2\omega_1\omega_5^3 - 36v_2^4\omega_7\omega_1^3\omega_5 + 12c_s^4\omega_7^2\omega_5^3 + 18c_s^2v_2^2\omega_7^2\omega_1^2\omega_5^2 + 36c_s^2v_2^2\omega_7\omega_1\omega_5^3 - c_s^4\omega_7^2\omega_1^3\omega_5^3 - 19v_2^2\omega_7^2\omega_1^3\omega_5^2 - 12c_s^4\omega_7^2\omega_1^2\omega_5 + 18c_s^2\omega_7\omega_1^2\omega_5^3)\frac{\rho}{12\omega_7^2\omega_1^3\omega_5^3}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D_x D_y^3} v_1} = (48\omega_3^2c_s^2v_1^2\omega_4^2\omega_1\omega_2^2 + 48\omega_3^2v_2^4\omega_4^2\omega_1^3 + 24\omega_3v_2^2\omega_4^2\omega_1^3\omega_2 - 18\omega_3^2c_s^2\omega_4\omega_1^3\omega_2^3 + 36\omega_3^2v_2^4\omega_4\omega_1^3\omega_2^2 + 162\omega_3^2c_s^2v_2^2\omega_1^3\omega_2^3 - 216\omega_3v_2^2\omega_4^2\omega_1^2\omega_2^3 + 40\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^2 - 36v_2^4\omega_4^2\omega_1^3\omega_2^2 - 492\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^2\omega_2^2 - 54\omega_3^2v_2^2\omega_1^3\omega_2^3 - 108\omega_3^2v_2^4\omega_1^2\omega_2^3 - 48\omega_3^2v_1^2\omega_4^2\omega_1\omega_2^2 - 40\omega_3^2c_s^2\omega_4^2\omega_1^3 + 240\omega_3^2v_2^2\omega_4^2\omega_1^2\omega_2^2 + 86\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^3 - 297\omega_3c_s^2v_2^2\omega_4^2\omega_1^3\omega_2^3 + 108\omega_3v_2^4\omega_4\omega_1^3\omega_2^3 - 28\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2 + 144\omega_3^2v_2^2v_1^2\omega_4^2\omega_1^3 + 72\omega_3^2v_2^2\omega_4\omega_1\omega_2^3 - 48\omega_3^2v_2^2\omega_4^2\omega_2^3 - 492\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^3\omega_2 + 54v_2^4\omega_4^2\omega_1^3\omega_2^2 + 174\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^2\omega_2^3 + 432\omega_3^2c_s^2v_2^2\omega_4^2\omega_2^3 - 117\omega_3^2v_2^4\omega_4\omega_1^3\omega_2^3 - 36\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^2 + 60\omega_3v_2^2\omega_4^2\omega_1^2\omega_2^2 - 12\omega_3^2c_s^2v_1^2\omega_4^2\omega_1\omega_2^3 + 16\omega_3c_s^4\omega_4^2\omega_1^3\omega_2 + 204\omega_3^2v_2^2\omega_4^2\omega_1^3\omega_2 + 72\omega_3^2c_s^4\omega_4\omega_1\omega_2^3 + 288\omega_3c_s^2v_2^2\omega_4^2\omega_1^3\omega_2^2 + 20\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^2 + 8\omega_3^2v_2^2\omega_4^2\omega_1^2\omega_2^3 - 36\omega_3v_2^4\omega_4\omega_1^3\omega_2^2 + 80\omega_3^2c_s^4\omega_4^2\omega_2^3 - 48\omega_3^2v_1^2\omega_4^2\omega_1\omega_2^3 - 180\omega_3v_2^4\omega_4\omega_1^2\omega_2^3 + 468\omega_3c_s^2v_2^2\omega_4^2\omega_1^2\omega_2^3 - 86\omega_3^2v_2^2\omega_4^2\omega_1^3\omega_2^2 - 6\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^3 - 56\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2 - 16\omega_3c_s^2\omega_4^2\omega_1\omega_2^3 - 96\omega_3^2v_2^2\omega_4^2\omega_1^3 - 72\omega_3c_s^2v_2^2\omega_4^2\omega_1^3\omega_2 - 96\omega_3c_s^2v_1^2\omega_4^2\omega_1\omega_2^3 + 54\omega_3^2v_2^4\omega_1^3\omega_2^3 + 144\omega_3^2v_2^2v_1^2\omega_4^2\omega_1\omega_2^2 + 264\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^3 + 32\omega_3^2c_s^4\omega_4^2\omega_1^3 + 168\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^3\omega_2^2 + 16\omega_3^2\omega_4^2\omega_1\omega_2^2 + 108\omega_3^2v_2^2\omega_1^2\omega_2^3 - 32\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^2 - 288\omega_3^2v_2^4\omega_4^2\omega_1\omega_2^3 + 117\omega_3v_2^2\omega_4^2\omega_1^3\omega_2^3 - 36\omega_3c_s^4\omega_4^2\omega_1^3\omega_2^2 - 324\omega_3^2c_s^2v_2^2\omega_1^2\omega_2^3 + 72\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^3 - 36\omega_3^2v_2^4\omega_4\omega_1^2\omega_2^2 + 576\omega_3^2v_2^2v_1^2\omega_4^2\omega_1\omega_2^3 + 192\omega_3^2v_2^4\omega_4^2\omega_2^3 - 24\omega_3v_2^4\omega_4^2\omega_1\omega_2^3 - 144\omega_3^2v_2^2\omega_4^2\omega_1^2\omega_2 - 2\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^2 - 24\omega_3^2v_2^2\omega_4^2\omega_1^3\omega_2^3 - 108\omega_3c_s^2v_2^2\omega_4^2\omega_1^2\omega_2^2 + 18\omega_3c_s^4\omega_4^2\omega_1^3\omega_2^3 - 108\omega_3v_2^2\omega_4^2\omega_1^3\omega_2^2 + 288\omega_3^2v_2^4\omega_4\omega_1^2\omega_2^3 + 8\omega_3^2c_s^2\omega_4^2\omega_2^3 + 96\omega_3^2v_2^4\omega_4^2\omega_1\omega_2^2 + 48\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^3 - 432\omega_3^2v_2^2v_1^2\omega_4^2\omega_2^3 + 264\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^2\omega_2 + 16\omega_3^2\omega_4^2\omega_1\omega_2^3 + 72\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^3\omega_2^3 - 72v_2^4\omega_4^2\omega_1^2\omega_2^3 + 48\omega_3c_s^2v_1^2\omega_4^2\omega_1^2\omega_2^2 + 36v_2^2\omega_4^2\omega_1^3\omega_2^2 - 288\omega_3^2v_2^2v_1^2\omega_4^2\omega_1^3\omega_2 - 144\omega_3^2v_2^2v_1^2\omega_4^2\omega_1^2\omega_2^3 + 24\omega_3^2v_1^2\omega_4^2\omega_1^2\omega_2 - 24\omega_3v_2^4\omega_4^2\omega_1^3\omega_2 + 216\omega_3v_2^4\omega_4^2\omega_1^2\omega_2^3 - 40\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^2 - 540\omega_3c_s^2v_2^2\omega_4\omega_1^2\omega_2^3 + 18\omega_3^2c_s^4\omega_4\omega_1^3\omega_2^3 - 36\omega_3^2v_2^2\omega_4\omega_1^3\omega_2^2 + 8\omega_3^2\omega_4^2\omega_1^3 - 108\omega_3v_2^2\omega_4\omega_1^3\omega_2^3 - 144\omega_3^2v_2^4\omega_4^2\omega_1^2\omega_2^2 - 36\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^3 - 72\omega_3^2v_2^4\omega_4\omega_1\omega_2^3 - 96\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^2\omega_2 + 36\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2 - 2\omega_3^2\omega_4^2\omega_1^2\omega_2^3 + 108\omega_3^2c_s^2v_2^2\omega_4\omega_1^3\omega_2^2 - 8\omega_3^2\omega_4^2\omega_1^3\omega_2 + 36\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^3 - 60\omega_3v_2^4\omega_4^2\omega_1^2\omega_2^2 + 117\omega_3^2v_2^2\omega_4\omega_1^3\omega_2^3 + 72\omega_3c_s^2v_2^2\omega_4^2\omega_1\omega_2^3 - 16\omega_3c_s^2\omega_4^2\omega_1^3\omega_2 - 216c_s^2v_2^2\omega_4^2\omega_1^2\omega_2^3 + 48\omega_3c_s^2v_1^2\omega_4^2\omega_1^3\omega_2 - 288\omega_3^2v_2^2v_1^2\omega_4^2\omega_1^2\omega_2^2 - 6\omega_3^2v_1^2\omega_4^2\omega_1^3\omega_2^2 - 54v_2^2\omega_4^2\omega_1^3\omega_2^3 + 72\omega_3c_s^2v_1^2\omega_4^2\omega_1^2\omega_2^3 - 297\omega_3^2c_s^2v_2^2\omega_4\omega_1^3\omega_2^3 - 24\omega_3^2v_1^2\omega_4^2\omega_1^3 - 8\omega_3^2\omega_4^2\omega_1^2\omega_2^2 + 24\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^3 - 72\omega_3^2c_s^2\omega_4\omega_1\omega_2^3 - 108\omega_3^2v_2^4\omega_4^2\omega_1^3\omega_2 - 12\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^3\omega_2^2 + 36\omega_3v_2^2\omega_4\omega_1^3\omega_2^2 - 12\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^2 + 40\omega_3^2v_2^4\omega_4^2\omega_1^2\omega_2^3 - 852\omega_3^2c_s^2v_2^2\omega_4^2\omega_1\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^2\omega_2 - 108\omega_3^2c_s^2v_2^2\omega_4\omega_1^2\omega_2^2 + 38\omega_3^2v_2^4\omega_4^2\omega_1^3\omega_2^2 + 12\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^2\omega_2^2 + 180\omega_3v_2^2\omega_4\omega_1^2\omega_2^3 + 16\omega_3c_s^4\omega_4^2\omega_1\omega_2^3 + 64\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2 - 12\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^3\omega_2 - 108c_s^2v_2^2\omega_4^2\omega_1^3\omega_2^2 + 16\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^2 + 96\omega_3^2v_2^2\omega_4^2\omega_1\omega_2^3 - 72\omega_3^2c_s^4\omega_4\omega_1^2\omega_2^3 + 36\omega_3^2v_2^2\omega_4\omega_1^2\omega_2^2 + 324\omega_3c_s^2v_2^2\omega_4\omega_1^3\omega_2^3 - 117\omega_3v_2^4\omega_4^2\omega_1^3\omega_2^3 + 48\omega_3^2v_1^2\omega_4^2\omega_2^3 + 36\omega_3c_s^2\omega_4^2\omega_1^3\omega_2^2 + 6\omega_3^2v_1^2\omega_4^2\omega_1^2\omega_2^3 + 144\omega_3^2v_1^2\omega_4^2\omega_1^2\omega_2 - 72\omega_3c_s^2v_1^2\omega_4^2\omega_1^3\omega_2^2 + 24\omega_3^2v_1^2\omega_4^2\omega_1^3\omega_2 + 24\omega_3^2c_s^2v_1^2\omega_4^2\omega_2^3 + 96\omega_3^2v_2^4\omega_4^2\omega_1^2\omega_2 + 24\omega_3v_2^2\omega_4^2\omega_1\omega_2^3 + 24\omega_3^2v_2^4\omega_4^2\omega_1^3\omega_2^3 + 24\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^2\omega_2^2 + 648\omega_3^2c_s^2v_2^2\omega_4\omega_1^2\omega_2^3 + 336\omega_3^2c_s^2v_2^2\omega_4^2\omega_1\omega_2^2 + 2\omega_3^2\omega_4^2\omega_1^3\omega_2^2 + 144\omega_3^2v_2^2v_1^2\omega_4^2\omega_1^3\omega_2^2 + 72v_2^2\omega_4^2\omega_1^2\omega_2^3 + 24\omega_3^2v_1^2\omega_4^2\omega_1^2\omega_2^2 - 16\omega_3^2\omega_4^2\omega_2^3 - 108\omega_3c_s^2v_2^2\omega_4\omega_1^3\omega_2^2 - 288\omega_3^2v_2^2\omega_4\omega_1^2\omega_2^3 - 18\omega_3c_s^2\omega_4^2\omega_1^3\omega_2^3 + 108\omega_3v_2^4\omega_4^2\omega_1^3\omega_2^2 - 144\omega_3^2v_2^2\omega_4^2\omega_1\omega_2^2 + 162c_s^2v_2^2\omega_4^2\omega_1^3\omega_2^3 - 172\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^3)\frac{\rho}{72\omega_3^2\omega_4^2\omega_1^3\omega_2^3}$

coefficient $C^{(2)}_{\mathrm{D_x D_y^3} v_2}$ at $\frac{\partial^4 v_2}{\partial x_1 \partial x_2^3}$:

$C^{(2),\mathrm{SRT}}_{\mathrm{D_x D_y^3} v_2} = 0$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D_x D_y^3} v_2} = (44c_s^2\omega_{10}^3\omega_5\omega_{15} - 17\omega_{10}^2\omega_5^2\omega_{15}^2 + 32c_s^2\omega_{10}\omega_5\omega_{15}^2 - 28v_2^2\omega_{10}^3\omega_{15} - 48v_2^2\omega_{10}^2\omega_5\omega_{15} + 25c_s^2\omega_{10}^2\omega_5^2\omega_{15}^2 - 24\omega_{10}\omega_5\omega_{15}^2 - 28\omega_{10}^3\omega_5\omega_{15} - 64v_2^2\omega_{10}\omega_5^2\omega_{15} + 28v_2^2\omega_{10}^2\omega_{15}^2 - 20c_s^2\omega_{10}^3\omega_{10}\omega_{15} - 43v_2^2\omega_{10}^3\omega_5^2\omega_{15} - 120v_2^2\omega_{10}\omega_5^2\omega_{15}^2 + 12\omega_{10}^3\omega_{15} + 56c_s^2\omega_{10}^2\omega_5^2\omega_{15} - 68v_2^2\omega_{10}^2\omega_5\omega_{15}^2 + 20c_s^2\omega_{10}^2\omega_{15}^2 - 12\omega_{10}^2\omega_{15}^2 - 40\omega_{10}^2\omega_5^2\omega_{15} + 43v_2^2\omega_{10}^2\omega_5^2\omega_{15}^2 - 16v_2^2\omega_{10}^2\omega_5^2 + 16c_s^2\omega_{10}^3\omega_5^2 - 8\omega_{10}^3\omega_5^2 + 16\omega_{10}^2\omega_5\omega_{15} - 32c_s^2\omega_{10}\omega_5^2\omega_{15} + 68v_2^2\omega_{10}^3\omega_5\omega_{15} + 64v_2^2\omega_{10}\omega_5\omega_{15}^2 - 16v_2^2\omega_{10}^3\omega_5 - 32\omega_5^2\omega_{15}^2 - 16c_s^2\omega_{10}^2\omega_5\omega_{15} + 24\omega_{10}\omega_5^2\omega_{15} + 48c_s^2\omega_5^2\omega_{15}^2 + 48\omega_{10}\omega_5^2\omega_{15}^2 - 44c_s^2\omega_{10}^2\omega_5\omega_{15}^2 + 8\omega_{10}^2\omega_5^2 + 17\omega_{10}^3\omega_5^2\omega_{15} - 16c_s^2\omega_{10}^2\omega_5^2 + 16v_2^2\omega_{10}^3\omega_5^2 - 25c_s^2\omega_{10}^3\omega_5^2\omega_{15} - 72c_s^2\omega_{10}\omega_5^2\omega_{15}^2 + 80v_2^2\omega_5^2\omega_{15}^2 + 28\omega_{10}^2\omega_5\omega_{15}^2 + 8\omega_{10}^3\omega_5 + 104v_2^2\omega_{10}^2\omega_5^2\omega_{15} - 16c_s^2\omega_{10}^3\omega_5)\frac{v_2 v_1 \rho}{4\omega_{10}^3\omega_5^2\omega_{15}^2}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D_x D_y^3} v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D_x D_y^3} v_2}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D_x D_y^3} v_2} = 0$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D_x D_y^3} v_2} = 0$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D_x D_y^3} v_2} = 0$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D_x D_y^3} v_2} = (36c_s^2\omega_1\omega_2^3 - 120\omega_3v_2^2\omega_1\omega_2^2 + 6\omega_3\omega_1^2\omega_2 + 84\omega_3c_s^2\omega_1^3 - 12\omega_1\omega_2^3 - 9\omega_3v_1^2\omega_1^2\omega_2^2 - 66\omega_3v_2^2\omega_1\omega_2^3 + 9v_1^2\omega_1^3\omega_2^2 - 5\omega_3\omega_1^3\omega_2^2 - 5\omega_3v_1^2\omega_1^2\omega_2^3 + 48\omega_3v_2^2\omega_1^3 - 18\omega_3v_1^2\omega_1^3\omega_2 - 9v_1^2\omega_1^2\omega_2^3 - 6v_1^2\omega_1^3\omega_2 + 48\omega_3\omega_1^3\omega_2 + 5\omega_3v_1^2\omega_1^3\omega_2^2 + 5\omega_3\omega_1^2\omega_2^3 - 54\omega_3c_s^2\omega_1\omega_2^2 + 84\omega_3v_2^2\omega_2^3 - 51\omega_3\omega_1^2\omega_2^2 + 6\omega_3v_1^2\omega_1^2\omega_2 - 6v_1^2\omega_1^2\omega_2^2 - 12\omega_3c_s^2\omega_2^3 + 27\omega_3c_s^2\omega_1\omega_2^3 + 42\omega_3\omega_1\omega_2^2 - 9\omega_1^3\omega_2^2 + 27c_s^2\omega_1^3\omega_2^2 - 12\omega_3v_2^2\omega_1^2\omega_2 - 108\omega_3c_s^2\omega_1^3\omega_2 - 12\omega_3\omega_2^3 - 15\omega_3c_s^2\omega_1^2\omega_2^3 + 12v_1^2\omega_1\omega_2^3 - 24\omega_3v_1^2\omega_2^3 + 3\omega_3\omega_1\omega_2^3 + 81\omega_3c_s^2\omega_1^2\omega_2^2 - 18\omega_3c_s^2\omega_1^2\omega_2 + 12\omega_3v_1^2\omega_1^3 - 66\omega_3v_2^2\omega_1^3\omega_2 - 18c_s^2\omega_1^2\omega_2^2 + 27\omega_3v_1^2\omega_1\omega_2^3 + 6\omega_1^2\omega_2^2 + 132\omega_3v_2^2\omega_1^2\omega_2^2 - 18c_s^2\omega_1^3\omega_2 - 27c_s^2\omega_1^2\omega_2^3 + 15\omega_3c_s^2\omega_1^3\omega_2^2 + 6\omega_3v_1^2\omega_1\omega_2^2 + 9\omega_1^2\omega_2^3 + 6\omega_1^3\omega_2 - 36\omega_3\omega_1^3)\frac{v_2 v_1 \rho}{18\omega_3\omega_1^3\omega_2^3}$

coefficient $C^{(2)}_{\mathrm{D_y^4}\rho}$ at $\frac{\partial^4 \rho}{\partial x_2^4}$:

$C^{(2),\mathrm{SRT}}_{\mathrm{D_y^4}\rho} = (12 + 672c_s^2v_2^2 - 5c_s^4\omega^3 + 90v_2^4\omega^2 + 144v_2^4 - 9v_2^4\omega^3 + 82c_s^4\omega^2 + 144c_s^4 - 216c_s^4\omega - \omega^3 + 8\omega^2 - 216v_2^4\omega - 18\omega - 34c_s^2v_2^2\omega^3 + 10v_2^2\omega^3 - 78c_s^2\omega^2 + 404c_s^2v_2^2\omega^2 + 6c_s^2\omega^3 - 98v_2^2\omega^2 + 234v_2^2\omega - 1008c_s^2v_2^2\omega + 198c_s^2\omega - 132c_s^2 - 156v_2^2)\frac{v_2}{12\omega^3}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}^4_y\rho} = (12 + 8\omega_{10}^2 + 672c_s^2v_2^2 - 216v_2^4\omega_{10} - 216c_s^4\omega_{10} + 144v_2^4 - \omega_{10}^3 + 144c_s^4 - 18\omega_{10} + 82c_s^4\omega_{10}^2 - 9v_2^4\omega_{10}^3 + 90v_2^4\omega_{10}^2 - 5c_s^4\omega_{10}^3 + 198c_s^2\omega_{10} + 234v_2^2\omega_{10} - 1008c_s^2v_2^2\omega_{10} + 404c_s^2v_2^2\omega_{10}^2 - 98v_2^2\omega_{10}^2 + 6c_s^2\omega_{10}^3 - 34c_s^2v_2^2\omega_{10}^3 - 132c_s^2 - 78c_s^2\omega_{10}^2 + 10v_2^2\omega_{10}^3 - 156v_2^2)\frac{v_2}{12\omega_{10}^3}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}^4_y\rho} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}^4_y\rho}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}^4_y\rho} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}^4_y\rho}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}^4_y\rho} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}^4_y\rho}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}^4_y\rho} = (12 - 34c_s^2v_2^2\omega_5^3 + 672c_s^2v_2^2 - 78c_s^2\omega_5^2 + 10v_2^2\omega_5^3 + 404c_s^2v_2^2\omega_5^2 + 144v_2^4 - 98v_2^2\omega_5^2 + 6c_s^2\omega_5^3 + 144c_s^4 + 234v_2^2\omega_5 - 1008c_s^2v_2^2\omega_5 + 198c_s^2\omega_5 + 90v_2^4\omega_5^2 - 5c_s^4\omega_5^3 - 18\omega_5 + 82c_s^4\omega_5^2 - 9v_2^4\omega_5^3 - \omega_5^3 - 216c_s^4\omega_5 - 216v_2^4\omega_5 + 8\omega_5^2 - 132c_s^2 - 156v_2^2)\frac{v_2}{12\omega_5^3}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}^4_y\rho} = (-8c_s^2\omega_1\omega_2^3 - 176\omega_3v_2^2\omega_1\omega_2^2 + 72\omega_3c_s^4\omega_1\omega_2^2 + 8\omega_3\omega_1^2\omega_2 - 52\omega_3c_s^2\omega_1^3 - 3\omega_3\omega_1^3\omega_2^3 + 404\omega_3c_s^2v_2^2\omega_1^3\omega_2^2 + 328\omega_3v_2^2\omega_1\omega_2^3 + 440\omega_3c_s^2v_2^2\omega_1^2\omega_2 - 102\omega_3c_s^2v_2^2\omega_1^3\omega_2^3 + 8\omega_3\omega_1^3\omega_2^2 - 28\omega_3v_2^2\omega_1^3 - 372\omega_3c_s^4\omega_1\omega_2^3 - 1088\omega_3c_s^2v_2^2\omega_1^2\omega_2^2 + 168\omega_3v_2^4\omega_1\omega_2^2 + 24c_s^4\omega_1\omega_2^3 - 10\omega_3\omega_1^3\omega_2 + 16\omega_3\omega_1^2\omega_2^3 - 80\omega_3c_s^2\omega_1\omega_2^2 - 160\omega_3v_2^2\omega_2^3 - 16\omega_3\omega_1^2\omega_2^2 - 464\omega_3c_s^2v_2^2\omega_1^3\omega_2 - 300\omega_3v_2^4\omega_1\omega_2^3 + 808\omega_3c_s^2v_2^2\omega_1^2\omega_2^3 - 184\omega_3c_s^2\omega_2^3 + 320\omega_3c_s^2\omega_1\omega_2^3 + 8c_s^2v_2^2\omega_1\omega_2^3 - 15\omega_3c_s^4\omega_1^3\omega_2^3 + 8\omega_3\omega_1\omega_2^2 + 72\omega_3c_s^4\omega_1^2\omega_2 + 180\omega_3v_2^4\omega_1^2\omega_2^3 - 1472\omega_3c_s^2v_2^2\omega_1\omega_2^3 + 760\omega_3c_s^2v_2^2\omega_2^3 - 84\omega_3v_2^4\omega_1^3\omega_2 - 48c_s^4\omega_1^2\omega_2^2 - 104\omega_3v_2^2\omega_1^2\omega_2 + 30\omega_3v_2^2\omega_1^3\omega_2^3 + 8c_s^2v_2^2\omega_1^3\omega_2 + 24\omega_3v_2^4\omega_1^3 + 122\omega_3c_s^2\omega_1^3\omega_2 + 16\omega_3\omega_2^3 - 156\omega_3c_s^2\omega_1^2\omega_2^3 + 656\omega_3c_s^2v_2^2\omega_1\omega_2^2 - 264\omega_3v_2^4\omega_1^2\omega_2^2 + 24c_s^4\omega_1^3\omega_2 - 28\omega_3\omega_1\omega_2^3 + 82\omega_3c_s^4\omega_1^3\omega_2^2 + 72\omega_3c_s^4\omega_1^3 - 16c_s^2v_2^2\omega_1^2\omega_2^2 + 152\omega_3c_s^2\omega_1^2\omega_2^2 - 98\omega_3v_2^2\omega_1^3\omega_2^2 - 80\omega_3c_s^2\omega_1^2\omega_2 + 18\omega_3c_s^2\omega_1^3\omega_2^3 + 94\omega_3v_2^2\omega_1^3\omega_2 + 16c_s^2\omega_1^2\omega_2^2 - 196\omega_3v_2^2\omega_1^2\omega_2^3 - 27\omega_3v_2^4\omega_1^3\omega_2^3 + 96\omega_3v_2^4\omega_1^2\omega_2 + 216\omega_3c_s^4\omega_2^3 + 164\omega_3c_s^4\omega_1^2\omega_2^3 - 156\omega_3c_s^4\omega_1^3\omega_2 + 280\omega_3v_2^2\omega_1^2\omega_2^2 - 8c_s^2\omega_1^3\omega_2 - 78\omega_3c_s^2\omega_1^3\omega_2^2 + 160\omega_3c_s^2v_2^2\omega_1^3 - 120\omega_3c_s^4\omega_1^2\omega_2^2 + 4\omega_3\omega_1^3 + 90\omega_3v_2^4\omega_1^3\omega_2^2 + 144\omega_3v_2^4\omega_2^3)\frac{v_2}{36\omega_3\omega_1^3\omega_2^3}$

coefficient $C^{(2)}_{\mathrm{D}^4_y v_2}$ **at** $\frac{\partial^4 v_2}{\partial x_2^4}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}^4_y v_2} = (12 + 432c_s^2v_2^2 - c_s^4\omega^3 + 310v_2^4\omega^2 + 504v_2^4 - 29v_2^4\omega^3 + 14c_s^4\omega^2 + 24c_s^4 - 36c_s^4\omega - \omega^3 + 8\omega^2 - 756v_2^4\omega - 18\omega - 18c_s^2v_2^2\omega^3 + 14v_2^2\omega^3 - 22c_s^2\omega^2 + 252c_s^2v_2^2\omega^2 + 2c_s^2\omega^3 - 154v_2^2\omega^2 + 378v_2^2\omega - 648c_s^2v_2^2\omega + 54c_s^2\omega - 36c_s^2 - 252v_2^2)\frac{\rho}{12\omega^3}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}^4_y v_2} = (12 + 8\omega_{10}^2 + 432c_s^2v_2^2 - 756v_2^4\omega_{10} - 36c_s^4\omega_{10} + 504v_2^4 - \omega_{10}^3 + 24c_s^4 - 18\omega_{10} + 14c_s^4\omega_{10}^2 - 29v_2^4\omega_{10}^3 + 310v_2^4\omega_{10}^2 - c_s^4\omega_{10}^3 + 54c_s^2\omega_{10} + 378v_2^2\omega_{10} - 648c_s^2v_2^2\omega_{10} + 252c_s^2v_2^2\omega_{10}^2 - 154v_2^2\omega_{10}^2 + 2c_s^2\omega_{10}^3 - 18c_s^2v_2^2\omega_{10}^3 - 36c_s^2 - 22c_s^2\omega_{10}^2 + 14v_2^2\omega_{10}^3 - 252v_2^2)\frac{\rho}{12\omega_{10}^3}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}^4_y v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}^4_y v_2}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}^4_y v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}^4_y v_2}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}^4_y v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}^4_y v_2}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}^4_y v_2} = (12 - 18c_s^2v_2^2\omega_5^3 + 432c_s^2v_2^2 - 22c_s^2\omega_5^2 + 14v_2^2\omega_5^3 + 252c_s^2v_2^2\omega_5^2 + 504v_2^4 - 154v_2^2\omega_5^2 + 2c_s^2\omega_5^3 + 24c_s^4 + 378v_2^2\omega_5 - 648c_s^2v_2^2\omega_5 + 54c_s^2\omega_5 + 310v_2^4\omega_5^2 - c_s^4\omega_5^3 - 18\omega_5 + 14c_s^4\omega_5^2 - 29v_2^4\omega_5^3 - \omega_5^3 - 36c_s^4\omega_5 - 756v_2^4\omega_5 + 8\omega_5^2 - 36c_s^2 - 252v_2^2)\frac{\rho}{12\omega_5^3}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}^4_y v_2} = (-8c_s^2\omega_1\omega_2^3 - 240\omega_3v_2^2\omega_1\omega_2^2 + 8\omega_3c_s^4\omega_1\omega_2^2 + 8\omega_3\omega_1^2\omega_2 - 20\omega_3c_s^2\omega_1^3 - 3\omega_3\omega_1^3\omega_2^3 + 252\omega_3c_s^2v_2^2\omega_1^3\omega_2^2 + 552\omega_3v_2^2\omega_1\omega_2^3 + 264\omega_3c_s^2v_2^2\omega_1^2\omega_2 - 54\omega_3c_s^2v_2^2\omega_1^3\omega_2^3 + 8\omega_3\omega_1^3\omega_2^2 - 60\omega_3v_2^2\omega_1^3 - 68\omega_3c_s^4\omega_1\omega_2^3 - 576\omega_3c_s^2v_2^2\omega_1^2\omega_2^2 + 552\omega_3v_2^4\omega_1\omega_2^2 + 8c_s^4\omega_1\omega_2^3 - 10\omega_3\omega_1^3\omega_2 + 16\omega_3\omega_1^2\omega_2^3 - 16\omega_3c_s^2\omega_1\omega_2^2 - 288\omega_3v_2^2\omega_2^3 - 16\omega_3\omega_1^2\omega_2^2 - 360\omega_3c_s^2v_2^2\omega_1^3\omega_2 - 1068\omega_3v_2^4\omega_1\omega_2^3 + 504\omega_3c_s^2v_2^2\omega_1^2\omega_2^3 - 56\omega_3c_s^2\omega_2^3 + 96\omega_3c_s^2\omega_1\omega_2^3 + 24c_s^2v_2^2\omega_1\omega_2^3 - 3\omega_3c_s^4\omega_1^3\omega_2^3 + 8\omega_3\omega_1\omega_2^2 + 8\omega_3c_s^4\omega_1^2\omega_2 + 620\omega_3v_2^4\omega_1^2\omega_2^3 - 1008\omega_3c_s^2v_2^2\omega_1\omega_2^3 + 552\omega_3c_s^2v_2^2\omega_2^3 - 312\omega_3v_2^4\omega_1^3\omega_2 - 16c_s^4\omega_1^2\omega_2^2 - 168\omega_3v_2^2\omega_1^2\omega_2 + 42\omega_3v_2^2\omega_1^3\omega_2^3 + 24c_s^2v_2^2\omega_1^3\omega_2 + 96\omega_3v_2^4\omega_1^3 + 42\omega_3c_s^2\omega_1^3\omega_2 + 16\omega_3\omega_2^3 - 44\omega_3c_s^2\omega_1^2\omega_2^3 + 336\omega_3c_s^2v_2^2\omega_1\omega_2^2 - 888\omega_3v_2^4\omega_1^2\omega_2^2 + 8c_s^4\omega_1^3\omega_2 - 28\omega_3\omega_1\omega_2^3 + 14\omega_3c_s^4\omega_1^3\omega_2^2 + 16\omega_3c_s^4\omega_1^3 - 48c_s^2v_2^2\omega_1^2\omega_2^2 + 24\omega_3c_s^2\omega_1^2\omega_2^2 - 154\omega_3v_2^2\omega_1^3\omega_2^2 - 16\omega_3c_s^2\omega_1^2\omega_2 + 6\omega_3c_s^2\omega_1^3\omega_2^3 + 174\omega_3v_2^2\omega_1^3\omega_2 + 16c_s^2\omega_1^2\omega_2^2 - 308\omega_3v_2^2\omega_1^2\omega_2^3 - 87\omega_3v_2^4\omega_1^3\omega_2^3 + 336\omega_3v_2^4\omega_1^2\omega_2 + 40\omega_3c_s^4\omega_2^3 + 28\omega_3c_s^4\omega_1^2\omega_2^3 - 32\omega_3c_s^4\omega_1^3\omega_2 + 408\omega_3v_2^2\omega_1^2\omega_2^2 - 8c_s^2\omega_1^3\omega_2 - 22\omega_3c_s^2\omega_1^3\omega_2^2 + 144\omega_3c_s^2v_2^2\omega_1^3 - 8\omega_3c_s^4\omega_1^2\omega_2^2 + 4\omega_3\omega_1^3 + 310\omega_3v_2^4\omega_1^3\omega_2^2 + 528\omega_3v_2^4\omega_2^3)\frac{\rho}{36\omega_3\omega_1^3\omega_2^3}$

coefficient $C^{(2)}_{\mathrm{D}^3_x\mathrm{D}_z\rho}$ **at** $\frac{\partial^4\rho}{\partial x_1^3\partial x_3}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}^3_x\mathrm{D}_z\rho} = 0$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}^3_x\mathrm{D}_z\rho} = (4\omega_6\omega_{13}\omega_7\omega_5^2\omega_9^2\omega_{12}^2 - 4\omega_6v_1^2\omega_{13}\omega_7\omega_{14}\omega_5\omega_9\omega_{12}^2 + 12c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2 - 4\omega_6v_1^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_9^2\omega_{12} +$

$4\omega_6\omega_{13}\omega_{14}\omega_5^2\omega_9\omega_{12}^2 - 4\omega_6\omega_{13}\omega_7\omega_{14}\omega_5^2\omega_9\omega_{12}^2 + 9\omega_6 c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 + 2\omega_6\omega_{13}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 - 2\omega_6\omega_{13}\omega_7\omega_8\omega_5^2\omega_9^2\omega_{12}^2 -$
$12c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 - 9\omega_6 c_s^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 - 4\omega_6 v_1^2\omega_{13}\omega_7\omega_8\omega_5\omega_9^2\omega_{12}^2 + 4\omega_6 v_1^2\omega_{13}\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2 - 3\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 +$
$6\omega_6 c_s^2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12} + 2\omega_6\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 + 6\omega_6 c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2 + 4v_1^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 + 12\omega_6 c_s^2\omega_{13}\omega_7\omega_8\omega_5\omega_9^2\omega_{12} +$
$4\omega_6 v_1^2\omega_{13}\omega_5^2\omega_9^2\omega_{12}^2 - 12\omega_6 c_s^2\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2 - 6\omega_6 c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_{12}^2 - 4\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 - 4v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 -$
$2\omega_6 v_1^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12} - 12\omega_6 c_s^2\omega_{13}\omega_7\omega_8\omega_5\omega_9^2\omega_{12}^2 - 12\omega_6 c_s^2\omega_{13}\omega_{14}\omega_5^2\omega_9\omega_{12}^2 - 3\omega_6 v_1^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 - 4\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_{12}^2 +$
$24\omega_6 c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} - 12\omega_6 c_s^2\omega_{13}\omega_7\omega_5^2\omega_9^2\omega_{12}^2 + 4\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 - 4\omega_6\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2 - 12\omega_6 c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_9^2\omega_{12} +$
$4\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2 - 4\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_9\omega_{12}^2 - 12\omega_6 c_s^2\omega_{13}\omega_7\omega_{14}\omega_5\omega_9\omega_{12}^2 - 6\omega_6 c_s^2\omega_{13}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 - 8\omega_6 v_1^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2 -$
$4\omega_6 v_1^2\omega_{13}\omega_7\omega_5^2\omega_9^2\omega_{12}^2 - 2\omega_6\omega_7\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 + 2\omega_6\omega_{13}\omega_7\omega_8\omega_5^2\omega_9^2\omega_{12} - 4\omega_6 v_1^2\omega_{13}\omega_{14}\omega_5^2\omega_9\omega_{12}^2 - 2\omega_6 v_1^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_{12}^2 -$
$4\omega_6 v_1^2\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2 + 4\omega_6 v_1^2\omega_{13}\omega_7\omega_8\omega_5\omega_9^2\omega_{12} + 4\omega_6\omega_{13}\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} - 2\omega_6 v_1^2\omega_{13}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 + 12c_s^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 +$
$2\omega_6 v_1^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2 + 2\omega_6 v_1^2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12} - 4v_1^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 - 8\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} + 12\omega_6 c_s^2\omega_{13}\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2 +$
$12\omega_6 c_s^2\omega_{13}\omega_7\omega_5\omega_9^2\omega_{12}^2 - 4\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 + 3\omega_6\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 - 4\omega_6\omega_{13}\omega_5^2\omega_9^2\omega_{12}^2 - 6\omega_6 c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12} +$
$4v_1^2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 + 4\omega_6 v_1^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2 + 4\omega_6 v_1^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_{12}^2 + 2\omega_6 v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 + 6\omega_6 c_s^2\omega_{13}\omega_7\omega_8\omega_5^2\omega_9^2\omega_{12}^2 -$
$4\omega_6 v_1^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2 + 12\omega_6 c_s^2\omega_{13}\omega_7\omega_{14}\omega_5^2\omega_9\omega_{12}^2 - 4\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 + 4\omega_6 v_1^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_9\omega_{12}^2 + 2\omega_6 v_1^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 +$
$6\omega_6 c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 - 2\omega_6 v_1^2\omega_{13}\omega_7\omega_8\omega_5^2\omega_9^2\omega_{12} + 12\omega_6 c_s^2\omega_{13}\omega_5^2\omega_9^2\omega_{12}^2 + 4\omega_6\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2 - 4\omega_6\omega_{13}\omega_7\omega_8\omega_5\omega_9^2\omega_{12} +$
$3\omega_6 v_1^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 + 2\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_{12}^2 + 4\omega_6 v_1^2\omega_{13}\omega_7\omega_5\omega_9^2\omega_{12}^2 + 2\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12} - 2\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2 -$
$6\omega_6 c_s^2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 - 4\omega_6 v_1^2\omega_{13}\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} + 4v_1^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2 + 4\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 - 2\omega_6\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12} -$
$12c_s^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2 + 12\omega_6 c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_9\omega_{12}^2 + 4\omega_6\omega_{13}\omega_7\omega_{14}\omega_5\omega_9\omega_{12}^2 - 12c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 + 4\omega_6 v_1^2\omega_{13}\omega_7\omega_{14}\omega_5^2\omega_9\omega_{12}^2 -$
$4\omega_6\omega_{13}\omega_7\omega_5\omega_9^2\omega_{12}^2 + 4\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_9^2\omega_{12} - 12\omega_6 c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2 + 2\omega_6 v_1^2\omega_{13}\omega_7\omega_8\omega_5^2\omega_9^2\omega_{12}^2 + 12\omega_6 c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_{12}^2 +$
$12\omega_6 c_s^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 + 4\omega_6\omega_{13}\omega_7\omega_8\omega_5\omega_9^2\omega_{12}^2 + 12\omega_6 c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2 + 24\omega_6 c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2 - 4v_1^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2 -$
$4\omega_6\omega_{13}\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2 + 8\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2 - 12\omega_6 c_s^2\omega_{13}\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} - 2\omega_6 v_1^2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 - 2\omega_6\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 +$
$8\omega_6 v_1^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} + 4\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2 - 6\omega_6 c_s^2\omega_{13}\omega_7\omega_8\omega_5^2\omega_9^2\omega_{12} + 6\omega_6 c_s^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2)\frac{v_3 v_2 v_1}{4\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x^3\mathrm{D}_z\rho} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x^3\mathrm{D}_z\rho}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x^3\mathrm{D}_z\rho} = 0$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x^3\mathrm{D}_z\rho} = 0$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x^3\mathrm{D}_z\rho} = 0$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x^3\mathrm{D}_z\rho} = (-\omega_1 + v_3^2\omega_1 - 3c_s^2\omega_2 + \omega_2 + 3c_s^2\omega_1 - v_3^2\omega_2)\frac{v_3 v_2 v_1}{12\omega_1\omega_2}$

coefficient $C^{(2)}_{\mathrm{D}_x^3\mathrm{D}_z v_1}$ **at** $\frac{\partial^4 v_1}{\partial x_1^3\partial x_3}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x^3\mathrm{D}_z v_1} = 0$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x^3\mathrm{D}_z v_1} = (4\omega_6\omega_{13}\omega_7\omega_5^2\omega_9^2\omega_{12}^2 - 12\omega_6 v_1^2\omega_{13}\omega_7\omega_{14}\omega_5\omega_9\omega_{12}^2 + 4c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2 - 12\omega_6 v_1^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_9^2\omega_{12} +$
$4\omega_6\omega_{13}\omega_{14}\omega_5^2\omega_9\omega_{12}^2 - 4\omega_6\omega_{13}\omega_7\omega_{14}\omega_5^2\omega_9\omega_{12}^2 + 3\omega_6 c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 + 2\omega_6\omega_{13}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 - 2\omega_6\omega_{13}\omega_7\omega_8\omega_5^2\omega_9^2\omega_{12}^2 -$
$4c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 - 3\omega_6 c_s^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 - 12\omega_6 v_1^2\omega_{13}\omega_7\omega_8\omega_5\omega_9^2\omega_{12}^2 + 12\omega_6 v_1^2\omega_{13}\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2 - 3\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 +$
$2\omega_6 c_s^2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12} + 2\omega_6\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 + 2\omega_6 c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2 + 12v_1^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 + 4\omega_6 c_s^2\omega_{13}\omega_7\omega_8\omega_5\omega_9^2\omega_{12} +$
$12\omega_6 v_1^2\omega_{13}\omega_5^2\omega_9^2\omega_{12}^2 - 4\omega_6 c_s^2\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2 - 2\omega_6 c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_{12}^2 - 4\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 - 12v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 -$
$6\omega_6 v_1^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12} - 4\omega_6 c_s^2\omega_{13}\omega_7\omega_8\omega_5\omega_9^2\omega_{12}^2 - 4\omega_6 c_s^2\omega_{13}\omega_{14}\omega_5^2\omega_9\omega_{12}^2 - 9\omega_6 v_1^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 - 4\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_{12}^2 +$
$8\omega_6 c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} - 4\omega_6 c_s^2\omega_{13}\omega_7\omega_5^2\omega_9^2\omega_{12}^2 + 4\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 - 4\omega_6\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2 - 4\omega_6 c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_9^2\omega_{12} +$
$4\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2 - 4\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_9\omega_{12}^2 - 4\omega_6 c_s^2\omega_{13}\omega_7\omega_{14}\omega_5\omega_9\omega_{12}^2 - 2\omega_6 c_s^2\omega_{13}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 - 24\omega_6 v_1^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2 -$
$12\omega_6 v_1^2\omega_{13}\omega_7\omega_5^2\omega_9^2\omega_{12}^2 - 2\omega_6\omega_7\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 + 2\omega_6\omega_{13}\omega_7\omega_8\omega_5^2\omega_9^2\omega_{12} - 12\omega_6 v_1^2\omega_{13}\omega_{14}\omega_5^2\omega_9\omega_{12}^2 - 6\omega_6 v_1^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_{12}^2 -$
$12\omega_6 v_1^2\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2 + 12\omega_6 v_1^2\omega_{13}\omega_7\omega_8\omega_5\omega_9^2\omega_{12} + 4\omega_6\omega_{13}\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} - 6\omega_6 v_1^2\omega_{13}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 + 4c_s^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 +$
$6\omega_6 v_1^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2 + 6\omega_6 v_1^2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12} - 12v_1^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 - 8\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} + 4\omega_6 c_s^2\omega_{13}\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2 +$
$4\omega_6 c_s^2\omega_{13}\omega_7\omega_5\omega_9^2\omega_{12}^2 - 4\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2 + 3\omega_6\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 - 4\omega_6\omega_{13}\omega_5^2\omega_9^2\omega_{12}^2 - 2\omega_6 c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12} +$
$12v_1^2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 + 12\omega_6 v_1^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2 + 12\omega_6 v_1^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_{12}^2 + 6\omega_6 v_1^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 + 2\omega_6 c_s^2\omega_{13}\omega_7\omega_8\omega_5^2\omega_9^2\omega_{12}^2 -$
$12\omega_6 v_1^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2 + 4\omega_6 c_s^2\omega_{13}\omega_7\omega_{14}\omega_5^2\omega_9\omega_{12}^2 - 4\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 + 12\omega_6 v_1^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_9\omega_{12}^2 + 6\omega_6 v_1^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 +$
$2\omega_6 c_s^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 - 6\omega_6 v_1^2\omega_{13}\omega_7\omega_8\omega_5^2\omega_9^2\omega_{12} + 4\omega_6 c_s^2\omega_{13}\omega_5^2\omega_9^2\omega_{12}^2 + 4\omega_6\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2 - 4\omega_6\omega_{13}\omega_7\omega_8\omega_5\omega_9^2\omega_{12} +$
$9\omega_6 v_1^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 + 2\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_{12}^2 + 12\omega_6 v_1^2\omega_{13}\omega_7\omega_5\omega_9^2\omega_{12}^2 + 2\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12} - 2\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2 -$
$2\omega_6 c_s^2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 - 12\omega_6 v_1^2\omega_{13}\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} + 12v_1^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2 + 4\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 - 2\omega_6\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12} -$
$4c_s^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2 + 4\omega_6 c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_9\omega_{12}^2 + 4\omega_6\omega_{13}\omega_7\omega_{14}\omega_5\omega_9\omega_{12}^2 - 4c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 + 12\omega_6 v_1^2\omega_{13}\omega_7\omega_{14}\omega_5^2\omega_9\omega_{12}^2 -$
$4\omega_6\omega_{13}\omega_7\omega_5\omega_9^2\omega_{12}^2 + 4\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_9^2\omega_{12} - 4\omega_6 c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2 + 6\omega_6 v_1^2\omega_{13}\omega_7\omega_8\omega_5^2\omega_9^2\omega_{12}^2 + 4\omega_6 c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_{12}^2 +$
$4\omega_6 c_s^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2 + 4\omega_6\omega_{13}\omega_7\omega_8\omega_5\omega_9^2\omega_{12}^2 + 4c_s^2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 - 8\omega_6 c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2 - 12v_1^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2 -$
$4\omega_6\omega_{13}\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2 + 8\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12}^2 - 4\omega_6 c_s^2\omega_{13}\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} - 6\omega_6 v_1^2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2 - 2\omega_6\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 +$
$24\omega_6 v_1^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} + 4\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2 - 2\omega_6 c_s^2\omega_{13}\omega_7\omega_8\omega_5^2\omega_9^2\omega_{12} + 2\omega_6 c_s^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12}^2)\frac{v_3 v_2\rho}{4\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x^3\mathrm{D}_z v_1} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x^3\mathrm{D}_z v_1}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x^3\mathrm{D}_z v_1} = 0$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x^3\mathrm{D}_z v_1} = 0$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x^3\mathrm{D}_z v_1} = 0$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x^3\mathrm{D}_z v_1} = (-\omega_1 + v_3^2\omega_1 - 3c_s^2\omega_2 + \omega_2 + 3c_s^2\omega_1 - v_3^2\omega_2)\frac{v_3 v_2 \rho}{36\omega_1\omega_2}$

coefficient $C^{(2)}_{\mathrm{D}_x^3\mathrm{D}_z v_2}$ **at** $\frac{\partial^4 v_2}{\partial x_1^3 \partial x_3}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x^3\mathrm{D}_z v_2} = 0$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x^3\mathrm{D}_z v_2} = (-2v_1^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2 - 8c_s^2\omega_7^2\omega_{14}\omega_8^2\omega_{12}^2 + \omega_7^2\omega_{14}\omega_8^2\omega_5^3\omega_{12} - v_1^2\omega_7\omega_{14}\omega_8\omega_5^3\omega_{12}^2 + \omega_7^2\omega_8^2\omega_5^3\omega_{12} - 2c_s^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}^2 + 2c_s^2\omega_7^2\omega_8^2\omega_5^2\omega_{12} - 2c_s^2\omega_7^2\omega_{14}\omega_5^3\omega_{12}^2 - \omega_7\omega_{14}\omega_8^2\omega_5^2\omega_{12}^2 - 2c_s^2\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_{12} + 5c_s^2\omega_7^2\omega_{14}\omega_8\omega_5^3\omega_{12}^2 - 2\omega_7\omega_8\omega_5^3\omega_{12}^2 + c_s^2\omega_7^2\omega_8^2\omega_5^3\omega_{12}^2 + 2v_1^2\omega_7^2\omega_8\omega_5^2\omega_{12}^2 - v_1^2\omega_7\omega_8^2\omega_5^3\omega_{12}^2 + \omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}^2 + v_1^2\omega_7^2\omega_{14}\omega_8^2\omega_5^3 + 2\omega_7^2\omega_8^2\omega_5^2\omega_{12}^2 - 7c_s^2\omega_7\omega_{14}\omega_8\omega_5^3\omega_{12}^2 + v_1^2\omega_7^2\omega_{14}\omega_8\omega_5^3\omega_{12}^2 - \omega_7\omega_{14}\omega_8^2\omega_5^3\omega_{12} - 2v_1^2\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_{12} + v_1^2\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_{12}^2 - 11c_s^2\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_{12}^2 + 2c_s^2\omega_7^2\omega_{14}\omega_5^2\omega_{12}^2 - c_s^2\omega_7^2\omega_8^2\omega_5^3\omega_{12} - 4\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_{12} - 6c_s^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_{12}^2 - 2\omega_7^2\omega_8^2\omega_5^2\omega_{12} - v_1^2\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_{12}^2 + 2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_{12} + 13c_s^2\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_{12}^2 + 2c_s^2\omega_7\omega_8\omega_5^3\omega_{12}^2 + 4c_s^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_{12}^2 - \omega_7^2\omega_8^2\omega_5^3\omega_{12}^2 - 2v_1^2\omega_7^2\omega_8\omega_5^3\omega_{12}^2 - 2c_s^2\omega_7^2\omega_8^2\omega_5^2\omega_{12}^2 - 5c_s^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}^2 + 2c_s^2\omega_7\omega_{14}\omega_5^3\omega_{12}^2 + \omega_7\omega_{14}\omega_8\omega_5^3\omega_{12}^2 - v_1^2\omega_7^2\omega_{14}\omega_8^2\omega_5^3\omega_{12} + c_s^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_{12} + v_1^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_{12}^2 - 2c_s^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2 + 2v_1^2\omega_7^2\omega_8^2\omega_5^2\omega_{12} + 2c_s^2\omega_{14}\omega_8\omega_5^3\omega_{12}^2 - c_s^2\omega_7^2\omega_{14}\omega_8^2\omega_5^3\omega_{12} + 6c_s^2\omega_7^2\omega_{14}\omega_8\omega_5\omega_{12}^2 - v_1^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}^2 + v_1^2\omega_7^2\omega_8^2\omega_5^3\omega_{12}^2 + 2c_s^2\omega_7^2\omega_8\omega_5^2\omega_{12}^2 + 7c_s^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_{12}^2 + 2\omega_7^2\omega_8\omega_5^3\omega_{12}^2 + c_s^2\omega_7^2\omega_{14}\omega_8^2\omega_5^3 + v_1^2\omega_7\omega_{14}\omega_8^2\omega_5^3\omega_{12} - \omega_7^2\omega_{14}\omega_8\omega_5^3\omega_{12}^2 - c_s^2\omega_7^2\omega_8^2\omega_5^3\omega_{12}^2 + 2\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_{12} - v_1^2\omega_7^2\omega_8^2\omega_5^3\omega_{12} + 2\omega_7^2\omega_{14}\omega_8^2\omega_5^2 - 2c_s^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_{12} - \omega_7^2\omega_{14}\omega_8^2\omega_5\omega_{12}^2 + 4v_1^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_{12} - 2\omega_7^2\omega_8\omega_5^2\omega_{12}^2 + 2v_1^2\omega_7\omega_8\omega_5^3\omega_{12}^2 - 2v_1^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_{12} + \omega_7^2\omega_{14}\omega_8\omega_5^2\omega_{12}^2 - \omega_7^2\omega_{14}\omega_8^2\omega_5^3 - 2c_s^2\omega_7^2\omega_8\omega_5^3\omega_{12}^2 - 2v_1^2\omega_7^2\omega_8^2\omega_5^2\omega_{12}^2 + \omega_7\omega_8^2\omega_5^3\omega_{12}^2 + 4c_s^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_{12})\frac{v_3 v_1 \rho}{2\omega_7^2\omega_{14}\omega_8^2\omega_5^3\omega_{12}^2}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x^3\mathrm{D}_z v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x^3\mathrm{D}_z v_2}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x^3\mathrm{D}_z v_2} = 0$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x^3\mathrm{D}_z v_2} = 0$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x^3\mathrm{D}_z v_2} = 0$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x^3\mathrm{D}_z v_2} = (2\omega_3\omega_4^2\omega_1 + 18\omega_3c_s^2\omega_4^2 + 3v_1^2\omega_4^2\omega_1 - 2\omega_3v_3^2\omega_4^2\omega_1 - 2\omega_3^2\omega_4\omega_1 - 18\omega_3c_s^2\omega_4\omega_1 - 6\omega_3^2v_1^2 + 12\omega_4^2 + 3\omega_3^2v_1^2\omega_1 + 6\omega_3v_3^2\omega_4^2 - 6v_1^2\omega_4^2 + 3v_3^2\omega_4^2\omega_1 + 2\omega_3^2v_3^2\omega_4\omega_1 + 36\omega_3c_s^2\omega_4 + 6\omega_3^2\omega_4 - 6\omega_3v_1^2\omega_4\omega_1 + 6\omega_3^2v_3^2 - 12\omega_3\omega_4 + 12\omega_3v_1^2\omega_4 + 18c_s^2\omega_4^2\omega_1 + 6\omega_3^2c_s^2\omega_4\omega_1 - 36c_s^2\omega_4^2 - 18\omega_3^2c_s^2\omega_4 - 6\omega_4^2\omega_1 - 6\omega_3c_s^2\omega_4^2\omega_1 - 6v_3^2\omega_4^2 - 6\omega_3^2v_3^2\omega_4 - 3\omega_3^2v_3^2\omega_1 + 6\omega_3\omega_4\omega_1 - 6\omega_3\omega_4^2)\frac{v_3 v_1 \rho}{8\omega_3^2\omega_4^2\omega_1}$

coefficient $C^{(2)}_{\mathrm{D}_x^3\mathrm{D}_z v_3}$ **at** $\frac{\partial^4 v_3}{\partial x_1^3 \partial x_3}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x^3\mathrm{D}_z v_3} = (2 - 2v_1^2 + v_1^2\omega - \omega + 3c_s^2\omega - 6c_s^2)\frac{v_2 v_1 \rho}{12\omega}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x^3\mathrm{D}_z v_3} = (-6\omega_6^2v_1^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}^2 + 6\omega_6^2v_1^2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 - 12\omega_6^2v_1^2\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12}^2 + 6\omega_6^2\omega_{13}\omega_7^2\omega_8^2\omega_5^2\omega_9^2\omega_{12} - 36\omega_6c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 + 12\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_8^2\omega_5\omega_9^2\omega_{12} - 54\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12}^2 - 24c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}^2 + 6\omega_6^2c_s^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 + 12\omega_6^2c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2 - 18\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12} + 12\omega_6^2c_s^2\omega_{13}\omega_7\omega_8\omega_5^2\omega_9^2\omega_{12}^2 + 12\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_5\omega_9^2\omega_{12}^2 + 12\omega_6\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 + 6\omega_6^2v_1^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2 - 24\omega_6c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12}^2 - 12\omega_6^2\omega_{13}\omega_7^2\omega_8\omega_5\omega_9^2\omega_{12}^2 - 12\omega_6^2v_1^2\omega_{13}\omega_7^2\omega_8^2\omega_5\omega_9^2\omega_{12}^2 + 18\omega_6^2v_1^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12} + 3\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 - 12\omega_6c_s^2\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}^2 - 12\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_8\omega_5^2\omega_9^2\omega_{12}^2 - 9\omega_6^2v_1^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 - 6\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 - 36\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_9^2\omega_{12} + 6\omega_6\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 + 18\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2 + 6\omega_6^2\omega_{13}\omega_7\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 + 12\omega_6^2v_1^2\omega_{13}\omega_7^2\omega_8\omega_5^2\omega_9^2\omega_{12}^2 + 6\omega_6^2v_1^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 - 4\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}^2 + 12\omega_6^2v_1^2\omega_{13}\omega_7^2\omega_8^2\omega_5\omega_9^2\omega_{12} - 6\omega_6^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}^2 + 6\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 - 9\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12} - 12\omega_6^2c_s^2\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12}^2 - 6\omega_6\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 - 18\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}^2 + 12\omega_6c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2 + 12\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2 - 12\omega_6^2v_1^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_9^2\omega_{12} - 6\omega_6^2v_1^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 + 42\omega_6c_s^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 - 12\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_9\omega_{12}^2 - 54\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2 - 9\omega_6^2c_s^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 - 6\omega_6^2\omega_{13}\omega_7^2\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 - 12\omega_6^2v_1^2\omega_{13}\omega_7^2\omega_8\omega_5^2\omega_9^2\omega_{12}^2 - 12\omega_6v_1^2\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}^2 - 12\omega_6^2\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}^2 - 12\omega_6c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12} + 6\omega_6v_1^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}^2 + 4\omega_6^2v_1^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}^2 - 12\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_{12}^2 - 12\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_8^2\omega_5\omega_9^2\omega_{12}^2 - 12\omega_6\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 - 12\omega_6c_s^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 - 6\omega_6^2c_s^2\omega_{13}\omega_7\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 + 18\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12}^2 + 24\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_9^2\omega_{12}^2 - 6\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2 - 12\omega_6c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 + 6\omega_6^2c_s^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}^2 + 54\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12} + \omega_6^2v_1^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 + 6\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}^2 + 12\omega_6^2\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12}^2 - 6\omega_6^2v_1^2\omega_{13}\omega_7^2\omega_8^2\omega_5^2\omega_9^2\omega_{12} - 12\omega_6c_s^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12}^2 - 36\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2 + 36\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_9\omega_{12}^2 - \omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 -$

$18\omega_6^2v_1^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12}^2 + 12\omega_6\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}^2 + 6\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 + 9\omega_6^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 + 24\omega_6c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12} -$
$6\omega_6v_1^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 + 12\omega_6^2\omega_{13}\omega_7^2\omega_8^2\omega_5\omega_9^2\omega_{12}^2 + 12\omega_6^2v_1^2\omega_{13}\omega_7^2\omega_{8}\omega_5\omega_9^2\omega_{12}^2 + 36\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_{12}^2 - 24c_s^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 +$
$12\omega_6v_1^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 + 12\omega_6^2c_s^2\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}^2 + 30\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 + 12\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}^2 -$
$6\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_8^2\omega_5^2\omega_9^2\omega_{12} + 12\omega_6^2c_s^2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 + 54\omega_6c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}^2 - 12\omega_6^2\omega_{13}\omega_7^2\omega_8^2\omega_5\omega_9^2\omega_{12} + 6\omega_6^2v_1^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}^2 -$
$12\omega_6c_s^2\omega_{13}\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 - 6\omega_6^2v_1^2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2 - 6\omega_6^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 + 6\omega_6v_1^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 - 12\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_5^2\omega_9^2\omega_{12}^2 -$
$24\omega_6c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_9^2\omega_{12}^2 - 42\omega_6^2c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 + 3\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12} - 12\omega_6v_1^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 +$
$24c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 - 12\omega_6^2\omega_{13}\omega_7\omega_8\omega_5^2\omega_9^2\omega_{12}^2 - 6\omega_6^2v_1^2\omega_{13}\omega_7\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 + 12\omega_6^2v_1^2\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}^2 + 12\omega_6^2v_1^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_{12}^2 +$
$12\omega_6c_s^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 + 12\omega_6^2c_s^2\omega_{13}\omega_7^2\omega_8\omega_5^2\omega_9^2\omega_{12}^2 + 12\omega_6^2c_s^2\omega_{13}\omega_7\omega_{14}\omega_5^2\omega_9^2\omega_{12}^2 - 3\omega_6^2v_1^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12} +$
$12\omega_6c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}^2 + 12\omega_6^2\omega_{13}\omega_7^2\omega_8\omega_5^2\omega_9^2\omega_{12}^2 + 6\omega_6^2v_1^2\omega_{13}\omega_7^2\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2 - 6\omega_6\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12}^2 + 12\omega_6^2v_1^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_9\omega_{12}^2 +$
$12\omega_6c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12}^2 - 12\omega_6^2v_1^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2 + 12\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_9^2\omega_{12} + 6\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}^2)\frac{v_2v_1\rho}{12\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}^2}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x^3\mathrm{D}_z v_3} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x^3\mathrm{D}_z v_3}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x^3\mathrm{D}_z v_3} = (-3v_1^2\omega_9 - \omega_{13} + v_1^2\omega_{13} + v_1^2\omega_{13}\omega_9 + 3c_s^2\omega_{13} - 9c_s^2\omega_9 - \omega_{13}\omega_9 + 3c_s^2\omega_{13}\omega_9 + 3\omega_9)\frac{v_2v_1\rho}{12\omega_{13}\omega_9}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x^3\mathrm{D}_z v_3} = C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x^3\mathrm{D}_z v_3}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x^3\mathrm{D}_z v_3} = (-3v_1^2\omega_4 + v_1^2\omega_{12} + 3c_s^2\omega_4\omega_{12} - \omega_4\omega_{12} + 3\omega_4 - 9c_s^2\omega_4 + v_1^2\omega_4\omega_{12} - \omega_{12} + 3c_s^2\omega_{12})\frac{v_2v_1\rho}{12\omega_4\omega_{12}}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x^3\mathrm{D}_z v_3} = (9\omega_4\omega_1\omega_2 - 27\omega_3c_s^2\omega_1\omega_2 - 27c_s^2\omega_4\omega_1\omega_2 + 12\omega_3c_s^2\omega_4\omega_1 + 6\omega_3c_s^2\omega_4\omega_2 - 9v_1^2\omega_4\omega_1\omega_2 - 6\omega_3\omega_4\omega_1\omega_2 + 2\omega_3\omega_4\omega_2 -$
$9\omega_3v_1^2\omega_1\omega_2 + 2\omega_3v_1^2\omega_4\omega_1 - 18\omega_3v_3^2\omega_4\omega_2 + 6\omega_3v_1^2\omega_4\omega_1\omega_2 + 18\omega_3c_s^2\omega_4\omega_1\omega_2 - 8\omega_3\omega_4\omega_1 + 18\omega_3v_3^2\omega_4\omega_1 + 4\omega_3v_1^2\omega_4\omega_2 + 9\omega_3\omega_1\omega_2)\frac{v_2v_1\rho}{72\omega_3\omega_4\omega_1\omega_2}$

coefficient $C^{(2)}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z\rho}$ **at** $\frac{\partial^4\rho}{\partial x_1^2\partial x_2\partial x_3}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z\rho} = 0$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z\rho} =$
$(3\omega_7^2\omega_8^2\omega_5 - 2\omega_7\omega_8\omega_5^3 - \omega_7^2\omega_8^2\omega_5^2 + \omega_7\omega_5^3 - \omega_8^2\omega_5^2 + 2\omega_7\omega_8^2\omega_5^2 + \omega_7^2\omega_8\omega_5^3 + \omega_8\omega_5^3 + \omega_7^2\omega_5^2 - 2\omega_7^2\omega_8\omega_5^2 - \omega_7^2\omega_5^3 - 2\omega_7^2\omega_8^2 + \omega_7^2\omega_8\omega_5 - \omega_7\omega_8^2\omega_5)\frac{2v_3c_s^4}{\omega_7^2\omega_8^2\omega_5^3}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z\rho} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z\rho}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z\rho} = 0$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z\rho} = 0$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z\rho} = 0$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z\rho} = (-432\omega_3^2c_s^2v_1^2\omega_4^2\omega_1\omega_2^2 - 27\omega_3^2c_s^2\omega_4\omega_1^3\omega_2^3 - 96\omega_3^2v_3^2v_1^2\omega_4^2\omega_1\omega_2^2 - 56\omega_3v_3^2c_s^2\omega_4^2\omega_1\omega_2^3 - 84v_3^2c_s^2\omega_4^2\omega_1^2\omega_2^3 + 192\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^2 -$
$108\omega_3^2c_s^2\omega_1^2\omega_2^3 - 54c_s^2\omega_4^2\omega_1^3\omega_2^3 - 72\omega_3^2v_1^4\omega_4^2\omega_1^2\omega_2 + 27\omega_3^2v_3^2c_s^2\omega_4\omega_1^3\omega_2^3 + 96\omega_3^2v_1^2\omega_4^2\omega_1\omega_2^2 + 8\omega_3^2v_3^2\omega_4^2\omega_1^3\omega_2 - 104\omega_3^2c_s^2\omega_4^2\omega_1^3 - 30\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^3 -$
$162\omega_3^2c_s^4\omega_1^3\omega_2^3 - 168\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2 + 24c_s^2\omega_4^2\omega_1^3\omega_2^2 - 60\omega_3^2v_3^2v_1^2\omega_4^2\omega_1\omega_2^3 + 324\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^3 - 432\omega_3^2c_s^2v_1^2\omega_4^2\omega_1\omega_2^3 - 24\omega_3c_s^4\omega_4^2\omega_1^3\omega_2 +$
$192\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^2 + 144\omega_3^2c_s^4\omega_4^2\omega_2^3 + 48\omega_3^2v_3^2v_1^2\omega_4^2\omega_1^3 - 16\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2^2 + 96\omega_3^2v_1^2\omega_4^2\omega_1\omega_2^3 + 324\omega_3^2c_s^4\omega_1^2\omega_2^3 - 72\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2 + 56\omega_3c_s^2\omega_4^2\omega_1\omega_2^3 -$
$108\omega_3^2v_3^2c_s^2\omega_4\omega_1^2\omega_2^3 - 56\omega_3^2v_3^2c_s^2\omega_4^2\omega_1\omega_2^2 + 8\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2 + 144\omega_3^2c_s^4\omega_4^2\omega_1^3 - 8\omega_3^2\omega_4^2\omega_1\omega_2^2 + 84c_s^2\omega_4^2\omega_1^2\omega_2^3 - 36\omega_3^2v_1^4\omega_4^2\omega_1^3\omega_2 + 128\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^2 +$
$72\omega_3^2v_3^2v_1^2\omega_4^2\omega_2^3 + 54v_3^2c_s^2\omega_4^2\omega_1^3\omega_2^3 + 54\omega_3^2c_s^2\omega_1^3\omega_2^3 + 108\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^3 + 8\omega_3^2v_3^2c_s^2\omega_4^2\omega_1\omega_2^3 + 30\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^2 - 81\omega_3c_s^4\omega_4^2\omega_1^3\omega_2^3 -$
$24v_3^2c_s^2\omega_4^2\omega_1^3\omega_2^2 - 104\omega_3^2c_s^2\omega_4^2\omega_2^3 + 64\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1\omega_2^3 + 72\omega_3^2v_1^4\omega_4^2\omega_1^2\omega_2^2 - 40\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^3\omega_2 + 162c_s^4\omega_4^2\omega_1^3\omega_2^3 - 10\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^2\omega_2^3 +$
$96\omega_3^2v_1^2\omega_4^2\omega_1^2\omega_2 + 108\omega_3^2v_3^2c_s^2\omega_1^2\omega_2^3 - 64\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^2 + 81\omega_3^2c_s^4\omega_4\omega_1^3\omega_2^3 + 8\omega_3^2\omega_4^2\omega_1^3 - 24\omega_3^2v_3^2v_1^2\omega_4^2\omega_1^2\omega_2 + 24\omega_3^2v_1^4\omega_4^2\omega_2^3 + 10\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^3 -$
$432\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^2\omega_2 + 112\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2 - 8\omega_3^2\omega_4^2\omega_1^3\omega_2 + 32\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^3 - 108\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^3 + 8\omega_3c_s^2\omega_4^2\omega_1^3\omega_2 + 32\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^2\omega_2^2 -$
$72c_s^4\omega_4^2\omega_1^3\omega_2^2 - 96\omega_3^2v_1^2\omega_4^2\omega_1^3 - 8\omega_3^2v_3^2\omega_4^2\omega_2^3 - 36\omega_3^2v_1^4\omega_4^2\omega_1\omega_2^3 + 16\omega_3^2\omega_4^2\omega_1^2\omega_2^2 + 432\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^3 - 27\omega_3v_3^2c_s^2\omega_4^2\omega_1^3\omega_2^3 - 176\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^2 -$
$8\omega_3^2\omega_4^2\omega_1^2\omega_2 - 60\omega_3^2v_3^2v_1^2\omega_4^2\omega_1^3\omega_2 - 168\omega_3c_s^4\omega_4^2\omega_1\omega_2^3 + 64\omega_3v_3^2c_s^2\omega_4^2\omega_1^2\omega_2^2 + 80\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2 - 432\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^3\omega_2 - 216\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^2 -$
$324\omega_3^2c_s^4\omega_4\omega_1^2\omega_2^3 - 8\omega_3^2v_3^2\omega_4^2\omega_1^3 - 96\omega_3^2v_1^2\omega_4^2\omega_2^3 - 54\omega_3^2v_3^2c_s^2\omega_1^3\omega_2^3 - 252c_s^4\omega_4^2\omega_1^2\omega_2^3 + 8\omega_3^2v_3^2\omega_4^2\omega_1\omega_2^2 - 8\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^2\omega_2 + 96\omega_3^2v_1^2\omega_4^2\omega_1^3\omega_2 +$
$432\omega_3^2c_s^2v_1^2\omega_4^2\omega_2^3 + 108\omega_3v_3^2c_s^2\omega_4^2\omega_1^2\omega_2^3 + 120\omega_3^2v_3^2v_1^2\omega_4^2\omega_1^2\omega_2^2 - 10\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2^2 - 8\omega_3v_3^2c_s^2\omega_4^2\omega_1^3\omega_2 + 864\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^2\omega_2^2 + 10\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^3\omega_2^2 +$
$48\omega_3^2v_1^4\omega_4^2\omega_1^3 - 192\omega_3^2v_1^2\omega_4^2\omega_1^2\omega_2^2 + 8\omega_3^2\omega_4^2\omega_2^3 + 8\omega_3^2v_3^2\omega_4^2\omega_1\omega_2^3 + 32\omega_3^2v_3^2c_s^2\omega_4^2\omega_2^3 + 27\omega_3c_s^2\omega_4^2\omega_1^3\omega_2^3 - 24\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^3)\frac{v_3}{72\omega_3^2\omega_4^2\omega_1^3\omega_2^3}$

coefficient $C^{(2)}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_1}$ **at** $\frac{\partial^4 v_1}{\partial x_1^2\partial x_2\partial x_3}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_1} = 0$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_1} = (3\omega_7^2\omega_{14}\omega_8\omega_5\omega_{12}^2 + \omega_7^2\omega_{14}\omega_8^2\omega_5^3\omega_{12} + \omega_7^2\omega_8^2\omega_5^3\omega_{12} + 2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_{12}^2 + \omega_7^2\omega_{14}\omega_5^2\omega_{12}^2 - 2\omega_7\omega_8\omega_5^3\omega_{12}^2 - \omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_{12}^2 + 2\omega_7^2\omega_8^2\omega_5^2\omega_{12}^2 - \omega_7\omega_{14}\omega_8^2\omega_5^3\omega_{12} - \omega_7^2\omega_{14}\omega_5^3\omega_{12}^2 - 4\omega_7^2\omega_{14}\omega_8^2\omega_{12}^2 - 4\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_{12} - \omega_{14}\omega_8^2\omega_5^2\omega_{12}^2 - 2\omega_7^2\omega_8^2\omega_5^2\omega_{12} + 2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_{12} - \omega_7^2\omega_8^2\omega_5^3\omega_{12}^2 - 2\omega_7\omega_{14}\omega_8\omega_5^3\omega_{12}^2 + 2\omega_7^2\omega_8\omega_5^3\omega_{12}^2 + \omega_7^2\omega_{14}\omega_8\omega_5^3\omega_{12}^2 + 2\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_{12} + 2\omega_7^2\omega_{14}\omega_8^2\omega_5^2 + 5\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_{12}^2 + \omega_{14}\omega_8\omega_5^3\omega_{12}^2 + 2\omega_7\omega_{14}\omega_8\omega_5^2\omega_{12}^2 + \omega_7\omega_{14}\omega_5^3\omega_{12}^2 - 2\omega_7^2\omega_8\omega_5^2\omega_{12}^2 - 4\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_{12}^2 - \omega_7^2\omega_{14}\omega_8^2\omega_5^3 + \omega_7\omega_8^2\omega_5^3\omega_{12}^2 - 3\omega_7\omega_{14}\omega_8^2\omega_5\omega_{12}^2)\frac{v_3c_s^2v_1\rho}{\omega_7^2\omega_{14}\omega_8^2\omega_5^3\omega_{12}^2}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_1} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_1}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_1} = 0$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_1} = 0$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_1} = 0$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_1} = (-6c_s^2\omega_1\omega_2^3 - 4\omega_3v_3^2\omega_1^2\omega_2 + 4v_3^2\omega_1^2\omega_2^2 + 14\omega_3\omega_1^2\omega_2 + 28\omega_3c_s^2\omega_1^3 + 4\omega_3v_3^2\omega_2^3 + 2\omega_1\omega_2^3 + 26\omega_3v_1^2\omega_1^2\omega_2^2 - 2v_3^2\omega_1^3\omega_2 - 13\omega_3v_1^2\omega_1^3\omega_2 + 10\omega_3\omega_1^3\omega_2 - 24\omega_3c_s^2\omega_1\omega_2^2 - 3\omega_3v_3^2\omega_1^3\omega_2 - 20\omega_3\omega_1^2\omega_2^2 - 22\omega_3v_1^2\omega_1^2\omega_2 + 6\omega_3v_3^2\omega_1^2\omega_2^2 + 4\omega_3v_3^2\omega_1^3 + 26\omega_3c_s^2\omega_2^3 - 24\omega_3c_s^2\omega_1\omega_2^3 + 8\omega_3\omega_1\omega_2^2 - 4\omega_3v_3^2\omega_1\omega_2^2 - 24\omega_3c_s^2\omega_1^3\omega_2 - 10\omega_3\omega_2^3 + 10\omega_3v_1^2\omega_2^3 + 10\omega_3\omega_1\omega_2^3 + 48\omega_3c_s^2\omega_1^2\omega_2^2 - 3\omega_3v_3^2\omega_1\omega_2^3 - 2v_3^2\omega_1\omega_2^3 - 30\omega_3c_s^2\omega_1^2\omega_2 + 16\omega_3v_1^2\omega_1^3 + 12c_s^2\omega_1^2\omega_2^2 - 13\omega_3v_1^2\omega_1\omega_2^3 - 4\omega_1^2\omega_2^2 - 6c_s^2\omega_1^3\omega_2 - 4\omega_3v_1^2\omega_1\omega_2^2 + 2\omega_1^3\omega_2 - 12\omega_3\omega_1^3)\frac{v_3v_1\rho}{6\omega_3\omega_1^3\omega_2^3}$

coefficient $C^{(2)}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_2}$ **at** $\frac{\partial^4 v_2}{\partial x_1^2\partial x_2\partial x_3}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_2} = 0$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_2} = (4\omega_6\omega_{16}\omega_{10}^2\omega_7^2\omega_8\omega_5^3\omega_{15}^2 + 4\omega_6\omega_{16}\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 5\omega_6\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 4\omega_6\omega_{10}^2\omega_7\omega_8^2\omega_5^3\omega_{15}^2 - 4\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 6\omega_6\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}^2 - 4\omega_6\omega_{16}\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 4\omega_6\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 2\omega_6\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_5^2\omega_{15}^2 + 8\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 8\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 4\omega_6\omega_{16}\omega_{10}^2\omega_{17}\omega_8\omega_5^3\omega_{15}^2 + 4\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 4\omega_6\omega_{16}\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15}^2 - 2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 8\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 4\omega_6\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 + 2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 8\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 2\omega_6\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_5^3\omega_{15}^2 + 4\omega_6\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 8\omega_6\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_{15}^2 - 8\omega_6\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 - 4\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_8^2\omega_5^3\omega_{15} + 4\omega_6\omega_{10}^2\omega_7^2\omega_8^2\omega_5^3\omega_{15}^2 - 4\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 - 4\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5^3\omega_{15}^2 - 4\omega_6\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 5\omega_6\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^3\omega_{15}^2 + 4\omega_6\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15} + 4\omega_6\omega_{16}\omega_{10}^2\omega_7^2\omega_8^2\omega_5^2\omega_{15}^2 + 4\omega_6\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 4\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 8\omega_6\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^3\omega_5^3\omega_{15} + 4\omega_6\omega_{10}\omega_7^2\omega_8^2\omega_5^3\omega_{15}^2 + 2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^3\omega_{15}^2 + 4\omega_6\omega_{16}\omega_{10}^2\omega_7^2\omega_8^2\omega_5^2 - 10\omega_6\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 4\omega_6\omega_{16}\omega_{10}^2\omega_7^2\omega_8^2\omega_5^3\omega_{15}^2 + 4\omega_6\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^3\omega_{15}^2 - 4\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5\omega_{15}^2 + 4\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^3 - 4\omega_6\omega_{16}\omega_{10}^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 12\omega_6\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 - 4\omega_6\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3 - 4\omega_6\omega_{16}\omega_{10}^2\omega_7^2\omega_8^2\omega_5^2\omega_{15} + 2\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 4\omega_6\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^3\omega_{15}^2 + 4\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_8^2\omega_5^3\omega_{15}^2 + 2\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_5^3\omega_{15}^2 - 4\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2)\frac{v_3c_s^2v_2\rho}{2\omega_6\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_2}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_2} = 0$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_2} = 0$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_2} = 0$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_2} = (9\omega_4\omega_1\omega_2 + 27\omega_3c_s^2\omega_1\omega_2 - 27c_s^2\omega_4\omega_1\omega_2 + 6\omega_3c_s^2\omega_4\omega_1 - 6\omega_3c_s^2\omega_4\omega_2 + 2\omega_3\omega_4\omega_2 - 2\omega_3v_3^2\omega_4\omega_2 - 9v_3^2\omega_4\omega_1\omega_2 - 2\omega_3\omega_4\omega_1 + 9\omega_3v_3^2\omega_1\omega_2 + 2\omega_3v_3^2\omega_4\omega_1 - 9\omega_3\omega_1\omega_2)\frac{v_3v_2\rho}{72\omega_3\omega_4\omega_1\omega_2}$

coefficient $C^{(2)}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_3}$ **at** $\frac{\partial^4 v_3}{\partial x_1^2\partial x_2\partial x_3}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_3} = (-36 - \omega^3 - 16\omega^2 + 54\omega)\frac{c_s^4\rho}{12\omega^3}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_3} = (24\omega_6^2\omega_{16}v_2^2\omega_7^3\omega_{17}\omega_{14}\omega_8\omega_5^2\omega_{15}\omega_{12} + 24\omega_6^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{17}\omega_{14}\omega_8\omega_5\omega_{15}\omega_{12} - 12\omega_6^2\omega_{16}v_1^2\omega_{10}\omega_7^3\omega_{17}\omega_{14}\omega_5^3\omega_{15}\omega_{12} - 12\omega_6c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{12} + 12\omega_6^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{14}\omega_8^2\omega_5^2\omega_{15}\omega_{12} + 12\omega_6^2c_s^2\omega_{16}\omega_7^3\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12} + 12\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12} + 12\omega_6^2c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12} + 12\omega_6^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{17}\omega_{14}\omega_8\omega_5^2\omega_{15}\omega_{12} + 12\omega_6^2\omega_{16}v_1^2\omega_{10}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^2\omega_{15}\omega_{12} - 12\omega_6^2c_s^2\omega_{10}\omega_7^2\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12} - 12\omega_6c_s^2\omega_{16}\omega_7^3\omega_{17}\omega_{14}\omega_8^2\omega_5^3\omega_{15}\omega_{12} - 48\omega_6^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12} -$

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

$$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_3} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_3}$$

$$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_3} = (-2\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^2\omega_{15}\omega_{12} + 12\omega_6\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_{14}\omega_8\omega_5\omega_{15}\omega_{12} - 12\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{14}\omega_5^2\omega_{15}\omega_{12} +$$
$$12\omega_6\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_{14}\omega_8\omega_5^2\omega_{15} - 12\omega_{10}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12} + 12\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_{15}\omega_{12} + 10\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12} -$$
$$12\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_{14}\omega_5^3\omega_{15}\omega_{12} + 12\omega_6\omega_{16}\omega_7^2\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12} - 12\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_5^2\omega_{15}\omega_{12} + 12\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_{14}\omega_5^3\omega_{15}\omega_{12} -$$
$$6\omega_6\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15} - 12\omega_{16}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12} + 12\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5\omega_{15}\omega_{12} + 12\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}\omega_{12} +$$
$$12\omega_{16}\omega_{10}\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12} + 6\omega_6\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12} + 12\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_{14}\omega_5^2\omega_{15}\omega_{12} + 12\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_5^3\omega_{15}\omega_{12} -$$
$$12\omega_6\omega_{16}\omega_{10}\omega_7\omega_{14}\omega_5^3\omega_{15}\omega_{12} + 6\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^3\omega_{15} + 12\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^2\omega_{12} + 12\omega_6\omega_{10}\omega_7^2\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12} +$$
$$12\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{14}\omega_8\omega_5^3\omega_{12} - 12\omega_6\omega_7^2\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12} - 12\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12} - 18\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^2\omega_{15}\omega_{12} -$$
$$6\omega_6\omega_{16}\omega_{10}\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12} + 6\omega_6\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_{12} - \omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12} - 12\omega_6\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_5^3\omega_{15}\omega_{12} +$$
$$12\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{14}\omega_5^3\omega_{15}\omega_{12} + 12\omega_6\omega_{16}\omega_{10}\omega_7\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12} + 12\omega_{10}\omega_7\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12} - 18\omega_6\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_{14}\omega_8\omega_5^2\omega_{15}\omega_{12} -$$
$$6\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^3\omega_{15}\omega_{12} - 12\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{12} - 12\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_{12} + 24\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5\omega_{15}\omega_{12} +$$
$$12\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15} - 18\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12} - 24\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_{15}\omega_{12} + 12\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12} -$$
$$12\omega_6\omega_{16}\omega_7^2\omega_{14}\omega_8\omega_5^3\omega_{12} + 12\omega_{16}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{12} - 12\omega_6\omega_{10}\omega_7\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12})\frac{c_s^4\rho}{12\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_{14}\omega_8\omega_5^3\omega_{15}\omega_{12}}$$

$$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_3} = C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_3}$$

$$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_3} = (-\omega_3^2\omega_{13}\omega_1^3\omega_2 - 12\omega_3\omega_1^2\omega_2 - 6\omega_3\omega_{13}\omega_1^3 + 12\omega_3^2\omega_1^3 + 12\omega_3\omega_{13}\omega_1\omega_2 - 12\omega_3^2\omega_1^2 + 24\omega_3\omega_1^3\omega_2 - 2\omega_3^2\omega_{13}\omega_1^2\omega_2 - 12\omega_3^2\omega_1^3\omega_2 +$$
$$12\omega_3^2\omega_{13}\omega_1 + 12\omega_{13}\omega_1^3 + 24\omega_3^2\omega_{13}\omega_1\omega_2 - 6\omega_3\omega_{13}\omega_1^2\omega_2 - 2\omega_3^2\omega_{13}\omega_1^3 + 12\omega_3^2\omega_1^2\omega_2 - 24\omega_3^2\omega_{13}\omega_2 - 6\omega_3^2\omega_{13}\omega_1^2 - 12\omega_1^3\omega_2 - 12\omega_3\omega_1^3)\frac{c_s^4\rho}{12\omega_3^2\omega_{13}\omega_1^3\omega_2}$$

$$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_3} =$$
$$(-18\omega_3^2 v_1^4\omega_4^2\omega_1^2\omega_5\omega_2^3 + 36\omega_3^2 v_1^4\omega_4\omega_1^3\omega_5\omega_2^2 - 9\omega_3 v_4^2\omega_4^2\omega_1^3\omega_5\omega_2^3 + 24\omega_3^2 v_1^2\omega_4^2\omega_5\omega_2^3 + 4\omega_3^2 c_s^4\omega_4^2\omega_1^3\omega_5\omega_2^2 - 16\omega_3 c_s^2\omega_4^2\omega_1^3\omega_5\omega_2 + 288\omega_3^2 c_s^4\omega_4\omega_1^2\omega_5\omega_2^3 +$$
$$36v_1^2\omega_4^2\omega_1^3\omega_5\omega_2^2 - 72\omega_3 c_s^2 v_1^2\omega_4^2\omega_1^3\omega_5\omega_2 - 36\omega_3^2 v_1^2\omega_4\omega_1^3\omega_5\omega_2^2 + 360\omega_3^2 v_3^2 v_1^2\omega_4^2\omega_1^2\omega_5\omega_2^2 + 18\omega_3^2 v_1^2\omega_4^2\omega_1^2\omega_5\omega_2^3 - 288\omega_3^2 c_s^2\omega_4\omega_1^2\omega_5\omega_2^3 +$$
$$288\omega_3^2 c_s^4\omega_4^2\omega_1^2\omega_2^3 - 36v_1^4\omega_4^2\omega_1^3\omega_5\omega_2^2 - 4\omega_3^2 c_s^2\omega_4^2\omega_1^3\omega_5\omega_2^2 + 16\omega_3 c_s^4\omega_4^2\omega_1^3\omega_5\omega_2 - 216\omega_3^2 c_s^2 v_1^2\omega_4^2\omega_5\omega_2^3 + 108\omega_3^2 c_s^2 v_1^2\omega_4\omega_1^3\omega_5\omega_2^3 + 9\omega_3 v_2^2\omega_4^2\omega_1^3\omega_5\omega_2^3 +$$
$$216\omega_3^2 v_3^2 v_1^2\omega_4^2\omega_5\omega_2^3 + 48\omega_3^2 c_s^2 v_1^2\omega_4^2\omega_1^2\omega_5\omega_2^2 - 96\omega_3^2 v_1^2\omega_4^2\omega_1^3\omega_5 - 6\omega_3^2 c_s^4\omega_4^2\omega_1^3\omega_5\omega_2^3 - 54v_1^2\omega_4^2\omega_1^3\omega_5\omega_2^3 - 160\omega_3 c_s^2\omega_4^2\omega_1\omega_5\omega_2^3 - 36\omega_3^2 v_1^4\omega_4^2\omega_1^2\omega_5\omega_2^2 +$$
$$54\omega_3^2 v_1^4\omega_4\omega_1^3\omega_5\omega_2^3 + 108\omega_3^2 c_s^2 v_1^2\omega_4\omega_1^3\omega_5\omega_2^2 - 60\omega_3^2 c_s^2 v_1^2\omega_4^2\omega_1^2\omega_5\omega_2^3 + 264\omega_3^2 c_s^2 v_1^2\omega_4^2\omega_1^3\omega_5 + 54v_1^4\omega_4^2\omega_1^3\omega_5\omega_2^3 + 180\omega_3 c_s^2 v_1^2\omega_4^2\omega_1\omega_5\omega_2^3 +$$
$$648\omega_3^2 v_3^2 c_s^2\omega_4\omega_1^2\omega_5\omega_2^3 + 144\omega_3^2 v_3^2 v_1^2\omega_4^2\omega_1^3\omega_5 - 216c_s^2 v_1^2\omega_4^2\omega_1^2\omega_5\omega_2^3 + 6\omega_3^2 v_3^2 c_s^2\omega_4^2\omega_1^3\omega_5\omega_2^2 - 54\omega_3^2 v_1^2\omega_4\omega_1^3\omega_5\omega_2^3 - 84\omega_3^2 v_1^2\omega_4^2\omega_1^2\omega_5\omega_2^2 +$$

$160\omega_3 c_s^4\omega_4^2\omega_1\omega_5\omega_2^3 + 2\omega_3^2 v_2^4\omega_4^2\omega_1^3\omega_5\omega_2^2 - 88\omega_3^2 c_s^2\omega_4^2\omega_5\omega_2^3 - 36\omega_3^2 v_1^2\omega_4\omega_1\omega_5\omega_2^3 - 72\omega_3^2 c_s^4\omega_4^2\omega_1^3\omega_2^3 + 72\omega_3 c_s^4\omega_4^2\omega_1^3\omega_5\omega_2^3 - 12\omega_3^2 v_3^2 c_s^2\omega_4^2\omega_1^3\omega_5\omega_2 -$
$162\omega_3^2 c_s^2 v_1^2\omega_1^3\omega_5\omega_2^3 + 12\omega_3 v_1^4\omega_4^2\omega_1^2\omega_5\omega_2^2 + 24\omega_3^2 v_3^2\omega_4^2\omega_1\omega_5\omega_2^3 + 8\omega_3^2\omega_4^2\omega_5\omega_2^3 + 264\omega_3 v_3^2 c_s^2\omega_4^2\omega_1^2\omega_5\omega_2^2 - 168\omega_3^2 v_3^2 c_s^2\omega_4^2\omega_1\omega_5\omega_2^2 + 36\omega_3^2 c_s^2\omega_4^2\omega_1\omega_5\omega_2^3 -$
$108\omega_3 c_s^2 v_1^2\omega_4^2\omega_1^3\omega_5\omega_2^3 - 72\omega_3 c_s^2\omega_4^2\omega_1^3\omega_5\omega_2^3 + 54\omega_3^2 v_1^2\omega_1^3\omega_5\omega_2^3 + 36\omega_3^2 v_1^4\omega_4\omega_1\omega_5\omega_2^3 + 240\omega_3^2 v_3^2 c_s^2\omega_4^2\omega_5\omega_2^3 - 2\omega_3^2 v_2^2\omega_4^2\omega_1^3\omega_5\omega_2^2 + 8\omega_3^2 c_s^4\omega_4^2\omega_1\omega_5\omega_2^3 +$
$24\omega_3^2 v_1^4\omega_4^2\omega_1^2\omega_5\omega_2 - 12\omega_3 v_1^2\omega_4^2\omega_1^2\omega_5\omega_2^2 - 8\omega_3^2\omega_4^2\omega_1\omega_5\omega_2^3 + 64\omega_3^2 c_s^2\omega_4^2\omega_1\omega_5\omega_2^2 - 120\omega_3^2 v_3^2 c_s^2\omega_4^2\omega_1\omega_5\omega_2^3 + 108\omega_3 c_s^2 v_1^2\omega_4\omega_1^2\omega_5\omega_2^3 + 8\omega_3^2\omega_4^2\omega_1^3\omega_5 +$
$180\omega_3 c_s^2 v_1^2\omega_4^2\omega_1^3\omega_5\omega_2^2 + 24\omega_3^2 v_3^2\omega_4^2\omega_1\omega_5\omega_2^2 - 72\omega_3^2 v_3^2 v_1^2\omega_4^2\omega_1^2\omega_5\omega_2 + 36\omega_3 v_1^4\omega_4^2\omega_1^2\omega_5\omega_2^3 - 468\omega_3 v_3^2 c_s^2\omega_4^2\omega_1^2\omega_5\omega_2^3 - 36\omega_3 v_1^4\omega_4\omega_1^3\omega_5\omega_2^2 -$
$108\omega_3^2 c_s^2 v_1^2\omega_4\omega_1\omega_5\omega_2^3 + 36\omega_3^2 c_s^2\omega_4^2\omega_1^3\omega_5\omega_2 + 108\omega_3^2 v_1^4\omega_1^2\omega_5\omega_2^3 - 72\omega_3 c_s^4\omega_4^2\omega_1^3\omega_5\omega_2^2 - 40\omega_3^2 c_s^2\omega_4^2\omega_1^3\omega_5 - 24\omega_3^2 c_s^2 v_1^2\omega_4^2\omega_1^2\omega_5\omega_2 +$
$24\omega_3^2 v_3^2\omega_4^2\omega_1^3\omega_5\omega_2 + 36\omega_3 v_1^2\omega_4\omega_1^3\omega_5\omega_2^2 - 8\omega_3^2\omega_4^2\omega_1\omega_5\omega_2^2 + 6\omega_3^2 c_s^2 v_2^2\omega_4^2\omega_1^3\omega_5\omega_2^2 - 36\omega_3 v_1^2\omega_4^2\omega_1^2\omega_5\omega_2^3 - 56\omega_3^2 c_s^4\omega_4^2\omega_1\omega_5\omega_2^2 - 8\omega_3^2\omega_4^2\omega_1^3\omega_5\omega_2 +$
$24\omega_3^2 v_3^2 c_s^2\omega_4^2\omega_1^3\omega_5 - 28\omega_3^2 c_s^4\omega_4^2\omega_1^3\omega_5\omega_2 + 72\omega_3 c_s^2\omega_4^2\omega_1^3\omega_5\omega_2^2 + 162 c_s^2 v_1^2\omega_4^2\omega_1^3\omega_5\omega_2^3 + 4\omega_3^2 c_s^2\omega_4^2\omega_1^2\omega_5\omega_2^3 + 132\omega_3^2 v_3^2 c_s^2\omega_4^2\omega_1^2\omega_5\omega_2^2 - 72 v_1^4\omega_4^2\omega_1^2\omega_5\omega_2^3 -$
$162\omega_3^2 v_3^2 c_s^2\omega_4\omega_1^3\omega_5\omega_2^3 - 96\omega_3^2 v_1^4\omega_4^2\omega_5\omega_2^3 - 108\omega_3^2 c_s^2 v_1^2\omega_4\omega_1^2\omega_5\omega_2^2 - 24\omega_3 v_1^4\omega_4^2\omega_1^3\omega_5\omega_2 - 18\omega_3^2 v_1^2\omega_4^2\omega_1^3\omega_5\omega_2^2 + 48\omega_3 v_3^2 c_s^2\omega_4^2\omega_1^3\omega_5\omega_2 +$
$144\omega_3^2 v_1^2\omega_4\omega_1^2\omega_5\omega_2^3 + 72 v_1^2\omega_4^2\omega_1^2\omega_5\omega_2^3 - 27\omega_3 c_s^2 v_2^2\omega_4^2\omega_1^3\omega_5\omega_2^3 - 28\omega_3^2 c_s^4\omega_4^2\omega_1^2\omega_5\omega_2^3 - 144\omega_3^2 v_1^4\omega_4\omega_1^2\omega_5\omega_2^3 + 24\omega_3 v_1^2\omega_4^2\omega_1^3\omega_5\omega_2 + 18\omega_3^2 v_1^4\omega_4^2\omega_1^3\omega_5\omega_2^2 +$
$36\omega_3^2 v_1^2\omega_4\omega_1^2\omega_5\omega_2^2 - 48\omega_3^2 v_3^2\omega_4^2\omega_1^2\omega_5\omega_2^2 + 12\omega_3 v_1^4\omega_4^2\omega_1\omega_5\omega_2^3 + 60\omega_3^2 c_s^2 v_1^2\omega_4^2\omega_1^3\omega_5\omega_2^2 + 336\omega_3 v_3^2 c_s^2\omega_4^2\omega_1\omega_5\omega_2^3 - 216\omega_3^2 c_s^2 v_1^2\omega_4\omega_1^3\omega_5\omega_2^3 +$
$48\omega_3^2 v_1^4\omega_4^2\omega_1^3\omega_5 - 6\omega_3^2 v_3^2 c_s^2\omega_4^2\omega_1^2\omega_5\omega_2^3 - 72\omega_3^2 c_s^2\omega_4^2\omega_1^2\omega_5\omega_2^2 - 108 c_s^2 v_1^2\omega_4^2\omega_1^3\omega_5\omega_2^2 + 72\omega_3^2 c_s^2\omega_4\omega_1^3\omega_5\omega_2^3 - 36\omega_3^2 v_1^4\omega_4\omega_1^2\omega_5\omega_2^2 - 72\omega_3^2 c_s^4\omega_4\omega_1^3\omega_5\omega_2^3 +$
$56\omega_3^2 c_s^4\omega_4^2\omega_1^2\omega_5\omega_2^2 + 16\omega_3^2\omega_4^2\omega_1^2\omega_5\omega_2^2 - 12\omega_3 v_1^2\omega_4^2\omega_1\omega_5\omega_2^3 - 24\omega_3^2 v_3^2\omega_4^2\omega_5\omega_2^3 - 288\omega_3^2 c_s^4\omega_4\omega_1\omega_5\omega_2^3 + 54\omega_3 v_1^2\omega_4^2\omega_1^3\omega_5\omega_2^3 + 27\omega_3^2 c_s^2 v_2^2\omega_4\omega_1^3\omega_5\omega_2^3 +$
$152\omega_3^2 c_s^4\omega_4^2\omega_5\omega_2^3 - 112\omega_3 c_s^2\omega_4^2\omega_1^2\omega_5\omega_2^2 - 56\omega_3^2 c_s^4\omega_4^2\omega_1^2\omega_5\omega_2 + 108\omega_3^2 v_1^4\omega_4^2\omega_1\omega_5\omega_2^3 + 2\omega_3^2 v_2^2\omega_4^2\omega_1^2\omega_5\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^2\omega_5\omega_2 + 162\omega_3 v_3^2 c_s^2\omega_4^2\omega_1^3\omega_5\omega_2^3 -$
$24\omega_3^2 c_s^2 v_1^2\omega_4^2\omega_1\omega_5\omega_2^2 - 54\omega_3 v_1^4\omega_4^2\omega_1^3\omega_5\omega_2^3 - 180\omega_3^2 v_3^2 v_1^2\omega_4^2\omega_1^3\omega_5\omega_2 + 108\omega_3 c_s^2 v_1^2\omega_4^2\omega_1^2\omega_5\omega_2^2 + 288\omega_3^2 c_s^2\omega_4\omega_1\omega_5\omega_2^3 - 48\omega_3^2 v_1^2\omega_4^2\omega_1\omega_5\omega_2^2 -$
$288\omega_3^2 v_3^2 v_1^2\omega_4^2\omega_1\omega_5\omega_2^2 - 348\omega_3^2 c_s^2 v_1^2\omega_4^2\omega_1^3\omega_5\omega_2 - 2\omega_3^2 v_2^4\omega_4^2\omega_1^2\omega_5\omega_2^3 + 24\omega_3^2 v_3^2\omega_4^2\omega_1^2\omega_5\omega_2 + 112\omega_3 c_s^4\omega_4^2\omega_1^2\omega_5\omega_2^2 - 54\omega_3^2 v_1^4\omega_1^3\omega_5\omega_2^3 +$
$64\omega_3^2 c_s^2\omega_4^2\omega_1^2\omega_5\omega_2 + 32\omega_3^2 c_s^4\omega_4^2\omega_1^3\omega_5 + 24\omega_3^2 v_1^4\omega_4^2\omega_1\omega_5\omega_2^2 - 108\omega_3^2 v_1^2\omega_1^2\omega_5\omega_2^3 - 9\omega_3^2 v_2^2\omega_4\omega_1^3\omega_5\omega_2^3 + 216\omega_3 c_s^2\omega_4^2\omega_1^2\omega_5\omega_2^3 - 72\omega_3 v_1^2\omega_4^2\omega_1^3\omega_5\omega_2^2 -$
$72\omega_3^2 v_1^4\omega_4^2\omega_1^3\omega_5\omega_2 - 6\omega_3^2 c_s^2 v_2^2\omega_4^2\omega_1^2\omega_5\omega_2^3 - 24\omega_3^2 v_3^2\omega_4^2\omega_1^3\omega_5 - 36\omega_3 v_1^2\omega_4\omega_1^2\omega_5\omega_2^2 + 324\omega_3^2 c_s^2 v_1^2\omega_1^2\omega_5\omega_2^3 - 96\omega_3^2 v_3^2 c_s^2\omega_4^2\omega_1^2\omega_5\omega_2 - 216\omega_3 c_s^4\omega_4^2\omega_1^2\omega_5\omega_2^3 +$
$9\omega_3^2 v_2^4\omega_4\omega_1^3\omega_5\omega_2^3 - 180\omega_3^2 v_3^2 v_1^2\omega_4^2\omega_1\omega_5\omega_2^2 + 72\omega_3^2 v_1^2\omega_4^2\omega_1\omega_5\omega_2^2 - 72\omega_3 c_s^2 v_1^2\omega_4^2\omega_1^2\omega_5\omega_2^3 - 648\omega_3^2 v_3^2 c_s^2\omega_4\omega_1\omega_5\omega_2^3 - 108\omega_3 c_s^2 v_1^2\omega_4\omega_1^3\omega_5\omega_2^2 +$
$36\omega_3 v_1^4\omega_4\omega_1^2\omega_5\omega_2^3 - 180\omega_3 v_3^2 c_s^2\omega_4^2\omega_1^3\omega_5\omega_2^2 + 300\omega_3^2 c_s^2 v_1^2\omega_4^2\omega_1\omega_5\omega_2^3 + 72\omega_3 v_1^4\omega_4^2\omega_1^3\omega_5\omega_2^2 + 132\omega_3^2 v_1^2\omega_4^2\omega_1^3\omega_5\omega_2 - 288\omega_3^2 c_s^4\omega_4^2\omega_1\omega_2^3)\frac{\rho}{72\omega_3^2\omega_4^2\omega_1^3\omega_5\omega_2^3}$

coefficient $C^{(2)}_{\mathrm{D_x D_y^2 D_z}\rho}$ **at** $\frac{\partial^4\rho}{\partial x_1\partial x_2^2\partial x_3}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D_x D_y^2 D_z}\rho} = 0$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D_x D_y^2 D_z}\rho} = (\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_5\omega_{15}^2 + \omega_{16}^2 v_2^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}^2 + 3\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 3c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_{15}^2 -$
$6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}^2 - \omega_{16}^2 v_2^2\omega_{10}^2\omega_7\omega_{17}\omega_5^2\omega_{15}^2 + 2\omega_{16} v_2^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15} + 3c_s^2\omega_{16}^2\omega_{10}^3\omega_7\omega_5^2\omega_{15}^2 -$
$3c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5 - v_2^2\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 3c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8\omega_5^2\omega_{15}^2 + \omega_{16}\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 3c_s^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 +$
$3c_s^2\omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15} + 6c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + \omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15} + \omega_{16}^2\omega_{10}^3\omega_7^2\omega_8\omega_5^2\omega_{15} + \omega_{16}^2 v_2^2\omega_{10}^3\omega_7^2\omega_8\omega_5^2\omega_{15}^2 -$
$2\omega_{16}\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 3c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15} - 3c_s^2\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - \omega_{16}^2 v_2^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5 + v_2^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 -$
$\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2 - \omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 3c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_5^2\omega_{15}^2 - 3c_s^2\omega_{16}\omega_{10}^3\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + \omega_{16} v_2^2\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15}^2 - 2\omega_{16}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 +$
$3c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_5\omega_{15}^2 + \omega_{16}^2 v_2^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_{15}^2 + 6c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 + \omega_{16}\omega_{10}^3\omega_7^2\omega_8\omega_5^2\omega_{15}^2 - 2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} - \omega_{16}^2 v_2^2\omega_{10}^3\omega_7^2\omega_{17}^2\omega_8\omega_5^2\omega_{15}^2 +$
$\omega_{16} v_2^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}^2 - 3c_s^2\omega_{16}\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15} - \omega_{16}^2 v_2^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15} - 3c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 +$
$2\omega_{16}^2 v_2^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - \omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_{15}^2 + \omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 2\omega_{16}^2 v_2^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 -$
$\omega_{16}^2 v_2^2\omega_{10}^3\omega_7^2\omega_8\omega_5^2\omega_{15} - \omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - \omega_{16}^2\omega_{10}^3\omega_7^2\omega_8\omega_5^2\omega_{15}^2 + \omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5 + \omega_{16}^2 v_2^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2 - 2\omega_{16}^2 v_2^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}^2 -$
$\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + \omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 3c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2 + 3c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}^2 - 3c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8\omega_5^2\omega_{15} +$
$\omega_{16}^2 v_2^2\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15} - \omega_{16}^2 v_2^2\omega_{10}^2\omega_7^2\omega_{17}\omega_5^2\omega_{15}^2 + \omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5 + 3c_s^2\omega_{16}\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + \omega_{16} v_2^2\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 +$
$\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15} - \omega_{16} v_2^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + \omega_{16}^2\omega_{10}^3\omega_7^2\omega_5^2\omega_{15}^2 - 3c_s^2\omega_{16}\omega_{10}^3\omega_7^2\omega_8\omega_5^2\omega_{15}^2 + \omega_{16} v_2^2\omega_{10}^3\omega_7\omega_8\omega_5^2\omega_{15}^2 + 6c_s^2\omega_{16}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 +$
$\omega_{16}\omega_{10}^3\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + \omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_5^2\omega_{15}^2 + \omega_{16}^2\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15}^2 + \omega_{16}^2 v_2^2\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15} + 2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}^2 - \omega_{16}^2 v_2^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2 +$
$\omega_{16}^2 v_2^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 3c_s^2\omega_{16}^2\omega_{10}^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 3c_s^2\omega_{16}^2\omega_{10}^3\omega_7\omega_8\omega_5^2\omega_{15}^2 + 3c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8\omega_5\omega_{15} - 9c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 +$
$\omega_{16}^2 v_2^2\omega_{10}^3\omega_7\omega_5^2\omega_{15}^2 - \omega_{16}^2 v_2^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15} - \omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 2\omega_{16} v_2^2\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 3c_s^2\omega_{16}\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 -$
$\omega_{16}^2 v_2^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_{15} - \omega_{16}^2 v_2^2\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5\omega_{15} + \omega_{16}^2 v_2^2\omega_{10}^2\omega_7^2\omega_{17}\omega_5^2\omega_{15}^2 - v_2^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15} -$
$\omega_{16}^2\omega_{10}^3\omega_7^2\omega_5\omega_{15}^2 + 3c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15}^2 + 3c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_5^2\omega_{15}^2 - \omega_{16} v_2^2\omega_{10}^3\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 3c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_{15} +$
$2\omega_{16}^2 v_2^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} + \omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15} + \omega_{16}^2 v_2^2\omega_{10}^3\omega_7^2\omega_5\omega_{15}^2 + 6c_s^2\omega_{16}\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - \omega_{16} v_2^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 -$
$\omega_{16}\omega_{10}^3\omega_7\omega_8\omega_5^2\omega_{15}^2 - 3c_s^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 3c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15} - 2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - \omega_{16}^2 v_2^2\omega_{10}^3\omega_7\omega_8\omega_5^2\omega_{15}^2 +$
$\omega_{16}^2 v_2^2\omega_{10}^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 3c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2 - 2\omega_{16}^2 v_2^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - \omega_{16}^2\omega_{10}^3\omega_7\omega_5^2\omega_{15}^2 - 2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 +$
$3c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15} + \omega_{16}^2 v_2^2\omega_{10}^3\omega_7^2\omega_8\omega_5\omega_{15} + \omega_{16}^2\omega_{10}^3\omega_7^2\omega_8\omega_5\omega_{15}^2 + 3c_s^2\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + \omega_{16}^2\omega_{10}^3\omega_7\omega_8\omega_5^2\omega_{15}^2 - \omega_{16}^2\omega_{10}^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 -$
$3c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 3c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15}^2 - \omega_{16}^2 v_2^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15} + \omega_{16}\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 + 6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} +$
$\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - \omega_{16}^2\omega_{10}^3\omega_7^2\omega_8\omega_5\omega_{15} - \omega_{16}^2 v_2^2\omega_{10}^3\omega_7^2\omega_8\omega_5^2\omega_{15}^2 + \omega_{16}^2 v_2^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 3c_s^2\omega_{16}\omega_{10}^3\omega_7^2\omega_5^2\omega_{15}^2 -$
$6c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - \omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}^2 - \omega_{16} v_2^2\omega_{10}^3\omega_7^2\omega_8\omega_5^2\omega_{15}^2 + 3c_s^2\omega_{16}\omega_{10}^3\omega_7\omega_8\omega_5^2\omega_{15}^2 - 3\omega_{16}^2 v_2^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 -$
$\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_5^2\omega_{15}^2 - \omega_{16}\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15}^2 + \omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_{15} + 3c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + \omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - \omega_{16}^2 v_2^2\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15}^2 -$
$\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15} + \omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2 + 2\omega_{16}^2 v_2^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15} - \omega_{16} v_2^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}^2 - \omega_{16}\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}^2 -$
$3c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8\omega_5^2\omega_{15}^2 - 3c_s^2\omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5\omega_{15} - 3c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15})\frac{\rho_{3}v_2v_1}{\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D_x D_y^2 D_z}\rho} = C^{(2),\mathrm{MRT1}}_{\mathrm{D_x D_y^2 D_z}\rho}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D_x D_y^2 D_z}\rho} = 0$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D_x D_y^2 D_z}\rho} = 0$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D_x D_y^2 D_z}\,\rho} = 0$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D_x D_y^2 D_z}\,\rho} = (-18c_s^2\omega_1\omega_2^3 + 6v_3^2\omega_7^2\omega_2^2 + 6\omega_1\omega_2^3 + 2v_1^2\omega_1^3 - 6v_1^2\omega_1^2\omega_2 - 3v_3^2\omega_1^3\omega_2 + 36c_s^2\omega_1\omega_2^2 - 12\omega_1\omega_2^2 - 3v_1^2\omega_1^3\omega_2 - 12\omega_1^3 + 6v_1^2\omega_1^2\omega_2^2 - 6v_3^2\omega_1^2\omega_2 + 4v_1^2\omega_1^3 + 12v_2^2\omega_1\omega_2^2 + 4v_2^2\omega_1^3 - 3v_1^2\omega_1\omega_2^3 + 2v_3^2\omega_2^3 + 24\omega_1^2\omega_2 + 36c_s^2\omega_1^3 - 72c_s^2\omega_1^2\omega_2 - 3v_3^2\omega_1\omega_2^3 + 36c_s^2\omega_1^2\omega_2^2 + 4v_3^2\omega_1^3 - 12\omega_1^2\omega_2^2 - 4v_2^2\omega_2^3 - 18c_s^2\omega_1^3\omega_2 - 12v_2^2\omega_1^2\omega_2 + 6\omega_1^3\omega_2)\frac{v_3 v_2 v_1}{6\omega_1^3\omega_2^3}$

coefficient $C^{(2)}_{\mathrm{D_x D_y^2 D_z}\,v_1}$ **at** $\frac{\partial^4 v_1}{\partial x_1 \partial x_2^2 \partial x_3}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D_x D_y^2 D_z}\,v_1} = 0$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D_x D_y^2 D_z}\,v_1} = (-4\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_6\omega_{16}^2 v_2^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 2c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^3\omega_{15}^2 - 6\omega_6 c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 - 2\omega_6 c_s^2\omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8^2\omega_5^3\omega_{15} - 2\omega_6\omega_{16}^2 v_2^2\omega_{10}^2\omega_7^2\omega_8^2\omega_5^3\omega_{15}^2 + 2\omega_6 c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_5^2\omega_{15}^2 - 2\omega_6 c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3 - 4\omega_6 c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 - 2\omega_6\omega_{16}^2 v_2^2\omega_{10}^3\omega_7^2\omega_8\omega_5^3\omega_{15}^2 + \omega_6\omega_{16}^2 v_2^2\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 4\omega_6\omega_{16}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 + 2\omega_6\omega_{16}\omega_{10}^3\omega_7^2\omega_8^2\omega_5^3\omega_{15}^2 - 2\omega_6\omega_{16} v_2^2\omega_{10}^3\omega_7^2\omega_8^2\omega_5^3\omega_{15}^2 + 2\omega_6 c_s^2\omega_{16}\omega_{10}^3\omega_7^2\omega_8^2\omega_5^2\omega_{15}^2 - 2\omega_6\omega_{16}^2 v_2^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3 - \omega_6\omega_{16}^2 v_2^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 2\omega_6\omega_{16}^2\omega_{10}^3\omega_8\omega_5^3\omega_{15}^2 - 2\omega_6 c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8\omega_5^3\omega_{15}^2 + 2\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 + 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_6\omega_{16}^2 v_2^2\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 4\omega_6 c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_6\omega_{16}\omega_{10}v_2^2\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 + 2c_s^2\omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5^3\omega_{15}^2 - 2\omega_6 c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8^2\omega_5^3\omega_{15}^2 + 4\omega_6 c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 4\omega_6 c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - \omega_6\omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 2\omega_6\omega_{16}^2 v_2^2\omega_{10}^3\omega_7^2\omega_8\omega_5^2\omega_{15}^2 - 8\omega_6 c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 2\omega_6\omega_{16}^3\omega_7\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 - 2\omega_6 c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_5^3\omega_{15}^2 + 2\omega_6 c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8^2\omega_5^3\omega_{15} + 2\omega_6\omega_{16}^2 v_2^2\omega_{10}^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 - 2\omega_6\omega_{16}^2 v_2^2\omega_{10}^3\omega_7^2\omega_8^2\omega_5^3\omega_{15}^2 - 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8^2\omega_5^3 - 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8^2\omega_5^2\omega_{15} + 3\omega_6\omega_{16} v_2^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 - 3\omega_6\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 - 6\omega_6 c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 4\omega_6 c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^3\omega_{15}^2 + 4\omega_6\omega_{16}^2 v_2^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 2\omega_6\omega_{16} v_2^2\omega_{10}^3\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 - 8\omega_6 c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_{15}^2 + 2\omega_6 c_s^2\omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 2\omega_6 c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_8^2\omega_5^3\omega_{15}^2 + 2c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 2\omega_6\omega_{16}\omega_{10}^3\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 + 9\omega_6 c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 - 2\omega_6 v_2^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 - 4\omega_6 c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^3\omega_{15}^2 - 2\omega_6\omega_{16}^2 v_2^2\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 4\omega_6 c_s^2\omega_{16}^2\omega_{10}^3\omega_{17}\omega_8\omega_5^3\omega_{15}^2 + 6\omega_6 c_s^2\omega_{16}\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}^2 - 2c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 + \omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 2\omega_6 c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8^2\omega_5^2\omega_{15}^2 + 11\omega_6 c_s^2\omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 2\omega_6\omega_{16}^3\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 - 2\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8^2\omega_5^3\omega_{15}^2 - 2\omega_6 c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8\omega_5^3\omega_{15}^2 + 6\omega_6 c_s^2\omega_{16}^2\omega_{10}^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 + 2\omega_6\omega_{16}^2 v_2^2\omega_{10}^2\omega_7^2\omega_8^2\omega_5^3\omega_{15} + 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2 + 12\omega_6 c_s^2\omega_{16}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 + 2\omega_6\omega_{16}^2 v_2^2\omega_{10}^3\omega_7\omega_8\omega_5^3\omega_{15}^2 - 2\omega_6\omega_{16}\omega_{10}^3\omega_7^2\omega_8^2\omega_5^3\omega_{15}^2 - 2\omega_6\omega_{16}^2 v_2^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 2\omega_6 c_s^2\omega_{16}\omega_{10}^3\omega_7^2\omega_8^2\omega_5^2\omega_{15}^2 + 2\omega_6\omega_{16}^2 v_2^2\omega_{10}^3\omega_7^2\omega_8^2\omega_5^3\omega_{15}^2 + \omega_6\omega_{16}^2 v_2^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^3 - 13\omega_6 c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 4\omega_6 c_s^2\omega_{16}\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - \omega_6\omega_{16}^2 v_2^2\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5^3\omega_{15}^2 - 2\omega_6\omega_{16}^2 v_2^2\omega_{10}^3\omega_7^2\omega_8^2\omega_5^2\omega_{15}^2 - 2\omega_6 c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8^2\omega_5^3\omega_{15} + 2c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 4\omega_6 c_s^2\omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5\omega_{15}^2 + 2\omega_6\omega_{16}^2 v_2^2\omega_{10}\omega_7\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 - 4\omega_6 c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - \omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 - 9\omega_6 c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 - \omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 - 2c_s^2\omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 15\omega_6 c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 - 5\omega_6\omega_{16}^2 v_2^2\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 + 2\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8^2\omega_5^3\omega_{15}^2 - 2\omega_6\omega_{16}^2 v_2^2\omega_{10}^3\omega_7^2\omega_8^2\omega_5^3\omega_{15} + 3\omega_6 c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 + 3\omega_6\omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 + 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8\omega_5^3\omega_{15}^2 + 2\omega_6 c_s^2\omega_{16}^2\omega_{10}^3\omega_7\omega_8\omega_5^3\omega_{15}^2 + 4\omega_6\omega_{16}^2 v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 + 4\omega_6\omega_{16}^2 v_2^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 2\omega_6 c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8^2\omega_5^2\omega_{15}^2 + 2\omega_6 c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 4\omega_6 c_s^2\omega_{16}\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + \omega_6\omega_{16}^2 v_2^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + \omega_6\omega_{16}^2 v_2^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^3\omega_{15}^2 - 8\omega_6 c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 2\omega_6\omega_{16}^2 v_2^2\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 + \omega_6\omega_{16}^2 v_2^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 - 15\omega_6 c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 + 2\omega_6\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 + 8\omega_6 c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^3\omega_{15}^2 - 6\omega_6 c_s^2\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 - 2\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8^2\omega_5^3\omega_{15} - 3\omega_6\omega_{16}\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 - 2\omega_6\omega_{16}^2 v_2^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2 + 2\omega_6 c_s^2\omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_5^3\omega_{15}^2 - 2\omega_6 c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15} - 2\omega_6\omega_{16}^2 v_2^2\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 + 2\omega_6 v_2^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 + 2\omega_6\omega_{16}^2 v_2^2\omega_{10}^3\omega_7^2\omega_8^2\omega_5^3\omega_{15}^2 + \omega_6\omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5^3\omega_{15}^2 - 3\omega_6 c_s^2\omega_{16}\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 + 3\omega_6\omega_{16} v_2^2\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 + 4\omega_6 c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 2\omega_6\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 2\omega_6 v_2^2\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 + 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8^2\omega_5^3\omega_{15}^2 + 6\omega_6 c_s^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 - 11\omega_6 c_s^2\omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5^3\omega_{15}^2 + 2\omega_6 c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8^2\omega_5^3\omega_{15}^2 + \omega_6\omega_{16}^3\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 - \omega_6\omega_{16}^2 v_2^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - \omega_6\omega_{16}^3\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^3\omega_{15}^2 - \omega_6\omega_{16} v_2^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 + 9\omega_6 c_s^2\omega_{16}\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 - 2\omega_6 c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2 + 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15} - 2\omega_6 c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 4\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_{15}^2 + 8\omega_6 c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 3\omega_6\omega_{16}^2 v_2^2\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 + 5\omega_6\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 - 4\omega_6 c_s^2\omega_{16}^2\omega_{10}^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 2\omega_6\omega_{16}^2 v_2^2\omega_{10}^3\omega_7^2\omega_8^2\omega_5^2\omega_{15} + 6\omega_6 c_s^2\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2 + 2\omega_6\omega_{16}^2 v_2^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^3)\frac{v_3 v_2 \rho}{2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^3\omega_{15}^2}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D_x D_y^2 D_z}\,v_1} = C^{(2),\mathrm{MRT1}}_{\mathrm{D_x D_y^2 D_z}\,v_1}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D_x D_y^2 D_z}\,v_1} = 0$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D_x D_y^2 D_z}\,v_1} = 0$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D_x D_y^2 D_z}\,v_1} = 0$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D_x D_y^2 D_z}\,v_1} = (-24\omega_3 v_2^2\omega_4^2\omega_1^3\omega_2 - 108\omega_3\omega_4^2\omega_1^2\omega_2^3 + 189\omega_3^2 c_s^2\omega_4\omega_1^3\omega_2^3 + 48\omega_3\omega_4^2\omega_1^3\omega_2 - 36\omega_3 v_2^2\omega_4^2\omega_1^2\omega_2^3 + 324c_s^2\omega_4^2\omega_1^3\omega_2^3 + 72\omega_4^2\omega_1^3\omega_2^2 - 63\omega_3^2\omega_4\omega_1^3\omega_2^3 - 60\omega_3 v_3^2\omega_4^2\omega_1^2\omega_2^2 + 54\omega_3^2 v_2^2\omega_1^3\omega_2^3 - 20\omega_3^2 v_3^2\omega_4^2\omega_1^2\omega_2^3 - 72\omega_3^2 v_3^2\omega_4^2\omega_1^3\omega_2 + 336\omega_3^2 c_s^2\omega_4^2\omega_1^3 + 72\omega_3^2 v_2^2\omega_4^2\omega_1^2\omega_2^2 + 216\omega_3 c_s^2\omega_4\omega_1^3\omega_2^2 - 36\omega_3^2 v_2^2\omega_4\omega_1\omega_2^3 + 72\omega_3^2\omega_4\omega_1^3\omega_2^2 - 108\omega_4^2\omega_1^3\omega_2^3 + 48\omega_3^2 v_2^2\omega_4^2\omega_2^3 + 144\omega_3 v_3^2\omega_4^2\omega_1^2\omega_2^3 - 216c_s^2\omega_4^2\omega_1^3\omega_2^2 - 24\omega_3 v_3^2\omega_4^2\omega_1^3\omega_2 - 216\omega_3^2 c_s^2\omega_4\omega_1^3\omega_2^2 +$

$12\omega_3 v_2^2\omega_4^2\omega_1^2\omega_2^2 + 48\omega_3\omega_4^2\omega_1^2\omega_2^2 - 36\omega_3^2 v_2^2\omega_4^2\omega_1^3\omega_2 - 324\omega_3 c_s^2\omega_4\omega_1^3\omega_2^3 + 72\omega_3^2 v_3^2\omega_4\omega_1\omega_2^3 - 36\omega_3^2 v_3^2\omega_4^2\omega_1^2\omega_2^2 - 108\omega_3^2 v_1^2\omega_4^2\omega_1\omega_2^3 - 36\omega_3 c_s^2\omega_4^2\omega_1\omega_2^3 +$
$48\omega_3^2 v_2^2\omega_4^2\omega_1^3 + 24\omega_3^2 v_3^2\omega_4^2\omega_1^2\omega_2 + 24\omega_3^2\omega_4^2\omega_1\omega_2^2 - 432c_s^2\omega_4^2\omega_2^3 - 108\omega_3^2 v_2^2\omega_1^2\omega_2^3 + 72\omega_3 v_3^2\omega_4^2\omega_1^3\omega_2^2 + 144\omega_3^2\omega_4\omega_1^2\omega_2^3 - 72\omega_3^2 c_s^2\omega_4^2\omega_1\omega_2^2 +$
$63\omega_3\omega_4^2\omega_1^3\omega_2^3 - 432\omega_3^2 c_s^2\omega_4\omega_1^2\omega_2^3 + 20\omega_3^2 v_5^2\omega_4^2\omega_1^3\omega_2^2 - 48\omega_3^2 v_2^2\omega_4^2\omega_1^2\omega_2 + 432\omega_3 c_s^2\omega_4\omega_1^2\omega_2^3 + 36\omega_3 v_2^2\omega_4^2\omega_1^3\omega_2^2 + 216\omega_3^2 c_s^2\omega_4\omega_1^2\omega_2^2 -$
$120\omega_3^2 c_s^2\omega_4^2\omega_2^3 - 108\omega_3\omega_4^2\omega_1^3\omega_2^2 + 180\omega_3^2 c_s^2\omega_4^2\omega_1\omega_2^3 - 63\omega_3 v_3^2\omega_4^2\omega_1^3\omega_2^3 + 144\omega_4^2\omega_1^2\omega_2^3 - 72\omega_3^2\omega_4\omega_1^2\omega_2^2 - 36\omega_3^2\omega_4^2\omega_1\omega_2^3 - 36v_2^2\omega_4^2\omega_1^3\omega_2^2 +$
$63\omega_3^2 v_3^2\omega_4\omega_1^3\omega_2^3 - 216\omega_3^2 v_1^2\omega_4^2\omega_1^2\omega_2 + 54v_3^2\omega_4^2\omega_1^3\omega_2^3 - 144\omega_3 c_s^2\omega_4^2\omega_1^2\omega_2^2 - 36\omega_3^2 v_2^2\omega_4\omega_1^3\omega_2^2 - 144\omega_3^2\omega_4^2\omega_1^3 - 108\omega_3 v_2^2\omega_4\omega_1^3\omega_2^3 - 60\omega_3^2 c_s^2\omega_4^2\omega_1^2\omega_2^3 +$
$108\omega_3\omega_4\omega_1^3\omega_2^3 - 360\omega_3^2 c_s^2\omega_4^2\omega_1^3\omega_2 + 36\omega_3 v_3^2\omega_4\omega_1^3\omega_2^2 + 20\omega_3^2\omega_4^2\omega_1^2\omega_2^3 - 54\omega_3^2 v_3^2\omega_1^3\omega_2^3 + 144\omega_3^2\omega_4^2\omega_1^3\omega_2 + 324\omega_3 c_s^2\omega_4^2\omega_1^2\omega_2^3 - 144\omega_3 c_s^2\omega_4^2\omega_1^3\omega_2 -$
$36v_3^2\omega_4^2\omega_1^3\omega_2^2 - 36\omega_3^2 v_3^2\omega_4\omega_1^3\omega_2^2 + 54v_2^2\omega_4^2\omega_1^3\omega_2^3 - 36\omega_3^2\omega_4\omega_1\omega_2^3 + 144\omega_3^2 v_1^2\omega_4^2\omega_1^3 - 96\omega_3^2 v_3^2\omega_4^2\omega_2^3 - 108\omega_3^2\omega_4^2\omega_1^2\omega_2^2 + 108\omega_3^2 c_s^2\omega_4\omega_1\omega_2^3 -$
$72\omega_3\omega_4\omega_1^3\omega_2^2 + 36\omega_3 v_2^2\omega_4\omega_1^3\omega_2^2 + 180\omega_3^2 c_s^2\omega_4^2\omega_1^2\omega_2^2 + 96\omega_3^2\omega_4^2\omega_1^2\omega_2 - 24\omega_3 v_3^2\omega_4^2\omega_1\omega_2^3 + 108\omega_3^2 v_3^2\omega_1^2\omega_2^3 + 180\omega_3 v_2^2\omega_4\omega_1^2\omega_2^3 - 144\omega_3^2 c_s^2\omega_4^2\omega_1^2\omega_2 -$
$144\omega_3\omega_4\omega_1^2\omega_2^3 - 72v_3^2\omega_4^2\omega_1^2\omega_2^3 - 36\omega_3^2 v_2^2\omega_4^2\omega_1\omega_2^3 + 36\omega_3^2 v_2^2\omega_4\omega_1^2\omega_2^2 + 48\omega_3^2 v_3^2\omega_4^2\omega_1^3 + 72\omega_3^2 v_1^2\omega_4^2\omega_2^3 + 324\omega_3 c_s^2\omega_4^2\omega_1^3\omega_2^2 + 24\omega_3^2 v_3^2\omega_4^2\omega_1\omega_2^2 -$
$180\omega_3^2 v_3^2\omega_4\omega_1^2\omega_2^3 - 108\omega_3^2 v_1^2\omega_4^2\omega_1^3\omega_2 + 12\omega_3 v_2^2\omega_4^2\omega_1\omega_2^3 + 60\omega_3^2 c_s^2\omega_4^2\omega_1^3\omega_2^2 + 12\omega_3\omega_4^2\omega_1\omega_2^3 - 20\omega_3^2\omega_4^2\omega_1^3\omega_2^2 - 36\omega_3 v_3^2\omega_4\omega_1^2\omega_2^3 + 36\omega_3^2 v_3^2\omega_4\omega_1^2\omega_2^2 -$
$72v_2^2\omega_4^2\omega_1^2\omega_2^3 + 216\omega_3^2 v_1^2\omega_4^2\omega_1^2\omega_2^2 + 24\omega_3^2\omega_4^2\omega_2^3 + 108\omega_3^2 v_3^2\omega_4^2\omega_1\omega_2^3 + 36\omega_3^2 v_2^2\omega_4\omega_1^2\omega_2^3 - 189\omega_3 c_s^2\omega_4^2\omega_1^3\omega_2^3 - 48\omega_3^2 v_2^2\omega_4^2\omega_1\omega_2^2)\frac{v_3 v_2\rho}{72\omega_3^2\omega_4^2\omega_1^3\omega_2^3}$

coefficient $C^{(2)}_{\mathrm{D_x D_y^2 D_z}\, v_2}$ **at** $\frac{\partial^4 v_2}{\partial x_1 \partial x_2^2 \partial x_3}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D_x D_y^2 D_z}\, v_2} = 0$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D_x D_y^2 D_z}\, v_2} = (\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_5\omega_{15}^2 + 3\omega_{16}^2 v_2^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}^2 + 3\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_{15}^2 -$
$2c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}^2 - 3\omega_{16}^2 v_2^2\omega_{10}^2\omega_7\omega_{17}\omega_5^2\omega_{15}^2 + 6\omega_{16} v_2^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15} + c_s^2\omega_{16}^2\omega_{10}^3\omega_7\omega_5^2\omega_{15}^2 -$
$c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5 - 3v_2^2\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8\omega_5^2\omega_{15}^2 + \omega_{16}\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + c_s^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 +$
$c_s^2\omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15} + 2c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + \omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15} + \omega_{16}^2\omega_{10}^3\omega_7^2\omega_8\omega_5^2\omega_{15} + 3\omega_{16}^2 v_2^2\omega_{10}^3\omega_7^2\omega_8\omega_5^2\omega_{15}^2 -$
$2\omega_{16}\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15} - c_s^2\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 3\omega_{16}^2 v_2^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5 + 3v_2^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 -$
$\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2 - \omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_5^2\omega_{15}^2 - c_s^2\omega_{16}\omega_{10}^3\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 3\omega_{16} v_2^2\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15}^2 - 2\omega_{16}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 +$
$c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_5\omega_{15}^2 + 3\omega_{16}^2 v_2^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_{15}^2 + 2c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 + \omega_{16}\omega_{10}^3\omega_7^2\omega_8\omega_5^2\omega_{15}^2 - 2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} - 3\omega_{16}^2 v_2^2\omega_{10}^3\omega_7^2\omega_5^2\omega_{15}^2 +$
$3\omega_{16} v_2^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}^2 - c_s^2\omega_{16}\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 3\omega_{16}^2 v_2^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5 - c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_5\omega_{15}^2 - c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 +$
$6\omega_{16}^2 v_2^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - \omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_{15}^2 + \omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}^2 + 2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 6\omega_{16}^2 v_2^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 -$
$3\omega_{16}^2 v_2^2\omega_{10}^3\omega_7^2\omega_8\omega_5^2\omega_{15} - \omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - \omega_{16}^2\omega_{10}^3\omega_7^2\omega_8\omega_5^2\omega_{15}^2 + \omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5 + 3\omega_{16}^2 v_2^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2 - 6\omega_{16}^2 v_2^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 -$
$\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + \omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2 + c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8\omega_5^2\omega_{15} +$
$3\omega_{16}^2 v_2^2\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15} - 3\omega_{16}^2 v_2^2\omega_{10}^2\omega_7^2\omega_{17}\omega_5^2\omega_{15}^2 + \omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5\omega_{15} + c_s^2\omega_{16}\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}^2 - 3\omega_{16} v_2^2\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 +$
$\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15} - 3\omega_{16} v_2^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + \omega_{16}^2\omega_{10}^3\omega_5^2\omega_{15}^2 - c_s^2\omega_{16}\omega_{10}^3\omega_7^2\omega_8\omega_5^2\omega_{15}^2 + 3\omega_{16} v_2^2\omega_{10}^3\omega_7\omega_8\omega_5^2\omega_{15}^2 +$
$2c_s^2\omega_{16}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + \omega_{16}\omega_{10}^3\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + \omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_5^2\omega_{15}^2 + \omega_{16}^2\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15}^2 + 3\omega_{16}^2 v_2^2\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15} + 2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 -$
$3\omega_{16}^2 v_2^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2 + 3\omega_{16}^2 v_2^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + c_s^2\omega_{16}^2\omega_{10}^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - c_s^2\omega_{16}^2\omega_{10}^3\omega_7\omega_8\omega_5^2\omega_{15}^2 + c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8\omega_5\omega_{15} -$
$3c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 3\omega_{16}^2 v_2^2\omega_{10}^3\omega_7\omega_5^2\omega_{15}^2 - 3\omega_{16}^2 v_2^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15} - \omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15} + 6\omega_{16} v_2^2\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 -$
$c_s^2\omega_{16}\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 3\omega_{16}^2 v_2^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_{15} - 3\omega_{16}^2 v_2^2\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5\omega_{15} + 3\omega_{16}^2 v_2^2\omega_{10}^2\omega_7^2\omega_{17}\omega_5^2\omega_{15}^2 - 3v_2^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 +$
$2c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15} - \omega_{16}^2\omega_{10}^3\omega_7^2\omega_5\omega_{15}^2 + c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15}^2 + c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_5^2\omega_{15}^2 - 3\omega_{16} v_2^2\omega_{10}^3\omega_{17}\omega_8\omega_5^2\omega_{15}^2 -$
$c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_{15} + 6\omega_{16}^2 v_2^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} + \omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15} + 3\omega_{16}^2 v_2^2\omega_{10}^3\omega_7^2\omega_5\omega_{15}^2 + 2c_s^2\omega_{16}\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 -$
$3\omega_{16} v_2^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - \omega_{16}\omega_{10}^3\omega_7\omega_8\omega_5^2\omega_{15}^2 - c_s^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15} - 2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 -$
$3\omega_{16}^2 v_2^2\omega_{10}^3\omega_7\omega_8\omega_5^2\omega_{15}^2 + 3\omega_{16}^2 v_2^2\omega_{10}^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2 - 6\omega_{16}^2 v_2^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - \omega_{16}^2\omega_{10}^3\omega_7\omega_5^2\omega_{15}^2 -$
$2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 + c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15} + 3\omega_{16}^2 v_2^2\omega_{10}^3\omega_7^2\omega_8\omega_5\omega_{15} + \omega_{16}^2\omega_{10}^3\omega_7^2\omega_8\omega_5\omega_{15}^2 + c_s^2\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + \omega_{16}^2\omega_{10}^3\omega_7\omega_8\omega_5^2\omega_{15}^2 -$
$\omega_{16}^2\omega_{10}^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}^2 - c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15}^2 - 3\omega_{16}^2 v_2^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15} + \omega_{16}\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5\omega_{15}^2 +$
$2c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} + \omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - \omega_{16}^2\omega_{10}^3\omega_7^2\omega_8\omega_5\omega_{15} - 3\omega_{16}^2 v_2^2\omega_{10}^3\omega_7^2\omega_8\omega_5^2\omega_{15}^2 + 3\omega_{16}^2 v_2^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 -$
$c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_5^2\omega_{15}^2 - 2c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - \omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}^2 - 3\omega_{16}^2 v_2^2\omega_{10}^3\omega_7^2\omega_8\omega_5^2\omega_{15}^2 + c_s^2\omega_{16}^2\omega_{10}^3\omega_7\omega_8\omega_5^2\omega_{15}^2 -$
$9\omega_{16}^2 v_2^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - \omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_5^2\omega_{15}^2 - \omega_{16}\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15}^2 + \omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_{15} + c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + \omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 -$
$3\omega_{16}^2 v_2^2\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15}^2 - \omega_{16}^2\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15} + \omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2 + 6\omega_{16}^2 v_2^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15} + 3\omega_{16} v_2^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}^2 -$
$\omega_{16}\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}^2 - c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8\omega_5\omega_{15}^2 - c_s^2\omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5\omega_{15} - c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15})\frac{v_3 v_1\rho}{\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D_x D_y^2 D_z}\, v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D_x D_y^2 D_z}\, v_2}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D_x D_y^2 D_z}\, v_2} = 0$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D_x D_y^2 D_z}\, v_2} = 0$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D_x D_y^2 D_z}\, v_2} = 0$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D_x D_y^2 D_z}\, v_2} = (-36\omega_3^2 c_s^2\omega_4\omega_1^2\omega_2 + 18\omega_3^2 c_s^2\omega_1^2\omega_2^3 + 20\omega_3^2\omega_4\omega_1^2\omega_2 + \omega_3 v_3^2\omega_4\omega_1\omega_2^3 + \omega_3 v_1^2\omega_4\omega_1^2\omega_2^2 - 4\omega_3^2\omega_4\omega_2^3 - 3\omega_3^2 v_1^2\omega_4\omega_1^3\omega_2 -$
$4\omega_3^2 v_3^2\omega_4\omega_1\omega_2^2 + 18\omega_3 c_s^2\omega_4\omega_1^3\omega_2^2 + 3v_3^2\omega_4\omega_1^2\omega_2^3 - 3\omega_3^2 v_3^2\omega_1\omega_2^3 - 2\omega_3 v_1^2\omega_4\omega_1^3\omega_2 - 3\omega_3 v_1^2\omega_4\omega_1^2\omega_2^3 - 2\omega_3\omega_4\omega_1\omega_2^3 + 3\omega_3 v_3^2\omega_1^3\omega_2^2 + 18\omega_3^2 c_s^2\omega_1^2\omega_2^2 +$
$4\omega_3^2 v_1^2\omega_4\omega_2^3 + 36\omega_3^2 v_2^2\omega_4\omega_1\omega_2^2 + 4\omega_3^2 v_3^2\omega_4\omega_1^3 - 6\omega_3\omega_1^3\omega_2^2 + 6\omega_3^2 v_1^2\omega_4\omega_1^2\omega_2^2 - 3\omega_3^2 v_3^2\omega_4\omega_1\omega_2^3 - 3\omega_3 v_1^2\omega_1^2\omega_2^3 + 6\omega_3 c_s^2\omega_4\omega_1^2\omega_2^2 - 3\omega_3^2 v_1^2\omega_1\omega_2^3 -$
$4\omega_3^2 v_1^2\omega_4\omega_1^2\omega_2 + 3\omega_3 v_1^2\omega_1^3\omega_2^2 + 6\omega_3\omega_1^2\omega_2^3 + 3\omega_3 v_1^2\omega_4\omega_1^3\omega_2^2 + 6\omega_3^2\omega_4\omega_1^3\omega_2 + 4\omega_3^2 v_3^2\omega_4\omega_2^3 + 4\omega_3^2 v_1^2\omega_4\omega_1^3 - 18\omega_3^2 c_s^2\omega_4\omega_1^3\omega_2 - 3\omega_3 v_3^2\omega_1^2\omega_2^3 +$
$6\omega_3^2\omega_1\omega_2^3 - 12\omega_3 c_s^2\omega_4\omega_1^3\omega_2 - 3v_3^2\omega_4\omega_1^3\omega_2^2 - 18\omega_3 c_s^2\omega_4\omega_1^2\omega_2^3 - 18\omega_3^2 c_s^2\omega_1^3\omega_2^2 + 36\omega_3^2 c_s^2\omega_4\omega_1^2\omega_2^2 - 12\omega_3^2\omega_4\omega_1^3 - 12\omega_3^2\omega_4\omega_1^2\omega_2^2 - 6\omega_3^2\omega_1^2\omega_2^3 -$

$4\omega_3^2v_3^2\omega_4\omega_1^2\omega_2 + 6\omega_3c_s^2\omega_4\omega_1\omega_2^3 + 3\omega_3^2v_1^2\omega_1^2\omega_2^2 - 12\omega_3^2c_s^2\omega_4\omega_1\omega_2^2 + 20\omega_3^2c_s^2\omega_4\omega_2^3 + 3\omega_3v_3^2\omega_4\omega_1^3\omega_2^2 - 4\omega_3^2\omega_4\omega_1\omega_2^2 + 18c_s^2\omega_4\omega_1^2\omega_2^3 -$
$18\omega_3c_s^2\omega_1^2\omega_2^3 + 12\omega_3^2v_2^2\omega_4\omega_1^3 + 3\omega_3^2v_1^2\omega_1^2\omega_2^3 - 3v_1^2\omega_4\omega_1^3\omega_2^2 - 36\omega_3^2v_2^2\omega_4\omega_1^2\omega_2 - 6\omega_3^2\omega_1^2\omega_2^2 - 3\omega_3^2v_3^2\omega_1^3\omega_2^2 + 6\omega_3^2\omega_4\omega_1\omega_2^3 - 6\omega_4\omega_1^2\omega_2^3 -$
$18\omega_3^2c_s^2\omega_4\omega_1\omega_2^3 - 6\omega_3\omega_4\omega_1^3\omega_2^2 + \omega_3v_1^2\omega_4\omega_1\omega_2^3 + 6\omega_4\omega_1^3\omega_2^2 + \omega_3v_3^2\omega_4\omega_1^2\omega_2^2 + 3\omega_3^2v_3^2\omega_1^2\omega_2^3 - 12\omega_3^2v_2^2\omega_4\omega_2^3 + 4\omega_3\omega_4\omega_1^3\omega_2 + 6\omega_3\omega_4\omega_1^2\omega_2^3 -$
$3\omega_3^2v_1^2\omega_1^3\omega_2^2 + 3v_1^2\omega_4\omega_1^2\omega_2^3 - 3\omega_3^2v_3^2\omega_4\omega_1^3\omega_2 - 4\omega_3^2v_1^2\omega_4\omega_1\omega_2^2 - 18\omega_3^2c_s^2\omega_1\omega_2^3 - 2\omega_3\omega_4\omega_1^2\omega_2^2 + 18\omega_3c_s^2\omega_1^3\omega_2^2 - 18c_s^2\omega_4\omega_1^3\omega_2^2 - 2\omega_3v_3^2\omega_4\omega_1^3\omega_2 +$
$3\omega_3^2v_3^2\omega_1^2\omega_2^2 - 3\omega_3v_3^2\omega_4\omega_1^2\omega_2^3 + 6\omega_3^2v_3^2\omega_4\omega_1^2\omega_2^2 - 3\omega_3^2v_1^2\omega_4\omega_1\omega_2^3 + 28\omega_3^2c_s^2\omega_4\omega_1^3 + 6\omega_3^2\omega_1^3\omega_2^2)\frac{v_3v_1\rho}{6\omega_3^2\omega_4\omega_1^3\omega_2^3}$

coefficient $C^{(2)}_{\mathrm{D_xD_y^2D_z}v_3}$ **at** $\frac{\partial^4 v_3}{\partial x_1\partial x_2^2\partial x_3}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D_xD_y^2D_z}v_3} = 0$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D_xD_y^2D_z}v_3} = (4\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{17}\omega_8\omega_5\omega_{15}^2 + 12\omega_6c_s^2\omega_{16}^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 2\omega_6\omega_{16}^2v_2^2\omega_{10}^3\omega_7^3\omega_8^2\omega_5\omega_{15}^2 - 2\omega_6c_s^2\omega_{16}\omega_{10}^2\omega_7^3\omega_{17}\omega_8^2\omega_5\omega_{15}^2 +$
$2\omega_6\omega_{16}^2\omega_{10}\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 9\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5\omega_{15} - 2\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_8^2\omega_5^2\omega_{15}^2 + 2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_5^2\omega_{15}^2 - 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5^2 -$
$8\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 - 2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_8\omega_5^2\omega_{15}^2 + \omega_6\omega_{16}^2v_2^2\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - \omega_6\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 -$
$5\omega_6\omega_{16}^2v_2^2\omega_{10}\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8^2\omega_5^2\omega_{15}^2 + 2\omega_6\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - \omega_6\omega_{16}^2v_2^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 2\omega_6\omega_{16}v_2^2\omega_{10}^3\omega_7^3\omega_8^2\omega_5^2\omega_{15}^2 +$
$2\omega_6\omega_{16}\omega_{10}^3\omega_7^3\omega_8^2\omega_5^2\omega_{15}^2 + 3\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 2\omega_6\omega_{16}^2v_2^2\omega_{10}^3\omega_7^3\omega_8\omega_5^2\omega_{15}^2 + 2\omega_6\omega_{16}\omega_{10}^2\omega_7^3\omega_{17}\omega_8^2\omega_5\omega_{15}^2 - 2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_8^2\omega_5\omega_{15}^2 -$
$2\omega_6\omega_{16}v_2^2\omega_{10}^2\omega_7^3\omega_{17}\omega_8^2\omega_5\omega_{15}^2 - 4\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 4\omega_6\omega_{16}^2v_2^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 3\omega_6\omega_{16}^2v_2^2\omega_{10}^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$2\omega_6\omega_{16}^2v_2^2\omega_{10}^2\omega_7^3\omega_8^2\omega_5^2\omega_{15}^2 + 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3\omega_8^2\omega_5^2\omega_{15} + 4\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 3\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5\omega_{15} - 6\omega_6c_s^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$\omega_6\omega_{16}^2v_2^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_8^2\omega_5\omega_{15} - \omega_6\omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 6\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_{15} + 2\omega_6\omega_{16}^2v_2^2\omega_{10}^3\omega_7^2\omega_8^2\omega_5^2\omega_{15}^2 +$
$\omega_6\omega_{16}^2v_2^2\omega_{10}^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 2\omega_6\omega_{16}v_2^2\omega_{10}^3\omega_7^2\omega_8^2\omega_5^2\omega_{15}^2 - 2\omega_6\omega_{16}\omega_{10}^3\omega_7^2\omega_8^2\omega_5^2\omega_{15}^2 - 8\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 2\omega_6\omega_{16}^2v_2^2\omega_{10}^2\omega_7^3\omega_8^2\omega_5^2\omega_{15} -$
$15\omega_6c_s^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3\omega_8^2\omega_5^2\omega_{15}^2 + 2\omega_6\omega_{10}^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 8\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 6\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2 +$
$2\omega_6v_2^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 2\omega_6\omega_{16}^2v_2^2\omega_{10}\omega_{17}^3\omega_8^2\omega_5^2\omega_{15} - 2\omega_6c_s^2\omega_{16}\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 2\omega_6\omega_{16}v_2^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 +$
$9\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 4\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_{15}^2 + 2c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 2\omega_6\omega_{16}\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5 +$
$2\omega_6c_s^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 2\omega_6\omega_{16}\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 2c_s^2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8\omega_5\omega_{15}^2 - \omega_6\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 2\omega_6\omega_{16}v_2^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 -$
$2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3\omega_8\omega_5\omega_{15}^2 + 3\omega_6\omega_{16}^2v_2^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5\omega_{15} - 2\omega_6\omega_{16}^2v_2^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5^2 - 2\omega_6c_s^2\omega_{16}\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 2\omega_6c_s^2\omega_{16}\omega_{10}^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 -$
$3\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}^2 - 2\omega_6\omega_{16}^2v_2^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_{15}^2 + \omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8\omega_5^2\omega_{15}^2 -$
$2c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 - 2\omega_6\omega_{16}^2v_2^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_{15} + 15\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 2\omega_6\omega_{16}^2v_2^2\omega_{10}^3\omega_7^3\omega_8^2\omega_5^2\omega_{15} +$
$5\omega_6\omega_{16}^2\omega_{10}\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 2\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_8^2\omega_5^2\omega_{15} - 2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_5^2\omega_{15}^2 - \omega_6\omega_{16}^2v_2^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15} + \omega_6\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8\omega_5\omega_{15}^2 +$
$2\omega_6\omega_{16}v_2^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5\omega_{15}^2 + 4\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3\omega_8\omega_5^2\omega_{15}^2 - 2\omega_6c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 -$
$2\omega_6\omega_{16}\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5\omega_{15}^2 - 2c_s^2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 2\omega_6v_2^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 2\omega_6\omega_{16}\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 6\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5^2 -$
$13\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 2\omega_6\omega_{16}v_2^2\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 4\omega_6c_s^2\omega_{16}\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 2\omega_6\omega_{16}^2v_2^2\omega_{10}^3\omega_7^2\omega_8^2\omega_5^2\omega_{15}^2 -$
$2\omega_6\omega_{16}^2v_2^2\omega_{10}^3\omega_7^3\omega_8^2\omega_5^2\omega_{15} + 2c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 4\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5\omega_{15}^2 + 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3\omega_8^2\omega_5^2\omega_{15}^2 - 4\omega_6c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 -$
$\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 + 2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_5^2\omega_{15}^2 - 4\omega_6\omega_{16}^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 2\omega_6\omega_{16}^2\omega_{10}\omega_7^3\omega_{17}\omega_8^2\omega_5\omega_{15}^2 - 2c_s^2\omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 +$
$11\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 - 3\omega_6\omega_{16}^2v_2^2\omega_{10}^2\omega_7^3\omega_{17}\omega_8^2\omega_5\omega_{15}^2 - 2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_8^2\omega_5^2\omega_{15} + 6\omega_6c_s^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 +$
$2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3\omega_8^2\omega_5\omega_{15}^2 - 2\omega_6c_s^2\omega_{16}\omega_{10}^3\omega_7^3\omega_8^2\omega_5^2\omega_{15}^2 + 2\omega_6c_s^2\omega_{16}\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 2\omega_6\omega_{16}\omega_{10}\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 11\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8\omega_5\omega_{15}^2 -$
$2\omega_6\omega_{16}^2v_2^2\omega_{10}\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 4\omega_6\omega_{16}\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_8^2\omega_5^2\omega_{15}^2 - 2\omega_6c_s^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 +$
$6\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15}^2 + 2\omega_6\omega_{16}^2v_2^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5^2 - 2\omega_6c_s^2\omega_{16}\omega_{10}^3\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 4\omega_6\omega_{16}v_2^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 +$
$\omega_6\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 - 4\omega_6c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 2\omega_6\omega_{16}^2v_2^2\omega_{10}\omega_{17}^3\omega_8^2\omega_5\omega_{15}^2 + 2\omega_6\omega_{16}^2v_2^2\omega_{10}^3\omega_7^3\omega_8\omega_5\omega_{15}^2 + 2\omega_6\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2 -$
$9\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5\omega_{15}^2 + \omega_6\omega_{16}v_2^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15}^2 - 2\omega_6\omega_{16}^2v_2^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5 + 4\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15} +$
$4\omega_6\omega_{16}v_2^2\omega_{10}^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 4\omega_6\omega_{16}\omega_{10}^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_8^2\omega_5^2\omega_{15}^2 - 2\omega_6c_s^2\omega_{10}^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 4\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8\omega_{15}^2 +$
$2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_{15} - \omega_6\omega_{16}^2v_2^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8\omega_5\omega_{15}^2 - 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3\omega_8^2\omega_5\omega_{15} + \omega_6\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_6\omega_{16}^2v_2^2\omega_{10}^2\omega_7^3\omega_{17}\omega_8^2\omega_{15}^2 +$
$2\omega_6c_s^2\omega_{16}\omega_{10}^3\omega_7^2\omega_8^2\omega_5^2\omega_{15}^2 + 4\omega_6c_s^2\omega_{16}\omega_{10}^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 2\omega_6\omega_{16}^2v_2^2\omega_{10}^3\omega_7^3\omega_8^2\omega_5^2\omega_{15}^2 - \omega_6\omega_{16}^2v_2^2\omega_{10}^3\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15}^2 -$
$2\omega_6v_2^2\omega_{10}^2\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 - 4\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3\omega_8^2\omega_5^2\omega_{15}^2 + 2\omega_6\omega_{16}^2v_2^2\omega_{10}^3\omega_7^3\omega_8^2\omega_5^2\omega_{15}^2 - 6\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5 -$
$2\omega_6\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 3\omega_6\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{17}\omega_8^2\omega_5\omega_{15}^2 - 8\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2 + 2\omega_6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_8\omega_5\omega_{15}^2)\frac{v_2v_1\rho}{2\omega_6\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{17}\omega_8^2\omega_5^2\omega_{15}^2}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D_xD_y^2D_z}v_3} = C^{(2),\mathrm{MRT1}}_{\mathrm{D_xD_y^2D_z}v_3}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D_xD_y^2D_z}v_3} = 0$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D_xD_y^2D_z}v_3} = 0$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D_xD_y^2D_z}v_3} = 0$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D_xD_y^2D_z}v_3} = (-24\omega_3v_2^2\omega_4^2\omega_1^3\omega_2 - 108\omega_3\omega_4^2\omega_1^2\omega_2^3 + 189\omega_3^2c_s^2\omega_4\omega_1^3\omega_2^2 + 48\omega_3\omega_4^2\omega_1^3\omega_2 - 36\omega_3v_2^2\omega_4^2\omega_1^2\omega_2^2 + 324c_s^2\omega_4^2\omega_1^3\omega_2^2 + 72\omega_4^2\omega_1^3\omega_2^2 -$
$24\omega_3v_1^2\omega_4^2\omega_1\omega_2^3 - 63\omega_3^2\omega_4\omega_1^3\omega_2^2 + 54\omega_3^2v_2^2\omega^3\omega_2^3 + 24\omega_3^2v_1^2\omega_4^2\omega_1\omega_2^2 - 108\omega_3^2v_3^2\omega_4^2\omega_1^3\omega_2 + 336\omega_3^2c_s^2\omega_4^2\omega_1^3 - 180\omega_3^2v_1^2\omega_4\omega_1^2\omega_2^3 + 72\omega_3^2v_2^2\omega_4^2\omega_1^2\omega_2^2 -$
$72v_1^2\omega_4^2\omega_1^2\omega_2^3 + 216\omega_3c_s^2\omega_4\omega_1^3\omega_2^2 - 36\omega_3^2v_2^2\omega_4\omega_1\omega_2^3 + 72\omega_3^2\omega_4\omega_1^3\omega_2^2 - 108\omega_4^2\omega_1^3\omega_2^3 + 48\omega_3^2v_2^2\omega_4^2\omega_2^3 - 216c_s^2\omega_4^2\omega_1^3\omega_2^2 - 36\omega_3v_1^2\omega_4\omega_1^2\omega_2^3 -$
$216\omega_3^2c_s^2\omega_4\omega_1^3\omega_2^2 + 12\omega_3v_2^2\omega_4^2\omega_1^2\omega_2^2 + 48\omega_3\omega_4^2\omega_1^2\omega_2^2 - 36\omega_3^2v_2^2\omega_4^2\omega_1^3\omega_2 - 324\omega_3c_s^2\omega_4\omega_1^3\omega_2^2 + 36\omega_3^2v_1^2\omega_4\omega_1^2\omega_2^2 + 216\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2^2 +$
$108\omega_3^2v_1^2\omega_4^2\omega_1\omega_2^3 + 54v_1^2\omega_4^2\omega_1^3\omega_2^2 - 36\omega_3c_s^2\omega_4^2\omega_1\omega_2^3 + 48\omega_3^2v_2^2\omega_4^2\omega_1^3 - 216\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2 + 63\omega_3^2v_1^2\omega_4\omega_1^3\omega_2^2 + 36\omega_3v_1^2\omega_4\omega_1^3\omega_2^2 + 24\omega_3^2\omega_4^2\omega_1\omega_2^2 -$

$432c_s^2\omega_4^2\omega_1^2\omega_2^3 - 108\omega_3^2v_2^2\omega_1^2\omega_2^3 + 144\omega_3^2\omega_4\omega_1^2\omega_2^3 - 72\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^2 + 63\omega_3\omega_4^2\omega_1^3\omega_2^3 - 432\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^3 - 36\omega_3^2v_1^2\omega_4\omega_1^3\omega_2^2 - 48\omega_3^2v_2^2\omega_4^2\omega_1^2\omega_2 +$
$432\omega_3c_s^2\omega_4\omega_1^2\omega_2^3 - 36v_1^2\omega_4^2\omega_1^3\omega_2^2 + 36\omega_3v_2^2\omega_4^2\omega_1^3\omega_2^2 + 216\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^2 - 120\omega_3^2c_s^2\omega_4^2\omega_2^3 - 108\omega_3\omega_4^2\omega_1^3\omega_2^2 + 180\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^3 + 144\omega_4^2\omega_1^2\omega_2^3 -$
$72\omega_3^2\omega_4\omega_1^2\omega_2^2 - 36\omega_3^2\omega_4^2\omega_1\omega_2^3 - 36v_2^2\omega_4^2\omega_1^3\omega_2^2 + 24\omega_3^2v_1^2\omega_4^2\omega_1^2\omega_2 - 144\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^2 - 36\omega_3^2v_2^2\omega_4\omega_1^3\omega_2^2 - 144\omega_3^2\omega_4^2\omega_1^3 - 108\omega_3v_2^2\omega_4\omega_1^3\omega_2^2 -$
$60\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^3 + 108\omega_3\omega_4\omega_1^3\omega_2^3 - 360\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2 + 20\omega_3^2\omega_4^2\omega_1^2\omega_2^3 + 72\omega_3v_1^2\omega_4^2\omega_1^3\omega_2^2 + 144\omega_3^2\omega_4^2\omega_1^3\omega_2 + 324\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^3 + 108\omega_3^2v_1^2\omega_1^2\omega_2^3 -$
$144\omega_3c_s^2\omega_4^2\omega_1^3\omega_2 + 20\omega_3^2v_1^2\omega_4^2\omega_1^3\omega_2^2 + 54v_2^2\omega_4^2\omega_1^3\omega_2^3 - 36\omega_3^2\omega_4\omega_1\omega_2^3 + 48\omega_3^2v_1^2\omega_4^2\omega_1^3 - 63\omega_3v_1^2\omega_4^2\omega_1^3\omega_2^3 + 72\omega_3^2v_3^2\omega_4^2\omega_2^3 - 108\omega_3^2\omega_4^2\omega_1^2\omega_2^2 +$
$108\omega_3^2c_s^2\omega_4\omega_1\omega_2^3 - 72\omega_3\omega_4\omega_1^3\omega_2^3 + 36\omega_3v_2^2\omega_4\omega_1^3\omega_2^2 + 180\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^2 + 96\omega_3^2\omega_4^2\omega_1^2\omega_2 - 60\omega_3v_1^2\omega_4^2\omega_1^2\omega_2^2 + 180\omega_3v_2^2\omega_4\omega_1^2\omega_2^3 - 144\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2 -$
$144\omega_3\omega_4\omega_1^2\omega_2^3 - 36\omega_3^2v_2^2\omega_4^2\omega_1\omega_2^3 + 36\omega_3^2v_2^2\omega_4\omega_1^2\omega_2^2 + 144\omega_3^2v_3^2\omega_4^2\omega_1^3 - 96\omega_3^2v_1^2\omega_4^2\omega_2^3 + 324\omega_3c_s^2\omega_4^2\omega_1^3\omega_2^2 - 20\omega_3^2v_1^2\omega_4^2\omega_1^2\omega_2^3 - 72\omega_3^2v_1^2\omega_4^2\omega_1^3\omega_2 +$
$12\omega_3v_2^2\omega_4^2\omega_1\omega_2^3 + 60\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2^2 + 12\omega_3\omega_4^2\omega_1\omega_2^3 + 144\omega_3v_1^2\omega_4^2\omega_1^2\omega_2^3 - 20\omega_3^2\omega_4^2\omega_1^3\omega_2^2 - 24\omega_3v_1^2\omega_4^2\omega_1^3\omega_2 + 72\omega_3^2v_1^2\omega_4\omega_1\omega_2^3 - 72v_2^2\omega_4^2\omega_1^2\omega_2^3 -$
$36\omega_3^2v_1^2\omega_4^2\omega_1^2\omega_2^2 + 24\omega_3^2\omega_4^2\omega_2^3 - 108\omega_3^2v_3^2\omega_4^2\omega_1\omega_2^3 + 36\omega_3^2v_2^2\omega_4\omega_1^2\omega_2^3 - 54\omega_3^2v_1^2\omega_1^3\omega_2^3 - 189\omega_3c_s^2\omega_4^2\omega_1^3\omega_2^3 - 48\omega_3^2v_2^2\omega_4^2\omega_1\omega_2^2)\frac{v_2v_1\rho}{72\omega_3^2\omega_4^2\omega_1^3\omega_2^3}$

coefficient $C^{(2)}_{\mathrm{D}^3_y\mathrm{D}_z\rho}$ **at** $\frac{\partial^4\rho}{\partial x_2^3\partial x_3}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}^3_y\mathrm{D}_z\rho} = 0$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}^3_y\mathrm{D}_z\rho} = (-20\omega_{16}v_2^2\omega_{10}^3\omega_7 + 8\omega_{16}^2v_2^4\omega_{10}^2 - 4v_2^4\omega_{10}^2\omega_7^2 - 144c_s^2\omega_{16}^2v_2^2\omega_{10}\omega_7^2 - 48c_s^2\omega_{16}v_2^2\omega_{10}^2\omega_7 + 4c_s^4\omega_{10}^3\omega_7^2 + 8c_s^4\omega_{16}\omega_{10}^2\omega_7^2 -$
$36\omega_{16}^2v_2^4\omega_{10}\omega_7^2 + 4c_s^2\omega_{10}^2\omega_7^2 + 4c_s^2\omega_{16}\omega_{10}^3 - 4v_2^2\omega_{10}^3\omega_7^2 - 16\omega_{16}v_2^4\omega_{10}^2\omega_7 - 51c_s^2\omega_{16}v_2^2\omega_{10}^3\omega_7^2 - 20\omega_{16}^2v_2^2\omega_{10}\omega_7 + 8c_s^2\omega_{16}^2\omega_{10}^2\omega_7 -$
$32\omega_{16}v_2^2\omega_{10}^2\omega_7^2 - 4v_2^4\omega_{10}^3\omega_7 + 24\omega_{16}^2v_2^4\omega_7^2 + 24c_s^2v_2^2\omega_{10}^3\omega_7^2 - 13\omega_{16}v_2^4\omega_{10}^3\omega_7^2 + 8c_s^4\omega_{16}\omega_{10}^3\omega_7 - 12c_s^4\omega_{16}^2\omega_{10}\omega_7^2 + 4c_s^2\omega_{10}^3\omega_7 - 24c_s^2v_2^2\omega_{10}^3\omega_7 +$
$4v_2^2\omega_{10}^2\omega_7^2 + 8\omega_{16}v_2^2\omega_{10}^3 + 20\omega_{16}v_2^4\omega_{10}^3\omega_7 - 4c_s^2\omega_{10}^3\omega_7^2 + 4c_s^4\omega_{16}^2\omega_{10}\omega_7 - 4c_s^4\omega_{16}\omega_{10}^3\omega_7^2 + 84c_s^2\omega_{16}v_2^2\omega_{10}^3\omega_7 - 4c_s^4\omega_{10}^2\omega_7^2 + 36\omega_{16}^2v_2^2\omega_{10}\omega_7^2 -$
$4c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2 + 16\omega_{16}v_2^2\omega_{10}^2\omega_7 + 4v_2^4\omega_{10}^3\omega_7^2 - 4c_s^4\omega_{16}\omega_{10}^3 + 20\omega_{16}^2v_2^4\omega_{10}\omega_7 - 24c_s^2v_2^2\omega_{10}^2\omega_7^2 + 4v_2^2\omega_{10}^3\omega_7 - 36c_s^2\omega_{16}v_2^2\omega_{10}^3 + 32\omega_{16}v_2^4\omega_{10}^2\omega_7^2 +$
$13\omega_{16}v_2^2\omega_{10}^3\omega_7^2 + 72c_s^2\omega_{16}^2v_2^2\omega_{10}\omega_7 + 120c_s^2\omega_{16}v_2^2\omega_{10}^2\omega_7^2 + 4c_s^2\omega_{16}\omega_{10}\omega_7^2 - 4c_s^4\omega_{10}^3\omega_7 - 20\omega_{16}^2v_2^4\omega_{10}^2\omega_7 + 36c_s^2\omega_{16}^2v_2^2\omega_{10}^2 - 20\omega_{16}v_2^4\omega_{10}\omega_7^2 -$
$24\omega_{16}^2v_2^2\omega_7^2 - 84c_s^2\omega_{16}^2v_2^2\omega_{10}^2\omega_7 + 4c_s^4\omega_{16}^2\omega_{10}^2 - 8c_s^2\omega_{16}\omega_{10}^2\omega_7^2 - 72c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^2 - 8\omega_{16}^2v_2^2\omega_{10}^2 + 96c_s^2\omega_{16}^2v_2^2\omega_7^2 - 8c_s^4\omega_{16}^2\omega_{10}^2\omega_7 -$
$13\omega_{16}^2v_2^2\omega_{10}^2\omega_7^2 + 12c_s^2\omega_{16}^2\omega_{10}\omega_7^2 - 8c_s^2\omega_{16}\omega_{10}^3\omega_7 + 8c_s^4\omega_{16}^2\omega_7^2 + 4c_s^2\omega_{16}\omega_{10}^3\omega_7^2 + 20\omega_{16}^2v_2^2\omega_{10}^2\omega_7 - 4c_s^2\omega_{16}^2\omega_{10}\omega_7 + 20\omega_{16}v_2^2\omega_{10}\omega_7^2 -$
$4c_s^2\omega_{16}^2\omega_{10}^2 + 4c_s^4\omega_{16}^2\omega_{10}^2\omega_7^2 + 51c_s^2\omega_{16}^2v_2^2\omega_{10}^2\omega_7^2 - 8\omega_{16}v_2^4\omega_{10}^3 + 13\omega_{16}^2v_2^4\omega_{10}^2\omega_7^2 - 4c_s^4\omega_{16}\omega_{10}\omega_7^2 - 8c_s^2\omega_{16}^2\omega_7^2)\frac{v_3}{4\omega_{16}^2\omega_{10}^3\omega_7^2}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}^3_y\mathrm{D}_z\rho} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}^3_y\mathrm{D}_z\rho}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}^3_y\mathrm{D}_z\rho} = 0$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}^3_y\mathrm{D}_z\rho} = 0$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}^3_y\mathrm{D}_z\rho} = 0$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}^3_y\mathrm{D}_z\rho} = (56\omega_3^2c_s^2\omega_1^3\omega_2 + 5\omega_3^2c_s^2\omega_1^2\omega_2^3 - 24\omega_3^2v_2^2\omega_1^2\omega_2 - 8\omega_3^2v_3^2\omega_1\omega_2^2 + 24\omega_3^2v_3^2v_2^2\omega_1\omega_2^2 - 36\omega_3^2v_2^4\omega_1^3\omega_2 - 36\omega_3^2c_s^4\omega_2^3 - 36\omega_3^2c_s^4\omega_1^2\omega_2 +$
$4\omega_3^2\omega_1^3 - 8\omega_3^2v_3^2\omega_1\omega_2^3 - 24\omega_3^2v_2^2\omega_1^3\omega_2^2 - 34\omega_3^2c_s^2\omega_1^2\omega_2^2 + 72\omega_3^2c_s^2v_2^2\omega_1^3\omega_2^2 + 48\omega_3^2v_2^4\omega_2^3 + 6\omega_3^2c_s^4\omega_1^3\omega_2^2 + 96\omega_3^2v_3^2v_2^2\omega_1\omega_2^3 - 12v_3^2c_s^2\omega_1^3\omega_2^2 +$
$72\omega_3^2v_2^4\omega_1^2\omega_2^2 + 24\omega_3c_s^4\omega_1\omega_2^3 - 6\omega_3^2c_s^4\omega_1^2\omega_2^3 + 8\omega_3^2v_3^2c_s^2\omega_1\omega_2^2 - 84\omega_3^2c_s^4\omega_1^3\omega_2 + 8\omega_3^2\omega_1\omega_2^2 + 12v_3^2c_s^2\omega_1^2\omega_2^3 + 84\omega_3^2v_2^2\omega_1^3\omega_2 + 24\omega_3^2v_2^2\omega_1^2\omega_2^3 +$
$24\omega_3^2v_2^4\omega_1^3 - 324\omega_3^2c_s^2v_2^2\omega_1^3\omega_2 + 8\omega_3v_3^2c_s^2\omega_1\omega_2^3 + 40\omega_3^2c_s^2\omega_1^2\omega_2 - 72\omega_3^2c_s^2v_2^2\omega_1^2\omega_2^3 + 8\omega_3^2\omega_1\omega_2^3 + 22\omega_3^2v_3^2c_s^2\omega_1\omega_2^3 + 42\omega_3^2c_s^4\omega_1^2\omega_2^2 +$
$216\omega_3^2c_s^2v_2^2\omega_1^2\omega_2^2 - 5\omega_3^2c_s^2\omega_1^3\omega_2^2 + 216\omega_3^2c_s^2v_2^2\omega_1^3 - 8\omega_3c_s^2\omega_1\omega_2^3 - 24\omega_3^2v_2^2\omega_1^2\omega_2^2 - 8\omega_3^2\omega_2^3 + 72\omega_3^2c_s^4\omega_1^3 + 24\omega_3^2v_3^2v_2^2\omega_1^2\omega_2 - \omega_3^2\omega_1^2\omega_2^3 - 4\omega_3^2\omega_1^3\omega_2 -$
$20\omega_3^2v_3^2c_s^2\omega_1^3\omega_2 - 2\omega_3^2v_3^2c_s^2\omega_1^2\omega_2^3 + 24\omega_3^2v_2^2\omega_2^3 + 12c_s^2\omega_1^3\omega_2^2 - 4\omega_3v_3^2c_s^2\omega_1^2\omega_2^2 - 216\omega_3^2c_s^2v_2\omega_1\omega_2^2 + 4\omega_3^2v_3^2\omega_1^2\omega_2 + 16\omega_3^2v_3^2c_s^2\omega_1^3 + 4\omega_3c_s^2\omega_1^3\omega_2 +$
$18\omega_3c_s^2\omega_1^2\omega_2^3 + 48\omega_3^2v_2^2\omega_1\omega_2^2 - 2\omega_3^2v_3^2c_s^2\omega_1^2\omega_2^2 + 36c_s^4\omega_1^2\omega_2^3 + 42\omega_3^2c_s^4\omega_1\omega_2^2 + 24\omega_3^2v_3^2v_2^2\omega_1^3\omega_2^2 + 54\omega_3c_s^4\omega_1^3\omega_2^2 - 4\omega_3^2\omega_1^2\omega_2^2 - \omega_3^2v_3^2\omega_1^3\omega_2^2 +$
$24\omega_3^2v_3^2v_2^2\omega_1^3 - 60\omega_3^2v_2^2\omega_1\omega_2^3 + 4\omega_3c_s^2\omega_1^2\omega_2^2 + 20\omega_3^2c_s^2\omega_2^3 - 4\omega_3v_3^2c_s^2\omega_1^3\omega_2 + 108\omega_3^2c_s^2v_2^2\omega_1\omega_2^3 - 4\omega_3^2v_3^2\omega_1^3 - 18\omega_3v_3^2c_s^2\omega_1^2\omega_2^3 + 4\omega_3^2v_3^2\omega_1^3\omega_2 +$
$\omega_3^2v_3^2\omega_1^2\omega_2^3 + 18\omega_3v_3^2c_s^2\omega_1^3\omega_2^2 - 8\omega_3^2c_s^2\omega_1\omega_2^2 - 4\omega_3^2v_3^2c_s^2\omega_1^2\omega_2 - 36c_s^4\omega_1^3\omega_2^2 - 72\omega_3^2v_3^2v_2^2\omega_2^3 + 8\omega_3^2v_3^2\omega_2^3 - 48\omega_3^2v_3^2v_2^2\omega_1^3\omega_2 - 72\omega_3^2v_2^4\omega_1\omega_2^2 -$
$54\omega_3c_s^4\omega_1^2\omega_2^3 - 4\omega_3^2\omega_1^2\omega_2 - 52\omega_3^2c_s^2\omega_1^3 - 12\omega_3c_s^4\omega_1^3\omega_2 - 24\omega_3^2v_3^2v_2^2\omega_1^2\omega_2^3 - 22\omega_3^2c_s^2\omega_1\omega_2^3 - 12c_s^2\omega_1^2\omega_2^3 - 18\omega_3c_s^2\omega_1^3\omega_2^2 + 4\omega_3^2v_3^2\omega_1^2\omega_2^2 -$
$48\omega_3^2v_3^2v_2^2\omega_1^2\omega_2^2 + \omega_3^2\omega_1^3\omega_2^2 - 12\omega_3c_s^4\omega_1^2\omega_2^2 - 36\omega_3^2v_2^4\omega_1\omega_2^3 - 48\omega_3^2v_2^2\omega_1^3 + 2\omega_3^2v_3^2c_s^2\omega_1^3\omega_2^2 - 20\omega_3^2v_3^2c_s^2\omega_2^3)\frac{v_3}{36\omega_3^2\omega_1^3\omega_2^3}$

coefficient $C^{(2)}_{\mathrm{D}^3_y\mathrm{D}_z v_2}$ **at** $\frac{\partial^4 v_2}{\partial x_2^3\partial x_3}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}^3_y\mathrm{D}_z v_2} = 0$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}^3_y\mathrm{D}_z v_2} = (68\omega_{16}v_2^2\omega_{10}^3\omega_7 + 8\omega_{10}^2\omega_7^2 + 28\omega_{16}^2\omega_{10}^2\omega_7 + 12\omega_{16}\omega_{10}^3 - 16c_s^2\omega_{10}^2\omega_7^2 - 20c_s^2\omega_{16}\omega_{10}^3 + 16v_2^2\omega_{10}^3\omega_7^2 + 64\omega_{16}^2v_2^2\omega_{10}\omega_7 - 44c_s^2\omega_{16}^2\omega_{10}^2\omega_7 +$
$104\omega_{16}v_2^2\omega_{10}^2\omega_7^2 + 8\omega_{10}^3\omega_7 - 16c_s^2\omega_{10}^3\omega_7 - 16v_2^2\omega_{10}^2\omega_7^2 - 28\omega_{16}v_2^2\omega_{10}^3 + 16c_s^2\omega_{10}^3\omega_7^2 + 24\omega_{16}\omega_{10}\omega_7^2 - 120\omega_{16}^2v_2^2\omega_{10}\omega_7^2 + 25c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2 -$
$48\omega_{16}v_2^2\omega_{10}^2\omega_7 - 8\omega_{10}^3\omega_7^2 - 16v_2^2\omega_{10}^3\omega_7 - 43\omega_{16}v_2^2\omega_{10}^3\omega_7^2 - 32c_s^2\omega_{16}\omega_{10}\omega_7^2 - 17\omega_{16}^2\omega_{10}^2\omega_7^2 + 80\omega_{16}^2v_2^2\omega_7^2 + 48\omega_{16}^2\omega_{10}\omega_7^2 + 56c_s^2\omega_{16}\omega_{10}^2\omega_7^2 -$
$28\omega_{16}\omega_{10}^3\omega_7 + 28\omega_{16}^2v_2^2\omega_{10}^2 + 43\omega_{16}^2v_2^2\omega_{10}^2\omega_7^2 - 72c_s^2\omega_{16}^2\omega_{10}\omega_7^2 + 44c_s^2\omega_{16}\omega_{10}^3\omega_7 - 40\omega_{16}\omega_{10}^2\omega_7^2 - 25c_s^2\omega_{16}\omega_{10}^3\omega_7^2 + 16\omega_{16}\omega_{10}^2\omega_7 - 68\omega_{16}^2v_2^2\omega_{10}\omega_7 +$
$32c_s^2\omega_{16}^2\omega_{10}\omega_7 - 12\omega_{16}^2\omega_{10}^2 - 64\omega_{16}v_2^2\omega_{10}\omega_7^2 + 20c_s^2\omega_{16}^2\omega_{10}^2 - 16c_s^2\omega_{16}\omega_{10}^2\omega_7 + 17\omega_{16}\omega_{10}^3\omega_7^2 - 24\omega_{16}^2\omega_{10}\omega_7 - 32\omega_{16}^2\omega_7^2 + 48c_s^2\omega_{16}^2\omega_7^2)\frac{v_3v_2\rho}{4\omega_{16}^2\omega_{10}^3\omega_7^2}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}^3_y\mathrm{D}_z v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}^3_y\mathrm{D}_z v_2}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}^3_y\mathrm{D}_z v_2} = 0$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}^3_y\mathrm{D}_z v_2} = 0$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}^3_y\mathrm{D}_z v_2} = 0$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}^3_y\mathrm{D}_z v_2} = (36c_s^2\omega_1\omega_2^3 + 6\omega_3 v_3^2\omega_1^2\omega_2 - 120\omega_3 v_2^2\omega_1\omega_2^2 - 6v_3^2\omega_1^2\omega_2^2 + 6\omega_3\omega_1^2\omega_2 + 84\omega_3 c_s^2\omega_1^3 - 24\omega_3 v_3^2\omega_2^3 - 12\omega_1\omega_2^3 - 6v_3^2\omega_1^3\omega_2 - 9v_3^2\omega_1^2\omega_2^3 + 5\omega_3 v_3^2\omega_1^3\omega_2^2 - 66\omega_3 v_2^2\omega_1\omega_2^3 - 5\omega_3\omega_1^3\omega_2^2 + 48\omega_3 v_2^2\omega_1^3 + 48\omega_3\omega_1^3\omega_2 + 5\omega_3\omega_1^2\omega_2^3 + 9v_3^2\omega_1^3\omega_2^2 - 54\omega_3 c_s^2\omega_1\omega_2^2 - 18\omega_3 v_3^2\omega_1^3\omega_2 + 84\omega_3 v_2^2\omega_2^3 - 5\omega_3 v_3^2\omega_1^2\omega_2^3 - 51\omega_3\omega_1^2\omega_2^2 - 9\omega_3 v_3^2\omega_1^2\omega_2^2 + 12\omega_3 v_3^2\omega_1^3 - 12\omega_3 c_s^2\omega_2^3 + 27\omega_3 c_s^2\omega_1\omega_2^3 + 42\omega_3\omega_1\omega_2^2 - 9\omega_1^3\omega_2^2 + 27c_s^2\omega_1^3\omega_2^2 - 12\omega_3 v_2^2\omega_1^2\omega_2 + 6\omega_3 v_3^2\omega_1\omega_2^2 - 108\omega_3 c_s^2\omega_1^3\omega_2 - 12\omega_3\omega_2^3 - 15\omega_3 c_s^2\omega_1^2\omega_2^3 + 3\omega_3\omega_1\omega_2^3 + 81\omega_3 c_s^2\omega_1^2\omega_2^2 + 27\omega_3 v_3^2\omega_1\omega_2^3 + 12v_3^2\omega_1\omega_2^3 - 18\omega_3 c_s^2\omega_1^2\omega_2 - 66\omega_3 v_2^2\omega_1^3\omega_2 - 18c_s^2\omega_1^2\omega_2^2 + 6\omega_1^2\omega_2^2 + 132\omega_3 v_2^2\omega_1^2\omega_2^2 - 18c_s^2\omega_1^3\omega_2 - 27c_s^2\omega_1^2\omega_2^3 + 15\omega_3 c_s^2\omega_1^3\omega_2^2 + 9\omega_1^2\omega_2^3 + 6\omega_1^3\omega_2 - 36\omega_3\omega_1^3)\frac{v_3 v_2\rho}{18\omega_3\omega_1^3\omega_2^3}$

coefficient $C^{(2)}_{\mathrm{D}^3_y\mathrm{D}_z v_3}$ **at** $\frac{\partial^4 v_3}{\partial x_2^3\partial x_3}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}^3_y\mathrm{D}_z v_3} = (-36c_s^2v_2^2 - c_s^4\omega^3 - 26v_2^4\omega^2 - 36v_2^4 + 4v_2^4\omega^3 + 20c_s^4\omega^2 + 36c_s^4 - 54c_s^4\omega + 54v_2^4\omega + 12c_s^2v_2^2\omega^3 - 4v_2^2\omega^3 - 12c_s^2\omega^2 - 42c_s^2v_2^2\omega^2 + 26v_2^2\omega^2 - 54v_2^2\omega + 54c_s^2v_2^2\omega + 36c_s^2\omega - 24c_s^2 + 36v_2^2)\frac{\rho}{12\omega^3}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}^3_y\mathrm{D}_z v_3} = (24\omega_{16}v_2^2\omega_{10}^3\omega_7 + 72\omega_{16}^2v_2^4\omega_7^3 - 60\omega_{16}v_2^2\omega_{10}^2\omega_7^3 - 108c_s^2\omega_{16}^2v_2^2\omega_{10}\omega_7^2 - 5c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2 - 21c_s^2\omega_{16}v_2^2\omega_{10}^3\omega_7^3 + 12c_s^4\omega_{16}\omega_{10}^2\omega_7^2 - 12c_s^4\omega_{16}^2\omega_{10}\omega_7^3 - 27\omega_{16}v_2^4\omega_{10}^3\omega_7^3 + 12v_2^2\omega_{10}^3\omega_7^2 + 12c_s^2v_2^2\omega_{10}^2\omega_7^3 + 30c_s^2\omega_{16}v_2^2\omega_{10}^3\omega_7^2 + 24\omega_{16}v_2^2\omega_{10}^2\omega_7^2 - 12v_2^4\omega_{10}^2\omega_7^3 - 306c_s^2\omega_{16}^2v_2^2\omega_{10}\omega_7^3 - 12c_s^2v_2^2\omega_{10}^3\omega_7^2 - 12v_2^2\omega_{10}^3\omega_7^3 + 48\omega_{16}v_2^4\omega_{10}^3\omega_7^2 + 12c_s^4\omega_{16}\omega_{10}^3\omega_7 - 12c_s^4\omega_{16}^2\omega_{10}\omega_7^2 - 6c_s^4\omega_{16}\omega_{10}^2\omega_7^3 - 90\omega_{16}^2v_2^4\omega_{10}\omega_7^3 + 60\omega_{16}v_2^4\omega_{10}^2\omega_7^3 - 24\omega_{16}v_2^4\omega_{10}^3\omega_7 - 12c_s^2v_2^2\omega_{10}^2\omega_7^3 - 18c_s^4\omega_{16}\omega_{10}^3\omega_7^2 - 12c_s^2\omega_{16}v_2^2\omega_{10}^3\omega_7 + 54c_s^2\omega_{16}v_2^2\omega_{10}^2\omega_7^3 - 6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2 - 12v_2^4\omega_{10}^3\omega_7^2 + 27\omega_{16}v_2^2\omega_{10}^3\omega_7^3 + 6c_s^4\omega_{16}\omega_{10}^3\omega_7^3 + 12v_2^2\omega_{10}^2\omega_7^3 - 24\omega_{16}v_2^4\omega_{10}^2\omega_7^2 - 48\omega_{16}v_2^2\omega_{10}^3\omega_7^2 + 12v_2^4\omega_{10}^3\omega_7^3 - 12c_s^2\omega_{16}v_2^2\omega_{10}^2\omega_7^2 - c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3 + 90\omega_{16}^2v_2^2\omega_{10}\omega_7^3 + 6c_s^2\omega_{16}^2\omega_{10}^3\omega_7 + 4\omega_{16}^2v_2^4\omega_{10}^3\omega_7^3 + 13c_s^4\omega_{16}^2\omega_{10}^3\omega_7^2 + 252c_s^2\omega_{16}^2v_2^2\omega_7^3 - 48c_s^2\omega_{16}^2v_2^2\omega_{10}\omega_7 + 12c_s^2\omega_{16}^2v_2^2\omega_{10}^3\omega_7^3 + 12c_s^4\omega_{16}^2\omega_{16}^3\omega_7^3 - 12\omega_{16}^2v_2^2\omega_{10}^3\omega_7 - 12c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2 + 12c_s^2\omega_{16}^2\omega_{10}\omega_7^3 - 19\omega_{16}^2v_2^2\omega_{10}^2\omega_7^3 - 72\omega_{16}^2v_2^2\omega_7^3 - 36\omega_{16}v_2^4\omega_{10}^2\omega_7^3 - 48c_s^2\omega_{16}^2v_2^2\omega_{10}^3 - c_s^4\omega_{16}^2\omega_{10}^3\omega_7^3 - 18\omega_{16}^2v_2^4\omega_{10}^3\omega_7^2 - 12\omega_{16}^2v_2^2\omega_{10}^2\omega_7^2 + 12c_s^2\omega_{16}^2\omega_{10}\omega_7^3 - 36c_s^2\omega_{16}^2v_2^2\omega_{10}\omega_7^3 - 12c_s^2\omega_{16}\omega_{10}^3\omega_7 + 6c_s^2\omega_{16}\omega_{10}^2\omega_7^3 + 12c_s^4\omega_{16}^2\omega_{10}^3 - 81c_s^2\omega_{16}^2v_2^2\omega_{10}^3\omega_7^2 + 18c_s^2\omega_{16}\omega_{10}^3\omega_7^2 - 4\omega_{16}^2v_2^2\omega_{10}^3\omega_7^3 + 102c_s^2\omega_{16}^2v_2^2\omega_{10}^3\omega_7 + 60c_s^2\omega_{16}^2v_2^2\omega_{10}^2\omega_7^3 - 12c_s^2\omega_{16}^2\omega_7^3 + 19\omega_{16}^2v_2^4\omega_{10}^2\omega_7^3 + 6c_s^4\omega_{16}^2\omega_{10}^2\omega_7^2 + 12\omega_{16}^2v_2^4\omega_{10}^3\omega_7 + 162c_s^2\omega_{16}^2v_2^2\omega_{10}^2\omega_7^2 + 36\omega_{16}v_2^2\omega_{10}\omega_7^3 + 18\omega_{16}^2v_2^2\omega_{10}^3\omega_7^2 - 6c_s^2\omega_{16}\omega_{10}^3\omega_7^3 + c_s^4\omega_{16}^2\omega_{10}^2\omega_7^3 + 12\omega_{16}^2v_2^4\omega_{10}^2\omega_7^2 - 24c_s^4\omega_{16}^2\omega_{10}^3\omega_7)\frac{\rho}{12\omega_{16}^2\omega_{10}^3\omega_7^3}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}^3_y\mathrm{D}_z v_3} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}^3_y\mathrm{D}_z v_3}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}^3_y\mathrm{D}_z v_3} = (72\omega_{16}^2v_2^4\omega_7^3 - 72\omega_{16}v_2^2\omega_{10}^2\omega_7^3 - 36c_s^2\omega_{16}^2v_2^2\omega_{10}\omega_7^2 - 5c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2 - 99c_s^2\omega_{16}v_2^2\omega_{10}^3\omega_7^3 + 12c_s^4\omega_{16}\omega_{10}^2\omega_7^2 - 12c_s^4\omega_{16}^2\omega_{10}\omega_7^3 - 39\omega_{16}v_2^4\omega_{10}^3\omega_7^3 + 36v_2^2\omega_{10}^3\omega_7^2 + 108c_s^2v_2^2\omega_{10}^3\omega_7^3 + 54c_s^2\omega_{16}v_2^2\omega_{10}^3\omega_7^2 - 36v_2^4\omega_{10}^2\omega_7^3 - 306c_s^2\omega_{16}^2v_2^2\omega_{10}\omega_7^3 - 108c_s^2v_2^2\omega_{10}^3\omega_7^2 - 36v_2^2\omega_{10}^3\omega_7^3 + 36\omega_{16}v_2^4\omega_{10}^3\omega_7^2 + 12c_s^4\omega_{16}\omega_{10}^3\omega_7 - 12c_s^4\omega_{16}^2\omega_{10}\omega_7^2 - 6c_s^4\omega_{16}\omega_{10}^2\omega_7^3 - 90\omega_{16}^2v_2^4\omega_{10}\omega_7^3 + 72\omega_{16}v_2^4\omega_{10}^2\omega_7^3 - 108c_s^2v_2^2\omega_{10}^2\omega_7^3 - 18c_s^4\omega_{16}\omega_{10}^3\omega_7^2 + 36c_s^2\omega_{16}v_2^2\omega_{10}^3\omega_7 + 198c_s^2\omega_{16}v_2^2\omega_{10}^2\omega_7^3 - 6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2 - 36v_2^4\omega_{10}^3\omega_7^2 + 39\omega_{16}v_2^2\omega_{10}^3\omega_7^3 + 6c_s^4\omega_{16}\omega_{10}^3\omega_7^3 + 36v_2^2\omega_{10}^2\omega_7^3 - 36\omega_{16}v_2^2\omega_{10}^3\omega_7^2 + 36v_2^4\omega_{10}^3\omega_7^3 + 36c_s^2\omega_{16}v_2^2\omega_{10}^2\omega_7^2 - c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3 + 90\omega_{16}^2v_2^2\omega_{10}\omega_7^3 + 6c_s^2\omega_{16}^2\omega_{10}\omega_7 + 4\omega_{16}^2v_2^4\omega_{10}^3\omega_7^3 + 13c_s^4\omega_{16}^2\omega_{10}^3\omega_7^2 + 252c_s^2\omega_{16}^2v_2^2\omega_7^3 + 12c_s^2\omega_{16}^2v_2^2\omega_{10}^3\omega_7^3 + 12c_s^4\omega_{16}^2\omega_{16}^3\omega_7^3 - 12\omega_{16}^2v_2^4\omega_{10}^2\omega_7^3 - 36\omega_{16}v_2^2\omega_{10}^3\omega_7^2 - 4\omega_{16}^2v_2^2\omega_{10}^3\omega_7^3 - 18c_s^2\omega_{16}^2v_2^2\omega_{10}^3\omega_7 + 60c_s^2\omega_{16}^2v_2^2\omega_{10}^2\omega_7^3 - 12c_s^2\omega_{16}^2\omega_7^3 + 19\omega_{16}^2v_2^4\omega_{10}^2\omega_7^3 + 6c_s^4\omega_{16}^2\omega_{10}^2\omega_7^2 + 18c_s^2\omega_{16}^2v_2^2\omega_{10}^2\omega_7^2 + 36\omega_{16}v_2^2\omega_{10}\omega_7^3 + 6\omega_{16}^2v_2^2\omega_{10}^3\omega_7^2 - 6c_s^2\omega_{16}\omega_{10}^3\omega_7^3 + c_s^4\omega_{16}^2\omega_{10}^2\omega_7^3 - 24c_s^4\omega_{16}^2\omega_{10}^3\omega_7)\frac{\rho}{12\omega_{16}^2\omega_{10}^3\omega_7^3}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}^3_y\mathrm{D}_z v_3} = C^{(2),\mathrm{CLBM1}}_{\mathrm{D}^3_y\mathrm{D}_z v_3}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}^3_y\mathrm{D}_z v_3} = (19\omega_3^3v_2^4\omega_{11}^2\omega_5^2 + 6\omega_3^3v_2^2\omega_{11}^2\omega_5^3 + 12\omega_3^2c_s^2\omega_{11}^2\omega_5 - 3\omega_3^2c_s^2v_2^2\omega_{11}^2\omega_5^3 + 13\omega_3^2c_s^4\omega_{11}^2\omega_5^3 - \omega_3^3c_s^2\omega_{11}^2\omega_5^2 + 72\omega_3^3v_2^4\omega_{11}^2 + 198\omega_3^3c_s^2v_2^2\omega_{11}\omega_5^2 - 12\omega_3^3c_s^4\omega_{11}^2\omega_5 + 18\omega_3^2c_s^2v_2^2\omega_{11}^2\omega_5^2 - 12\omega_3c_s^2\omega_{11}\omega_5^3 + 4\omega_3^3v_2^4\omega_{11}^2\omega_5^3 + 12\omega_3^3c_s^4\omega_{11}^2 - 99\omega_3^3c_s^2v_2^2\omega_{11}\omega_5^3 + 90\omega_3^3v_2^2\omega_{11}^2\omega_5 - 18\omega_3c_s^2v_2^2\omega_{11}^2\omega_5^3 + 6\omega_3^2c_s^4\omega_{11}^2\omega_5^2 - 6\omega_3^3v_2^4\omega_{11}^2\omega_5^3 - 19\omega_3^3v_2^2\omega_{11}^2\omega_5^2 - 12\omega_3^2c_s^4\omega_{11}^2\omega_5 - 36\omega_3^2c_s^2v_2^2\omega_{11}^2\omega_5 + \omega_3^3c_s^4\omega_{11}^2\omega_5^2 - 36\omega_3^3v_2^4\omega_5^2 - 5\omega_3^2c_s^2\omega_{11}^2\omega_5^3 + 12\omega_3^3c_s^2\omega_{11}^2\omega_5 - 4\omega_3^3v_2^2\omega_{11}^2\omega_5^3 + 36\omega_3^2v_2^2\omega_5^3 + 12\omega_3c_s^4\omega_{11}\omega_5^3 - 108\omega_3^3c_s^2v_2^2\omega_{11}\omega_5 - 90\omega_3^3v_2^4\omega_{11}^2\omega_5 + 36\omega_3^3v_2^4\omega_5^3 - 6\omega_3^3c_s^2\omega_{11}^2\omega_5^2 - \omega_3^3c_s^4\omega_{11}^2\omega_5^3 + 108\omega_3^3c_s^2v_2^2\omega_5^3 - 306\omega_3^3c_s^2v_2^2\omega_{11}^2\omega_5 - 24\omega_3c_s^4\omega_{11}^2\omega_5^3 + 39\omega_3^3v_2^2\omega_{11}\omega_5^3 - 12\omega_3^3c_s^2\omega_{11}^2 - 36\omega_3^3v_2^4\omega_{11}\omega_5 + 6\omega_3^3c_s^4\omega_{11}\omega_5^3 - 12\omega_3^2c_s^2\omega_{11}\omega_5^2 - 72\omega_3^3v_2^2\omega_{11}\omega_5^2 + 36\omega_3^2v_2^4\omega_{11}\omega_5^3 - 108\omega_3^3c_s^2v_2^2\omega_5^2 + 18\omega_3^2c_s^2\omega_{11}\omega_5^3 - 6\omega_3^3c_s^4\omega_{11}\omega_5^2 - 72\omega_3^3v_2^2\omega_{11}^2 + 36\omega_3^3c_s^2v_2^2\omega_{11}\omega_5^2 - 39\omega_3^3v_2^4\omega_{11}\omega_5^3 - 36\omega_3^2v_2^4\omega_5^3 + 6\omega_3c_s^2\omega_{11}^2\omega_5^3 + 36\omega_3^3v_2^2\omega_{11}\omega_5 + 12\omega_3^3c_s^2v_2^2\omega_{11}^2\omega_5^3 + 36\omega_3c_s^2v_2^2\omega_{11}\omega_5^3 + 12\omega_3^2c_s^4\omega_{11}\omega_5^2 - 36\omega_3^3v_2^2\omega_5^3 - 6\omega_3^3c_s^2\omega_{11}\omega_5^3 - 36\omega_3^2v_2^2\omega_{11}\omega_5^3 + 252\omega_3^3c_s^2v_2^2\omega_{11}^2 + 72\omega_3^3v_2^4\omega_{11}\omega_5^2 - 108\omega_3^2c_s^2v_2^2\omega_5^3 + 54\omega_3^2c_s^2v_2^2\omega_{11}\omega_5^3 + 6\omega_3^3c_s^2\omega_{11}\omega_5^2 + 12c_s^4\omega_{11}^2\omega_5^3 - 18\omega_3^2c_s^4\omega_{11}\omega_5^3 + 36\omega_3^3v_2^2\omega_5^2 + 60\omega_3^3c_s^2v_2^2\omega_{11}^2\omega_5^2)\frac{\rho}{12\omega_3^3\omega_{11}^2\omega_5^3}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}^3_y\mathrm{D}_z v_3} = (48\omega_3^3v_2^4\omega_4^2\omega_1^3 + 24\omega_3v_2^2\omega_4^2\omega_1^3\omega_2 - 18\omega_3^2c_s^2\omega_4\omega_1^3\omega_2^3 + 36\omega_3^2v_2^4\omega_4\omega_1^3\omega_2^2 + 162\omega_3^2c_s^2v_2^2\omega_1^3\omega_2^3 - 96\omega_3v_3^2c_s^2\omega_4^2\omega_1\omega_2^3 - 216\omega_3v_2^2\omega_4^2\omega_1^2\omega_2^3 + 40\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^2 - 36v_2^4\omega_4^2\omega_1^3\omega_2^2 - 492\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^2\omega_2^2 - 288\omega_3^2v_3^2v_2^2\omega_4^2\omega_1^2\omega_2^2 - 54\omega_3^2v_2^2\omega_1^3\omega_2^3 - 108\omega_3^2v_2^4\omega_1^2\omega_2^3 + 6\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2^3 + 24\omega_3^2v_3^2\omega_4^2\omega_1^3\omega_2 - 40\omega_3^2c_s^2\omega_4^2\omega_1^3 + 240\omega_3^2v_2^2\omega_4^2\omega_1^2\omega_2 + 86\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^3 - 297\omega_3c_s^2v_2^2\omega_4^2\omega_1^3\omega_2^3 + 108\omega_3v_2^4\omega_4\omega_1^3\omega_2^3 - 28\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2 + 72\omega_3^2v_2^2\omega_4\omega_1\omega_2^3 - 48\omega_3^2v_2^2\omega_4^2\omega_2^3 - 492\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^3\omega_2 - 144\omega_3^2v_3^2v_2^2\omega_4^2\omega_1^2\omega_2^3 + 54v_2^4\omega_4^2\omega_1^3\omega_2^3 - 288\omega_3^2v_3^2v_2^2\omega_4^2\omega_1^3\omega_2 + 174\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^2\omega_2^3 + 432\omega_3^2c_s^2v_2^2\omega_4^2\omega_2^3 - 117\omega_3^2v_2^4\omega_4\omega_1^3\omega_2^3 -$

$36\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^3 + 60\omega_3v_2^2\omega_4^2\omega_1^2\omega_2^2 + 16\omega_3c_s^4\omega_4^2\omega_1^3\omega_2 + 204\omega_3^2v_2^2\omega_4^2\omega_1^3\omega_2 + 72\omega_3^2c_s^4\omega_4\omega_1\omega_2^3 + 288\omega_3c_s^2v_2^2\omega_4^2\omega_1^3\omega_2^2 + 20\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^2 +$
$8\omega_3^2v_2^2\omega_4^2\omega_1^2\omega_2^3 - 36\omega_3v_2^4\omega_4\omega_1^3\omega_2^2 + 80\omega_3^2c_s^4\omega_4^2\omega_2^3 + 24\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2^2 - 180\omega_3v_2^4\omega_4\omega_1^2\omega_2^3 + 468\omega_3c_s^2v_2^2\omega_4^2\omega_1^2\omega_2^3 - 86\omega_3^2v_2^2\omega_4^2\omega_1^3\omega_2^2 - 6\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^3 -$
$56\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2 - 16\omega_3c_s^2\omega_4^2\omega_1\omega_2^3 - 96\omega_3^2v_2^2\omega_4^2\omega_1^3 - 72\omega_3c_s^2v_2^2\omega_4^2\omega_1^3\omega_2 + 54\omega_3^2v_2^4\omega_1^3\omega_2^3 + 264\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^3 + 48\omega_3^2v_3^2c_s^2\omega_4^2\omega_1\omega_2^2 + 24\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2 +$
$32\omega_3^2c_s^4\omega_4^2\omega_1^3 + 168\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^3\omega_2^2 + 16\omega_3^2\omega_4^2\omega_1\omega_2^2 + 108\omega_3^2v_2^2\omega_1^2\omega_2^3 + 144\omega_3^2v_3^2v_2^2\omega_4^2\omega_1^3\omega_2^2 - 32\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^2 - 288\omega_3^2v_2^4\omega_4^2\omega_1\omega_2^3 +$
$117\omega_3v_2^2\omega_4^2\omega_1^3\omega_2^3 - 36\omega_3c_s^4\omega_4^2\omega_1^3\omega_2^2 - 324\omega_3^2c_s^2v_2^2\omega_1^2\omega_2^3 + 72\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^3 - 36\omega_3^2v_2^4\omega_4\omega_1^2\omega_2^2 - 12\omega_3^2v_3^2c_s^2\omega_4^2\omega_1\omega_2^3 + 192\omega_3^2v_2^4\omega_4^2\omega_2^3 -$
$6\omega_3^2v_3^2\omega_4^2\omega_1^3\omega_2^2 - 24\omega_3v_2^4\omega_4^2\omega_1\omega_2^3 - 144\omega_3^2v_2^2\omega_4^2\omega_2^2\omega_2 - 2\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^2 - 24\omega_3^2v_2^2\omega_4^2\omega_1^3\omega_2^3 - 108\omega_3c_s^2v_2^2\omega_4^2\omega_1^2\omega_2^2 + 18\omega_3c_s^4\omega_4^2\omega_1^3\omega_2^3 -$
$108\omega_3v_2^2\omega_4^2\omega_1^3\omega_2^2 + 288\omega_3^2v_2^4\omega_4\omega_1^2\omega_2^3 + 8\omega_3^2c_s^4\omega_4^2\omega_2^3 + 96\omega_3^2v_2^4\omega_4^2\omega_1\omega_2^2 + 48\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^3 + 264\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^2\omega_2 + 16\omega_3^2\omega_4^2\omega_1\omega_2^3 + 72\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^3\omega_2^3 +$
$144\omega_3^2v_3^2v_2^2\omega_4^2\omega_1^2\omega_2 - 72v_2^4\omega_4^2\omega_1^2\omega_2^3 - 12\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^3\omega_2 + 36v_2^2\omega_4^2\omega_1^3\omega_2^2 + 12\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^2\omega_2^3 - 24\omega_3v_2^4\omega_4^2\omega_1^3\omega_2 + 216\omega_3v_2^4\omega_4^2\omega_1^2\omega_2^3 -$
$40\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^2 - 540\omega_3c_s^2v_2^2\omega_4\omega_1^2\omega_2^3 + 18\omega_3^2c_s^4\omega_4\omega_1^3\omega_2^3 - 36\omega_3^2v_2^2\omega_4\omega_1^3\omega_2^2 + 8\omega_3^2\omega_4^2\omega_1^3 - 108\omega_3v_2^2\omega_4\omega_1^3\omega_2^3 - 144\omega_3^2v_2^4\omega_4^2\omega_1^2\omega_2^2 - 36\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^3 -$
$72\omega_3^2v_2^4\omega_4\omega_1\omega_2^3 + 36\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2 - 72\omega_3v_3^2c_s^2\omega_4^2\omega_1^3\omega_2^2 - 2\omega_3^2\omega_4^2\omega_1^2\omega_2^3 + 108\omega_3^2c_s^2v_2^2\omega_4\omega_1^3\omega_2^2 - 8\omega_3^2\omega_4^2\omega_1^3\omega_2 + 24\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^3 + 36\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^3 -$
$60\omega_3v_2^4\omega_4^2\omega_1^2\omega_2^2 + 117\omega_3^2v_2^2\omega_4\omega_1^3\omega_2^3 + 72\omega_3c_s^2v_2^2\omega_4^2\omega_1\omega_2^3 - 16\omega_3c_s^2\omega_4^2\omega_1^3\omega_2 - 216c_s^2v_2^2\omega_4^2\omega_1^2\omega_2^3 + 24\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^2\omega_2^2 - 432\omega_3^2v_3^2v_2^2\omega_4^2\omega_2^3 -$
$54v_2^2\omega_4^2\omega_1^3\omega_2^3 - 297\omega_3^2c_s^2v_2^2\omega_4\omega_1^3\omega_2^3 + 48\omega_3^2v_3^2\omega_4^2\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^2\omega_2^2 - 72\omega_3^2c_s^2\omega_4\omega_1\omega_2^3 - 108\omega_3^2v_2^4\omega_4^2\omega_1^3\omega_2 + 36\omega_3v_2^2\omega_4\omega_1^3\omega_2^2 - 12\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^2 +$
$40\omega_3^2v_2^4\omega_4^2\omega_1^2\omega_2^3 - 852\omega_3^2c_s^2v_2^2\omega_4^2\omega_1\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^2\omega_2 + 576\omega_3^2v_3^2v_2^2\omega_4^2\omega_1\omega_2^3 - 108\omega_3^2c_s^2v_2^2\omega_4\omega_1^2\omega_2^2 + 38\omega_3^2v_2^4\omega_4^2\omega_1^3\omega_2^2 + 180\omega_3v_2^2\omega_4\omega_1^2\omega_2^3 +$
$16\omega_3c_s^4\omega_4^2\omega_1\omega_2^3 + 144\omega_3^2v_3^2v_2^2\omega_4^2\omega_1^3 + 48\omega_3v_3^2c_s^2\omega_4^2\omega_1^2\omega_2^2 + 64\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2 - 108c_s^2v_2^2\omega_4^2\omega_1^3\omega_2^2 + 16\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^2 + 96\omega_3^2v_2^2\omega_4^2\omega_1\omega_2^3 -$
$72\omega_3^2c_s^4\omega_4\omega_1^2\omega_2^3 + 36\omega_3^2v_2^2\omega_4\omega_1^2\omega_2^2 - 24\omega_3^2v_3^2\omega_4^2\omega_1^3 + 324\omega_3c_s^2v_2^2\omega_4\omega_1^3\omega_2^3 - 117\omega_3v_2^4\omega_4^2\omega_1^3\omega_2^3 + 36\omega_3c_s^2\omega_4^2\omega_1^3\omega_2^2 - 48\omega_3^2v_3^2\omega_4^2\omega_1\omega_2^2 -$
$96\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^2\omega_2 + 96\omega_3^2v_2^4\omega_4^2\omega_1^2\omega_2 + 72\omega_3v_3^2c_s^2\omega_4^2\omega_1^2\omega_2^3 + 24\omega_3v_2^2\omega_4^2\omega_1\omega_2^3 + 48\omega_3v_3^2c_s^2\omega_4^2\omega_1^3\omega_2 + 24\omega_3^2v_2^4\omega_4^2\omega_1^3\omega_2^3 + 144\omega_3^2v_3^2v_2^2\omega_4^2\omega_1\omega_2^2 +$
$648\omega_3^2c_s^2v_2^2\omega_4\omega_1^2\omega_2^3 + 336\omega_3^2c_s^2v_2^2\omega_4^2\omega_1\omega_2^2 + 2\omega_3^2\omega_4^2\omega_1^3\omega_2^2 - 12\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^3\omega_2^2 + 72v_2^2\omega_4^2\omega_1^2\omega_2^3 - 16\omega_3^2\omega_4^2\omega_2^3 - 48\omega_3^2v_3^2\omega_4^2\omega_1\omega_2^3 - 108\omega_3c_s^2v_2^2\omega_4\omega_1^3\omega_2^2 -$
$288\omega_3^2v_2^2\omega_4\omega_1^2\omega_2^3 + 24\omega_3^2v_3^2c_s^2\omega_4^2\omega_2^3 - 18\omega_3c_s^2\omega_4^2\omega_1^3\omega_2^3 + 108\omega_3v_2^4\omega_4^2\omega_1^3\omega_2^2 - 144\omega_3^2v_2^2\omega_4^2\omega_1\omega_2^2 + 162c_s^2v_2^2\omega_4^2\omega_1^3\omega_2^3 - 172\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^3)\frac{\rho}{72\omega_3^2\omega_4^2\omega_1^3\omega_2^3}$

coefficient $C^{(2)}_{\mathrm{D}_x^2\mathrm{D}_z^2\rho}$ **at** $\frac{\partial^4\rho}{\partial x_1^2\partial x_3^2}$**:**

$$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_z^2\rho} = (-4c_s^4v_2\omega^2 - 108v_3^2v_2v_1^2\omega - 42v_3^2c_s^2v_1\omega^2 + 2c_s^4v_2\omega^3 + 72c_s^2v_2v_1^2 + 3v_3^2c_s^2v_1\omega^3 + 108v_3^2v_2^2v_1\omega - 3v_3^2v_2v_1^2\omega^3 - 42v_3^2v_2^2v_1\omega^2 -$$
$$72v_3^2c_s^2v_1 + 3v_3^2v_2^2v_1\omega^3 + 42v_3^2v_2v_1^2\omega^2 + 108v_3^2c_s^2v_1\omega - 72v_3^2v_2^2v_1 - 108c_s^2v_2v_1^2\omega - 108v_3^2c_s^2v_2\omega + 72v_3^2c_s^2v_2 - 72c_s^2v_2^2v_1 + 108c_s^2v_2^2v_1\omega -$$
$$3v_3^2c_s^2v_2\omega^3 - 3c_s^2v_2v_1^2\omega^3 - 42c_s^2v_2^2v_1\omega^2 + 3c_s^2v_2^2v_1\omega^3 + 42c_s^2v_2v_1^2\omega^2 + 42v_3^2c_s^2v_2\omega^2 + 72v_3^2v_2v_1^2)\frac{1}{12\omega^3}$$

$$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_z^2\rho} = (-3\omega_6^2\omega_{19}v_3^2c_s^2v_2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12} - 6\omega_6^2c_s^2v_2v_1^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12} - 12\omega_6^2\omega_{19}v_3^2v_2^2v_1\omega_7^2\omega_{14}\omega_8\omega_5\omega_{12} +$$
$$12\omega_6^2\omega_{19}v_3^2c_s^2v_1\omega_7^2\omega_{20}\omega_8\omega_5^2\omega_{12} + 6\omega_6^2\omega_{19}v_3^2c_s^2v_1\omega_7^2\omega_{20}\omega_8^2\omega_5^2 - 48\omega_6^2\omega_{19}c_s^4v_2\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12} - 6\omega_6^2\omega_{19}c_s^2v_2^2v_1\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_{12} -$$
$$12\omega_6^2\omega_{19}v_3^2v_2^2v_1\omega_7\omega_{20}\omega_8\omega_5^2\omega_{12} - 6\omega_6^2\omega_{19}v_3^2c_s^2v_1\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12} + 3\omega_6^2\omega_{19}v_3^2v_2^2v_1\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12} + 12\omega_6^2v_3^2v_2v_1^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_{12} +$$
$$6\omega_6^2v_3^2v_2^2v_1\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12} + 12\omega_6^2\omega_{19}v_3^2v_2^2v_1\omega_7^2\omega_{20}\omega_8^2\omega_5\omega_{12} - 6\omega_6^2v_3^2c_s^2v_2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_{12} - 3\omega_6^2v_3^2c_s^2v_1\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12} -$$
$$6\omega_6^2c_s^2v_2v_1^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_{12} - 3\omega_6^2\omega_{19}c_s^2v_2v_1^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12} + 12\omega_6^2\omega_{19}v_3^2v_2^2v_1\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_{12} + 12\omega_6^2\omega_{19}c_s^2v_2^2v_1\omega_7^2\omega_{20}\omega_8\omega_5^2\omega_{12} +$$
$$48\omega_6\omega_{19}c_s^4v_2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12} - 6\omega_6^2v_3^2c_s^2v_2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12} + 6\omega_6^2\omega_{19}v_3^2v_2^2v_1\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5 - 6\omega_6^2\omega_{19}v_3^2c_s^2v_1\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_{12} +$$
$$2\omega_6^2\omega_{19}c_s^4v_2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12} - 12\omega_6^2\omega_{19}c_s^2v_2^2v_1\omega_7^2\omega_{14}\omega_8\omega_5\omega_{12} - 6\omega_6^2\omega_{19}c_s^2v_2^2v_1\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12} + 12\omega_6^2\omega_{19}v_3^2c_s^2v_1\omega_7^2\omega_{20}\omega_8^2\omega_5\omega_{12} +$$
$$12\omega_6^2\omega_{19}v_3^2v_2^2v_1\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12} + 12\omega_6^2v_3^2c_s^2v_2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_{12} + 3\omega_6^2v_3^2v_2v_1^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12} + 24\omega_6^2\omega_{19}c_s^4v_2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{12} +$$
$$12\omega_6^2c_s^2v_2v_1^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_{12} - 12\omega_6^2\omega_{19}v_3^2c_s^2v_2\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12} + 12\omega_6^2\omega_{19}v_3^2c_s^2v_1\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_{12} + 6\omega_6^2\omega_{19}v_3^2c_s^2v_1\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5 -$$
$$12\omega_6^2\omega_{19}c_s^2v_2^2v_1\omega_7\omega_{20}\omega_8\omega_5^2\omega_{12} - 6\omega_6^2\omega_{19}v_3^2v_2^2v_1\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_{12} - 12\omega_6^2\omega_{19}c_s^2v_2v_1^2\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12} - 24\omega_6\omega_{19}c_s^4v_2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_{12} -$$
$$24\omega_{19}c_s^4v_2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{12} - 12\omega_6^2\omega_{19}v_3^2c_s^2v_1\omega_7^2\omega_{14}\omega_8\omega_5\omega_{12} + 6\omega_6^2\omega_{19}v_3^2v_2^2v_1\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12} + 12\omega_6^2\omega_{19}c_s^2v_2^2v_1\omega_7^2\omega_{20}\omega_8^2\omega_5\omega_{12} +$$
$$12\omega_6^2\omega_{19}v_3^2v_2^2v_1\omega_7^2\omega_{20}\omega_8\omega_5^2\omega_{12} + 12\omega_6^2\omega_{19}c_s^2v_2^2v_1\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_{12} - 12\omega_6^2\omega_{19}v_3^2c_s^2v_1\omega_7\omega_{20}\omega_8\omega_5^2\omega_{12} + 6\omega_6^2\omega_{19}c_s^2v_2^2v_1\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5 -$$
$$3\omega_6^2c_s^2v_2^2v_1\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12} - 6\omega_6^2v_3^2v_2v_1^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_{12} - 6\omega_6^2\omega_{19}v_3^2c_s^2v_2\omega_7\omega_{20}\omega_8^2\omega_5^2\omega_{12} - 6\omega_6^2\omega_{19}c_s^2v_2v_1^2\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_{12} +$$
$$12\omega_6^2\omega_{19}v_3^2c_s^2v_1\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12} + 3\omega_6^2\omega_{19}c_s^2v_2^2v_1\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12} - 3\omega_6^2\omega_{19}c_s^2v_2^2v_1\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 - 6\omega_6^2v_3^2v_2v_1^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12} -$$
$$6\omega_6^2\omega_{19}c_s^2v_2v_1^2\omega_7\omega_{20}\omega_8^2\omega_5^2\omega_{12} - 12\omega_6^2\omega_{19}v_3^2v_2v_1^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_{12} - 6\omega_6^2\omega_{19}v_3^2c_s^2v_2\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_{12} - 24\omega_6^2\omega_{19}c_s^4v_2\omega_7^2\omega_{20}\omega_{14}\omega_5^2\omega_{12} -$$
$$3\omega_6^2\omega_{19}v_3^2v_2v_1^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12} + 12\omega_6^2\omega_{19}c_s^2v_2v_1^2\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{12} + 12\omega_6^2\omega_{19}v_3^2c_s^2v_2\omega_7\omega_{14}\omega_8\omega_5^2\omega_{12} + 12\omega_6^2\omega_{19}v_3^2c_s^2v_2\omega_7^2\omega_{20}\omega_8\omega_5\omega_{12} +$$
$$6\omega_6^2c_s^2v_2^2v_1\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12} + 6\omega_6^2\omega_{19}v_3^2v_2v_1^2\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{12} + 12\omega_6^2\omega_{19}c_s^2v_2^2v_1\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_{12} - 3\omega_6^2\omega_{19}v_3^2c_s^2v_1\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 +$$
$$3\omega_6^2c_s^2v_2v_1^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12} + 24\omega_6^2\omega_{19}c_s^4v_2\omega_7\omega_{20}\omega_{14}\omega_5^2\omega_{12} - 12\omega_6^2\omega_{19}v_3^2c_s^2v_2\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_{12} + 6\omega_6^2\omega_{19}v_3^2c_s^2v_2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12} -$$
$$6\omega_6^2\omega_{19}v_3^2v_2v_1^2\omega_7^2\omega_{14}\omega_8\omega_5\omega_{12} - 12\omega_6^2\omega_{19}c_s^2v_2v_1^2\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_{12} - 6\omega_6^2\omega_{19}v_3^2v_2v_1^2\omega_7\omega_{20}\omega_8^2\omega_5^2\omega_{12} - 6\omega_6^2\omega_{19}v_3^2v_2v_1^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_{12} -$$
$$3\omega_6^2\omega_{19}v_3^2v_2v_1^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 12\omega_6^2\omega_{19}c_s^2v_2v_1^2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{12} + 6\omega_6^2\omega_{19}v_3^2c_s^2v_2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_{12} + 12\omega_6^2\omega_{19}v_3^2c_s^2v_2\omega_7^2\omega_{20}\omega_8\omega_5^2\omega_{12} +$$
$$12\omega_6^2\omega_{19}v_3^2c_s^2v_2\omega_7^2\omega_{14}\omega_8\omega_5\omega_{12} + 6\omega_6^2\omega_{19}c_s^2v_2^2v_1\omega_7^2\omega_{20}\omega_8^2\omega_5^2 - 12\omega_6^2c_s^2v_2^2v_1\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_{12} - 6\omega_6^2\omega_{19}v_3^2c_s^2v_1\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{12} -$$
$$48\omega_6^2\omega_{19}c_s^4v_2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{12} - 12\omega_6^2\omega_{19}c_s^2v_2^2v_1\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12} + 12\omega_6^2\omega_{19}v_3^2c_s^2v_2\omega_7\omega_{20}\omega_8\omega_5^2\omega_{12} + 12\omega_6^2\omega_{19}c_s^2v_2v_1^2\omega_7^2\omega_{14}\omega_8\omega_5\omega_{12} -$$
$$12\omega_6^2v_3^2c_s^2v_1\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_{12} + 6\omega_6^2\omega_{19}v_3^2v_2v_1\omega_7^2\omega_{20}\omega_8^2\omega_5^2 + 6\omega_6^2v_3^2v_2v_1\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_{12} - 12\omega_6^2\omega_{19}v_3^2c_s^2v_2\omega_7^2\omega_{20}\omega_8^2\omega_5\omega_{12} -$$
$$6\omega_6^2\omega_{19}c_s^2v_2v_1^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5 - 12\omega_6^2\omega_{19}v_3^2v_2v_1^2\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{12} - 12\omega_6^2\omega_{19}c_s^2v_2v_1^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_{12} - 6\omega_6^2\omega_{19}v_3^2c_s^2v_2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5 -$$
$$12\omega_6^2\omega_{19}c_s^2v_2v_1^2\omega_7^2\omega_{20}\omega_8^2\omega_5\omega_{12} - 12\omega_6^2\omega_{19}v_3^2c_s^2v_2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_{12} + 48\omega_6\omega_{19}c_s^4v_2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{12} + 12\omega_6^2\omega_{19}v_3^2v_2v_1^2\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{12} -$$
$$12\omega_6^2v_3^2v_2^2v_1\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_{12} + 12\omega_6^2\omega_{19}v_3^2c_s^2v_2\omega_7^2\omega_{20}\omega_8^2\omega_5 - 6\omega_6^2\omega_{19}c_s^2v_2^2v_1\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{12} + 6\omega_6^2v_3^2c_s^2v_1\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_{12} -$$
$$12\omega_6^2\omega_{19}v_3^2c_s^2v_1\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{12} + 6\omega_6^2\omega_{19}c_s^2v_2v_1^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_{12} + 12\omega_6^2\omega_{19}v_3^2v_2v_1^2\omega_7\omega_{20}\omega_8\omega_5^2\omega_{12} + 12\omega_6^2\omega_{19}v_3^2v_2^2v_1\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{12} +$$
$$12\omega_6^2\omega_{19}c_s^2v_2v_1^2\omega_7^2\omega_{20}\omega_8^2\omega_5 + 6\omega_6^2\omega_{19}v_3^2c_s^2v_2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_{12} - 12\omega_6^2\omega_{19}v_3^2c_s^2v_2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12} + 12\omega_6^2\omega_{19}v_3^2v_2^2v_1\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{12} -$$
$$6\omega_6^2\omega_{19}v_3^2v_2v_1^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5 - 12\omega_6^2\omega_{19}v_3^2v_2v_1^2\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{12} - 12\omega_6^2\omega_{19}c_s^2v_2v_1^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_{12} - 6\omega_6^2\omega_{19}v_3^2c_s^2v_1\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{12} -$$
$$6\omega_6^2\omega_{19}v_3^2v_2v_1^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5 + 12\omega_6^2\omega_{19}v_3^2c_s^2v_2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_{12} + 12\omega_6^2\omega_{19}v_3^2c_s^2v_2\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{12} + 6\omega_6^2c_s^2v_2^2v_1\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_{12} - 24\omega_{19}c_s^4v_2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12} +$$
$$24\omega_6^2\omega_{19}c_s^4v_2\omega_7^2\omega_{20}\omega_{14}\omega_5\omega_{12} - 12\omega_6^2\omega_{19}v_3^2v_2v_1^2\omega_7^2\omega_{20}\omega_8\omega_5\omega_{12} - 12\omega_6^2\omega_{19}v_3^2c_s^2v_2\omega_7^2\omega_{20}\omega_8\omega_5^2\omega_{12} - 12\omega_6^2\omega_{19}v_3^2v_2^2v_1\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{12} +$$
$$3\omega_6^2\omega_{19}v_3^2v_2v_1^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 - 6\omega_6^2\omega_{19}v_3^2c_s^2v_1\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{12} - 6\omega_6^2\omega_{19}v_3^2v_2v_1^2\omega_7^2\omega_{20}\omega_8^2\omega_5^2 + 12\omega_6^2\omega_{19}v_3^2c_s^2v_1\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{12} +$$
$$12\omega_6^2\omega_{19}c_s^2v_2^2v_1\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_{12} + 6\omega_6^2\omega_{19}v_3^2v_2v_1^2\omega_7\omega_{20}\omega_8^2\omega_5^2\omega_{12} + 24\omega_6\omega_{19}c_s^4v_2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12} + 6\omega_6^2\omega_{19}v_3^2v_2v_1\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_{12} +$$
$$12\omega_6^2\omega_{19}v_3^2c_s^2v_2\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{12} - 12\omega_6^2\omega_{19}v_3^2v_2^2v_1\omega_7\omega_{14}\omega_8\omega_5^2\omega_{12} - 6\omega_6^2\omega_{19}c_s^2v_2^2v_1\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{12} - 6\omega_6^2\omega_{19}v_3^2c_s^2v_2\omega_7^2\omega_{20}\omega_8^2\omega_5^2 +$$

$12\omega_6^2\omega_{19}v_3^2c_s^2v_1\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_{12} + 24\omega_{19}c_s^4v_2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12} - 6\omega_6^2\omega_{19}c_s^2v_2v_1^2\omega_7^2\omega_{20}\omega_8^2\omega_5^2 + 12\omega_6^2\omega_{19}c_s^2v_2v_1^2\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{12} -$
$12\omega_6^2\omega_{19}v_3^2v_2^2v_1\omega_7^2\omega_{20}\omega_8\omega_5\omega_{12} - 12\omega_6^2\omega_{19}v_3^2c_s^2v_1\omega_7\omega_{14}\omega_8\omega_5^2\omega_{12} - 12\omega_6^2\omega_{19}v_3^2v_2^2v_1\omega_7^2\omega_{20}\omega_8^2\omega_5 + 6\omega_6^2\omega_{19}c_s^2v_2^2v_1\omega_7\omega_{20}\omega_8^2\omega_5^2\omega_{12} +$
$12\omega_6^2\omega_{19}v_3^2v_2^2v_1\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_{12} + 3\omega_6^2\omega_{19}c_s^2v_2v_1^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 6\omega_6^2\omega_{19}v_3^2c_s^2v_2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{12} - 6\omega_6^2\omega_{19}v_3^2v_2^2v_1\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{12} +$
$3\omega_6^2\omega_{19}v_3^2c_s^2v_2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 24\omega_6^2\omega_{19}c_s^4v_2\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{12} + 6\omega_6^2\omega_{19}c_s^2v_2^2v_1\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_{12} + 12\omega_6^2\omega_{19}c_s^2v_2^2v_1\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{12} -$
$12\omega_6^2\omega_{19}v_3^2c_s^2v_1\omega_7^2\omega_{20}\omega_8\omega_5\omega_{12} - 12\omega_6^2\omega_{19}c_s^2v_2^2v_1\omega_7^2\omega_{20}\omega_8^2\omega_5 - 6\omega_6^2\omega_{19}v_3^2v_2^2v_1\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{12} - 12\omega_6^2\omega_{19}c_s^2v_2^2v_1\omega_7\omega_{14}\omega_8\omega_5^2\omega_{12} +$
$6\omega_6^2\omega_{19}v_3^2c_s^2v_1\omega_7\omega_{20}\omega_8^2\omega_5^2\omega_{12} + 6\omega_6^2\omega_{19}v_3^2c_s^2v_1\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_{12} - 12\omega_6^2\omega_{19}v_3^2v_2v_1^2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{12} + 24\omega_6^2\omega_{19}c_s^4v_2\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_{12} -$
$12\omega_6^2\omega_{19}c_s^2v_2^2v_1\omega_7^2\omega_{20}\omega_8\omega_5\omega_{12} + 6\omega_6^2\omega_{19}c_s^2v_2v_1^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{12})\frac{1}{12\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12}}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_z^2\rho} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_z^2\rho}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_z^2\rho} = (-6\omega_6\omega_{19}v_3^2v_2^2v_1\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12} - 3\omega_6v_3^2c_s^2v_1\omega_7\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12} + 12\omega_6\omega_{19}c_s^2v_2^2v_1\omega_{14}\omega_8\omega_5\omega_{12} +$
$12\omega_6\omega_{19}v_3^2v_2^2v_1\omega_7\omega_{14}\omega_5\omega_{12} - 6\omega_6\omega_{19}v_3^2v_2^2v_1\omega_7\omega_{20}\omega_{14}\omega_8\omega_{12} - 6\omega_6v_3^2v_2v_1^2\omega_7\omega_{14}\omega_8\omega_5\omega_{12} - 6\omega_6\omega_{19}v_3^2c_s^2v_2\omega_7\omega_{14}\omega_8\omega_{12} -$
$6\omega_6\omega_{19}c_s^2v_2v_1^2\omega_7\omega_{14}\omega_8\omega_{12} + 12\omega_6\omega_{19}v_3^2v_2^2v_1\omega_{14}\omega_5\omega_{12} + 3\omega_6\omega_{19}v_3^2c_s^2v_2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5 + 12\omega_6\omega_{19}c_s^2v_2^2v_1\omega_7\omega_{14}\omega_5\omega_{12} +$
$12\omega_6\omega_{19}v_3^2v_2^2v_1\omega_{14}\omega_8\omega_5\omega_{12} + 12\omega_6\omega_{19}v_3^2c_s^2v_2\omega_{14}\omega_5\omega_{12} + 3\omega_6\omega_{19}c_s^2v_2v_1^2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5 + 6\omega_6\omega_{19}v_3^2v_2v_1^2\omega_7\omega_{20}\omega_8\omega_5\omega_{12} +$
$12\omega_6\omega_{19}c_s^2v_2v_1^2\omega_{14}\omega_5\omega_{12} - 6\omega_6\omega_{19}v_3^2v_2v_1^2\omega_7\omega_{14}\omega_8\omega_{12} + 12\omega_6\omega_{19}c_s^2v_2^2v_1\omega_{20}\omega_{14}\omega_5\omega_{12} - 6\omega_6v_3^2c_s^2v_2\omega_7\omega_{14}\omega_8\omega_5\omega_{12} -$
$6\omega_6\omega_{19}c_s^2v_2^2v_1\omega_7\omega_{20}\omega_{14}\omega_8\omega_{12} + 12\omega_6\omega_{19}v_3^2v_2^2v_1\omega_7\omega_{20}\omega_8\omega_{12} - 6\omega_6\omega_{19}c_s^2v_2^2v_1\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12} + 6\omega_6\omega_{19}v_3^2c_s^2v_1\omega_7\omega_{20}\omega_8\omega_5 -$
$6\omega_6\omega_{19}v_3^2c_s^2v_2\omega_7\omega_{20}\omega_{14}\omega_8 - 12\omega_6\omega_{19}v_3^2c_s^2v_2\omega_7\omega_{20}\omega_5\omega_{12} - 3\omega_6c_s^2v_2^2v_1\omega_7\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12} - 6\omega_6c_s^2v_2v_1^2\omega_7\omega_{14}\omega_8\omega_5\omega_{12} -$
$6\omega_6\omega_{19}c_s^2v_2v_1^2\omega_7\omega_{20}\omega_{14}\omega_8 - 12\omega_6\omega_{19}c_s^2v_2v_1^2\omega_7\omega_{20}\omega_5\omega_{12} - 12\omega_6\omega_{19}v_3^2c_s^2v_1\omega_7\omega_{14}\omega_{12} - 6\omega_6\omega_{19}v_3^2c_s^2v_1\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12} +$
$12\omega_6\omega_{19}v_3^2v_2^2v_1\omega_{20}\omega_{14}\omega_5\omega_{12} + 6\omega_6\omega_{19}v_3^2c_s^2v_2\omega_7\omega_{20}\omega_8\omega_5\omega_{12} - 12\omega_6\omega_{19}v_3^2c_s^2v_1\omega_7\omega_{20}\omega_8 + 2\omega_6\omega_{19}c_s^4v_2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12} +$
$12\omega_6\omega_{19}c_s^2v_2^2v_1\omega_7\omega_{20}\omega_8\omega_{12} - 6\omega_6\omega_{19}v_3^2c_s^2v_1\omega_7\omega_{20}\omega_{14}\omega_8\omega_{12} + 3\omega_6\omega_{19}v_3^2v_2v_1^2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5 + 3\omega_6v_3^2v_2v_1^2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12} -$
$12\omega_6\omega_{19}v_3^2v_2v_1^2\omega_7\omega_{20}\omega_5\omega_{12} + 6\omega_6\omega_{19}c_s^2v_2v_1^2\omega_7\omega_{20}\omega_8\omega_5\omega_{12} - 6\omega_6\omega_{19}v_3^2v_2v_1^2\omega_7\omega_{20}\omega_{14}\omega_8 - 12\omega_6\omega_{19}c_s^2v_2v_1^2\omega_7\omega_{14}\omega_5\omega_{12} -$
$12\omega_6\omega_{19}v_3^2v_2v_1^2\omega_{14}\omega_8\omega_5\omega_{12} - 6\omega_6c_s^2v_2v_1^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12} + 12\omega_6\omega_{19}v_3^2c_s^2v_1\omega_7\omega_{20}\omega_{14}\omega_{12} - 12\omega_6\omega_{19}v_3^2c_s^2v_2\omega_7\omega_{14}\omega_5\omega_{12} +$
$6\omega_6\omega_{19}v_3^2v_2^2v_1\omega_7\omega_{14}\omega_8\omega_{12} - 12\omega_6\omega_{19}v_3^2v_2^2v_1\omega_7\omega_{20}\omega_{14}\omega_5\omega_{12} - 6\omega_6\omega_{19}c_s^2v_2^2v_1\omega_7\omega_{14}\omega_8\omega_5\omega_{12} - 6\omega_6v_3^2c_s^2v_2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12} -$
$12\omega_6\omega_{19}c_s^2v_2v_1^2\omega_{14}\omega_8\omega_5\omega_{12} - 12\omega_6\omega_{19}v_3^2v_2v_1^2\omega_7\omega_{14}\omega_5\omega_{12} - 12\omega_6\omega_{19}v_3^2c_s^2v_2\omega_{14}\omega_8\omega_5\omega_{12} + 6\omega_6\omega_{19}v_3^2c_s^2v_1\omega_{20}\omega_8\omega_5\omega_{12} +$
$6\omega_6\omega_{19}c_s^2v_2^2v_1\omega_7\omega_{14}\omega_8\omega_{12} - 6\omega_6\omega_{19}v_3^2c_s^2v_1\omega_7\omega_{14}\omega_8\omega_5\omega_{12} + 12\omega_6\omega_{19}v_3^2v_2v_1^2\omega_7\omega_{20}\omega_{12} - 12\omega_6\omega_{19}c_s^2v_2v_1^2\omega_7\omega_{20}\omega_8\omega_{12} -$
$3\omega_6v_3^2v_2^2v_1\omega_7\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12} - 12\omega_6\omega_{19}v_3^2v_2v_1^2\omega_{20}\omega_{14}\omega_5\omega_{12} - 12\omega_6\omega_{19}v_3^2c_s^2v_2\omega_7\omega_{20}\omega_8\omega_{12} - 6\omega_6v_3^2v_2v_1^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12} +$
$6\omega_6\omega_{19}v_3^2v_2^2v_1\omega_7\omega_{20}\omega_{14}\omega_8 + 12\omega_6\omega_{19}v_3^2v_2^2v_1\omega_7\omega_{20}\omega_5\omega_{12} + 12\omega_6\omega_{19}c_s^2v_2v_1^2\omega_7\omega_{20}\omega_{12} + 12\omega_6\omega_{19}v_3^2c_s^2v_2\omega_7\omega_{20}\omega_{12} - 12\omega_6v_3^2c_s^2v_1\omega_{14}\omega_8\omega_5\omega_{12} +$
$3\omega_6v_3^2c_s^2v_2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12} - 12\omega_6\omega_{19}c_s^2v_2^2v_1\omega_7\omega_{20}\omega_{14}\omega_5\omega_{12} - 6\omega_6\omega_{19}v_3^2v_2^2v_1\omega_7\omega_{14}\omega_8\omega_5\omega_{12} - 12\omega_6\omega_{19}c_s^2v_2^2v_1\omega_7\omega_{20}\omega_8 -$
$12\omega_6\omega_{19}v_3^2c_s^2v_2\omega_{20}\omega_{14}\omega_5\omega_{12} - 12\omega_6\omega_{19}v_3^2v_2v_1^2\omega_7\omega_{20}\omega_8\omega_{12} - 12\omega_6\omega_{19}c_s^2v_2^2v_1\omega_7\omega_{14}\omega_{12} + 12\omega_6\omega_{19}v_3^2c_s^2v_2\omega_{20}\omega_5\omega_{12} +$
$12\omega_6\omega_{19}c_s^2v_2v_1^2\omega_{20}\omega_5\omega_{12} + 3\omega_6c_s^2v_2v_1^2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12} - 12\omega_6\omega_{19}c_s^2v_2v_1^2\omega_{20}\omega_{14}\omega_5\omega_{12} - 12\omega_6\omega_{19}v_3^2v_2^2v_1\omega_7\omega_{20}\omega_8 -$
$12\omega_6\omega_{19}v_3^2c_s^2v_1\omega_7\omega_{20}\omega_{14}\omega_5\omega_{12} + 12\omega_6\omega_{19}c_s^2v_2^2v_1\omega_7\omega_{20}\omega_5\omega_{12} + 6\omega_6\omega_{19}c_s^2v_2^2v_1\omega_7\omega_{14}\omega_8 - 12\omega_6\omega_{19}v_3^2v_2^2v_1\omega_7\omega_{14}\omega_{12} +$
$12\omega_6\omega_{19}v_3^2v_2v_1^2\omega_{20}\omega_5\omega_{12} + 6\omega_6\omega_{19}v_3^2c_s^2v_2\omega_7\omega_{20}\omega_{14}\omega_8\omega_{12} + 6\omega_6c_s^2v_2^2v_1\omega_7\omega_{14}\omega_8\omega_5\omega_{12} - 6\omega_6\omega_{19}v_3^2c_s^2v_1\omega_7\omega_{20}\omega_8\omega_5\omega_{12} +$
$6\omega_6\omega_{19}v_3^2c_s^2v_2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12} - 12\omega_6\omega_{19}v_3^2c_s^2v_1\omega_7\omega_{20}\omega_{12} - 6\omega_6\omega_{19}c_s^2v_2v_1^2\omega_{20}\omega_8\omega_5\omega_{12} + 6\omega_6\omega_{19}c_s^2v_2v_1^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12} -$
$12\omega_6\omega_{19}v_3^2v_2v_1^2\omega_7\omega_{20}\omega_{14}\omega_{12} + 6\omega_6\omega_{19}c_s^2v_2v_1^2\omega_7\omega_{20}\omega_{14}\omega_8\omega_{12} - 6\omega_6\omega_{19}v_3^2c_s^2v_2\omega_{20}\omega_8\omega_5\omega_{12} + 12\omega_6\omega_{19}v_3^2c_s^2v_1\omega_{14}\omega_8\omega_5\omega_{12} +$
$3\omega_6\omega_{19}v_3^2c_s^2v_1\omega_7\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12} - 6\omega_6\omega_{19}c_s^2v_2^2v_1\omega_7\omega_{20}\omega_8\omega_5\omega_{12} - 3\omega_6\omega_{19}v_3^2v_2^2v_1\omega_7\omega_{20}\omega_{14}\omega_8\omega_5 + 6\omega_6v_3^2c_s^2v_1\omega_7\omega_{14}\omega_8\omega_5\omega_{12} -$
$12\omega_6\omega_{19}v_3^2c_s^2v_1\omega_{20}\omega_5\omega_{12} - 12\omega_6\omega_{19}v_3^2c_s^2v_2\omega_7\omega_{20}\omega_{14}\omega_{12} - 6\omega_6\omega_{19}v_3^2v_2v_1^2\omega_{20}\omega_8\omega_5\omega_{12} - 4\omega_{19}c_s^4v_2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12} +$
$12\omega_6\omega_{19}v_3^2c_s^2v_1\omega_7\omega_{14}\omega_5\omega_{12} - 12\omega_6\omega_{19}c_s^2v_2v_1^2\omega_7\omega_{20}\omega_{14}\omega_{12} - 3\omega_6\omega_{19}v_3^2c_s^2v_1\omega_7\omega_{20}\omega_{14}\omega_8\omega_5 + 6\omega_6\omega_{19}c_s^2v_2^2v_1\omega_7\omega_{20}\omega_8\omega_5 +$
$12\omega_6v_3^2v_2v_1^2\omega_{14}\omega_8\omega_5\omega_{12} + 6\omega_6v_3^2v_2^2v_1\omega_7\omega_{14}\omega_8\omega_5\omega_{12} + 6\omega_6\omega_{19}v_3^2v_2v_1^2\omega_7\omega_{20}\omega_{14}\omega_8\omega_{12} + 12\omega_6\omega_{19}v_3^2c_s^2v_1\omega_{20}\omega_{14}\omega_5\omega_{12} -$
$3\omega_6\omega_{19}v_3^2v_2v_1^2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12} + 6\omega_6\omega_{19}v_3^2v_2v_1^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12} - 12\omega_6\omega_{19}c_s^2v_2^2v_1\omega_{14}\omega_5\omega_{12} + 12\omega_6v_3^2c_s^2v_2\omega_{14}\omega_8\omega_5\omega_{12} +$
$6\omega_6\omega_{19}v_3^2v_2^2v_1\omega_7\omega_{20}\omega_8\omega_5 - 6\omega_6\omega_{19}v_3^2v_2^2v_1\omega_7\omega_{20}\omega_8\omega_5\omega_{12} + 12\omega_6c_s^2v_2v_1^2\omega_{14}\omega_8\omega_5\omega_{12} - 3\omega_6\omega_{19}c_s^2v_2^2v_1\omega_7\omega_{20}\omega_{14}\omega_8\omega_5 +$
$3\omega_6\omega_{19}c_s^2v_2^2v_1\omega_7\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12} - 12\omega_6\omega_{19}v_3^2v_2^2v_1\omega_{14}\omega_5\omega_{12} + 12\omega_6\omega_{19}v_3^2c_s^2v_1\omega_7\omega_{20}\omega_8\omega_{12} + 12\omega_6\omega_{19}c_s^2v_2v_1^2\omega_7\omega_{20}\omega_{14}\omega_5\omega_{12} +$
$6\omega_6\omega_{19}v_3^2v_2v_1^2\omega_7\omega_{14}\omega_8\omega_5\omega_{12} - 12\omega_6\omega_{19}c_s^2v_2^2v_1\omega_7\omega_{20}\omega_{12} + 6\omega_6v_3^2v_2^2v_1\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12} + 12\omega_6\omega_{19}c_s^2v_2^2v_1\omega_7\omega_{20}\omega_{14}\omega_{12} -$
$12\omega_6\omega_{19}v_3^2v_2^2v_1\omega_7\omega_{20}\omega_{12} + 6\omega_6\omega_{19}v_3^2v_2^2v_1\omega_{20}\omega_8\omega_5\omega_{12} + 12\omega_6\omega_{19}v_3^2c_s^2v_2\omega_7\omega_{20}\omega_{14}\omega_5\omega_{12} + 6\omega_6\omega_{19}v_3^2c_s^2v_1\omega_7\omega_{14}\omega_8\omega_{12} +$
$12\omega_6\omega_{19}v_3^2v_2v_1^2\omega_7\omega_{20}\omega_8 - 12\omega_6\omega_{19}v_3^2v_2^2v_1\omega_{20}\omega_5\omega_{12} + 12\omega_6\omega_{19}v_3^2v_2v_1^2\omega_7\omega_{14}\omega_{12} + 12\omega_6\omega_{19}v_3^2c_s^2v_2\omega_7\omega_{20}\omega_8 + 12\omega_6\omega_{19}v_3^2v_2^2v_1\omega_7\omega_{20}\omega_{14}\omega_{12} +$
$12\omega_6\omega_{19}c_s^2v_2v_1^2\omega_7\omega_{20}\omega_8 + 12\omega_6\omega_{19}v_3^2c_s^2v_2\omega_7\omega_{14}\omega_{12} - 12\omega_6\omega_{19}c_s^2v_2^2v_1\omega_{20}\omega_5\omega_{12} + 6\omega_6\omega_{19}c_s^2v_2^2v_1\omega_{20}\omega_8\omega_5\omega_{12} + 12\omega_6\omega_{19}c_s^2v_2v_1^2\omega_7\omega_{14}\omega_{12} -$
$12\omega_6c_s^2v_2^2v_1\omega_{14}\omega_8\omega_5\omega_{12} - 3\omega_6\omega_{19}c_s^2v_2v_1^2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12} + 12\omega_6\omega_{19}v_3^2v_2v_1^2\omega_7\omega_{20}\omega_{14}\omega_5\omega_{12} + 6\omega_6\omega_{19}c_s^2v_2v_1^2\omega_7\omega_{14}\omega_8\omega_5\omega_{12} -$
$6\omega_6\omega_{19}v_3^2v_2v_1^2\omega_7\omega_{20}\omega_8\omega_5 + 6\omega_6\omega_{19}v_3^2c_s^2v_2\omega_7\omega_{14}\omega_8\omega_5\omega_{12} + 6\omega_6c_s^2v_2^2v_1\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12} + 3\omega_6\omega_{19}v_3^2v_2^2v_1\omega_7\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12} +$
$6\omega_6\omega_{19}v_3^2c_s^2v_1\omega_7\omega_{20}\omega_{14}\omega_8 + 12\omega_6\omega_{19}v_3^2c_s^2v_1\omega_7\omega_{20}\omega_5\omega_{12} - 6\omega_6\omega_{19}v_3^2c_s^2v_2\omega_7\omega_{20}\omega_8\omega_5 - 12\omega_6v_3^2v_2^2v_1\omega_{14}\omega_8\omega_5\omega_{12} - 6\omega_6\omega_{19}c_s^2v_2v_1^2\omega_7\omega_{20}\omega_8\omega_5 -$
$12\omega_6\omega_{19}v_3^2c_s^2v_1\omega_{14}\omega_5\omega_{12} + 6\omega_6v_3^2c_s^2v_1\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12} - 3\omega_6\omega_{19}v_3^2c_s^2v_2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12})\frac{1}{12\omega_6\omega_{19}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12}}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_z^2\rho} = C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_z^2\rho}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_z^2\rho} = (-2+\omega_2)\frac{c_s^4v_2}{6\omega_2}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_z^2\rho} = (3v_1^2\omega_1 - 3v_1^2\omega_2 + 6c_s^2\omega_1\omega_2 - 2\omega_1 + 3v_3^2\omega_1 - 14c_s^2\omega_2 + 2\omega_2 + 2c_s^2\omega_1 - 3v_3^2\omega_2)\frac{c_s^2v_2}{36\omega_1\omega_2}$

coefficient $C^{(2)}_{\mathrm{D}_x^2\mathrm{D}_z^2v_1}$ **at** $\frac{\partial^4 v_1}{\partial x_1^2\partial x_3^2}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_z^2v_1} = (28c_s^2v_2v_1\omega^2 - 24c_s^2v_2^2 + 36v_3^2v_2^2\omega - 2c_s^2v_2v_1\omega^3 + 36v_3^2c_s^2\omega - 14v_3^2c_s^2\omega^2 + v_3^2v_2^2\omega^3 + 48c_s^2v_2v_1 - 24v_3^2v_2^2 - 14v_3^2v_2^2\omega^2 + v_3^2c_s^2\omega^3 -$

$72c_s^2v_2v_1\omega - 24v_3^2c_s^2 + 28v_3^2v_2v_1\omega^2 + c_s^2v_2^2\omega^3 + 48v_3^2v_2v_1 - 14c_s^2v_2^2\omega^2 - 2v_3^2v_2v_1\omega^3 + 36c_s^2v_2^2\omega - 72v_3^2v_2v_1\omega)\frac{\rho}{4\omega^3}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_z^2v_1} = (-4\omega_6^2\omega_{19}v_3^2v_2^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12} - 2\omega_6^2\omega_{19}c_s^2v_2^2\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_9\omega_{12} + 2\omega_6^2\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9 +$
$4\omega_6^2\omega_{19}v_3^2c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12} - \omega_6^2c_s^2v_2^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} - 4\omega_6^2\omega_{19}c_s^2v_2^2\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5\omega_9 +$
$4\omega_6^2\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12} + 4\omega_6^2\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_5^2\omega_9\omega_{12} - \omega_6^2\omega_{19}c_s^2v_2^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9 +$
$4\omega_6^2\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} + 2\omega_6^2v_3^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} - 4\omega_6^2\omega_{19}v_3^2c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5\omega_9 -$
$6\omega_6\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} - 8\omega_6^2\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_8\omega_5^2\omega_9\omega_{12} - 4\omega_6^2\omega_{19}v_3^2v_2^2\omega_{13}\omega_7^2\omega_{20}\omega_8\omega_5\omega_9\omega_{12} -$
$4\omega_6\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12} + 8\omega_6^2\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_9\omega_{12} - 2\omega_6^2\omega_{19}v_3^2c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_9\omega_{12} -$
$4\omega_6^2\omega_{19}v_3^2v_2^2\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5\omega_9 - 4\omega_6^2\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_9 - 8\omega_6\omega_{19}c_s^2v_2v_1\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} + 4\omega_6^2\omega_{19}c_s^2v_2^2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12} +$
$2\omega_6^2\omega_{19}v_3^2v_2^2\omega_{13}\omega_7\omega_{20}\omega_8^2\omega_5^2\omega_9\omega_{12} + 2\omega_6^2\omega_{19}v_3^2v_2^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12} + 2\omega_6^2c_s^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} +$
$4\omega_6^2\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} - 2\omega_6^2\omega_{19}c_s^2v_2^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12} - 2\omega_6^2\omega_{19}c_s^2v_2^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} -$
$4\omega_6^2\omega_{19}v_3^2c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12} + 4\omega_6^2\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12} + 4\omega_6^2\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} +$
$8\omega_6^2c_s^2v_2v_1\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} + 8\omega_6^2\omega_{19}c_s^2v_2v_1\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{12} + 4\omega_6^2\omega_{19}v_3^2v_2^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_9\omega_{12} -$
$8\omega_6^2\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12} - \omega_6^2\omega_{19}v_3^2c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9 + 4\omega_6^2\omega_{19}v_3^2v_2^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12} +$
$4\omega_6^2\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5\omega_9\omega_{12} + 8\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} + 12\omega_6^2\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12} +$
$4\omega_6\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} - 2\omega_6^2\omega_{19}v_3^2v_2^2\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_9\omega_{12} - 4\omega_6^2\omega_{19}c_s^2v_2^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12} +$
$2\omega_6^2\omega_{19}v_3^2c_s^2\omega_{13}\omega_7\omega_{20}\omega_8^2\omega_5^2\omega_9\omega_{12} + 6\omega_6^2\omega_{19}c_s^2v_2v_1\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} - 8\omega_6^2\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5\omega_9\omega_{12} +$
$4\omega_6\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_9\omega_{12} + 2\omega_6^2v_3^2v_2^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} + 2\omega_6^2\omega_{19}v_3^2c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12} -$
$4\omega_6^2c_s^2v_2v_1\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} - 8\omega_6^2\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} - 4\omega_6^2\omega_{19}c_s^2v_2^2\omega_{13}\omega_7^2\omega_{20}\omega_8\omega_5\omega_9\omega_{12} +$
$8\omega_6^2\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12} - \omega_6^2v_3^2c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} - \omega_6^2\omega_{19}v_3^2v_2^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9 - 4\omega_6^2\omega_{19}v_3^2c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12} +$
$8\omega_6^2\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12} - 2\omega_6^2\omega_{19}v_3^2c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12} + 8\omega_6^2\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12} +$
$2\omega_6^2\omega_{19}c_s^2v_2^2\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_9\omega_{12} + 4\omega_6^2\omega_{19}v_3^2v_2^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9 - 4\omega_6^2\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9 -$
$4\omega_6^2\omega_{19}c_s^2v_2^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12} - 2\omega_6^2\omega_{19}v_3^2c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} - 4\omega_6^2\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12} +$
$\omega_6^2\omega_{19}v_3^2v_2^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} - 4\omega_6^2\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_9 - 4\omega_6^2\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_5^2\omega_9\omega_{12} +$
$2\omega_6^2\omega_{19}c_s^2v_2^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12} + 4\omega_6\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12} - 4\omega_6^2\omega_{19}v_3^2c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_8\omega_5\omega_9\omega_{12} -$
$4\omega_6\omega_{19}c_s^2v_2v_1\omega_{13}\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} + 8\omega_6^2\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7\omega_{20}\omega_8\omega_5^2\omega_9\omega_{12} + 8\omega_6\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_9 -$
$4\omega_6^2v_3^2c_s^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} - 8\omega_6^2\omega_{19}c_s^2v_2v_1\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12} - 4\omega_6\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12} +$
$4\omega_6^2\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_9\omega_{12} - 4\omega_6^2\omega_{19}c_s^2v_2v_1\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} + 4\omega_6^2\omega_{19}c_s^2v_2^2\omega_{13}\omega_7^2\omega_{20}\omega_8\omega_5^2\omega_9\omega_{12} +$
$4\omega_6^2\omega_{19}v_3^2v_2^2\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5\omega_9\omega_{12} + 2\omega_6^2v_3^2v_2^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} - 8\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} -$
$20\omega_6^2\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_9\omega_{12} - 16\omega_6^2\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12} - 8\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12} -$
$8\omega_6\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_9\omega_{12} + 2\omega_6^2v_3^2c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} + 2\omega_6^2\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9 +$
$4\omega_6^2\omega_{19}v_3^2v_2^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} + 4\omega_6^2\omega_{19}c_s^2v_2^2\omega_{13}\omega_7^2\omega_{20}\omega_8\omega_5^2\omega_9\omega_{12} - \omega_6^2v_3^2v_2^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} - 2\omega_6^2\omega_{19}v_3^2c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} -$
$8\omega_6\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{12} - 2\omega_6^2\omega_{19}v_3^2v_2^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12} + 8\omega_6^2v_3^2v_2v_1\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} +$
$4\omega_6^2\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} - 2\omega_6^2\omega_{19}v_3^2v_2^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} - 4\omega_6^2\omega_{19}v_3^2v_2^2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12} +$
$4\omega_6^2\omega_{19}c_s^2v_2^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_9\omega_{12} - 4\omega_6^2c_s^2v_2^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} - 8\omega_6^2\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12} -$
$8\omega_6^2\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_9\omega_{12} + \omega_6^2\omega_{19}v_3^2c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} + 4\omega_6^2\omega_{19}c_s^2v_2^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12} -$
$8\omega_6^2\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12} + 4\omega_6^2\omega_{19}v_3^2c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_9\omega_{12} - 2\omega_6^2\omega_{19}c_s^2v_2^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} -$
$4\omega_6^2\omega_{19}v_3^2v_2^2\omega_{13}\omega_7\omega_{20}\omega_8^2\omega_5^2\omega_9\omega_{12} + 4\omega_6^2\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_5\omega_9\omega_{12} + 2\omega_6^2\omega_{19}v_3^2v_2^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_9 -$
$8\omega_6^2\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} - 4\omega_6^2v_3^2v_2v_1\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} + 2\omega_6^2c_s^2v_2^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} -$
$4\omega_6^2\omega_{19}v_3^2c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12} + 8\omega_6^2\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} + 4\omega_6^2\omega_{19}c_s^2v_2^2\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5\omega_9\omega_{12} +$
$8\omega_6^2\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5\omega_9 + 2\omega_6^2c_s^2v_2^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} + 2\omega_6^2\omega_{19}v_3^2v_2^2\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_9 + 4\omega_6^2\omega_{19}v_3^2v_2^2\omega_{13}\omega_7^2\omega_{20}\omega_8\omega_5^2\omega_9\omega_{12} +$
$4\omega_6^2\omega_{19}c_s^2v_2^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} + 8\omega_6\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} - 4\omega_6^2\omega_{19}c_s^2v_2v_1\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12} -$
$4\omega_6^2\omega_{19}v_3^2c_s^2\omega_{13}\omega_7\omega_{20}\omega_8\omega_5^2\omega_9\omega_{12} + 8\omega_6^2\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_8\omega_5\omega_9\omega_{12} + 12\omega_6\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12} +$
$2\omega_6^2\omega_{19}v_3^2c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_9 - 4\omega_6^2v_3^2v_2v_1\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} - 2\omega_6^2\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} +$
$8\omega_6\omega_{19}c_s^2v_2v_1\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12} - 4\omega_6^2\omega_{19}c_s^2v_2^2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12} - 4\omega_6^2\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_9 -$
$4\omega_6^2v_3^2v_2^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} + 4\omega_6^2\omega_{19}v_3^2c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5\omega_9\omega_{12} - 4\omega_6^2\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_9\omega_{12} + 2\omega_6^2v_3^2c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} +$
$8\omega_6\omega_{19}c_s^2v_2v_1\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} + 2\omega_6^2\omega_{19}c_s^2v_2^2\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_9 + 8\omega_6^2\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12} +$
$2\omega_6^2\omega_{19}c_s^2v_2^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_9 - 4\omega_6^2\omega_{19}v_3^2v_2^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12} + 4\omega_6^2\omega_{19}v_3^2c_s^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} +$
$4\omega_6^2\omega_{19}v_3^2c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_9\omega_{12} - 2\omega_6^2\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} - 4\omega_6^2\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12} -$
$4\omega_6^2c_s^2v_2v_1\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} - 4\omega_6^2\omega_{19}c_s^2v_2^2\omega_{13}\omega_7\omega_{20}\omega_8\omega_5^2\omega_9\omega_{12} - 2\omega_6^2\omega_{19}v_3^2v_2^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} +$
$4\omega_6^2\omega_{19}v_3^2c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} + \omega_6^2\omega_{19}c_s^2v_2^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} + 2\omega_6^2\omega_{19}v_3^2c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_9)\frac{\rho}{4\omega_6^2\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_z^2v_1} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_z^2v_1}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_z^2v_1} = (-4\omega_{19}v_3^2v_2v_1\omega_7\omega_{20}\omega_8\omega_5 - 4\omega_{19}c_s^2v_2^2\omega_7\omega_{20}\omega_{12} - 2\omega_{19}c_s^2v_2^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12} + 2\omega_{19}v_3^2c_s^2\omega_{20}\omega_8\omega_5\omega_{12} -$
$2\omega_{19}c_s^2v_2^2\omega_7\omega_{20}\omega_{14}\omega_8\omega_{12} - 4\omega_{19}v_3^2v_2^2\omega_7\omega_{20}\omega_{12} + 8\omega_{19}c_s^2v_2v_1\omega_7\omega_{20}\omega_{14}\omega_5\omega_{12} + 4\omega_{19}v_3^2v_2v_1\omega_7\omega_{14}\omega_8\omega_5\omega_{12} - 4\omega_{19}v_3^2v_2^2\omega_{20}\omega_5\omega_{12} -$
$\omega_{19}v_3^2c_s^2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5 - 4\omega_{19}c_s^2v_2v_1\omega_7\omega_{20}\omega_8\omega_5 - 4\omega_{19}c_s^2v_2^2\omega_{20}\omega_5\omega_{12} + 2c_s^2v_2v_1\omega_7\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12} - 2\omega_{19}v_3^2v_2^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12} -$
$4\omega_{19}v_3^2c_s^2\omega_7\omega_{20}\omega_8 + 4\omega_{19}v_3^2c_s^2\omega_7\omega_{20}\omega_{14}\omega_{12} - 4\omega_{19}v_3^2c_s^2\omega_7\omega_{14}\omega_{12} - 2\omega_{19}v_3^2v_2^2\omega_7\omega_{20}\omega_{14}\omega_8\omega_{12} + 8\omega_{19}v_3^2v_2v_1\omega_7\omega_{20}\omega_8 + 8\omega_{19}v_3^2v_2v_1\omega_7\omega_{14}\omega_{12} +$
$8\omega_{19}c_s^2v_2v_1\omega_7\omega_{20}\omega_8 + 8\omega_{19}v_3^2v_2v_1\omega_7\omega_{20}\omega_{14}\omega_5\omega_{12} + 4\omega_{19}c_s^2v_2v_1\omega_7\omega_{14}\omega_8\omega_5\omega_{12} + 8\omega_{19}c_s^2v_2v_1\omega_7\omega_{14}\omega_{12} + 2v_3^2v_2^2\omega_7\omega_{14}\omega_8\omega_5\omega_{12} -$
$2\omega_{19}v_3^2v_2v_1\omega_7\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12} + 2\omega_{19}c_s^2v_2^2\omega_7\omega_{20}\omega_8\omega_5 - 2\omega_{19}v_3^2c_s^2\omega_7\omega_{20}\omega_8\omega_5\omega_{12} + 2\omega_{19}v_3^2v_2^2\omega_7\omega_{20}\omega_8\omega_5 + 2c_s^2v_2^2\omega_7\omega_{14}\omega_8\omega_5\omega_{12} -$
$4\omega_{19}c_s^2v_2^2\omega_7\omega_{20}\omega_{14}\omega_5\omega_{12} + 2\omega_{19}v_3^2v_2^2\omega_{20}\omega_8\omega_5\omega_{12} + 2v_3^2v_2^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12} + 4\omega_{19}c_s^2v_2v_1\omega_7\omega_{20}\omega_{14}\omega_8\omega_{12} + 4\omega_{19}c_s^2v_2v_1\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12} -$
$v_3^2c_s^2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12} + 2\omega_{19}c_s^2v_2^2\omega_{20}\omega_8\omega_5\omega_{12} + 2c_s^2v_2^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12} - 4\omega_{19}v_3^2v_2^2\omega_7\omega_{20}\omega_{14}\omega_5\omega_{12} - c_s^2v_2^2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12} +$

$4\omega_{19}v_3^2v_2^2\omega_7\omega_{20}\omega_{14}\omega_{12} + 2v_3^2v_2v_1\omega_7\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12} + 4\omega_{19}c_s^2v_2^2\omega_7\omega_{20}\omega_{14}\omega_{12} + 4\omega_{19}v_3^2v_2v_1\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12} - 2\omega_{19}c_s^2v_2^2\omega_7\omega_{14}\omega_8\omega_5\omega_{12} +$
$4\omega_{19}v_3^2v_2v_1\omega_7\omega_{20}\omega_{14}\omega_8\omega_{12} - 8\omega_{19}v_3^2v_2v_1\omega_7\omega_{20}\omega_{14}\omega_{12} - 4\omega_{19}c_s^2v_2v_1\omega_{20}\omega_8\omega_5\omega_{12} + 2\omega_{19}v_3^2c_s^2\omega_7\omega_{20}\omega_8\omega_5 - v_3^2v_2^2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12} -$
$2\omega_{19}v_3^2v_2^2\omega_7\omega_{14}\omega_8\omega_5\omega_{12} - 8\omega_{19}c_s^2v_2v_1\omega_7\omega_{20}\omega_{14}\omega_{12} - 2\omega_{19}c_s^2v_2v_1\omega_7\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12} - 4\omega_{19}c_s^2v_2^2\omega_{14}\omega_5\omega_{12} - 4\omega_{19}v_3^2v_2v_1\omega_{20}\omega_8\omega_5\omega_{12} -$
$4\omega_{19}v_3^2v_2^2\omega_{14}\omega_5\omega_{12} + 4\omega_{19}c_s^2v_2^2\omega_7\omega_{14}\omega_5\omega_{12} - 2\omega_{19}v_3^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12} - 8\omega_{19}v_3^2v_2v_1\omega_{20}\omega_{14}\omega_5\omega_{12} + 8\omega_{19}c_s^2v_2v_1\omega_{20}\omega_5\omega_{12} -$
$2\omega_{19}v_3^2c_s^2\omega_7\omega_{20}\omega_{14}\omega_8\omega_{12} - 8\omega_{19}c_s^2v_2v_1\omega_7\omega_{20}\omega_8\omega_{12} + 2\omega_{19}v_3^2c_s^2\omega_7\omega_{14}\omega_8\omega_{12} + 4\omega_{19}v_3^2v_2^2\omega_7\omega_{14}\omega_5\omega_{12} - \omega_{19}v_3^2v_2^2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5 +$
$8\omega_{19}v_3^2v_2v_1\omega_{20}\omega_5\omega_{12} - 8\omega_{19}c_s^2v_2v_1\omega_{20}\omega_{14}\omega_5\omega_{12} + 4\omega_{19}c_s^2v_2^2\omega_{14}\omega_8\omega_5\omega_{12} + 8\omega_{19}v_3^2v_2v_1\omega_7\omega_{20}\omega_{12} - 8\omega_{19}v_3^2v_2v_1\omega_7\omega_{20}\omega_8\omega_{12} -$
$\omega_{19}c_s^2v_2^2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5 + 8\omega_{19}c_s^2v_2v_1\omega_7\omega_{20}\omega_{12} + 4\omega_{19}v_3^2v_2^2\omega_{14}\omega_8\omega_5\omega_{12} - 4c_s^2v_2v_1\omega_7\omega_{14}\omega_8\omega_5\omega_{12} + 4\omega_{19}c_s^2v_2^2\omega_7\omega_{20}\omega_8\omega_{12} -$
$8\omega_{19}c_s^2v_2v_1\omega_7\omega_{14}\omega_5\omega_{12} - 8\omega_{19}v_3^2v_2v_1\omega_{14}\omega_8\omega_5\omega_{12} + 4\omega_{19}v_3^2c_s^2\omega_7\omega_{20}\omega_5\omega_{12} + 2\omega_{19}v_3^2c_s^2\omega_7\omega_{20}\omega_{14}\omega_8 + 4\omega_{19}v_3^2v_2^2\omega_7\omega_{20}\omega_8\omega_{12} -$
$4\omega_{19}v_3^2c_s^2\omega_7\omega_{20}\omega_{12} - 2\omega_{19}v_3^2v_2^2\omega_7\omega_{20}\omega_8\omega_5\omega_{12} + 2v_3^2c_s^2\omega_7\omega_{14}\omega_8\omega_5\omega_{12} - 4\omega_{19}v_3^2c_s^2\omega_{20}\omega_5\omega_{12} - 8\omega_{19}c_s^2v_2v_1\omega_{14}\omega_8\omega_5\omega_{12} -$
$8\omega_{19}v_3^2v_2v_1\omega_7\omega_{14}\omega_5\omega_{12} - 4v_3^2v_2^2\omega_{14}\omega_8\omega_5\omega_{12} + 4\omega_{19}c_s^2v_2^2\omega_{20}\omega_{14}\omega_5\omega_{12} - 4v_3^2v_2v_1\omega_7\omega_{14}\omega_8\omega_5\omega_{12} - 4\omega_{19}v_3^2v_2^2\omega_7\omega_{14}\omega_{12} -$
$4\omega_{19}c_s^2v_2^2\omega_7\omega_{20}\omega_8 + 4\omega_{19}v_3^2v_2^2\omega_{20}\omega_{14}\omega_5\omega_{12} - 2\omega_{19}c_s^2v_2^2\omega_7\omega_{20}\omega_8\omega_5\omega_{12} - 4c_s^2v_2^2\omega_{14}\omega_8\omega_5\omega_{12} - 4\omega_{19}c_s^2v_2^2\omega_7\omega_{14}\omega_{12} - 4\omega_{19}v_3^2v_2^2\omega_7\omega_{20}\omega_8 +$
$\omega_{19}v_3^2v_2^2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12} + 2\omega_{19}v_3^2v_2^2\omega_7\omega_{14}\omega_8\omega_{12} + 4\omega_{19}v_3^2c_s^2\omega_7\omega_{14}\omega_5\omega_{12} - 8\omega_{19}c_s^2v_2v_1\omega_7\omega_{20}\omega_5\omega_{12} - 4\omega_{19}v_3^2c_s^2\omega_7\omega_{20}\omega_{14}\omega_5\omega_{12} -$
$4\omega_{19}c_s^2v_2v_1\omega_7\omega_{20}\omega_{14}\omega_8 + 2\omega_{19}c_s^2v_2^2\omega_7\omega_{14}\omega_8\omega_{12} + 4\omega_{19}v_3^2v_2v_1\omega_7\omega_{20}\omega_8\omega_5\omega_{12} - 4v_3^2v_2v_1\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12} + 2\omega_{19}c_s^2v_2v_1\omega_7\omega_{20}\omega_{14}\omega_8\omega_5 +$
$4\omega_{19}v_3^2c_s^2\omega_{14}\omega_8\omega_5\omega_{12} - 4\omega_{19}v_3^2v_2v_1\omega_7\omega_{20}\omega_{14}\omega_8 - 8\omega_{19}v_3^2v_2v_1\omega_7\omega_{20}\omega_5\omega_{12} - 4\omega_{19}v_3^2c_s^2\omega_{14}\omega_5\omega_{12} + 2v_3^2c_s^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12} +$
$8\omega_{19}v_3^2v_2v_1\omega_{14}\omega_5\omega_{12} + 4\omega_{19}v_3^2v_2^2\omega_7\omega_{20}\omega_5\omega_{12} + 2\omega_{19}v_3^2v_2^2\omega_7\omega_{20}\omega_{14}\omega_8 + \omega_{19}c_s^2v_2^2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12} + 4\omega_{19}v_3^2c_s^2\omega_7\omega_{20}\omega_8\omega_{12} +$
$8\omega_{19}c_s^2v_2v_1\omega_{14}\omega_5\omega_{12} - 4\omega_{19}c_s^2v_2v_1\omega_7\omega_{14}\omega_8\omega_{12} + 4\omega_{19}c_s^2v_2^2\omega_7\omega_{20}\omega_5\omega_{12} + 2\omega_{19}c_s^2v_2^2\omega_7\omega_{20}\omega_{14}\omega_8 + 8c_s^2v_2v_1\omega_{14}\omega_8\omega_5\omega_{12} -$
$2\omega_{19}v_3^2c_s^2\omega_7\omega_{14}\omega_8\omega_5\omega_{12} + 4\omega_{19}c_s^2v_2v_1\omega_7\omega_{20}\omega_8\omega_5\omega_{12} + \omega_{19}v_3^2c_s^2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12} - 4c_s^2v_2v_1\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12} + 4\omega_{19}v_3^2c_s^2\omega_{20}\omega_{14}\omega_5\omega_{12} +$
$2\omega_{19}v_3^2v_2v_1\omega_7\omega_{20}\omega_{14}\omega_8\omega_5 - 4\omega_{19}v_3^2v_2v_1\omega_7\omega_{14}\omega_8\omega_{12} - 4v_3^2c_s^2\omega_{14}\omega_8\omega_5\omega_{12} + 8v_3^2v_2v_1\omega_{14}\omega_8\omega_5\omega_{12})\frac{\rho}{4\omega_{19}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12}}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_z^2 v_1} = C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_z^2 v_1}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_z^2 v_1} = 0$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_z^2 v_1} = (v_1^2\omega_1 - v_1^2\omega_2 - \omega_1 - 3c_s^2\omega_2 + \omega_2 + 3c_s^2\omega_1)\frac{v_2v_1\rho}{36\omega_1\omega_2}$

coefficient $C^{(2)}_{\mathrm{D}_x^2\mathrm{D}_z^2 v_2}$ **at** $\frac{\partial^4 v_2}{\partial x_1^2\partial x_3^2}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_z^2 v_2} = (-28c_s^2v_2v_1\omega^2 - 36c_s^2v_1^2\omega + 2c_s^2v_2v_1\omega^3 - 36v_3^2c_s^2\omega - 4c_s^4\omega^2 - 8c_s^4 + 14v_3^2c_s^2\omega^2 + 12c_s^4\omega + 14c_s^2v_1^2\omega^2 - 48c_s^2v_2v_1 - v_3^2c_s^2\omega^3 +$
$72c_s^2v_2v_1\omega - c_s^2v_1^2\omega^3 + 24v_3^2c_s^2 - 28v_3^2v_2v_1\omega^2 + 14v_3^2v_1^2\omega^2 + 24v_3^2v_1^2 - 48v_3^2v_2v_1 + 2v_3^2v_2v_1\omega^3 - v_3^2v_1^2\omega^3 - 36v_3^2v_1^2\omega + 72v_3^2v_2v_1\omega + 24c_s^2v_1^2)\frac{\rho}{4\omega^3}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_z^2 v_2} = (-8\omega_{19}v_3^2v_2v_1\omega_7^3\omega_{14}\omega_8\omega_5^2\omega_{12} + 4c_s^2v_2v_1\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{12} - 2\omega_{19}v_3^2v_1^2\omega_7^3\omega_{14}\omega_8^2\omega_5^2\omega_{12} - 2v_3^2v_1^2\omega_7^3\omega_{14}\omega_8^2\omega_5^3\omega_{12} +$
$8\omega_{19}v_3^2v_2v_1\omega_7^3\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{12} + 4c_s^2v_2v_1\omega_7^3\omega_{14}\omega_8^2\omega_5^3\omega_{12} + 4\omega_{19}c_s^2v_1^2\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{12} + 4v_3^2c_s^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12} -$
$2v_3^2v_1^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{12} - \omega_{19}v_3^2v_1^2\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{12} + 4\omega_{19}v_3^2c_s^2\omega_7^3\omega_{20}\omega_8^2\omega_5^2 - 2\omega_{19}c_s^2v_1^2\omega_7^3\omega_{14}\omega_8^2\omega_5^2\omega_{12} - 2c_s^2v_1^2\omega_7^3\omega_{14}\omega_8^2\omega_5^3\omega_{12} +$
$2\omega_{19}c_s^4\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12} + 4\omega_{19}v_3^2v_1^2\omega_7^3\omega_{20}\omega_8\omega_5^2\omega_{12} + 8\omega_{19}v_3^2v_2v_1\omega_7^3\omega_{20}\omega_8^2\omega_5^2\omega_{12} - 8\omega_{19}c_s^2v_2v_1\omega_7^3\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{12} +$
$4v_3^2v_2v_1\omega_7^3\omega_{14}\omega_8^2\omega_5^3\omega_{12} + 2\omega_{19}c_s^4\omega_7^3\omega_{14}\omega_8^2\omega_5^2\omega_{12} - 8\omega_{19}c_s^2v_1^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{12} + 4\omega_{19}v_3^2c_s^2\omega_7^3\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12} -$
$4\omega_{19}v_3^2v_2v_1\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{12} - 8\omega_{19}c_s^2v_2v_1\omega_7^3\omega_{14}\omega_8\omega_5^2\omega_{12} - \omega_{19}c_s^2v_1^2\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{12} - 2c_s^2v_1^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{12} -$
$16\omega_{19}v_3^2c_s^2\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{12} + 8\omega_{19}c_s^2v_2v_1\omega_7^3\omega_{20}\omega_8^2\omega_5^2\omega_{12} + 4\omega_{19}c_s^4\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{12} + 4\omega_{19}c_s^2v_1^2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{12} -$
$4\omega_{19}c_s^4\omega_7^3\omega_{20}\omega_8\omega_5^2\omega_{12} + 4\omega_{19}v_3^2c_s^2\omega_7^3\omega_{20}\omega_8^2\omega_{12} - 2\omega_{19}v_3^2c_s^2\omega_7^3\omega_{20}\omega_8^2\omega_5^3 - 2\omega_{19}v_3^2v_1^2\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + \omega_{19}v_3^2c_s^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3 +$
$4\omega_{19}c_s^4\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{12} + 4\omega_{19}v_3^2c_s^2\omega_7^2\omega_{20}\omega_{14}\omega_5^3\omega_{12} - 2c_s^4\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12} + 2\omega_{19}c_s^2v_1^2\omega_7^3\omega_{14}\omega_8^2\omega_5^3\omega_{12} + 4v_3^2v_2v_1\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{12} +$
$8\omega_{19}v_3^2v_2v_1\omega_7^2\omega_{14}\omega_8^2\omega_5^3\omega_{12} + 8\omega_{19}v_3^2c_s^2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{12} + 8\omega_{19}c_s^2v_2v_1\omega_7^3\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{12} - 4\omega_{19}v_3^2v_2v_1\omega_7^3\omega_{20}\omega_8^2\omega_5^3\omega_{12} +$
$4\omega_{19}v_3^2v_2v_1\omega_7^3\omega_{20}\omega_8^2\omega_5^3 - 4\omega_{19}v_3^2v_1^2\omega_7^3\omega_{20}\omega_8\omega_5^3\omega_{12} + 4\omega_{19}v_3^2v_1^2\omega_7^2\omega_{14}\omega_8\omega_5^3\omega_{12} - 2v_3^2c_s^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{12} - \omega_{19}v_3^2c_s^2\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{12} -$
$2\omega_{19}c_s^2v_1^2\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^2 - 12\omega_{19}c_s^2v_1^2\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{12} + 2c_s^4\omega_7^3\omega_{14}\omega_8^2\omega_5^3\omega_{12} + 2\omega_{19}v_3^2v_1^2\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12} + 2\omega_{19}v_3^2v_1^2\omega_7^3\omega_{14}\omega_8^2\omega_5^3\omega_{12} -$
$4\omega_{19}v_3^2c_s^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{12} - 2\omega_{19}v_3^2v_1^2\omega_7^2\omega_{20}\omega_8^2\omega_5^3\omega_{12} + 8\omega_{19}c_s^2v_1^2\omega_7^3\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12} - 8\omega_{19}v_3^2v_2v_1\omega_7^2\omega_{20}\omega_8\omega_5^3\omega_{12} +$
$8\omega_{19}v_3^2v_2v_1\omega_7^3\omega_{14}\omega_8\omega_5^3\omega_{12} + 4\omega_{19}c_s^2v_1^2\omega_7^2\omega_{14}\omega_8\omega_5^3\omega_{12} + 4\omega_{19}c_s^2v_2v_1\omega_7^3\omega_{20}\omega_8^2\omega_5^3 - 8\omega_{19}v_3^2v_2v_1\omega_7^3\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{12} - 8\omega_{19}v_3^2v_2v_1\omega_7^3\omega_{20}\omega_8^2\omega_5^2 -$
$4\omega_{19}v_3^2c_s^2\omega_7^3\omega_{20}\omega_8\omega_5^3\omega_{12} + 8\omega_{19}c_s^2v_2v_1\omega_7^2\omega_{14}\omega_8^2\omega_5^3\omega_{12} + 4\omega_{19}c_s^2v_2v_1\omega_7^3\omega_{20}\omega_8^2\omega_5^3\omega_{12} + 4\omega_{19}c_s^4\omega_7^3\omega_{20}\omega_8\omega_5^3\omega_{12} + \omega_{19}v_3^2v_1^2\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^3 -$
$4\omega_{19}c_s^4\omega_7^2\omega_{14}\omega_8\omega_5^3\omega_{12} - 4\omega_{19}c_s^2v_2v_1\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{12} - 2\omega_{19}v_3^2c_s^2\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^2 - 8\omega_{19}c_s^2v_2v_1\omega_7^3\omega_{20}\omega_8^2\omega_5^2 + 4\omega_{19}v_3^2c_s^2\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{12} +$
$2\omega_{19}c_s^2v_1^2\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12} - 2\omega_{19}v_3^2c_s^2\omega_7^2\omega_{20}\omega_8^2\omega_5^3\omega_{12} - 4\omega_{19}v_3^2v_1^2\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{12} + 4\omega_{19}c_s^2v_1^2\omega_7^2\omega_{20}\omega_{14}\omega_5^3\omega_{12} - 2\omega_{19}c_s^4\omega_7^3\omega_{14}\omega_8^2\omega_5^3\omega_{12} +$
$2\omega_{19}c_s^4\omega_7^2\omega_{20}\omega_8^2\omega_5^3\omega_{12} - 8\omega_{19}c_s^2v_2v_1\omega_7^2\omega_{20}\omega_8\omega_5^3\omega_{12} + \omega_{19}c_s^2v_1^2\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^3 + 8\omega_{19}c_s^2v_2v_1\omega_7^3\omega_{14}\omega_8\omega_5^3\omega_{12} - 8\omega_{19}v_3^2v_2v_1\omega_7^2\omega_{14}\omega_8\omega_5^3\omega_{12} +$
$8\omega_{19}v_3^2v_2v_1\omega_7^3\omega_{20}\omega_8\omega_5^3\omega_{12} - 4\omega_{19}c_s^2v_2v_1\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12} + 2\omega_{19}v_3^2v_1^2\omega_7^3\omega_{20}\omega_8^2\omega_5^3\omega_{12} - 4\omega_{19}v_3^2v_1^2\omega_7^2\omega_{14}\omega_8^2\omega_5^3\omega_{12} -$
$4\omega_{19}c_s^4\omega_7^3\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{12} - 2\omega_{19}c_s^2v_2v_1\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^3 - 4\omega_{19}c_s^2v_1^2\omega_7^3\omega_{14}\omega_8\omega_5^3\omega_{12} + 4\omega_{19}v_3^2v_1^2\omega_7^3\omega_{20}\omega_8^2\omega_5^2 - 4\omega_{19}v_3^2c_s^2\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_{12} +$
$4\omega_{19}c_s^2v_1^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 - 4c_s^4\omega_7^2\omega_{14}\omega_8^2\omega_5^3\omega_{12} + 4\omega_{19}v_3^2v_2v_1\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^2 - 4\omega_{19}c_s^2v_1^2\omega_7^2\omega_{14}\omega_8^2\omega_5^3\omega_{12} + 2\omega_{19}v_3^2v_2v_1\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{12} -$
$2\omega_{19}c_s^4\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3 - 4\omega_{19}v_3^2v_1^2\omega_7^3\omega_{14}\omega_8\omega_5^3\omega_{12} + 4\omega_{19}v_3^2v_1^2\omega_7^2\omega_{20}\omega_8\omega_5^3\omega_{12} - 4\omega_{19}c_s^4\omega_7^3\omega_{20}\omega_8^2\omega_5^2 + 4\omega_{19}v_3^2v_2v_1\omega_7^2\omega_{20}\omega_8^2\omega_5^3\omega_{12} -$
$4\omega_{19}v_3^2v_2v_1\omega_7^3\omega_{14}\omega_8^2\omega_5^3\omega_{12} - 2\omega_{19}c_s^4\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{12} - 4\omega_{19}v_3^2v_1^2\omega_7^3\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{12} + 8\omega_{19}v_3^2c_s^2\omega_7^3\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{12} -$
$4\omega_{19}v_3^2c_s^2\omega_7^3\omega_{20}\omega_{14}\omega_5^3\omega_{12} + c_s^2v_1^2\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{12} - 2\omega_{19}c_s^4\omega_7^3\omega_{20}\omega_8^2\omega_5^3\omega_{12} + 8\omega_{19}c_s^2v_2v_1\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{12} - 4\omega_{19}c_s^2v_1^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12} +$
$4\omega_{19}c_s^4\omega_7^2\omega_{14}\omega_8^2\omega_5^3\omega_{12} - 2\omega_{19}v_3^2v_2v_1\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^3 - 4\omega_{19}c_s^2v_1^2\omega_7^3\omega_{20}\omega_{14}\omega_5^3\omega_{12} - 8\omega_{19}c_s^2v_2v_1\omega_7^2\omega_{14}\omega_8\omega_5^3\omega_{12} - 2\omega_{19}c_s^2v_1^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3 -$
$12\omega_{19}c_s^4\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12} + 8\omega_{19}c_s^2v_2v_1\omega_7^3\omega_{20}\omega_8\omega_5^3\omega_{12} - 2\omega_{19}v_3^2v_1^2\omega_7^3\omega_{20}\omega_8^2\omega_5^3 + 4\omega_{19}c_s^2v_2v_1\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 2\omega_{19}v_3^2c_s^2\omega_7^3\omega_{20}\omega_8^2\omega_5^3\omega_{12} +$
$4\omega_{19}c_s^2v_2v_1\omega_7^2\omega_{20}\omega_8^2\omega_5^3\omega_{12} - 4\omega_{19}c_s^2v_2v_1\omega_7^3\omega_{14}\omega_8^2\omega_5^3\omega_{12} - 2c_s^2v_2v_1\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{12} + 4\omega_{19}c_s^4\omega_7^3\omega_{14}\omega_8\omega_5^3\omega_{12} - 4\omega_{19}c_s^4\omega_7^2\omega_{20}\omega_8\omega_5^3\omega_{12} +$
$4\omega_{19}c_s^4\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 4\omega_{19}v_3^2c_s^2\omega_7^2\omega_{20}\omega_8\omega_5^3\omega_{12} + 2\omega_{19}c_s^4\omega_7^3\omega_{20}\omega_8^2\omega_5^3 + v_3^2v_1^2\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{12} + 2\omega_{19}v_3^2v_1^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{12} -$
$2v_3^2c_s^2\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12} + 8\omega_{19}v_3^2c_s^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12} - 16\omega_{19}c_s^2v_1^2\omega_7^3\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{12} + 4\omega_{19}v_3^2v_1^2\omega_7^3\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{12} +$
$4\omega_{19}c_s^4\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12} + 8\omega_{19}c_s^2v_1^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12} - 12\omega_{19}v_3^2c_s^2\omega_7^3\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{12} + 4\omega_{19}v_3^2c_s^2\omega_7^3\omega_{20}\omega_{14}\omega_5^2\omega_{12} -$
$4\omega_{19}v_3^2v_2v_1\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12} + 4c_s^2v_1^2\omega_7^2\omega_{14}\omega_8^2\omega_5^3\omega_{12} + 4\omega_{19}v_3^2v_2v_1\omega_7^3\omega_{14}\omega_8^2\omega_5^2\omega_{12} - 4\omega_{19}c_s^2v_1^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{12} +$

$$4\omega_{19}v_3^2v_1^2\omega_7^3\omega_{14}\omega_8\omega_5^2\omega_{12} + 4v_3^2v_1^2\omega_7^2\omega_{14}\omega_8^2\omega_5^3\omega_{12} - 4\omega_{19}v_3^2v_1^2\omega_7^3\omega_{20}\omega_8^2\omega_5^2\omega_{12} + 2\omega_{19}c_s^2v_2v_1\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{12} - 8\omega_{19}v_3^2v_2v_1\omega_7^3\omega_{20}\omega_8\omega_5^2\omega_{12} -$$
$$8\omega_{19}v_3^2c_s^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12} + 4\omega_{19}c_s^2v_1^2\omega_7^3\omega_{14}\omega_8\omega_5^2\omega_{12} + 4\omega_{19}c_s^4\omega_7^3\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{12} - 8c_s^2v_2v_1\omega_7^2\omega_{14}\omega_8^2\omega_5^3\omega_{12} +$$
$$8\omega_{19}c_s^2v_1^2\omega_7^3\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{12} + v_3^2c_s^2\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{12} + 2\omega_{19}v_3^2c_s^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{12} + 4\omega_{19}c_s^2v_2v_1\omega_7^3\omega_{14}\omega_8^2\omega_5^2\omega_{12} +$$
$$8\omega_{19}v_3^2v_2v_1\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^3\omega_{12} - 4\omega_{19}c_s^4\omega_7^3\omega_{14}\omega_8\omega_5^2\omega_{12} + 6\omega_{19}v_3^2c_s^2\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{12} - 2\omega_{19}c_s^4\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{12} -$$
$$4\omega_{19}v_3^2c_s^2\omega_7^3\omega_{20}\omega_8^2\omega_5^2\omega_{12} + 4\omega_{19}c_s^2v_1^2\omega_7^3\omega_{20}\omega_{14}\omega_5^2\omega_{12} + 6\omega_{19}c_s^2v_1^2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{12} - 8v_3^2v_2v_1\omega_7^2\omega_{14}\omega_8^2\omega_5^3\omega_{12} + 4\omega_{19}c_s^4\omega_7^3\omega_{20}\omega_8^2\omega_5^2\omega_{12} -$$
$$2v_3^2v_2v_1\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{12} - 8\omega_{19}c_s^2v_2v_1\omega_7^3\omega_{20}\omega_8\omega_5^2\omega_{12} + 4c_s^4\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12} + 2\omega_{19}c_s^4\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{12})\frac{\rho}{4\omega_{19}\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^3\omega_{12}}$$

$$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_z^2v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_z^2v_2}$$

$$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_z^2v_2} = (-4\omega_{19}v_3^2v_2v_1\omega_7^2\omega_{20}\omega_8\omega_5^2\omega_{12} - 4\omega_{19}v_3^2v_1^2\omega_7\omega_{20}\omega_{14}\omega_5^2\omega_{12} + 4\omega_{19}c_s^4\omega_7\omega_{14}\omega_8\omega_5^2\omega_{12} - 2\omega_{19}c_s^2v_1^2\omega_7^2\omega_{20}\omega_8\omega_5^2 +$$
$$2\omega_{19}c_s^2v_1^2\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_{12} - 4\omega_{19}v_3^2c_s^2\omega_7^2\omega_{20}\omega_8\omega_5\omega_{12} - \omega_{19}c_s^2v_1^2\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{12} - 4\omega_{19}v_3^2c_s^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_{12} + 4\omega_{19}c_s^4\omega_7^2\omega_{20}\omega_8\omega_5\omega_{12} -$$
$$2\omega_{19}v_3^2v_1^2\omega_7^2\omega_{20}\omega_8\omega_5^2 + 2\omega_{19}c_s^4\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{12} - 2\omega_{19}v_3^2v_1^2\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5 - 4\omega_{19}c_s^2v_1^2\omega_7\omega_{20}\omega_{14}\omega_5^2\omega_{12} - 4\omega_{19}c_s^4\omega_7^2\omega_{20}\omega_{14}\omega_5^2\omega_{12} +$$
$$2\omega_{19}v_3^2v_1^2\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_{12} + 4\omega_{19}c_s^2v_2v_1\omega_7\omega_{20}\omega_8\omega_5^2\omega_{12} + 2\omega_{19}v_3^2c_s^2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{12} + 8\omega_{19}v_3^2v_2v_1\omega_7^2\omega_{20}\omega_{14}\omega_5\omega_{12} +$$
$$4\omega_{19}c_s^2v_2v_1\omega_7^2\omega_{14}\omega_8\omega_5\omega_{12} + 2c_s^4\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_{12} - 4\omega_{19}c_s^2v_2v_1\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12} - 2\omega_{19}c_s^2v_1^2\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5 + 2\omega_{19}c_s^4\omega_7^2\omega_{20}\omega_8\omega_5^2 +$$
$$4\omega_{19}v_3^2c_s^2\omega_7^2\omega_{20}\omega_{14}\omega_5^2\omega_{12} + 4\omega_{19}c_s^4\omega_7\omega_{20}\omega_{14}\omega_8\omega_5 - 2\omega_{19}v_3^2c_s^2\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5 + 4\omega_{19}c_s^4\omega_7\omega_{20}\omega_{14}\omega_5^2\omega_{12} + 4\omega_{19}c_s^2v_1^2\omega_7^2\omega_{20}\omega_{14}\omega_5^2\omega_{12} +$$
$$4\omega_{19}v_3^2c_s^2\omega_7\omega_{14}\omega_5^2\omega_{12} - 4\omega_{19}c_s^2v_1^2\omega_7^2\omega_{14}\omega_5^2\omega_{12} - 4\omega_{19}c_s^2v_2v_1\omega_7^2\omega_{20}\omega_8\omega_5^2\omega_{12} - 4\omega_{19}v_3^2v_1^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_{12} - 4\omega_{19}v_3^2v_1^2\omega_7^2\omega_{20}\omega_8\omega_5\omega_{12} -$$
$$4c_s^4\omega_7\omega_{14}\omega_8\omega_5^2\omega_{12} - \omega_{19}v_3^2v_1^2\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{12} - 4\omega_{19}v_3^2c_s^2\omega_7\omega_{20}\omega_{14}\omega_5^2\omega_{12} - 8\omega_{19}v_3^2v_2v_1\omega_7^2\omega_{14}\omega_5\omega_{12} - 8\omega_{19}c_s^2v_2v_1\omega_7\omega_{20}\omega_5^2\omega_{12} -$$
$$4\omega_{19}v_3^2v_1^2\omega_7^2\omega_{14}\omega_5^2\omega_{12} + 4\omega_{19}v_3^2v_1^2\omega_7^2\omega_{20}\omega_{14}\omega_5^2\omega_{12} + 4\omega_{19}v_3^2c_s^2\omega_7^2\omega_{20}\omega_5\omega_{12} + 4\omega_{19}v_3^2v_2v_1\omega_7\omega_{20}\omega_8\omega_5^2\omega_{12} - 4\omega_{19}c_s^2v_1^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_{12} -$$
$$2\omega_{19}c_s^4\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_{12} - 4\omega_{19}c_s^2v_1^2\omega_7^2\omega_{20}\omega_8\omega_5\omega_{12} + 2\omega_{19}v_3^2c_s^2\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_{12} + 8\omega_{19}c_s^2v_2v_1\omega_7^2\omega_{20}\omega_{14}\omega_5\omega_{12} + 4\omega_{19}c_s^4\omega_7^2\omega_{14}\omega_5^2\omega_{12} +$$
$$4\omega_{19}v_3^2v_2v_1\omega_7^2\omega_{14}\omega_8\omega_5\omega_{12} - 8\omega_{19}v_3^2v_2v_1\omega_7\omega_{20}\omega_5^2\omega_{12} - 8\omega_{19}c_s^2v_2v_1\omega_7^2\omega_{14}\omega_5^2\omega_{12} - 4\omega_{19}v_3^2v_1^2\omega_7^2\omega_{20}\omega_5^2\omega_{12} - 8\omega_{19}c_s^2v_2v_1\omega_7\omega_{14}\omega_5^2\omega_{12} -$$
$$8\omega_{19}v_3^2v_2v_1\omega_7^2\omega_{20}\omega_5\omega_{12} + 4c_s^2v_2v_1\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_{12} - 4\omega_{19}c_s^2v_1^2\omega_7^2\omega_{20}\omega_5^2\omega_{12} + 2\omega_{19}v_3^2v_1^2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{12} + 4\omega_{19}v_3^2c_s^2\omega_7\omega_{20}\omega_5^2\omega_{12} -$$
$$2v_3^2v_1^2\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_{12} + 4\omega_{19}c_s^4\omega_7^2\omega_{20}\omega_5^2\omega_{12} + 4v_3^2c_s^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_{12} + \omega_{19}v_3^2c_s^2\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^2 - 8\omega_{19}c_s^2v_2v_1\omega_7^2\omega_{20}\omega_5\omega_{12} -$$
$$8\omega_{19}v_3^2v_2v_1\omega_7\omega_{14}\omega_5^2\omega_{12} - 4\omega_{19}v_3^2v_2v_1\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12} + 4\omega_{19}v_3^2c_s^2\omega_7^2\omega_{14}\omega_5\omega_{12} - 2c_s^2v_1^2\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_{12} - 8v_3^2v_2v_1\omega_7\omega_{14}\omega_8\omega_5^2\omega_{12} -$$
$$2v_3^2c_s^2\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_{12} - 2\omega_{19}c_s^4\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{12} + 4v_3^2v_2v_1\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_{12} + 2\omega_{19}c_s^2v_1^2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{12} - 2\omega_{19}c_s^4\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2 -$$
$$4\omega_{19}c_s^4\omega_7^2\omega_{20}\omega_8\omega_5 + \omega_{19}c_s^2v_1^2\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^2 + 4c_s^2v_1^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_{12} - \omega_{19}v_3^2c_s^2\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{12} + 4\omega_{19}c_s^2v_1^2\omega_7^2\omega_{20}\omega_8\omega_5 -$$
$$8c_s^2v_2v_1\omega_7\omega_{14}\omega_8\omega_5^2\omega_{12} + 4v_3^2v_1^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_{12} + \omega_{19}v_3^2v_1^2\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^2 + 4\omega_{19}v_3^2v_1^2\omega_7^2\omega_{20}\omega_8\omega_5 + 4\omega_{19}c_s^4\omega_7\omega_{20}\omega_{14}\omega_8\omega_{12} -$$
$$8\omega_{19}c_s^2v_2v_1\omega_7^2\omega_{20}\omega_8\omega_5 + 4\omega_{19}c_s^4\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12} + 2\omega_{19}c_s^4\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12} + 2\omega_{19}v_3^2c_s^2\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12} - 2c_s^2v_2v_1\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{12} -$$
$$2\omega_{19}c_s^2v_2v_1\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^2 - 8\omega_{19}v_3^2v_2v_1\omega_7^2\omega_{20}\omega_8\omega_5 - 2\omega_{19}v_3^2c_s^2\omega_7^2\omega_{20}\omega_8\omega_5^2 + v_3^2v_1^2\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{12} - 4\omega_{19}c_s^2v_2v_1\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{12} -$$
$$2v_3^2c_s^2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{12} - 4\omega_{19}c_s^4\omega_7\omega_{14}\omega_5^2\omega_{12} + 4\omega_{19}v_3^2v_1^2\omega_7^2\omega_{20}\omega_5\omega_{12} + 8\omega_{19}v_3^2v_2v_1\omega_7^2\omega_{20}\omega_5^2\omega_{12} + 4\omega_{19}c_s^2v_1^2\omega_7^2\omega_{20}\omega_5\omega_{12} +$$
$$4c_s^4\omega_7\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12} - 2\omega_{19}v_3^2v_2v_1\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^2 + 2\omega_{19}v_3^2v_2v_1\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{12} + 4\omega_{19}v_3^2v_1^2\omega_7\omega_{14}\omega_5^2\omega_{12} + 8\omega_{19}c_s^2v_2v_1\omega_7^2\omega_{20}\omega_5^2\omega_{12} -$$
$$4\omega_{19}c_s^4\omega_7^2\omega_{20}\omega_5\omega_{12} - 2\omega_{19}c_s^4\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_{12} + 4v_3^2v_2v_1\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{12} - 4\omega_{19}v_3^2c_s^2\omega_7^2\omega_{14}\omega_5^2\omega_{12} + 4\omega_{19}c_s^2v_1^2\omega_7\omega_{14}\omega_5^2\omega_{12} +$$
$$c_s^2v_1^2\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{12} + 4\omega_{19}v_3^2v_2v_1\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5 + 4\omega_{19}c_s^2v_1^2\omega_7^2\omega_{14}\omega_5\omega_{12} + 8\omega_{19}c_s^2v_2v_1\omega_7^2\omega_{20}\omega_8\omega_5\omega_{12} - 4\omega_{19}c_s^2v_1^2\omega_7^2\omega_{20}\omega_{14}\omega_5\omega_{12} +$$
$$v_3^2c_s^2\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{12} - 4\omega_{19}c_s^4\omega_7\omega_{20}\omega_5^2\omega_{12} + 2\omega_{19}v_3^2v_1^2\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12} + 8\omega_{19}v_3^2v_2v_1\omega_7^2\omega_{14}\omega_5^2\omega_{12} + 4\omega_{19}v_3^2v_1^2\omega_7^2\omega_{14}\omega_5\omega_{12} +$$
$$8\omega_{19}v_3^2v_2v_1\omega_7\omega_{20}\omega_{14}\omega_5^2\omega_{12} + 8\omega_{19}c_s^2v_2v_1\omega_7\omega_{14}\omega_8\omega_5^2\omega_{12} + 2\omega_{19}v_3^2v_1^2\omega_7^2\omega_{20}\omega_8\omega_5^2\omega_{12} + 4\omega_{19}c_s^2v_1^2\omega_7\omega_{20}\omega_5^2\omega_{12} + 2\omega_{19}c_s^4\omega_7^2\omega_{14}\omega_8\omega_5\omega_{12} -$$
$$2\omega_{19}v_3^2c_s^2\omega_7\omega_{20}\omega_8\omega_5^2\omega_{12} - 2c_s^4\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12} - 4\omega_{19}v_3^2v_2v_1\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{12} - 4\omega_{19}v_3^2v_1^2\omega_7^2\omega_{20}\omega_{14}\omega_5\omega_{12} - 4\omega_{19}v_3^2c_s^2\omega_7^2\omega_{20}\omega_5^2\omega_{12} +$$
$$8\omega_{19}c_s^2v_2v_1\omega_7^2\omega_{14}\omega_5^2\omega_{12} + 4\omega_{19}v_3^2v_1^2\omega_7\omega_{20}\omega_5^2\omega_{12} - 4\omega_{19}c_s^4\omega_7^2\omega_{14}\omega_5\omega_{12} - 8\omega_{19}c_s^2v_2v_1\omega_7^2\omega_{20}\omega_{14}\omega_5^2\omega_{12} - 2c_s^2v_1^2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{12} -$$
$$4\omega_{19}v_3^2v_2v_1\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_{12} - 2v_3^2v_2v_1\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{12} + 2\omega_{19}c_s^2v_1^2\omega_7^2\omega_{20}\omega_8\omega_5^2\omega_{12} - 2\omega_{19}v_3^2c_s^2\omega_7^2\omega_{14}\omega_8\omega_5\omega_{12} + 2\omega_{19}c_s^4\omega_7\omega_{20}\omega_8\omega_5^2\omega_{12} -$$
$$2\omega_{19}c_s^2v_1^2\omega_7^2\omega_{14}\omega_8\omega_5\omega_{12} + 2\omega_{19}v_3^2c_s^2\omega_7^2\omega_{20}\omega_8\omega_5^2\omega_{12} + 4\omega_{19}c_s^2v_2v_1\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5 + 8\omega_{19}v_3^2v_2v_1\omega_7^2\omega_{20}\omega_8\omega_5\omega_{12} +$$
$$8\omega_{19}c_s^2v_2v_1\omega_7\omega_{20}\omega_{14}\omega_5^2\omega_{12} + 4\omega_{19}v_3^2c_s^2\omega_7^2\omega_{20}\omega_8\omega_5 + 8\omega_{19}v_3^2v_2v_1\omega_7\omega_{14}\omega_8\omega_5^2\omega_{12} - 12\omega_{19}c_s^4\omega_7\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12} + 4\omega_{19}v_3^2v_2v_1\omega_7^2\omega_{20}\omega_8\omega_5^2 -$$
$$2\omega_{19}c_s^4\omega_7^2\omega_{20}\omega_8\omega_5^2\omega_{12} - 2\omega_{19}c_s^2v_1^2\omega_7\omega_{20}\omega_8\omega_5^2\omega_{12} + 2\omega_{19}c_s^2v_1^2\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12} + 4c_s^2v_2v_1\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{12} - 2\omega_{19}v_3^2v_1^2\omega_7^2\omega_{14}\omega_8\omega_5\omega_{12} +$$
$$4\omega_{19}c_s^4\omega_7^2\omega_{20}\omega_{14}\omega_5\omega_{12} - 4\omega_{19}v_3^2c_s^2\omega_7^2\omega_{20}\omega_{14}\omega_5\omega_{12} + 4\omega_{19}c_s^2v_2v_1\omega_7^2\omega_{20}\omega_8\omega_5^2 + 2\omega_{19}c_s^2v_2v_1\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{12} - 2\omega_{19}v_3^2v_1^2\omega_7\omega_{20}\omega_8\omega_5^2\omega_{12} -$$
$$2v_3^2v_1^2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{12} - 8\omega_{19}v_3^2v_2v_1\omega_7^2\omega_{20}\omega_{14}\omega_5^2\omega_{12} - 4\omega_{19}c_s^2v_2v_1\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_{12})\frac{\rho}{4\omega_{19}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{12}}$$

$$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_z^2v_2} = C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_z^2v_2}$$

$$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_z^2v_2} = (-\omega_3^2\omega_1^2 + 2\omega_3^2\omega_1 - \omega_3\omega_{13}\omega_1 - \omega_1^2 - 2\omega_3\omega_1 - \omega_3^2 + \omega_3\omega_{13} + 2\omega_3\omega_1^2 + \omega_{13}\omega_1)\frac{c_s^4\rho}{\omega_3^2\omega_{13}\omega_1^2}$$

$$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_z^2v_2} = (-6\omega_3^2v_1^2\omega_1^2\omega_5 + 8\omega_3c_s^2\omega_4^2\omega_1^2\omega_5 + 18\omega_3^2c_s^2v_1^2\omega_1^2\omega_5 + 6\omega_3v_3^4\omega_4^2\omega_1^2\omega_5 - 12\omega_3^2v_3^2c_s^2\omega_4\omega_1\omega_5 + 6\omega_3c_s^2v_1^2\omega_4^2\omega_1^2\omega_5 - 32\omega_3^2c_s^4\omega_4^2\omega_1 +$$
$$3\omega_3v_1^2\omega_4^2\omega_1^3\omega_5 - 6\omega_3v_3^2c_s^2\omega_4^2\omega_1^3\omega_5 + 8\omega_3^2c_s^2\omega_4\omega_1\omega_5 - 3\omega_3^2v_1^4\omega_1^3\omega_5 + 6\omega_3^2v_3^4\omega_1^2\omega_5 - 3\omega_3^2v_3^2\omega_4\omega_1^3\omega_5 - 3v_3^2\omega_4^2\omega_1^3\omega_5 - 2\omega_3^2c_s^4\omega_4\omega_1^3\omega_5 +$$
$$18\omega_3^2v_3^2c_s^2\omega_1^2\omega_5 - 6v_1^4\omega_4^2\omega_1^2\omega_5 - 6\omega_3^2v_1^4\omega_4\omega_1^2\omega_5 + 3\omega_3^2v_3^2\omega_1^3\omega_5 - 12\omega_3^2c_s^2v_1^2\omega_4\omega_1\omega_5 + 6\omega_3v_3^2c_s^2\omega_4^2\omega_1^2\omega_5 + 6\omega_3^2v_1^4\omega_1^2\omega_5 - 6\omega_3v_1^2\omega_4^2\omega_1^2\omega_5 -$$
$$3\omega_3v_3^4\omega_4^2\omega_1^3\omega_5 - 8\omega_3^2c_s^4\omega_4^2\omega_1^3 - 9\omega_3^2c_s^2v_1^2\omega_1^3\omega_5 - 6\omega_3c_s^2v_1^2\omega_4^2\omega_1^3\omega_5 - 2\omega_3c_s^2\omega_4^2\omega_1^3\omega_5 + 3\omega_3^2v_1^2\omega_1^3\omega_5 - 8\omega_3^2c_s^4\omega_4^2\omega_1\omega_5 - 6\omega_3^2v_3^2\omega_1^2\omega_5 +$$
$$3\omega_3^2v_1^4\omega_4\omega_1^3\omega_5 + 3v_1^4\omega_4^2\omega_1^3\omega_5 + 8\omega_3c_s^4\omega_4^2\omega_1\omega_5 + 6v_3^2\omega_4^2\omega_1^2\omega_5 - 9\omega_3^2v_3^2c_s^2\omega_1^3\omega_5 + 8\omega_3^2c_s^4\omega_4\omega_1^2\omega_5 - 3\omega_3^2v_3^4\omega_1^3\omega_5 + 32\omega_3^2c_s^4\omega_4^2\omega_1^2 + 6\omega_3^2v_3^2\omega_4\omega_1^2\omega_5 -$$
$$6\omega_3v_3^2\omega_4^2\omega_1^2\omega_5 - 8\omega_3c_s^4\omega_4^2\omega_1^2\omega_5 - 8\omega_3^2c_s^4\omega_4\omega_1\omega_5 + 16\omega_3^2c_s^4\omega_4^2\omega_5 - 3\omega_3v_1^4\omega_4^2\omega_1^3\omega_5 + 3v_3^4\omega_4^2\omega_1^3\omega_5 - 18v_3^2c_s^2\omega_4^2\omega_1^2\omega_5 - 6\omega_3^2c_s^2v_1^2\omega_4\omega_1^2\omega_5 +$$
$$12\omega_3v_3^2c_s^2\omega_4^2\omega_1\omega_5 + 2\omega_3^2c_s^2\omega_4\omega_1^3\omega_5 + 3\omega_3^2v_3^4\omega_4\omega_1^3\omega_5 + 9c_s^2v_1^2\omega_4^2\omega_1^3\omega_5 + 6\omega_3^2v_3^2c_s^2\omega_4\omega_1^3\omega_5 + 6\omega_3^2v_1^2\omega_4\omega_1^2\omega_5 + 6v_1^2\omega_4^2\omega_1^2\omega_5 + 6\omega_3v_1^4\omega_4^2\omega_1^2\omega_5 +$$
$$2\omega_3c_s^4\omega_4^2\omega_1^3\omega_5 + 3\omega_3v_3^2\omega_4^2\omega_1^3\omega_5 - 3v_1^2\omega_4^2\omega_1^3\omega_5 - 8\omega_3c_s^2\omega_4^2\omega_1\omega_5 - 6\omega_3^2v_3^2c_s^2\omega_4\omega_1^2\omega_5 + 12\omega_3c_s^2v_1^2\omega_4^2\omega_1\omega_5 - 18c_s^2v_1^2\omega_4^2\omega_1^2\omega_5 - 3\omega_3^2v_1^2\omega_4\omega_1^3\omega_5 -$$
$$6\omega_3^2v_3^4\omega_4\omega_1^2\omega_5 - 6v_3^4\omega_4^2\omega_1^2\omega_5 - 8\omega_3^2c_s^2\omega_4\omega_1^2\omega_5 + 6\omega_3^2c_s^2v_1^2\omega_4\omega_1^3\omega_5 + 9v_3^2c_s^2\omega_4^2\omega_1^3\omega_5)\frac{\rho}{8\omega_3^2\omega_4^2\omega_1^3\omega_5}$$

coefficient $C^{(2)}_{\mathrm{D}_x^2\mathrm{D}_z^2v_3}$ **at** $\frac{\partial^4 v_3}{\partial x_1^2\partial x_3^2}$**:**

$$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_z^2 v_3} = (24v_2v_1^2 - 36c_s^2v_2\omega + 14c_s^2v_2\omega^2 - c_s^2v_2\omega^3 + 24c_s^2v_2 - 24c_s^2v_1 + 36v_2^2v_1\omega + c_s^2v_1\omega^3 - 24v_2^2v_1 - 14c_s^2v_1\omega^2 - 36v_2v_1^2\omega + 36c_s^2v_1\omega + v_2^2v_1\omega^3 + 14v_2v_1^2\omega^2 - v_2v_1^2\omega^3 - 14v_2^2v_1\omega^2)\frac{v_3\rho}{2\omega^3}$$

$$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_z^2 v_3} = (4\omega_6^2\omega_{19}v_2^2v_1\omega_7^2\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12} - \omega_6^2c_s^2v_1\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12} - \omega_6^2\omega_{19}v_2v_1^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12} -$$
$$4\omega_6^2\omega_{19}c_s^2v_1\omega_7\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12} - 4\omega_6^2\omega_{19}v_2v_1^2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12} - 2\omega_6c_s^2v_2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12} -$$
$$4\omega_6^2\omega_{19}c_s^2v_1\omega_7^2\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12} - \omega_6^2\omega_{19}c_s^2v_1\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 2\omega_6^2\omega_{19}c_s^2v_2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}\omega_{12} -$$
$$4\omega_{19}c_s^2v_2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12} + 2\omega_6^2v_2^2v_1\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12} + 2\omega_6^2\omega_{19}c_s^2v_1\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} -$$
$$4\omega_6^2\omega_{19}v_2v_1^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{12} - 4\omega_6\omega_{19}c_s^2v_2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12} - 8\omega_6^2\omega_{19}c_s^2v_2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12} +$$
$$2\omega_6^2\omega_{19}v_2v_1^2\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12} + 2\omega_6^2c_s^2v_1\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12} + 2\omega_6^2\omega_{19}c_s^2v_2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{12} +$$
$$2\omega_6\omega_{19}c_s^2v_2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12} + 4\omega_6^2\omega_{19}v_2^2v_1\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12} - 3\omega_6\omega_{19}c_s^2v_2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12} -$$
$$2\omega_6^2\omega_{19}c_s^2v_2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} - 2\omega_6^2\omega_{19}v_2v_1^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 4\omega_6^2v_2^2v_1\omega_7\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12} - 2\omega_6^2c_s^2v_2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12} +$$
$$4\omega_6^2\omega_{19}c_s^2v_1\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_{12} + 2\omega_6^2\omega_{19}v_2^2v_1\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} + 2\omega_6^2\omega_{19}c_s^2v_1\omega_7\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{12} -$$
$$4\omega_6\omega_{19}c_s^2v_2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{12} - 2\omega_6^2\omega_{19}c_s^2v_1\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_{12} - 2\omega_6^2\omega_{19}v_2^2v_1\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{12} -$$
$$4\omega_6\omega_{19}c_s^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12} - 2\omega_6^2\omega_{19}c_s^2v_2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_5^2\omega_{18}\omega_{12} - 10\omega_6^2\omega_{19}c_s^2v_2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12} -$$
$$4\omega_{19}c_s^2v_2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_{12} - 4\omega_6^2\omega_{19}v_2v_1^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_{12} - \omega_6^2\omega_{19}c_s^2v_2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12} -$$
$$2\omega_6^2\omega_{19}v_2v_1^2\omega_7\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{12} - 4\omega_6^2\omega_{19}c_s^2v_2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{12} + 4\omega_6^2\omega_{19}v_2^2v_1\omega_7\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12} -$$
$$4\omega_6^2\omega_{19}v_2v_1^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12} + 2\omega_6^2\omega_{19}v_2^2v_1\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_{12} - 2\omega_6^2\omega_{19}c_s^2v_1\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12} -$$
$$2\omega_6^2v_2v_1^2\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12} - 2\omega_6^2\omega_{19}c_s^2v_2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{12} - 2\omega_6^2\omega_{19}c_s^2v_1\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12} +$$
$$4\omega_6^2\omega_{19}c_s^2v_1\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{12} - 2\omega_6^2v_2v_1^2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12} + \omega_6^2\omega_{19}v_2v_1^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$$
$$4\omega_6^2\omega_{19}v_2^2v_1\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{12} - 4\omega_6^2\omega_{19}c_s^2v_1\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12} + 4\omega_6^2\omega_{19}c_s^2v_2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12} -$$
$$4\omega_6^2\omega_{19}v_2^2v_1\omega_7\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{12} - 2\omega_6\omega_{19}c_s^2v_2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}\omega_{12} + 4\omega_6^2\omega_{19}c_s^2v_2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{12} +$$
$$4\omega_6^2\omega_{19}v_2v_1^2\omega_7\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12} - 2\omega_6\omega_{19}c_s^2v_2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_{12} + \omega_6^2\omega_{19}v_2^2v_1\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12} +$$
$$2\omega_6^2\omega_{19}v_2^2v_1\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 4\omega_6^2\omega_{19}v_2v_1^2\omega_7^2\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12} + 4\omega_6^2\omega_{19}c_s^2v_2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{12} - 2\omega_6^2\omega_{19}c_s^2v_2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$$
$$2\omega_6\omega_{19}c_s^2v_2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_{12} + 4\omega_6^2\omega_{19}v_2^2v_1\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12} + 4\omega_{19}c_s^2v_2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12} +$$
$$3\omega_6^2\omega_{19}c_s^2v_2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{12} + 2\omega_6^2\omega_{19}v_2v_1^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{12} - \omega_6^2v_2^2v_1\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12} +$$
$$2\omega_6^2\omega_{19}c_s^2v_2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_{12} + 2\omega_6^2\omega_{19}c_s^2v_2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12} + 2\omega_6^2\omega_{19}c_s^2v_2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_5\omega_{18}\omega_{12} -$$
$$2\omega_6^2\omega_{19}v_2v_1^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} + 2\omega_6^2\omega_{19}c_s^2v_2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_5^2\omega_{18}\omega_{12} + 2\omega_6^2\omega_{19}v_2v_1^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12} +$$
$$4\omega_6^2v_2v_1^2\omega_7\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12} + 4\omega_6^2\omega_{19}c_s^2v_1\omega_7\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12} - 2\omega_6^2\omega_{19}c_s^2v_2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12} - 4\omega_6^2\omega_{19}v_2^2v_1\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18} +$$
$$2\omega_6^2c_s^2v_1\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12} + 2\omega_6^2\omega_{19}c_s^2v_1\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_{12} - 2\omega_6^2\omega_{19}v_2^2v_1\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12} +$$
$$4\omega_6c_s^2v_2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12} + 4\omega_6^2\omega_{19}c_s^2v_2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18} + 4\omega_6^2\omega_{19}v_2v_1^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12} +$$
$$4\omega_6^2\omega_{19}v_2^2v_1\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{12} + 4\omega_6^2\omega_{19}c_s^2v_1\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12} - 4\omega_6^2\omega_{19}c_s^2v_1\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{12} -$$
$$4\omega_6^2\omega_{19}c_s^2v_1\omega_7\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{12} - 2\omega_6\omega_{19}c_s^2v_2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12} - 4\omega_6^2\omega_{19}v_2v_1^2\omega_7^2\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12} -$$
$$4\omega_6^2\omega_{19}c_s^2v_2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{12} + \omega_6^2c_s^2v_2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12} + 6\omega_6\omega_{19}c_s^2v_2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12} -$$
$$2\omega_6^2\omega_{19}v_2^2v_1\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_{12} + 4\omega_6^2\omega_{19}c_s^2v_1\omega_7^2\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12} - 4\omega_6^2\omega_{19}v_2^2v_1\omega_7\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12} +$$
$$2\omega_6^2\omega_{19}v_2v_1^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_{12} + \omega_6^2\omega_{19}c_s^2v_2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 4\omega_6^2\omega_{19}v_2v_1^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18} -$$
$$4\omega_6^2\omega_{19}v_2^2v_1\omega_7^2\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}\omega_{12} + 4\omega_6^2\omega_{19}v_2v_1^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18}\omega_{12} - \omega_6^2\omega_{19}v_2^2v_1\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$$
$$6\omega_6^2\omega_{19}c_s^2v_2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12} + 4\omega_6\omega_{19}c_s^2v_2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{12} + 4\omega_6^2\omega_{19}v_2v_1^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18}\omega_{12} +$$
$$2\omega_6\omega_{19}c_s^2v_2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12} + 2\omega_6^2\omega_{19}c_s^2v_2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12} + 2\omega_6^2v_2^2v_1\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12} +$$
$$4\omega_6\omega_{19}c_s^2v_2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_{12} - 2\omega_6^2\omega_{19}v_2^2v_1\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12} - 2\omega_6^2\omega_{19}c_s^2v_2\omega_7\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{12} -$$
$$4\omega_6^2c_s^2v_1\omega_7\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12} - 4\omega_6^2\omega_{19}v_2v_1^2\omega_7\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12} - 4\omega_6^2\omega_{19}v_2^2v_1\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12} -$$
$$2\omega_6^2\omega_{19}v_2v_1^2\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}\omega_{12} - 4\omega_6^2\omega_{19}c_s^2v_2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_{12} + \omega_6^2v_2v_1^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12} +$$
$$\omega_6^2\omega_{19}c_s^2v_1\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12} - 4\omega_6^2\omega_{19}c_s^2v_1\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18} + 4\omega_6^2\omega_{19}v_2^2v_1\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}\omega_{12} +$$
$$2\omega_6^2\omega_{19}c_s^2v_1\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} + 2\omega_6^2\omega_{19}v_2^2v_1\omega_7\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{12} + 4\omega_6^2\omega_{19}c_s^2v_2\omega_7\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{12} +$$
$$4\omega_6^2\omega_{19}c_s^2v_1\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18}\omega_{12} + 4\omega_6\omega_{19}c_s^2v_2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{12} -$$
$$2\omega_6^2\omega_{19}c_s^2v_1\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18}\omega_{12})\frac{v_3\rho}{2\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18}\omega_{12}}$$

$$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_z^2 v_3} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_z^2 v_3}$$

$$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_z^2 v_3} = (2\omega_{19}c_s^2v_2\omega_7\omega_{14}\omega_8\omega_5\omega_{12} + 2\omega_{19}c_s^2v_1\omega_7\omega_{20}\omega_{14}\omega_8 + 4\omega_{19}c_s^2v_1\omega_7\omega_{20}\omega_5\omega_{12} - 2\omega_{19}c_s^2v_2\omega_7\omega_{20}\omega_8\omega_5 + 4\omega_{19}v_2v_1^2\omega_7\omega_{20}\omega_{14}\omega_5\omega_{12} -$$
$$4\omega_{19}c_s^2v_1\omega_{14}\omega_5\omega_{12} - 2\omega_{19}v_2v_1^2\omega_7\omega_{20}\omega_8\omega_5 - 2v_2v_1^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12} + \omega_{19}v_2^2v_1\omega_7\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12} + 4\omega_{19}c_s^2v_2\omega_7\omega_{20}\omega_8 +$$
$$2\omega_{19}c_s^2v_1\omega_7\omega_{14}\omega_8\omega_{12} + 4\omega_{19}c_s^2v_2\omega_7\omega_{20}\omega_{14}\omega_5\omega_{12} + 4\omega_{19}c_s^2v_2\omega_7\omega_{14}\omega_{12} + 4\omega_{19}v_2v_1^2\omega_7\omega_{20}\omega_8 + 2\omega_{19}v_2v_1^2\omega_7\omega_{14}\omega_8\omega_5\omega_{12} + 4\omega_{19}v_2v_1^2\omega_7\omega_{14}\omega_{12} -$$
$$\omega_{19}c_s^2v_2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12} - 4\omega_{19}v_2^2v_1\omega_{20}\omega_5\omega_{12} + 4\omega_{19}v_2^2v_1\omega_7\omega_{20}\omega_{14}\omega_{12} - 4\omega_{19}v_2^2v_1\omega_7\omega_{20}\omega_{12} - 2c_s^2v_2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12} +$$
$$2\omega_{19}v_2^2v_1\omega_{20}\omega_8\omega_5\omega_{12} + \omega_{19}c_s^2v_1\omega_7\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12} + 2\omega_{19}v_2v_1^2\omega_7\omega_{20}\omega_{14}\omega_8\omega_{12} - 4\omega_{19}v_2^2v_1\omega_{14}\omega_5\omega_{12} + 2\omega_{19}v_2^2v_1\omega_7\omega_{20}\omega_8\omega_5 +$$
$$2\omega_{19}v_2v_1^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12} + 4\omega_{19}c_s^2v_1\omega_7\omega_{20}\omega_8\omega_{12} - \omega_{19}c_s^2v_1\omega_7\omega_{20}\omega_{14}\omega_8\omega_5 - 4c_s^2v_1\omega_{14}\omega_8\omega_5\omega_{12} - 2c_s^2v_2\omega_7\omega_{14}\omega_8\omega_5\omega_{12} -$$
$$2\omega_{19}v_2^2v_1\omega_7\omega_{20}\omega_8\omega_5\omega_{12} + 4\omega_{19}c_s^2v_1\omega_{20}\omega_{14}\omega_5\omega_{12} - 4\omega_{19}c_s^2v_1\omega_{20}\omega_5\omega_{12} + 2\omega_{19}c_s^2v_2\omega_7\omega_{20}\omega_{14}\omega_8\omega_{12} + 4\omega_{19}c_s^2v_1\omega_7\omega_{14}\omega_5\omega_{12} -$$
$$4\omega_{19}c_s^2v_2\omega_7\omega_{20}\omega_{14}\omega_{12} - 2\omega_{19}c_s^2v_1\omega_7\omega_{20}\omega_8\omega_5\omega_{12} + 2\omega_{19}c_s^2v_2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12} - 2\omega_{19}v_2v_1^2\omega_{20}\omega_8\omega_5\omega_{12} - 2v_2v_1^2\omega_7\omega_{14}\omega_8\omega_5\omega_{12} -$$
$$4\omega_{19}v_2v_1^2\omega_7\omega_{20}\omega_{14}\omega_{12} - 2\omega_{19}c_s^2v_2\omega_{20}\omega_8\omega_5\omega_{12} - \omega_{19}v_2^2v_1\omega_7\omega_{20}\omega_{14}\omega_8\omega_5 + 4\omega_{19}c_s^2v_1\omega_{14}\omega_8\omega_5\omega_{12} - \omega_{19}v_2v_1^2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12} -$$
$$4\omega_{19}c_s^2v_1\omega_7\omega_{20}\omega_{12} + 2c_s^2v_1\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12} - 4\omega_{19}v_2^2v_1\omega_7\omega_{20}\omega_8 - 4\omega_{19}c_s^2v_2\omega_{20}\omega_{14}\omega_5\omega_{12} + 4\omega_{19}v_2v_1^2\omega_{20}\omega_5\omega_{12} - 4\omega_{19}v_2v_1^2\omega_7\omega_{20}\omega_8\omega_{12} -$$
$$4\omega_{19}v_2^2v_1\omega_7\omega_{14}\omega_{12} - 2\omega_{19}v_2^2v_1\omega_7\omega_{14}\omega_8\omega_5\omega_{12} + 4c_s^2v_2\omega_{14}\omega_8\omega_5\omega_{12} + 4\omega_{19}c_s^2v_2\omega_{20}\omega_5\omega_{12} + 4\omega_{19}c_s^2v_2\omega_7\omega_{20}\omega_{12} - 4\omega_{19}v_2v_1^2\omega_{20}\omega_{14}\omega_5\omega_{12} -$$
$$4\omega_{19}c_s^2v_1\omega_7\omega_{20}\omega_{14}\omega_5\omega_{12} - 4\omega_{19}c_s^2v_2\omega_7\omega_{20}\omega_8\omega_{12} - v_2^2v_1\omega_7\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12} + 4v_2v_1^2\omega_{14}\omega_8\omega_5\omega_{12} + c_s^2v_2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12} +$$
$$4\omega_{19}v_2v_1^2\omega_7\omega_{20}\omega_{12} + 2\omega_{19}v_2^2v_1\omega_7\omega_{20}\omega_{14}\omega_8 + 4\omega_{19}v_2^2v_1\omega_7\omega_{20}\omega_5\omega_{12} - 4\omega_{19}c_s^2v_2\omega_{14}\omega_8\omega_5\omega_{12} + 2\omega_{19}c_s^2v_1\omega_{20}\omega_8\omega_5\omega_{12} -$$

$4\omega_{19}v_2^2v_1\omega_7\omega_{20}\omega_{14}\omega_5\omega_{12} - 4\omega_{19}v_2v_1^2\omega_7\omega_{14}\omega_5\omega_{12} - 4\omega_{19}c_s^2v_2\omega_7\omega_{14}\omega_5\omega_{12} + 2v_2^2v_1\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12} - 4\omega_{19}v_2v_1^2\omega_{14}\omega_8\omega_5\omega_{12} +$
$4\omega_{19}c_s^2v_1\omega_7\omega_{20}\omega_{14}\omega_{12} - 2\omega_{19}c_s^2v_1\omega_7\omega_{14}\omega_8\omega_5\omega_{12} + 2\omega_{19}v_2^2v_1\omega_7\omega_{14}\omega_8\omega_{12} + 4\omega_{19}v_2^2v_1\omega_{20}\omega_{14}\omega_5\omega_{12} + v_2v_1^2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12} -$
$4\omega_{19}c_s^2v_1\omega_7\omega_{14}\omega_{12} - 4\omega_{19}v_2v_1^2\omega_7\omega_{20}\omega_5\omega_{12} - 2\omega_{19}v_2v_1^2\omega_7\omega_{20}\omega_{14}\omega_8 - 4v_2^2v_1\omega_{14}\omega_8\omega_5\omega_{12} - 4\omega_{19}c_s^2v_1\omega_7\omega_{20}\omega_8 + 4\omega_{19}v_2^2v_1\omega_7\omega_{20}\omega_8\omega_{12} +$
$\omega_{19}v_2v_1^2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5 - 2\omega_{19}c_s^2v_1\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12} + 2\omega_{19}c_s^2v_2\omega_7\omega_{20}\omega_8\omega_5\omega_{12} + 2v_2^2v_1\omega_7\omega_{14}\omega_8\omega_5\omega_{12} + 2\omega_{19}c_s^2v_1\omega_7\omega_{20}\omega_8\omega_5 -$
$2\omega_{19}c_s^2v_2\omega_7\omega_{20}\omega_{14}\omega_8 - 4\omega_{19}c_s^2v_2\omega_7\omega_{20}\omega_5\omega_{12} - 2\omega_{19}c_s^2v_1\omega_7\omega_{20}\omega_{14}\omega_8\omega_{12} + 4\omega_{19}c_s^2v_2\omega_{14}\omega_5\omega_{12} + 4\omega_{19}v_2^2v_1\omega_{14}\omega_8\omega_5\omega_{12} + 4\omega_{19}v_2v_1^2\omega_{14}\omega_5\omega_{12} -$
$2\omega_{19}v_2^2v_1\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12} - 2\omega_{19}v_2v_1^2\omega_7\omega_{14}\omega_8\omega_{12} + 2c_s^2v_1\omega_7\omega_{14}\omega_8\omega_5\omega_{12} - 2\omega_{19}v_2^2v_1\omega_7\omega_{20}\omega_{14}\omega_8\omega_{12} + 4\omega_{19}v_2^2v_1\omega_7\omega_{14}\omega_5\omega_{12} +$
$2\omega_{19}v_2v_1^2\omega_7\omega_{20}\omega_8\omega_5\omega_{12} - c_s^2v_1\omega_7\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12} + \omega_{19}c_s^2v_2\omega_7\omega_{20}\omega_{14}\omega_8\omega_5 - 2\omega_{19}c_s^2v_2\omega_7\omega_{14}\omega_8\omega_{12})\frac{v_3\rho}{2\omega_{19}\omega_7\omega_{20}\omega_{14}\omega_8\omega_5\omega_{12}}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_z^2v_3} = C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_z^2v_3}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_z^2v_3} = 0$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_z^2v_3} = (-\omega_1 + v_3^2\omega_1 - 3c_s^2\omega_2 + \omega_2 + 3c_s^2\omega_1 - v_3^2\omega_2)\frac{v_3v_2\rho}{36\omega_1\omega_2}$

coefficient $C^{(2)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2\rho}$ **at** $\frac{\partial^4\rho}{\partial x_1\partial x_2\partial x_3^2}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2\rho} = (36v_3c_s^2v_1^2\omega - 24v_3c_s^2v_2^2 + v_3v_2^2v_1^2\omega^3 + 14v_3^2c_s^2v_1\omega^2 - v_3^2c_s^2v_1\omega^3 - 14v_3v_2^2v_1^2\omega^2 - 36v_3^2v_2^2v_1\omega + 36v_3v_2^2v_1^2\omega + 14v_3^2v_2^2v_1\omega^2 +$
$v_3c_s^2v_1^2\omega^3 + 24v_3^2c_s^2v_1 - 14v_3c_s^2v_1^2\omega^2 - v_3^2v_2^2v_1\omega^3 - 36v_3^2c_s^2v_1\omega + 24v_3^2v_2^2v_1 - 14v_3c_s^2v_2^2\omega^2 + v_3c_s^2v_2^2\omega^3 + 24c_s^2v_2^2v_1 - 36c_s^2v_2^2v_1\omega - 24v_3v_2^2v_1^2 +$
$14c_s^2v_2^2v_1\omega^2 - c_s^2v_2^2v_1\omega^3 + 36v_3c_s^2v_2^2\omega - 24v_3c_s^2v_1^2)\frac{1}{2\omega^3}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2\rho} = (2\omega_{19}v_3^2v_2^2v_1\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - \omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15} - 4\omega_{19}c_s^4\omega_{16}v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15} - \omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$2v_3c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + \omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5 - 2v_3c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$v_3c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} + v_3^2\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$2\omega_{19}c_s^2v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_{19}v_3c_s^2v_1^2\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_{19}v_3c_s^2v_1^2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$2\omega_{19}c_s^2v_2^2v_1\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + \omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5 - \omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5 -$
$2\omega_{19}v_3^2v_2^2v_1\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15} + 2\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} +$
$\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} -$
$2\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} + 2\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - \omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$2\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + \omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - \omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 +$
$2\omega_{19}v_3^2v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} - 2v_3\omega_{16}v_2^2v_1^2\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2c_s^2\omega_{16}v_2^2v_1\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - c_s^2\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$v_3\omega_{16}v_2^2v_1^2\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 - 4\omega_{19}c_s^4\omega_{16}v_1\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_{15} +$
$2\omega_{19}v_3v_2^2v_1^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} - 2\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5 - 2\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} +$
$2\omega_{19}v_3^2c_s^2v_1\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_{19}c_s^2v_2^2v_1\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2c_s^2\omega_{16}v_2^2v_1\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$2\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5 + 2\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5 - 4\omega_{19}c_s^4\omega_{16}v_1\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$2\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} + 2v_3\omega_{16}v_2^2v_1^2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - \omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$2\omega_{19}v_3^2c_s^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} + 4\omega_{19}c_s^4\omega_{16}v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} + \omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$2\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} - 2\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} +$
$2\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} - 2\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} - 2\omega_{19}c_s^2v_2^2v_1\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5 - \omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - v_3^2\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 2v_3^2\omega_{16}v_2^2v_1\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$2\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} + 2\omega_{19}v_3c_s^2v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} + 4\omega_{19}c_s^4\omega_{16}v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_5\omega_{15} +$
$2\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 - \omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + \omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$2\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} + \omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 -$
$v_3^2c_s^2\omega_{16}v_1\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - \omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5\omega_{15} - 2\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5\omega_{15} +$
$\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5\omega_{15} + 2v_3^2c_s^2\omega_{16}v_1\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + c_s^2\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$2\omega_{19}v_3^2v_2^2v_1\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - v_3\omega_{16}v_2^2v_1^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} -$
$2\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15} + 2\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} - 8\omega_{19}c_s^4\omega_{16}v_1\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$2\omega_{19}v_3c_s^2v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - \omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15} - 2\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5 -$
$2\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} + 2\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} + \omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$2\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 + 2\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$2\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + \omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5\omega_{15} + 2\omega_{19}c_s^2v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} +$
$2\omega_{19}v_3^2v_2^2v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_{19}v_3c_s^2v_1^2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} - 2\omega_{19}v_3^2c_s^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$2\omega_{19}c_s^2v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} + 2\omega_{19}v_3^2v_2^2v_1\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} -$
$2\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 - 2\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 -$
$2\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} - \omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} -$
$2\omega_{19}v_3c_s^2v_1^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2v_3c_s^2\omega_{16}v_1^2\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - \omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5\omega_{15} -$
$\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + v_3c_s^2\omega_{16}v_1^2\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + \omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 +$
$2\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} - 2\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} -$
$2v_3^2\omega_{16}v_2^2v_1\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} + 2\omega_{19}v_3c_s^2v_2^2\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$

$2\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} - \omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$v_3c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 4\omega_{19}c_s^4\omega_{16}v_1\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_5^2\omega_{15} - 8\omega_{19}c_s^4\omega_{16}v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} +$
$2\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15} - 2\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} - 2\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15} +$
$4\omega_{19}c_s^4\omega_{16}v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_{15} - \omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} -$
$\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 2\omega_{19}v_3^2c_s^2v_1\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - \omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 +$
$2\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15} + 2\omega_{19}v_3v_2^2v_1^2\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_{19}v_3^2c_s^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} -$
$2\omega_{19}c_s^2v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} - 2\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_{19}v_3^2v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$2\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15} - 2\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} +$
$2\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} - 2\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} + \omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$2\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + \omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 2\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} +$
$2\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} + 2\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$4\omega_{19}c_s^4\omega_{16}v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} - 2\omega_{19}v_3c_s^2v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} + 2\omega_{19}v_3v_2^2v_1^2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - v_3^2\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5\omega_{15} +$
$\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5\omega_{15} + 2v_3^2\omega_{16}v_2^2v_1\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_{19}v_3^2c_s^2v_1\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$2\omega_{19}c_s^2v_2^2v_1\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} - \omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$2\omega_{19}v_3c_s^2v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + \omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_{19}v_3v_2^2v_1^2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} +$
$\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15} - 2\omega_{19}v_3^2v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_{19}v_3^2c_s^2v_1\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} +$
$2\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 - 2\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 - 2\omega_{19}v_3c_s^2v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} - 2\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} +$
$2\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} + v_3^2c_s^2\omega_{16}v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + \omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$2\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_{19}v_3v_2^2v_1^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$2\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + \omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} -$
$\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15} - 2\omega_{19}v_3^2c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} +$
$2\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} + 2c_s^2\omega_{16}v_2^2v_1\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5\omega_{15} +$
$2\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} - 2v_3\omega_{16}v_2^2v_1^2\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - \omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5\omega_{15} -$
$2\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 - \omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + v_3\omega_{16}v_2^2v_1^2\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - c_s^2\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 + 2\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} -$
$2\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} - 2\omega_{19}v_3c_s^2v_2^2\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_{19}v_3c_s^2v_1^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_{19}v_3^2c_s^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} -$
$2\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} - \omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$2\omega_{19}v_3c_s^2v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + \omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_{19}v_3v_2^2v_1^2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} +$
$\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_{19}v_3^2v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_{19}v_3^2c_s^2v_1\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} +$
$2\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 - 2\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 - 2\omega_{19}v_3c_s^2v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} - 2\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} +$
$2\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} + v_3^2c_s^2\omega_{16}v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + \omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$2\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_{19}v_3v_2^2v_1^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$2\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + \omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} -$
$\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15} - 2\omega_{19}v_3^2c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} +$
$2\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} + \omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15} + 2\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15} -$
$\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15} + \omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5 - 2\omega_{19}v_3^2c_s^2\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} -$
$4\omega_{19}c_s^4\omega_{16}v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_5^2\omega_{15} + 2\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5 - 2\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} +$
$2\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} - \omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 2\omega_{19}v_3c_s^2v_1^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} - \omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 2\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 +$
$12\omega_{19}c_s^4\omega_{16}v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_{19}v_3v_2^2v_1^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - \omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$8\omega_{19}c_s^4\omega_{16}v_1\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} + \omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 2\omega_{19}v_3^2v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} +$
$2\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} + 2\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} - \omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$v_3^2c_s^2\omega_{16}v_1\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2v_3^2c_s^2\omega_{16}v_1\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$2\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2v_3^2c_s^2\omega_{16}v_1\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_{19}v_3c_s^2v_1^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_{19}v_3^2c_s^2v_1\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} -$
$\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15} + \omega_{19}v_3^2c_s^2\omega_{16}v_1^2\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + \omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$2\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} - 2\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_{19}v_3v_2^2v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} -$
$\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5 + 2\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15} + 2\omega_{19}v_3^2c_s^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$2\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15})\frac{1}{2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}}$

$$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2\rho} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2\rho}$$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2\rho} = (\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_{19}v_3v_2^2v_1^2\omega_7\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} + 2\omega_{19}c_s^2v_2^2v_1\omega_{10}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} +$
$\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5 + 2v_3^2c_s^2\omega_{16}v_1\omega_{10}\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_{10}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} -$
$v_3^2c_s^2\omega_{16}v_1\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} + \omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_{19}v_3c_s^2v_2^2\omega_7\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} - 2v_3^2c_s^2\omega_{16}v_1\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} +$
$\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_8\omega_{15} - 2\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8\omega_{15} + 2\omega_{19}v_3^2v_2^2v_1\omega_{10}\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} +$
$v_3^2c_s^2\omega_{16}v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_{19}v_3^2v_2^2v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} - 2\omega_{19}v_3^2v_2^2v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} -$
$2\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_{19}v_3c_s^2v_1^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} + 2\omega_{19}v_3c_s^2v_1^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} -$
$2\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_{10}\omega_{23}\omega_{17}\omega_5\omega_{15} + 2\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_{10}\omega_{23}\omega_{17}\omega_5\omega_{15} - 2\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{15} - 2v_3^2c_s^2\omega_{16}v_1^2\omega_{10}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} -$
$\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 + \omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5 + \omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} -$

$\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5 + 2\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{15} + 2\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_{10}\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} -$
$\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_5\omega_{15} +$
$2\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8\omega_5 + 2\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8\omega_5 +$
$2v_3c_s^2\omega_{16}v_1^2\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_{19}v_3^2c_s^2v_1\omega_{10}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8\omega_5 +$
$2\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_5\omega_{15} + v_3c_s^2\omega_{16}v_1^2\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_{10}\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} +$
$2\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_{10}\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_{10}\omega_{23}\omega_{17}\omega_5\omega_{15} + 2\omega_{19}v_3c_s^2v_2^2\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} -$
$2\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{15} + 2\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{15} + 2\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{15} -$
$2\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{15} - \omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5 + 2\omega_{19}v_3v_2^2v_1^2\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} -$
$\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5 - 2\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_7\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} + 2\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_7\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} -$
$2\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_{10}\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} - 2\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8 - 2\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_5\omega_{15} - 2\omega_{19}v_3c_s^2v_1^2\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} -$
$2\omega_{19}v_3^2c_s^2v_1\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_7\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} + 2\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_5\omega_{15} +$
$2\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8\omega_5 - 2\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_5\omega_{15} + 2\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_5\omega_{15} +$
$2\omega_{19}v_3c_s^2v_1^2\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 2c_s^2\omega_{16}v_2^2v_1\omega_{10}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 2v_3\omega_{16}v_2^2v_1^2\omega_{10}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - \omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 +$
$v_3c_s^2\omega_{16}v_2^2\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_{10}\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_{19}v_3^2c_s^2\omega_{16}v_2^2\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} +$
$2\omega_{19}v_3^2v_2^2v_1\omega_{10}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{15} - 2\omega_{19}v_3^2v_2^2v_1\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} -$
$\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} - 2v_3c_s^2\omega_{16}v_2^2\omega_{10}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_7\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} +$
$v_3\omega_{16}v_2^2v_1^2\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_{15} - \omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5 - c_s^2\omega_{16}v_2^2v_1\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} -$
$2\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_5\omega_{15} - 2\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_{10}\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} + 2\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{15} +$
$2\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_{10}\omega_{23}\omega_{17}\omega_5\omega_{15} - 2\omega_{19}v_3c_s^2v_2^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - \omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_{15} -$
$2\omega_{19}v_3c_s^2v_2^2\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_{19}v_3v_2^2v_1^2\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_{19}c_s^2v_2^2v_1\omega_{10}\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} + \omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} +$
$2\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} + \omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} - \omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} -$
$2\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - v_3c_s^2\omega_{16}v_1^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} +$
$2v_3^2\omega_{16}v_2^2v_1\omega_{10}\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} + \omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_8\omega_{15} - 2\omega_{19}v_3c_s^2v_1^2\omega_7\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} - 2\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_7\omega_{23}\omega_{20}\omega_8\omega_5 +$
$\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{15} + 2\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_{10}\omega_{23}\omega_{17}\omega_5\omega_{15} + \omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_8\omega_{15} -$
$\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_{15} - 2\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8\omega_{15} - \omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} -$
$2\omega_{19}v_3^2v_2^2v_1^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_{10}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + \omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} -$
$\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_{10}\omega_{23}\omega_{20}\omega_5\omega_{15} - 2\omega_{19}c_s^2v_1^2\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_{19}v_3^2c_s^2v_1\omega_{10}\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} +$
$2\omega_{19}v_3^2c_s^2v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + \omega_{19}v_3^2c_s^2\omega_{16}v_2^2v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{15} + 2\omega_{19}v_3^2c_s^2\omega_{16}v_2^2v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} - v_3^2c_s^2\omega_{16}v_1^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} +$
$2v_3^2\omega_{16}v_2^2v_1\omega_{10}\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} + \omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_8\omega_{15} - 2\omega_{19}v_3c_s^2v_1^2\omega_7\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} - 2\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_7\omega_{23}\omega_{20}\omega_8\omega_5 +$
$\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{15} + 2\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_{10}\omega_{23}\omega_{17}\omega_5\omega_{15} + \omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_8\omega_{15} -$
$\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_8\omega_{15} - 2\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - \omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} -$
$2\omega_{19}v_3^2v_2^2v_1^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_{10}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + \omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} -$
$\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_{10}\omega_{23}\omega_{20}\omega_5\omega_{15} - 2\omega_{19}c_s^2v_1^2\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_{19}v_3^2c_s^2v_1\omega_{10}\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} +$
$2\omega_{19}v_3^2c_s^2v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + \omega_{19}v_3^2c_s^2\omega_{16}v_2^2v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{15} + 2\omega_{19}v_3^2c_s^2\omega_{16}v_2^2v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8\omega_{15} - \omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} -$
$2\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_{10}\omega_{23}\omega_{20}\omega_5\omega_{15} - \omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} -$
$2v_3c_s^2\omega_{16}v_1^2\omega_{10}\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_{19}v_3c_s^2v_1^2\omega_{10}\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} + 2\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_7\omega_{23}\omega_{20}\omega_8\omega_{15} - \omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} -$
$2\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_{10}\omega_{23}\omega_{17}\omega_5\omega_{15} + v_3c_s^2\omega_{16}v_1^2\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_{10}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} +$
$2\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_{10}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + \omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8\omega_{15} -$
$\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_8\omega_{15} + 2\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8\omega_{15} + 2\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{20}\omega_8\omega_5 + 2\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_{15} +$
$\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_{15} + 2\omega_{19}v_3c_s^2v_2^2\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - \omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8\omega_{15} -$
$2\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} - \omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - \omega_{19}v_3^2c_s^2\omega_{16}v_2^2v_1\omega_{10}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} +$
$2\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_{10}\omega_{20}\omega_5\omega_{15} + 2\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_5\omega_{15} +$
$2\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_{10}\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} - 2\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_7\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} - \omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5 +$
$\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5 - 2\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{15} - 2\omega_{19}v_3v_2^2v_1^2\omega_{10}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_{19}c_s^2v_2^2v_1\omega_7\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} +$
$\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5 + 2\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_5\omega_{15} + 2\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_{15} + 2\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_7\omega_{23}\omega_{20}\omega_8\omega_5 +$
$\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - \omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8\omega_{15} -$
$2\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8 + 2\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8 - \omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 + \omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 +$
$2v_3^2c_s^2\omega_{16}v_1\omega_{10}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_5\omega_{15} - 2\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8\omega_5 -$
$2\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_5\omega_{15} - 2\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} + \omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} +$
$2\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} + \omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - \omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} +$
$\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 + \omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_{15} - v_3^2c_s^2\omega_{16}v_1\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} -$
$2\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{15} - 2\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_{10}\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_{19}v_3^2v_2^2v_1\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} +$
$2\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_{10}\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_{10}\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} - v_3^2\omega_{16}v_2^2v_1\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} +$
$2\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_5\omega_{15} + \omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5 - 2\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} -$
$2\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_5\omega_{15} + 2\omega_{19}v_3c_s^2v_2^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} + 2\omega_{19}v_3c_s^2v_2^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} -$
$2v_3^2\omega_{16}v_2^2v_1\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - v_3\omega_{16}v_2^2v_1^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + c_s^2\omega_{16}v_2^2v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} +$
$2\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8 + \omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5 + \omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} +$
$2\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_{10}\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} - 2\omega_{19}v_3c_s^2v_1^2\omega_{10}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8\omega_5 +$
$2\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_5\omega_{15} - 2\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_5\omega_{15} -$
$2\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_5\omega_{15} + 2\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_5\omega_{15} - 2\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_{15} +$
$2\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_{15} - 2\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_7\omega_{23}\omega_{20}\omega_8\omega_5 - 2\omega_{19}v_3^2c_s^2v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} + \omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 +$
$2v_3^2\omega_{16}v_2^2v_1\omega_{10}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_{19}v_3^2c_s^2v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_{19}c_s^2v_2^2v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} -$
$2\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{15} - 2\omega_{19}v_3c_s^2\omega_{16}v_2^2v_1\omega_{10}\omega_{23}\omega_{20}\omega_5\omega_{15} + 2\omega_{19}v_3v_2^2v_1^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} +$
$2\omega_{19}v_3v_2^2v_1^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_5\omega_{15} - 2\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_{10}\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} -$

$2\omega_{19}c_s^2v_2^2v_1\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_{19}v_3^2c_s^2v_1\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 2v_3\omega_{16}v_2^2v_1^2\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} -$
$2c_s^2\omega_{16}v_2^2v_1\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - v_3c_s^2\omega_{16}v_2^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_{19}v_3^2v_2^2v_1\omega_7\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} - 2\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_7\omega_{23}\omega_{20}\omega_8\omega_5 +$
$2\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_7\omega_{23}\omega_{20}\omega_8\omega_5 - 2\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_{15} - c_s^2\omega_{16}v_2^2v_1\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} + v_3\omega_{16}v_2^2v_1^2\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} +$
$2\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_{10}\omega_{23}\omega_{20}\omega_5\omega_{15} - 2\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_{10}\omega_{23}\omega_{20}\omega_5\omega_{15} - 2\omega_{19}v_3c_s^2v_1^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} -$
$\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + \omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - \omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5 +$
$2\omega_{19}v_3^2v_2^2v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + v_3c_s^2\omega_{16}v_2^2\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_{19}v_3c_s^2v_1^2\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} +$
$2c_s^2\omega_{16}v_2^2v_1\omega_{10}\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} - 2v_3\omega_{16}v_2^2v_1^2\omega_{10}\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_5\omega_{15} +$
$2v_3c_s^2\omega_{16}v_2^2\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_{19}v_3v_2^2v_1^2\omega_{10}\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} + 2\omega_{19}c_s^2v_2^2v_1\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 2v_3c_s^2\omega_{16}v_2^2\omega_{10}\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} -$
$2\omega_{19}v_3c_s^2v_2^2\omega_{10}\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} - \omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_8\omega_{15} + 2\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8\omega_{15} + 2\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8 -$
$\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_{19}v_3^2v_2^2v_1\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - \omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} +$
$2\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_{10}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - \omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15})\frac{1}{2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15}}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2\rho} = C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2\rho}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2\rho} = 0$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2\rho} = (-56\omega_3^2c_s^2v_1^2\omega_4^2\omega_1\omega_2^2 - 27\omega_3^2c_s^2\omega_4\omega_1^3\omega_2^3 - 96\omega_3^2v_3^2v_1^2\omega_4^2\omega_1\omega_2^2 - 108\omega_3^2c_s^2v_1^2\omega_4\omega_1^2\omega_2^3 + 192\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^2 - 108\omega_3^2c_s^2\omega_1^2\omega_2^3 -$
$54c_s^2\omega_4^2\omega_1^3\omega_2^3 + 54c_s^2v_1^2\omega_4^2\omega_1^3\omega_2^3 + 8\omega_3^2v_1^2\omega_4^2\omega_1\omega_2^2 + 96\omega_3^2v_3^2\omega_4^2\omega_1^3\omega_2 - 104\omega_3^2c_s^2\omega_4^2\omega_1^3 - 30\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^3 - 162\omega_3^2c_s^4\omega_1^3\omega_2^3 - 168\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2 +$
$24c_s^2\omega_4^2\omega_1^3\omega_2^2 - 60\omega_3^2v_3^2v_1^2\omega_4^2\omega_1\omega_2^3 + 324\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^3 + 8\omega_3^2c_s^2v_1^2\omega_4^2\omega_1\omega_2^3 - 24\omega_3c_s^4\omega_4^2\omega_1^3\omega_2 + 192\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^2 + 144\omega_3^2c_s^4\omega_4^2\omega_2^3 +$
$48\omega_3^2v_3^2v_1^2\omega_4^2\omega_1^3 - 192\omega_3^2v_3^2\omega_4^2v_1^2\omega_2^2 + 8\omega_3^2v_1^2\omega_4^2\omega_1\omega_2^3 - 24c_s^2v_1^2\omega_4^2\omega_1^3\omega_2^2 + 324\omega_3^2c_s^4\omega_1^2\omega_2^3 - 72\omega_3^2c_s^4\omega_4^2v_1^2\omega_2 + 56\omega_3c_s^2\omega_4^2\omega_1\omega_2^3 - 84c_s^2v_1^2\omega_4^2\omega_1^2\omega_2^3 -$
$56\omega_3c_s^2v_1^2\omega_4^2\omega_1\omega_2^3 - 432\omega_3^2v_3^2c_s^2\omega_4^2\omega_1\omega_2^2 + 96\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2 + 144\omega_3^2c_s^4\omega_4^2\omega_1^3 - 8\omega_3^2\omega_4^2\omega_1\omega_2^2 + 84c_s^2\omega_4^2\omega_1^2\omega_2^3 + 128\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^2 + 72\omega_3^2v_3^2v_1^2\omega_4^2\omega_2^3 +$
$54\omega_3^2c_s^2\omega_1^3\omega_2^3 + 27\omega_3^2c_s^2v_1^2\omega_4\omega_1^3\omega_2^3 + 108\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^3 - 432\omega_3^2v_3^2c_s^2\omega_4^2\omega_1\omega_2^3 + 30\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^2 - 81\omega_3c_s^4\omega_4^2\omega_1^3\omega_2^3 - 104\omega_3^2c_s^2\omega_4^2\omega_2^3 +$
$64\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^3 - 36\omega_3^2v_3^4\omega_4^2\omega_1\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1\omega_2^3 - 432\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^3\omega_2 + 64\omega_3c_s^2v_1^2\omega_4^2\omega_1^2\omega_2^2 + 162c_s^4\omega_4^2\omega_1^3\omega_2^3 + 8\omega_3^2v_1^2\omega_4^2\omega_1^2\omega_2 - 64\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^2 +$
$81\omega_3^2c_s^4\omega_4\omega_1^3\omega_2^3 + 8\omega_3^2\omega_4^2\omega_1^3 + 48\omega_3^2v_3^4\omega_4^2\omega_1^3 - 24\omega_3^2v_3^2v_1^2\omega_4^2\omega_1^2\omega_2 + 10\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^3 - 8\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^2\omega_2 + 112\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2 - 36\omega_3^2v_3^4\omega_4^2\omega_1^3\omega_2 -$
$8\omega_3^2\omega_4^2\omega_1^3\omega_2 + 432\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^3 - 108\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^3 + 8\omega_3c_s^2\omega_4^2\omega_1^3\omega_2 + 864\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^2\omega_2^2 - 8\omega_3c_s^2v_1^2\omega_4^2\omega_1^3\omega_2 + 108\omega_3^2c_s^2v_1^2\omega_1^2\omega_2^3 - 72c_s^4\omega_4^2\omega_1^3\omega_2^2 +$
$108\omega_3c_s^2v_1^2\omega_4^2\omega_1^2\omega_2^3 - 8\omega_3^2v_1^2\omega_4^2\omega_1^3 - 96\omega_3^2v_3^2\omega_4^2\omega_2^3 + 16\omega_3^2\omega_4^2\omega_1^2\omega_2^2 + 72\omega_3^2v_3^4\omega_4^2\omega_1^2\omega_2^2 + 32\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^3 + 10\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^3\omega_2^2 - 176\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^2 -$
$8\omega_3^2\omega_4^2\omega_1^2\omega_2 - 72\omega_3^2v_3^4\omega_4^2\omega_1^2\omega_2 - 10\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^2\omega_2^3 - 60\omega_3^2v_3^2v_1^2\omega_4^2\omega_1^3\omega_2 - 168\omega_3c_s^4\omega_4^2\omega_1\omega_2^3 + 80\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2 - 40\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^3\omega_2 -$
$216\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^2 - 324\omega_3^2c_s^4\omega_4\omega_1^2\omega_2^3 - 96\omega_3^2v_3^2\omega_4^2\omega_1^3 - 8\omega_3^2v_1^2\omega_4^2\omega_2^3 - 252c_s^4\omega_4^2\omega_1^2\omega_2^3 + 96\omega_3^2v_3^2\omega_4^2\omega_1\omega_2^2 - 432\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^2\omega_2 + 8\omega_3^2v_1^2\omega_4^2\omega_1^3\omega_2 +$
$32\omega_3^2c_s^2v_1^2\omega_4^2\omega_2^3 + 120\omega_3^2v_3^2v_1^2\omega_4^2\omega_1^2\omega_2^2 - 10\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2^2 + 32\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^2\omega_2^2 - 54\omega_3^2c_s^2v_1^2\omega_1^3\omega_2^2 - 27\omega_3c_s^2v_1^2\omega_4^2\omega_1^3\omega_2^2 - 16\omega_3^2v_1^2\omega_4^2\omega_1^2\omega_2^2 +$
$24\omega_3^2v_3^4\omega_4^2\omega_2^3 + 8\omega_3^2\omega_4^2\omega_2^3 + 96\omega_3^2v_3^2\omega_4^2\omega_1\omega_2^3 + 432\omega_3^2v_3^2c_s^2\omega_4^2\omega_2^3 + 27\omega_3c_s^2\omega_4^2\omega_1^3\omega_2^3 - 24\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^3)\frac{v_1}{72\omega_3^2\omega_4^2\omega_1^3\omega_2^3}$

coefficient $C^{(2)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_1}$ **at** $\frac{\partial^4 v_1}{\partial x_1\partial x_2\partial x_3^2}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_1} = (144c_s^2v_2^2 - 216v_3^2v_2^2\omega - c_s^4\omega^3 - 216v_3^2c_s^2\omega - 16c_s^4\omega^2 - 36c_s^4 + 84v_3^2c_s^2\omega^2 + 54c_s^4\omega - 6v_3^2v_2^2\omega^3 + 144v_3^2v_2^2 + 84v_3^2v_2^2\omega^2 -$
$6v_3^2c_s^2\omega^3 + 144v_3^2c_s^2 - 168v_3c_s^2v_1\omega^2 - 6c_s^2v_2^2\omega^3 - 288v_3c_s^2v_1 + 432v_3v_2^2v_1\omega + 12v_3c_s^2v_1\omega^3 + 84c_s^2v_2^2\omega^2 - 288v_3v_2^2v_1 - 168v_3v_2^2v_1\omega^2 -$
$216c_s^2v_2^2\omega + 432v_3c_s^2v_1\omega + 12v_3v_2^2v_1\omega^3)\frac{\rho}{12\omega^3}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_1} = (-12\omega_6^2\omega_{19}v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{15} + 24\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{15} +$
$12\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 12\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} - 12\omega_6^2c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} -$
$24\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^3 - 24\omega_6^2\omega_{19}v_3v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 6\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} -$
$6\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 - 24\omega_6^2\omega_{19}v_3c_s^2v_1\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 60\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} +$
$12\omega_6^2\omega_{19}v_3^2c_s^2\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 6\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 6\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 +$
$12\omega_6\omega_{19}c_s^2v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 12\omega_6\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 12\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 +$
$24\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^3 + 12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 36\omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$24\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^3\omega_{15} + 6\omega_6^2\omega_{19}v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 12\omega_6^2\omega_{19}v_3^2v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} -$
$12\omega_6^2\omega_{19}v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 12\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 12\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} +$
$12\omega_6^2v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 24\omega_6^2v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 24\omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} +$
$12\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15} - 24\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^3\omega_{15} -$
$24\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^3\omega_{15} - 12\omega_6^2v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 24\omega_6^2\omega_{19}v_3v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^3\omega_{15} -$
$12\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8^2\omega_5^3\omega_{15} - 60\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{15} - 12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{15} -$
$24\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{15} - 12\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 12\omega_6^2\omega_{19}v_3^2v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8^2\omega_5^3\omega_{15} +$
$12\omega_6^2c_s^4\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 24\omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 12\omega_6\omega_{19}c_s^4\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} -$
$12\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_{15} + 36\omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 12\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} -$
$24\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^3 + 12\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 12\omega_6^2\omega_{19}v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} -$
$12\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 12\omega_6^2\omega_{19}c_s^2v_2^2\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 12\omega_6^2v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} -$
$12\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 + 24\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 12\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_5^3\omega_{15} -$
$12\omega_6^2\omega_{19}v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^3\omega_{15} - 24\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 - 6\omega_6^2\omega_{19}v_3^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 -$
$6\omega_6^2\omega_{19}v_3^2\omega_{16}v_2^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 6\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 6\omega_6^2v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} -$
$12\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 24\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5^3\omega_{15} + 6\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 +$
$6\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 12\omega_6^2\omega_{19}v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8^2\omega_5^3\omega_{15} - 12\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$

$6\omega_6^2\omega_{19}v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 24\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} - 18\omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} -$
$24\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8\omega_5^3\omega_{15} - 12\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 - 12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} +$
$24\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} - 12\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 24\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8^2\omega_5^3\omega_{15} -$
$6\omega_6^2c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 12\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5^3\omega_{15} + 6\omega_6^2c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^3\omega_{15} -$
$12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8\omega_5^3\omega_{15} - 12\omega_6\omega_{19}c_s^4\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 24\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{15} +$
$12\omega_6^2\omega_{19}v_3^2c_s^2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8^2\omega_5^3\omega_{15} + 42\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{15} + 12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{15} +$
$24\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 6\omega_6^2v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 12\omega_6^2\omega_{19}v_3^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^3 -$
$6\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15} - 24\omega_6^2\omega_{19}v_3c_s^2v_1\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8^2\omega_5^3\omega_{15} - 12\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^3\omega_{15} +$
$24\omega_6^2\omega_{19}v_3v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 24\omega_6^2v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 12\omega_6^2v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8^2\omega_5^3\omega_{15} -$
$6\omega_6^2v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 12\omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 - 12\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^3\omega_{15} -$
$24\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 + 24\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 12\omega_6^2v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} +$
$12\omega_6^2\omega_{19}v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} + 12\omega_6^2\omega_{19}v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8\omega_5^3\omega_{15} + 12\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_5^2\omega_{15} -$
$24\omega_6^2v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 24\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8^2\omega_5^3\omega_{15} + 12\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$24\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^3\omega_{15} + 12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8^2\omega_5^3\omega_{15} + 6\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$24\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15} + 24\omega_6^2\omega_{19}v_3v_2^2v_1\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 12\omega_6^2\omega_{19}v_3^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^3\omega_{15} +$
$6\omega_6^2c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 12\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 12\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 -$
$12\omega_6^2\omega_{19}c_s^4\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8^2\omega_5^3\omega_{15} - 6\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 12\omega_6^2\omega_{19}v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{15} +$
$12\omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 12\omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 12\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} +$
$12\omega_6^2\omega_{19}v_3^2v_2^2\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 24\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} + 24\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^3 +$
$12\omega_6^2\omega_{19}v_3^2v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 6\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^3\omega_{15} -$
$12\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 6\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 + 12\omega_6\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 +$
$24\omega_6^2\omega_{19}v_3v_2^2v_1\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 12\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_5^3\omega_{15} - 12\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} -$
$6\omega_6^2c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} + 12\omega_6^2c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} +$
$6\omega_6^2\omega_{19}v_3^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 6\omega_6^2\omega_{19}v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 6\omega_6^2v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} -$
$12\omega_6\omega_{19}c_s^2v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 24\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} - 6\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} -$
$12\omega_6^2\omega_{19}v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^3 - 2\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 24\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} -$
$12\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} - 12\omega_6^2\omega_{19}c_s^2v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} +$
$12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 6\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 12\omega_6^2v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} -$
$24\omega_6^2\omega_{19}v_3c_s^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 24\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 12\omega_6^2\omega_{19}v_3^2v_2^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} -$
$10\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 12\omega_6^2\omega_{19}v_3^2c_s^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 24\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} +$
$12\omega_6^2\omega_{19}v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8\omega_5^3\omega_{15} + 12\omega_6^2\omega_{19}v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15} + 12\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} -$
$24\omega_6^2\omega_{19}v_3^2v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^3\omega_{15} - 12\omega_6^2\omega_{19}v_3c_s^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 24\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^3\omega_{15} +$
$12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^3 + 24\omega_6^2\omega_{19}v_3c_s^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 12\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_5^2\omega_{15} +$
$12\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 - 12\omega_6^2\omega_{19}v_3^2v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^3\omega_{15} - 6\omega_6^2\omega_{19}v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} -$
$12\omega_6^2\omega_{19}c_s^2v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 12\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 12\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} +$
$24\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{15} - 12\omega_6^2\omega_{19}v_3^2c_s^2\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8\omega_5^3\omega_{15} +$
$24\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8^2\omega_5^3\omega_{15} + 12\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15} +$
$12\omega_6^2v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 12\omega_6^2\omega_{19}v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 - 24\omega_6^2v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8^2\omega_5^3\omega_{15} -$
$12\omega_6^2\omega_{19}v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} - 12\omega_6^2v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 6\omega_6^2\omega_{19}v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} +$
$6\omega_6^2\omega_{19}v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 + 12\omega_6^2\omega_{19}c_s^2v_2^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 12\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 -$
$12\omega_6^2\omega_{19}v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 12\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 24\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8\omega_5^3\omega_{15} -$
$24\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15} + 24\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{15} + 12\omega_6^2v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$6\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 12\omega_6^2\omega_{19}v_3^2c_s^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 12\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^3 -$
$24\omega_6^2\omega_{19}v_3c_s^2v_1\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 24\omega_6^2\omega_{19}v_3c_s^2v_1\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 +$
$12\omega_6^2\omega_{19}v_3^2c_s^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 12\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15} - 24\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{15} -$
$12\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 24\omega_6^2v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 12\omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 -$
$12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^3 - 12\omega_6^2\omega_{19}v_3^2v_2^2\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 12\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 -$
$48\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{15} - 6\omega_6^2c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 12\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} -$
$12\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} + 12\omega_6^2c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 6\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} +$
$6\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3 - 12\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_5^3\omega_{15} + 12\omega_6^2\omega_{19}v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} -$
$24\omega_6^2\omega_{19}v_3v_2^2v_1\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 18\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 6\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^3\omega_{15} +$
$12\omega_6^2\omega_{19}v_3^2v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^3\omega_{15} + 24\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^3\omega_{15} - 12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^3\omega_{15} +$
$24\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{15} + 12\omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} - 24\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^3\omega_{15} +$
$12\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^3 - 12\omega_6^2\omega_{19}v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5^3\omega_{15} + 12\omega_6^2v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^3\omega_{15} -$
$24\omega_6^2\omega_{19}v_3^2v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 24\omega_6^2v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 18\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15} -$
$12\omega_6^2\omega_{19}v_3^2c_s^2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 18\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 6\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$12\omega_6^2\omega_{19}c_s^4\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^3\omega_{15} - 24\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{15} - 6\omega_6^2v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$12\omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{15} + 12\omega_6^2\omega_{19}v_3^2c_s^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^3\omega_{15} + 24\omega_6^2\omega_{19}v_3c_s^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^3\omega_{15} +$
$6\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 6\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 18\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} +$
$12\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 24\omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 24\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} +$

$12\omega_6^2\omega_{19}c_s^2v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 24\omega_6^2\omega_{19}v_3c_s^2v_1\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 12\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} -$
$\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 12\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8\omega_5^3\omega_{15} - 12\omega_6^2v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} +$
$12\omega_6\omega_{19}c_s^2v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 24\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 12\omega_6^2\omega_{19}v_3^2v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} +$
$12\omega_6^2v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 24\omega_6^2\omega_{19}v_3c_s^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^3\omega_{15} - 6\omega_6^2v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^3\omega_{15} +$
$24\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^3\omega_{15} - 12\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 12\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8\omega_5^3\omega_{15} +$
$12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5^3\omega_{15} - 12\omega_6^2c_s^4\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8^2\omega_5^3\omega_{15} - 12\omega_6^2\omega_{19}c_s^4\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^3\omega_{15} +$
$24\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 12\omega_6\omega_{19}c_s^4\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15} + 24\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5^3\omega_{15} +$
$24\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 24\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^3\omega_{15} + 12\omega_6^2\omega_{19}v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^3\omega_{15} +$
$6\omega_6^2\omega_{19}v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 36\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} - 12\omega_6^2\omega_{19}v_3^2c_s^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^3\omega_{15} -$
$24\omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15})\frac{\rho}{12\omega_6^2\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^3\omega_{15}}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_1} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_1}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_1} =$
$(-24\omega_6\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} + 12\omega_6\omega_{19}v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} + 24\omega_6\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} +$
$12\omega_6\omega_{19}v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_5^2\omega_{15} + 24\omega_6\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_5\omega_{15} + 12\omega_6\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2 +$
$6\omega_6\omega_{19}v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2 + 24\omega_6v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} + 12\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^2 -$
$24\omega_6\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_5^2\omega_{15} - 12\omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} - 6\omega_6\omega_{19}v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} +$
$12\omega_6\omega_{19}v_3^2v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} + 12\omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_5^2\omega_{15} - 6\omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2 +$
$6\omega_6\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} + 12\omega_6\omega_{19}c_s^4\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} - 6\omega_6\omega_{19}v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5 +$
$12\omega_6\omega_{19}c_s^2v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} - 12\omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_5\omega_{15} + 12\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} +$
$6\omega_6\omega_{19}v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 12\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} + 12\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2 +$
$24\omega_6\omega_{19}v_3c_s^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} + 24\omega_6\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15} - 12\omega_6\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} -$
$6\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15} - 6\omega_6v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} + 12\omega_6v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15} -$
$6\omega_6\omega_{19}v_3^2\omega_{16}v_2^2\omega_7^3\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} - \omega_6\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} - 12\omega_6\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} +$
$12\omega_6\omega_{19}v_3^2v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} + 12\omega_6\omega_{19}c_s^2v_2^2\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} - 12\omega_6v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} -$
$12\omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_5^2\omega_{15} - 12\omega_6\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^2 - 24\omega_6v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} +$
$12\omega_6v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15} + 12\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_5^2\omega_{15} - 12\omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} -$
$24\omega_6\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_5^2\omega_{15} - 6\omega_6\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^3\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} + 24\omega_6\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_5^2\omega_{15} +$
$12\omega_6\omega_{19}v_3^2c_s^2\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} - 12\omega_6\omega_{19}v_3^2c_s^2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} + 24\omega_6\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} +$
$12\omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_5\omega_{15} + 6\omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 24\omega_6\omega_{19}v_3v_2^2v_1\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} +$
$12\omega_6\omega_{19}v_3^2c_s^2\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} + 12\omega_6\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5 + 12\omega_6\omega_{19}c_s^2v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} -$
$6\omega_6\omega_{19}v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} - 24\omega_6\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_5\omega_{15} - 12\omega_6\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} -$
$24\omega_6\omega_{19}v_3v_2^2v_1\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} - 6\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_{15} + 6\omega_6\omega_{19}v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} -$
$12\omega_6\omega_{19}v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15} + 12\omega_6\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_7^3\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} - 12\omega_6c_s^4\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15} +$
$12\omega_6\omega_{19}v_3^2c_s^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} - 12\omega_6\omega_{19}v_3^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} + 12\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} -$
$12\omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_5^2\omega_{15} + 12\omega_6\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^2 + 12\omega_6\omega_{19}v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_5^2\omega_{15} +$
$12\omega_6\omega_{19}c_s^2v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} + 12\omega_6\omega_{19}v_3^2v_2^2\omega_7^3\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} - 6\omega_6\omega_{19}v_3^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2 +$
$12\omega_6\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} - 12\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_5^2\omega_{15} - 12\omega_6\omega_{19}c_s^4\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} +$
$12\omega_6\omega_{19}v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_5\omega_{15} - 12\omega_6\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2 - 24\omega_6\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} +$
$24\omega_6\omega_{19}v_3c_s^2v_1\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} - 24\omega_6\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^2 + 24\omega_6\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_5^2\omega_{15} -$
$6\omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} + 24\omega_6\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_5^2\omega_{15} - 18\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} +$
$12\omega_6\omega_{19}v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} + 12\omega_6\omega_{19}v_3^2v_2^2\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} - 12\omega_6\omega_{19}v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15} +$
$12\omega_6\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} - 6\omega_6c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15} + 12\omega_6c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} +$
$6\omega_6\omega_{19}v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} - 12\omega_6\omega_{19}v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_5^2\omega_{15} - 24\omega_6\omega_{19}v_3v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} -$
$24\omega_6v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15} - 24\omega_6\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_5\omega_{15} + 12\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} +$
$12\omega_6v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} + 6\omega_6\omega_{19}v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2 + 24\omega_6\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} +$
$24\omega_6\omega_{19}v_3c_s^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} - 24\omega_6\omega_{19}v_3v_2^2v_1\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} + 12\omega_6\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2 +$
$12\omega_6\omega_{19}c_s^2v_2^2\omega_7^3\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} - 24\omega_6\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_5^2\omega_{15} + 12\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_5^2\omega_{15} +$
$24\omega_6\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} + 12\omega_6\omega_{19}v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_5^2\omega_{15} + 12\omega_6\omega_{19}v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} -$
$12\omega_6\omega_{19}v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_5^2\omega_{15} + 24\omega_6\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} - 12\omega_6v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} -$
$12\omega_6\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15} + 12\omega_6\omega_{19}v_3^2c_s^2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} - 6\omega_6\omega_{19}v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} +$
$12\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_{15} + 12\omega_6\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} + 6\omega_6v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} -$
$2\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} - 12\omega_6\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} - 6\omega_6\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2 +$
$6\omega_6\omega_{19}v_3^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} - 12\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5 - 12\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_5\omega_{15} -$
$6\omega_6\omega_{19}v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5 + 12\omega_6\omega_{19}v_3^2c_s^2\omega_7^3\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} + 12\omega_6\omega_{19}v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_5^2\omega_{15} -$
$12\omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} + 12\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_5\omega_{15} + 12\omega_6\omega_{19}v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_5\omega_{15} +$
$12\omega_6v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15} + 6\omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15} - 12\omega_6\omega_{19}c_s^2v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} -$
$24\omega_6\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^2 - 12\omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} - 6\omega_6v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} -$
$12\omega_6\omega_{19}v_3^2c_s^2\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} - 12\omega_6\omega_{19}v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_5\omega_{15} + 12\omega_6\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2 -$
$12\omega_6\omega_{19}v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} + 12\omega_6\omega_{19}v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_5^2\omega_{15} - 12\omega_6\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2 -$
$12\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_5\omega_{15} - 12\omega_{19}c_s^4\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} - 12\omega_6\omega_{19}c_s^2v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} -$

$24\omega_6\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} - 12\omega_6\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 6\omega_6\omega_{19}v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15} +$
$6\omega_6c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15} - 12\omega_6\omega_{19}v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} + 24\omega_6\omega_{19}v_3v_2^2v_1\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} +$
$12\omega_6\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} + 12\omega_6\omega_{19}v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_5\omega_{15} + 12\omega_6\omega_{19}v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5 -$
$24\omega_6\omega_{19}v_3c_s^2v_1\omega_7^3\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} + 12\omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} - 12\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_5^2\omega_{15} +$
$24\omega_6v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} + 12\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_5^2\omega_{15} - 24\omega_6\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_5^2\omega_{15} -$
$24\omega_6v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15} - 24\omega_6\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} - 18\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} +$
$12\omega_6v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} + 6\omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2 - 6\omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} +$
$6\omega_6c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} + 12\omega_6\omega_{19}v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} - 12\omega_6\omega_{19}v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_5^2\omega_{15} +$
$24\omega_6\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_5^2\omega_{15} + 24\omega_6\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} + 24\omega_6\omega_{19}v_3v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} -$
$24\omega_6\omega_{19}v_3c_s^2v_1\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} - 12\omega_6\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15} - 12\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2 -$
$12\omega_6\omega_{19}c_s^4\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} - 12\omega_6\omega_{19}c_s^2v_2^2\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} - 24\omega_6\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5 -$
$24\omega_6\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_5\omega_{15} + 24\omega_6\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} - 24\omega_6\omega_{19}v_3v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} -$
$12\omega_6\omega_{19}v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_5^2\omega_{15} - 12\omega_6\omega_{19}v_3^2c_s^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} - 6\omega_6v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15} +$
$12\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15} + 12\omega_6v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} + 12\omega_6c_s^4\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} +$
$10\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} + 12\omega_6\omega_{19}v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_5^2\omega_{15} - 12\omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^2 +$
$24\omega_6\omega_{19}v_3c_s^2v_1\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} - 12\omega_6\omega_{19}v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_5^2\omega_{15} - 12\omega_6\omega_{19}v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} +$
$24\omega_6\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_5^2\omega_{15} + 24\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} + 12\omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} +$
$12\omega_6\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} - 12\omega_6\omega_{19}v_3^2v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} + 6\omega_6v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} +$
$12\omega_6\omega_{19}v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_5\omega_{15} + 12\omega_6\omega_{19}v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5 - 12\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_5^2\omega_{15} +$
$24\omega_6\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^2 + 12\omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5 + 12\omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_5\omega_{15} +$
$6\omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} + 12\omega_6v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} - 6\omega_6v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15} -$
$24\omega_6\omega_{19}v_3c_s^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} - 12\omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15} - 24\omega_6\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5 -$
$24\omega_6\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_5\omega_{15} - 12\omega_6\omega_{19}v_3^2v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} - 24\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} +$
$24\omega_6\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_5\omega_{15} + 12\omega_{19}c_s^4\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} - 12\omega_6\omega_{19}v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^2 -$
$12\omega_6\omega_{19}v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} - 12\omega_6\omega_{19}v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_5^2\omega_{15} - 6\omega_6v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} -$
$12\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} - 12\omega_6v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} + 24\omega_6\omega_{19}v_3v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} -$
$12\omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_5^2\omega_{15} + 12\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5 + 24\omega_6\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^2 -$
$24\omega_6\omega_{19}v_3c_s^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} - 12\omega_6\omega_{19}v_3^2c_s^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} + 12\omega_6\omega_{19}v_3^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^2 +$
$24\omega_6\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_5^2\omega_{15} + 24\omega_6\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15} - 12\omega_6\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} -$
$6\omega_6c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 18\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} + 6\omega_6\omega_{19}v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} -$
$12\omega_6\omega_{19}v_3^2v_2^2\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} - 24\omega_6\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_5^2\omega_{15} - 12\omega_6\omega_{19}v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} -$
$12\omega_6\omega_{19}v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_5\omega_{15} - 6\omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5 + 6\omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} -$
$24\omega_6v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} + 12\omega_6v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15} + 12\omega_{19}c_s^4\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} -$
$6\omega_6c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} - 12\omega_6\omega_{19}v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} - 12\omega_6\omega_{19}v_3^2v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} +$
$6\omega_6\omega_{19}v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15} + 12\omega_6c_s^4\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15} - 24\omega_6\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} -$
$12\omega_6\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} - 24\omega_6\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_5^2\omega_{15} - 12\omega_6c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} +$
$12\omega_6\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5 - 12\omega_6\omega_{19}c_s^2v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} - 6\omega_6\omega_{19}v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} +$
$12\omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_5^2\omega_{15} - 12\omega_6\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} + 12\omega_6\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5 -$
$216\omega_3^2v_3^2c_s^2\omega_4\omega_1^2\omega_5\omega_2^3 + 144\omega_3^2v_3^2v_1^2\omega_4^2\omega_1^3\omega_5 + 60\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^3\omega_5\omega_2^2 + 12\omega_3v_3^4\omega_4^2\omega_1\omega_5\omega_2^3 - 48\omega_3^2v_1^2\omega_4^2\omega_1^2\omega_5\omega_2^2 + 160\omega_3c_s^4\omega_4^2\omega_1\omega_5\omega_2^3 +$
$2\omega_3^2v_3^2\omega_4^2\omega_1^3\omega_5\omega_2^2 - 54\omega_3v_3^4\omega_4^2\omega_1^3\omega_5\omega_2^3 - 88\omega_3^2c_s^2\omega_4^2\omega_5\omega_2^3 - 72\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^3 + 72\omega_3c_s^4\omega_4^2\omega_1^3\omega_5\omega_2^3 - 348\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^3\omega_5\omega_2 + 24\omega_3^2v_1^2\omega_4^2\omega_1^2\omega_5\omega_2 -$
$48\omega_3^2v_3^2\omega_4^2\omega_1\omega_5\omega_2^3 + 8\omega_3^2\omega_4^2\omega_5\omega_2^3 - 96\omega_3^2v_3^4\omega_4^2\omega_5\omega_2^3 + 108\omega_3v_3^2c_s^2\omega_4^2\omega_1^2\omega_5\omega_2^2 - 24\omega_3^2v_3^2c_s^2\omega_4^2\omega_1\omega_5\omega_2^2 + 36\omega_3^2c_s^2\omega_4^2\omega_1\omega_5\omega_2^3 + 162\omega_3c_s^2v_1^2\omega_4^2\omega_1^3\omega_5\omega_2^3 -$
$72\omega_3c_s^2\omega_4^2\omega_1^3\omega_5\omega_2^3 - 216\omega_3^2v_3^2c_s^2\omega_4^2\omega_5\omega_2^3 - 2\omega_3^2v_3^2\omega_4^2\omega_1^3\omega_5\omega_2^2 + 54\omega_3v_3^2\omega_4^2\omega_1^3\omega_5\omega_2^3 + 8\omega_3^2c_s^4\omega_4^2\omega_1\omega_5\omega_2^3 + 108\omega_3^2v_3^4\omega_4^2\omega_1\omega_5\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1\omega_5\omega_2^3 +$
$64\omega_3^2c_s^2\omega_4^2\omega_1\omega_5\omega_2^2 + 300\omega_3^2v_3^2c_s^2\omega_4^2\omega_1\omega_5\omega_2^3 + 8\omega_3^2\omega_4^2\omega_1^3\omega_5 + 48\omega_3^2v_3^4\omega_4^2\omega_1^3\omega_5 - 180\omega_3c_s^2v_1^2\omega_4^2\omega_1^3\omega_5\omega_2^2 + 72\omega_3^2v_3^2\omega_4^2\omega_1\omega_5\omega_2^2 - 72\omega_3^2v_3^2v_1^2\omega_4^2\omega_1^2\omega_5\omega_2 -$
$108\omega_3v_3^2c_s^2\omega_4\omega_1^3\omega_5\omega_2^2 - 72\omega_3v_3^2c_s^2\omega_4^2\omega_1^2\omega_5\omega_2^3 - 648\omega_3^2c_s^2v_1^2\omega_4\omega_1\omega_5\omega_2^3 + 36\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_5\omega_2 - 72\omega_3c_s^4\omega_4^2\omega_1^3\omega_5\omega_2^2 - 40\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_5 -$
$96\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^2\omega_5\omega_2 + 72\omega_3v_3^4\omega_4^2\omega_1^3\omega_5\omega_2^2 + 132\omega_3^2v_3^2\omega_4^2\omega_1^3\omega_5\omega_2 + 36\omega_3v_3^4\omega_4\omega_1^2\omega_5\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1\omega_5\omega_2^2 + 6\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^3\omega_5\omega_2^2 + 24\omega_3^2v_3^4\omega_4^2\omega_1\omega_5\omega_2^2 -$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_1} = C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_1}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_1} = (-12\omega_3^3\omega_1 + 12\omega_3\omega_{13}\omega_1\omega_2 - 6\omega_3^3\omega_{13}\omega_1 - 12\omega_3^2\omega_1^2 - \omega_3^3\omega_{13}\omega_1^2\omega_2 + 12\omega_3\omega_{13}\omega_1^2 - 12\omega_3^2\omega_1\omega_2 - 2\omega_3^3\omega_{13}\omega_1^2 - 2\omega_3^2\omega_{13}\omega_1^2\omega_2 +$
$12\omega_3^3\omega_1^2 - 12\omega_3^3\omega_1^2\omega_2 + 12\omega_3^3\omega_{13} - 12\omega_3^3\omega_2 + 24\omega_3^3\omega_1\omega_2 - 6\omega_3^2\omega_{13}\omega_1\omega_2 - 24\omega_{13}\omega_1^2\omega_2 + 24\omega_3\omega_{13}\omega_1^2\omega_2 + 12\omega_3^2\omega_1^2\omega_2 - 6\omega_3^2\omega_{13}\omega_1^2)\frac{c_s^4\rho}{12\omega_3^3\omega_{13}\omega_1^2\omega_2}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_1} =$
$(72v_3^2\omega_4^2\omega_1^2\omega_5\omega_2^3 + 24\omega_3v_3^2\omega_4^2\omega_1^3\omega_5\omega_2 - 9\omega_3v_3^4\omega_4^2\omega_1^3\omega_5\omega_2^3 - 24\omega_3^2v_1^2\omega_4^2\omega_5\omega_2^3 + 18\omega_3^2v_3^4\omega_4^2\omega_1^3\omega_5\omega_2^2 - 162\omega_3^2v_3^2c_s^2\omega_1^3\omega_5\omega_2^3 - 144\omega_3^2v_3^4\omega_4\omega_1^2\omega_5\omega_2^3 +$
$4\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_5\omega_2^2 - 16\omega_3c_s^2\omega_4^2\omega_1^3\omega_5\omega_2 + 288\omega_3^2c_s^4\omega_4\omega_1^2\omega_5\omega_2^3 + 48\omega_3c_s^2v_1^2\omega_4^2\omega_1^3\omega_5\omega_2 - 72v_3^4\omega_4^2\omega_1^2\omega_5\omega_2^3 + 360\omega_3^2v_3^2v_1^2\omega_4^2\omega_1^2\omega_5\omega_2^2 -$
$54\omega_3^2v_3^4\omega_1^3\omega_5\omega_2^3 - 288\omega_3^2c_s^2\omega_4\omega_1^2\omega_5\omega_2^3 + 288\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^3 - 108\omega_3^2v_3^2c_s^2\omega_4\omega_1^2\omega_5\omega_2^2 - 4\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_5\omega_2^2 + 16\omega_3c_s^4\omega_4^2\omega_1^3\omega_5\omega_2 + 240\omega_3^2c_s^2v_1^2\omega_4^2\omega_5\omega_2^3 +$
$144\omega_3^2v_3^2\omega_4\omega_1^2\omega_5\omega_2^3 - 162\omega_3^2c_s^2v_1^2\omega_4\omega_1^3\omega_5\omega_2^3 + 9\omega_3v_3^2\omega_4^2\omega_1^3\omega_5\omega_2^3 + 162v_3^2c_s^2\omega_4^2\omega_1^3\omega_5\omega_2^3 - 24\omega_3v_3^4\omega_4^2\omega_1^3\omega_5\omega_2 + 216\omega_3^2v_3^2v_1^2\omega_4^2\omega_5\omega_2^3 -$
$18\omega_3^2v_3^2\omega_4^2\omega_1^3\omega_5\omega_2^2 + 132\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^2\omega_5\omega_2^2 - 24\omega_3^2v_1^2\omega_4^2\omega_1^3\omega_5 - 6\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_5\omega_2^3 - 36\omega_3^2v_3^4\omega_4\omega_1^2\omega_5\omega_2^2 - 160\omega_3c_s^2\omega_4^2\omega_1\omega_5\omega_2^3 - 108\omega_3^2v_3^2\omega_1^2\omega_5\omega_2^3 -$
$12\omega_3v_3^2\omega_4^2\omega_1\omega_5\omega_2^3 + 36\omega_3^2v_3^2\omega_4\omega_1^2\omega_5\omega_2^2 - 6\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^2\omega_5\omega_2^3 + 24\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^3\omega_5 - 108v_3^2c_s^2\omega_4^2\omega_1^3\omega_5\omega_2^2 + 336\omega_3c_s^2v_1^2\omega_4^2\omega_1\omega_5\omega_2^3 -$
$216\omega_3^2v_3^2c_s^2\omega_4\omega_1^2\omega_5\omega_2^3 + 144\omega_3^2v_3^2v_1^2\omega_4^2\omega_1^3\omega_5 + 60\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^3\omega_5\omega_2^2 + 12\omega_3v_3^4\omega_4^2\omega_1\omega_5\omega_2^3 - 48\omega_3^2v_1^2\omega_4^2\omega_1^2\omega_5\omega_2^2 + 160\omega_3c_s^4\omega_4^2\omega_1\omega_5\omega_2^3 +$
$2\omega_3^2v_3^2\omega_4^2\omega_1^3\omega_5\omega_2^2 - 54\omega_3v_3^4\omega_4^2\omega_1^3\omega_5\omega_2^3 - 88\omega_3^2c_s^2\omega_4^2\omega_5\omega_2^3 - 72\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^3 + 72\omega_3c_s^4\omega_4^2\omega_1^3\omega_5\omega_2^3 - 348\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^3\omega_5\omega_2 + 24\omega_3^2v_1^2\omega_4^2\omega_1^2\omega_5\omega_2 -$
$48\omega_3^2v_3^2\omega_4^2\omega_1\omega_5\omega_2^3 + 8\omega_3^2\omega_4^2\omega_5\omega_2^3 - 96\omega_3^2v_3^4\omega_4^2\omega_5\omega_2^3 + 108\omega_3v_3^2c_s^2\omega_4^2\omega_1^2\omega_5\omega_2^2 - 24\omega_3^2v_3^2c_s^2\omega_4^2\omega_1\omega_5\omega_2^2 + 36\omega_3^2c_s^2\omega_4^2\omega_1\omega_5\omega_2^3 + 162\omega_3c_s^2v_1^2\omega_4^2\omega_1^3\omega_5\omega_2^3 -$
$72\omega_3c_s^2\omega_4^2\omega_1^3\omega_5\omega_2^3 - 216\omega_3^2v_3^2c_s^2\omega_4^2\omega_5\omega_2^3 - 2\omega_3^2v_3^2\omega_4^2\omega_1^3\omega_5\omega_2^2 + 54\omega_3v_3^2\omega_4^2\omega_1^3\omega_5\omega_2^3 + 8\omega_3^2c_s^4\omega_4^2\omega_1\omega_5\omega_2^3 + 108\omega_3^2v_3^4\omega_4^2\omega_1\omega_5\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1\omega_5\omega_2^3 +$
$64\omega_3^2c_s^2\omega_4^2\omega_1\omega_5\omega_2^2 + 300\omega_3^2v_3^2c_s^2\omega_4^2\omega_1\omega_5\omega_2^3 + 8\omega_3^2\omega_4^2\omega_1^3\omega_5 + 48\omega_3^2v_3^4\omega_4^2\omega_1^3\omega_5 - 180\omega_3c_s^2v_1^2\omega_4^2\omega_1^3\omega_5\omega_2^2 + 72\omega_3^2v_3^2\omega_4^2\omega_1\omega_5\omega_2^2 - 72\omega_3^2v_3^2v_1^2\omega_4^2\omega_1^2\omega_5\omega_2 -$
$108\omega_3v_3^2c_s^2\omega_4\omega_1^3\omega_5\omega_2^2 - 72\omega_3v_3^2c_s^2\omega_4^2\omega_1^2\omega_5\omega_2^3 - 648\omega_3^2c_s^2v_1^2\omega_4\omega_1\omega_5\omega_2^3 + 36\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_5\omega_2 - 72\omega_3c_s^4\omega_4^2\omega_1^3\omega_5\omega_2^2 - 40\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_5 -$
$96\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^2\omega_5\omega_2 + 72\omega_3v_3^4\omega_4^2\omega_1^3\omega_5\omega_2^2 + 132\omega_3^2v_3^2\omega_4^2\omega_1^3\omega_5\omega_2 + 36\omega_3v_3^4\omega_4\omega_1^2\omega_5\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1\omega_5\omega_2^2 + 6\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^3\omega_5\omega_2^2 + 24\omega_3^2v_3^4\omega_4^2\omega_1\omega_5\omega_2^2 -$

$56\omega_3^2c_s^4\omega_4^2\omega_1\omega_5\omega_2^2 - 36\omega_3v_3^2\omega_4\omega_1^2\omega_5\omega_2^3 - 72\omega_3v_3^2\omega_4^2\omega_1^3\omega_5\omega_2^2 - 8\omega_3^2\omega_4^2\omega_1^3\omega_5\omega_2 - 72\omega_3^2v_3^4\omega_4^2\omega_1^3\omega_5\omega_2 + 264\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^3\omega_5 - 28\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_5\omega_2 +$
$72\omega_3c_s^2\omega_4^2\omega_1^3\omega_5\omega_2^2 + 4\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_5\omega_2^3 + 48\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^2\omega_5\omega_2^2 + 108\omega_3^2v_3^2c_s^2\omega_4\omega_1^3\omega_5\omega_2^3 + 18\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_5\omega_2^3 - 36\omega_3^2v_3^2\omega_4\omega_1^3\omega_5\omega_2^2 -$
$36v_3^4\omega_4^2\omega_1^3\omega_5\omega_2^2 - 72\omega_3v_3^2c_s^2\omega_4^2\omega_1^3\omega_5\omega_2 + 36\omega_3^2v_3^4\omega_4\omega_1^3\omega_5\omega_2^2 - 18\omega_3^2v_3^4\omega_4^2\omega_1^2\omega_5\omega_2^3 - 27\omega_3c_s^2v_2^2\omega_4^2\omega_1^3\omega_5\omega_2^3 - 28\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_5\omega_2^3 + 36v_3^2\omega_4^2\omega_1^3\omega_5\omega_2^2 +$
$54\omega_3^2v_3^2\omega_1^3\omega_5\omega_2^3 + 108\omega_3^2v_3^4\omega_1^2\omega_5\omega_2^3 + 54v_3^4\omega_4^2\omega_1^3\omega_5\omega_2^3 - 84\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_5\omega_2^2 - 216v_3^2c_s^2\omega_4^2\omega_1^2\omega_5\omega_2^3 + 6\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^3\omega_5\omega_2^2 - 54\omega_3^2v_3^2\omega_4\omega_1^3\omega_5\omega_2^3 +$
$180\omega_3v_3^2c_s^2\omega_4^2\omega_1\omega_5\omega_2^3 + 648\omega_3^2c_s^2v_1^2\omega_4\omega_1^2\omega_5\omega_2^3 - 60\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^2\omega_5\omega_2^3 - 72\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_5\omega_2^2 + 108\omega_3^2v_3^2c_s^2\omega_4\omega_1^3\omega_5\omega_2^2 + 72\omega_3^2c_s^2\omega_4\omega_1^3\omega_5\omega_2^3 -$
$54v_3^2\omega_4^2\omega_1^3\omega_5\omega_2^3 - 72\omega_3^2c_s^4\omega_4\omega_1^3\omega_5\omega_2^3 + 56\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_5\omega_2^2 + 54\omega_3^2v_3^4\omega_4\omega_1^3\omega_5\omega_2^3 - 36\omega_3^2v_3^4\omega_4^2\omega_1^2\omega_5\omega_2^2 + 16\omega_3^2\omega_4^2\omega_1^2\omega_5\omega_2^2 + 324\omega_3^2v_3^2c_s^2\omega_1^2\omega_5\omega_2^3 +$
$24\omega_3^2v_3^2\omega_4^2\omega_5\omega_2^3 - 288\omega_3^2c_s^4\omega_4\omega_1\omega_5\omega_2^3 + 36\omega_3^2v_3^4\omega_4\omega_1\omega_5\omega_2^3 + 27\omega_3^2c_s^2v_2^2\omega_4\omega_1^3\omega_5\omega_2^3 + 152\omega_3^2c_s^4\omega_4^2\omega_5\omega_2^3 - 112\omega_3c_s^2\omega_4^2\omega_1^2\omega_5\omega_2^2 - 56\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_5\omega_2 +$
$24\omega_3^2v_3^4\omega_4^2\omega_1^2\omega_5\omega_2 + 2\omega_3^2v_2^2\omega_4^2\omega_1^2\omega_5\omega_2^3 - 12\omega_3v_3^2\omega_4^2\omega_1^2\omega_5\omega_2^2 - 8\omega_3^2\omega_4^2\omega_1^2\omega_5\omega_2 - 36\omega_3^2v_3^2\omega_4\omega_1\omega_5\omega_2^3 - 108\omega_3v_3^2c_s^2\omega_4^2\omega_1^3\omega_5\omega_2^3 - 168\omega_3^2c_s^2v_1^2\omega_4^2\omega_1\omega_5\omega_2^2 -$
$180\omega_3^2v_3^2v_1^2\omega_4^2\omega_1^3\omega_5\omega_2 + 264\omega_3c_s^2v_1^2\omega_4^2\omega_1^2\omega_5\omega_2^2 + 288\omega_3^2c_s^2\omega_4\omega_1\omega_5\omega_2^3 + 24\omega_3^2v_1^2\omega_4^2\omega_1\omega_5\omega_2^3 - 288\omega_3^2v_3^2v_1^2\omega_4^2\omega_1\omega_5\omega_2^2 - 12\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^3\omega_5\omega_2 -$
$2\omega_3^2v_2^4\omega_4^2\omega_1^2\omega_5\omega_2^3 + 12\omega_3v_3^4\omega_4^2\omega_1^2\omega_5\omega_2^2 + 112\omega_3c_s^4\omega_4^2\omega_1^2\omega_5\omega_2^2 + 64\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_5\omega_2 + 32\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_5 - 36\omega_3v_3^2\omega_4^2\omega_1^2\omega_5\omega_2^3 + 36\omega_3v_3^2\omega_4\omega_1^3\omega_5\omega_2^2 -$
$9\omega_3^2v_2^2\omega_4\omega_1^3\omega_5\omega_2^3 + 216\omega_3c_s^2\omega_4^2\omega_1^2\omega_5\omega_2^3 - 6\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^2\omega_5\omega_2^3 - 96\omega_3^2v_3^2\omega_4^2\omega_1^3\omega_5 - 24\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^2\omega_5\omega_2 - 216\omega_3c_s^4\omega_4^2\omega_1^2\omega_5\omega_2^3 - 36\omega_3v_3^4\omega_4\omega_1^3\omega_5\omega_2^2 +$
$9\omega_3^2v_2^4\omega_4\omega_1^3\omega_5\omega_2^3 + 36\omega_3v_3^4\omega_4^2\omega_1^2\omega_5\omega_2^3 - 180\omega_3^2v_3^2v_1^2\omega_4^2\omega_1\omega_5\omega_2^2 + 24\omega_3^2v_1^2\omega_4^2\omega_1\omega_5\omega_2^2 - 468\omega_3c_s^2v_1^2\omega_4^2\omega_1^2\omega_5\omega_2^3 - 108\omega_3^2v_3^2c_s^2\omega_4\omega_1\omega_5\omega_2^3 +$
$180\omega_3v_3^2c_s^2\omega_4^2\omega_1^3\omega_5\omega_2^2 - 120\omega_3^2c_s^2v_1^2\omega_4^2\omega_1\omega_5\omega_2^3 + 108\omega_3v_3^2c_s^2\omega_4\omega_1^2\omega_5\omega_2^3 + 24\omega_3^2v_1^2\omega_4^2\omega_1^3\omega_5\omega_2 - 288\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^3)\frac{\rho}{72\omega_3^2\omega_4^2\omega_1^3\omega_5\omega_2^3}$

coefficient $C^{(2)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_2}$ **at** $\frac{\partial^4 v_2}{\partial x_1 \partial x_2 \partial x_3^2}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_2} = (-36v_3^2v_1\omega + 36v_3v_1^2\omega - v_3^2v_1\omega^3 - 14v_3v_1^2\omega^2 - 24v_3v_1^2 + v_3v_1^2\omega^3 + 14v_3^2v_1\omega^2 + 24c_s^2v_1 - 14v_3c_s^2\omega^2 - 24v_3c_s^2 - c_s^2v_1\omega^3 +$
$v_3c_s^2\omega^3 + 14c_s^2v_1\omega^2 - 36c_s^2v_1\omega + 24v_3^2v_1 + 36v_3c_s^2\omega)\frac{v_2\rho}{\omega^3}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_2} = (-4\omega_6\omega_{19}c_s^2\omega_{16}^2v_1\omega_{10}^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15} + 2\omega_6\omega_{19}c_s^2\omega_{16}^2v_1\omega_{10}^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} +$
$2\omega_6c_s^2\omega_{16}^2v_1\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 4\omega_6\omega_{19}v_3^2\omega_{16}^2v_1\omega_{10}^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 4\omega_6\omega_{19}v_3\omega_{16}v_1^2\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$4\omega_6\omega_{19}v_3^2\omega_{16}v_1\omega_{10}^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_6\omega_{19}c_s^2\omega_{16}^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 4\omega_6\omega_{19}v_3^2\omega_{16}^2v_1\omega_{10}^2\omega_7^2\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} -$
$2\omega_6\omega_{19}v_3c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15} - 4\omega_6\omega_{19}c_s^2\omega_{16}^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} + 4\omega_6\omega_{19}c_s^2\omega_{16}^2v_1\omega_{10}^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5 +$
$4\omega_6\omega_{19}v_3c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} + 8\omega_6\omega_{19}c_s^2\omega_{16}v_1\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 4\omega_6\omega_{19}v_3\omega_{16}^2v_1^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} -$
$2\omega_6v_3^2\omega_{16}^2v_1\omega_{10}^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 4\omega_6\omega_{19}c_s^2\omega_{16}^2v_1\omega_{10}^2\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_6\omega_{19}c_s^2\omega_{16}^2v_1\omega_{10}^3\omega_7^2\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$4\omega_6v_3^2\omega_{16}^2v_1\omega_{10}^2\omega_7^2\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_6\omega_{19}v_3c_s^2\omega_{16}^2v_1^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 4\omega_6\omega_{19}c_s^2\omega_{16}^2v_1\omega_{10}^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$4\omega_6\omega_{19}v_3^2\omega_{16}^2v_1\omega_{10}^3\omega_7^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2 + 6\omega_6\omega_{19}c_s^2\omega_{16}^2v_1\omega_{10}^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} - \omega_6\omega_{19}c_s^2\omega_{16}^2v_1\omega_{10}^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$2\omega_6v_3^2\omega_{16}^2v_1\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_{19}c_s^2\omega_{16}^2v_1\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 4\omega_6\omega_{19}c_s^2\omega_{16}v_1\omega_{10}^2\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$4\omega_6\omega_{19}v_3c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} - 4\omega_6\omega_{19}v_3\omega_{16}^2v_1^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} + 4\omega_6\omega_{19}v_3\omega_{16}v_1^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$4\omega_6\omega_{19}v_3\omega_{16}v_1^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} + 4\omega_6\omega_{19}c_s^2\omega_{16}^2v_1\omega_{10}^3\omega_7^2\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_6\omega_{19}v_3^2\omega_{16}^2v_1\omega_{10}^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$4\omega_6\omega_{19}v_3c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15} + 4\omega_6c_s^2\omega_{16}^2v_1\omega_{10}^2\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 4\omega_6\omega_{19}v_3c_s^2\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} -$
$2\omega_6c_s^2\omega_{16}^2v_1\omega_{10}^2\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 4\omega_6\omega_{19}v_3^2\omega_{16}^2v_1\omega_{10}^2\omega_7^2\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 4\omega_6\omega_{19}v_3\omega_{16}^2v_1^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15} +$
$4\omega_6\omega_{19}v_3^2\omega_{16}v_1\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_6\omega_{19}v_3^2\omega_{16}^2v_1\omega_{10}^2\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5 + 2\omega_6\omega_{19}v_3\omega_{16}^2v_1^2\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$4\omega_6\omega_{19}v_3^2\omega_{16}^2v_1\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5 + 2\omega_6\omega_{19}v_3c_s^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_6\omega_{19}v_3\omega_{16}^2v_1^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$4\omega_6\omega_{19}v_3\omega_{16}^2v_1^2\omega_{10}^2\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 4\omega_6\omega_{19}v_3^2\omega_{16}^2v_1\omega_{10}^2\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15} - 2\omega_6\omega_{19}c_s^2\omega_{16}^2v_1\omega_{10}^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$4\omega_6\omega_{19}v_3c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 4\omega_6\omega_{19}c_s^2\omega_{16}v_1\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 + 4\omega_6\omega_{19}c_s^2\omega_{16}v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$4\omega_6\omega_{19}v_3\omega_{16}^2v_1^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} + 2\omega_6\omega_{19}v_3\omega_{16}^2v_1^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 4\omega_6\omega_{19}c_s^2\omega_{16}v_1\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$4\omega_6\omega_{19}v_3^2\omega_{16}^2v_1\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 + 2\omega_6\omega_{19}v_3^2\omega_{16}^2v_1\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 4\omega_6\omega_{19}v_3^2\omega_{16}v_1\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} -$
$4\omega_6\omega_{19}v_3^2\omega_{16}^2v_1\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 4\omega_6\omega_{19}v_3^2\omega_{16}v_1\omega_{10}^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_6\omega_{19}c_s^2\omega_{16}^2v_1\omega_{10}^3\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$4\omega_6\omega_{19}v_3^2\omega_{16}^2v_1^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} - 8\omega_6\omega_{19}c_s^2\omega_{16}^2v_1\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15} + 4\omega_6\omega_{19}v_3c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} -$
$2\omega_6\omega_{19}c_s^2\omega_{16}^2v_1\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 4\omega_6\omega_{19}v_3\omega_{16}^2v_1^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} + 4\omega_6\omega_{19}c_s^2\omega_{16}v_1\omega_{10}^3\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$4\omega_6\omega_{19}v_3c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} + 4\omega_6\omega_{19}v_3^2\omega_{16}^2v_1\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} + 4\omega_6\omega_{19}v_3c_s^2\omega_{16}\omega_{10}^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$2\omega_6v_3\omega_{16}^2v_1^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 4\omega_6c_s^2\omega_{16}^2v_1\omega_{10}^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_6\omega_{19}v_3^2\omega_{16}^2v_1\omega_{10}^2\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$4\omega_6\omega_{19}v_3c_s^2\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 4\omega_6\omega_{19}v_3c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 + 2\omega_6\omega_{19}v_3c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 +$
$4\omega_6\omega_{19}v_3^2\omega_{16}^2v_1\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} - 4\omega_6\omega_{19}v_3\omega_{16}v_1^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} + 4\omega_6\omega_{19}c_s^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$4\omega_6\omega_{19}v_3\omega_{16}^2v_1^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5\omega_{15} + 2\omega_6\omega_{19}v_3\omega_{16}^2v_1^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 4\omega_6\omega_{19}c_s^2\omega_{16}v_1\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$4\omega_6\omega_{19}v_3^2\omega_{16}^2v_1\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 + 2\omega_6\omega_{19}v_3^2\omega_{16}^2v_1\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 4\omega_6\omega_{19}v_3^2\omega_{16}v_1\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} -$
$4\omega_6\omega_{19}v_3^2\omega_{16}^2v_1\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 4\omega_6\omega_{19}v_3^2\omega_{16}^2v_1\omega_{10}^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_6\omega_{19}c_s^2\omega_{16}^2v_1\omega_{10}^3\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$4\omega_6\omega_{19}v_3^2\omega_{16}^2v_1^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} - 8\omega_6\omega_{19}c_s^2\omega_{16}^2v_1\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15} + 4\omega_6\omega_{19}v_3c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} -$
$2\omega_6\omega_{19}c_s^2\omega_{16}^2v_1\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 4\omega_6\omega_{19}v_3\omega_{16}^2v_1^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} + 4\omega_6\omega_{19}c_s^2\omega_{16}v_1\omega_{10}^3\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$4\omega_6\omega_{19}v_3c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} + 2\omega_6\omega_{19}v_3^2\omega_{16}^2v_1\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 4\omega_6\omega_{19}v_3c_s^2\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$2\omega_6v_3\omega_{16}^2v_1^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 4\omega_6c_s^2\omega_{16}^2v_1\omega_{10}^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_6\omega_{19}v_3^2\omega_{16}^2v_1\omega_{10}^2\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$4\omega_6\omega_{19}v_3c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 4\omega_6\omega_{19}v_3^2\omega_{16}^2v_1\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 + 4\omega_6\omega_{19}v_3^2\omega_{16}^2v_1\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} +$
$4\omega_6\omega_{19}v_3\omega_{16}^2v_1^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} + 4\omega_6\omega_{19}c_s^2\omega_{16}^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 4\omega_6\omega_{19}c_s^2\omega_{16}^2v_1\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_{15} +$
$4\omega_6\omega_{19}v_3^2\omega_{16}v_1\omega_{10}^2\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_6\omega_{19}c_s^2\omega_{16}^2v_1\omega_{10}^3\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15} + 4\omega_6\omega_{19}v_3^2\omega_{16}^2v_1\omega_{10}^2\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} +$

$$2\omega_6\omega_{19}v_3c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5\omega_{15} + 2\omega_6\omega_{19}v_3\omega_{16}^2v_1^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5\omega_{15} - 4\omega_6\omega_{19}v_3^2\omega_{16}^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} -$$
$$4\omega_6\omega_{19}v_3c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 4\omega_6\omega_{19}v_3^2\omega_{16}^2v_1\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} + 4\omega_6\omega_{19}v_3\omega_{16}^2v_1^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 -$$
$$4\omega_6\omega_{19}c_s^2\omega_{16}^2v_1\omega_{10}^2\omega_7^2\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_6v_3^2\omega_{16}^2v_1\omega_{10}^2\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 4\omega_6v_3^2\omega_{16}^2v_1\omega_{10}^2\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$$
$$4\omega_6\omega_{19}v_3^2\omega_{16}v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 4\omega_6\omega_{19}v_3c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 + 2\omega_6\omega_{19}c_s^2\omega_{16}^2v_1\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$$
$$4\omega_6\omega_{19}v_3^2\omega_{16}^2v_1^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} - 2\omega_6\omega_{19}c_s^2\omega_{16}^2v_1\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5 - 4\omega_6\omega_{19}v_3c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_5^2\omega_{15} +$$
$$4\omega_6\omega_{19}v_3^2\omega_{16}^2v_1^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} - 2\omega_6v_3^2\omega_{16}^2v_1^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 4\omega_6v_3^2\omega_{16}^2v_1\omega_{10}^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$$
$$2\omega_6v_3c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_{19}c_s^2\omega_{16}^2v_1\omega_{10}^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} + 8\omega_6\omega_{19}c_s^2\omega_{16}^2v_1\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$$
$$4\omega_6\omega_{19}v_3c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_6\omega_{19}c_s^2\omega_{16}^2v_1\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{16}^2v_1\omega_{10}^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$$
$$4\omega_6\omega_{19}c_s^2\omega_{16}v_1\omega_{10}^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 4\omega_6\omega_{19}v_3^2\omega_{16}^2v_1\omega_{10}^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} - 8\omega_6\omega_{19}c_s^2\omega_{16}^2v_1\omega_{10}^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$$
$$8\omega_6\omega_{19}c_s^2\omega_{16}^2v_1\omega_{10}^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15} + 4\omega_6\omega_{19}v_3\omega_{16}v_1^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 4\omega_6\omega_{19}v_3c_s^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 -$$
$$4\omega_6\omega_{19}v_3\omega_{16}^2v_1^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 - 4\omega_6v_3c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 4\omega_6\omega_{19}c_s^2\omega_{16}^2v_1\omega_{10}^2\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15} +$$
$$2\omega_6v_3c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 4\omega_6\omega_{19}v_3\omega_{16}^2v_1^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 4\omega_6\omega_{19}v_3c_s^2\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$$
$$2\omega_6v_3\omega_{16}^2v_1^2\omega_{10}^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 4\omega_6v_3\omega_{16}^2v_1^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_6\omega_{19}c_s^2\omega_{16}^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$$
$$4\omega_6\omega_{19}v_3^2\omega_{16}^2v_1\omega_{10}^2\omega_7^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} + 4\omega_6\omega_{19}v_3c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 4\omega_6\omega_{19}v_3c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$$
$$4\omega_6\omega_{19}v_3c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} - 4\omega_6\omega_{19}v_3\omega_{16}^2v_1^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} - 2\omega_{19}c_s^2\omega_{16}^2v_1\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} +$$
$$4\omega_6v_3c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 4\omega_6\omega_{19}v_3c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5 - 4\omega_6\omega_{19}v_3\omega_{16}^2v_1^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5 +$$
$$4\omega_6\omega_{19}v_3\omega_{16}v_1^2\omega_{10}^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 4\omega_6\omega_{19}c_s^2v_1\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_6\omega_{19}c_s^2\omega_{16}^2v_1\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 +$$
$$4\omega_6v_3\omega_{16}^2v_1^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 4\omega_6\omega_{19}v_3^2\omega_{16}v_1\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 14\omega_6\omega_{19}c_s^2\omega_{16}^2v_1\omega_{10}^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} +$$
$$12\omega_6\omega_{19}c_s^2\omega_{16}^2v_1\omega_{10}^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_6\omega_{19}c_s^2\omega_{16}^2v_1\omega_{10}^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_5^2\omega_{15} + 2\omega_6\omega_{19}v_3c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5 -$$
$$2\omega_6\omega_{19}v_3^2\omega_{16}^2v_1\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 4\omega_6\omega_{19}c_s^2\omega_{16}^2v_1\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_{15} - 4\omega_6\omega_{19}v_3c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} +$$
$$2\omega_6\omega_{19}v_3\omega_{16}^2v_1^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5 + 2\omega_6\omega_{19}v_3^2\omega_{16}^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 4\omega_6\omega_{19}v_3c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$$
$$4\omega_6\omega_{19}v_3^2\omega_{16}^2v_1^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15} - 2\omega_6\omega_{19}v_3c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_6\omega_{19}v_3\omega_{16}^2v_1^2\omega_{10}^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$$
$$4\omega_6\omega_{19}v_3\omega_{16}^2v_1^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 4\omega_6\omega_{19}v_3^2\omega_{16}v_1\omega_{10}^2\omega_7^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} + 2\omega_6\omega_{19}v_3\omega_{16}^2v_1^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$$
$$2\omega_6\omega_{19}c_s^2\omega_{16}^2v_1\omega_{10}^2\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5\omega_{15} - 4\omega_6\omega_{19}c_s^2\omega_{16}v_1\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15} + 2\omega_6\omega_{19}c_s^2\omega_{16}^2v_1\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15})\frac{v_2\rho}{2\omega_6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}}$$

$$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_2}$$

$$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_2} = (-\omega_{19}v_3^2\omega_{16}v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 + 2\omega_{19}c_s^2v_1\omega_7\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} - 2\omega_{19}v_3\omega_{16}v_1^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{15} +$$
$$2\omega_{19}v_3^2\omega_{16}v_1\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_{15} + 2c_s^2\omega_{16}v_1\omega_{10}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - \omega_{19}v_3^2\omega_{16}v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5 - 2v_3\omega_{16}v_1^2\omega_{10}\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} -$$
$$2\omega_{19}v_3^2\omega_{16}v_1\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_5\omega_{15} + 2\omega_{19}c_s^2\omega_{16}v_1\omega_{10}\omega_{23}\omega_{20}\omega_5\omega_{15} + \omega_{19}c_s^2\omega_{16}v_1\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_{19}v_3c_s^2\omega_{16}\omega_{10}\omega_{23}\omega_{17}\omega_5\omega_{15} +$$
$$2\omega_{19}c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{20}\omega_8\omega_5 - 2\omega_{19}v_3\omega_{16}v_1^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} - \omega_{19}v_3\omega_{16}v_1^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_{19}v_3v_1^2\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} +$$
$$v_3c_s^2\omega_{16}\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_{19}v_3c_s^2\omega_7\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} + 2\omega_{19}v_3c_s^2\omega_{16}\omega_{10}\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_{19}v_3c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{15} +$$
$$2\omega_{19}v_3^2\omega_{16}v_1\omega_7\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} + 2\omega_{19}c_s^2\omega_{16}v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_5\omega_{15} + 2\omega_{19}v_3v_1^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_{19}v_3^2\omega_{16}v_1\omega_{10}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} +$$
$$2\omega_{19}c_s^2\omega_{16}v_1\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_{15} + 2\omega_{19}v_3v_1^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} + 2v_3\omega_{16}v_1^2\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_{19}v_3c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{15} -$$
$$2\omega_{19}c_s^2\omega_{16}v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_5\omega_{15} + v_3\omega_{16}v_1^2\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_{19}v_3c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_5\omega_{15} + 2\omega_{19}v_3c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8\omega_5 -$$
$$v_3c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_{19}v_3^2\omega_{16}v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8\omega_{15} - 2\omega_{19}c_s^2v_1\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_{19}v_3^2\omega_{16}v_1\omega_{10}\omega_{23}\omega_{20}\omega_5\omega_{15} -$$
$$\omega_{19}v_3c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5 - 2\omega_{19}v_3\omega_{16}v_1^2\omega_{10}\omega_{23}\omega_{17}\omega_5\omega_{15} - \omega_{19}v_3\omega_{16}v_1^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_{15} +$$
$$2\omega_{19}v_3^2\omega_{16}v_1\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{16}v_1\omega_{10}\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} + \omega_{19}v_3\omega_{16}v_1^2\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_{19}v_3c_s^2\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} +$$
$$\omega_{19}v_3^2\omega_{16}v_1\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} + \omega_{19}v_3\omega_{16}v_1^2\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_8\omega_{15} + 2\omega_{19}v_3^2\omega_{16}v_1\omega_7\omega_{23}\omega_{20}\omega_8\omega_5 + \omega_{19}c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} +$$
$$\omega_{19}v_3^2\omega_{16}v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5 + 2\omega_{19}c_s^2\omega_{16}v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} - \omega_{19}v_3\omega_{16}v_1^2\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 2v_3^2\omega_{16}v_1\omega_{10}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} -$$
$$\omega_{19}c_s^2\omega_{16}v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 - \omega_{19}v_3c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} - 2v_3c_s^2\omega_{16}\omega_{10}\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_{19}v_3c_s^2\omega_{16}\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} +$$
$$2\omega_{19}c_s^2\omega_{16}v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8 - v_3^2\omega_{16}v_1\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_{19}c_s^2v_1\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - \omega_{19}c_s^2\omega_{16}v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} -$$
$$v_3\omega_{16}v_1^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - \omega_{19}c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5 - 2\omega_{19}c_s^2\omega_{16}v_1\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{16}v_1\omega_{10}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} +$$
$$2\omega_{19}v_3\omega_{16}v_1^2\omega_7\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} - 2\omega_{19}v_3^2\omega_{16}v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_5\omega_{15} + \omega_{19}v_3c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_8\omega_{15} - 2\omega_{19}c_s^2\omega_{16}v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8\omega_{15} +$$
$$\omega_{19}v_3c_s^2\omega_{16}\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_{19}c_s^2v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + \omega_{19}c_s^2\omega_{16}v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_{15} + 2\omega_{19}v_3^2\omega_{16}v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8 -$$
$$c_s^2\omega_{16}v_1\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_{19}v_3v_1^2\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_{19}v_3^2\omega_{16}v_1\omega_{10}\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} + 2\omega_{19}v_3\omega_{16}v_1^2\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_5\omega_{15} +$$
$$2\omega_{19}v_3\omega_{16}v_1^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8\omega_5 - 2c_s^2\omega_{16}v_1\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_{19}v_3\omega_{16}v_1^2\omega_{10}\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_{19}v_3^2v_1\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} -$$
$$2\omega_{19}v_3v_1^2\omega_7\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} - 2\omega_{19}v_3\omega_{16}v_1^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_5\omega_{15} + 2\omega_{19}v_3\omega_{16}v_1^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{15} -$$
$$\omega_{19}v_3^2\omega_{16}v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_{19}v_3^2v_1\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_{19}v_3c_s^2\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_{19}v_3c_s^2\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} -$$
$$2\omega_{19}c_s^2v_1\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_{19}v_3\omega_{16}v_1^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_5\omega_{15} - 2\omega_{19}v_3^2\omega_{16}v_1\omega_7\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} + 2\omega_{19}v_3^2v_1\omega_{10}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} -$$
$$2\omega_{19}v_3c_s^2\omega_{10}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + \omega_{19}v_3^2\omega_{16}v_1\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - \omega_{19}v_3\omega_{16}v_1^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5 - \omega_{19}v_3c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_{15} -$$
$$2\omega_{19}v_3v_1^2\omega_{10}\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} - 2\omega_{19}v_3v_1^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - \omega_{19}c_s^2\omega_{16}v_1\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_8\omega_{15} - 2\omega_{19}v_3^2v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} +$$
$$2\omega_{19}v_3c_s^2\omega_{16}\omega_{10}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 2v_3c_s^2\omega_{16}\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + \omega_{19}v_3c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} -$$
$$2\omega_{19}v_3^2v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} + 2\omega_{19}v_3c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8\omega_{15} + v_3c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} - \omega_{19}c_s^2\omega_{16}v_1\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} +$$
$$2\omega_{19}v_3c_s^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_{19}v_3\omega_{16}v_1^2\omega_{10}\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} - 2\omega_{19}v_3^2\omega_{16}v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8\omega_5 - 2\omega_{19}v_3^2\omega_{16}v_1\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_5\omega_{15} +$$
$$2\omega_{19}v_3c_s^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} - 2\omega_{19}v_3\omega_{16}v_1^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8 + v_3\omega_{16}v_1^2\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_{19}v_3^2\omega_{16}v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{15} -$$
$$2\omega_{19}v_3^2\omega_{16}v_1\omega_{10}\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} - 2v_3\omega_{16}v_1^2\omega_{10}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - \omega_{19}v_3c_s^2\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_{19}v_3c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} +$$
$$2\omega_{19}c_s^2\omega_{16}v_1\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_{19}v_3c_s^2\omega_{16}\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_5\omega_{15} + 2\omega_{19}c_s^2v_1\omega_{10}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} +$$
$$\omega_{19}c_s^2\omega_{16}v_1\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} + \omega_{19}v_3c_s^2\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5 + 2\omega_{19}v_3^2\omega_{16}v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_5\omega_{15} - 2\omega_{19}v_3c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8\omega_5 +$$
$$2c_s^2\omega_{16}v_1\omega_{10}\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} + \omega_{19}v_3c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 - 2\omega_{19}v_3\omega_{16}v_1^2\omega_{10}\omega_{23}\omega_{20}\omega_5\omega_{15} + v_3^2\omega_{16}v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} +$$
$$2\omega_{19}v_3v_1^2\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_{19}v_3c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_5\omega_{15} + 2\omega_{19}v_3^2\omega_{16}v_1\omega_{10}\omega_{23}\omega_{17}\omega_5\omega_{15} - c_s^2\omega_{16}v_1\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} +$$

$2\omega_{19}v_3\omega_{16}v_1^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8\omega_{15} - 2\omega_{19}v_3^2v_1\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_{19}v_3c_s^2\omega_{16}\omega_{10}\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} - 2\omega_{19}v_3\omega_{16}v_1^2\omega_7\omega_{23}\omega_{20}\omega_8\omega_5 +$
$2\omega_{19}v_3c_s^2\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} + 2\omega_{19}v_3\omega_{16}v_1^2\omega_{10}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} +$
$2\omega_{19}v_3^2\omega_{16}v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} - 2\omega_{19}v_3c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_{15} + \omega_{19}c_s^2\omega_{16}v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5 - 2\omega_{19}v_3c_s^2\omega_{10}\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} +$
$\omega_{19}v_3^2\omega_{16}v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_{19}c_s^2\omega_{16}v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{15} + 2\omega_{19}v_3^2v_1\omega_{10}\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{16}v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{15} -$
$2\omega_{19}v_3v_1^2\omega_{10}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{16}v_1\omega_{10}\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} - \omega_{19}v_3^2\omega_{16}v_1\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_8\omega_{15} + 2\omega_{19}v_3c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_5\omega_{15} -$
$2\omega_{19}c_s^2v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} - 2\omega_{19}c_s^2v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{16}v_1\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{16}v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8\omega_5 -$
$\omega_{19}v_3^2\omega_{16}v_1\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + \omega_{19}v_3\omega_{16}v_1^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_{19}c_s^2\omega_{16}v_1\omega_{10}\omega_{23}\omega_{17}\omega_5\omega_{15} - 2\omega_{19}v_3c_s^2\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_8\omega_5 -$
$v_3^2\omega_{16}v_1\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} - 2v_3^2\omega_{16}v_1\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + \omega_{19}v_3\omega_{16}v_1^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 + c_s^2\omega_{16}v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} -$
$2\omega_{19}v_3c_s^2\omega_{16}\omega_{10}\omega_{23}\omega_{20}\omega_5\omega_{15} + 2\omega_{19}v_3\omega_{16}v_1^2\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_5\omega_{15} + 2v_3^2\omega_{16}v_1\omega_{10}\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} + \omega_{19}v_3\omega_{16}v_1^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5 -$
$\omega_{19}v_3\omega_{16}v_1^2\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_{19}v_3\omega_{16}v_1^2\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_{19}c_s^2v_1\omega_{10}\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} + 2\omega_{19}v_3^2\omega_{16}v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{15} -$
$2\omega_{19}v_3c_s^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + \omega_{19}v_3^2\omega_{16}v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_{15} + 2\omega_{19}v_3^2v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} -$
$\omega_{19}v_3c_s^2\omega_{16}\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 2v_3c_s^2\omega_{16}\omega_{10}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_{19}v_3\omega_{16}v_1^2\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_{15})\frac{v_2\rho}{\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15}}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_2} = C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_2}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_2} = 0$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_2} = (9\omega_4\omega_1\omega_2 + 27\omega_3c_s^2\omega_1\omega_2 - 27c_s^2\omega_4\omega_1\omega_2 + 6\omega_3c_s^2\omega_4\omega_1 - 6\omega_3c_s^2\omega_4\omega_2 - 9v_1^2\omega_4\omega_1\omega_2 + 2\omega_3\omega_4\omega_2 + 9\omega_3v_1^2\omega_1\omega_2 + 2\omega_3v_1^2\omega_4\omega_1 -$
$2\omega_3\omega_4\omega_1 - 2\omega_3v_1^2\omega_4\omega_2 - 9\omega_3\omega_1\omega_2)\frac{v_2v_1\rho}{72\omega_3\omega_4\omega_1\omega_2}$

coefficient $C^{(2)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_3}$ **at** $\frac{\partial^4 v_3}{\partial x_1\partial x_2\partial x_3^2}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_3} = (-14v_2^2v_1^2\omega^2 - 24c_s^2v_2^2 + 36c_s^2v_1^2\omega + v_2^2v_1^2\omega^3 - 14c_s^2v_1^2\omega^2 + 36v_2^2v_1^2\omega + c_s^2v_1^2\omega^3 + 28v_3c_s^2v_1\omega^2 + c_s^2v_2^2\omega^3 + 48v_3c_s^2v_1 -$
$72v_3v_2^2v_1\omega - 2v_3c_s^2v_1\omega^3 - 14c_s^2v_2^2\omega^2 + 48v_3v_2^2v_1 + 28v_3v_2^2v_1\omega^2 + 36c_s^2v_2^2\omega - 24v_2^2v_1^2 - 24c_s^2v_1^2 - 72v_3c_s^2v_1\omega - 2v_3v_2^2v_1\omega^3)\frac{\rho}{2\omega^3}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_3} = (-6\omega_{19}^2v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15} - 2\omega_{19}^2c_s^2v_1^2\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_{19}\omega_{16}v_2^2v_1^2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$2\omega_{19}^2v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 4\omega_{19}^2v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 4\omega_{19}^2v_3v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} +$
$2\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + \omega_{19}^2\omega_{16}v_2^2v_1^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5 + 4\omega_{19}^2v_3c_s^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} +$
$\omega_{19}\omega_{16}v_2^2v_1^2\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_{19}^2c_s^2\omega_{16}v_1^2\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15} - 2\omega_{19}\omega_{16}v_2^2v_1^2\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$4\omega_{19}^2v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} + 2\omega_{19}^2\omega_{16}v_2^2v_1^2\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 4\omega_{19}^2v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} -$
$\omega_{19}^2\omega_{16}v_2^2v_1^2\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + \omega_{19}^2\omega_{16}v_2^2v_1^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 4\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15} +$
$2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_{19}^2c_s^2v_1^2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$4\omega_{19}^2v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} - \omega_{19}^2c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + \omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$2\omega_{19}^2\omega_{16}v_2^2v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 - 2\omega_{19}^2c_s^2v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} - 2\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + \omega_{19}^2c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5 -$
$\omega_{19}^2\omega_{16}v_2^2v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 4\omega_{19}^2v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 + 4\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$2\omega_{19}^2v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_{15} + \omega_{19}^2c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_{19}^2\omega_{16}v_2^2v_1^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} -$
$2\omega_{19}^2\omega_{16}v_2^2v_1^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5 - 2\omega_{19}^2v_2^2v_1^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_{19}^2c_s^2v_2^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 6\omega_{19}^2v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} +$
$2\omega_{19}^2v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 4\omega_{19}^2v_3c_s^2v_1\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_{19}^2c_s^2\omega_{16}v_1^2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} +$
$4\omega_{19}^2v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15} + 2\omega_{19}^2v_2^2v_1^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} + 4\omega_{19}^2v_3c_s^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$2\omega_{19}^2\omega_{16}v_2^2v_1^2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} + 2\omega_{19}^2v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_{19}^2v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5 +$
$2\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_{19}^2c_s^2\omega_{16}v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 - 2\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5 + 2\omega_{19}^2c_s^2v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} +$
$2\omega_{19}^2v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15} + 4\omega_{19}^2v_3v_2^2v_1\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_{19}^2c_s^2\omega_{16}v_1^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 +$
$4\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - \omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$4\omega_{19}^2v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5 + 2\omega_{19}^2c_s^2\omega_{16}v_1^2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} - 2\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} +$
$2\omega_{19}^2v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_5\omega_{15} - \omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} -$
$2\omega_{19}^2c_s^2\omega_{16}v_1^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5 - 4\omega_{19}^2v_3c_s^2v_1\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_{19}^2v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$4\omega_{19}^2v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 + 2\omega_{19}^2c_s^2v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_{19}^2c_s^2v_1^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$8\omega_{19}^2v_3c_s^2\omega_{16}v_1\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + \omega_{19}^2c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5\omega_{15} -$
$2\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_{19}^2c_s^2\omega_{16}v_1^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} + 4\omega_{19}^2v_3c_s^2v_1\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$4\omega_{19}^2v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8^2\omega_5 - 4\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$2\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 + 2\omega_{19}^2v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + \omega_{19}^2\omega_{16}v_2^2v_1^2\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5\omega_{15} -$
$2\omega_{19}^2\omega_{16}v_2^2v_1^2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15} + 2\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$4\omega_{19}^2v_3v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} - 8\omega_{19}^2v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} +$
$2\omega_{19}^2c_s^2v_2^2\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - \omega_{19}\omega_{16}v_2^2v_1^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - \omega_{19}^2c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 +$
$2\omega_{19}^2v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_5^2\omega_{15} + 4\omega_{19}^2v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} + 2\omega_{19}^2c_s^2\omega_{16}v_1^2\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$4\omega_{19}^2v_3c_s^2v_1\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} - \omega_{19}^2c_s^2\omega_{16}v_1^2\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 4\omega_{19}^2v_3v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_{19}^2c_s^2v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} +$
$2\omega_{19}^2v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_{15} - 4\omega_{19}^2v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} + \omega_{19}c_s^2\omega_{16}v_1^2\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$

$$4\omega_{19}^2 v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} - 2\omega_{19}c_s^2\omega_{16}v_1^2\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_{19}^2\omega_{16}v_2^2v_1^2\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15} +$$
$$2\omega_{19}^2 v_2^2v_1^2\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_{19}^2c_s^2v_1^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_{19}^2c_s^2\omega_{16}v_1^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5\omega_{15} -$$
$$\omega_{19}^2\omega_{16}v_2^2v_1^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 2\omega_{19}^2\omega_{16}v_2^2v_1^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} - \omega_{19}^2c_s^2\omega_{16}v_1^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15} -$$
$$2\omega_{19}^2 v_2^2v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} + 4\omega_{19}^2v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} - 4\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$$
$$2\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} + 4\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$$
$$4\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_{19}^2c_s^2v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} +$$
$$\omega_{19}^2c_s^2\omega_{16}v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 2\omega_{19}^2v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} +$$
$$6\omega_{19}^2v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} + 4\omega_{19}^2v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} + 4v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$$
$$\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_{19}^2\omega_{16}v_2^2v_1^2\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_{19}^2v_2^2v_1^2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 4\omega_{19}^2v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 +$$
$$2\omega_{19}c_s^2\omega_{16}v_1^2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 4\omega_{19}^2v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5\omega_{15} + \omega_{19}^2c_s^2\omega_{16}v_1^2\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5\omega_{15} +$$
$$2\omega_{19}^2v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 2\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 + \omega_{19}^2c_s^2\omega_{16}v_1^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$$
$$2\omega_{19}^2\omega_{16}v_2^2v_1^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} + \omega_{19}^2\omega_{16}v_2^2v_1^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_{19}^2v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 2\omega_{19}^2c_s^2v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$$
$$4\omega_{19}^2v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15} - 2\omega_{19}^2v_2^2v_1^2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} - 4\omega_{19}^2v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$$
$$4\omega_{19}^2v_3c_s^2v_1\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_{19}^2c_s^2\omega_{16}v_1^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} + 2\omega_{19}^2c_s^2\omega_{16}v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} +$$
$$2\omega_{19}^2v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15} + 2\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5\omega_{15} + 4\omega_{19}^2v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2 +$$
$$\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_{19}^2\omega_{16}v_2^2v_1^2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} +$$
$$2\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 4\omega_{19}^2v_3v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_{19}^2c_s^2v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$$
$$\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_{19}^2\omega_{16}v_2^2v_1^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5\omega_{15} + 2\omega_{19}^2c_s^2\omega_{16}v_1^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} +$$
$$4\omega_{19}^2v_3v_2^2v_1\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} - 4\omega_{19}^2v_3c_s^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - \omega_{19}^2c_s^2\omega_{16}v_1^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 -$$
$$2\omega_{19}^2v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5\omega_{15} - 2\omega_{19}^2c_s^2\omega_{16}v_1^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} - 4\omega_{19}^2v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} +$$
$$2\omega_{19}^2c_s^2v_1^2\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 4\omega_{19}^2v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 4\omega_{19}^2v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} +$$
$$2\omega_{19}^2\omega_{16}v_2^2v_1^2\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - \omega_{19}^2\omega_{16}v_2^2v_1^2\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + \omega_{19}\omega_{16}v_2^2v_1^2\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$$
$$4\omega_{19}^2v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} - 2\omega_{19}\omega_{16}v_2^2v_1^2\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_{19}^2c_s^2\omega_{16}v_1^2\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$$
$$\omega_{19}c_s^2\omega_{16}v_1^2\omega_{10}\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15} - 2\omega_{19}^2c_s^2v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} -$$
$$4\omega_{19}^2v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} - \omega_{19}^2c_s^2\omega_{16}v_1^2\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 4\omega_{19}^2v_3c_s^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} +$$
$$2\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} + 4\omega_{19}^2v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15} + 2\omega_{19}^2v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$$
$$4\omega_{19}^2v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} - 2\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8\omega_5^2\omega_{15} - 2\omega_{19}^2v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$$
$$2\omega_{19}^2v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_5^2\omega_{15} - 2\omega_{19}^2c_s^2v_2^2\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 4\omega_{19}^2v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^2\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$$
$$2\omega_{19}^2v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 12\omega_{19}^2v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{15} + 2\omega_{19}^2\omega_{16}v_2^2v_1^2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} -$$
$$2\omega_{19}^2v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5 + 10\omega_{19}^2v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_{19}^2c_s^2\omega_{16}v_1^2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8\omega_5^2\omega_{15} +$$
$$\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - \omega_{19}^2\omega_{16}v_2^2v_1^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{15} - 12\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$$
$$\omega_{19}^2c_s^2\omega_{16}v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 4\omega_{19}^2v_3v_2^2v_1\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_{19}^2c_s^2v_1^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} -$$
$$2\omega_{19}^2v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + \omega_{19}^2\omega_{16}v_2^2v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 2\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$$
$$2\omega_{19}^2c_s^2\omega_{16}v_1^2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 2\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{20}\omega_8^2\omega_5^2\omega_{15} - \omega_{19}c_s^2\omega_{16}v_1^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$$
$$2\omega_{19}^2v_2^2v_1^2\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 4\omega_{19}^2v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 4\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$$
$$2v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 2\omega_{19}^2v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + \omega_{19}^2c_s^2\omega_{16}v_1^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15})\frac{\rho}{2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{15}}$$

$$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_3} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_3}$$

$$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_3} =$$
$$(4\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{15} + 2\omega_{19}c_s^2\omega_{16}v_1^2\omega_7\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} - 2\omega_{19}v_2^2v_1^2\omega_{10}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} +$$
$$4\omega_{19}v_3c_s^2v_1\omega_{10}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} - \omega_{19}c_s^2\omega_{16}v_2^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_{19}c_s^2v_2^2\omega_{10}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} -$$
$$2\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5 - 2\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} +$$
$$2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_{15} - 4\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_5\omega_{15} - 4\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{10}\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} -$$
$$2v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 4\omega_{19}v_3v_2^2v_1\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_{16}v_2^2v_1^2\omega_{10}\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_{19}c_s^2\omega_{16}v_1^2\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_5\omega_{15} +$$
$$2\omega_{19}c_s^2\omega_{16}v_1^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8\omega_5 + 2\omega_{19}c_s^2v_1^2\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_{19}\omega_{16}v_2^2v_1^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8 - 4\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_5\omega_{15} +$$
$$2\omega_{19}c_s^2\omega_{16}v_1^2\omega_{10}\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} - 2c_s^2\omega_{16}v_2^2\omega_{10}\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 - \omega_{19}\omega_{16}v_2^2v_1^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} +$$
$$2\omega_{19}c_s^2\omega_{16}v_1^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{15} - 2\omega_{19}\omega_{16}v_2^2v_1^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} + 4\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} -$$
$$\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_{15} + 2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{16}v_1^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8 +$$
$$2\omega_{16}v_2^2v_1^2\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + \omega_{16}v_2^2v_1^2\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} + \omega_{19}c_s^2\omega_{16}v_2^2\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 4\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8\omega_{15} -$$
$$2\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_{23}\omega_{17}\omega_5\omega_{15} - 4\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{10}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + \omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_8\omega_{15} - \omega_{19}\omega_{16}v_2^2v_1^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_{15} -$$
$$\omega_{19}c_s^2\omega_{16}v_1^2\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} + 4v_3\omega_{16}v_2^2v_1\omega_{10}\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} + c_s^2\omega_{16}v_2^2\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} + \omega_{19}\omega_{16}v_2^2v_1^2\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} +$$
$$4\omega_{19}v_3v_2^2v_1\omega_{10}\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} - 2\omega_{19}c_s^2v_1^2\omega_{10}\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} + 2c_s^2\omega_{16}v_2^2\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + \omega_{19}\omega_{16}v_2^2v_1^2\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_8\omega_{15} -$$
$$2\omega_{19}c_s^2\omega_{16}v_1^2\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_{19}\omega_{16}v_2^2v_1^2\omega_{10}\omega_{23}\omega_{20}\omega_5\omega_{15} + 4\omega_{19}v_3v_2^2v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} +$$
$$4\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_5\omega_{15} - 2\omega_{19}c_s^2v_1^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - \omega_{19}\omega_{16}v_2^2v_1^2\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} -$$
$$\omega_{19}c_s^2\omega_{16}v_1^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5 + 4\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{10}\omega_{23}\omega_{17}\omega_8\omega_5 + 2\omega_{19}c_s^2v_1^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 + 4\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8\omega_{15} -$$
$$2\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{16}v_1^2\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_{15} + 2\omega_{19}c_s^2\omega_{16}v_2^2v_1^2\omega_7\omega_{23}\omega_{20}\omega_8\omega_5 +$$
$$2\omega_{19}c_s^2v_1^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{16}v_1^2\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_{15} + 2\omega_{19}c_s^2v_1^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 4\omega_{19}v_3v_2^2v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} -$$
$$4\omega_{19}v_3v_2^2v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 4\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{10}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + c_s^2\omega_{16}v_1^2\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - \omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} -$$
$$2\omega_{19}c_s^2v_2^2\omega_{10}\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} - 4\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8\omega_{15} + \omega_{19}c_s^2\omega_{16}v_1^2\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_8\omega_{15} + 4\omega_{19}v_3c_s^2v_1\omega_{10}\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} -$$

$2\omega_{19}v_2^2v_1^2\omega_{10}\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} + 4v_3c_s^2\omega_{16}v_1\omega_{10}\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} + \omega_{19}c_s^2\omega_{16}v_1^2\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - \omega_{16}v_2^2v_1^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} +$
$2\omega_{19}\omega_{16}v_2^2v_1^2\omega_7\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} - 4\omega_{19}v_3c_s^2v_1\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_{19}v_2^2v_1^2\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_{19}c_s^2v_1^2\omega_{10}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} +$
$4\omega_{19}v_3v_2^2v_1\omega_{10}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} - 2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5 - 2\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_5\omega_{15} -$
$4\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{10}\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} - 4\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_5\omega_{15} + 2v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} +$
$2\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{15} - 2v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{16}v_1^2\omega_{10}\omega_{23}\omega_{20}\omega_5\omega_{15} +$
$2\omega_{19}\omega_{16}v_2^2v_1^2\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_5\omega_{15} - 2c_s^2\omega_{16}v_1^2\omega_{10}\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} - c_s^2\omega_{16}v_2^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_{19}\omega_{16}v_2^2v_1^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8\omega_5 -$
$4v_3\omega_{16}v_2^2v_1\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + \omega_{19}c_s^2\omega_{16}v_1^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_5\omega_{15} -$
$2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 + 2\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8\omega_5 + 4\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{15} +$
$2\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5 + 2\omega_{19}\omega_{16}v_2^2v_1^2\omega_{10}\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} + 4\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{10}\omega_{23}\omega_{17}\omega_5\omega_{15} +$
$2\omega_{19}\omega_{16}v_2^2v_1^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{15} + 2\omega_{19}c_s^2v_2^2\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} -$
$2\omega_{19}\omega_{16}v_2^2v_1^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_5\omega_{15} - 2\omega_{19}\omega_{16}v_2^2v_1^2\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_{15} - 2\omega_{19}c_s^2\omega_{16}v_1^2\omega_7\omega_{23}\omega_{20}\omega_8\omega_5 - 4\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_5\omega_{15} -$
$4\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{15} + \omega_{19}c_s^2\omega_{16}v_1^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 + 4\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_{15} + 4\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7\omega_{23}\omega_{20}\omega_8\omega_5 -$
$4\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{10}\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{16}v_1^2\omega_{10}\omega_{23}\omega_{17}\omega_5\omega_{15} - 2\omega_{19}\omega_{16}v_2^2v_1^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{15} + 2\omega_{19}\omega_{16}v_2^2v_1^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_5\omega_{15} -$
$4\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8\omega_5 - 4\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_5\omega_{15} + 2\omega_{19}v_2^2v_1^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} + c_s^2\omega_{16}v_2^2\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} -$
$\omega_{19}\omega_{16}v_2^2v_1^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5 + 2\omega_{19}v_2^2v_1^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 4\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_5\omega_{15} +$
$4v_3\omega_{16}v_2^2v_1\omega_{10}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 4\omega_{19}v_3c_s^2v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} - \omega_{19}c_s^2\omega_{16}v_1^2\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_5\omega_{15} -$
$4\omega_{19}v_3c_s^2v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 4\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{10}\omega_{23}\omega_{20}\omega_5\omega_{15} + 2\omega_{19}c_s^2v_2^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} + 2\omega_{19}c_s^2v_2^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} +$
$4\omega_{19}v_3v_2^2v_1\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_{19}c_s^2v_1^2\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_{19}\omega_{16}v_2^2v_1^2\omega_{10}\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} + 2\omega_{19}c_s^2\omega_{16}v_1^2\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_5\omega_{15} +$
$\omega_{19}c_s^2\omega_{16}v_1^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5 + \omega_{16}v_2^2v_1^2\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - \omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5 - 4\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} -$
$2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8 + 2\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} - 2\omega_{16}v_2^2v_1^2\omega_{10}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} -$
$2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_8\omega_{15} - 4\omega_{19}v_3v_2^2v_1\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} +$
$2\omega_{19}c_s^2v_1^2\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_{19}c_s^2v_2^2\omega_7\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} - 2\omega_{19}v_2^2v_1^2\omega_7\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} + 4\omega_{19}v_3c_s^2v_1\omega_7\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} +$
$2\omega_{19}c_s^2\omega_{16}v_1^2\omega_{10}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 2c_s^2\omega_{16}v_2^2\omega_{10}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_{19}c_s^2\omega_{16}v_1^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8\omega_{15} + 2\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} +$
$4\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{20}\omega_8\omega_5 + 4\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_{15} - 2\omega_{19}c_s^2\omega_{16}v_1^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_5\omega_{15} +$
$2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5 - 2\omega_{19}\omega_{16}v_2^2v_1^2\omega_{10}\omega_{23}\omega_{17}\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{16}v_1^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{15} - 2v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} -$
$4v_3c_s^2\omega_{16}v_1\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 4\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{10}\omega_{23}\omega_{20}\omega_5\omega_{15} - 2\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} +$
$4\omega_{19}v_3c_s^2v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8\omega_{15} + 2\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_{15} -$
$2\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_8\omega_{15} + 2\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_{19}v_2^2v_1^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 2c_s^2\omega_{16}v_1^2\omega_{10}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} -$
$2\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_{23}\omega_{20}\omega_5\omega_{15} - 2v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_{19}\omega_{16}v_2^2v_1^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8\omega_{15} - 2\omega_{19}c_s^2v_1^2\omega_7\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} +$
$4\omega_{19}v_3v_2^2v_1\omega_7\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7\omega_{23}\omega_{20}\omega_8\omega_5 + 4\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_{19}c_s^2v_2^2\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} -$
$c_s^2\omega_{16}v_1^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} + \omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} +$
$2\omega_{19}\omega_{16}v_2^2v_1^2\omega_{10}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - \omega_{19}c_s^2\omega_{16}v_1^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{16}v_1^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} -$
$4\omega_{19}v_3c_s^2v_1\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_{19}v_2^2v_1^2\omega_{10}\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 4\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8 + 2\omega_{19}c_s^2\omega_{16}v_1^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_5\omega_{15} +$
$2c_s^2\omega_{16}v_1^2\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + \omega_{19}\omega_{16}v_2^2v_1^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} +$
$2v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - \omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} + 4\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8 -$
$4\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{15} + c_s^2\omega_{16}v_1^2\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} - 4\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{10}\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} + \omega_{19}\omega_{16}v_2^2v_1^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 +$
$4\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} + 4v_3c_s^2\omega_{16}v_1\omega_{10}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} +$
$\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 - 4\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_8\omega_5 - 4\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_5\omega_{15} +$
$2\omega_{19}\omega_{16}v_2^2v_1^2\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_5\omega_{15} + 2\omega_{19}c_s^2\omega_{16}v_1^2\omega_{10}\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15} - \omega_{19}\omega_{16}v_2^2v_1^2\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_8\omega_5\omega_{15} + 4\omega_{19}v_3c_s^2v_1\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} -$
$2\omega_{19}v_2^2v_1^2\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + \omega_{19}\omega_{16}v_2^2v_1^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5 - 2\omega_{19}\omega_{16}v_2^2v_1^2\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} + \omega_{19}c_s^2\omega_{16}v_2^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5 +$
$2\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_{23}\omega_{20}\omega_{17}\omega_5\omega_{15} - 2\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7\omega_{23}\omega_{17}\omega_{15} - 2\omega_{19}c_s^2v_2^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} -$
$\omega_{19}c_s^2\omega_{16}v_1^2\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_{15} - 2\omega_{19}c_s^2v_2^2\omega_7\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15} - 4\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7\omega_{23}\omega_{20}\omega_8\omega_5\omega_{15})\frac{\rho}{2\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{15}}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_3} = C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_3}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_3} = 0$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_3} = (-6c_s^2\omega_1\omega_2^3 - 22\omega_3v_3^2\omega_1^2\omega_2 + 14\omega_3\omega_1^2\omega_2 + 28\omega_3c_s^2\omega_1^3 + 10\omega_3v_3^2\omega_2^3 + 2\omega_1\omega_2^3 + 6\omega_3v_1^2\omega_1^2\omega_2^2 - 3\omega_3v_1^2\omega_1^3\omega_2 - 2v_1^2\omega_1^3\omega_2 +$
$10\omega_3\omega_1^3\omega_2 - 24\omega_3c_s^2\omega_1\omega_2^2 - 13\omega_3v_3^2\omega_1^3\omega_2 - 20\omega_3\omega_1^2\omega_2^2 - 4\omega_3v_1^2\omega_1^2\omega_2 + 4v_1^2\omega_1^2\omega_2^2 + 26\omega_3v_3^2\omega_1^2\omega_2^2 + 16\omega_3v_3^2\omega_1^3 + 26\omega_3c_s^2\omega_2^3 - 24\omega_3c_s^2\omega_1\omega_2^3 +$
$8\omega_3\omega_1\omega_2^2 - 4\omega_3v_3^2\omega_1\omega_2^2 - 24\omega_3c_s^2\omega_1^3\omega_2 - 10\omega_3\omega_2^3 - 2v_1^2\omega_1\omega_2^3 + 4\omega_3v_1^2\omega_2^3 + 10\omega_3\omega_1\omega_2^3 + 48\omega_3c_s^2\omega_1^2\omega_2^2 - 13\omega_3v_3^2\omega_1\omega_2^3 - 30\omega_3c_s^2\omega_1^2\omega_2 +$
$4\omega_3v_1^2\omega_1^3 + 12c_s^2\omega_1^2\omega_2^2 - 3\omega_3v_1^2\omega_1\omega_2^3 - 4\omega_1^2\omega_2^2 - 6c_s^2\omega_1^3\omega_2 - 4\omega_3v_1^2\omega_1\omega_2^2 + 2\omega_1^3\omega_2 - 12\omega_3\omega_1^3)\frac{v_3v_1\rho}{6\omega_3\omega_1^3\omega_2^3}$

coefficient $C^{(2)}_{\mathrm{D}_y^2\mathrm{D}_z^2\rho}$ **at** $\frac{\partial^4\rho}{\partial x_2^2\partial x_3^2}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_y^2\mathrm{D}_z^2\rho} = (24 - \omega^3 + 14\omega^2 - 36\omega + v_2^2\omega^3 - 46c_s^2\omega^2 + 5c_s^2\omega^3 - 14v_2^2\omega^2 + 36v_2^2\omega + 108c_s^2\omega - 72c_s^2 - 24v_2^2)\frac{c_s^2v_2}{12\omega^3}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z^2\rho} = (72\omega_{19}v_3^2c_s^2\omega_{16}\omega_{10}^2\omega_7^3\omega_{23} - 12\omega_{19}c_s^2\omega_{16}^2\omega_{10}^3\omega_7\omega_{23} + 18\omega_{19}c_s^2\omega_{16}^2v_2^2\omega_{10}^2\omega_7^2\omega_{23} + 12\omega_{19}c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2 + 2\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23} +$
$18c_s^4\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23} - 72\omega_{19}v_3^2c_s^2\omega_{16}\omega_{10}^3\omega_7\omega_{23} - 12c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2 - 6\omega_{19}v_3^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23} + 36\omega_{19}v_3^2c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{23} + 36\omega_{19}v_3^2c_s^2\omega_{16}^2\omega_7^3\omega_{23} -$
$24\omega_{19}v_3^2\omega_{16}^2v_2^2\omega_{10}^2\omega_7^2\omega_{23} + 180\omega_{19}c_s^4\omega_{16}^2\omega_{10}^3\omega_7\omega_{23} + 12\omega_{19}c_s^4\omega_{10}^2\omega_7^3\omega_{23} - 12\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}^3\omega_7^3 - 6v_3^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23} - 12\omega_{19}v_3^2\omega_{16}v_2^2\omega_{10}^3\omega_7^3 +$
$12\omega_{19}v_3^2\omega_{10}^2\omega_7^3\omega_{23} - 6\omega_{19}c_s^4\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23} - 6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23} + 6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^3 + 12\omega_{19}v_3^2\omega_{16}\omega_{10}^3\omega_7^3\omega_{23} - 12v_3^2\omega_{16}^2v_2^2\omega_{10}^2\omega_7^2\omega_{23} +$

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

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_y^2\mathrm{D}_z^2\rho} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z^2\rho}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z^2\rho} = (-40\omega_{19}c_s^2\omega_{16}^2\omega_{10}^3\omega_7\omega_{23} - 36\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23} + 18\omega_{19}c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2 + 12\omega_{19}\omega_{16}v_2^2\omega_{10}^3\omega_7 - 18c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2 -$
$6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23} + 36\omega_{19}c_s^2\omega_{16}^2\omega_{10}^3\omega_{23} - 6\omega_{19}\omega_{16}v_2^2\omega_{10}^3\omega_7^2\omega_{23} + 36\omega_{19}c_s^2\omega_{16}^2\omega_7^2\omega_{23} - 12\omega_{19}\omega_{16}\omega_{10}^3\omega_7 + 2\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23} +$
$12\omega_{19}\omega_{16}v_2^2\omega_{10}^2\omega_7^2 + 6\omega_{16}^2\omega_{10}^3\omega_7^2 + \omega_{19}\omega_{16}^2v_2^2\omega_{10}^3\omega_7^2\omega_{23} + 12\omega_{19}\omega_{10}^3\omega_7^2\omega_{23} + 6\omega_{19}\omega_{16}\omega_{10}^3\omega_7^2\omega_{23} - 12\omega_{19}v_2^2\omega_{10}^3\omega_7^2\omega_{23} - 12\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2 -$
$36\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_{23} + 18c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23} + 12\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23} + 12\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7\omega_{23} - 6\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23} - 12\omega_{19}\omega_{16}^2v_2^2\omega_{10}\omega_7^2\omega_{23} -$
$12\omega_{16}^2\omega_{10}^3\omega_7 - 18\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2 + 12\omega_{19}\omega_{10}^2\omega_7^2\omega_{23} - 12\omega_{19}v_2^2\omega_{10}^2\omega_7^2\omega_{23} - 12\omega_{19}\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{23} - 12\omega_{19}\omega_{16}v_2^2\omega_{10}^3\omega_{23} + 12\omega_{19}\omega_{16}\omega_{10}^3\omega_7^2 -$
$12\omega_{16}^2v_2^2\omega_{10}^2\omega_7\omega_{23} + 36\omega_{19}c_s^2\omega_{10}^3\omega_7^2\omega_{23} + 12\omega_{19}\omega_{16}\omega_{10}^3\omega_{23} - 36\omega_{19}c_s^2\omega_{16}^2\omega_{10}^3\omega_7 - 12\omega_{19}\omega_{16}v_2^2\omega_{10}^3\omega_7^2 + 18\omega_{19}\omega_{16}^2v_2^2\omega_{10}^2\omega_7\omega_{23} -$
$18\omega_{19}c_s^2\omega_{16}\omega_{10}^3\omega_7^2\omega_{23} + 36c_s^2\omega_{16}^2\omega_{10}^3\omega_7 - 18\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2\omega_{23} + 6\omega_{16}^2v_2^2\omega_{10}^2\omega_7^2\omega_{23} + 36\omega_{19}c_s^2\omega_{16}\omega_{10}^2\omega_7^2 - 12\omega_{19}\omega_{16}^2v_2^2\omega_{10}^3\omega_7 -$
$36\omega_{19}c_s^2\omega_{10}^3\omega_7\omega_{23} + 12\omega_{16}^2v_2^2\omega_{10}^3\omega_7 + 54\omega_{19}c_s^2\omega_{16}\omega_{10}^3\omega_7\omega_{23} - 36\omega_{19}c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{23} - 2\omega_{19}\omega_{16}^2v_2^2\omega_{10}^2\omega_7^2\omega_{23} - 6\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^2 -$
$36c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{23} - 12\omega_{19}\omega_{16}^2v_2^2\omega_{10}^2\omega_{23} - \omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{23} + 18\omega_{19}\omega_{16}v_2^2\omega_{10}^2\omega_7^2\omega_{23} + 54\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{23} + 36\omega_{19}c_s^2\omega_{16}\omega_{10}^3\omega_7 -$
$6\omega_{19}\omega_{16}^2v_2^2\omega_{10}^2\omega_7^2 - 12\omega_{19}\omega_{16}^2\omega_7^2\omega_{23} - 12\omega_{19}\omega_{16}^2\omega_{10}^3\omega_{23} - 36\omega_{19}c_s^2\omega_{10}^2\omega_7^2\omega_{23} + 54\omega_{19}c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{23} - 36\omega_{19}c_s^2\omega_{16}\omega_{10}^3\omega_7^2 -$
$12\omega_{19}\omega_{16}^2v_2^2\omega_{10}^3\omega_7\omega_{23} + 12\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{23} + 12\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7 - 36\omega_{19}c_s^2\omega_{16}\omega_{10}^3\omega_{23} + 12\omega_{19}v_2^2\omega_{10}^3\omega_7^2\omega_{23} - 18\omega_{19}\omega_{16}\omega_{10}^3\omega_7\omega_{23} -$
$12\omega_{19}\omega_{10}^3\omega_7^2\omega_{23} + 6\omega_{19}\omega_{16}^2v_2^2\omega_{10}^3\omega_7^2 + 12\omega_{19}\omega_{16}^2\omega_{10}^2\omega_{23} + 5\omega_{19}c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{23} - 6\omega_{16}^2v_2^2\omega_{10}^3\omega_7^2 + 12\omega_{16}^2\omega_{10}^2\omega_7\omega_{23} - 18\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7\omega_{23} +$
$6\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2 + 12\omega_{19}\omega_{16}^2v_2^2\omega_7^2\omega_{23} + 18\omega_{19}\omega_{16}v_2^2\omega_{10}^3\omega_7\omega_{23} + 12\omega_{19}\omega_{16}^2v_2^2\omega_{10}^3\omega_{23})\frac{c_s^2v_2}{12\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{23}}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_y^2\mathrm{D}_z^2\rho} = C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z^2\rho}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z^2\rho} = (-12v_2^2\omega_{11}\omega_5^3 + 36\omega_3c_s^2\omega_{11}\omega_5^2 + \omega_3^2v_2^2\omega_{11}^2\omega_5^3 - 54\omega_3^2c_s^2\omega_{11}^2\omega_5 + 12\omega_3^2v_2^2\omega_{11}^2 - 6\omega_3^2\omega_{11}\omega_5^2 + 12\omega_3\omega_{11}^2\omega_5^3 + 36\omega_3^2c_s^2\omega_{11}^2 +$
$4\omega_3^2v_2^2\omega_{11}^2\omega_5^2 + 54\omega_3c_s^2\omega_{11}\omega_5^3 - 6\omega_3\omega_{11}^2\omega_5^2 + 6\omega_3^2\omega_{11}\omega_5^3 - 12\omega_3^2v_2^2\omega_5^2 + 12\omega_{11}\omega_5^3 + 36\omega_3^2c_s^2\omega_5^3 - 36c_s^2\omega_{11}\omega_5^3 + 5\omega_3^2c_s^2\omega_{11}^2\omega_5^3 + 12\omega_3v_2^2\omega_{11}\omega_5^2 -$
$18\omega_3^2v_2^2\omega_{11}^2\omega_5 + 12\omega_3\omega_5^3 - 36\omega_3^2c_s^2\omega_5^2 + 12\omega_3^2v_2^2\omega_5^3 + 18\omega_3v_2^2\omega_{11}\omega_5^3 + 12\omega_3^2c_s^2\omega_{11}^2\omega_5^2 - 12\omega_3^2\omega_5^3 - 36\omega_3c_s^2\omega_5^3 + 18\omega_3^2\omega_{11}^2\omega_5 + 12\omega_{11}^2\omega_5^2 - 36c_s^2\omega_{11}^2\omega_5^2 -$
$12\omega_3v_2^2\omega_{11}^2\omega_5^3 + 18\omega_3^2c_s^2\omega_{11}\omega_5^2 - 12\omega_3v_2^2\omega_5^3 - 12\omega_{11}^2\omega_5^3 + 12\omega_3^2\omega_5^2 - 18\omega_3^2c_s^2\omega_{11}\omega_5^3 + 6\omega_3v_2^2\omega_{11}^2\omega_5^2 + 36c_s^2\omega_{11}^2\omega_5^3 - 12v_2^2\omega_{11}^2\omega_5^2 + 6\omega_3^2v_2^2\omega_{11}\omega_5^2 -$
$40\omega_3c_s^2\omega_{11}^2\omega_5^3 - \omega_3^2\omega_{11}^2\omega_5^3 - 12\omega_3\omega_{11}\omega_5^2 + 18\omega_3c_s^2\omega_{11}^2\omega_5^2 - 6\omega_3^2v_2^2\omega_{11}\omega_5^3 + 12v_2^2\omega_{11}^2\omega_5^3 - 12\omega_3^2\omega_{11}^2 - 18\omega_3\omega_{11}\omega_5^3 - 4\omega_3^2\omega_{11}^2\omega_5^2)\frac{c_s^2v_2}{12\omega_3^2\omega_{11}^2\omega_5^3}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_y^2\mathrm{D}_z^2\rho} = (9\omega_3^2c_s^2\omega_4\omega_1^3\omega_2^2 + 18\omega_3^2c_s^2v_2^2\omega_1^3\omega_2^2 + 96\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^2 + 36\omega_3^2c_s^2\omega_1^3\omega_2^2 - 18c_s^2\omega_4^2\omega_1^3\omega_2^2 + 16\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^2\omega_2^2 + 60\omega_3^2v_2^2v_2^2\omega_4^2\omega_1^2\omega_2^2 +$
$27\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2^2 + 66\omega_3^2v_3^2\omega_4^2\omega_1^3\omega_2 - 52\omega_3^2c_s^2\omega_4^2\omega_1^3 - 8\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2^2 - 119\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^2 + 54\omega_3^2c_s^4\omega_1^3\omega_2^2 - 9\omega_3c_s^2v_2^2\omega_4^2\omega_1^3\omega_2^2 - 102\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2 -$
$4\omega_3^2v_2^2\omega_4^2\omega_2^2 - 20\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^3\omega_2 + 12c_s^2\omega_4^2\omega_1^3\omega_2^2 - 30\omega_3^2v_3^2v_2^2\omega_4^2\omega_1^3\omega_2 - 32\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^2\omega_2^2 + 16\omega_3^2c_s^2v_2^2\omega_4^2\omega_2^2 + 108\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^2 -$
$12\omega_3c_s^4\omega_4^2\omega_1^3\omega_2 + 4\omega_3^2v_2^2\omega_4^2\omega_1^3\omega_2 + 24\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^2 - 24\omega_3^2v_2^2\omega_4^2\omega_1^2\omega_2^2 + 36\omega_3c_s^2v_2^2\omega_4^2\omega_1^2\omega_2^2 - 108\omega_3^2c_s^4\omega_1^3\omega_2^2 + 15\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^2 + 28\omega_3c_s^2\omega_4^2\omega_1\omega_2^2 -$
$4\omega_3^2v_2^2\omega_4^2\omega_1^3 - 4\omega_3c_s^2v_2^2\omega_4^2\omega_1^3\omega_2 + 16\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^3 + 12\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2 + 36\omega_3^2v_3^4\omega_4^2\omega_1\omega_2^2 + 72\omega_3^2c_s^4\omega_4^2\omega_1^3 + 8\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^3\omega_2^2 - 4\omega_3^2\omega_4^2\omega_1\omega_2^2 +$
$24c_s^2\omega_4^2\omega_1^2\omega_2^3 + 28\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^2 - 18\omega_3^2c_s^2\omega_1^3\omega_2^3 - 36\omega_3^2c_s^2v_2^2\omega_1^2\omega_2^3 - 36\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^3 + 324\omega_3^2v_3^2c_s^2\omega_4^2\omega_1\omega_2^3 - 27\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2^2 + 4\omega_3^2v_2^2\omega_4^2\omega_1^2\omega_2 +$
$35\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^2 + 32\omega_3c_s^2v_2^2\omega_4^2\omega_1^2\omega_2^2 - 27\omega_3c_s^4\omega_4^2\omega_1^3\omega_2^2 + 20\omega_3^2c_s^2\omega_4^2\omega_2^3 - 58\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^3 - 4\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^2\omega_2 + 72\omega_3^2v_3^2\omega_4^2\omega_1\omega_2^3 - 4\omega_3^2\omega_4^2\omega_1\omega_2^3 +$
$3\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^3\omega_2^3 - 12\omega_3^2v_3^2v_2^2\omega_4^2\omega_1^2\omega_2 - 324\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^3\omega_2 + 54c_s^4\omega_4^2\omega_1^3\omega_2^3 - 138\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^2\omega_2^3 - 32\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^2 - 27\omega_3^2c_s^4\omega_4\omega_1^3\omega_2^3 +$
$4\omega_3^2\omega_4^2\omega_1^3 + 24\omega_3^2v_3^4\omega_4^2\omega_1^3 + 49\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^3 + 74\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2 - 27\omega_3^2v_3^4\omega_4^2\omega_1^2\omega_2^3 - 36\omega_3^2v_3^4\omega_4^2\omega_1^3\omega_2 - 4\omega_3^2\omega_4^2\omega_1^3\omega_2 + 216\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^3 -$
$36\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^3 - 28\omega_3c_s^2v_2^2\omega_4^2\omega_1\omega_2^3 + 4\omega_3c_s^2\omega_4^2\omega_1^3\omega_2 - 24c_s^2v_2^2\omega_4^2\omega_1^2\omega_2^3 + 36\omega_3^2v_3^2v_2^2\omega_4^2\omega_2^3 - 36c_s^4\omega_4^2\omega_1^3\omega_2^2 - 9\omega_3^2c_s^2v_2^2\omega_4\omega_1^3\omega_2^3 + 24\omega_3^2v_3^2\omega_4^2\omega_2^3 +$
$8\omega_3^2\omega_4^2\omega_1^2\omega_2^2 - 36\omega_3^2v_3^4\omega_4^2\omega_1^2\omega_2^2 - 16\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^2 + 4\omega_3^2c_s^2v_2^2\omega_4^2\omega_1\omega_2^3 - 4\omega_3^2\omega_4^2\omega_1^2\omega_2 - 30\omega_3^2v_3^2v_2^2\omega_4^2\omega_1\omega_2^3 - 3\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2^3 - 84\omega_3c_s^4\omega_4^2\omega_1\omega_2^3 +$

$24\omega_3^2v_3^2v_2^2\omega_4^2\omega_1^3 + 4\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2 - 12c_s^2v_2^2\omega_4^2\omega_1^3\omega_2^2 - 72\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^2 + 4\omega_3^2v_2^2\omega_4^2\omega_1\omega_2^3 + 108\omega_3^2c_s^4\omega_4\omega_1^2\omega_2^3 - 48\omega_3^2v_3^2\omega_4^2\omega_1^3 - 72c_s^4\omega_4^2\omega_1^2\omega_2^3 +$
$12\omega_3^2v_3^2\omega_4^2\omega_1\omega_2^2 - 25\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2^2 - 48\omega_3^2v_3^2v_2^2\omega_4^2\omega_1\omega_2^2 + 36\omega_3^2c_s^2v_2^2\omega_4\omega_1^2\omega_2^3 + 27\omega_3^2v_3^4\omega_4^2\omega_1^3\omega_2^2 - 28\omega_3^2c_s^2v_2^2\omega_4^2\omega_1\omega_2^2 + 138\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^3\omega_2^2 -$
$60\omega_3^2v_3^4\omega_4^2\omega_2^3 + 4\omega_3^2\omega_4^2\omega_2^3 - 42\omega_3^2v_3^2\omega_4^2\omega_1\omega_2^3 - 216\omega_3^2v_3^2c_s^2\omega_4^2\omega_2^3 + 9\omega_3c_s^2\omega_4^2\omega_1^3\omega_2^3 + 4\omega_3^2v_2^2\omega_4^2\omega_1\omega_2^2 + 18c_s^2v_2^2\omega_4^2\omega_1^3\omega_2^3 + 78\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^3)\frac{v_2}{36\omega_3^2\omega_4^2\omega_1^3\omega_2^3}$

coefficient $C^{(2)}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_2}$ **at** $\frac{\partial^4 v_2}{\partial x_2^2\partial x_3^2}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_2} = (-24 - 12\omega^2 + 36\omega + 8c_s^2\omega^2 - c_s^2\omega^3 + 36v_2^2\omega^2 - 108v_2^2\omega - 18c_s^2\omega + 12c_s^2 + 72v_2^2)\frac{c_s^2\rho}{12\omega^3}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_2} =$
$(24\omega_{19}v_3^2c_s^2\omega_{16}\omega_{10}^2\omega_7^3\omega_{23} + 180\omega_{19}c_s^2\omega_{16}^2v_2^2\omega_{10}^2\omega_7^2\omega_{23} + 12\omega_{19}c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2 + 6\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23} + 6c_s^4\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23} - 24\omega_{19}v_3^2c_s^2\omega_{16}\omega_{10}^3\omega_7\omega_{23} -$
$12c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2 - 6\omega_{19}v_3^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23} + 12\omega_{19}v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23} + 12\omega_{19}v_3^2c_s^2\omega_{16}^2\omega_7^3\omega_{23} - 72\omega_{19}v_3^2\omega_{16}^2v_2^2\omega_{10}^2\omega_7^2\omega_{23} + 18\omega_{19}c_s^4\omega_{16}^2\omega_{10}^3\omega_7\omega_{23} -$
$36\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}^3\omega_7^3 - 6v_3^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23} - 36\omega_{19}v_3^2\omega_{16}v_2^2\omega_{10}^3\omega_7^3 + 12\omega_{19}v_3^2\omega_{10}^2\omega_7^3\omega_{23} - 6\omega_{19}c_s^4\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23} - 6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23} + 6c_s^2\omega_{16}^2\omega_{10}^3\omega_7^3 +$
$12\omega_{19}v_3^2\omega_{16}\omega_{10}^3\omega_7^3\omega_{23} - 36v_3^2\omega_{16}^2v_2^2\omega_{10}^2\omega_7^2\omega_{23} + 24\omega_{19}v_3^2c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{23} - 12\omega_{19}c_s^2\omega_{16}\omega_{10}^3\omega_7^3\omega_{23} - 6\omega_{19}c_s^2\omega_{16}^2\omega_{10}^3\omega_7^3 - 36c_s^2\omega_{16}^2v_2^2\omega_{10}^2\omega_7^2\omega_{23} +$
$36\omega_{19}v_3^2\omega_{16}^2v_2^2\omega_{10}^3\omega_7^2 + 12\omega_{19}c_s^4\omega_{16}\omega_{10}^3\omega_7^3\omega_{23} + 36\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}^3\omega_7^2 + 60\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}^2\omega_7^2\omega_{23} + 12\omega_{19}c_s^4\omega_{16}\omega_{10}^3\omega_7^3 - 12\omega_{19}v_3^2c_s^2\omega_{10}^3\omega_7^2\omega_{23} -$
$6\omega_{19}v_3^2c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3 - 36\omega_{19}v_3^2\omega_{16}v_2^2\omega_{10}^2\omega_7^2\omega_{23} - 12\omega_{19}v_3^2\omega_{16}\omega_{10}^2\omega_7^3 + 12v_3^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23} + 12\omega_{19}c_s^4\omega_{16}\omega_{10}^3\omega_7^2 + 36\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}^2\omega_7^3 +$
$24\omega_{19}c_s^4\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23} + 12c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23} + 36\omega_{19}v_3^2\omega_{16}v_2^2\omega_{10}^2\omega_7^3 - 12\omega_{19}v_3^2\omega_{16}\omega_{10}^3\omega_7^2 - 12\omega_{19}v_3^2c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2 - 24\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23} -$
$12c_s^4\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23} + 18\omega_{19}v_3^2\omega_{16}^2v_2^2\omega_{10}^2\omega_7^3\omega_{23} - 18\omega_{19}v_3^2c_s^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23} + 84\omega_{19}c_s^2\omega_{16}^2v_2^2\omega_{10}^3\omega_7\omega_{23} + 24\omega_{19}v_3^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23} +$
$12\omega_{19}v_3^2\omega_{16}\omega_{10}\omega_7^3\omega_{23} + 12v_3^2c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2 - 12\omega_{19}v_3^2c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{23} - 18\omega_{19}c_s^2\omega_{16}^2v_2^2\omega_{10}^2\omega_7^3\omega_{23} + 6\omega_{19}v_3^2c_s^2\omega_{16}^2\omega_{10}^3\omega_7^3 + 12\omega_{19}v_3^2c_s^2\omega_{10}^3\omega_7^3\omega_{23} +$
$60\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}^3\omega_7\omega_{23} + 12\omega_{19}v_3^2\omega_{16}\omega_{10}^3\omega_7^3 + 72\omega_{19}v_3^2\omega_{16}v_2^2\omega_{10}^2\omega_7^3\omega_{23} - 24\omega_{19}c_s^4\omega_{16}\omega_{10}^3\omega_7^2\omega_{23} - 72\omega_{19}v_3^2\omega_{16}v_2^2\omega_{10}^3\omega_7\omega_{23} - 12\omega_{19}c_s^4\omega_{16}\omega_{10}^3\omega_7^3 -$
$144\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}^2\omega_7^3\omega_{23} + 18c_s^2\omega_{16}^2v_2^2\omega_{10}^2\omega_7^3\omega_{23} + 6\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3 - 36\omega_{19}v_3^2v_2^2\omega_{10}^2\omega_7^3\omega_{23} - 6v_3^2c_s^2\omega_{16}^2\omega_{10}^3\omega_7^3 + 24\omega_{19}c_s^2v_2^2\omega_{10}^2\omega_7^3\omega_{23} -$
$36\omega_{19}v_3^2\omega_{16}\omega_{10}^3\omega_7^2\omega_{23} + 18v_3^2\omega_{16}^2v_2^2\omega_{10}^2\omega_7^3\omega_{23} + 24\omega_{19}c_s^2\omega_{16}\omega_{10}^3\omega_7^2\omega_{23} + 18\omega_{19}c_s^2\omega_{16}^2v_2^2\omega_{10}^3\omega_7^3 - 132\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}^3\omega_7^2\omega_{23} + 12\omega_{19}v_3^2c_s^2\omega_{16}\omega_{10}^3\omega_7^2 +$
$18\omega_{19}v_3^2\omega_{16}^2v_2^2\omega_{10}^3\omega_7^3 + 12\omega_{19}v_3^2\omega_{16}^2\omega_{10}^3\omega_7^2 - 12\omega_{19}c_s^4\omega_{16}\omega_{10}^2\omega_7^3\omega_{23} + 12c_s^4\omega_{16}^2\omega_{10}^3\omega_7^2 - 12\omega_{19}c_s^4\omega_{16}^2\omega_{10}\omega_7^2\omega_{23} + 108\omega_{19}v_3^2\omega_{16}v_2^2\omega_{10}^3\omega_7^2\omega_{23} -$
$12\omega_{19}c_s^4\omega_{16}^2\omega_{10}^3\omega_7^2 + 12\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^2\omega_{23} - 12v_3^2\omega_{16}^2\omega_{10}^3\omega_7^2 + 12\omega_{19}c_s^2\omega_{16}\omega_{10}^2\omega_7^3\omega_{23} + 18\omega_{19}c_s^2\omega_{16}^2v_2^2\omega_{10}\omega_7^3\omega_{23} - 18v_3^2\omega_{16}^2v_2^2\omega_{10}^3\omega_7^3 -$
$12\omega_{19}c_s^4\omega_{16}^2\omega_{10}^3\omega_{23} - 24\omega_{19}v_3^2\omega_{16}\omega_{10}^2\omega_7^3\omega_{23} - 18c_s^2\omega_{16}^2v_2^2\omega_{10}^3\omega_7^3 - 54\omega_{19}v_3^2\omega_{16}^2v_2^2\omega_{10}\omega_7^3\omega_{23} + 6\omega_{19}v_3^2c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23} - 12\omega_{19}v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23} -$
$12\omega_{19}c_s^2\omega_{16}\omega_{10}^3\omega_7\omega_{23} + 24\omega_{19}c_s^2v_2^2\omega_{10}^3\omega_7^2\omega_{23} + 12\omega_{19}c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{23} + 24\omega_{19}v_3^2\omega_{16}\omega_{10}^3\omega_7\omega_{23} - 36\omega_{19}v_3^2v_2^2\omega_{10}^3\omega_7^2\omega_{23} + 6\omega_{19}c_s^4\omega_{16}^2\omega_{10}^3\omega_7^3 -$
$12\omega_{19}c_s^4\omega_{16}^2\omega_{10}^2\omega_7\omega_{23} + 6v_3^2\omega_{16}^2\omega_{10}^3\omega_7^3 + 72\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23} - 12\omega_{19}v_3^2\omega_{10}^3\omega_7^3\omega_{23} - 6\omega_{19}v_3^2\omega_{16}^2\omega_{10}^3\omega_7^3 - 36\omega_{19}v_3^2\omega_{16}^2v_2^2\omega_{10}^3\omega_7^2 -$
$\omega_{19}c_s^4\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{23} - 6c_s^4\omega_{16}^2\omega_{10}^3\omega_7^3 - 36\omega_{19}v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23} - 36\omega_{19}c_s^2\omega_{16}^2v_2^2\omega_{10}^3\omega_7^2 - 12\omega_{19}v_3^2c_s^2\omega_{16}\omega_{10}^3\omega_7^3 - 42\omega_{19}c_s^2\omega_{16}^2v_2^2\omega_{10}^2\omega_7^2\omega_{23} -$
$24\omega_{19}v_3^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{23} - 48\omega_{19}c_s^2\omega_{16}^2v_2^2\omega_{10}^3\omega_{23} + 12\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{23} + 6v_3^2c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23} - 12\omega_{19}v_3^2c_s^2\omega_{16}\omega_{10}^3\omega_7^3\omega_{23} + 36c_s^2\omega_{16}^2v_2^2\omega_{10}^3\omega_7^2 -$
$12\omega_{19}c_s^2\omega_{16}\omega_{10}^2\omega_7^3 + 36v_3^2\omega_{16}^2v_2^2\omega_{10}^3\omega_7^2 - 24\omega_{19}c_s^2v_2^2\omega_{10}^3\omega_7^3\omega_{23} + 18\omega_{19}v_3^2\omega_{16}\omega_{10}\omega_7^3\omega_{23} - 24\omega_{19}v_3^2c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23} + 36\omega_{19}v_3^2\omega_{16}^2v_2^2\omega_{10}^2\omega_7^2\omega_{23} +$
$36\omega_{19}v_3^2v_2^2\omega_{10}^3\omega_7^3\omega_{23} - 12\omega_{19}v_3^2\omega_{16}^2\omega_7^3\omega_{23} - 6\omega_{19}c_s^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23} - 108\omega_{19}c_s^2\omega_{16}^2v_2^2\omega_{10}\omega_7^2\omega_{23} - 12\omega_{19}c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{23} - 12\omega_{19}c_s^2\omega_{16}\omega_{10}^3\omega_7^2 -$
$12\omega_{19}v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23} + 12\omega_{19}v_3^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{23} - 36\omega_{19}v_3^2\omega_{16}v_2^2\omega_{10}^3\omega_7^3\omega_{23} + 6\omega_{19}c_s^4\omega_{16}^2\omega_{10}\omega_7^3\omega_{23} - 12\omega_{19}v_3^2c_s^2\omega_{10}^3\omega_7^3\omega_{23} +$
$78\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}^3\omega_7^3\omega_{23} - 18\omega_{19}c_s^2\omega_{16}^2v_2^2\omega_{10}^2\omega_7^3 + 12\omega_{19}c_s^4\omega_{16}\omega_{10}^2\omega_7^2\omega_{23} - 18\omega_{19}v_3^2\omega_{16}^2v_2^2\omega_{10}^2\omega_7^3 - 84\omega_{19}c_s^2\omega_{16}^2v_2^2\omega_{10}^2\omega_7\omega_{23} +$
$12\omega_{19}c_s^2\omega_{16}\omega_{10}^3\omega_7^3 + 36\omega_{19}v_3^2\omega_{16}^2v_2^2\omega_7^3\omega_{23} + 72\omega_{19}v_3^2\omega_{16}^2v_2^2\omega_{10}^2\omega_7\omega_{23} + 36\omega_{19}v_3^2c_s^2\omega_{16}\omega_{10}^3\omega_7^2\omega_{23} - 12v_3^2c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23} -$
$4\omega_{19}c_s^4\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{23} + 6\omega_{19}v_3^2\omega_{16}^2\omega_{10}^2\omega_7^3 + 12\omega_{19}v_3^2\omega_{10}^3\omega_7^2\omega_{23} + 12\omega_{19}v_3^2c_s^2\omega_{16}\omega_{10}^2\omega_7^3 - 6\omega_{19}c_s^4\omega_{16}^2\omega_{10}^2\omega_7^3)\frac{\rho}{12\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{23}}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_2}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_2} = (-18\omega_{16}v_2^2\omega_{10}^2\omega_7^3 + 24\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23} + 12\omega_{19}c_s^2\omega_{10}\omega_7^2\omega_{23} + 36\omega_{19}v_2^2\omega_{10}\omega_7^3 + 18\omega_{19}\omega_{16}v_2^2\omega_{10}^2\omega_7^3 + 6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23} -$
$12c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23} - 6\omega_{16}\omega_{10}\omega_7^3\omega_{23} - 6\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3 + 12\omega_{19}c_s^2\omega_{10}^2\omega_7\omega_{23} - 36\omega_{19}\omega_{16}v_2^2\omega_{10}^2\omega_7^2 + 36\omega_{16}v_2^2\omega_{10}^2\omega_7^2 + 18\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23} -$
$6\omega_{19}\omega_{16}\omega_7^3\omega_{23} + 18\omega_{19}c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{23} + 12\omega_{19}\omega_{16}\omega_{10}^2\omega_7^2 + 18\omega_{19}\omega_{16}v_2^2\omega_7^3\omega_{23} - 18\omega_{19}\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23} + 36\omega_{19}v_2^2\omega_{10}^2\omega_7^3\omega_{23} -$
$12\omega_{19}\omega_{10}^2\omega_7^3\omega_{23} + 12\omega_{16}\omega_{10}\omega_7^2\omega_{23} - 12\omega_{19}\omega_{10}^2\omega_7^2 + 6c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23} - 24\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23} - 12\omega_{19}c_s^2\omega_{10}\omega_7^3\omega_{23} - 6\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3 -$
$6\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23} + 12\omega_{19}c_s^2\omega_{10}\omega_7^3 + 24\omega_{19}\omega_{10}^2\omega_7^2\omega_{23} - 72\omega_{19}v_2^2\omega_{10}^2\omega_7^2\omega_{23} + 72\omega_{19}\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{23} - 36\omega_{19}\omega_{16}v_2^2\omega_7^2\omega_{23} + 12\omega_{19}\omega_{10}^2\omega_7^3 -$
$36\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{23} + 12\omega_{19}\omega_{16}\omega_7^2\omega_{23} + 36\omega_{19}v_2^2\omega_{10}^2\omega_7\omega_{23} - 36\omega_{19}\omega_{16}v_2^2\omega_{10}\omega_7\omega_{23} - 12\omega_{19}\omega_{10}^2\omega_7\omega_{23} + 6\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23} -$
$12\omega_{19}c_s^2\omega_{16}\omega_{10}^2\omega_{23} - 12\omega_{19}\omega_{10}\omega_7^3 - 12\omega_{19}c_s^2\omega_{16}\omega_{10}^2\omega_7^2 - \omega_{19}c_s^2\omega_{16}\omega_{10}^2\omega_7^3\omega_{23} + 12\omega_{19}c_s^2\omega_{10}^2\omega_7^2 + 12c_s^2\omega_{16}\omega_{10}^2\omega_7^2 + 12\omega_{19}c_s^2\omega_{10}^2\omega_7^3\omega_{23} +$
$6\omega_{16}\omega_{10}^2\omega_7^3 - 12\omega_{19}\omega_{10}\omega_7^2\omega_{23} + 12\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23} + 36\omega_{19}v_2^2\omega_{10}\omega_7^2\omega_{23} - 12\omega_{16}\omega_{10}^2\omega_7^2 - 6c_s^2\omega_{16}\omega_{10}^2\omega_7^3 - 12\omega_{19}c_s^2\omega_{10}^2\omega_7^3 +$
$6\omega_{19}c_s^2\omega_{16}\omega_{10}^2\omega_7^3 + 36\omega_{19}v_2^2\omega_{10}^2\omega_7^2 - 24\omega_{19}c_s^2\omega_{10}^2\omega_7^2\omega_{23} - 4\omega_{19}c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{23} - 12\omega_{19}c_s^2\omega_{16}\omega_7^2\omega_{23} - 12\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23} -$
$18\omega_{19}\omega_{16}v_2^2\omega_{10}\omega_7^3 - 36\omega_{19}v_2^2\omega_{10}^2\omega_7^3 - 36\omega_{19}v_2^2\omega_{10}\omega_7^3\omega_{23} + 12\omega_{19}\omega_{10}\omega_7^3\omega_{23} + 6\omega_{19}\omega_{16}\omega_{10}\omega_7^3)\frac{c_s^2\rho}{12\omega_{19}\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_2} = C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_2}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_2} = (18\omega_3c_s^2\omega_{11}\omega_5^2 + 24\omega_3^2c_s^2\omega_5 - 36\omega_3v_2^2\omega_{11}\omega_5 + 72\omega_3^2v_2^2\omega_5 - 72\omega_3^2v_2^2\omega_5^2 - 12\omega_3\omega_5^2 - 12\omega_3^2c_s^2\omega_{11} - 24\omega_3^2c_s^2\omega_5^2 - 12\omega_3^2\omega_{11}\omega_5 -$
$12\omega_3c_s^2\omega_{11}\omega_5 - 12c_s^2\omega_{11}\omega_5^2 - 36\omega_3^2v_2^2\omega_{11} + 24\omega_3^3\omega_5 - 72\omega_3^3v_2^2\omega_5 + 36\omega_3v_2^2\omega_5^2 + 12\omega_3^2\omega_{11} - 12\omega_3^3 - 4\omega_3^2c_s^2\omega_{11}\omega_5^2 + 12\omega_3c_s^2\omega_5^2 + 12\omega_3\omega_{11}\omega_5 +$
$24\omega_3^2\omega_5^2 - 24\omega_3^3c_s^2\omega_5 + 36\omega_3^2v_2^2\omega_{11}\omega_5 - 24\omega_3^2\omega_5 + 12\omega_3^3c_s^2\omega_5^2 + 36\omega_3^3v_2^2 + 12\omega_3^2c_s^2\omega_{11}\omega_5 - \omega_3^3c_s^2\omega_{11}\omega_5^2 - 12\omega_3^3\omega_5^2 + 36\omega_3^3v_2^2\omega_5^2 + 12\omega_3^3c_s^2)\frac{c_s^2\rho}{12\omega_3^3\omega_{11}\omega_5^2}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_2} = (8\omega_3c_s^4\omega_4\omega_1\omega_2^3 + 32\omega_3^2c_s^2\omega_4\omega_1^2\omega_2 + 54\omega_3v_3^2c_s^2\omega_4\omega_1^2\omega_2^2 + \omega_3^2v_2^4\omega_4\omega_1^3\omega_2^2 + 54\omega_3^2c_s^2v_2^2\omega_1^3\omega_2^3 + 72\omega_3^2c_s^2\omega_1^2\omega_2^3 - 4\omega_3^2\omega_4\omega_1^2\omega_2 +$
$12\omega_3^2v_3^4\omega_4\omega_1^2\omega_2 - 90\omega_3^2v_3^2v_2^2\omega_4\omega_1\omega_2^3 - 6\omega_3v_2^2\omega_4\omega_1\omega_2^3 + 48\omega_3^2c_s^2v_2^2\omega_4\omega_1\omega_2^3 - 48\omega_3^2v_3^4\omega_4\omega_2^3 + 4\omega_3^2\omega_4\omega_2^3 + 36\omega_3v_3^4\omega_4\omega_1^3\omega_2^2 + 36\omega_3^2v_3^2\omega_4\omega_1\omega_2^2 -$
$12\omega_3^2v_3^2c_s^2\omega_4\omega_1^2\omega_2 + 18\omega_3^2c_s^4\omega_1^3\omega_2^3 + 18\omega_3v_3^4\omega_1^2\omega_2^3 + 36\omega_3c_s^2\omega_4\omega_1^3\omega_2^2 - 18v_3^2\omega_4\omega_1^2\omega_2^3 + 12\omega_3^2v_2^2\omega_4\omega_1\omega_2^3 - 108\omega_3^2v_3^2c_s^2\omega_4\omega_2^3 - 28\omega_3^2c_s^4\omega_4\omega_1\omega_2^2 +$

$9\omega_3^2v_3^4\omega_4\omega_1^3\omega_2^2 - 18\omega_3^2v_3^2\omega_1\omega_2^3 - 84\omega_3^2c_s^2v_2^2\omega_4\omega_1\omega_2^2 - 144\omega_3^2v_3^2v_2^2\omega_4\omega_1\omega_2^2 + 18\omega_3v_3^2\omega_1^3\omega_2^2 - 36\omega_3v_3^2c_s^2\omega_4\omega_1^3\omega_2 - 2\omega_3^2c_s^2\omega_4\omega_1^3\omega_2^2 +$
$72\omega_3^2v_3^2v_2^2\omega_4\omega_1^3 - 90\omega_3v_3^2c_s^2\omega_4\omega_1^2\omega_2^3 + 76\omega_3^2c_s^4\omega_4\omega_1\omega_2^3 + 12\omega_3^2v_2^2\omega_4\omega_1\omega_2^2 - 48\omega_3^2v_3^2\omega_4\omega_1^3 - 18\omega_3c_s^2\omega_4\omega_1^3\omega_2^3 - 24\omega_3^2v_3^2\omega_4\omega_1\omega_2^3 +$
$30\omega_3^2v_3^2c_s^2\omega_4\omega_1^3\omega_2^2 - 56\omega_3c_s^2\omega_4\omega_1^2\omega_2^2 - 72\omega_3^2c_s^4\omega_1^2\omega_2^3 + 6\omega_3v_3^4\omega_4\omega_1^2\omega_2^2 - 30\omega_3^2v_3^2c_s^2\omega_4\omega_1^2\omega_2^3 - 174\omega_3^2v_3^2c_s^2\omega_4\omega_1^3\omega_2 + 108\omega_3^2v_3^2v_2^2\omega_4\omega_2^3 -$
$36\omega_3^2v_3^4\omega_4\omega_1^3\omega_2 - 4\omega_3^2\omega_4\omega_1^3\omega_2 + 12\omega_3^2v_3^2\omega_4\omega_2^3 - 9\omega_3^2v_3^4\omega_4\omega_1^2\omega_2^3 + 90\omega_3v_3^2c_s^2\omega_4\omega_1^3\omega_2^2 + 18\omega_3^2c_s^2\omega_4\omega_1^3\omega_2 - 18\omega_3^2c_s^2\omega_1^3\omega_2^3 - 216\omega_3^2c_s^2v_2^2\omega_1^2\omega_2^3 +$
$2\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^3 - 18\omega_3v_3^2\omega_1^2\omega_2^3 - 12\omega_3v_3^4\omega_4\omega_1^3\omega_2 + 24\omega_3^2v_3^2c_s^2\omega_4\omega_1^2\omega_2^2 - 36\omega_3v_3^4\omega_4\omega_1^2\omega_2^3 + 18\omega_3^2v_3^4\omega_1\omega_2^3 - 8\omega_3c_s^2\omega_4\omega_1^3\omega_2 + 60\omega_3c_s^2v_2^2\omega_4\omega_1\omega_2^3 +$
$18v_3^2\omega_4\omega_1^3\omega_2^2 + 54\omega_3^2v_3^2c_s^2\omega_1\omega_2^3 - 18\omega_3v_3^4\omega_1^3\omega_2^2 + 36\omega_3c_s^2\omega_4\omega_1^2\omega_2^3 - \omega_3^2v_2^4\omega_4\omega_1^2\omega_2^3 - 36\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^2 + 4\omega_3^2\omega_4\omega_1^3 + 24\omega_3^2v_3^4\omega_4\omega_1^3 +$
$132\omega_3^2v_3^2c_s^2\omega_4\omega_1^3 + 8\omega_3^2\omega_4\omega_1^2\omega_2^2 - 18\omega_3^2v_3^4\omega_4\omega_1^2\omega_2^2 - 12\omega_3^2v_3^2c_s^2\omega_4\omega_1\omega_2^2 + 6\omega_3v_3^4\omega_4\omega_1\omega_2^3 - 18\omega_3^2v_3^4\omega_1^2\omega_2^3 - 28\omega_3^2c_s^4\omega_4\omega_1^2\omega_2 + 24\omega_3c_s^2v_2^2\omega_4\omega_1^3\omega_2 -$
$8\omega_3c_s^2\omega_4\omega_1\omega_2^3 - 54\omega_3^2v_3^2c_s^2\omega_1^2\omega_2^3 - 126\omega_3c_s^2v_2^2\omega_4\omega_1^2\omega_2^3 - 3\omega_3^2c_s^4\omega_4\omega_1^3\omega_2^3 - \omega_3^2v_2^2\omega_4\omega_1^3\omega_2^2 - 36\omega_3c_s^4\omega_4\omega_1^3\omega_2^2 + 32\omega_3^2c_s^2\omega_4\omega_1\omega_2^2 + 28\omega_3^2c_s^2\omega_4\omega_2^3 +$
$18v_3^4\omega_4\omega_1^2\omega_2^3 - 36\omega_3v_3^2\omega_4\omega_1^3\omega_2^2 + 12\omega_3^2v_3^4\omega_4\omega_1\omega_2^2 - 4\omega_3^2\omega_4\omega_1\omega_2^2 + 6\omega_3^2c_s^2v_2^2\omega_4\omega_1^3\omega_2^2 - 54\omega_3^2v_3^2c_s^2\omega_1^2\omega_2^2 - 12\omega_3^2v_2^2\omega_4\omega_1^3 + 2\omega_3^2c_s^4\omega_4\omega_1^3\omega_2^2 +$
$132\omega_3c_s^2v_2^2\omega_4\omega_1^2\omega_2^2 + 72\omega_3^2c_s^4\omega_1\omega_2^3 + 12\omega_3^2v_2^2\omega_4\omega_1^2\omega_2 + 12\omega_3^2c_s^2v_2^2\omega_4\omega_1^3 - 9\omega_3^2v_3^2\omega_4\omega_1^3\omega_2^2 - 18\omega_3^2v_3^4\omega_1^2\omega_2^2 + 150\omega_3^2v_3^2c_s^2\omega_4\omega_1\omega_2^3 - 18\omega_3^2v_3^2\omega_1^3\omega_2^2 +$
$54\omega_3^2v_3^4\omega_4\omega_1\omega_2^3 - 4\omega_3^2\omega_4\omega_1\omega_2^3 - 36\omega_3^2v_3^2v_2^2\omega_4\omega_1^2\omega_2 - 48\omega_3^2c_s^2v_2^2\omega_4\omega_1^2\omega_2 + 16\omega_3^2c_s^4\omega_4\omega_1^3 - 18\omega_3^2c_s^2\omega_4\omega_1\omega_2^3 + 216\omega_3^2c_s^2v_2^2\omega_1\omega_2^3 - 54v_3^2c_s^2\omega_4\omega_1^3\omega_2^2 +$
$18\omega_3c_s^4\omega_4\omega_1^3\omega_2^3 + 54\omega_3v_3^2c_s^2\omega_1^2\omega_2^3 - 6\omega_3v_3^2\omega_4\omega_1^2\omega_2^2 + 180\omega_3^2v_3^2v_2^2\omega_4\omega_1^2\omega_2^2 + 66\omega_3^2c_s^2v_2^2\omega_4\omega_1^2\omega_2^2 + 18\omega_3^2v_3^2\omega_1^2\omega_2^3 - 12\omega_3^2v_2^2\omega_4\omega_2^3 -$
$54\omega_3v_3^2c_s^2\omega_1^3\omega_2^2 - 18\omega_3v_3^2c_s^2\omega_4\omega_1\omega_2^3 + 56\omega_3c_s^4\omega_4\omega_1^2\omega_2^2 + 54v_3^2c_s^2\omega_4\omega_1^2\omega_2^3 - 96\omega_3^2c_s^2v_2^2\omega_4\omega_2^3 - 68\omega_3^2c_s^4\omega_4\omega_2^3 - 14\omega_3^2c_s^4\omega_4\omega_1^3\omega_2 - 14\omega_3^2c_s^4\omega_4\omega_1^2\omega_2^3 -$
$24\omega_3^2v_3^2\omega_4\omega_1^2\omega_2^2 + 54\omega_3c_s^2v_2^2\omega_4\omega_1^3\omega_2^3 + 66\omega_3^2v_3^2\omega_4\omega_1^3\omega_2 + 9\omega_3^2v_3^2\omega_4\omega_1^2\omega_2^3 - 18v_3^4\omega_4\omega_1^3\omega_2^2 - 72\omega_3^2c_s^2\omega_1\omega_2^3 + 8\omega_3c_s^4\omega_4\omega_1^3\omega_2 - 36\omega_3c_s^4\omega_4\omega_1^2\omega_2^3 +$
$12\omega_3v_3^2\omega_4\omega_1^3\omega_2 - 90\omega_3^2v_3^2v_2^2\omega_4\omega_1^3\omega_2 - 6\omega_3^2c_s^2v_2^2\omega_4\omega_1^2\omega_2^3 + 18\omega_3^2v_3^2\omega_1^2\omega_2^2 - 6\omega_3^2c_s^2v_2^2\omega_4\omega_1^3\omega_2 + 36\omega_3v_3^2\omega_4\omega_1^2\omega_2^3 - 42\omega_3^2v_3^2\omega_4\omega_1^2\omega_2^2 -$
$20\omega_3^2c_s^2\omega_4\omega_1^3 + 18\omega_3^2v_3^4\omega_1^3\omega_2^2 - 90\omega_3c_s^2v_2^2\omega_4\omega_1^3\omega_2^2 + \omega_3^2v_2^2\omega_4\omega_1^2\omega_2^3 + 28\omega_3^2c_s^4\omega_4\omega_1^2\omega_2^2 + 54\omega_3^2v_3^2c_s^2\omega_1^3\omega_2^2 + 12\omega_3^2v_2^2\omega_4\omega_1^3\omega_2)\frac{\rho}{36\omega_3^2\omega_4\omega_1^3\omega_2^3}$

coefficient $C^{(2)}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_3}$ **at** $\frac{\partial^4 v_3}{\partial x_2^2\partial x_3^2}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_3} = 0$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_3} = (4\omega_{19}c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{11} - 9\omega_{19}^2\omega_{16}\omega_{10}^3\omega_7^2\omega_{23}\omega_{11} - 4\omega_{19}^2\omega_{16}\omega_{10}^2\omega_7^3\omega_{11} + 12\omega_{19}c_s^2\omega_{16}^2\omega_{10}^3\omega_7\omega_{23}\omega_{11} - 8\omega_{19}^2c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{23}\omega_{11} +$
$4\omega_{19}^2c_s^2\omega_{16}\omega_{10}^2\omega_7^3\omega_{11} + 2\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{11} - 4\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11} - 4\omega_{19}^2v_2^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11} - 2\omega_{19}^2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{11} - 4\omega_{19}^2\omega_{10}^3\omega_7^3\omega_{23}\omega_{11} +$
$7\omega_{19}^2\omega_{16}v_2^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11} + 4\omega_{19}^2\omega_{16}^2v_2^2\omega_7^3\omega_{23}\omega_{11} + 2\omega_{19}^2\omega_{16}^2v_2^2\omega_{10}^2\omega_7\omega_{23}\omega_{11} + \omega_{19}^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{23}\omega_{11} + 2\omega_{19}^2c_s^2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{11} +$
$8\omega_{19}^2c_s^2\omega_{10}^3\omega_7^3\omega_{23}\omega_{11} + 11\omega_{19}^2c_s^2\omega_{16}\omega_{10}^3\omega_7^2\omega_{23}\omega_{11} - 6\omega_{19}^2\omega_{16}v_2^2\omega_{10}^3\omega_7\omega_{23}\omega_{11} - 2\omega_{19}^2\omega_{16}^2v_2^2\omega_{10}^2\omega_7^3\omega_{11} - 3\omega_{19}^2\omega_{16}v_2^2\omega_{10}^3\omega_7^3\omega_{23}\omega_{11} +$
$4\omega_{19}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11} + 4\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11} - 4\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{11} + \omega_{19}^2\omega_{16}^2v_2^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11} - 15\omega_{19}^2c_s^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11} +$
$2\omega_{19}^2c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}\omega_{11} - 8\omega_{19}^2c_s^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11} + 3\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11} - 16\omega_{19}^2c_s^2\omega_{16}^2\omega_{10}^3\omega_{23}\omega_{11} + 2\omega_{19}^2\omega_{16}^2v_2^2\omega_{10}^3\omega_7\omega_{23}\omega_{11} -$
$2\omega_{19}c_s^2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{11} - 2c_s^2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{23}\omega_{11} - 2\omega_{19}\omega_{16}^2v_2^2\omega_{10}^3\omega_7^2\omega_{23}\omega_{11} + 2\omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{23}\omega_{11} - \omega_{19}^2c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11} +$
$2\omega_{19}^2\omega_{16}^2v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{11} + 2\omega_{19}^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}\omega_{11} - 4\omega_{19}^2c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{11} - 4\omega_{19}^2c_s^2\omega_{16}^2\omega_{10}^3\omega_7\omega_{23} + 8\omega_{19}c_s^2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{23}\omega_{11} +$
$4\omega_{19}^2v_2^2\omega_{10}^3\omega_7^3\omega_{23}\omega_{11} + 4\omega_{19}^2\omega_{16}v_2^2\omega_{10}^2\omega_7^3\omega_{11} + 5\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11} - 8\omega_{19}^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11} + 4\omega_{19}^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{11} +$
$2\omega_{19}^2c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{23} - 8\omega_{19}^2c_s^2\omega_{10}^3\omega_7^2\omega_{23}\omega_{11} - 2\omega_{19}^2c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{11} - 5\omega_{19}^2c_s^2\omega_{16}\omega_{10}^3\omega_7^3\omega_{23}\omega_{11} + 4\omega_{19}^2\omega_{10}^3\omega_7^2\omega_{23}\omega_{11} + 2\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{11} -$
$2\omega_{19}\omega_{16}^2v_2^2\omega_{10}^3\omega_7^3\omega_{11} - \omega_{19}^2\omega_{16}^2v_2^2\omega_{10}^3\omega_7^2\omega_{23}\omega_{11} + 4\omega_{19}^2\omega_{16}v_2^2\omega_{10}^3\omega_7^2\omega_{11} - 2\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}\omega_{11} - 2\omega_{19}^2\omega_{16}v_2^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11} -$
$4\omega_{19}^2c_s^2\omega_{16}\omega_{10}^3\omega_7^3\omega_{11} - 4\omega_{19}^2\omega_{16}^2v_2^2\omega_{10}^3\omega_7^2\omega_{11} + 8\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11} - 6\omega_{19}^2c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}\omega_{11} - 4\omega_{19}^2\omega_{16}v_2^2\omega_{10}^3\omega_7^2\omega_{23}\omega_{11} +$
$4\omega_{19}^2\omega_{16}\omega_{10}^3\omega_7^3\omega_{11} + 3\omega_{19}^2\omega_{16}\omega_{10}^3\omega_7^2\omega_{23}\omega_{11} - 2\omega_{19}c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{23} - 4\omega_{19}^2\omega_{16}v_2^2\omega_{10}^3\omega_7^2\omega_{11} + 26\omega_{19}^2c_s^2\omega_{16}^2\omega_{10}^3\omega_7\omega_{23}\omega_{11} +$
$6\omega_{19}^2\omega_{16}\omega_{10}^3\omega_7\omega_{23}\omega_{11} - 4\omega_{19}^2v_2^2\omega_{10}^3\omega_7^2\omega_{23}\omega_{11} - 24\omega_{19}c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{23}\omega_{11} + 4\omega_{19}\omega_{16}^2v_2^2\omega_{10}^3\omega_7^2\omega_{11} - 2\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11} -$
$7\omega_{19}^2\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}\omega_{11} - 5\omega_{19}^2\omega_{16}^2v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{11} + 3\omega_{19}^2c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11} - \omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11} + 13\omega_{19}^2c_s^2\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}\omega_{11} +$
$4\omega_{19}c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{23} + 12\omega_{19}^2c_s^2\omega_{16}^2\omega_7^3\omega_{23}\omega_{11} - 4\omega_{19}^2\omega_{16}\omega_{10}^3\omega_7^2\omega_{11} - \omega_{19}\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{23}\omega_{11} + \omega_{19}\omega_{16}^2v_2^2\omega_{10}^3\omega_7^3\omega_{23}\omega_{11} + 4c_s^2\omega_{16}^2\omega_{10}^3\omega_7^2\omega_{23}\omega_{11} +$
$9\omega_{19}^2\omega_{16}v_2^2\omega_{10}^3\omega_7^2\omega_{23}\omega_{11} - 6\omega_{19}^2c_s^2\omega_{16}\omega_{10}^3\omega_7\omega_{23}\omega_{11} + 2\omega_{19}^2\omega_{16}^2v_2^2\omega_{10}^3\omega_7^3\omega_{11} - 2\omega_{19}^2\omega_{16}^2\omega_{10}^3\omega_7\omega_{23}\omega_{11} + 2\omega_{19}^2c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11} -$
$3\omega_{19}^2\omega_{16}^2v_2^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11} + 4\omega_{19}^2c_s^2\omega_{16}\omega_{10}^3\omega_7^2\omega_{11} - 4\omega_{19}^2\omega_{16}^2\omega_7^3\omega_{23}\omega_{11})\frac{v_3v_2\rho}{2\omega_{19}^2\omega_{16}^2\omega_{10}^3\omega_7^3\omega_{23}\omega_{11}}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_3} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_3}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_3} = 0$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_3} = 0$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_3} = 0$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_3} =$
$(-18c_s^2\omega_1\omega_2^3 + 6\omega_3v_3^2\omega_1^2\omega_2 - 12\omega_3v_2^2\omega_1\omega_2^2 + 6\omega_3\omega_1^2\omega_2 + 84\omega_3c_s^2\omega_1^3 - 114\omega_3v_3^2\omega_2^3 + 6\omega_1\omega_2^3 + 50\omega_3v_3^2\omega_1^3\omega_2^2 - 9\omega_3v_2^2\omega_1\omega_2^3 - 23\omega_3\omega_1^3\omega_2^2 +$
$12\omega_3v_2^2\omega_1^3 + 48\omega_3\omega_1^3\omega_2 + 23\omega_3\omega_1^2\omega_2^3 - 6v_2^2\omega_1\omega_2^3 - 75\omega_3v_3^2\omega_1^3\omega_2 + 12\omega_3v_2^2\omega_2^3 - 50\omega_3v_3^2\omega_1^2\omega_2^3 + 12\omega_3\omega_1^2\omega_2^2 - 66\omega_3v_3^2\omega_1^2\omega_2^2 + 48\omega_3v_3^2\omega_1^3 - 66\omega_3c_s^2\omega_2^3 +$
$108\omega_3c_s^2\omega_1\omega_2^3 - 12\omega_3\omega_1\omega_2^2 - 12\omega_3v_2^2\omega_1^2\omega_2 + 60\omega_3v_3^2\omega_1\omega_2^2 + 12v_2^2\omega_1^2\omega_2^2 - 108\omega_3c_s^2\omega_1^3\omega_2 + 42\omega_3\omega_2^3 - 42\omega_3c_s^2\omega_1^2\omega_2^3 - 60\omega_3\omega_1\omega_2^3 - 6v_2^2\omega_1^3\omega_2 +$
$141\omega_3v_3^2\omega_1\omega_2^3 - 18\omega_3c_s^2\omega_1^2\omega_2 - 9\omega_3v_2^2\omega_1^3\omega_2 + 36c_s^2\omega_1^2\omega_2^2 - 12\omega_1^2\omega_2^2 + 18\omega_3v_2^2\omega_1^2\omega_2^2 - 18c_s^2\omega_1^3\omega_2 + 42\omega_3c_s^2\omega_1^3\omega_2^2 + 6\omega_1^3\omega_2 - 36\omega_3\omega_1^3)\frac{v_3v_2\rho}{18\omega_3\omega_1^3\omega_2^3}$

coefficient $C^{(2)}_{\mathrm{D}_x\mathrm{D}_z^3\rho}$ **at** $\frac{\partial^4\rho}{\partial x_1\partial x_3^3}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_z^3\rho} = 0$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D_x D_z^3}\rho} = (-4\omega_6\omega_{19}^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} + 8\omega_6\omega_{19}v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 4\omega_6\omega_{19}^2v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5 - 12\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8 -$
$8\omega_6\omega_{19}^2v_3^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} - 2\omega_6\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 12\omega_6\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5 - 4\omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8 - 4\omega_6\omega_{19}^2\omega_7^2\omega_{11}^2\omega_{18} +$
$4\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8 - 4\omega_6\omega_{19}v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18} + 4\omega_6\omega_{19}^2v_3^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18} + 24\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} - 4\omega_6\omega_{19}^2\omega_7\omega_{20}\omega_8\omega_5\omega_{18} -$
$4\omega_6\omega_{19}^2v_3^2\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18} - 2\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5 - 24\omega_6\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} - 12\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18} + 12\omega_6\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18} -$
$12\omega_6\omega_{19}^2c_s^2\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18} + 2\omega_6\omega_{19}v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18} + 2\omega_6\omega_{19}^2v_3^2\omega_7^2\omega_{11}^2\omega_8\omega_5\omega_{18} + 2\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_8\omega_5\omega_{18} - 2\omega_6\omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18} +$
$6\omega_6\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18} + 4\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8\omega_5 + 6\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{11}^2\omega_8\omega_5\omega_{18} - 6\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18} - 3\omega_6\omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5 -$
$9\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5 + 4\omega_6\omega_{19}^2\omega_7^2\omega_{11}^2\omega_5\omega_{18} + 12\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18} - 2\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8 + 4\omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18} -$
$12\omega_6\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}\omega_5\omega_{18} + 12\omega_6\omega_{19}^2c_s^2\omega_7\omega_{11}^2\omega_5\omega_{18} + 4\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5 + 4\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_{18} + 12\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5 +$
$4\omega_6\omega_{19}^2v_3^2\omega_7^2\omega_{11}^2\omega_5\omega_{18} - 4\omega_6\omega_{19}^2v_3^2\omega_7\omega_{20}\omega_{11}\omega_5\omega_{18} + 4\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18} + 4\omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5 - 4\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5 -$
$2\omega_6\omega_{19}v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 12\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_5\omega_{18} - 12\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5 + 4\omega_6\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 4\omega_6\omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_5\omega_{18} -$
$4\omega_{19}^2v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5 + 3\omega_6\omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} - 2\omega_6\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18} + 2\omega_6\omega_{19}^2\omega_7^2\omega_{11}^2\omega_8\omega_{18} - 6\omega_6\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} -$
$4\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18} + 12\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{11}^2\omega_{18} + 9\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} - 2\omega_6\omega_{19}^2v_3^2\omega_7^2\omega_{11}^2\omega_8\omega_{18} + 2\omega_6v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} -$
$6\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{11}^2\omega_8\omega_{18} - 4\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_5\omega_{18} - 4\omega_6\omega_{19}\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18} + 6\omega_6c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} - 8\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} +$
$2\omega_6\omega_{19}\omega_7^2\omega_{11}^2\omega_8\omega_5\omega_{18} - 12\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_{18} - 4\omega_{19}^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} - 4\omega_6\omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_{18} - 4\omega_6\omega_{19}^2\omega_7\omega_{11}^2\omega_5\omega_{18} -$
$12\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} - 3\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} - 4\omega_6\omega_{19}v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 4\omega_6\omega_{19}^2\omega_7\omega_{20}\omega_{11}\omega_5\omega_{18} - 4\omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} -$
$12\omega_6\omega_{19}c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 2\omega_6\omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8 + 6\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8 - 12\omega_6\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5 - 2\omega_6\omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_8\omega_5\omega_{18} -$
$2\omega_6\omega_{19}^2\omega_7^2\omega_{11}^2\omega_8\omega_5\omega_{18} + 2\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18} + 4\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} + 8\omega_6\omega_{19}^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} - 4\omega_6\omega_{19}^2v_3^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5 -$
$12\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{11}^2\omega_5\omega_{18} + 12\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} - 6\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_8\omega_5\omega_{18} - 4\omega_6\omega_{19}^2v_3^2\omega_7^2\omega_{11}^2\omega_5\omega_{18} + 3\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5 +$
$12\omega_6\omega_{19}c_s^2\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18} + 4\omega_6\omega_{19}v_3^2\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18} + 4\omega_{19}^2v_3^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} + 4\omega_6\omega_{19}^2v_3^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} - 4\omega_6v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} -$
$4\omega_6\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5 - 6\omega_6\omega_{19}c_s^2\omega_7^2\omega_{11}^2\omega_8\omega_5\omega_{18} + 12\omega_6\omega_{19}^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} - 2\omega_6\omega_{19}v_3^2\omega_7^2\omega_{11}^2\omega_8\omega_5\omega_{18} + 6\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5 -$
$12\omega_6c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} - 4\omega_6\omega_{19}^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18} + 4\omega_6\omega_{19}^2\omega_7^2\omega_{11}^2\omega_8\omega_5\omega_{18} + 4\omega_6\omega_{19}v_3^2\omega_7\omega_{20}\omega_8\omega_5\omega_{18} + 4\omega_6\omega_{19}^2v_3^2\omega_7^2\omega_{11}^2\omega_{18} +$
$2\omega_6\omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5 + 4\omega_6\omega_{19}\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 2\omega_6\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 12\omega_6\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_8\omega_5\omega_{18})\frac{v_3v_2v_1}{4\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D_x D_z^3}\rho} = C^{(2),\mathrm{MRT1}}_{\mathrm{D_x D_z^3}\rho}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D_x D_z^3}\rho} = 0$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D_x D_z^3}\rho} = 0$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D_x D_z^3}\rho} = 0$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D_x D_z^3}\rho} = (v_1^2\omega_1 - v_1^2\omega_2 - \omega_1 - 3c_s^2\omega_2 + \omega_2 + 3c_s^2\omega_1)\frac{v_3v_2v_1}{12\omega_1\omega_2}$

coefficient $C^{(2)}_{\mathrm{D_x D_z^3}v_1}$ **at** $\frac{\partial^4 v_1}{\partial x_1 \partial x_3^3}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D_x D_z^3}v_1} = (2 - \omega + v_3^2\omega - 2v_3^2 + 3c_s^2\omega - 6c_s^2)\frac{v_3v_2\rho}{12\omega}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D_x D_z^3}v_1} = (24\omega_6^2\omega_{19}^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18} + 18\omega_6^2\omega_{19}v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} - 12\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18} + 12\omega_6^2\omega_{19}^2v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2 -$
$12\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_{18} - 36\omega_6^2\omega_{19}c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2 - 18\omega_6^2\omega_{19}^2v_3^2\omega_7\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} -$
$12\omega_6^2\omega_{19}v_3^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^2\omega_{19}^2\omega_7^2\omega_{11}^2\omega_8\omega_5\omega_{18} + 54\omega_6^2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} - 4\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2\omega_{19}^2\omega_7\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} +$
$24\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2\omega_{19}\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} + 6\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} - 54\omega_6^2\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$6\omega_6^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18} - 6\omega_6^2\omega_{19}^2\omega_7^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} - 18\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} + 42\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18} +$
$18\omega_6^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} + 30\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18} + 12\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5 - 24\omega_6\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} -$
$9\omega_6^2\omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2 + 12\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_5\omega_{18} + 6\omega_6^2v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} + 6\omega_6^2\omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18} +$
$24\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} + 6\omega_6^2\omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18} - 9\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2 + 6\omega_6^2\omega_{19}\omega_7^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} - 12\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2 +$
$36\omega_6^2\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_8^2\omega_5^2\omega_{18} + 3\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} - 6\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18} + 6\omega_6^2\omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5 - 6\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2 -$
$54\omega_6^2\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18} + 12\omega_6^2\omega_{19}^2v_3^2\omega_7\omega_{20}\omega_8^2\omega_5^2\omega_{18} + 6\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5 - 12\omega_6\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18} -$
$36\omega_6^2c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} - 6\omega_6^2\omega_{19}v_3^2\omega_7^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^2\omega_{19}^2v_3^2\omega_7^2\omega_{11}^2\omega_8\omega_5^2\omega_{18} + 36\omega_6^2\omega_{19}^2c_s^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 6\omega_6^2\omega_{19}^2v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18} - 12\omega_6\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} - 24\omega_6\omega_{19}^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} -$
$6\omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^2v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2\omega_{19}^2v_3^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{11}^2\omega_8\omega_5^2\omega_{18} + 12\omega_6^2\omega_{19}^2v_3^2\omega_7\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5^2\omega_{18} - 3\omega_6^2\omega_{19}v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2\omega_{19}^2v_3^2\omega_7\omega_{11}^2\omega_8\omega_5^2\omega_{18} + 4\omega_6^2\omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^2\omega_{19}c_s^2\omega_7\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2\omega_{19}^2c_s^2\omega_7\omega_{11}^2\omega_8\omega_5^2\omega_{18} - 18\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^2\omega_{19}\omega_7\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} + 12\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2 +$
$12\omega_6^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}\omega_8^2\omega_5^2 + 18\omega_6^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18} - 9\omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} - 6\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} -$
$6\omega_6^2\omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 6\omega_6\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} - 24\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} -$
$6\omega_6^2\omega_{19}^2v_3^2\omega_7^2\omega_{11}^2\omega_8^2\omega_5\omega_{18} - \omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} + 9\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2 + 6\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} -$
$12\omega_6\omega_{19}^2v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2 + 6\omega_6^2\omega_{19}^2v_3^2\omega_7^2\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} - 12\omega_6\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2 + 12\omega_6\omega_{19}^2v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2 + 6\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} -$
$12\omega_6^2\omega_{19}^2c_s^2\omega_7\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2 + 54\omega_6\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^2\omega_{19}^2v_3^2\omega_7\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^2\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 12\omega_6^2\omega_{19}^2v_3^2\omega_7^2\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 6\omega_6\omega_{19}^2v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2 +$
$12\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{11}^2\omega_8\omega_5\omega_{18} - 12\omega_6^2\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}\omega_8^2\omega_5^2 + 6\omega_6^2\omega_{19}^2\omega_7^2\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 6\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^2\omega_{19}^2v_3^2\omega_7\omega_{20}\omega_{11}\omega_8^2\omega_5^2 -$

$42\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} - 36\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} - 12\omega_6\omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5 - 12\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5 - 12\omega_6^2\omega_{19}^2\omega_7\omega_{11}^2\omega_8\omega_5^2\omega_{18} - 6\omega_6^2\omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} - 6\omega_6\omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_5^2\omega_{18} - 12\omega_6^2\omega_{19}^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 3\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} + 12\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 12\omega_6^2\omega_{19}^2\omega_7^2\omega_{11}^2\omega_8\omega_5^2\omega_{18} - 6\omega_6^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_5^2\omega_{18} + \omega_6^2\omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18} + 6\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2 - 12\omega_6^2\omega_{19}^2\omega_7\omega_{20}\omega_8^2\omega_5^2\omega_{18} - 6\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - 6\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5 + 6\omega_6^2\omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2 - 24\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18})\frac{v_3v_2\rho}{12\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5^2\omega_{18}}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_z^3v_1} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^3v_1}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_z^3v_1} = (v_3^2\omega_{11}\omega_{18} - 9c_s^2\omega_{11} - 3v_3^2\omega_{11} + 3\omega_{11} + 3c_s^2\omega_{18} - \omega_{11}\omega_{18} + 3c_s^2\omega_{11}\omega_{18} + v_3^2\omega_{18} - \omega_{18})\frac{v_3v_2\rho}{12\omega_{11}\omega_{18}}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_z^3v_1} = C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_z^3v_1}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_z^3v_1} = (-3\omega_6v_3^2 + 3\omega_6 + 3\omega_6c_s^2\omega_8 + v_3^2\omega_8 - 9\omega_6c_s^2 + 3c_s^2\omega_8 - \omega_6\omega_8 + \omega_6v_3^2\omega_8 - \omega_8)\frac{v_3v_2\rho}{12\omega_6\omega_8}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_z^3v_1} = (9\omega_4\omega_1\omega_2 - 27\omega_3c_s^2\omega_1\omega_2 - 27c_s^2\omega_4\omega_1\omega_2 + 12\omega_3c_s^2\omega_4\omega_1 + 6\omega_3c_s^2\omega_4\omega_2 + 6\omega_3v_3^2\omega_4\omega_1\omega_2 - 6\omega_3\omega_4\omega_1\omega_2 + 2\omega_3\omega_4\omega_2 + 18\omega_3v_1^2\omega_4\omega_1 + 4\omega_3v_3^2\omega_4\omega_2 - 9v_3^2\omega_4\omega_1\omega_2 + 18\omega_3c_s^2\omega_4\omega_1\omega_2 - 8\omega_3\omega_4\omega_1 - 9\omega_3v_3^2\omega_1\omega_2 + 2\omega_3v_3^2\omega_4\omega_1 - 18\omega_3v_1^2\omega_4\omega_2 + 9\omega_3\omega_1\omega_2)\frac{v_3v_2\rho}{72\omega_3\omega_4\omega_1\omega_2}$

coefficient $C^{(2)}_{\mathrm{D}_x\mathrm{D}_z^3v_2}$ **at** $\frac{\partial^4 v_2}{\partial x_1\partial x_3^3}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_z^3v_2} = 0$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^3v_2} = (5\omega_{19}^2c_s^2\omega_7^3\omega_{20}\omega_8\omega_5^2 - 2\omega_{19}^2c_s^2\omega_7^3\omega_8\omega_5^2 + \omega_{19}^2v_3^2\omega_7^3\omega_{20}\omega_8\omega_5^2 + 2\omega_{19}^2\omega_7^3\omega_8\omega_5^2 - \omega_{19}^2\omega_7\omega_{20}\omega_8^2\omega_5^2 + 13\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_8^2\omega_5^2 - \omega_{19}^2v_3^2\omega_7^3\omega_8^2\omega_5 + \omega_{19}^2v_3^2\omega_7\omega_{20}\omega_8^2\omega_5^2 - \omega_{19}^2\omega_7^3\omega_{20}\omega_8\omega_5^2 + 2\omega_{19}^2c_s^2\omega_7^3\omega_{20}\omega_8 + 4\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_8\omega_5 + 2\omega_{19}^2v_3^2\omega_7^2\omega_8\omega_5^2 + 2\omega_{19}\omega_7\omega_{20}\omega_8^2\omega_5^2 + 2\omega_{19}^2c_s^2\omega_7^3\omega_{20}\omega_5 - 2\omega_{19}^2c_s^2\omega_7^3\omega_{20}\omega_5^2 - \omega_{19}v_3^2\omega_7^3\omega_8^2\omega_5^2 - 2\omega_{19}^2c_s^2\omega_7^2\omega_8^2\omega_5^2 + 2\omega_{19}^2\omega_7^2\omega_8^2\omega_5^2 + \omega_{19}^2v_3^2\omega_7^3\omega_8^2\omega_5^2 - 6\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_8^2\omega_5 + 2\omega_{19}c_s^2\omega_7^2\omega_8^2\omega_5^2 - \omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_8\omega_5^2 + \omega_{19}^2\omega_7^3\omega_{20}\omega_8\omega_5 - 11\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_8\omega_5^2 - 7\omega_{19}^2c_s^2\omega_7^3\omega_{20}\omega_8\omega_5 - 2\omega_{19}v_3^2\omega_7\omega_{20}\omega_8^2\omega_5^2 - 2\omega_{19}c_s^2\omega_7\omega_{20}\omega_8^2\omega_5^2 - \omega_{19}^2v_3^2\omega_7^3\omega_{20}\omega_8\omega_5 + \omega_{19}^2\omega_7^2\omega_{20}\omega_8\omega_5^2 + 2\omega_{19}^2c_s^2\omega_7^3\omega_8\omega_5 + \omega_{19}\omega_7^3\omega_8^2\omega_5^2 - 2\omega_{19}^2\omega_7^3\omega_8\omega_5 - \omega_{19}c_s^2\omega_7^3\omega_{20}\omega_8^2\omega_5^2 - 8\omega_{19}^2c_s^2\omega_{20}\omega_8^2\omega_5^2 - \omega_{19}v_3^2\omega_7^3\omega_{20}\omega_8^2\omega_5^2 - 2\omega_{19}^2v_3^2\omega_7^3\omega_8\omega_5^2 - 5\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_8^2\omega_5^2 - \omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_8^2\omega_5^2 - \omega_{19}^2c_s^2\omega_7^3\omega_8^2\omega_5 + v_3^2\omega_7^3\omega_{20}\omega_8^2\omega_5^2 + \omega_{19}^2\omega_7^2\omega_{20}\omega_8^2\omega_5^2 + c_s^2\omega_7^3\omega_{20}\omega_8^2\omega_5^2 - 2\omega_{19}v_3^2\omega_7^2\omega_{20}\omega_8^2\omega_5 + \omega_{19}^2\omega_7^3\omega_8^2\omega_5 - 2\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_8^2\omega_5 - 4\omega_{19}\omega_7^2\omega_{20}\omega_8^2\omega_5^2 + 2\omega_7^2\omega_{20}\omega_8^2\omega_5^2 + 2\omega_{19}^2c_s^2\omega_7^2\omega_8\omega_5^2 - 2\omega_{19}^2\omega_7^2\omega_8\omega_5^2 - \omega_{19}\omega_7^3\omega_{20}\omega_8^2\omega_5 - 2\omega_{19}\omega_7^2\omega_8^2\omega_5^2 - \omega_7^3\omega_{20}\omega_8^2\omega_5^2 + \omega_{19}\omega_7^3\omega_{20}\omega_8^2\omega_5^2 - \omega_{19}c_s^2\omega_7^3\omega_8^2\omega_5^2 + 2\omega_{19}\omega_7^2\omega_{20}\omega_8^2\omega_5 - 2\omega_{19}^2v_3^2\omega_7^2\omega_8^2\omega_5^2 - 2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_8^2 - \omega_{19}^2\omega_7^2\omega_{20}\omega_8^2\omega_5 + \omega_{19}^2c_s^2\omega_7^3\omega_8^2\omega_5^2 + 2\omega_{19}v_3^2\omega_7^2\omega_8^2\omega_5^2 + 4\omega_{19}v_3^2\omega_7^2\omega_{20}\omega_8^2\omega_5^2 + 4\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_8^2\omega_5^2 - \omega_{19}^2\omega_7^3\omega_8^2\omega_5^2 + \omega_{19}c_s^2\omega_7^3\omega_{20}\omega_8^2\omega_5 + 2\omega_{19}^2v_3^2\omega_7^3\omega_8^2\omega_5 + \omega_{19}v_3^2\omega_7^3\omega_{20}\omega_8^2\omega_5 + 6\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_8\omega_5^2 + 2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_5^2 + 7\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_8^2\omega_5 - 2c_s^2\omega_7^2\omega_{20}\omega_8^2\omega_5^2 + \omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_8^2\omega_5 - 2v_3^2\omega_7^2\omega_{20}\omega_8^2\omega_5^2)\frac{v_3v_1\rho}{2\omega_{19}^2\omega_7^3\omega_{20}\omega_8^2\omega_5^2}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_z^3v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^3v_2}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_z^3v_2} = 0$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_z^3v_2} = 0$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_z^3v_2} = 0$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_z^3v_2} = (2\omega_3\omega_4^2\omega_1 + 18\omega_3c_s^2\omega_4^2 + 2\omega_3^2v_1^2\omega_4\omega_1 + 3v_1^2\omega_4^2\omega_1 + 12\omega_3v_3^2\omega_4 - 2\omega_3^2\omega_4\omega_1 - 18\omega_3c_s^2\omega_4\omega_1 + 6\omega_3^2v_1^2 + 12\omega_4^2 - 3\omega_3^2v_1^2\omega_1 - 6\omega_3^2v_1^2\omega_4 - 6v_1^2\omega_4^2 + 3v_3^2\omega_4^2\omega_1 + 36\omega_3c_s^2\omega_4 - 2\omega_3v_1^2\omega_4^2\omega_1 + 6\omega_3^2\omega_4 - 6\omega_3^2v_3^2 - 12\omega_3\omega_4 + 18c_s^2\omega_4^2\omega_1 + 6\omega_3^2c_s^2\omega_4\omega_1 - 36c_s^2\omega_4^2 - 18\omega_3^2c_s^2\omega_4 - 6\omega_4^2\omega_1 - 6\omega_3c_s^2\omega_4^2\omega_1 + 6\omega_3v_1^2\omega_4^2 - 6v_3^2\omega_4^2 + 3\omega_3^2v_3^2\omega_1 + 6\omega_3\omega_4\omega_1 - 6\omega_3\omega_4^2 - 6\omega_3v_3^2\omega_4\omega_1)\frac{v_3v_1\rho}{8\omega_3^2\omega_4^2\omega_1}$

coefficient $C^{(2)}_{\mathrm{D}_x\mathrm{D}_z^3v_3}$ **at** $\frac{\partial^4 v_3}{\partial x_1\partial x_3^3}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_z^3v_3} = 0$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^3v_3} = (-4\omega_6\omega_{19}^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} + 24\omega_6\omega_{19}v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 12\omega_6\omega_{19}^2v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5 - 4\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8 - 24\omega_6\omega_{19}^2v_3^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} - 2\omega_6\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 4\omega_6\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5 - 12\omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8 - 4\omega_6\omega_{19}^2\omega_7^2\omega_{11}^2\omega_{18} + 4\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8 - 12\omega_6\omega_{19}v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18} + 12\omega_6\omega_{19}^2v_3^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18} + 8\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} - 4\omega_6\omega_{19}^2\omega_7\omega_{20}\omega_8\omega_5\omega_{18} - 12\omega_6\omega_{19}^2v_3^2\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18} - 2\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5 - 8\omega_6\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} - 4\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18} + 4\omega_6\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18} - 4\omega_6\omega_{19}^2c_s^2\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18} + 6\omega_6\omega_{19}v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18} + 6\omega_6\omega_{19}^2v_3^2\omega_7^2\omega_{11}^2\omega_8\omega_5\omega_{18} + 2\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_8\omega_5\omega_{18} - 6\omega_6\omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18} + 2\omega_6\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18} + 4\omega_6\omega_{19}^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5 + 2\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{11}^2\omega_8\omega_5\omega_{18} - 2\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18} - 9\omega_6\omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5 - 3\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5 + 4\omega_6\omega_{19}^2\omega_7^2\omega_{11}^2\omega_5\omega_{18} + 4\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18} - 2\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8 + 12\omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18} -$

$4\omega_6\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}\omega_5\omega_{18} + 4\omega_6\omega_{19}^2c_s^2\omega_7\omega_{11}^2\omega_5\omega_{18} + 4\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5 + 4\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_{18} + 4\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5 +$
$12\omega_6\omega_{19}^2v_3^2\omega_7\omega_{11}^2\omega_5\omega_{18} - 12\omega_6\omega_{19}^2v_3^2\omega_7\omega_{20}\omega_{11}\omega_5\omega_{18} + 4\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18} + 12\omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5 - 4\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5 -$
$6\omega_6\omega_{19}v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 4\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_5\omega_{18} - 4\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5 + 4\omega_6\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 12\omega_6\omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_5\omega_{18} -$
$12\omega_{19}^2v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5 + 9\omega_6\omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} - 2\omega_6\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18} + 2\omega_6\omega_{19}^2\omega_7^2\omega_{11}^2\omega_8\omega_{18} - 2\omega_6\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} -$
$4\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18} + 4\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{11}^2\omega_{18} + 3\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} - 6\omega_6\omega_{19}^2v_3^2\omega_7^2\omega_{11}^2\omega_8\omega_{18} + 6\omega_6v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} -$
$2\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{11}^2\omega_8\omega_{18} - 4\omega_6\omega_{19}^2\omega_{20}\omega_{11}\omega_5\omega_{18} - 4\omega_6\omega_{19}\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18} + 2\omega_6c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} - 8\omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} +$
$2\omega_6\omega_{19}\omega_7^2\omega_{11}^2\omega_8\omega_5\omega_{18} - 4\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_{18} - 4\omega_{19}^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} - 12\omega_6\omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_{18} - 4\omega_6\omega_{19}^2\omega_7\omega_{11}^2\omega_5\omega_{18} -$
$4\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} - 3\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} - 12\omega_6\omega_{19}v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 4\omega_6\omega_{19}^2\omega_7\omega_{20}\omega_{11}\omega_5\omega_{18} - 12\omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} -$
$4\omega_6\omega_{19}c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 6\omega_6\omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8 + 2\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8 - 4\omega_6\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5 - 6\omega_6\omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_8\omega_5\omega_{18} -$
$2\omega_6\omega_{19}^2\omega_7^2\omega_{11}^2\omega_8\omega_5\omega_{18} + 2\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18} + 4\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} + 8\omega_6\omega_{19}^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} - 12\omega_6\omega_{19}^2v_3^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5 -$
$4\omega_6\omega_{19}c_s^2\omega_7^2\omega_{11}^2\omega_5\omega_{18} + 4\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} - 2\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_8\omega_5\omega_{18} - 12\omega_6\omega_{19}^2v_3^2\omega_7^2\omega_{11}^2\omega_5\omega_{18} + 3\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5 +$
$4\omega_6\omega_{19}c_s^2\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18} + 12\omega_6\omega_{19}v_3^2\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18} + 12\omega_{19}^2v_3^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} + 12\omega_6\omega_{19}^2v_3^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} - 12\omega_6v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} -$
$4\omega_6\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5 - 2\omega_6\omega_{19}c_s^2\omega_7^2\omega_{11}^2\omega_8\omega_5\omega_{18} + 4\omega_6\omega_{19}^2c_s^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} - 6\omega_6\omega_{19}v_3^2\omega_7^2\omega_{11}^2\omega_8\omega_5\omega_{18} + 2\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5 -$
$4\omega_6c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} - 4\omega_6\omega_{19}^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18} + 4\omega_6\omega_{19}^2\omega_7\omega_{11}^2\omega_8\omega_5\omega_{18} + 12\omega_6\omega_{19}^2v_3^2\omega_7\omega_{20}\omega_8\omega_5\omega_{18} + 12\omega_6\omega_{19}^2v_3^2\omega_7^2\omega_{11}^2\omega_{18} +$
$6\omega_6\omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5 + 4\omega_6\omega_{19}\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 2\omega_6\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 4\omega_6\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_8\omega_5\omega_{18})\frac{v_2v_1\rho}{4\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_z^3v_3} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^3v_3}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_z^3v_3} = 0$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_z^3v_3} = 0$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_z^3v_3} = 0$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_z^3v_3} = (v_1^2\omega_1 - v_1^2\omega_2 - \omega_1 - 3c_s^2\omega_2 + \omega_2 + 3c_s^2\omega_1)\frac{v_2v_1\rho}{36\omega_1\omega_2}$

coefficient $C^{(2)}_{\mathrm{D}_y\mathrm{D}_z^3\rho}$ **at** $\frac{\partial^4\rho}{\partial x_2\partial x_3^3}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_y\mathrm{D}_z^3\rho} = (24 - \omega^3 + 14\omega^2 - 36\omega + 36v_3^2\omega - 42c_s^2\omega^2 + 3c_s^2\omega^3 + v_3^2\omega^3 - 24v_3^2 + 108c_s^2\omega - 72c_s^2 - 14v_3^2\omega^2)\frac{v_3c_s^2}{12\omega^3}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^3\rho} = (12\omega_{19}v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{11}^2 - 5\omega_{19}^2v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11} - 12\omega_{19}^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{23} - 36\omega_{19}^2c_s^2v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{11} +$
$36\omega_{19}^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{11} + 12\omega_{19}^2c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{11} + 12\omega_{19}^2v_3^2c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{11}^2 - 12\omega_{19}^2v_3^2\omega_{10}\omega_7^2\omega_{11}^2 + 15\omega_{19}\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2 -$
$12v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2 + 12\omega_{19}^2v_3^2c_s^2\omega_7^3\omega_{11}^2 - 12\omega_{19}^2v_3^2v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{11} - \omega_{19}^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2 - 12\omega_{19}\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11}^2 +$
$36\omega_{19}^2c_s^2v_2^2\omega_{10}\omega_7^2\omega_{11}^2 + 12\omega_{19}^2v_3^2v_2^2\omega_{10}\omega_7^2\omega_{11}^2 + 6\omega_{19}^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11} - 72\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{11}^2 + 3\omega_{19}^2c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2 + 12\omega_{19}^2c_s^2\omega_7^3\omega_{23}\omega_{11} -$
$6\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2 + 36\omega_{19}^2c_s^4\omega_{10}\omega_7^2\omega_{11}^2 - 6\omega_{19}^2v_3^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11} - 15\omega_{19}v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2 - 24\omega_{19}v_3^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{11}^2 -$
$36\omega_{19}^2c_s^4\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{11} - 18\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11} + 6\omega_{19}^2c_s^2\omega_{16}\omega_7^3\omega_{11}^2 + 12\omega_{19}^2v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{11} - 6\omega_{19}^2v_3^2c_s^2\omega_{16}\omega_7^3\omega_{11}^2 +$
$36\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{23} - 18\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{11}^2 + 12\omega_{19}^2v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{23} - 45\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2 - 12\omega_{19}^2v_3^2c_s^2\omega_7^3\omega_{23}\omega_{11} -$
$6\omega_{19}v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{11}^2 - 72\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7\omega_{23}\omega_{11}^2 + 6\omega_{19}^2v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{11} - 12\omega_{19}^2v_3^2c_s^2\omega_{10}\omega_7^2\omega_{23}\omega_{11} - 36\omega_{19}^2c_s^2v_2^2\omega_{10}\omega_7^3\omega_{11}^2 +$
$18\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{11} - 12\omega_{19}^2v_3^2v_2^2\omega_{10}\omega_7^3\omega_{11}^2 - 15\omega_{19}^2c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11} - 24\omega_{19}v_3^2\omega_{16}v_2^2\omega_{10}\omega_7\omega_{23}\omega_{11}^2 + 18\omega_{19}v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2 +$
$12\omega_{19}^2v_2^2\omega_{10}\omega_7^3\omega_{11}^2 + 156\omega_{19}^2c_s^4\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{11}^2 - 6\omega_{19}v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{11}^2 + 6\omega_{19}v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{11} + 12\omega_{19}^2v_3^2v_2^2\omega_7^3\omega_{11}^2 +$
$12c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2 + 6\omega_{19}^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23} - 42\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2 + 18c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2 - 6\omega_{19}^2v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23} +$
$12\omega_{19}v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{11}^2 - 18\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23} - 108\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{11} + 18\omega_{19}^2c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{11} - 36\omega_{19}^2c_s^4\omega_{10}\omega_7^2\omega_{23}\omega_{11} +$
$36\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{11}^2 + 12c_s^4\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2 + \omega_{19}^2v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2 + 24\omega_{19}\omega_{16}v_2^2\omega_{10}\omega_7\omega_{23}\omega_{11}^2 - 18\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2 +$
$6v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2 - 12\omega_{19}^2c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{11}^2 - 6\omega_{19}\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{11} - 12\omega_{19}^2v_3^2c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{11} - 36\omega_{19}^2v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{11} +$
$12\omega_{19}^2c_s^2\omega_{10}\omega_7^2\omega_{23}\omega_{11} + 5\omega_{19}^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11} - 36\omega_{19}^2c_s^4\omega_{10}\omega_7^3\omega_{11}^2 - 6\omega_{19}^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{11} + 12\omega_{19}^2v_2^2\omega_7^3\omega_{23}\omega_{11} - 12\omega_{19}^2c_s^2\omega_7^3\omega_{11}^2 -$
$6\omega_{19}^2v_3^2\omega_{16}v_2^2\omega_7^3\omega_{11}^2 + 36\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^2\omega_{11}^2 - 12\omega_{19}^2v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{11} - 18\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^3\omega_{11}^2 + 144\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2 +$
$6\omega_{19}^2v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{11}^2 - 12\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{11}^2 + 24\omega_{19}^2v_3^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{11} + 12\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2 + 12\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{11}^2 +$
$12\omega_{19}^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{11}^2 - 60\omega_{19}^2c_s^4\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2 + 36\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11}^2 + 72\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{11} - 36\omega_{19}^2c_s^2v_2^2\omega_7^3\omega_{23}\omega_{11} +$
$6\omega_{19}^2\omega_{16}v_2^2\omega_7^3\omega_{11}^2 - 12\omega_{19}^2v_3^2v_2^2\omega_7^3\omega_{23}\omega_{11} - 12\omega_{19}v_3^2c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{11}^2 + 48\omega_{19}v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2 + 12\omega_{19}v_3^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11}^2 -$
$18\omega_{19}^2c_s^4\omega_{16}\omega_7^3\omega_{11}^2 - 36\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{11}^2 + 72\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_{10}\omega_7\omega_{23}\omega_{11} - 12\omega_{19}^2v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{11}^2 + 6\omega_{19}\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{11}^2 -$
$6\omega_{19}^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{11}^2 - 12\omega_{19}^2c_s^2\omega_{10}\omega_7^2\omega_{11}^2 - 24\omega_{19}^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{11} - 36\omega_{19}^2c_s^4\omega_7^3\omega_{23}\omega_{11} - 9\omega_{19}^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{11} + 36\omega_{19}^2c_s^2v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{11} +$
$12\omega_{19}^2v_3^2c_s^2\omega_{10}\omega_7^2\omega_{11}^2 + 24\omega_{19}^2v_3^2\omega_{16}v_2^2\omega_{10}\omega_7\omega_{23}\omega_{11} + 18\omega_{19}^2v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11} + 12\omega_{19}^2c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2 + 18\omega_{19}^2c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{11}^2 +$
$12\omega_{19}^2v_3^2v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{11} + 24\omega_{19}\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{11}^2 + 12\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2 - 48\omega_{19}\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2 + 6v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2 -$
$12\omega_{19}^2v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2 - 6c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2 + 3\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2 - 12v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2 + 36\omega_{19}^2c_s^4\omega_7^3\omega_{11}^2 -$
$6\omega_{19}^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{11}^2 - 12\omega_{19}^2c_s^2\omega_{10}\omega_7^3\omega_{23}\omega_{11} - 18\omega_{19}^2c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11} - 24\omega_{19}^2\omega_{16}v_2^2\omega_{10}\omega_7\omega_{23}\omega_{11} - 12\omega_{19}^2v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{11}^2 +$
$6\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{11}^2 + 12\omega_{19}\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{11} + 9\omega_{19}^2v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{11} - 12\omega_{19}^2v_2^2\omega_7^3\omega_{11}^2 - 36c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2 +$
$36\omega_{19}^2c_s^2v_2^2\omega_7^3\omega_{11}^2 + 36\omega_{19}^2c_s^4\omega_{10}\omega_7^3\omega_{23}\omega_{11} - 18\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{11}^2 - 96\omega_{19}^2c_s^4\omega_{16}\omega_{10}\omega_{23}\omega_{11}^2 + 27\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{11} -$
$36\omega_{19}^2c_s^4\omega_{16}\omega_{10}\omega_7^2\omega_{11}^2 - 3\omega_{19}v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2 + 54\omega_{19}^2c_s^4\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11} - 6c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2 + 15\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2 -$
$12\omega_{19}^2v_3^2c_s^2\omega_{10}\omega_7^3\omega_{11}^2 - 12\omega_{19}v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{11} + 12\omega_{19}^2v_3^2c_s^2\omega_{10}\omega_7^3\omega_{23}\omega_{11} + 12\omega_{19}^2c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{11}^2 + 12\omega_{19}^2c_s^2\omega_{10}\omega_7^3\omega_{11}^2 +$

$6\omega_{19}^2 v_3^2 \omega_{16} v_2^2 \omega_{10} \omega_7^3 \omega_{11}^2 - 12\omega_{19}\omega_{16} v_2^2 \omega_{10} \omega_7^2 \omega_{11}^2 + 18\omega_{19}^2 c_s^2 \omega_{16} v_2^2 \omega_{10} \omega_7^3 \omega_{11}^2 - 36\omega_{19} c_s^2 \omega_{16} v_2^2 \omega_{10} \omega_7^2 \omega_{23} \omega_{11}) \frac{v_3}{12\omega_{19}^2 \omega_{16} \omega_{10} \omega_7^3 \omega_{23} \omega_{11}^2}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_y \mathrm{D}_z^3 \rho} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y \mathrm{D}_z^3 \rho}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_y \mathrm{D}_z^3 \rho} = (-9\omega_{19} c_s^2 \omega_{16} \omega_{10} \omega_7^2 \omega_{23} \omega_{11} + 12\omega_{19} v_3^2 \omega_{16} \omega_{10} \omega_7 \omega_{11} + 36\omega_{19} c_s^2 \omega_{16} \omega_{10} \omega_7 \omega_{11} - 18\omega_{19}^2 c_s^2 \omega_{16} \omega_7^2 \omega_{11} - 36\omega_{19}^2 c_s^2 \omega_{16} \omega_{10} \omega_7 \omega_{23} \omega_{11} -$
$3\omega_{19} v_3^2 \omega_{16} \omega_{10} \omega_7^2 \omega_{23} \omega_{11} + 6\omega_{19}^2 \omega_{16} \omega_7^2 \omega_{11} - 12\omega_{19}^2 v_3^2 \omega_{16} \omega_{10} \omega_7 \omega_{23} \omega_{11} + 6v_3^2 \omega_{16} \omega_{10} \omega_7^2 \omega_{23} \omega_{11} - 12\omega_{19}^2 \omega_7^2 \omega_{11} + 18c_s^2 \omega_{16} \omega_{10} \omega_7^2 \omega_{23} \omega_{11} +$
$12\omega_{19}^2 \omega_{16} \omega_{10} \omega_7 \omega_{23} \omega_{11} - 12\omega_{19}^2 \omega_{10} \omega_7^2 \omega_{23} - 12\omega_{19}^2 \omega_{10} \omega_7 \omega_{11} + 36\omega_{19}^2 c_s^2 \omega_{10} \omega_7^2 \omega_{23} + 36\omega_{19}^2 c_s^2 \omega_{10} \omega_7 \omega_{11} + 12\omega_{16} \omega_{10} \omega_7 \omega_{23} \omega_{11} -$
$12\omega_{19} \omega_{16} \omega_{10} \omega_7 \omega_{11} - 36\omega_{19}^2 c_s^2 \omega_7^2 \omega_{23} - 18\omega_{19} \omega_{16} \omega_{10} \omega_7 \omega_{23} \omega_{11} + 12\omega_{19}^2 \omega_{16} \omega_{10} \omega_{23} - 36\omega_{19}^2 c_s^2 \omega_{16} \omega_{10} \omega_{23} - 12\omega_{19}^2 v_3^2 \omega_{10} \omega_7 \omega_{23} -$
$12\omega_{19}^2 v_3^2 \omega_{10} \omega_7^2 \omega_{11} - 36\omega_{19}^2 c_s^2 \omega_{16} \omega_{10} \omega_7 \omega_{11} + 6\omega_{19}^2 v_3^2 \omega_{16} \omega_7^2 \omega_{23} - 15\omega_{19}^2 c_s^2 \omega_{16} \omega_{10} \omega_7^2 \omega_{23} - 12\omega_{19}^2 v_3^2 \omega_{16} \omega_{10} \omega_7 \omega_{11} - 5\omega_{19}^2 v_3^2 \omega_{16} \omega_{10} \omega_7^2 \omega_{23} +$
$12\omega_{19}^2 v_3^2 \omega_7^2 \omega_{11} + 5\omega_{19}^2 \omega_{16} \omega_{10} \omega_7^2 \omega_{23} + 12\omega_{19}^2 \omega_{16} \omega_{10} \omega_7 \omega_{11} + 18\omega_{19}^2 v_3^2 \omega_{16} \omega_{10} \omega_7 \omega_{23} + 6\omega_{19}^2 v_3^2 \omega_{16} \omega_{10} \omega_7^2 \omega_{11} + 54\omega_{19}^2 c_s^2 \omega_{16} \omega_{10} \omega_7 \omega_{23} -$
$6\omega_{19}^2 v_3^2 \omega_{16} \omega_7^2 \omega_{11} + 18\omega_{19}^2 c_s^2 \omega_{16} \omega_{10} \omega_7^2 \omega_{11} - 6\omega_{16} \omega_{10} \omega_7^2 \omega_{23} \omega_{11} - 12\omega_{19}^2 v_3^2 \omega_7^2 \omega_{23} + 12\omega_{19} \omega_{16} \omega_{10} \omega_{23} \omega_{11} + 3\omega_{19} \omega_{16} \omega_{10} \omega_7^2 \omega_{23} \omega_{11} -$
$6\omega_{19}^2 \omega_{16} \omega_{10} \omega_7^2 \omega_{11} - 18\omega_{19}^2 \omega_{16} \omega_{10} \omega_7 \omega_{23} - 12\omega_{19}^2 \omega_{16} \omega_{10} \omega_{23} \omega_{11} + 36\omega_{19}^2 c_s^2 \omega_7^2 \omega_{11} + 6\omega_{19} \omega_{16} \omega_{10} \omega_7^2 \omega_{11} + 12\omega_{19}^2 v_3^2 \omega_{10} \omega_7 \omega_{11} +$
$36\omega_{19}^2 c_s^2 \omega_{16} \omega_{10} \omega_{23} \omega_{11} + 12\omega_{19}^2 v_3^2 \omega_{10} \omega_7^2 \omega_{23} + 12\omega_{19}^2 v_3^2 \omega_{16} \omega_{10} \omega_{23} \omega_{11} + \omega_{19}^2 v_3^2 \omega_{16} \omega_{10} \omega_7^2 \omega_{23} \omega_{11} + 18\omega_{19} v_3^2 \omega_{16} \omega_{10} \omega_7 \omega_{23} \omega_{11} + 12\omega_{19}^2 \omega_7^2 \omega_{23} +$
$3\omega_{19}^2 c_s^2 \omega_{16} \omega_{10} \omega_7^2 \omega_{23} \omega_{11} + 54\omega_{19} c_s^2 \omega_{16} \omega_{10} \omega_7 \omega_{23} \omega_{11} + 12\omega_{19}^2 \omega_{10} \omega_7^2 \omega_{11} + 12\omega_{19}^2 \omega_{10} \omega_7 \omega_{23} - 12\omega_{19}^2 v_3^2 \omega_{16} \omega_{10} \omega_{23} - 12\omega_{19} v_3^2 \omega_{16} \omega_{10} \omega_{23} \omega_{11} -$
$36\omega_{19}^2 c_s^2 \omega_{10} \omega_7^2 \omega_{11} - 36\omega_{19} c_s^2 \omega_{16} \omega_{10} \omega_{23} \omega_{11} - 36\omega_{19}^2 c_s^2 \omega_{10} \omega_7 \omega_{23} - 36c_s^2 \omega_{16} \omega_{10} \omega_7 \omega_{23} \omega_{11} + 18\omega_{19}^2 c_s^2 \omega_{16} \omega_7^2 \omega_{23} - 18\omega_{19} c_s^2 \omega_{16} \omega_{10} \omega_7^2 \omega_{11} -$
$6\omega_{19} v_3^2 \omega_{16} \omega_{10} \omega_7^2 \omega_{11} - 12v_3^2 \omega_{16} \omega_{10} \omega_7 \omega_{23} \omega_{11} - 6\omega_{19}^2 \omega_{16} \omega_7^2 \omega_{23} - \omega_{19}^2 \omega_{16} \omega_{10} \omega_7^2 \omega_{23} \omega_{11}) \frac{v_3 c_s^2}{12\omega_{19}^2 \omega_{16} \omega_{10} \omega_7^2 \omega_{23} \omega_{11}}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_y \mathrm{D}_z^3 \rho} = C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_y \mathrm{D}_z^3 \rho}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_y \mathrm{D}_z^3 \rho} = (12\omega_{10}^2 - 36\omega_6 \omega_3 c_s^2 - 3\omega_6 \omega_3^2 v_3^2 \omega_{10} - \omega_6 \omega_3^2 \omega_{10}^2 + 3\omega_6 \omega_3^2 c_s^2 \omega_{10}^2 + 12\omega_6 \omega_3 + 6\omega_3 v_3^2 \omega_{10}^2 - 12\omega_6 \omega_3 v_3^2 + 6\omega_3^2 \omega_{10} + 36\omega_3 c_s^2 \omega_{10} -$
$\omega_3^2 \omega_{10}^2 + 18\omega_3 c_s^2 \omega_{10}^2 + 12\omega_3 v_3^2 \omega_{10} - 9\omega_6 \omega_3^2 c_s^2 \omega_{10} - 6\omega_6 \omega_3^2 + \omega_6 \omega_3^2 v_3^2 \omega_{10}^2 + 3\omega_6 \omega_3^2 \omega_{10} + 3\omega_3^2 c_s^2 \omega_{10}^2 - 6\omega_3^2 v_3^2 \omega_{10} - 12v_3^2 \omega_{10}^2 - 18\omega_6 \omega_3 \omega_{10} -$
$6\omega_3 \omega_{10}^2 + 54\omega_6 \omega_3 c_s^2 \omega_{10} - 12\omega_6 v_3^2 \omega_{10} + 12\omega_6 \omega_{10} + 36\omega_6 c_s^2 \omega_{10}^2 - 12\omega_6 \omega_3 v_3^2 \omega_{10}^2 + 18\omega_6 \omega_3 v_3^2 \omega_{10} - 36\omega_6 c_s^2 \omega_{10} - 12\omega_3 \omega_{10} + 6\omega_6 \omega_3^2 v_3^2 +$
$12\omega_6 v_3^2 \omega_{10}^2 - 36\omega_6 \omega_3 c_s^2 \omega_{10}^2 - 12\omega_6 \omega_{10}^2 + \omega_3^2 v_3^2 \omega_{10}^2 + 18\omega_6 \omega_3^2 c_s^2 + 12\omega_6 \omega_3 \omega_{10}^2 - 18\omega_3^2 c_s^2 \omega_{10} - 36c_s^2 \omega_{10}^2) \frac{v_3 c_s^2}{12\omega_6 \omega_3^2 \omega_{10}^2}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_y \mathrm{D}_z^3 \rho} = (9\omega_3^2 c_s^2 \omega_4 \omega_1^3 \omega_2^3 - 56\omega_3 v_3^2 c_s^2 \omega_4^2 \omega_1 \omega_2^3 - 36v_3^2 c_s^2 \omega_4^2 \omega_1^2 \omega_2^3 + 120\omega_3 c_s^4 \omega_4^2 \omega_1^2 \omega_2^2 + 36\omega_3^2 c_s^2 \omega_1^2 \omega_2^3 - 18c_s^2 \omega_4^2 \omega_1^3 \omega_2^3 + 92\omega_3^2 v_3^2 \omega_4^2 \omega_1^2 \omega_2^3 -$
$9\omega_3^2 v_3^2 c_s^2 \omega_4 \omega_1^3 \omega_2^3 + 152\omega_3^2 v_3^2 \omega_4^2 \omega_1^3 \omega_2 - 104\omega_3^2 c_s^2 \omega_4^2 \omega_1^3 - 342\omega_3^2 c_s^4 \omega_4^2 \omega_1^2 \omega_2^3 + 54\omega_3^2 c_s^4 \omega_1^3 \omega_2^3 - 276\omega_3^2 c_s^4 \omega_4^2 \omega_1^3 \omega_2 - 18\omega_3^2 c_s^2 v_2^2 \omega_4^2 \omega_1^2 \omega_2^3 + 216\omega_3 c_s^4 \omega_4^2 \omega_1^2 \omega_2^3 +$
$48\omega_3 c_s^4 \omega_4^2 \omega_1^3 \omega_2 + 12\omega_3^2 c_s^4 \omega_4^2 \omega_1^2 \omega_2^2 + 6\omega_3^2 v_2^2 \omega_4^2 \omega_1^2 \omega_2^3 - 288\omega_3^2 c_s^4 \omega_4^2 \omega_2^3 + 104\omega_3^2 v_3^2 \omega_4^2 \omega_1^2 \omega_2^2 - 108\omega_3^2 c_s^4 \omega_1^2 \omega_2^3 - 6\omega_3^2 v_2^2 \omega_4^2 \omega_1^3 \omega_2^2 + 18\omega_3^2 c_s^4 \omega_4^2 \omega_1^3 \omega_2^3 +$
$72\omega_3^2 c_s^4 \omega_4^2 \omega_1^2 \omega_2 + 56\omega_3 c_s^2 \omega_4^2 \omega_1 \omega_2^3 + 36\omega_3^2 v_3^2 c_s^2 \omega_4 \omega_1^2 \omega_2^3 - 56\omega_3^2 v_3^2 c_s^2 \omega_4^2 \omega_1 \omega_2^2 - 136\omega_3^2 v_3^2 \omega_4^2 \omega_1^2 \omega_2 - 24\omega_3^2 v_3^4 \omega_4^2 \omega_1 \omega_2^2 + 144\omega_3^2 c_s^4 \omega_4^2 \omega_1^3 +$
$18\omega_3^2 c_s^2 v_2^2 \omega_4^2 \omega_1^3 \omega_2^2 - 8\omega_3^2 \omega_4^2 \omega_1 \omega_2^2 + 36c_s^2 \omega_4^2 \omega_1^2 \omega_2^3 + 56\omega_3^2 c_s^2 \omega_4^2 \omega_1 \omega_2^2 + 18v_3^2 c_s^2 \omega_4^2 \omega_1^3 \omega_2^3 - 18\omega_3^2 c_s^2 \omega_1^3 \omega_2^3 - 108\omega_3 c_s^4 \omega_4^2 \omega_1^3 \omega_2^2 - 36\omega_3^2 c_s^2 \omega_4 \omega_1^2 \omega_2^3 +$
$1232\omega_3^2 v_3^2 c_s^2 \omega_4^2 \omega_1 \omega_2^3 - 92\omega_3^2 v_3^2 \omega_4^2 \omega_1^3 \omega_2^2 + 144\omega_3^2 c_s^4 \omega_4^2 \omega_1^3 \omega_2^2 - 27\omega_3 c_s^4 \omega_4^2 \omega_1^3 \omega_2^3 + 208\omega_3^2 c_s^2 \omega_4^2 \omega_2^3 - 368\omega_3^2 c_s^2 \omega_4^2 \omega_1 \omega_2^3 + 228\omega_3^2 v_3^4 \omega_4^2 \omega_1 \omega_2^2 +$
$28\omega_3^2 \omega_4^2 \omega_1 \omega_2^3 - 712\omega_3^2 v_3^2 c_s^2 \omega_4^2 \omega_1^3 \omega_2 + 54c_s^4 \omega_4^2 \omega_1^3 \omega_2^3 - 460\omega_3^2 v_3^2 c_s^2 \omega_4^2 \omega_1^2 \omega_2^3 - 36\omega_3^2 v_3^2 c_s^2 \omega_1^2 \omega_2^3 - 40\omega_3 c_s^2 \omega_4^2 \omega_1^2 \omega_2^2 - 27\omega_3^2 c_s^4 \omega_4 \omega_1^3 \omega_2^3 + 8\omega_3^2 \omega_4^2 \omega_1^3 +$
$48\omega_3^2 v_3^4 \omega_4^2 \omega_1^3 + 184\omega_3^2 c_s^2 \omega_4^2 \omega_1^2 \omega_2^3 + 208\omega_3^2 c_s^2 \omega_4^2 \omega_1^3 \omega_2 - 36\omega_3 v_3^2 c_s^2 \omega_4^2 \omega_1^3 \omega_2^2 - 14\omega_3^2 \omega_4^2 \omega_1^2 \omega_2^3 - 78\omega_3^2 v_3^4 \omega_4^2 \omega_1^2 \omega_2^3 - 132\omega_3^2 v_3^4 \omega_4^2 \omega_1^3 \omega_2 - 20\omega_3^2 \omega_4^2 \omega_1^3 \omega_2 +$
$320\omega_3^2 v_3^2 c_s^2 \omega_4^2 \omega_1^3 - 72\omega_3 c_s^2 \omega_4^2 \omega_1^2 \omega_2^3 - 16\omega_3 c_s^2 \omega_4^2 \omega_1^3 \omega_2 - 412\omega_3^2 v_3^2 c_s^2 \omega_4^2 \omega_1^2 \omega_2^2 + 160\omega_3^2 v_3^2 \omega_4^2 \omega_2^3 - 8\omega_3^2 \omega_4^2 \omega_1^2 \omega_2^2 - 96\omega_3^2 v_3^4 \omega_4^2 \omega_1^2 \omega_2^2 - 9\omega_3 v_3^2 c_s^2 \omega_4^2 \omega_1^3 \omega_2^3 +$
$52\omega_3^2 c_s^2 \omega_4^2 \omega_1^2 \omega_2^2 - 6\omega_3^2 v_3^4 \omega_4^2 \omega_1^2 \omega_2^3 + 16\omega_3^2 \omega_4^2 \omega_1^2 \omega_2 + 120\omega_3^2 v_3^4 \omega_4^2 \omega_1^2 \omega_2 + 6\omega_3^2 v_2^4 \omega_4^2 \omega_1^3 \omega_2^2 - 6\omega_3^2 c_s^2 \omega_4^2 \omega_1^3 \omega_2^3 - 168\omega_3 c_s^4 \omega_4^2 \omega_1 \omega_2^3 + 40\omega_3 v_3^2 c_s^2 \omega_4^2 \omega_1^2 \omega_2^2 -$
$88\omega_3^2 c_s^2 \omega_4^2 \omega_1^2 \omega_2 - 144\omega_3^2 c_s^4 \omega_4^2 \omega_1 \omega_2^2 + 108\omega_3^2 c_s^4 \omega_4 \omega_1^2 \omega_2^3 - 56\omega_3^2 v_3^2 \omega_4^2 \omega_1^3 + 36\omega_3 c_s^2 \omega_4^2 \omega_1^3 \omega_2^2 + 18\omega_3^2 v_3^2 c_s^2 \omega_1^3 \omega_2^3 - 108c_s^4 \omega_4^2 \omega_1^2 \omega_2^3 + 32\omega_3^2 v_3^2 \omega_4^2 \omega_1 \omega_2^2 +$
$448\omega_3^2 v_3^2 c_s^2 \omega_4^2 \omega_1^2 \omega_2 + 6\omega_3^2 v_3^2 c_s^2 \omega_4^2 \omega_1^3 \omega_2^3 + 72\omega_3 v_3^2 c_s^2 \omega_4^2 \omega_1^2 \omega_2^3 - 118\omega_3^2 c_s^2 \omega_4^2 \omega_1^3 \omega_2^2 + 16\omega_3 v_3^2 c_s^2 \omega_4^2 \omega_1^3 \omega_2 + 78\omega_3^2 v_3^4 \omega_4^2 \omega_1^3 \omega_2^2 + 14\omega_3^2 \omega_4^2 \omega_1^3 \omega_2^2 +$
$394\omega_3^2 v_3^2 c_s^2 \omega_4^2 \omega_1^3 \omega_2^2 - 144\omega_3^2 v_3^4 \omega_4^2 \omega_2^3 - 16\omega_3^2 \omega_4^2 \omega_2^3 - 256\omega_3^2 v_3^2 \omega_4^2 \omega_1 \omega_2^3 - 784\omega_3^2 v_3^2 c_s^2 \omega_4^2 \omega_2^3 + 9\omega_3 c_s^2 \omega_4^2 \omega_1^3 \omega_2^3 + 588\omega_3^2 c_s^4 \omega_4^2 \omega_1 \omega_2^3) \frac{v_3}{72\omega_3^2 \omega_4^2 \omega_1^3 \omega_2^3}$

coefficient $C^{(2)}_{\mathrm{D}_y \mathrm{D}_z^3 v_2}$ **at** $\frac{\partial^4 v_2}{\partial x_2 \partial x_3^3}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_y \mathrm{D}_z^3 v_2} = (2 - \omega + v_3^2 \omega - 2v_3^2 + 3c_s^2 \omega - 6c_s^2) \frac{v_3 v_2 \rho}{12\omega}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y \mathrm{D}_z^3 v_2} = (-12\omega_{19}^2 v_3^2 \omega_{16} \omega_{10} \omega_7^3 \omega_{23} \omega_{11}^2 + 24\omega_{19}^2 c_s^2 \omega_{16} \omega_7^3 \omega_{23} \omega_{11}^2 - 84\omega_{19}^2 c_s^2 \omega_{16} \omega_{10} \omega_7^3 \omega_{23} \omega_{11}^2 - 66\omega_{19}^2 c_s^2 \omega_{16}^2 \omega_{10}^2 \omega_7^2 \omega_{23} \omega_{11}^2 -$
$36\omega_{19} c_s^2 \omega_{16}^2 \omega_{10}^2 \omega_7 \omega_{23} \omega_{11}^2 + 6\omega_{19} v_3^2 \omega_{16}^2 \omega_{10}^2 \omega_7^3 \omega_{23} \omega_{11} + 12\omega_{19}^2 \omega_{16} \omega_{10}^2 \omega_7^2 \omega_{23} \omega_{11}^2 - 12\omega_{19}^2 v_3^2 \omega_{16}^2 \omega_{10}^2 \omega_7^2 \omega_{23} \omega_{11}^2 - 36\omega_{19} v_3^2 \omega_{16}^2 \omega_{10}^2 \omega_7 \omega_{23} \omega_{11}^2 +$
$6\omega_{19} c_s^2 \omega_{16}^2 \omega_{10}^2 \omega_7^3 \omega_{23} \omega_{11} - 24\omega_{19}^2 c_s^2 \omega_{10}^2 \omega_7^3 \omega_{23} \omega_{11}^2 - 132\omega_{19}^2 c_s^2 \omega_{16} \omega_{10}^2 \omega_7^2 \omega_{23} \omega_{11}^2 - 24\omega_{19}^2 \omega_{16} \omega_{10}^2 \omega_7^2 \omega_{11}^2 - 24\omega_{19}^2 c_s^2 \omega_{16}^2 \omega_7^2 \omega_{23} \omega_{11}^2 +$
$12\omega_{19}^2 \omega_{16}^2 \omega_{10}^2 \omega_7^2 \omega_{23} \omega_{11}^2 - 12\omega_{19}^2 v_3^2 \omega_{16} \omega_{10}^2 \omega_7^2 \omega_{23} \omega_{11}^2 - 12\omega_{19}^2 \omega_{16}^2 \omega_{10}^2 \omega_7^2 \omega_{23} + 12\omega_{19}^2 \omega_{16}^2 \omega_{10} \omega_7^3 \omega_{11}^2 + 12\omega_{19} \omega_{16}^2 \omega_{10}^2 \omega_7^2 \omega_{23} \omega_{11} +$
$12\omega_{19}^2 v_3^2 \omega_{16}^2 \omega_{10}^2 \omega_7^2 \omega_{23} - 12\omega_{19}^2 v_3^2 \omega_{16} \omega_{10} \omega_7^3 \omega_{11}^2 - 12\omega_{19}^2 c_s^2 \omega_{16} \omega_{10} \omega_7^3 \omega_{11}^2 + 36\omega_{19}^2 c_s^2 \omega_{16}^2 \omega_{10}^2 \omega_7^2 \omega_{23} + 12\omega_{19}^2 \omega_{16} \omega_{10} \omega_7^3 \omega_{23} \omega_{11}^2 +$
$24\omega_{19}^2 c_s^2 \omega_{16} \omega_{10}^2 \omega_7^2 \omega_{11}^2 + 24\omega_{19}^2 v_3^2 \omega_{16} \omega_{10}^2 \omega_7^2 \omega_{11}^2 - 66\omega_{19} \omega_{16}^2 \omega_{10}^2 \omega_7^2 \omega_{23} \omega_{11}^2 - 24\omega_{19} c_s^2 \omega_{16}^2 \omega_{10} \omega_7^2 \omega_{23} \omega_{11}^2 + 24c_s^2 \omega_{16}^2 \omega_{10}^2 \omega_7^3 \omega_{23} \omega_{11}^2 -$
$72\omega_{19}^2 c_s^2 \omega_{16}^2 \omega_{10} \omega_7 \omega_{23} \omega_{11}^2 - 24\omega_{19} v_3^2 \omega_{16}^2 \omega_{10} \omega_7^2 \omega_{23} \omega_{11}^2 + 12v_3^2 \omega_{16}^2 \omega_{10}^2 \omega_7^3 \omega_{23} \omega_{11}^2 + 24\omega_{16}^2 \omega_{10}^2 \omega_7^2 \omega_{23} \omega_{11}^2 + 18\omega_{19}^2 \omega_{16}^2 \omega_{10}^2 \omega_7^2 \omega_{23} \omega_{11} -$
$42\omega_{19}^2 c_s^2 \omega_{16}^2 \omega_{10}^2 \omega_7^2 \omega_{23} \omega_{11} - 24\omega_{19}^2 c_s^2 \omega_{16} \omega_{10}^2 \omega_7^3 \omega_{11}^2 - 24\omega_{19}^2 v_3^2 \omega_{16} \omega_{10}^2 \omega_7^3 \omega_{11}^2 - 18\omega_{19} v_3^2 \omega_{16}^2 \omega_{10}^2 \omega_7^3 \omega_{23} \omega_{11}^2 - 6\omega_{19}^2 v_3^2 \omega_{16}^2 \omega_{10}^2 \omega_7^3 \omega_{23} -$
$18\omega_{19}^2 v_3^2 \omega_{16}^2 \omega_{10}^2 \omega_7^2 \omega_{23} \omega_{11} - 18\omega_{19}^2 c_s^2 \omega_{16}^2 \omega_{10}^2 \omega_7^3 \omega_{23} - 24\omega_{19} c_s^2 \omega_{16}^2 \omega_{10}^2 \omega_7^3 \omega_{23} \omega_{11}^2 - 12\omega_{19} \omega_{16}^2 \omega_{10} \omega_7^3 \omega_{23} \omega_{11}^2 + 6\omega_{19}^2 \omega_{16}^2 \omega_{10}^2 \omega_7^3 \omega_{23} +$
$24\omega_{19}^2 \omega_{16} \omega_{10}^2 \omega_7^3 \omega_{11}^2 + 12\omega_{19}^2 v_3^2 \omega_{16}^2 \omega_{10} \omega_7^2 \omega_{23} \omega_{11}^2 - 6\omega_{19} \omega_{16}^2 \omega_{10}^2 \omega_7^3 \omega_{23} \omega_{11} - 24\omega_{19} \omega_{16}^2 \omega_{10}^2 \omega_7^2 \omega_{11}^2 + 84\omega_{19}^2 c_s^2 \omega_{16} \omega_{10} \omega_7^2 \omega_{23} \omega_{11}^2 +$
$36\omega_{19} \omega_{16}^2 \omega_{10}^2 \omega_7 \omega_{23} \omega_{11}^2 - \omega_{19}^2 \omega_{16}^2 \omega_{10}^2 \omega_7^3 \omega_{23} \omega_{11}^2 + 24\omega_{19}^2 c_s^2 \omega_{10}^2 \omega_7^2 \omega_{23} \omega_{11}^2 + 60\omega_{19}^2 c_s^2 \omega_{16} \omega_{10}^2 \omega_7^3 \omega_{23} \omega_{11}^2 - 12\omega_{19} v_3^2 \omega_{16}^2 \omega_{10}^2 \omega_7^3 \omega_{11}^2 -$
$12\omega_{19}^2 \omega_{16}^2 \omega_{10}^2 \omega_7 \omega_{23} \omega_{11} - 96\omega_{19}^2 c_s^2 \omega_{16}^2 \omega_{10}^2 \omega_{23} \omega_{11}^2 - 12\omega_{19} c_s^2 \omega_{16}^2 \omega_{10}^2 \omega_7^3 \omega_{11}^2 + 12\omega_{19}^2 v_3^2 \omega_{16} \omega_{10}^2 \omega_7^3 \omega_{23} \omega_{11}^2 - 24\omega_{19}^2 c_s^2 \omega_{16}^2 \omega_{10}^2 \omega_7^2 \omega_{11}^2 -$
$12\omega_{19}^2 \omega_{16} \omega_{10}^2 \omega_7^3 \omega_{23} \omega_{11}^2 - 12\omega_{19} v_3^2 \omega_{16}^2 \omega_{10}^2 \omega_7^2 \omega_{23} \omega_{11} - 24\omega_{19}^2 v_3^2 \omega_{16}^2 \omega_{10}^2 \omega_7^2 \omega_{11}^2 + 12\omega_{19}^2 v_3^2 \omega_{16}^2 \omega_{10}^2 \omega_7 \omega_{23} \omega_{11} + 3\omega_{19}^2 c_s^2 \omega_{16}^2 \omega_{10}^2 \omega_7^3 \omega_{23} \omega_{11}^2 +$
$24\omega_{19}^2 v_3^2 \omega_{16} \omega_{10} \omega_7^3 \omega_{11}^2 - 12\omega_{19} c_s^2 \omega_{16}^2 \omega_{10}^2 \omega_7^2 \omega_{23} \omega_{11} + 12\omega_{19}^2 c_s^2 \omega_{16}^2 \omega_{10}^2 \omega_7 \omega_{23} \omega_{11} + \omega_{19}^2 v_3^2 \omega_{16}^2 \omega_{10}^2 \omega_7^3 \omega_{23} \omega_{11}^2 + 24\omega_{19}^2 c_s^2 \omega_{16} \omega_{10} \omega_7^3 \omega_{11}^2 -$
$24\omega_{19}^2 \omega_{16} \omega_{10} \omega_7^3 \omega_{11}^2 + 48\omega_{19}^2 c_s^2 \omega_{16} \omega_{10} \omega_7^2 \omega_{23} \omega_{11}^2 + 24\omega_{19}^2 c_s^2 \omega_{10} \omega_7^3 \omega_{23} \omega_{11}^2 + 24\omega_{19}^2 \omega_{16}^2 \omega_{10}^2 \omega_7^2 \omega_{11}^2 - 12\omega_{19}^2 \omega_{16}^2 \omega_{10} \omega_7^2 \omega_{23} \omega_{11}^2 +$
$24\omega_{19} v_3^2 \omega_{16}^2 \omega_{10}^2 \omega_7^2 \omega_{11}^2 + 24\omega_{19} c_s^2 \omega_{16}^2 \omega_{10}^2 \omega_7^2 \omega_{11}^2 + 66\omega_{19} v_3^2 \omega_{16}^2 \omega_{10}^2 \omega_7^2 \omega_{23} \omega_{11}^2 + 12\omega_{19} \omega_{16}^2 \omega_{10}^2 \omega_7^3 \omega_{11}^2 + 12\omega_{19}^2 v_3^2 \omega_{16}^2 \omega_{10}^2 \omega_7 \omega_{23} \omega_{11}^2 +$

$12\omega_{19}^2c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11} + 24\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2 + 90\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}^2 + 156\omega_{19}^2c_s^2\omega_{16}^2\omega_{10}\omega_7\omega_{23}\omega_{11}^2 + 4\omega_{19}^2v_3^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11} -$
$12\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{11}^2 - 4\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11} - 12\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}^2 - 12\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7\omega_{23}\omega_{11}^2 + 72\omega_{19}^2c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{23}\omega_{11}^2 -$
$48c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}^2 + 12\omega_{19}c_s^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2 + 18\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}^2 + 12\omega_{19}^2c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{11}^2 - 24v_3^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}^2 +$
$12\omega_{19}v_3^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2 + 12\omega_{19}^2v_3^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{11}^2)\frac{v_3v_2\rho}{12\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}^2}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_y\mathrm{D}_z^3v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^3v_2}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_y\mathrm{D}_z^3v_2} = (\omega_{19}v_3^2\omega_{11} - 9c_s^2\omega_{11} - \omega_{19} - 3v_3^2\omega_{11} + 3\omega_{19}c_s^2\omega_{11} + \omega_{19}v_3^2 - \omega_{19}\omega_{11} + 3\omega_{11} + 3\omega_{19}c_s^2)\frac{v_3v_2\rho}{12\omega_{19}\omega_{11}}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_y\mathrm{D}_z^3v_2} = C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_y\mathrm{D}_z^3v_2}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_y\mathrm{D}_z^3v_2} = (-3\omega_6v_3^2 + 3\omega_6 - 9\omega_6c_s^2 - \omega_{10} + 3c_s^2\omega_{10} + \omega_6v_3^2\omega_{10} - \omega_6\omega_{10} + 3\omega_6c_s^2\omega_{10} + v_3^2\omega_{10})\frac{v_3v_2\rho}{12\omega_6\omega_{10}}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_y\mathrm{D}_z^3v_2} = (-18\omega_3v_2^2\omega_4\omega_2 + 9\omega_4\omega_1\omega_2 - 27\omega_3c_s^2\omega_1\omega_2 - 27c_s^2\omega_4\omega_1\omega_2 + 12\omega_3c_s^2\omega_4\omega_1 + 6\omega_3c_s^2\omega_4\omega_2 + 6\omega_3v_3^2\omega_4\omega_1\omega_2 + 18\omega_3v_2^2\omega_4\omega_1 -$
$6\omega_3\omega_4\omega_1\omega_2 + 2\omega_3\omega_4\omega_2 + 4\omega_3v_3^2\omega_4\omega_2 - 9v_3^2\omega_4\omega_1\omega_2 + 18\omega_3c_s^2\omega_4\omega_1\omega_2 - 8\omega_3\omega_4\omega_1 - 9\omega_3v_3^2\omega_1\omega_2 + 2\omega_3v_3^2\omega_4\omega_1 + 9\omega_3\omega_1\omega_2)\frac{v_3v_2\rho}{72\omega_3\omega_4\omega_1\omega_2}$

coefficient $C^{(2)}_{\mathrm{D}_y\mathrm{D}_z^3v_3}$ **at** $\frac{\partial^4v_3}{\partial x_2\partial x_3^3}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_y\mathrm{D}_z^3v_3} = (-12 - 6\omega^2 + 18\omega - 54v_3^2\omega + 2c_s^2\omega^2 - c_s^2\omega^3 + 36v_3^2 + 18v_3^2\omega^2)\frac{c_s^2\rho}{12\omega^3}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^3v_3} = (36\omega_{19}v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{11}^2 - 15\omega_{19}^2v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11} - 12\omega_{19}^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{23} - 12\omega_{19}^2c_s^2v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{11} +$
$36\omega_{19}^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{11} + 12\omega_{19}^2c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{11} + 60\omega_{19}^2v_3^2c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{11}^2 - 12\omega_{19}^2v_2^2\omega_{10}\omega_7^2\omega_{11}^2 + 15\omega_{19}\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2 +$
$24v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2 + 36\omega_{19}^2v_3^2c_s^2\omega_7^3\omega_{11}^2 - 36\omega_{19}^2v_3^2v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{11} - 12\omega_{19}\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11}^2 + 12\omega_{19}^2c_s^2v_2^2\omega_{10}\omega_7^2\omega_{11}^2 +$
$36\omega_{19}^2v_3^2v_2^2\omega_{10}\omega_7^2\omega_{11}^2 + 6\omega_{19}^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11} - 24\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{11}^2 - \omega_{19}^2c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2 + 12\omega_{19}^2c_s^2\omega_7^3\omega_{23}\omega_{11} -$
$6\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2 + 12\omega_{19}^2c_s^4\omega_{10}\omega_7^2\omega_{11}^2 - 18\omega_{19}^2v_3^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11} - 45\omega_{19}v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2 - 72\omega_{19}v_3^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{11}^2 -$
$12\omega_{19}^2c_s^4\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{11} - 6\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11} + 6\omega_{19}^2c_s^2\omega_{16}\omega_7^3\omega_{11}^2 + 12\omega_{19}^2v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{11} - 18\omega_{19}^2v_3^2c_s^2\omega_{16}\omega_7^3\omega_{11}^2 +$
$12\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{23} - 6\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{11}^2 + 36\omega_{19}^2v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{23} - 15\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2 - 36\omega_{19}^2v_3^2c_s^2\omega_7^3\omega_{23}\omega_{11} -$
$18\omega_{19}v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{11}^2 - 24\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7\omega_{23}\omega_{11}^2 + 18\omega_{19}^2v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{11} - 36\omega_{19}^2v_3^2c_s^2\omega_{10}\omega_7^2\omega_{23}\omega_{11} - 12\omega_{19}^2c_s^2v_2^2\omega_{10}\omega_7^3\omega_{11}^2 +$
$6\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{11} - 36\omega_{19}^2v_3^2v_2^2\omega_{10}\omega_7^3\omega_{11}^2 - 5\omega_{19}^2c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11} - 72\omega_{19}v_3^2\omega_{16}v_2^2\omega_{10}\omega_7\omega_{23}\omega_{11}^2 - 102\omega_{19}v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2 +$
$12\omega_{19}^2v_2^2\omega_{10}\omega_7^3\omega_{11}^2 + 18\omega_{19}^2c_s^4\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{11}^2 - 18\omega_{19}v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{11}^2 + 18\omega_{19}v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{11} + 36\omega_{19}^2v_3^2v_2^2\omega_7^3\omega_{11}^2 +$
$6\omega_{19}^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23} - 18\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2 + 6c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2 - 18\omega_{19}^2v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23} + 36\omega_{19}v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{11}^2 -$
$6\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23} - 36\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{11} + 6\omega_{19}^2c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{11} - 12\omega_{19}^2c_s^4\omega_{10}\omega_7^2\omega_{23}\omega_{11} + 12\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{11}^2 +$
$24\omega_{19}\omega_{16}v_2^2\omega_{10}\omega_7\omega_{23}\omega_{11}^2 + 18\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2 + 18v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2 - 6\omega_{19}\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{11} - 36\omega_{19}^2v_3^2c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{11} -$
$108\omega_{19}^2v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{11} + 12\omega_{19}^2c_s^2\omega_{10}\omega_7^2\omega_{23}\omega_{11} + 5\omega_{19}^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11} - 12\omega_{19}^2c_s^4\omega_{10}\omega_7^3\omega_{11}^2 - 6\omega_{19}^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{11} +$
$12\omega_{19}^2v_2^2\omega_7^3\omega_{23}\omega_{11} - 12\omega_{19}^2c_s^2\omega_7^3\omega_{11}^2 - 18\omega_{19}^2v_3^2\omega_{16}v_2^2\omega_7^3\omega_{11}^2 + 12\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^2\omega_{11}^2 - 12\omega_{19}^2v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{11} - 6\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^3\omega_{11}^2 +$
$48\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2 + 18\omega_{19}^2v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{11}^2 - 12\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{11}^2 + 72\omega_{19}^2v_3^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{11} + 12\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2 +$
$12\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{11}^2 + 12\omega_{19}^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{11}^2 - 5\omega_{19}^2c_s^4\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2 + 12\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11}^2 + 24\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{11} -$
$12\omega_{19}^2c_s^2v_2^2\omega_7^3\omega_{23}\omega_{11} + 6\omega_{19}^2\omega_{16}v_2^2\omega_7^3\omega_{11}^2 - 36\omega_{19}^2v_3^2v_2^2\omega_7^3\omega_{23}\omega_{11} + 60\omega_{19}v_3^2c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{11}^2 + 144\omega_{19}v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2 +$
$36\omega_{19}v_3^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11}^2 - 6\omega_{19}^2c_s^4\omega_{16}\omega_7^3\omega_{11}^2 - 12\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{11}^2 + 24\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_{10}\omega_7\omega_{23}\omega_{11} - 36\omega_{19}^2v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{11}^2 +$
$6\omega_{19}\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{11}^2 - 6\omega_{19}^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{11}^2 - 12\omega_{19}^2c_s^2\omega_{10}\omega_7^2\omega_{11}^2 - 24\omega_{19}^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{11} - 12\omega_{19}^2c_s^4\omega_7^3\omega_{23}\omega_{11} - 9\omega_{19}^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{11} +$
$12\omega_{19}^2c_s^2v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{11} + 36\omega_{19}^2v_3^2c_s^2\omega_{10}\omega_7^2\omega_{11}^2 + 72\omega_{19}^2v_3^2\omega_{16}v_2^2\omega_{10}\omega_7\omega_{23}\omega_{11} + 54\omega_{19}^2v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11} + \omega_{19}^2c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2 +$
$6\omega_{19}^2c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{11}^2 + 36\omega_{19}^2v_3^2v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{11} + 24\omega_{19}\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{11}^2 - 12\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{11}^2 - 48\omega_{19}\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2 -$
$12v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2 - 15\omega_{19}^2v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2 - 6\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2 - 36v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2 + 12\omega_{19}^2c_s^4\omega_7^3\omega_{11}^2 -$
$6\omega_{19}^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{11}^2 - 12\omega_{19}^2c_s^2\omega_{10}\omega_7^3\omega_{23}\omega_{11} - 18\omega_{19}^2c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11} - 24\omega_{19}^2\omega_{16}v_2^2\omega_{10}\omega_7\omega_{23}\omega_{11} - 36\omega_{19}^2v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{11}^2 +$
$6\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{11}^2 + 12\omega_{19}\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{11} + 27\omega_{19}^2v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{11} - 12\omega_{19}^2v_2^2\omega_7^3\omega_{11}^2 - 12c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2 +$
$12\omega_{19}^2c_s^2v_2^2\omega_7^3\omega_{11}^2 + 12\omega_{19}^2c_s^4\omega_{10}\omega_7^3\omega_{23}\omega_{11} - 6\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{11}^2 - 12\omega_{19}^2c_s^4\omega_{16}\omega_{10}\omega_{23}\omega_{11}^2 + 9\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{11} -$
$12\omega_{19}^2c_s^4\omega_{16}\omega_{10}\omega_7^2\omega_{11}^2 + 30\omega_{19}v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2 + 18\omega_{19}^2c_s^4\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11} + 6\omega_{19}c_s^4\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2 - 36\omega_{19}^2v_3^2c_s^2\omega_{10}\omega_7^3\omega_{11}^2 -$
$36\omega_{19}v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{11} + 36\omega_{19}^2v_3^2c_s^2\omega_{10}\omega_7^3\omega_{23}\omega_{11} + 12\omega_{19}^2c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{11}^2 + 12\omega_{19}^2c_s^2\omega_{10}\omega_7^3\omega_{11}^2 + 18\omega_{19}^2v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{11}^2 -$
$48\omega_{19}^2v_3^2c_s^2\omega_{16}\omega_{10}\omega_{23}\omega_{11}^2 - 12\omega_{19}\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{11}^2 + 6\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{11}^2 - 12\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{11})\frac{\rho}{12\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_y\mathrm{D}_z^3v_3} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^3v_3}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_y\mathrm{D}_z^3v_3} = (-5\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11} + 54\omega_{19}v_3^2\omega_{16}\omega_{10}\omega_7^2\omega_{23} + 18\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23} + 18\omega_{19}v_3^2\omega_{16}\omega_7^3\omega_{23} - 3\omega_{19}v_3^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11} -$
$12\omega_{19}c_s^2\omega_{10}\omega_7^2\omega_{23} + 5\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23} + 12\omega_{19}\omega_{10}\omega_7^3\omega_{11} - 54v_3^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11} - 6\omega_{19}\omega_{16}\omega_7^3\omega_{23} - 18c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11} -$
$36\omega_{19}v_3^2\omega_{10}\omega_7^3\omega_{11} - 6\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11} - 12\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{11} - 12\omega_{19}\omega_{10}\omega_7^2\omega_{11} - 18\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23} - 36\omega_{19}v_3^2\omega_7^3\omega_{23} +$
$12\omega_{19}c_s^2\omega_{10}\omega_7^3\omega_{23} - 15\omega_{19}v_3^2\omega_{16}\omega_{10}\omega_7^3\omega_{23} - 5\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23} + 12\omega_{19}\omega_7^3\omega_{23} + 12\omega_{19}c_s^2\omega_7^3\omega_{11} + 36\omega_{19}v_3^2\omega_{10}\omega_7^2\omega_{11} - 6\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{11} -$
$36\omega_{19}v_3^2\omega_{10}\omega_7^2\omega_{23} + 6\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23} - 12\omega_{19}c_s^2\omega_7^3\omega_{23} + 18\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11} + 18v_3^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11} + \omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11} +$
$6c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11} - 12\omega_{16}\omega_{10}\omega_7^2\omega_{11} + 36\omega_{19}v_3^2\omega_7^3\omega_{11} - 18v_3^2\omega_{16}\omega_{10}\omega_7^3\omega_{11} + 12\omega_{19}\omega_{10}\omega_7^2\omega_{23} + 12\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23} - 6c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{11} +$

$12\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{11} - 12\omega_{19}c_s^2\omega_{10}\omega_7^3\omega_{11} - \omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11} + 6\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{11} - 12\omega_{19}\omega_7^3\omega_{11} + 18\omega_{19}v_3^2\omega_{16}\omega_{10}\omega_7^3\omega_{11} + 6\omega_{19}\omega_{16}\omega_7^3\omega_{11} + 18\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{11} + 36\omega_{19}v_3^2\omega_{10}\omega_7^3\omega_{23} - 12\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_{23}\omega_{11} + 12c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{11} - 12\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23} - 12\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{11} - 36\omega_{19}v_3^2\omega_{16}\omega_{10}\omega_7\omega_{23} - 36\omega_{19}v_3^2\omega_{16}\omega_{10}\omega_7^2\omega_{11} + 36v_3^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{11} - 18\omega_{19}v_3^2\omega_{16}\omega_7^3\omega_{11} + 12\omega_{19}c_s^2\omega_{10}\omega_7^2\omega_{11} + 36v_3^2\omega_{16}\omega_{10}\omega_7^2\omega_{11} - 6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{11} + 12c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{11} - 12\omega_{19}\omega_{10}\omega_7^3\omega_{23} + 6\omega_{16}\omega_{10}\omega_7^3\omega_{11})\frac{c_s^2\rho}{12\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_y\mathrm{D}_z^3 v_3} = C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_y\mathrm{D}_z^3 v_3}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_y\mathrm{D}_z^3 v_3} = (12\omega_6\omega_3c_s^2 - 3\omega_6\omega_3^2v_3^2\omega_{10} - 12\omega_6\omega_3 + 3\omega_3^3v_3^2\omega_{10} + 36\omega_6\omega_3v_3^2 - 6\omega_3^2\omega_{10} - 12\omega_3c_s^2\omega_{10} - 6\omega_6\omega_3^3 + \omega_3^3c_s^2\omega_{10} - 36\omega_3v_3^2\omega_{10} - 5\omega_6\omega_3^2c_s^2\omega_{10} + 18\omega_6\omega_3^2 - \omega_3^3\omega_{10} + \omega_6\omega_3^2\omega_{10} + 18\omega_6\omega_3^3v_3^2 + 18\omega_3^2v_3^2\omega_{10} + 6\omega_3^3 + 36\omega_3^2v_3^2 + 18\omega_6\omega_3c_s^2\omega_{10} + 12\omega_3^2c_s^2 - 12\omega_3^2 + 6\omega_6\omega_3^3c_s^2 - 18\omega_3^3v_3^2 - 12\omega_6c_s^2\omega_{10} - \omega_6\omega_3^3c_s^2\omega_{10} + 12\omega_3\omega_{10} - 54\omega_6\omega_3^2v_3^2 - 18\omega_6\omega_3^2c_s^2 + 6\omega_3^2c_s^2\omega_{10} - 6\omega_3^3c_s^2)\frac{c_s^2\rho}{12\omega_6\omega_3^3\omega_{10}}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_y\mathrm{D}_z^3 v_3} = (94\omega_3c_s^4\omega_4\omega_1\omega_2^3 - 90\omega_3v_3^2c_s^2\omega_4\omega_1^2\omega_2^2 - 4\omega_3\omega_4\omega_1\omega_2^2 - 222\omega_3v_3^2\omega_4\omega_1\omega_2^3 + 40\omega_3c_s^2\omega_4\omega_2^3 + 8c_s^4\omega_4\omega_1^3\omega_2 + 138\omega_3v_3^4\omega_4\omega_1^3\omega_2^2 - 18c_s^4\omega_4\omega_1^2\omega_2^3 - 24\omega_3c_s^2\omega_4\omega_1^3\omega_2^2 + 12\omega_3v_3^2\omega_4\omega_1\omega_2^2 + 14\omega_3\omega_4\omega_1\omega_2^3 - 288\omega_3v_3^2c_s^2\omega_4\omega_1^3\omega_2 - 153\omega_3v_3^2c_s^2\omega_4\omega_1^2\omega_2^3 - 28\omega_3c_s^4\omega_4\omega_1\omega_2^2 - 312\omega_3v_3^2c_s^2\omega_4\omega_2^3 + 24v_3^2c_s^2\omega_4\omega_1\omega_2^3 + 16\omega_3c_s^4\omega_4\omega_1^3 - 16\omega_3c_s^2\omega_4\omega_1^2\omega_2 + \omega_3v_2^4\omega_4\omega_1^3\omega_2^2 + 20c_s^4\omega_4\omega_1^2\omega_2^2 + 192\omega_3v_3^4\omega_4\omega_1^2\omega_2 + 36\omega_3c_s^4\omega_1\omega_2^3 - 6\omega_3c_s^2\omega_4\omega_1^2\omega_2^2 - \omega_3v_2^4\omega_4\omega_1^2\omega_2^3 - 68\omega_3c_s^4\omega_4\omega_2^3 - 168\omega_3v_3^4\omega_4\omega_1^2\omega_2^2 + 144\omega_3v_3^2c_s^2\omega_4\omega_1^3 + 9c_s^4\omega_4\omega_1^3\omega_2^3 + 108\omega_3v_3^2c_s^2\omega_1\omega_2^3 + 153\omega_3v_3^2c_s^2\omega_4\omega_1^3\omega_2^2 - 240\omega_3v_3^4\omega_4\omega_1^3\omega_2 - 18c_s^4\omega_4\omega_1^3\omega_2^2 - 138\omega_3v_3^4\omega_4\omega_1^2\omega_2^3 + 42\omega_3c_s^2\omega_4\omega_1^3\omega_2 - 20\omega_3c_s^2\omega_4\omega_1^3 + 24\omega_3c_s^2\omega_4\omega_1^2\omega_2^3 + 120\omega_3v_3^2c_s^2\omega_4\omega_1^2\omega_2 - 8c_s^2\omega_4\omega_1\omega_2^3 - 36\omega_3c_s^2\omega_1\omega_2^3 + 9\omega_3c_s^4\omega_1^3\omega_2^3 + 408\omega_3v_3^4\omega_4\omega_1\omega_2^3 - 264\omega_3v_3^4\omega_4\omega_2^3 - 54\omega_3c_s^2\omega_4\omega_1\omega_2^3 - 3\omega_3c_s^2v_2^2\omega_4\omega_1^2\omega_2^3 + 17\omega_3c_s^4\omega_4\omega_1^3\omega_2^2 + 27v_3^2c_s^2\omega_4\omega_1^3\omega_2^2 + 8\omega_3\omega_4\omega_1^2\omega_2 - 81\omega_3v_3^2\omega_4\omega_1^3\omega_2^2 - 8c_s^2\omega_4\omega_1^3\omega_2 + 18c_s^2\omega_4\omega_1^2\omega_2^3 + 36\omega_3c_s^2\omega_1^2\omega_2^3 + 32\omega_3c_s^2\omega_4\omega_1\omega_2^2 - 60\omega_3v_3^2\omega_4\omega_1^3 - 24\omega_3v_3^4\omega_4\omega_1\omega_2^2 - 96\omega_3v_3^2\omega_4\omega_1^2\omega_2 - 20c_s^2\omega_4\omega_1^2\omega_2^2 + 8\omega_3c_s^4\omega_4\omega_1^2\omega_2 + 7\omega_3\omega_4\omega_1^3\omega_2^2 + 4\omega_3\omega_4\omega_1^3 - 54v_3^2c_s^2\omega_4\omega_1^3\omega_2^2 - \omega_3v_2^2\omega_4\omega_1^3\omega_2^2 - 3\omega_3c_s^4\omega_4\omega_1^3\omega_2^3 - 108\omega_3v_3^2c_s^2\omega_1^2\omega_2^3 + 84\omega_3v_3^2\omega_4\omega_1^2\omega_2^2 - 9c_s^2\omega_4\omega_1^3\omega_2^3 - 9\omega_3c_s^2\omega_1^3\omega_2^3 + 432\omega_3v_3^2c_s^2\omega_4\omega_1\omega_2^3 - 10\omega_3\omega_4\omega_1^3\omega_2 + 10\omega_3c_s^4\omega_4\omega_1^2\omega_2^2 - 54v_3^2c_s^2\omega_4\omega_1^2\omega_2^3 + \omega_3v_2^2\omega_4\omega_1^2\omega_2^3 + 144\omega_3v_3^2\omega_4\omega_2^3 + 24v_3^2c_s^2\omega_4\omega_1^3\omega_2 - 7\omega_3\omega_4\omega_1^2\omega_2^3 - 36\omega_3c_s^4\omega_1^2\omega_2^3 - 8\omega_3\omega_4\omega_2^3 - 4\omega_3\omega_4\omega_1^2\omega_2^2 - 32\omega_3c_s^4\omega_4\omega_1^3\omega_2 + 27\omega_3v_3^2c_s^2\omega_1^3\omega_2^3 + 60v_3^2c_s^2\omega_4\omega_1^2\omega_2^2 - 29\omega_3c_s^4\omega_4\omega_1^2\omega_2^3 - 60\omega_3v_3^2c_s^2\omega_4\omega_1\omega_2^2 + 18c_s^2\omega_4\omega_1^3\omega_2^2 + 138\omega_3v_3^2\omega_4\omega_1^3\omega_2 + 96\omega_3v_3^4\omega_4\omega_1^3 + 81\omega_3v_3^2\omega_4\omega_1^2\omega_2^3 + 8c_s^4\omega_4\omega_1\omega_2^3 + 3\omega_3c_s^2v_2^2\omega_4\omega_1^3\omega_2^2)\frac{\rho}{36\omega_3\omega_4\omega_1^3\omega_2^3}$

coefficient $C^{(2)}_{\mathrm{D}_z^4\rho}$ at $\frac{\partial^4\rho}{\partial x_3^4}$:

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_z^4\rho} = (6v_3^4 - 3v_3^4\omega - 12v_3^2c_s^2\omega + 2c_s^4 - c_s^4\omega + 24v_3^2c_s^2 + 3v_3^2\omega - 6v_3^2 + c_s^2\omega - 2c_s^2)\frac{v_2}{24\omega}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_z^4\rho} = (-12v_3^2\omega_7^2\omega_{11}^2 - 12\omega_{19}c_s^4\omega_7^2\omega_{11}^2 - 216\omega_{19}v_3^2c_s^2\omega_{11}^2 - 48\omega_{19}^2c_s^4\omega_7\omega_{11} + 24\omega_{19}^2c_s^4\omega_{11} + 48\omega_{19}v_3^2\omega_7\omega_{11} - 144\omega_{19}^2v_3^2c_s^2\omega_7^2 + 24\omega_{19}c_s^2\omega_{11}^2 + 72\omega_{19}v_3^2c_s^2\omega_7^2\omega_{11} + 3\omega_{19}^2v_3^2\omega_7^2\omega_{11}^2 - 24\omega_{19}^2c_s^2\omega_7 + 96\omega_{19}v_3^4\omega_7\omega_{11}^2 + 24c_s^2\omega_7\omega_{11}^2 + 150\omega_{19}^2v_3^2c_s^2\omega_7^2\omega_{11} + 36\omega_{19}^2v_3^4\omega_7^2\omega_{11} + 36\omega_{19}^2v_3^2\omega_7^2 + 12\omega_{19}c_s^2\omega_7^2\omega_{11}^2 - 72\omega_{19}^2v_3^2\omega_7 + 12v_3^4\omega_7^2\omega_{11}^2 + 48\omega_{19}^2c_s^2\omega_7\omega_{11} - 48\omega_{19}v_3^4\omega_7\omega_{11} + 12\omega_{19}^2c_s^2\omega_7^2 - 12\omega_{19}^2v_3^2c_s^2\omega_7^2\omega_{11}^2 - 3\omega_{19}^2v_3^4\omega_7^2\omega_{11}^2 - 126\omega_{19}v_3^2c_s^2\omega_7^2\omega_{11}^2 + 288\omega_{19}^2v_3^2c_s^2\omega_7 - 24c_s^4\omega_7\omega_{11}^2 - 96\omega_{19}v_3^2\omega_7\omega_{11}^2 + 48\omega_{19}^2v_3^4\omega_{11} - 36\omega_{19}^2v_3^2\omega_7^2\omega_{11} + 72v_3^2c_s^2\omega_7^2\omega_{11}^2 + 48\omega_{19}v_3^2\omega_{11}^2 + 12c_s^4\omega_7^2\omega_{11}^2 + 30\omega_{19}v_3^2\omega_7^2\omega_{11}^2 + 432\omega_{19}v_3^2c_s^2\omega_7\omega_{11}^2 + 24\omega_{19}^2c_s^4\omega_7 - 144v_3^2c_s^2\omega_7\omega_{11}^2 + 96\omega_{19}^2v_3^2\omega_7\omega_{11} - 36\omega_{19}^2v_3^4\omega_7^2 - \omega_{19}^2c_s^4\omega_7^2\omega_{11}^2 - 48\omega_{19}^2c_s^2\omega_7\omega_{11}^2 - 24v_3^4\omega_7\omega_{11}^2 - 24\omega_{19}^2c_s^2\omega_{11} - 14\omega_{19}^2c_s^2\omega_7^2\omega_{11} - 24\omega_{19}c_s^4\omega_{11}^2 + 24\omega_{19}v_3^4\omega_7^2\omega_{11} - 432\omega_{19}^2v_3^2c_s^2\omega_7\omega_{11} - 30\omega_{19}v_3^4\omega_7^2\omega_{11}^2 - 12c_s^2\omega_7^2\omega_{11}^2 - 96\omega_{19}^2v_3^4\omega_7\omega_{11} - 48\omega_{19}^2v_3^2\omega_{11} - 48\omega_{19}v_3^4\omega_{11}^2 + \omega_{19}^2c_s^2\omega_7^2\omega_{11}^2 + 24v_3^2\omega_7\omega_{11}^2 + 48\omega_{19}c_s^4\omega_7\omega_{11}^2 + 72\omega_{19}^2v_3^4\omega_7 + 14\omega_{19}^2c_s^4\omega_7^2\omega_{11} + 216\omega_{19}^2v_3^2c_s^2\omega_{11} - 12\omega_{19}^2c_s^4\omega_7^2 - 144\omega_{19}v_3^2c_s^2\omega_7\omega_{11} - 24\omega_{19}v_3^2\omega_7^2\omega_{11})\frac{v_2}{24\omega_{19}^2\omega_7^2\omega_{11}^2}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}_z^4\rho} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}_z^4\rho}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_z^4\rho} = (6v_3^4 + c_s^2\omega_{11} + 2c_s^4 + 3v_3^2\omega_{11} + 24v_3^2c_s^2 - c_s^4\omega_{11} - 6v_3^2 - 3v_3^4\omega_{11} - 2c_s^2 - 12v_3^2c_s^2\omega_{11})\frac{v_2}{24\omega_{11}}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}_z^4\rho} = C^{(2),\mathrm{CLBM1}}_{\mathrm{D}_z^4\rho}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}_z^4\rho} = (3\omega_6v_3^2 + 6v_3^4 + \omega_6c_s^2 - 12\omega_6v_3^2c_s^2 + 2c_s^4 + 24v_3^2c_s^2 - 3\omega_6v_3^4 - 6v_3^2 - \omega_6c_s^4 - 2c_s^2)\frac{v_2}{24\omega_6}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}_z^4\rho} = (-3c_s^4\omega_1\omega_2 + 24v_3^2c_s^2\omega_1 + 6v_3^4\omega_1 + 4c_s^4\omega_2 + 48v_3^2c_s^2\omega_2 + 2c_s^4\omega_1 + 12v_3^4\omega_2 + 3c_s^2\omega_1\omega_2 - 6v_3^2\omega_1 - 4c_s^2\omega_2 + 9v_3^2\omega_1\omega_2 - 9v_3^4\omega_1\omega_2 - 2c_s^2\omega_1 - 36v_3^2c_s^2\omega_1\omega_2 - 12v_3^2\omega_2)\frac{v_2}{72\omega_1\omega_2}$

coefficient $C^{(2)}_{\mathrm{D}_z^4 v_2}$ at $\frac{\partial^4 v_2}{\partial x_3^4}$:

$C^{(2),\mathrm{SRT}}_{\mathrm{D}_z^4 v_2} = (-72v_3^4 - 3c_s^4\omega^3 + 108v_3^4\omega + 216v_3^2c_s^2\omega + 30c_s^4\omega^2 + 48c_s^4 - 84v_3^2c_s^2\omega^2 - 72c_s^4\omega - 42v_3^4\omega^2 + 6v_3^2c_s^2\omega^3 + 3v_3^4\omega^3 - 144v_3^2c_s^2 - 108v_3^2\omega - 14c_s^2\omega^2 + c_s^2\omega^3 - 3v_3^2\omega^3 + 72v_3^2 + 36c_s^2\omega - 24c_s^2 + 42v_3^2\omega^2)\frac{\rho}{24\omega^3}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}_z^4 v_2} = (-24v_3^2c_s^2\omega_7^2 + 6\omega_{19}c_s^4\omega_7^3 - 72\omega_{19}^2v_3^2c_s^2\omega_7^2 - 24v_3^4\omega_7^2 - 3\omega_{19}^2v_3^2\omega_7^3 + 12\omega_{19}^2c_s^2\omega_7 + 12v_3^2c_s^2\omega_7^3 - 48\omega_{19}v_3^4\omega_7 + 24\omega_{19}^2v_3^2\omega_7^2 + 12v_3^4\omega_7^3 + 6\omega_{19}^2v_3^2c_s^2\omega_7^3 - 24\omega_{19}c_s^4\omega_7^2 - 24\omega_{19}^2v_3^2\omega_7 + 24\omega_{19}c_s^4\omega_7 - 8\omega_{19}^2c_s^2\omega_7^2 + 72\omega_{19}v_3^4\omega_7^2 + 156\omega_{19}^2v_3^2c_s^2\omega_7 - 18\omega_{19}v_3^4\omega_7^3 + \omega_{19}^2c_s^2\omega_7^3 + 24\omega_{19}^2c_s^4 - 48\omega_{19}^2c_s^4\omega_7 + 48\omega_{19}v_3^2c_s^2\omega_7^2 + 48\omega_{19}v_3^2\omega_7 - 24\omega_{19}^2v_3^4\omega_7^2 - 12v_3^2\omega_7^3 + 24\omega_{19}c_s^2\omega_7^2 - 12\omega_{19}v_3^2c_s^2\omega_7^3 - 6\omega_{19}c_s^2\omega_7^3 + 24v_3^2\omega_7^2 + 3\omega_{19}^2v_3^4\omega_7^2 + 18\omega_{19}v_3^2\omega_7^3 - 3\omega_{19}^2c_s^4\omega_7^3 + 24\omega_{19}^2v_3^4\omega_7 - 24\omega_{19}c_s^2\omega_7 + 24\omega_{19}^2c_s^4\omega_7^2 - 96\omega_{19}^2v_3^2c_s^2 - 72\omega_{19}v_3^2\omega_7^2 - 24\omega_{19}v_3^2c_s^2\omega_7)\frac{\rho}{24\omega_{19}^2\omega_7^3}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}^4_z v_2} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}^4_z v_2}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}^4_z v_2} = (-216v_3^2c_s^2\omega_7^2 + 6\omega_{19}c_s^4\omega_7^3 - 12\omega_{19}^2v_3^2c_s^2\omega_7^2 - 72v_3^4\omega_7^2 - 3\omega_{19}^2v_3^2\omega_7^3 + 12\omega_{19}^2c_s^2\omega_7 + 108v_3^2c_s^2\omega_7^3 + 12\omega_{19}^2v_3^2\omega_7^2 + 36v_3^4\omega_7^3 + 6\omega_{19}^2v_3^2c_s^2\omega_7^3 - 24\omega_{19}c_s^4\omega_7^2 + 24\omega_{19}c_s^4\omega_7 - 8\omega_{19}^2c_s^2\omega_7^2 + 72\omega_{19}v_3^4\omega_7^2 - 36\omega_{19}^2v_3^2c_s^2\omega_7 - 30\omega_{19}v_3^4\omega_7^3 + \omega_{19}^2c_s^2\omega_7^3 + 24\omega_{19}^2c_s^4 - 48\omega_{19}^2c_s^4\omega_7 + 144\omega_{19}v_3^2c_s^2\omega_7^2 - 12\omega_{19}^2v_3^4\omega_7^2 - 36v_3^2\omega_7^3 + 24\omega_{19}c_s^2\omega_7^2 - 72\omega_{19}v_3^2c_s^2\omega_7^3 - 6\omega_{19}c_s^2\omega_7^3 + 72v_3^2\omega_7^2 + 3\omega_{19}^2v_3^4\omega_7^3 + 30\omega_{19}v_3^2\omega_7^3 - 3\omega_{19}^2c_s^4\omega_7^3 - 24\omega_{19}c_s^2\omega_7 + 24\omega_{19}^2c_s^4\omega_7^2 - 72\omega_{19}v_3^2\omega_7^2 + 72\omega_{19}v_3^2c_s^2\omega_7)\frac{\rho}{24\omega_{19}^2\omega_7^3}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}^4_z v_2} = C^{(2),\mathrm{CLBM1}}_{\mathrm{D}^4_z v_2}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}^4_z v_2} = (-216\omega_3^2v_3^2c_s^2 + 36\omega_3^3v_3^4 + 24\omega_3^2c_s^4\omega_{10}^2 + 30\omega_3^3v_3^2\omega_{10} + 72\omega_3v_3^2c_s^2\omega_{10} + 72\omega_3^2v_3^4\omega_{10} + \omega_3^3c_s^2\omega_{10}^2 - 24\omega_3c_s^2\omega_{10} - 12\omega_3^2v_3^4\omega_{10}^2 - 6\omega_3^3c_s^2\omega_{10} - 72\omega_3^2v_3^4 + 12\omega_3c_s^2\omega_{10}^2 + 24c_s^4\omega_{10}^2 - 24\omega_3^2c_s^4\omega_{10} - 3\omega_3^3v_3^2\omega_{10}^2 - 36\omega_3v_3^2c_s^2\omega_{10}^2 - 8\omega_3^2c_s^2\omega_{10}^2 - 30\omega_3^3v_3^4\omega_{10} - 72\omega_3^2v_3^2\omega_{10} - 3\omega_3^3c_s^4\omega_{10}^2 + 72\omega_3^2v_3^2 + 24\omega_3c_s^4\omega_{10} + 6\omega_3^3v_3^2c_s^2\omega_{10}^2 + 144\omega_3^2v_3^2c_s^2\omega_{10} + 108\omega_3^3v_3^2c_s^2 - 12\omega_3^2v_3^2c_s^2\omega_{10}^2 - 36\omega_3^3v_3^2 - 72\omega_3^3v_3^2c_s^2\omega_{10} + 12\omega_3^2v_3^2\omega_{10}^2 + 6\omega_3^3c_s^4\omega_{10} - 48\omega_3c_s^4\omega_{10}^2 + 24\omega_3^2c_s^2\omega_{10} + 3\omega_3^3v_3^4\omega_{10}^2)\frac{\rho}{24\omega_3^3\omega_{10}^2}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}^4_z v_2} = (-15\omega_3v_3^4\omega_4^2\omega_1^3 - 48\omega_3^2c_s^4\omega_4^2\omega_1 + \omega_3^2c_s^2\omega_4^2\omega_1^3 + 18v_3^2\omega_4^2\omega_1^2 + 9\omega_3^2v_3^4\omega_1^3 - 36\omega_3^2v_3^2\omega_4\omega_1^2 + 36\omega_3v_3^4\omega_4^2\omega_1^2 + 36\omega_3^2v_3^2c_s^2\omega_4\omega_1 - 18\omega_3^2v_3^4\omega_1^2 + 15\omega_3^2v_3^2\omega_4\omega_1^3 - 9v_3^2\omega_4^2\omega_1^3 - 8\omega_3^2c_s^2\omega_4^2\omega_1^2 + 12\omega_3^2c_s^2\omega_4^2\omega_1 + 54\omega_3v_3^2c_s^2\omega_4\omega_1^3 + 15\omega_3v_3^2\omega_4^2\omega_1^3 - 3\omega_3^2c_s^4\omega_4^2\omega_1^3 + 72\omega_3^2v_3^2c_s^2\omega_4\omega_1^2 + 36\omega_3^2v_3^4\omega_4\omega_1^2 - 18v_3^4\omega_4^2\omega_1^2 + 27v_3^2c_s^2\omega_4^2\omega_1^3 - 36\omega_3v_3^2\omega_4^2\omega_1^2 - 108\omega_3v_3^2c_s^2\omega_4\omega_1^2 + 24\omega_3^2c_s^4\omega_4^2 + 9v_3^4\omega_4^2\omega_1^3 - 54v_3^2c_s^2\omega_4^2\omega_1^2 - 15\omega_3^2v_3^4\omega_4\omega_1^3 - 36\omega_3^2v_3^2c_s^2\omega_4\omega_1^3 + 24\omega_3^2c_s^4\omega_4^2\omega_1^2 + 72\omega_3v_3^2c_s^2\omega_4^2\omega_1^2 + 36\omega_3v_3^2\omega_4\omega_1^2 - 3\omega_3c_s^2\omega_4^2\omega_1^3 + 3\omega_3^2v_3^4\omega_4^2\omega_1^3 + 18\omega_3^2v_3^2\omega_1^2 + 12\omega_3c_s^4\omega_4^2\omega_1 - 12\omega_3^2c_s^4\omega_4\omega_1^2 + 27\omega_3^2v_3^2c_s^2\omega_1^3 + 6\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^3 + 12\omega_3c_s^2\omega_4^2\omega_1^2 - 18\omega_3v_3^2\omega_4\omega_1^3 - 12\omega_3^2c_s^2\omega_4\omega_1 - 36\omega_3v_3^2c_s^2\omega_4^2\omega_1^3 - 12\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^2 - 54\omega_3^2v_3^2c_s^2\omega_1^2 + 3\omega_3^2c_s^4\omega_4\omega_1^3 - 12\omega_3^2v_3^4\omega_4^2\omega_1^2 - 9\omega_3^2v_3^2\omega_1^3 - 36\omega_3^2v_3^2c_s^2\omega_4^2\omega_1 - 36\omega_3v_3^4\omega_4\omega_1^2 + 3\omega_3c_s^4\omega_4^2\omega_1^3 - 12\omega_3c_s^2\omega_4^2\omega_1 - 3\omega_3^2v_3^2\omega_4^2\omega_1^3 + 12\omega_3^2c_s^2\omega_4\omega_1^2 - 12\omega_3c_s^4\omega_4^2\omega_1^2 + 12\omega_3^2c_s^4\omega_4\omega_1 + 18\omega_3v_3^4\omega_4\omega_1^3 - 3\omega_3^2c_s^2\omega_4\omega_1^3 + 36\omega_3v_3^2c_s^2\omega_4^2\omega_1 + 12\omega_3^2v_3^2\omega_4^2\omega_1^2)\frac{\rho}{24\omega_3^2\omega_4^2\omega_1^3}$

coefficient $C^{(2)}_{\mathrm{D}^4_z v_3}$ **at** $\frac{\partial^4 v_3}{\partial x_3^4}$**:**

$C^{(2),\mathrm{SRT}}_{\mathrm{D}^4_z v_3} = (-4 + 2\omega - 5v_3^2\omega + 10v_3^2 - 3c_s^2\omega + 6c_s^2)\frac{v_3v_2\rho}{12\omega}$

$C^{(2),\mathrm{MRT1}}_{\mathrm{D}^4_z v_3} = (24v_3^2\omega_7^2\omega_{11}^2 + 24\omega_{19}\omega_7\omega_{11} - 72\omega_{19}v_3^2\omega_7\omega_{11} - 60\omega_{19}c_s^2\omega_{11}^2 - 5\omega_{19}^2v_3^2\omega_7^2\omega_{11}^2 + 72\omega_{19}^2c_s^2\omega_7 - 48c_s^2\omega_7\omega_{11}^2 - 25\omega_{19}^2\omega_7^2\omega_{11} - 60\omega_{19}^2v_3^2\omega_7^2 + 12\omega_{19}c_s^2\omega_7^2\omega_{11} + 24\omega_7\omega_{11}^2 - 33\omega_{19}c_s^2\omega_7^2\omega_{11}^2 + 120\omega_{19}^2v_3^2\omega_7 - 120\omega_{19}^2c_s^2\omega_7\omega_{11} - 36\omega_{19}^2c_s^2\omega_7^2 + 2\omega_{19}^2\omega_7^2\omega_{11}^2 + 168\omega_{19}v_3^2\omega_7\omega_{11}^2 - 36\omega_{19}^2\omega_{11} + 61\omega_{19}^2v_3^2\omega_7^2\omega_{11} - 72\omega_{19}\omega_7\omega_{11}^2 - 84\omega_{19}v_3^2\omega_{11}^2 - 51\omega_{19}v_3^2\omega_7^2\omega_{11}^2 - 168\omega_{19}^2v_3^2\omega_7\omega_{11} + 24\omega_{19}^2\omega_7^2 + 21\omega_{19}\omega_7^2\omega_{11}^2 + 120\omega_{19}c_s^2\omega_7\omega_{11}^2 + 60\omega_{19}^2c_s^2\omega_{11} + 39\omega_{19}^2c_s^2\omega_7^2\omega_{11} + 24c_s^2\omega_7^2\omega_{11}^2 + 84\omega_{19}^2v_3^2\omega_{11} + 72\omega_{19}^2\omega_7\omega_{11} - 12\omega_7^2\omega_{11}^2 - 24\omega_{19}c_s^2\omega_7\omega_{11} - 3\omega_{19}^2c_s^2\omega_7^2\omega_{11}^2 - 12\omega_{19}\omega_7^2\omega_{11} - 48v_3^2\omega_7\omega_{11}^2 - 48\omega_{19}^2\omega_7 + 36\omega_{19}v_3^2\omega_7^2\omega_{11} + 36\omega_{19}\omega_{11}^2)\frac{v_3v_2\rho}{12\omega_{19}^2\omega_7^2\omega_{11}^2}$

$C^{(2),\mathrm{MRT2}}_{\mathrm{D}^4_z v_3} = C^{(2),\mathrm{MRT1}}_{\mathrm{D}^4_z v_3}$

$C^{(2),\mathrm{CLBM1}}_{\mathrm{D}^4_z v_3} = (-4 - 3c_s^2\omega_{11} - 5v_3^2\omega_{11} + 2\omega_{11} + 10v_3^2 + 6c_s^2)\frac{v_3v_2\rho}{12\omega_{11}}$

$C^{(2),\mathrm{CLBM2}}_{\mathrm{D}^4_z v_3} = C^{(2),\mathrm{CLBM1}}_{\mathrm{D}^4_z v_3}$

$C^{(2),\mathrm{CuLBM1}}_{\mathrm{D}^4_z v_3} = (-4 - 5\omega_6v_3^2 + 2\omega_6 - 3\omega_6c_s^2 + 10v_3^2 + 6c_s^2)\frac{v_3v_2\rho}{12\omega_6}$

$C^{(2),\mathrm{CuLBM2}}_{\mathrm{D}^4_z v_3} = (6\omega_1\omega_2 - 9c_s^2\omega_1\omega_2 - 4\omega_1 + 10v_3^2\omega_1 + 12c_s^2\omega_2 - 15v_3^2\omega_1\omega_2 - 8\omega_2 + 6c_s^2\omega_1 + 20v_3^2\omega_2)\frac{v_3v_2\rho}{36\omega_1\omega_2}$

3.4 Conservation of momentum: ρv_3

$v_3\frac{\partial\rho}{\partial t} + \rho\frac{\partial v_3}{\partial t} + v_3v_1\frac{\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_1} + v_3\rho\frac{\delta_l}{\delta_t}\frac{\partial v_1}{\partial x_1} + v_1\rho\frac{\delta_l}{\delta_t}\frac{\partial v_3}{\partial x_1} + v_3v_2\frac{\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_2} + v_3\rho\frac{\delta_l}{\delta_t}\frac{\partial v_2}{\partial x_2} + v_2\rho\frac{\delta_l}{\delta_t}\frac{\partial v_3}{\partial x_2} + (v_3^2 + c_s^2)\frac{\delta_l}{\delta_t}\frac{\partial\rho}{\partial x_3} + 2v_3\rho\frac{\delta_l}{\delta_t}\frac{\partial v_3}{\partial x_3} + C^{(3)}_{\mathrm{D}_x\rho,\mathrm{D}_xv_3}\frac{\delta_l^2}{\delta_t}\frac{\partial\rho}{\partial x_1}\frac{\partial v_3}{\partial x_1} + C^{(3)}_{\mathrm{D}_x\rho,\mathrm{D}_zv_1}\frac{\delta_l^2}{\delta_t}\frac{\partial\rho}{\partial x_1}\frac{\partial v_1}{\partial x_3} + C^{(3)}_{\mathrm{D}_xv_1,\mathrm{D}_zv_1}\frac{\delta_l^2}{\delta_t}\frac{\partial v_1}{\partial x_1}\frac{\partial v_1}{\partial x_3} + C^{(3)}_{\mathrm{D}_y\rho,\mathrm{D}_yv_3}\frac{\delta_l^2}{\delta_t}\frac{\partial\rho}{\partial x_2}\frac{\partial v_3}{\partial x_2} + C^{(3)}_{\mathrm{D}_y\rho,\mathrm{D}_zv_2}\frac{\delta_l^2}{\delta_t}\frac{\partial\rho}{\partial x_2}\frac{\partial v_2}{\partial x_3} + C^{(3)}_{\mathrm{D}_yv_2,\mathrm{D}_zv_2}\frac{\delta_l^2}{\delta_t}\frac{\partial v_2}{\partial x_2}\frac{\partial v_2}{\partial x_3} + C^{(3)}_{\mathrm{D}_z\rho,\mathrm{D}_xv_1}\frac{\delta_l^2}{\delta_t}\frac{\partial\rho}{\partial x_3}\frac{\partial v_1}{\partial x_1} + C^{(3)}_{\mathrm{D}_z\rho,\mathrm{D}_yv_2}\frac{\delta_l^2}{\delta_t}\frac{\partial\rho}{\partial x_3}\frac{\partial v_2}{\partial x_2} + C^{(3)}_{\mathrm{D}_z\rho,\mathrm{D}_zv_3}\frac{\delta_l^2}{\delta_t}\frac{\partial\rho}{\partial x_3}\frac{\partial v_3}{\partial x_3} + C^{(3)}_{\mathrm{D}_zv_3,\mathrm{D}_zv_3}\frac{\delta_l^2}{\delta_t}\left(\frac{\partial v_3}{\partial x_3}\right)^2 + C^{(3)}_{\mathrm{D}_x^2v_3}\frac{\delta_l^2}{\delta_t}\frac{\partial^2 v_3}{\partial x_1^2} + C^{(3)}_{\mathrm{D}_y^2v_3}\frac{\delta_l^2}{\delta_t}\frac{\partial^2 v_3}{\partial x_2^2} + C^{(3)}_{\mathrm{D}_x\mathrm{D}_z\rho}\frac{\delta_l^2}{\delta_t}\frac{\partial^2\rho}{\partial x_1\partial x_3} + C^{(3)}_{\mathrm{D}_x\mathrm{D}_zv_1}\frac{\delta_l^2}{\delta_t}\frac{\partial^2 v_1}{\partial x_1\partial x_3} + C^{(3)}_{\mathrm{D}_y\mathrm{D}_z\rho}\frac{\delta_l^2}{\delta_t}\frac{\partial^2\rho}{\partial x_2\partial x_3} + C^{(3)}_{\mathrm{D}_y\mathrm{D}_zv_2}\frac{\delta_l^2}{\delta_t}\frac{\partial^2 v_2}{\partial x_2\partial x_3} + C^{(3)}_{\mathrm{D}_z^2\rho}\frac{\delta_l^2}{\delta_t}\frac{\partial^2\rho}{\partial x_3^2} + C^{(3)}_{\mathrm{D}_z^2v_3}\frac{\delta_l^2}{\delta_t}\frac{\partial^2 v_3}{\partial x_3^2} + C^{(3)}_{\mathrm{D}_x^3\rho}\frac{\delta_l^3}{\delta_t}\frac{\partial^3\rho}{\partial x_1^3} + C^{(3)}_{\mathrm{D}_x^3v_1}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_1}{\partial x_1^3} + C^{(3)}_{\mathrm{D}_x^3v_3}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_3}{\partial x_1^3} + C^{(3)}_{\mathrm{D}_x^2\mathrm{D}_yv_2}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_2}{\partial x_1^2\partial x_2} + C^{(3)}_{\mathrm{D}_x^2\mathrm{D}_yv_3}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_3}{\partial x_1^2\partial x_2} + C^{(3)}_{\mathrm{D}_x\mathrm{D}_y^2v_1}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_1}{\partial x_1\partial x_2^2} +$

$$
\begin{aligned}
&C^{(3)}_{\mathrm{D}_x\mathrm{D}_y^2 v_3}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_3}{\partial x_1\partial x_2^2} + C^{(3)}_{\mathrm{D}_y^3\rho}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 \rho}{\partial x_2^3} + C^{(3)}_{\mathrm{D}_y^3 v_2}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_2}{\partial x_2^3} + C^{(3)}_{\mathrm{D}_y^3 v_3}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_3}{\partial x_2^3} + C^{(3)}_{\mathrm{D}_x^2\mathrm{D}_z\rho}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 \rho}{\partial x_1^2\partial x_3} + C^{(3)}_{\mathrm{D}_x^2\mathrm{D}_z v_1}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_1}{\partial x_1^2\partial x_3} + \\
&C^{(3)}_{\mathrm{D}_x^2\mathrm{D}_z v_3}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_3}{\partial x_1^2\partial x_3} + C^{(3)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z\rho}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 \rho}{\partial x_1\partial x_2\partial x_3} + C^{(3)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_1}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_1}{\partial x_1\partial x_2\partial x_3} + C^{(3)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_2}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_2}{\partial x_1\partial x_2\partial x_3} + \\
&C^{(3)}_{\mathrm{D}_y^2\mathrm{D}_z\rho}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 \rho}{\partial x_2^2\partial x_3} + C^{(3)}_{\mathrm{D}_y^2\mathrm{D}_z v_2}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_2}{\partial x_2^2\partial x_3} + C^{(3)}_{\mathrm{D}_y^2\mathrm{D}_z v_3}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_3}{\partial x_2^2\partial x_3} + C^{(3)}_{\mathrm{D}_x\mathrm{D}_z^2\rho}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 \rho}{\partial x_1\partial x_3^2} + C^{(3)}_{\mathrm{D}_x\mathrm{D}_z^2 v_1}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_1}{\partial x_1\partial x_3^2} + \\
&C^{(3)}_{\mathrm{D}_x\mathrm{D}_z^2 v_3}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_3}{\partial x_1\partial x_3^2} + C^{(3)}_{\mathrm{D}_y\mathrm{D}_z^2\rho}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 \rho}{\partial x_2\partial x_3^2} + C^{(3)}_{\mathrm{D}_y\mathrm{D}_z^2 v_2}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_2}{\partial x_2\partial x_3^2} + C^{(3)}_{\mathrm{D}_y\mathrm{D}_z^2 v_3}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_3}{\partial x_2\partial x_3^2} + C^{(3)}_{\mathrm{D}_z^3\rho}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 \rho}{\partial x_3^3} + \\
&C^{(3)}_{\mathrm{D}_z^3 v_3}\frac{\delta_l^3}{\delta_t}\frac{\partial^3 v_3}{\partial x_3^3} + C^{(3)}_{\mathrm{D}_x^4\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 \rho}{\partial x_1^4} + C^{(3)}_{\mathrm{D}_x^4 v_1}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_1}{\partial x_1^4} + C^{(3)}_{\mathrm{D}_x^4 v_3}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_3}{\partial x_1^4} + C^{(3)}_{\mathrm{D}_x^3\mathrm{D}_y\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 \rho}{\partial x_1^3\partial x_2} + C^{(3)}_{\mathrm{D}_x^3\mathrm{D}_y v_1}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_1}{\partial x_1^3\partial x_2} + \\
&C^{(3)}_{\mathrm{D}_x^3\mathrm{D}_y v_2}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_2}{\partial x_1^3\partial x_2} + C^{(3)}_{\mathrm{D}_x^3\mathrm{D}_y v_3}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_3}{\partial x_1^3\partial x_2} + C^{(3)}_{\mathrm{D}_x^2\mathrm{D}_y^2\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 \rho}{\partial x_1^2\partial x_2^2} + C^{(3)}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_1}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_1}{\partial x_1^2\partial x_2^2} + C^{(3)}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_2}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_2}{\partial x_1^2\partial x_2^2} + \\
&C^{(3)}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_3}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_3}{\partial x_1^2\partial x_2^2} + C^{(3)}_{\mathrm{D}_x\mathrm{D}_y^3\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 \rho}{\partial x_1\partial x_2^3} + C^{(3)}_{\mathrm{D}_x\mathrm{D}_y^3 v_1}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_2^3} + C^{(3)}_{\mathrm{D}_x\mathrm{D}_y^3 v_2}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_2}{\partial x_1\partial x_2^3} + C^{(3)}_{\mathrm{D}_x\mathrm{D}_y^3 v_3}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_3}{\partial x_1\partial x_2^3} + \\
&C^{(3)}_{\mathrm{D}_y^4\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 \rho}{\partial x_2^4} + C^{(3)}_{\mathrm{D}_y^4 v_2}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_2}{\partial x_2^4} + C^{(3)}_{\mathrm{D}_y^4 v_3}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_3}{\partial x_2^4} + C^{(3)}_{\mathrm{D}_x^3\mathrm{D}_z\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 \rho}{\partial x_1^3\partial x_3} + C^{(3)}_{\mathrm{D}_x^3\mathrm{D}_z v_1}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_1}{\partial x_1^3\partial x_3} + C^{(3)}_{\mathrm{D}_x^3\mathrm{D}_z v_3}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_3}{\partial x_1^3\partial x_3} + \\
&C^{(3)}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 \rho}{\partial x_1^2\partial x_2\partial x_3} + C^{(3)}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_1}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_1}{\partial x_1^2\partial x_2\partial x_3} + C^{(3)}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_2}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_2}{\partial x_1^2\partial x_2\partial x_3} + C^{(3)}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_3}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_3}{\partial x_1^2\partial x_2\partial x_3} + \\
&C^{(3)}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 \rho}{\partial x_1\partial x_2^2\partial x_3} + C^{(3)}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_1}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_2^2\partial x_3} + C^{(3)}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_2}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_2}{\partial x_1\partial x_2^2\partial x_3} + C^{(3)}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_3}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_3}{\partial x_1\partial x_2^2\partial x_3} + \\
&C^{(3)}_{\mathrm{D}_y^3\mathrm{D}_z\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 \rho}{\partial x_2^3\partial x_3} + C^{(3)}_{\mathrm{D}_y^3\mathrm{D}_z v_2}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_2}{\partial x_2^3\partial x_3} + C^{(3)}_{\mathrm{D}_y^3\mathrm{D}_z v_3}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_3}{\partial x_2^3\partial x_3} + C^{(3)}_{\mathrm{D}_x^2\mathrm{D}_z^2\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 \rho}{\partial x_1^2\partial x_3^2} + C^{(3)}_{\mathrm{D}_x^2\mathrm{D}_z^2 v_1}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_1}{\partial x_1^2\partial x_3^2} + \\
&C^{(3)}_{\mathrm{D}_x^2\mathrm{D}_z^2 v_3}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_3}{\partial x_1^2\partial x_3^2} + C^{(3)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 \rho}{\partial x_1\partial x_2\partial x_3^2} + C^{(3)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_1}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_2\partial x_3^2} + C^{(3)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_2}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_2}{\partial x_1\partial x_2\partial x_3^2} + \\
&C^{(3)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_3}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_3}{\partial x_1\partial x_2\partial x_3^2} + C^{(3)}_{\mathrm{D}_y^2\mathrm{D}_z^2\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 \rho}{\partial x_2^2\partial x_3^2} + C^{(3)}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_2}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_2}{\partial x_2^2\partial x_3^2} + C^{(3)}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_3}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_3}{\partial x_2^2\partial x_3^2} + C^{(3)}_{\mathrm{D}_x\mathrm{D}_z^3\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 \rho}{\partial x_1\partial x_3^3} + \\
&C^{(3)}_{\mathrm{D}_x\mathrm{D}_z^3 v_1}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_1}{\partial x_1\partial x_3^3} + C^{(3)}_{\mathrm{D}_x\mathrm{D}_z^3 v_3}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_3}{\partial x_1\partial x_3^3} + C^{(3)}_{\mathrm{D}_y\mathrm{D}_z^3\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 \rho}{\partial x_2\partial x_3^3} + C^{(3)}_{\mathrm{D}_y\mathrm{D}_z^3 v_2}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_2}{\partial x_2\partial x_3^3} + C^{(3)}_{\mathrm{D}_y\mathrm{D}_z^3 v_3}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_3}{\partial x_2\partial x_3^3} + \\
&C^{(3)}_{\mathrm{D}_z^4\rho}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 \rho}{\partial x_3^4} + C^{(3)}_{\mathrm{D}_z^4 v_3}\frac{\delta_l^4}{\delta_t}\frac{\partial^4 v_3}{\partial x_3^4} = 0,
\end{aligned}
$$

where:

coefficient $C^{(3)}_{\mathrm{D}_x\rho,\mathrm{D}_x v_3}$ **at** $\frac{\partial\rho}{\partial x_1}\frac{\partial v_3}{\partial x_1}$**:**

$$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x\rho,\mathrm{D}_x v_3} = (-2+\omega)\frac{c_s^2}{2\omega}$$

$$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\rho,\mathrm{D}_x v_3} = (-2+\omega_6)\frac{c_s^2}{2\omega_6}$$

$$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x\rho,\mathrm{D}_x v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\rho,\mathrm{D}_x v_3}$$

$$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x\rho,\mathrm{D}_x v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\rho,\mathrm{D}_x v_3}$$

$$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x\rho,\mathrm{D}_x v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\rho,\mathrm{D}_x v_3}$$

$$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x\rho,\mathrm{D}_x v_3} = (-2+\omega_2)\frac{c_s^2}{2\omega_2}$$

$$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x\rho,\mathrm{D}_x v_3} = (-2+\omega_1)\frac{c_s^2}{2\omega_1}$$

coefficient $C^{(3)}_{\mathrm{D}_x\rho,\mathrm{D}_z v_1}$ **at** $\frac{\partial\rho}{\partial x_1}\frac{\partial v_1}{\partial x_3}$**:**

$$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x\rho,\mathrm{D}_z v_1} = (-2+\omega)\frac{c_s^2}{2\omega}$$

$$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\rho,\mathrm{D}_z v_1} = (-2+\omega_6)\frac{c_s^2}{2\omega_6}$$

$$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x\rho,\mathrm{D}_z v_1} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\rho,\mathrm{D}_z v_1}$$

$$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x\rho,\mathrm{D}_z v_1} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\rho,\mathrm{D}_z v_1}$$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x\rho,\mathrm{D}_z v_1} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\rho,\mathrm{D}_z v_1}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x\rho,\mathrm{D}_z v_1} = (-2+\omega_2)\frac{c_s^2}{2\omega_2}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x\rho,\mathrm{D}_z v_1} = (6v_1^2\omega_1 - 6v_1^2\omega_2 + 3c_s^2\omega_1\omega_2 - 2\omega_1 - 12c_s^2\omega_2 + 2\omega_2 + 6c_s^2\omega_1)\frac{1}{6\omega_1\omega_2}$

coefficient $C^{(3)}_{\mathrm{D}_x v_1,\mathrm{D}_z v_1}$ **at** $\frac{\partial v_1}{\partial x_1}\frac{\partial v_1}{\partial x_3}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x v_1,\mathrm{D}_z v_1} = 0$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x v_1,\mathrm{D}_z v_1} = 0$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x v_1,\mathrm{D}_z v_1} = 0$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x v_1,\mathrm{D}_z v_1} = 0$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x v_1,\mathrm{D}_z v_1} = 0$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x v_1,\mathrm{D}_z v_1} = 0$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x v_1,\mathrm{D}_z v_1} = (\omega_1-\omega_2)\frac{2v_1\rho}{\omega_1\omega_2}$

coefficient $C^{(3)}_{\mathrm{D}_y\rho,\mathrm{D}_y v_3}$ **at** $\frac{\partial\rho}{\partial x_2}\frac{\partial v_3}{\partial x_2}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_y\rho,\mathrm{D}_y v_3} = (-2+\omega)\frac{c_s^2}{2\omega}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y\rho,\mathrm{D}_y v_3} = (-2+\omega_7)\frac{c_s^2}{2\omega_7}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_y\rho,\mathrm{D}_y v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y\rho,\mathrm{D}_y v_3}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_y\rho,\mathrm{D}_y v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y\rho,\mathrm{D}_y v_3}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_y\rho,\mathrm{D}_y v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y\rho,\mathrm{D}_y v_3}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_y\rho,\mathrm{D}_y v_3} = (-2+\omega_3)\frac{c_s^2}{2\omega_3}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_y\rho,\mathrm{D}_y v_3} = (-2+\omega_1)\frac{c_s^2}{2\omega_1}$

coefficient $C^{(3)}_{\mathrm{D}_y\rho,\mathrm{D}_z v_2}$ **at** $\frac{\partial\rho}{\partial x_2}\frac{\partial v_2}{\partial x_3}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_y\rho,\mathrm{D}_z v_2} = (-2+\omega)\frac{c_s^2}{2\omega}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y\rho,\mathrm{D}_z v_2} = (-2+\omega_7)\frac{c_s^2}{2\omega_7}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_y\rho,\mathrm{D}_z v_2} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y\rho,\mathrm{D}_z v_2}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_y\rho,\mathrm{D}_z v_2} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y\rho,\mathrm{D}_z v_2}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_y\rho,\mathrm{D}_z v_2} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y\rho,\mathrm{D}_z v_2}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_y\rho,\mathrm{D}_z v_2} = (-2+\omega_3)\frac{c_s^2}{2\omega_3}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_y\rho,\mathrm{D}_z v_2} = (3c_s^2\omega_1\omega_2 - 2\omega_1 - 12c_s^2\omega_2 - 6v_2^2\omega_2 + 2\omega_2 + 6v_2^2\omega_1 + 6c_s^2\omega_1)\frac{1}{6\omega_1\omega_2}$

coefficient $C^{(3)}_{\mathrm{D}_y v_2,\mathrm{D}_z v_2}$ **at** $\frac{\partial v_2}{\partial x_2}\frac{\partial v_2}{\partial x_3}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_y v_2,\mathrm{D}_z v_2} = 0$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y v_2,\mathrm{D}_z v_2} = 0$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_y v_2,\mathrm{D}_z v_2} = 0$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_y v_2,\mathrm{D}_z v_2} = 0$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_y v_2,\mathrm{D}_z v_2} = 0$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_y v_2,\mathrm{D}_z v_2} = 0$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_y v_2,\mathrm{D}_z v_2} = (\omega_1 - \omega_2)\frac{2v_2\rho}{\omega_1\omega_2}$

coefficient $C^{(3)}_{\mathrm{D}_z \rho,\mathrm{D}_x v_1}$ **at** $\frac{\partial \rho}{\partial x_3}\frac{\partial v_1}{\partial x_1}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_z \rho,\mathrm{D}_x v_1} = 0$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_z \rho,\mathrm{D}_x v_1} = 0$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_z \rho,\mathrm{D}_x v_1} = 0$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_z \rho,\mathrm{D}_x v_1} = 0$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_z \rho,\mathrm{D}_x v_1} = 0$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_z \rho,\mathrm{D}_x v_1} = 0$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_z \rho,\mathrm{D}_x v_1} = (3v_1^2\omega_1 - 3v_1^2\omega_2 - \omega_1 - c_s^2\omega_2 + \omega_2 + c_s^2\omega_1)\frac{1}{3\omega_1\omega_2}$

coefficient $C^{(3)}_{\mathrm{D}_z \rho,\mathrm{D}_y v_2}$ **at** $\frac{\partial \rho}{\partial x_3}\frac{\partial v_2}{\partial x_2}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_z \rho,\mathrm{D}_y v_2} = 0$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_z \rho,\mathrm{D}_y v_2} = 0$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_z \rho,\mathrm{D}_y v_2} = 0$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_z \rho,\mathrm{D}_y v_2} = 0$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_z \rho,\mathrm{D}_y v_2} = 0$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_z \rho,\mathrm{D}_y v_2} = 0$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_z \rho,\mathrm{D}_y v_2} = (-\omega_1 - c_s^2\omega_2 - 3v_2^2\omega_2 + \omega_2 + 3v_2^2\omega_1 + c_s^2\omega_1)\frac{1}{3\omega_1\omega_2}$

coefficient $C^{(3)}_{\mathrm{D}_z \rho,\mathrm{D}_z v_3}$ **at** $\frac{\partial \rho}{\partial x_3}\frac{\partial v_3}{\partial x_3}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_z \rho,\mathrm{D}_z v_3} = (-2 + \omega - 3v_3^2\omega + 6v_3^2 - 2c_s^2\omega + 4c_s^2)\frac{1}{\omega}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_z \rho,\mathrm{D}_z v_3} = (-2 - 2c_s^2\omega_{11} - 3v_3^2\omega_{11} + \omega_{11} + 6v_3^2 + 4c_s^2)\frac{1}{\omega_{11}}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_z \rho,\mathrm{D}_z v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_z \rho,\mathrm{D}_z v_3}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_z \rho,\mathrm{D}_z v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_z \rho,\mathrm{D}_z v_3}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_z \rho,\mathrm{D}_z v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_z \rho,\mathrm{D}_z v_3}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_z\rho,\mathrm{D}_z v_3} = (-2 - 3\omega_6 v_3^2 + \omega_6 - 2\omega_6 c_s^2 + 6v_3^2 + 4c_s^2)\frac{1}{\omega_6}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_z\rho,\mathrm{D}_z v_3} = (3\omega_1\omega_2 - 6c_s^2\omega_1\omega_2 - 2\omega_1 + 6v_3^2\omega_1 + 8c_s^2\omega_2 - 9v_3^2\omega_1\omega_2 - 4\omega_2 + 4c_s^2\omega_1 + 12v_3^2\omega_2)\frac{1}{3\omega_1\omega_2}$

coefficient $C^{(3)}_{\mathrm{D}_z v_3,\mathrm{D}_z v_3}$ **at** $\left(\frac{\partial v_3}{\partial x_3}\right)^2$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_z v_3,\mathrm{D}_z v_3} = (2-\omega)\frac{3v_3\rho}{\omega}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_z v_3,\mathrm{D}_z v_3} = (2-\omega_{11})\frac{3v_3\rho}{\omega_{11}}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_z v_3,\mathrm{D}_z v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_z v_3,\mathrm{D}_z v_3}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_z v_3,\mathrm{D}_z v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_z v_3,\mathrm{D}_z v_3}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_z v_3,\mathrm{D}_z v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_z v_3,\mathrm{D}_z v_3}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_z v_3,\mathrm{D}_z v_3} = (2-\omega_6)\frac{3v_3\rho}{\omega_6}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_z v_3,\mathrm{D}_z v_3} = (-3\omega_1\omega_2 + 2\omega_1 + 4\omega_2)\frac{v_3\rho}{\omega_1\omega_2}$

coefficient $C^{(3)}_{\mathrm{D}_x^2 v_3}$ **at** $\frac{\partial^2 v_3}{\partial x_1^2}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x^2 v_3} = (-2+\omega)\frac{c_s^2\rho}{2\omega}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^2 v_3} = (-2+\omega_6)\frac{c_s^2\rho}{2\omega_6}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x^2 v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^2 v_3}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x^2 v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^2 v_3}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x^2 v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^2 v_3}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x^2 v_3} = (-2+\omega_2)\frac{c_s^2\rho}{2\omega_2}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x^2 v_3} = (-2+\omega_1)\frac{c_s^2\rho}{2\omega_1}$

coefficient $C^{(3)}_{\mathrm{D}_y^2 v_3}$ **at** $\frac{\partial^2 v_3}{\partial x_2^2}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_y^2 v_3} = (-2+\omega)\frac{c_s^2\rho}{2\omega}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y^2 v_3} = (-2+\omega_7)\frac{c_s^2\rho}{2\omega_7}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_y^2 v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y^2 v_3}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_y^2 v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y^2 v_3}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_y^2 v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y^2 v_3}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_y^2 v_3} = (-2+\omega_3)\frac{c_s^2\rho}{2\omega_3}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_y^2 v_3} = (-2+\omega_1)\frac{c_s^2\rho}{2\omega_1}$

coefficient $C^{(3)}_{\mathrm{D}_x\mathrm{D}_z\rho}$ **at** $\frac{\partial^2\rho}{\partial x_1\partial x_3}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_z\rho} = 0$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z\rho} = 0$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_z\rho} = 0$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_z\rho} = 0$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_z\rho} = 0$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_z\rho} = 0$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_z\rho} = (v_1^2\omega_1 - v_1^2\omega_2 - \omega_1 - 3c_s^2\omega_2 + \omega_2 + 3c_s^2\omega_1)\frac{v_1}{3\omega_1\omega_2}$

coefficient $C^{(3)}_{\mathrm{D}_x\mathrm{D}_z v_1}$ **at** $\frac{\partial^2 v_1}{\partial x_1\partial x_3}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_z v_1} = (-2+\omega)\frac{c_s^2\rho}{2\omega}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z v_1} = (-2+\omega_6)\frac{c_s^2\rho}{2\omega_6}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_z v_1} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z v_1}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_z v_1} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z v_1}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_z v_1} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z v_1}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_z v_1} = (-2+\omega_2)\frac{c_s^2\rho}{2\omega_2}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_z v_1} = (6v_1^2\omega_1 - 6v_1^2\omega_2 + 3c_s^2\omega_1\omega_2 - 2\omega_1 - 8c_s^2\omega_2 + 2\omega_2 + 2c_s^2\omega_1)\frac{\rho}{6\omega_1\omega_2}$

coefficient $C^{(3)}_{\mathrm{D}_y\mathrm{D}_z\rho}$ **at** $\frac{\partial^2\rho}{\partial x_2\partial x_3}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_y\mathrm{D}_z\rho} = 0$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z\rho} = 0$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_y\mathrm{D}_z\rho} = 0$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_y\mathrm{D}_z\rho} = 0$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_y\mathrm{D}_z\rho} = 0$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_y\mathrm{D}_z\rho} = 0$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_y\mathrm{D}_z\rho} = (-\omega_1 - 3c_s^2\omega_2 - v_2^2\omega_2 + \omega_2 + v_2^2\omega_1 + 3c_s^2\omega_1)\frac{v_2}{3\omega_1\omega_2}$

coefficient $C^{(3)}_{\mathrm{D}_y\mathrm{D}_z v_2}$ **at** $\frac{\partial^2 v_2}{\partial x_2\partial x_3}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_y\mathrm{D}_z v_2} = (-2+\omega)\frac{c_s^2\rho}{2\omega}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z v_2} = (-2+\omega_7)\frac{c_s^2\rho}{2\omega_7}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_y\mathrm{D}_z v_2} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z v_2}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_y\mathrm{D}_z v_2} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z v_2}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_y\mathrm{D}_z v_2} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z v_2}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_y\mathrm{D}_z v_2} = (-2+\omega_3)\frac{c_s^2\rho}{2\omega_3}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_y\mathrm{D}_z v_2} = (3c_s^2\omega_1\omega_2 - 2\omega_1 - 8c_s^2\omega_2 - 6v_2^2\omega_2 + 2\omega_2 + 6v_2^2\omega_1 + 2c_s^2\omega_1)\frac{\rho}{6\omega_1\omega_2}$

coefficient $C^{(3)}_{\mathrm{D}_z^2\rho}$ at $\frac{\partial^2\rho}{\partial x_3^2}$:

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_z^2\rho} = (-2+\omega - v_3^2\omega + 2v_3^2 - 3c_s^2\omega + 6c_s^2)\frac{v_3}{2\omega}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_z^2\rho} = (-2 - 3c_s^2\omega_{11} - v_3^2\omega_{11} + \omega_{11} + 2v_3^2 + 6c_s^2)\frac{v_3}{2\omega_{11}}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_z^2\rho} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_z^2\rho}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_z^2\rho} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_z^2\rho}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_z^2\rho} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_z^2\rho}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_z^2\rho} = (-2 - \omega_6 v_3^2 + \omega_6 - 3\omega_6 c_s^2 + 2v_3^2 + 6c_s^2)\frac{v_3}{2\omega_6}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_z^2\rho} = (3\omega_1\omega_2 - 9c_s^2\omega_1\omega_2 - 2\omega_1 + 2v_3^2\omega_1 + 12c_s^2\omega_2 - 3v_3^2\omega_1\omega_2 - 4\omega_2 + 6c_s^2\omega_1 + 4v_3^2\omega_2)\frac{v_3}{6\omega_1\omega_2}$

coefficient $C^{(3)}_{\mathrm{D}_z^2 v_3}$ at $\frac{\partial^2 v_3}{\partial x_3^2}$:

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_z^2 v_3} = (-2+\omega - 3v_3^2\omega + 6v_3^2 - c_s^2\omega + 2c_s^2)\frac{\rho}{2\omega}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_z^2 v_3} = (-2 - c_s^2\omega_{11} - 3v_3^2\omega_{11} + \omega_{11} + 6v_3^2 + 2c_s^2)\frac{\rho}{2\omega_{11}}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_z^2 v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_z^2 v_3}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_z^2 v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_z^2 v_3}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_z^2 v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_z^2 v_3}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_z^2 v_3} = (-2 - 3\omega_6 v_3^2 + \omega_6 - \omega_6 c_s^2 + 6v_3^2 + 2c_s^2)\frac{\rho}{2\omega_6}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_z^2 v_3} = (3\omega_1\omega_2 - 3c_s^2\omega_1\omega_2 - 2\omega_1 + 6v_3^2\omega_1 + 4c_s^2\omega_2 - 9v_3^2\omega_1\omega_2 - 4\omega_2 + 2c_s^2\omega_1 + 12v_3^2\omega_2)\frac{\rho}{6\omega_1\omega_2}$

coefficient $C^{(3)}_{\mathrm{D}_x^3\rho}$ at $\frac{\partial^3\rho}{\partial x_1^3}$:

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x^3\rho} = (-1 + v_1^2 + 3c_s^2)\frac{v_3 v_1}{12}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^3\rho} = (-6\omega_6 v_1^2\omega_{13} - 12v_1^2\omega_9 - 12\omega_{13} + 12v_1^2\omega_{13} + 3\omega_6 c_s^2\omega_{13}\omega_9 + 6\omega_6 v_1^2\omega_9 + 36c_s^2\omega_{13} + 18\omega_6 c_s^2\omega_9 - \omega_6\omega_{13}\omega_9 + 6\omega_6\omega_{13} + \omega_6 v_1^2\omega_{13}\omega_9 - 6\omega_6\omega_9 - 18\omega_6 c_s^2\omega_{13} - 36c_s^2\omega_9 + 12\omega_9)\frac{v_3 v_1}{12\omega_6\omega_{13}\omega_9}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x^3\rho} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^3\rho}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x^3\rho} = C^{(3),\mathrm{SRT}}_{\mathrm{D}_x^3\rho}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x^3\rho} = C^{(3),\mathrm{SRT}}_{\mathrm{D}_x^3\rho}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}^3_x\rho} = C^{(3),\mathrm{SRT}}_{\mathrm{D}^3_x\rho}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}^3_x\rho} = C^{(3),\mathrm{SRT}}_{\mathrm{D}^3_x\rho}$

coefficient $C^{(3)}_{\mathrm{D}^3_x v_1}$ **at** $\frac{\partial^3 v_1}{\partial x_1^3}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}^3_x v_1} = (-1 + 3v_1^2 + c_s^2)\frac{v_3\rho}{12}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}^3_x v_1} = (-18\omega_6 v_1^2\omega_{13} - 36v_1^2\omega_9 - 12\omega_{13} + 36v_1^2\omega_{13} + \omega_6 c_s^2\omega_{13}\omega_9 + 18\omega_6 v_1^2\omega_9 + 12c_s^2\omega_{13} + 6\omega_6 c_s^2\omega_9 - \omega_6\omega_{13}\omega_9 + 6\omega_6\omega_{13} + 3\omega_6 v_1^2\omega_{13}\omega_9 - 6\omega_6\omega_9 - 6\omega_6 c_s^2\omega_{13} - 12c_s^2\omega_9 + 12\omega_9)\frac{v_3\rho}{12\omega_6\omega_{13}\omega_9}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}^3_x v_1} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}^3_x v_1}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}^3_x v_1} = C^{(3),\mathrm{SRT}}_{\mathrm{D}^3_x v_1}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}^3_x v_1} = C^{(3),\mathrm{SRT}}_{\mathrm{D}^3_x v_1}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}^3_x v_1} = C^{(3),\mathrm{SRT}}_{\mathrm{D}^3_x v_1}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}^3_x v_1} = C^{(3),\mathrm{SRT}}_{\mathrm{D}^3_x v_1}$

coefficient $C^{(3)}_{\mathrm{D}^3_x v_3}$ **at** $\frac{\partial^3 v_3}{\partial x_1^3}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}^3_x v_3} = (6 - 6v_1^2 + 6v_1^2\omega - v_1^2\omega^2 + \omega^2 - 6\omega - 3c_s^2\omega^2 + 18c_s^2\omega - 18c_s^2)\frac{v_1\rho}{6\omega^2}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}^3_x v_3} = (3\omega_6 v_1^2\omega_{13} + 6\omega_6 - 3\omega_6^2 c_s^2\omega_{13} - 6\omega_6 c_s^2 + 3\omega_6^2 v_1^2 + \omega_6^2\omega_{13} - 3\omega_6^2 - 12c_s^2\omega_{13} - 3\omega_6\omega_{13} - \omega_6^2 v_1^2\omega_{13} + 15\omega_6 c_s^2\omega_{13} + 3\omega_6^2 c_s^2 - 6\omega_6 v_1^2)\frac{v_1\rho}{6\omega_6^2\omega_{13}}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}^3_x v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}^3_x v_3}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}^3_x v_3} = (6 - 6v_1^2 - \omega_6 v_1^2\omega_{13} - 3\omega_6 + 9\omega_6 c_s^2 - 3\omega_{13} + 3v_1^2\omega_{13} + 9c_s^2\omega_{13} + \omega_6\omega_{13} - 3\omega_6 c_s^2\omega_{13} + 3\omega_6 v_1^2 - 18c_s^2)\frac{v_1\rho}{6\omega_6\omega_{13}}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}^3_x v_3} = C^{(3),\mathrm{CLBM1}}_{\mathrm{D}^3_x v_3}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}^3_x v_3} = (6 - 6v_1^2 + 3v_1^2\omega_{12} + 3v_1^2\omega_2 - v_1^2\omega_2\omega_{12} + 9c_s^2\omega_2 - 3\omega_2 - 18c_s^2 + \omega_2\omega_{12} - 3c_s^2\omega_2\omega_{12} - 3\omega_{12} + 9c_s^2\omega_{12})\frac{v_1\rho}{6\omega_2\omega_{12}}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}^3_x v_3} = (-6v_1^2\omega_4 + 6\omega_3 - 6\omega_3 c_s^2\omega_4\omega_1 - 18\omega_3 c_s^2 + 9\omega_3 c_s^2\omega_1 + 9c_s^2\omega_4\omega_1 - 3\omega_4\omega_1 + 6\omega_4 + 18\omega_3 c_s^2\omega_4 - 2\omega_3 v_1^2\omega_4\omega_1 + 3\omega_3 v_1^2\omega_1 - 6\omega_3\omega_4 - 6\omega_3 v_1^2 - 3\omega_3\omega_1 + 6\omega_3 v_1^2\omega_4 - 18c_s^2\omega_4 + 2\omega_3\omega_4\omega_1 + 3v_1^2\omega_4\omega_1)\frac{v_1\rho}{12\omega_3\omega_4\omega_1}$

coefficient $C^{(3)}_{\mathrm{D}^2_x\mathrm{D}_y v_2}$ **at** $\frac{\partial^3 v_2}{\partial x_1^2\partial x_2}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}^2_x\mathrm{D}_y v_2} = \frac{-v_3 c_s^2\rho}{6}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}^2_x\mathrm{D}_y v_2} = (6\omega_7\omega_5 - 6\omega_7\omega_8 - 6\omega_6\omega_7\omega_5 + 6\omega_6\omega_5 - 6\omega_6\omega_8 + 6\omega_6\omega_7\omega_8 - \omega_6\omega_7\omega_8\omega_5)\frac{v_3 c_s^2\rho}{6\omega_6\omega_7\omega_8\omega_5}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}^2_x\mathrm{D}_y v_2} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}^2_x\mathrm{D}_y v_2}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}^2_x\mathrm{D}_y v_2} = C^{(3),\mathrm{SRT}}_{\mathrm{D}^2_x\mathrm{D}_y v_2}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}^2_x\mathrm{D}_y v_2} = C^{(3),\mathrm{SRT}}_{\mathrm{D}^2_x\mathrm{D}_y v_2}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}^2_x\mathrm{D}_y v_2} = C^{(3),\mathrm{SRT}}_{\mathrm{D}^2_x\mathrm{D}_y v_2}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y v_2} = C^{(3),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_y v_2}$

coefficient $C^{(3)}_{\mathrm{D}_x^2\mathrm{D}_y v_3}$ **at** $\frac{\partial^3 v_3}{\partial x_1^2 \partial x_2}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_y v_3} = 0$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y v_3} = (-\omega_7\omega_8 - \omega_6\omega_8 + \omega_6\omega_7\omega_8 - \omega_6^2\omega_7 + \omega_6\omega_7 + \omega_6^2)\frac{c_s^2 v_2 \rho}{\omega_6^2\omega_7\omega_8}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_y v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y v_3}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y v_3} = 0$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y v_3} = 0$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y v_3} = 0$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y v_3} = (-2\omega_3 + v_2^2\omega_4\omega_1 + 6\omega_3 c_s^2 - 3\omega_3 c_s^2\omega_1 + 3c_s^2\omega_4\omega_1 - \omega_4\omega_1 + 2\omega_3 v_2^2 - \omega_3 v_2^2\omega_1 + 2\omega_4 + \omega_3\omega_1 - 6c_s^2\omega_4 - 2v_2^2\omega_4)\frac{v_2\rho}{4\omega_3\omega_4\omega_1}$

coefficient $C^{(3)}_{\mathrm{D}_x\mathrm{D}_y^2 v_1}$ **at** $\frac{\partial^3 v_1}{\partial x_1 \partial x_2^2}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y^2 v_1} = \frac{-v_3 c_s^2\rho}{6}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^2 v_1} = (6\omega_7\omega_5 - 6\omega_7\omega_8 - 6\omega_6\omega_7\omega_5 + 6\omega_6\omega_5 - 6\omega_6\omega_8 + 6\omega_6\omega_7\omega_8 - \omega_6\omega_7\omega_8\omega_5)\frac{v_3 c_s^2\rho}{6\omega_6\omega_7\omega_8\omega_5}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y^2 v_1} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^2 v_1}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2 v_1} = C^{(3),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y^2 v_1}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y^2 v_1} = C^{(3),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y^2 v_1}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2 v_1} = C^{(3),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y^2 v_1}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y^2 v_1} = C^{(3),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y^2 v_1}$

coefficient $C^{(3)}_{\mathrm{D}_x\mathrm{D}_y^2 v_3}$ **at** $\frac{\partial^3 v_3}{\partial x_1 \partial x_2^2}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y^2 v_3} = 0$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^2 v_3} = (\omega_7^2 - \omega_7\omega_8 - \omega_6\omega_8 + \omega_6\omega_7\omega_8 + \omega_6\omega_7 - \omega_6\omega_7^2)\frac{c_s^2 v_1\rho}{\omega_6\omega_7^2\omega_8}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y^2 v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^2 v_3}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2 v_3} = 0$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y^2 v_3} = 0$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2 v_3} = 0$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y^2 v_3} = (-2v_1^2\omega_4 - 2\omega_3 + 6\omega_3 c_s^2 - 3\omega_3 c_s^2\omega_1 + 3c_s^2\omega_4\omega_1 - \omega_4\omega_1 + 2\omega_4 - \omega_3 v_1^2\omega_1 + 2\omega_3 v_1^2 + \omega_3\omega_1 - 6c_s^2\omega_4 + v_1^2\omega_4\omega_1)\frac{v_1\rho}{4\omega_3\omega_4\omega_1}$

coefficient $C^{(3)}_{\mathrm{D}^3_y\rho}$ **at** $\frac{\partial^3\rho}{\partial x_2^3}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}^3_y\rho} = (-1+3c_s^2+v_2^2)\frac{v_3v_2}{12}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}^3_y\rho} = (3c_s^2\omega_{16}\omega_{10}\omega_7 - \omega_{16}\omega_{10}\omega_7 - 6\omega_{16}v_2^2\omega_7 - 12\omega_{16} + 12\omega_{10} - 18c_s^2\omega_{16}\omega_7 + 36c_s^2\omega_{16} + 6\omega_{16}\omega_7 - 36c_s^2\omega_{10} + 18c_s^2\omega_{10}\omega_7 - 6\omega_{10}\omega_7 - 12v_2^2\omega_{10} + \omega_{16}v_2^2\omega_{10}\omega_7 + 6v_2^2\omega_{10}\omega_7 + 12\omega_{16}v_2^2)\frac{v_3v_2}{12\omega_{16}\omega_{10}\omega_7}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}^3_y\rho} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}^3_y\rho}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}^3_y\rho} = C^{(3),\mathrm{SRT}}_{\mathrm{D}^3_y\rho}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}^3_y\rho} = C^{(3),\mathrm{SRT}}_{\mathrm{D}^3_y\rho}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}^3_y\rho} = C^{(3),\mathrm{SRT}}_{\mathrm{D}^3_y\rho}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}^3_y\rho} = C^{(3),\mathrm{SRT}}_{\mathrm{D}^3_y\rho}$

coefficient $C^{(3)}_{\mathrm{D}^3_y v_2}$ **at** $\frac{\partial^3 v_2}{\partial x_2^3}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}^3_y v_2} = (-1+c_s^2+3v_2^2)\frac{v_3\rho}{12}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}^3_y v_2} = (c_s^2\omega_{16}\omega_{10}\omega_7 - \omega_{16}\omega_{10}\omega_7 - 18\omega_{16}v_2^2\omega_7 - 12\omega_{16} + 12\omega_{10} - 6c_s^2\omega_{16}\omega_7 + 12c_s^2\omega_{16} + 6\omega_{16}\omega_7 - 12c_s^2\omega_{10} + 6c_s^2\omega_{10}\omega_7 - 6\omega_{10}\omega_7 - 36v_2^2\omega_{10} + 3\omega_{16}v_2^2\omega_{10}\omega_7 + 18v_2^2\omega_{10}\omega_7 + 36\omega_{16}v_2^2)\frac{v_3\rho}{12\omega_{16}\omega_{10}\omega_7}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}^3_y v_2} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}^3_y v_2}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}^3_y v_2} = C^{(3),\mathrm{SRT}}_{\mathrm{D}^3_y v_2}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}^3_y v_2} = C^{(3),\mathrm{SRT}}_{\mathrm{D}^3_y v_2}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}^3_y v_2} = C^{(3),\mathrm{SRT}}_{\mathrm{D}^3_y v_2}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}^3_y v_2} = C^{(3),\mathrm{SRT}}_{\mathrm{D}^3_y v_2}$

coefficient $C^{(3)}_{\mathrm{D}^3_y v_3}$ **at** $\frac{\partial^3 v_3}{\partial x_2^3}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}^3_y v_3} = (6+\omega^2-6\omega-3c_s^2\omega^2-v_2^2\omega^2+6v_2^2\omega+18c_s^2\omega-18c_s^2-6v_2^2)\frac{v_2\rho}{6\omega^2}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}^3_y v_3} = (\omega_{16}\omega_7^2-3c_s^2\omega_{16}\omega_7^2-3\omega_7^2+3\omega_{16}v_2^2\omega_7-\omega_{16}v_2^2\omega_7^2+6\omega_7+15c_s^2\omega_{16}\omega_7-12c_s^2\omega_{16}-3\omega_{16}\omega_7-6v_2^2\omega_7-6c_s^2\omega_7+3c_s^2\omega_7^2+3v_2^2\omega_7^2)\frac{v_2\rho}{6\omega_{16}\omega_7^2}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}^3_y v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}^3_y v_3}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}^3_y v_3} = (6-\omega_{16}v_2^2\omega_7-3\omega_{16}-3\omega_7-3c_s^2\omega_{16}\omega_7+9c_s^2\omega_{16}+\omega_{16}\omega_7+3v_2^2\omega_7+9c_s^2\omega_7+3\omega_{16}v_2^2-18c_s^2-6v_2^2)\frac{v_2\rho}{6\omega_{16}\omega_7}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}^3_y v_3} = C^{(3),\mathrm{CLBM1}}_{\mathrm{D}^3_y v_3}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}^3_y v_3} = (6+3v_2^2\omega_{11}-3\omega_3+9c_s^2\omega_{11}+9\omega_3c_s^2+3\omega_3v_2^2+\omega_3\omega_{11}-3\omega_{11}-3\omega_3c_s^2\omega_{11}-\omega_3v_2^2\omega_{11}-18c_s^2-6v_2^2)\frac{v_2\rho}{6\omega_3\omega_{11}}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}^3_y v_3} = (6\omega_3+3v_2^2\omega_4\omega_1-6\omega_3c_s^2\omega_4\omega_1-18\omega_3c_s^2+9\omega_3c_s^2\omega_1+9c_s^2\omega_4\omega_1-3\omega_4\omega_1-6\omega_3v_2^2+6\omega_3v_2^2\omega_4+3\omega_3v_2^2\omega_1-2\omega_3v_2^2\omega_4\omega_1+6\omega_4+18\omega_3c_s^2\omega_4-6\omega_3\omega_4-3\omega_3\omega_1-18c_s^2\omega_4-6v_2^2\omega_4+2\omega_3\omega_4\omega_1)\frac{v_2\rho}{12\omega_3\omega_4\omega_1}$

coefficient $C^{(3)}_{\mathrm{D}_x^2\mathrm{D}_z\rho}$ **at** $\frac{\partial^3\rho}{\partial x_1^2\partial x_3}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_z\rho} = (-12-\omega^2+12\omega)\frac{c_s^4}{6\omega^2}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_z\rho} = (-12+12\omega_6-\omega_6^2)\frac{c_s^4}{6\omega_6^2}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_z\rho} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_z\rho}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_z\rho} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_z\rho}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_z\rho} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_z\rho}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_z\rho} = (-12-\omega_2^2+12\omega_2)\frac{c_s^4}{6\omega_2^2}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_z\rho} = (3v_1^2\omega_1^2\omega_2+2c_s^4\omega_1^2-18c_s^2v_1^2\omega_2^2-2c_s^2\omega_1\omega_2^2-15c_s^2v_1^2\omega_1^2\omega_2+4v_1^2\omega_2^2+12c_s^2v_1^2\omega_1^2-14c_s^4\omega_2^2-2v_1^2\omega_1^2-3v_1^4\omega_1^2\omega_2+14c_s^4\omega_1\omega_2^2-2c_s^2\omega_1^2-3v_1^2\omega_1\omega_2^2-c_s^4\omega_1^2\omega_2^2-4v_1^4\omega_2^2+15c_s^2v_1^2\omega_1\omega_2^2+2c_s^2\omega_1^2\omega_2+2v_1^4\omega_1\omega_2+3v_1^4\omega_1\omega_2^2+6c_s^2v_1^2\omega_1\omega_2+2c_s^2\omega_2^2+2v_1^4\omega_1^2-2v_1^2\omega_1\omega_2-2c_s^4\omega_1^2\omega_2)\frac{1}{6\omega_1^2\omega_2^2}$

coefficient $C^{(3)}_{\mathrm{D}_x^2\mathrm{D}_z v_1}$ **at** $\frac{\partial^3 v_1}{\partial x_1^2\partial x_3}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_z v_1} = 0$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_z v_1} = (2\omega_6-2\omega_{13}-\omega_6^2+\omega_6\omega_{13})\frac{c_s^2v_1\rho}{\omega_6^2\omega_{13}}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_z v_1} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_z v_1}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_z v_1} = 0$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_z v_1} = 0$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_z v_1} = 0$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_z v_1} = (6\omega_2^2-11v_1^2\omega_1^2\omega_2+9c_s^2\omega_1\omega_2^2-14v_1^2\omega_2^2-5\omega_1\omega_2^2-2\omega_1\omega_2+8v_1^2\omega_1^2+2c_s^2\omega_1\omega_2-4\omega_1^2+8c_s^2\omega_1^2+11v_1^2\omega_1\omega_2^2+5\omega_1^2\omega_2-9c_s^2\omega_1^2\omega_2-10c_s^2\omega_2^2+6v_1^2\omega_1\omega_2)\frac{v_1\rho}{6\omega_1^2\omega_2^2}$

coefficient $C^{(3)}_{\mathrm{D}_x^2\mathrm{D}_z v_3}$ **at** $\frac{\partial^3 v_3}{\partial x_1^2\partial x_3}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_z v_3} = \frac{-v_3c_s^2\rho}{6}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_z v_3} = (12\omega_6\omega_{11}-\omega_6^2\omega_{11}\omega_{18}+12\omega_6^2+12\omega_6\omega_{11}\omega_{18}-12\omega_6\omega_{18}-12\omega_{11}\omega_{18}-12\omega_6^2\omega_{11})\frac{v_3c_s^2\rho}{6\omega_6^2\omega_{11}\omega_{18}}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_z v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_z v_3}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_z v_3} = C^{(3),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_z v_3}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_z v_3} = C^{(3),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_z v_3}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_z v_3} = C^{(3),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_z v_3}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_z v_3} = C^{(3),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_z v_3}$

coefficient $C^{(3)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z\rho}$ **at** $\frac{\partial^3\rho}{\partial x_1\partial x_2\partial x_3}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z\rho} = 0$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z\rho} = 0$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z\rho} = 0$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z\rho} = 0$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z\rho} = 0$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z\rho} = 0$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z\rho} = (-2v_2^2\omega_1\omega_2 - 2\omega_2^2 + v_1^2\omega_2^2 + 4\omega_1\omega_2 + v_1^2\omega_1^2 - 12c_s^2\omega_1\omega_2 - 2\omega_1^2 + 6c_s^2\omega_1^2 + v_2^2\omega_1^2 + v_2^2\omega_2^2 + 6c_s^2\omega_2^2 - 2v_1^2\omega_1\omega_2)\frac{v_2v_1}{3\omega_1^2\omega_2^2}$

coefficient $C^{(3)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_1}$ **at** $\frac{\partial^3 v_1}{\partial x_1\partial x_2\partial x_3}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_1} = 0$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_1} = (-\omega_7\omega_8 - \omega_6\omega_8 + \omega_6\omega_7\omega_8 - \omega_6^2\omega_7 + \omega_6\omega_7 + \omega_6^2)\frac{c_s^2v_2\rho}{\omega_6^2\omega_7\omega_8}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_1} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_1}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_1} = 0$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_1} = 0$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_1} = 0$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_1} = (\omega_3v_2^2\omega_4\omega_1\omega_2^2 - \omega_3\omega_4\omega_1\omega_2^2 + 6\omega_3v_2^2\omega_1\omega_2^2 + 2\omega_3v_2^2\omega_4\omega_1^2 + 3v_2^2\omega_4\omega_1^2\omega_2^2 - 4\omega_3c_s^2\omega_4\omega_2^2 - 3\omega_3c_s^2\omega_4\omega_1^2\omega_2 + 8\omega_3c_s^2\omega_4\omega_1^2 + 18\omega_3c_s^2\omega_1\omega_2^2 - 12c_s^2\omega_4\omega_1\omega_2^2 + 3\omega_3\omega_1^2\omega_2^2 - 2v_2^2\omega_4\omega_1^2\omega_2 - 2\omega_3v_2^2\omega_4\omega_2^2 + 4\omega_3\omega_4\omega_1\omega_2 + 4\omega_4\omega_1\omega_2^2 - 6\omega_3\omega_1\omega_2^2 + 6\omega_3v_1^2\omega_4\omega_2^2 + \omega_3\omega_4\omega_1^2\omega_2 - \omega_3v_2^2\omega_4\omega_1^2\omega_2 - 4\omega_3\omega_4\omega_1^2 - 3\omega_4\omega_1^2\omega_2^2 - 12\omega_3v_1^2\omega_4\omega_1\omega_2 + 3\omega_3c_s^2\omega_4\omega_1\omega_2^2 - 9\omega_3c_s^2\omega_1^2\omega_2^2 + 9c_s^2\omega_4\omega_1^2\omega_2^2 - 6c_s^2\omega_4\omega_1^2\omega_2 - 4\omega_3c_s^2\omega_4\omega_1\omega_2 - 3\omega_3v_2^2\omega_1^2\omega_2^2 + 6\omega_3v_1^2\omega_4\omega_1^2 + 2\omega_4\omega_1^2\omega_2 - 4v_2^2\omega_4\omega_1\omega_2^2)\frac{v_2\rho}{6\omega_3\omega_4\omega_1^2\omega_2^2}$

coefficient $C^{(3)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_2}$ **at** $\frac{\partial^3 v_2}{\partial x_1\partial x_2\partial x_3}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_2} = 0$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_2} = (\omega_7^2 - \omega_7\omega_8 - \omega_6\omega_8 + \omega_6\omega_7\omega_8 + \omega_6\omega_7 - \omega_6\omega_7^2)\frac{c_s^2v_1\rho}{\omega_6\omega_7^2\omega_8}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_2} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_2}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_2} = 0$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_2} = 0$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_2} = 0$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z v_2} = (-\omega_3\omega_4\omega_1\omega_2^2 + 6\omega_3v_2^2\omega_4\omega_1^2 - 3\omega_3v_1^2\omega_1^2\omega_2^2 - 4v_1^2\omega_4\omega_1\omega_2^2 - 4\omega_3c_s^2\omega_4\omega_2^2 - 3\omega_3c_s^2\omega_4\omega_1^2\omega_2 + 8\omega_3c_s^2\omega_4\omega_1^2 + 18\omega_3c_s^2\omega_1\omega_2^2 - 12c_s^2\omega_4\omega_1\omega_2^2 + 3\omega_3\omega_1^2\omega_2^2 - 12\omega_3v_2^2\omega_4\omega_1\omega_2 + 6\omega_3v_2^2\omega_4\omega_2^2 + 4\omega_3\omega_4\omega_1\omega_2 - \omega_3v_1^2\omega_4\omega_1^2\omega_2 + 4\omega_4\omega_1\omega_2^2 - 6\omega_3\omega_1\omega_2^2 - 2\omega_3v_1^2\omega_4\omega_2^2 - 2v_1^2\omega_4\omega_1^2\omega_2 + \omega_3\omega_4\omega_1^2\omega_2 - 4\omega_3\omega_4\omega_1^2 - 3\omega_4\omega_1^2\omega_2^2 + 3\omega_3c_s^2\omega_4\omega_1\omega_2^2 - 9\omega_3c_s^2\omega_1^2\omega_2^2 + 9c_s^2\omega_4\omega_1^2\omega_2^2 - 6c_s^2\omega_4\omega_1^2\omega_2 - 4\omega_3c_s^2\omega_4\omega_1\omega_2 + 2\omega_3v_1^2\omega_4\omega_1^2 + 2\omega_4\omega_1^2\omega_2 + \omega_3v_1^2\omega_4\omega_1\omega_2^2 + 6\omega_3v_1^2\omega_1\omega_2^2 + 3v_1^2\omega_4\omega_1^2\omega_2^2)\frac{v_1\rho}{6\omega_3\omega_4\omega_1^2\omega_2^2}$

coefficient $C^{(3)}_{\mathrm{D}_y^2\mathrm{D}_z\rho}$ **at** $\frac{\partial^3 \rho}{\partial x_2^2\partial x_3}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_y^2\mathrm{D}_z\rho} = (-12 - \omega^2 + 12\omega)\frac{c_s^4}{6\omega^2}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z\rho} = (-12 - \omega_7^2 + 12\omega_7)\frac{c_s^4}{6\omega_7^2}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_y^2\mathrm{D}_z\rho} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z\rho}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z\rho} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z\rho}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_y^2\mathrm{D}_z\rho} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z\rho}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z\rho} = (-12 + 12\omega_3 - \omega_3^2)\frac{c_s^4}{6\omega_3^2}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_y^2\mathrm{D}_z\rho} = (2v_2^4\omega_1^2 - 2v_2^2\omega_1\omega_2 + 2c_s^4\omega_1^2 + 6c_s^2v_2^2\omega_1\omega_2 - 2c_s^2\omega_1\omega_2^2 + 3v_2^4\omega_1\omega_2^2 - 14c_s^4\omega_2^2 + 2v_2^4\omega_1\omega_2 + 15c_s^2v_2^2\omega_1\omega_2^2 + 14c_s^4\omega_1\omega_2^2 - 4v_2^4\omega_2^2 - 3v_2^2\omega_1\omega_2^2 - 2c_s^2\omega_1^2 - c_s^4\omega_1^2\omega_2^2 - 2v_2^2\omega_1^2 - 3v_2^4\omega_1^2\omega_2 + 2c_s^2\omega_1^2\omega_2 + 12c_s^2v_2^2\omega_1^2 - 15c_s^2v_2^2\omega_1^2\omega_2 + 4v_2^2\omega_2^2 - 18c_s^2v_2^2\omega_2^2 + 2c_s^2\omega_2^2 + 3v_2^2\omega_1^2\omega_2 - 2c_s^4\omega_1^2\omega_2)\frac{1}{6\omega_1^2\omega_2^2}$

coefficient $C^{(3)}_{\mathrm{D}_y^2\mathrm{D}_z v_2}$ **at** $\frac{\partial^3 v_2}{\partial x_2^2\partial x_3}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_y^2\mathrm{D}_z v_2} = 0$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z v_2} = (-\omega_7^2 - 2\omega_{16} + 2\omega_7 + \omega_{16}\omega_7)\frac{c_s^2 v_2\rho}{\omega_{16}\omega_7^2}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_y^2\mathrm{D}_z v_2} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z v_2}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z v_2} = 0$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_y^2\mathrm{D}_z v_2} = 0$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z v_2} = 0$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_y^2\mathrm{D}_z v_2} = (6v_2^2\omega_1\omega_2 + 6\omega_2^2 + 9c_s^2\omega_1\omega_2^2 - 5\omega_1\omega_2^2 - 2\omega_1\omega_2 + 2c_s^2\omega_1\omega_2 - 4\omega_1^2 + 11v_2^2\omega_1\omega_2^2 + 8c_s^2\omega_1^2 + 8v_2^2\omega_1^2 + 5\omega_1^2\omega_2 - 9c_s^2\omega_1^2\omega_2 - 14v_2^2\omega_2^2 - 10c_s^2\omega_2^2 - 11v_2^2\omega_1^2\omega_2)\frac{v_2\rho}{6\omega_1^2\omega_2^2}$

coefficient $C^{(3)}_{\mathrm{D}_y^2\mathrm{D}_z v_3}$ **at** $\frac{\partial^3 v_3}{\partial x_2^2\partial x_3}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_y^2\mathrm{D}_z v_3} = \frac{-v_3 c_s^2\rho}{6}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z v_3} = (-12\omega_{19}\omega_7 + 12\omega_{19}\omega_7\omega_{11} + 12\omega_7^2 + 12\omega_7\omega_{11} - 12\omega_{19}\omega_{11} - 12\omega_7^2\omega_{11} - \omega_{19}\omega_7^2\omega_{11})\frac{v_3 c_s^2\rho}{6\omega_{19}\omega_7^2\omega_{11}}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_y^2\mathrm{D}_z v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z v_3}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z v_3} = C^{(3),\mathrm{SRT}}_{\mathrm{D}_y^2\mathrm{D}_z v_3}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_y^2\mathrm{D}_z v_3} = C^{(3),\mathrm{SRT}}_{\mathrm{D}_y^2\mathrm{D}_z v_3}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z v_3} = C^{(3),\mathrm{SRT}}_{\mathrm{D}_y^2\mathrm{D}_z v_3}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_y^2\mathrm{D}_z v_3} = C^{(3),\mathrm{SRT}}_{\mathrm{D}_y^2\mathrm{D}_z v_3}$

coefficient $C^{(3)}_{\mathrm{D}_x\mathrm{D}_z^2\rho}$ **at** $\frac{\partial^3\rho}{\partial x_1\partial x_3^2}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_z^2\rho} = 0$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^2\rho} = (\omega_6\omega_{11} - \omega_6 v_3^2\omega_{11} + v_3^2\omega_{11}\omega_{18} + 3\omega_6 c_s^2\omega_{11}^2 - v_3^2\omega_{11}^2 - 3\omega_6 c_s^2\omega_{11}\omega_{18} - 3c_s^2\omega_{11}^2 - 3\omega_6 c_s^2\omega_{11} - \omega_6\omega_{11}^2 + \omega_6 v_3^2\omega_{11}^2 - \omega_6 v_3^2\omega_{11}\omega_{18} + \omega_6\omega_{11}\omega_{18} - \omega_6\omega_{18} + \omega_6 v_3^2\omega_{18} + \omega_{11}^2 - \omega_{11}\omega_{18} + 3c_s^2\omega_{11}\omega_{18} + 3\omega_6 c_s^2\omega_{18})\frac{v_3 v_1}{\omega_6\omega_{11}^2\omega_{18}}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_z^2\rho} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^2\rho}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_z^2\rho} = 0$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_z^2\rho} = 0$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_z^2\rho} = 0$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_z^2\rho} = (2\omega_2^2 - 3v_1^2\omega_1^2\omega_2 + 9c_s^2\omega_1\omega_2^2 - 4v_1^2\omega_2^2 - 3\omega_1\omega_2^2 + 2\omega_1\omega_2 + 2v_1^2\omega_1^2 - 6c_s^2\omega_1\omega_2 - 4\omega_1^2 + 12c_s^2\omega_1^2 + 2v_3^2\omega_2^2 + 3v_1^2\omega_1\omega_2^2 - 4v_3^2\omega_1\omega_2 + 3\omega_1^2\omega_2 - 9c_s^2\omega_1^2\omega_2 + 2v_3^2\omega_1^2 - 6c_s^2\omega_2^2 + 2v_1^2\omega_1\omega_2)\frac{v_3 v_1}{6\omega_1^2\omega_2^2}$

coefficient $C^{(3)}_{\mathrm{D}_x\mathrm{D}_z^2 v_1}$ **at** $\frac{\partial^3 v_1}{\partial x_1\partial x_3^2}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_z^2 v_1} = (12 + 3\omega^2 - 12\omega + 12v_3^2\omega - 11c_s^2\omega^2 - 12v_3^2 + 36c_s^2\omega - 36c_s^2 - 3v_3^2\omega^2)\frac{v_3\rho}{12\omega^2}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^2 v_1} = (-12\omega_6 c_s^2\omega_{11}^2 - 6\omega_6^2 v_3^2\omega_{11}\omega_{18} + 36\omega_6^2 c_s^2\omega_{18} - 24c_s^2\omega_{11}^2\omega_{18} - 11\omega_6^2 c_s^2\omega_{11}^2\omega_{18} + 6\omega_6^2\omega_{11}\omega_{18} - 24\omega_6 c_s^2\omega_{11}\omega_{18} + 12\omega_6^2 v_3^2\omega_{18} + 6\omega_6 v_3^2\omega_{11}^2\omega_{18} - 6\omega_6\omega_{11}^2\omega_{18} + 12\omega_6\omega_{11}^2 - 12\omega_6^2\omega_{18} - 12\omega_6 v_3^2\omega_{11}^2 - 12\omega_6^2\omega_{11}^2 + 42\omega_6 c_s^2\omega_{11}^2\omega_{18} - 12\omega_6^2 c_s^2\omega_{11} + 3\omega_6^2\omega_{11}^2\omega_{18} + 12\omega_6^2 v_3^2\omega_{11}^2 - 12\omega_6^2 v_3^2\omega_{11} + 12\omega_6^2 c_s^2\omega_{11}^2 - 18\omega_6^2 c_s^2\omega_{11}\omega_{18} + 12\omega_6^2\omega_{11} - 3\omega_6^2 v_3^2\omega_{11}^2\omega_{18})\frac{v_3\rho}{12\omega_6^2\omega_{11}^2\omega_{18}}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_z^2 v_1} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^2 v_1}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_z^2 v_1} =$
$(12\omega_6\omega_{11} - 12\omega_6 v_3^2\omega_{11} + 36\omega_6 c_s^2\omega_{11}^2 - 6\omega_{11}^2\omega_{18} - 12v_3^2\omega_{11}^2 + 18c_s^2\omega_{11}^2\omega_{18} - 18\omega_6 c_s^2\omega_{11}\omega_{18} - 36c_s^2\omega_{11}^2 - 3\omega_6 v_3^2\omega_{11}^2\omega_{18} + 3\omega_6\omega_{11}^2\omega_{18} - 36\omega_6 c_s^2\omega_{11} - 12\omega_6\omega_{11}^2 + 12\omega_6 v_3^2\omega_{11}^2 - 6\omega_6 v_3^2\omega_{11}\omega_{18} + 6\omega_6\omega_{11}\omega_{18} - 12\omega_6\omega_{18} + 12\omega_6 v_3^2\omega_{18} - 11\omega_6 c_s^2\omega_{11}^2\omega_{18} + 12\omega_{11}^2 + 6v_3^2\omega_{11}^2\omega_{18} + 36\omega_6 c_s^2\omega_{18})\frac{v_3\rho}{12\omega_6\omega_{11}^2\omega_{18}}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_z^2 v_1} = C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_z^2 v_1}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_z^2 v_1} = (36\omega_6^2 c_s^2\omega_2 + 36c_s^2\omega_8\omega_2 - 11\omega_6^2 c_s^2\omega_8\omega_2 - 12\omega_8\omega_2 - 12\omega_6^2\omega_2 + 12\omega_6^2 v_3^2\omega_2 - 6\omega_6 v_3^2\omega_8\omega_2 + 6\omega_6\omega_8\omega_2 - 6\omega_6^2\omega_8 + 12\omega_6^2 + 6\omega_6^2 v_3^2\omega_8 - 18\omega_6 c_s^2\omega_8\omega_2 + 3\omega_6^2\omega_8\omega_2 + 12\omega_6\omega_2 - 12\omega_6 v_3^2\omega_2 + 18\omega_6^2 c_s^2\omega_8 - 36\omega_6^2 c_s^2 - 36\omega_6 c_s^2\omega_2 + 12v_3^2\omega_8\omega_2 - 12\omega_6^2 v_3^2 - 3\omega_6^2 v_3^2\omega_8\omega_2)\frac{v_3\rho}{12\omega_6^2\omega_8\omega_2}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_z^2 v_1} = (-8\omega_3\omega_4\omega_1\omega_2^2 + 16\omega_3 c_s^2\omega_4\omega_2^2 + 2\omega_3 v_3^2\omega_4\omega_1\omega_2^2 + 6v_3^2\omega_4\omega_1^2\omega_2^2 - 12\omega_3 c_s^2\omega_4\omega_1^2\omega_2 - 11\omega_3 c_s^2\omega_4\omega_1^2\omega_2^2 - 4v_3^2\omega_4\omega_1^2\omega_2 + 16\omega_3 c_s^2\omega_4\omega_1^2 - 36\omega_3 c_s^2\omega_1\omega_2^2 - 24c_s^2\omega_4\omega_1\omega_2^2 - 6\omega_3\omega_1^2\omega_2^2 + 6\omega_3 v_3^2\omega_1^2\omega_2^2 - 4\omega_3\omega_4\omega_1\omega_2 - 18\omega_3 v_1^2\omega_4\omega_1^2\omega_2 + 8\omega_4\omega_1\omega_2^2 + 12\omega_3\omega_1\omega_2^2 - 24\omega_3 v_1^2\omega_4\omega_2^2 + 4\omega_3 v_3^2\omega_4\omega_1^2 + 8\omega_3\omega_4\omega_1^2\omega_2 - 12\omega_3 v_3^2\omega_1\omega_2^2 - 8\omega_3\omega_4\omega_1^2 - 6\omega_4\omega_1^2\omega_2^2 + 12\omega_3 v_1^2\omega_4\omega_1\omega_2 + 12\omega_3 c_s^2\omega_4\omega_1\omega_2^2 - 2\omega_3 v_3^2\omega_4\omega_1^2\omega_2 + 18\omega_3 c_s^2\omega_1^2\omega_2^2 + 18c_s^2\omega_4\omega_1^2\omega_2^2 - 12c_s^2\omega_4\omega_1^2\omega_2 - 3\omega_3 v_3^2\omega_4\omega_1^2\omega_2^2 + 4\omega_3 c_s^2\omega_4\omega_1\omega_2 - 8v_3^2\omega_4\omega_1\omega_2^2 + 8\omega_3 v_3^2\omega_4\omega_2^2 + 3\omega_3\omega_4\omega_1^2\omega_2^2 + 12\omega_3 v_1^2\omega_4\omega_1^2 + 4\omega_4\omega_1^2\omega_2 + 18\omega_3 v_1^2\omega_4\omega_1\omega_2^2)\frac{v_3\rho}{12\omega_3\omega_4\omega_1^2\omega_2^2}$

coefficient $C^{(3)}_{\mathrm{D}_x\mathrm{D}_z^2 v_3}$ **at** $\frac{\partial^3 v_3}{\partial x_1\partial x_3^2}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_z^2 v_3} = 0$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^2 v_3} = (\omega_6\omega_{11} - 3\omega_6 v_3^2\omega_{11} + 3v_3^2\omega_{11}\omega_{18} + \omega_6 c_s^2\omega_{11}^2 - 3v_3^2\omega_{11}^2 - \omega_6 c_s^2\omega_{11}\omega_{18} - c_s^2\omega_{11}^2 - \omega_6 c_s^2\omega_{11} - \omega_6\omega_{11}^2 + 3\omega_6 v_3^2\omega_{11}^2 - 3\omega_6 v_3^2\omega_{11}\omega_{18} + \omega_6\omega_{11}\omega_{18} - \omega_6\omega_{18} + 3\omega_6 v_3^2\omega_{18} + \omega_{11}^2 - \omega_{11}\omega_{18} + c_s^2\omega_{11}\omega_{18} + \omega_6 c_s^2\omega_{18})\frac{v_1\rho}{\omega_6\omega_{11}^2\omega_{18}}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_z^2 v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^2 v_3}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_z^2 v_3} = 0$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_z^2 v_3} = 0$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_z^2 v_3} = 0$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_z^2 v_3} = (\omega_3\omega_1^2\omega_2 - 2v_1^2\omega_1^2\omega_2 - 4\omega_3 c_s^2\omega_1\omega_2 + 6c_s^2\omega_1\omega_2^2 - 2\omega_1\omega_2^2 + 6\omega_3 v_3^2\omega_2^2 + 8\omega_3 c_s^2\omega_1^2 + 3\omega_3 c_s^2\omega_1\omega_2^2 - 4\omega_3 c_s^2\omega_2^2 + 6\omega_3 v_3^2\omega_1^2 - \omega_3 v_1^2\omega_1^2\omega_2 - \omega_3\omega_1\omega_2^2 + 2v_1^2\omega_1\omega_2^2 - 2\omega_3 v_1^2\omega_2^2 + 2\omega_1^2\omega_2 - 6c_s^2\omega_1^2\omega_2 - 3\omega_3 c_s^2\omega_1^2\omega_2 - 4\omega_3\omega_1^2 - 12\omega_3 v_3^2\omega_1\omega_2 + 2\omega_3 v_1^2\omega_1^2 + \omega_3 v_1^2\omega_1\omega_2^2 + 4\omega_3\omega_1\omega_2)\frac{v_1\rho}{6\omega_3\omega_1^2\omega_2^2}$

coefficient $C^{(3)}_{\mathrm{D}_y\mathrm{D}_z^2\rho}$ **at** $\frac{\partial^3\rho}{\partial x_2\partial x_3^2}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_y\mathrm{D}_z^2\rho} = 0$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^2\rho} = (\omega_{19}v_3^2\omega_{11} - \omega_{19}\omega_7 + \omega_{19}\omega_7\omega_{11} - \omega_{19}v_3^2\omega_7\omega_{11} + 3c_s^2\omega_7\omega_{11}^2 - v_3^2\omega_{11}^2 - \omega_7\omega_{11}^2 + \omega_7\omega_{11} - 3c_s^2\omega_7\omega_{11} - 3c_s^2\omega_{11}^2 + 3\omega_{19}c_s^2\omega_{11} - \omega_{19}\omega_{11} + \omega_{19}v_3^2\omega_7 - v_3^2\omega_7\omega_{11} + \omega_{11}^2 - 3\omega_{19}c_s^2\omega_7\omega_{11} + v_3^2\omega_7\omega_{11}^2 + 3\omega_{19}c_s^2\omega_7)\frac{v_3 v_2}{\omega_{19}\omega_7\omega_{11}^2}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_y\mathrm{D}_z^2\rho} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^2\rho}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_y\mathrm{D}_z^2\rho} = 0$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_y\mathrm{D}_z^2\rho} = 0$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_y\mathrm{D}_z^2\rho} = 0$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_y\mathrm{D}_z^2\rho} = (2v_2^2\omega_1\omega_2 + 2\omega_2^2 + 9c_s^2\omega_1\omega_2^2 - 3\omega_1\omega_2^2 + 2\omega_1\omega_2 - 6c_s^2\omega_1\omega_2 - 4\omega_1^2 + 3v_2^2\omega_1\omega_2^2 + 12c_s^2\omega_1^2 + 2v_3^2\omega_2^2 - 4v_3^2\omega_1\omega_2 + 2v_2^2\omega_1^2 + 3\omega_1^2\omega_2 - 9c_s^2\omega_1^2\omega_2 - 4v_2^2\omega_2^2 + 2v_3^2\omega_1^2 - 6c_s^2\omega_2^2 - 3v_2^2\omega_1^2\omega_2)\frac{v_3 v_2}{6\omega_1^2\omega_2^2}$

coefficient $C^{(3)}_{\mathrm{D}_y\mathrm{D}_z^2 v_2}$ **at** $\frac{\partial^3 v_2}{\partial x_2\partial x_3^2}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_y\mathrm{D}_z^2 v_2} = (12 + 3\omega^2 - 12\omega + 12v_3^2\omega - 11c_s^2\omega^2 - 12v_3^2 + 36c_s^2\omega - 36c_s^2 - 3v_3^2\omega^2)\frac{v_3\rho}{12\omega^2}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^2 v_2} = (12v_3^2\omega_7^2\omega_{11}^2 - 24\omega_{19}c_s^2\omega_{11}^2 - 12c_s^2\omega_7\omega_{11}^2 - 18\omega_{19}c_s^2\omega_7^2\omega_{11} + 12\omega_7\omega_{11}^2 - 11\omega_{19}c_s^2\omega_7^2\omega_{11}^2 + 6\omega_{19}v_3^2\omega_7\omega_{11}^2 - 6\omega_{19}\omega_7\omega_{11}^2 - 12v_3^2\omega_7^2\omega_{11} - 12\omega_{19}\omega_7^2 - 3\omega_{19}v_3^2\omega_7^2\omega_{11}^2 + 3\omega_{19}\omega_7^2\omega_{11}^2 + 36\omega_{19}c_s^2\omega_7^2 + 12\omega_7^2\omega_{11} + 42\omega_{19}c_s^2\omega_7\omega_{11}^2 - 12c_s^2\omega_7^2\omega_{11} + 12c_s^2\omega_7^2\omega_{11}^2 - 12\omega_7^2\omega_{11}^2 - 24\omega_{19}c_s^2\omega_7\omega_{11} + 6\omega_{19}\omega_7^2\omega_{11} - 12v_3^2\omega_7\omega_{11}^2 - 6\omega_{19}v_3^2\omega_7^2\omega_{11} + 12\omega_{19}v_3^2\omega_7^2)\frac{v_3\rho}{12\omega_{19}\omega_7^2\omega_{11}^2}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_y\mathrm{D}_z^2 v_2} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^2 v_2}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_y\mathrm{D}_z^2 v_2} =$
$(-12\omega_{19}\omega_7 + 6\omega_{19}\omega_7\omega_{11} - 6\omega_{19}v_3^2\omega_7\omega_{11} + 18\omega_{19}c_s^2\omega_{11}^2 + 36c_s^2\omega_7\omega_{11}^2 - 12v_3^2\omega_{11}^2 - 12\omega_7\omega_{11}^2 + 12\omega_7\omega_{11} - 36c_s^2\omega_7\omega_{11} - 36c_s^2\omega_{11}^2 - 3\omega_{19}v_3^2\omega_7\omega_{11}^2 + 3\omega_{19}\omega_7\omega_{11}^2 + 6\omega_{19}v_3^2\omega_{11}^2 + 12\omega_{19}v_3^2\omega_7 - 12v_3^2\omega_7\omega_{11} - 11\omega_{19}c_s^2\omega_7\omega_{11}^2 + 12\omega_{11}^2 - 18\omega_{19}c_s^2\omega_7\omega_{11} + 12v_3^2\omega_7\omega_{11}^2 + 36\omega_{19}c_s^2\omega_7 - 6\omega_{19}\omega_{11}^2)\frac{v_3\rho}{12\omega_{19}\omega_7\omega_{11}^2}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_y\mathrm{D}_z^2 v_2} = C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_y\mathrm{D}_z^2 v_2}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_y\mathrm{D}_z^2 v_2} = (-36\omega_6\omega_3 c_s^2 + 18\omega_6^2 c_s^2\omega_{10} + 12\omega_6\omega_3 - 12\omega_6\omega_3 v_3^2 - 11\omega_6^2\omega_3 c_s^2\omega_{10} + 36\omega_3 c_s^2\omega_{10} - 6\omega_6^2\omega_{10} + 3\omega_6^2\omega_3\omega_{10} - 3\omega_6^2\omega_3 v_3^2\omega_{10} + 12\omega_3 v_3^2\omega_{10} + 6\omega_6^2 v_3^2\omega_{10} + 12\omega_6^2 + 6\omega_6\omega_3\omega_{10} - 18\omega_6\omega_3 c_s^2\omega_{10} - 6\omega_6\omega_3 v_3^2\omega_{10} + 36\omega_6^2\omega_3 c_s^2 - 12\omega_3\omega_{10} - 36\omega_6^2 c_s^2 - 12\omega_6^2 v_3^2 - 12\omega_6^2\omega_3 + 12\omega_6^2\omega_3 v_3^2)\frac{v_3\rho}{12\omega_6^2\omega_3\omega_{10}}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_y\mathrm{D}_z^2 v_2} = (18\omega_3 v_2^2\omega_4\omega_1\omega_2^2 - 8\omega_3\omega_4\omega_1\omega_2^2 + 12\omega_3 v_2^2\omega_4\omega_1^2 + 16\omega_3 c_s^2\omega_4\omega_2^2 + 2\omega_3 v_3^2\omega_4\omega_1\omega_2^2 + 6v_3^2\omega_4\omega_1^2\omega_2^2 - 12\omega_3 c_s^2\omega_4\omega_1^2\omega_2 - 11\omega_3 c_s^2\omega_4\omega_1^2\omega_2^2 - 4v_3^2\omega_4\omega_1^2\omega_2 + 16\omega_3 c_s^2\omega_4\omega_1^2 - 36\omega_3 c_s^2\omega_1\omega_2^2 - 24c_s^2\omega_4\omega_1\omega_2^2 - 6\omega_3\omega_1^2\omega_2^2 + 6\omega_3 v_3^2\omega_1^2\omega_2^2 + 12\omega_3 v_2^2\omega_4\omega_1\omega_2 - 24\omega_3 v_2^2\omega_4\omega_2^2 - 4\omega_3\omega_4\omega_1\omega_2 + 8\omega_4\omega_1\omega_2^2 + 12\omega_3\omega_1\omega_2^2 + 4\omega_3 v_3^2\omega_4\omega_1^2 + 8\omega_3\omega_4\omega_1^2\omega_2 - 12\omega_3 v_3^2\omega_1\omega_2^2 - 18\omega_3 v_2^2\omega_4\omega_1^2\omega_2 - 8\omega_3\omega_4\omega_1^2 - 6\omega_4\omega_1^2\omega_2^2 + 12\omega_3 c_s^2\omega_4\omega_1\omega_2^2 - 2\omega_3 v_3^2\omega_4\omega_1^2\omega_2 + 18\omega_3 c_s^2\omega_1^2\omega_2^2 + 18c_s^2\omega_4\omega_1^2\omega_2^2 - 12c_s^2\omega_4\omega_1^2\omega_2 - 3\omega_3 v_3^2\omega_4\omega_1^2\omega_2^2 + 4\omega_3 c_s^2\omega_4\omega_1\omega_2 - 8v_3^2\omega_4\omega_1\omega_2^2 + 8\omega_3 v_3^2\omega_4\omega_2^2 + 3\omega_3\omega_4\omega_1^2\omega_2^2 + 4\omega_4\omega_1^2\omega_2)\frac{v_3\rho}{12\omega_3\omega_4\omega_1^2\omega_2^2}$

coefficient $C^{(3)}_{\mathrm{D}_y\mathrm{D}_z^2 v_3}$ **at** $\frac{\partial^3 v_3}{\partial x_2\partial x_3^2}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_y\mathrm{D}_z^2 v_3} = 0$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^2 v_3} = (3\omega_{19}v_3^2\omega_{11} - \omega_{19}\omega_7 + \omega_{19}\omega_7\omega_{11} - 3\omega_{19}v_3^2\omega_7\omega_{11} + c_s^2\omega_7\omega_{11}^2 - 3v_3^2\omega_{11}^2 - \omega_7\omega_{11}^2 + \omega_7\omega_{11} - c_s^2\omega_7\omega_{11} - c_s^2\omega_{11}^2 + \omega_{19}c_s^2\omega_{11} - \omega_{19}\omega_{11} + 3\omega_{19}v_3^2\omega_7 - 3v_3^2\omega_7\omega_{11} + \omega_{11}^2 - \omega_{19}c_s^2\omega_7\omega_{11} + 3v_3^2\omega_7\omega_{11}^2 + \omega_{19}c_s^2\omega_7)\frac{v_2\rho}{\omega_{19}\omega_7\omega_{11}^2}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_y\mathrm{D}_z^2 v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^2 v_3}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_y\mathrm{D}_z^2 v_3} = 0$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_y\mathrm{D}_z^2 v_3} = 0$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_y\mathrm{D}_z^2 v_3} = 0$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_y\mathrm{D}_z^2 v_3} = (\omega_3 v_2^2\omega_1\omega_2^2 + \omega_3\omega_1^2\omega_2 + 2\omega_3 v_2^2\omega_1^2 - 4\omega_3 c_s^2\omega_1\omega_2 + 6c_s^2\omega_1\omega_2^2 - 2\omega_1\omega_2^2 + 6\omega_3 v_3^2\omega_2^2 + 8\omega_3 c_s^2\omega_1^2 + 3\omega_3 c_s^2\omega_1\omega_2^2 - 4\omega_3 c_s^2\omega_2^2 + 6\omega_3 v_3^2\omega_1^2 - 2\omega_3 v_2^2\omega_2^2 + 2v_2^2\omega_1\omega_2^2 - \omega_3\omega_1\omega_2^2 - \omega_3 v_2^2\omega_1^2\omega_2 + 2\omega_1^2\omega_2 - 6c_s^2\omega_1^2\omega_2 - 3\omega_3 c_s^2\omega_1^2\omega_2 - 4\omega_3\omega_1^2 - 12\omega_3 v_3^2\omega_1\omega_2 - 2v_2^2\omega_1^2\omega_2 + 4\omega_3\omega_1\omega_2)\frac{v_2\rho}{6\omega_3\omega_1^2\omega_2^2}$

coefficient $C^{(3)}_{\mathrm{D}_z^3\rho}$ at $\frac{\partial^3\rho}{\partial x_3^3}$:

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_z^3\rho} = (36v_3^4 - 36v_3^4\omega - 144v_3^2c_s^2\omega + c_s^4\omega^2 + 12c_s^4 + 24v_3^2c_s^2\omega^2 - 12c_s^4\omega + 7v_3^4\omega^2 + 144v_3^2c_s^2 + 36v_3^2\omega - c_s^2\omega^2 - 36v_3^2 + 12c_s^2\omega - 12c_s^2 - 7v_3^2\omega^2)\frac{1}{12\omega^2}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_z^3\rho} =$
$(36v_3^4 + 12c_s^2\omega_{11} - 7v_3^2\omega_{11}^2 + 12c_s^4 + 36v_3^2\omega_{11} - c_s^2\omega_{11}^2 + 144v_3^2c_s^2 + 24v_3^2c_s^2\omega_{11}^2 - 12c_s^4\omega_{11} + 7v_3^4\omega_{11}^2 - 36v_3^2 - 36v_3^4\omega_{11} - 12c_s^2 - 144v_3^2c_s^2\omega_{11} + c_s^4\omega_{11}^2)\frac{1}{12\omega_{11}^2}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_z^3\rho} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_z^3\rho}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_z^3\rho} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_z^3\rho}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_z^3\rho} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_z^3\rho}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_z^3\rho} =$
$(36\omega_6 v_3^2 + \omega_6^2c_s^4 + 36v_3^4 + 12\omega_6c_s^2 - 144\omega_6v_3^2c_s^2 + 7\omega_6^2v_3^4 + 12c_s^4 + 144v_3^2c_s^2 - 36\omega_6v_3^4 - \omega_6^2c_s^2 - 36v_3^2 - 12\omega_6c_s^4 - 7\omega_6^2v_3^2 - 12c_s^2 + 24\omega_6^2v_3^2c_s^2)\frac{1}{12\omega_6^2}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_z^3\rho} = (-7v_3^2\omega_1^2\omega_2^2 - 48v_3^2c_s^2\omega_1^2\omega_2 + 4c_s^4\omega_1^2 + 16v_3^4\omega_2^2 + 8c_s^2\omega_1\omega_2^2 + 72v_3^2c_s^2\omega_2^2 - 12v_3^4\omega_1^2\omega_2 + 4v_3^4\omega_1^2 + 8c_s^4\omega_2^2 + 7v_3^4\omega_1^2\omega_2^2 + 24v_3^2c_s^2\omega_1^2 + 24v_3^2c_s^2\omega_1^2\omega_2^2 - 8c_s^4\omega_1\omega_2^2 + 12v_3^2\omega_1^2\omega_2 - 4c_s^2\omega_1^2 - 16v_3^2\omega_2^2 - 96v_3^2c_s^2\omega_1\omega_2^2 + c_s^4\omega_1^2\omega_2^2 - 16v_3^2\omega_1\omega_2 - 24v_3^4\omega_1\omega_2^2 + 4c_s^2\omega_1^2\omega_2 - c_s^2\omega_1^2\omega_2^2 + 16v_3^4\omega_1\omega_2 - 4v_3^2\omega_1^2 - 8c_s^2\omega_2^2 + 24v_3^2\omega_1\omega_2^2 + 48v_3^2c_s^2\omega_1\omega_2 - 4c_s^4\omega_1^2\omega_2)\frac{1}{12\omega_1^2\omega_2^2}$

coefficient $C^{(3)}_{\mathrm{D}_z^3 v_3}$ at $\frac{\partial^3 v_3}{\partial x_3^3}$:

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_z^3 v_3} = (-24 - 4\omega^2 + 24\omega - 60v_3^2\omega + 5c_s^2\omega^2 + 60v_3^2 - 36c_s^2\omega + 36c_s^2 + 11v_3^2\omega^2)\frac{v_3\rho}{6\omega^2}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_z^3 v_3} = (-24 - 36c_s^2\omega_{11} + 11v_3^2\omega_{11}^2 - 60v_3^2\omega_{11} + 5c_s^2\omega_{11}^2 + 24\omega_{11} - 4\omega_{11}^2 + 60v_3^2 + 36c_s^2)\frac{v_3\rho}{6\omega_{11}^2}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_z^3 v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_z^3 v_3}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_z^3 v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_z^3 v_3}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_z^3 v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_z^3 v_3}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_z^3 v_3} = (-24 - 60\omega_6 v_3^2 + 24\omega_6 - 36\omega_6c_s^2 - 4\omega_6^2 + 5\omega_6^2c_s^2 + 60v_3^2 + 11\omega_6^2v_3^2 + 36c_s^2)\frac{v_3\rho}{6\omega_6^2}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_z^3 v_3} = (11v_3^2\omega_1^2\omega_2^2 - 12\omega_2^2 - 24c_s^2\omega_1\omega_2^2 + 16\omega_1\omega_2^2 - 8\omega_1\omega_2 + 8c_s^2\omega_1\omega_2 - 4\omega_1^2 - 20v_3^2\omega_1^2\omega_2 + 8c_s^2\omega_1^2 + 28v_3^2\omega_2^2 + 24v_3^2\omega_1\omega_2 + 8\omega_1^2\omega_2 - 12c_s^2\omega_1^2\omega_2 + 5c_s^2\omega_1^2\omega_2^2 - 4\omega_1^2\omega_2^2 + 8v_3^2\omega_1^2 + 20c_s^2\omega_2^2 - 40v_3^2\omega_1\omega_2^2)\frac{v_3\rho}{6\omega_1^2\omega_2^2}$

coefficient $C^{(3)}_{\mathrm{D}_x^4\rho}$ at $\frac{\partial^4\rho}{\partial x_1^4}$:

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x^4\rho} = (-6v_1^2 - 12c_s^2v_1^2\omega + 3v_1^2\omega + 2c_s^4 - c_s^4\omega - 3v_1^4\omega + 6v_1^4 + c_s^2\omega - 2c_s^2 + 24c_s^2v_1^2)\frac{v_3}{24\omega}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}^4_x\rho} = (24\omega_6 c_s^4\omega_{13}^2 + 24\omega_6 v_1^2\omega_9^2 - 216c_s^2v_1^2\omega_{13}\omega_9^2 - 126\omega_6^2c_s^2v_1^2\omega_{13}\omega_9^2 - 48\omega_6c_s^2\omega_{13}\omega_9^2 - 12\omega_6^2c_s^2\omega_9^2 - 24c_s^2\omega_{13}^2\omega_9 - 36\omega_6^2v_1^4\omega_{13}^2 - 14\omega_6^2c_s^2\omega_{13}^2\omega_9 + 24\omega_6^2v_1^4\omega_{13}\omega_9 + 432\omega_6c_s^2v_1^2\omega_{13}\omega_9^2 + 96\omega_6v_1^2\omega_{13}^2\omega_9 + 48v_1^2\omega_{13}\omega_9^2 - 144\omega_6^2c_s^2v_1^2\omega_{13}^2 + 30\omega_6^2v_1^2\omega_{13}\omega_9^2 - \omega_6^2c_s^4\omega_{13}^2\omega_9^2 - 144\omega_6c_s^2v_1^2\omega_{13}\omega_9 + 48\omega_6c_s^4\omega_{13}\omega_9^2 + 24c_s^4\omega_{13}^2\omega_9 + 72\omega_6^2c_s^2v_1^2\omega_9^2 - 24\omega_6^2v_1^2\omega_{13}\omega_9 + 14\omega_6^2c_s^4\omega_{13}^2\omega_9 - 96\omega_6v_1^4\omega_{13}^2\omega_9 + 72\omega_6^2c_s^2v_1^2\omega_{13}\omega_9 - 48v_1^4\omega_{13}\omega_9^2 + 12\omega_6^2v_1^4\omega_9^2 + 12\omega_6^2c_s^2\omega_{13}^2 + \omega_6^2c_s^2\omega_{13}^2\omega_9^2 - 30\omega_6^2v_1^4\omega_{13}\omega_9^2 - 72\omega_6v_1^2\omega_{13}^2 - 24\omega_6c_s^4\omega_9^2 + 48\omega_6c_s^2\omega_{13}^2\omega_9 + 24c_s^2\omega_{13}\omega_9^2 + 150\omega_6^2c_s^2v_1^2\omega_{13}^2\omega_9 - 48\omega_6v_1^4\omega_{13}\omega_9 - 3\omega_6^2v_1^4\omega_{13}^2\omega_9^2 + 12\omega_6^2c_s^2\omega_{13}\omega_9^2 + 216c_s^2v_1^2\omega_{13}^2\omega_9 - 24\omega_6c_s^2\omega_{13}^2 - 24\omega_6v_1^4\omega_9^2 - 96\omega_6v_1^2\omega_{13}\omega_9^2 - 48v_1^2\omega_{13}^2\omega_9 + 12\omega_6^2c_s^4\omega_9^2 - 432\omega_6c_s^2v_1^2\omega_{13}^2\omega_9 + 36\omega_6^2v_1^2\omega_{13}^2 - 36\omega_6^2v_1^2\omega_{13}^2\omega_9 + 288\omega_6c_s^2v_1^2\omega_{13}^2 - 144\omega_6c_s^2v_1^2\omega_9^2 + 48\omega_6v_1^2\omega_{13}\omega_9 - 12\omega_6^2v_1^2\omega_9^2 - 48\omega_6c_s^4\omega_{13}^2\omega_9 - 24c_s^4\omega_{13}\omega_9^2 - 12\omega_6^2c_s^4\omega_{13}\omega_9^2 - 12\omega_6^2c_s^4\omega_{13}^2 + 3\omega_6^2v_1^2\omega_{13}^2\omega_9^2 + 72\omega_6v_1^4\omega_{13}^2 + 24\omega_6c_s^2\omega_9^2 + 96\omega_6v_1^4\omega_{13}\omega_9^2 + 48v_1^4\omega_{13}^2\omega_9 - 12\omega_6^2c_s^2v_1^2\omega_{13}^2\omega_9^2 + 36\omega_6^2v_1^4\omega_{13}^2\omega_9)\frac{v_3}{24\omega_6^2\omega_{13}^2\omega_9^2}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}^4_x\rho} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}^4_x\rho}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}^4_x\rho} = (-6v_1^2 - 12c_s^2v_1^2\omega_9 + 3v_1^2\omega_9 + 2c_s^4 - c_s^4\omega_9 - 3v_1^4\omega_9 + 6v_1^4 + c_s^2\omega_9 - 2c_s^2 + 24c_s^2v_1^2)\frac{v_3}{24\omega_9}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}^4_x\rho} = C^{(3),\mathrm{CLBM1}}_{\mathrm{D}^4_x\rho}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}^4_x\rho} = (-6v_1^2 - 12c_s^2v_1^2\omega_4 + 3v_1^2\omega_4 + 2c_s^4 - c_s^4\omega_4 - 3v_1^4\omega_4 + c_s^2\omega_4 + 6v_1^4 - 2c_s^2 + 24c_s^2v_1^2)\frac{v_3}{24\omega_4}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}^4_x\rho} = (-3c_s^4\omega_1\omega_2 - 6v_1^2\omega_1 + 4c_s^4\omega_2 + 24c_s^2v_1^2\omega_1 - 12v_1^2\omega_2 + 48c_s^2v_1^2\omega_2 + 2c_s^4\omega_1 + 3c_s^2\omega_1\omega_2 + 6v_1^4\omega_1 - 4c_s^2\omega_2 - 9v_1^4\omega_1\omega_2 - 36c_s^2v_1^2\omega_1\omega_2 + 12v_1^4\omega_2 - 2c_s^2\omega_1 + 9v_1^2\omega_1\omega_2)\frac{v_3}{72\omega_1\omega_2}$

coefficient $C^{(3)}_{\mathrm{D}^4_x v_1}$ **at** $\frac{\partial^4 v_1}{\partial x_1^4}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}^4_x v_1} = (-4 + 10v_1^2 - 5v_1^2\omega + 2\omega - 3c_s^2\omega + 6c_s^2)\frac{v_3v_1\rho}{12\omega}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}^4_x v_1} = (-36\omega_{13}^2\omega_9 - 48\omega_6v_1^2\omega_9^2 + 21\omega_6^2\omega_{13}\omega_9^2 + 120\omega_6c_s^2\omega_{13}\omega_9^2 + 24\omega_6^2c_s^2\omega_9^2 + 60c_s^2\omega_{13}^2\omega_9 + 39\omega_6^2c_s^2\omega_{13}^2\omega_9 - 168\omega_6v_1^2\omega_{13}^2\omega_9 - 84v_1^2\omega_{13}\omega_9^2 + 24\omega_6^2\omega_{13}^2 - 51\omega_6^2v_1^2\omega_{13}\omega_9^2 + 72\omega_6\omega_{13}^2\omega_9 - 12\omega_6^2\omega_9^2 + 36\omega_6^2v_1^2\omega_{13}\omega_9 - 12\omega_6^2\omega_{13}\omega_9 - 24\omega_6c_s^2\omega_{13}\omega_9 - 36\omega_6^2c_s^2\omega_{13}^2 - 3\omega_6^2c_s^2\omega_{13}^2\omega_9^2 + 120\omega_6v_1^2\omega_{13}^2 - 120\omega_6c_s^2\omega_{13}^2\omega_9 - 60c_s^2\omega_{13}\omega_9^2 - 25\omega_6^2\omega_{13}^2\omega_9 - 33\omega_6^2c_s^2\omega_{13}\omega_9^2 + 36\omega_{13}\omega_9^2 + 72\omega_6c_s^2\omega_{13}^2 + 24\omega_6\omega_{13}\omega_9 + 168\omega_6v_1^2\omega_{13}\omega_9^2 + 84v_1^2\omega_{13}^2\omega_9 - 60\omega_6^2v_1^2\omega_{13}^2 + 61\omega_6^2v_1^2\omega_{13}^2\omega_9 + 24\omega_6\omega_9^2 - 48\omega_6\omega_{13}^2 - 72\omega_6v_1^2\omega_{13}\omega_9 + 24\omega_6^2v_1^2\omega_9^2 - 5\omega_6^2v_1^2\omega_{13}^2\omega_9^2 - 48\omega_6c_s^2\omega_9^2 - 72\omega_6\omega_{13}\omega_9^2 + 2\omega_6^2\omega_{13}^2\omega_9^2 + 12\omega_6^2c_s^2\omega_{13}\omega_9)\frac{v_3v_1\rho}{12\omega_6^2\omega_{13}^2\omega_9^2}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}^4_x v_1} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}^4_x v_1}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}^4_x v_1} = (-4 + 10v_1^2 - 5v_1^2\omega_9 - 3c_s^2\omega_9 + 6c_s^2 + 2\omega_9)\frac{v_3v_1\rho}{12\omega_9}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}^4_x v_1} = C^{(3),\mathrm{CLBM1}}_{\mathrm{D}^4_x v_1}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}^4_x v_1} = (-4 + 10v_1^2 - 5v_1^2\omega_4 + 2\omega_4 - 3c_s^2\omega_4 + 6c_s^2)\frac{v_3v_1\rho}{12\omega_4}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}^4_x v_1} = (10v_1^2\omega_1 + 20v_1^2\omega_2 + 6\omega_1\omega_2 - 9c_s^2\omega_1\omega_2 - 4\omega_1 + 12c_s^2\omega_2 - 8\omega_2 + 6c_s^2\omega_1 - 15v_1^2\omega_1\omega_2)\frac{v_3v_1\rho}{36\omega_1\omega_2}$

coefficient $C^{(3)}_{\mathrm{D}^4_x v_3}$ **at** $\frac{\partial^4 v_3}{\partial x_1^4}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}^4_x v_3} = (72v_1^2 - 3c_s^4\omega^3 + 216c_s^2v_1^2\omega + 30c_s^4\omega^2 - 108v_1^2\omega + 48c_s^4 + 42v_1^2\omega^2 - 72c_s^4\omega - 84c_s^2v_1^2\omega^2 - 3v_1^2\omega^3 + 6c_s^2v_1^2\omega^3 + 108v_1^4\omega - 14c_s^2\omega^2 + c_s^2\omega^3 + 3v_1^4\omega^3 - 72v_1^4 + 36c_s^2\omega - 42v_1^4\omega^2 - 24c_s^2 - 144c_s^2v_1^2)\frac{\rho}{24\omega^3}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}^4_x v_3} = (48\omega_6v_1^2\omega_{13} - 48\omega_6c_s^4\omega_{13}^2 - 3\omega_6^3v_1^2\omega_{13}^2 + 6\omega_6^3c_s^4\omega_{13} - 24\omega_6^2v_1^4\omega_{13}^2 + 24\omega_6^2c_s^2\omega_{13} - 72\omega_6^2c_s^2v_1^2\omega_{13}^2 - 96c_s^2v_1^2\omega_{13}^2 - 12\omega_6^3c_s^2v_1^2\omega_{13} + 24\omega_6^2v_1^2 + 6\omega_6^3c_s^2v_1^2\omega_{13}^2 + 24c_s^4\omega_{13}^2 + 48\omega_6^2c_s^2v_1^2\omega_{13} - 12\omega_6^3v_1^2 - 8\omega_6^2c_s^2\omega_{13}^2 + 72\omega_6^2v_1^4\omega_{13} - 24\omega_6^2c_s^2v_1^2 + 24\omega_6c_s^4\omega_{13} - 24\omega_6v_1^2\omega_{13}^2 - 3\omega_6^3c_s^4\omega_{13}^2 + 18\omega_6^3v_1^2\omega_{13} + 12\omega_6c_s^2\omega_{13}^2 - 48\omega_6v_1^4\omega_{13} - 6\omega_6^3c_s^2\omega_{13} + 3\omega_6^3v_1^4\omega_{13}^2 + 12\omega_6^3v_1^4 - 24\omega_6^2c_s^4\omega_{13} + 24\omega_6^2v_1^2\omega_{13}^2 + 156\omega_6c_s^2v_1^2\omega_{13}^2 + 12\omega_6^3c_s^2v_1^2 - 72\omega_6^2v_1^2\omega_{13} + 24\omega_6^2c_s^4\omega_{13}^2 - 24\omega_6c_s^2v_1^2\omega_{13} + 24\omega_6v_1^4\omega_{13}^2 - 24\omega_6c_s^2\omega_{13} - 18\omega_6^3v_1^4\omega_{13} + \omega_6^3c_s^2\omega_{13}^2 - 24\omega_6^2v_1^4)\frac{\rho}{24\omega_6^3\omega_{13}^2}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}^4_x v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}^4_x v_3}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}^4_x v_3} = (-48\omega_6c_s^4\omega_{13}^2 - 3\omega_6^3v_1^2\omega_{13}^2 + 6\omega_6^3c_s^4\omega_{13} - 12\omega_6^2v_1^4\omega_{13}^2 + 24\omega_6^2c_s^2\omega_{13} - 12\omega_6^2c_s^2v_1^2\omega_{13}^2 - 72\omega_6^3c_s^2v_1^2\omega_{13} + 72\omega_6^2v_1^2 + 6\omega_6^3c_s^2v_1^2\omega_{13}^2 + 24c_s^4\omega_{13}^2 + 144\omega_6^2c_s^2v_1^2\omega_{13} - 36\omega_6^3v_1^2 - 8\omega_6^2c_s^2\omega_{13}^2 + 72\omega_6^2v_1^4\omega_{13} - 216\omega_6^2c_s^2v_1^2 + 24\omega_6c_s^4\omega_{13} - 3\omega_6^3c_s^4\omega_{13}^2 + 30\omega_6^3v_1^2\omega_{13} + 12\omega_6c_s^2\omega_{13}^2 - 6\omega_6^3c_s^2\omega_{13} + 3\omega_6^3v_1^4\omega_{13}^2 + 36\omega_6^3v_1^4 - 24\omega_6^2c_s^4\omega_{13} + 12\omega_6^2v_1^2\omega_{13}^2 - 36\omega_6c_s^2v_1^2\omega_{13}^2 + 108\omega_6^3c_s^2v_1^2 - 72\omega_6^2v_1^2\omega_{13} + 24\omega_6^2c_s^4\omega_{13}^2 + 72\omega_6c_s^2v_1^2\omega_{13} - 24\omega_6c_s^2\omega_{13} - 30\omega_6^3v_1^4\omega_{13} + \omega_6^3c_s^2\omega_{13}^2 - 72\omega_6^2v_1^4)\frac{\rho}{24\omega_6^3\omega_{13}^2}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x^4 v_3} = C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x^4 v_3}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x^4 v_3} =$
$(6c_s^4\omega_2^3\omega_{12} - 36c_s^2v_1^2\omega_2\omega_{12}^2 + 108c_s^2v_1^2\omega_2^3 - 36v_1^2\omega_2^3 + 24c_s^2\omega_2^2\omega_{12} - 216c_s^2v_1^2\omega_2^2 + 24c_s^4\omega_2^2\omega_{12}^2 + 24c_s^4\omega_{12}^2 + c_s^2\omega_2^3\omega_{12}^2 + 72v_1^2\omega_2^2 - 6c_s^2\omega_2^3\omega_{12} - 24c_s^4\omega_2^2\omega_{12} - 8c_s^2\omega_2^2\omega_{12}^2 - 3c_s^4\omega_2^3\omega_{12}^2 + 72c_s^2v_1^2\omega_2\omega_{12} + 12c_s^2\omega_2\omega_{12}^2 - 12v_1^4\omega_2^2\omega_{12}^2 + 144c_s^2v_1^2\omega_2^2\omega_{12} - 3v_1^2\omega_2^3\omega_{12}^2 - 72v_1^4\omega_2^2 - 30v_1^4\omega_2^3\omega_{12} + 36v_1^4\omega_2^3 + 6c_s^2v_1^2\omega_2^3\omega_{12}^2 - 72v_1^2\omega_2^2\omega_{12} + 24c_s^4\omega_2\omega_{12} - 72c_s^2v_1^2\omega_2^3\omega_{12} + 12v_1^2\omega_2^2\omega_{12}^2 - 48c_s^4\omega_2\omega_{12}^2 + 3v_1^4\omega_2^3\omega_{12}^2 - 12c_s^2v_1^2\omega_2^2\omega_{12}^2 + 30v_1^2\omega_2^3\omega_{12} - 24c_s^2\omega_2\omega_{12} + 72v_1^4\omega_2^2\omega_{12})\frac{\rho}{24\omega_2^3\omega_{12}^2}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x^4 v_3} = (36\omega_3^2c_s^2v_1^2\omega_4\omega_1 - 36\omega_3v_1^2\omega_4^2\omega_1^2 - 9\omega_3^2v_1^2\omega_1^3 - 48\omega_3^2c_s^4\omega_4^2\omega_1 - 15\omega_3^2v_1^4\omega_4\omega_1^3 + 9v_1^4\omega_4^2\omega_1^3 + \omega_3^2c_s^2\omega_4^2\omega_1^3 + 18\omega_3^2v_1^2\omega_1^2 + 15\omega_3v_1^2\omega_4^2\omega_1^3 - 8\omega_3^2c_s^2\omega_4^2\omega_1^2 - 18v_1^4\omega_4^2\omega_1^2 + 36\omega_3^2v_1^4\omega_4\omega_1^2 + 36\omega_3v_1^4\omega_4^2\omega_1^2 - 108\omega_3c_s^2v_1^2\omega_4\omega_1^2 + 12\omega_3^2c_s^2\omega_4^2\omega_1 - 3\omega_3^2c_s^4\omega_4^2\omega_1^3 - 9v_1^2\omega_4^2\omega_1^3 - 54c_s^2v_1^2\omega_4^2\omega_1^2 + 15\omega_3^2v_1^2\omega_4\omega_1^3 - 36\omega_3^2c_s^2v_1^2\omega_4\omega_1^3 + 24\omega_3^2c_s^4\omega_4^2 + 54\omega_3c_s^2v_1^2\omega_4\omega_1^3 - 15\omega_3v_1^4\omega_4^2\omega_1^3 + 72\omega_3^2c_s^2v_1^2\omega_4\omega_1^2 + 27c_s^2v_1^2\omega_4^2\omega_1^3 - 36\omega_3^2v_1^2\omega_4\omega_1^2 + 18v_1^2\omega_4^2\omega_1^2 + 24\omega_3^2c_s^4\omega_4^2\omega_1^2 - 18\omega_3^2v_1^4\omega_1^2 + 27\omega_3^2c_s^2v_1^2\omega_1^3 - 36\omega_3c_s^2v_1^2\omega_4^2\omega_1^3 + 18\omega_3v_1^4\omega_4\omega_1^3 - 3\omega_3c_s^2\omega_4^2\omega_1^3 - 12\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^2 + 12\omega_3c_s^4\omega_4^2\omega_1 - 12\omega_3^2c_s^4\omega_4\omega_1^2 + 12\omega_3^2v_1^2\omega_4^2\omega_1^2 + 12\omega_3c_s^2\omega_4^2\omega_1^2 - 54\omega_3^2c_s^2v_1^2\omega_1^2 - 36\omega_3v_1^4\omega_4\omega_1^2 + 72\omega_3c_s^2v_1^2\omega_4^2\omega_1^2 - 12\omega_3^2c_s^2\omega_4\omega_1 + 9\omega_3^2v_1^4\omega_1^3 - 3\omega_3^2v_1^2\omega_4^2\omega_1^3 + 3\omega_3^2c_s^4\omega_4\omega_1^3 + 6\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^3 + 3\omega_3c_s^4\omega_4^2\omega_1^3 - 18\omega_3v_1^2\omega_4\omega_1^3 - 12\omega_3c_s^2\omega_4^2\omega_1 + 36\omega_3c_s^2v_1^2\omega_4^2\omega_1 - 12\omega_3^2v_1^4\omega_4^2\omega_1^2 + 12\omega_3^2c_s^2\omega_4\omega_1^2 + 36\omega_3v_1^2\omega_4\omega_1^2 - 12\omega_3c_s^4\omega_4^2\omega_1^2 - 36\omega_3^2c_s^2v_1^2\omega_4\omega_1 + 12\omega_3^2c_s^4\omega_4\omega_1 - 3\omega_3^2c_s^2\omega_4\omega_1^3 + 3\omega_3^2v_1^4\omega_4^2\omega_1^3)\frac{\rho}{24\omega_3^2\omega_4^2\omega_1^3}$

coefficient $C^{(3)}_{\mathrm{D}_x^3\mathrm{D}_y\rho}$ **at** $\frac{\partial^4\rho}{\partial x_1^3\partial x_2}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x^3\mathrm{D}_y\rho} = 0$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^3\mathrm{D}_y\rho} = (-12\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_5\omega_9\omega_{12} - 2\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^2 - 2\omega_6^2\omega_{13}^2\omega_7\omega_8\omega_5\omega_9^2\omega_{12} - 4\omega_6v_1^2\omega_{13}^2\omega_7\omega_8\omega_5\omega_9^2\omega_{12} - 12\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_5\omega_9^2\omega_{12} - 2\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_{12} + 4v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12} + 2\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9 - 4\omega_6v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_5\omega_9\omega_{12} + 4\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} - 6\omega_6^2c_s^2\omega_{13}^2\omega_8\omega_5\omega_9^2\omega_{12} - 4\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_5\omega_9\omega_{12} - 4\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_9\omega_{12} - 4v_1^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} + 2\omega_6^2v_1^2\omega_{13}\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} + 4\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_9^2 - 4\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_5\omega_9^2\omega_{12} - 4\omega_6^2v_1^2\omega_{13}^2\omega_{14}\omega_5\omega_9\omega_{12} - 4\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2 + 6\omega_6^2c_s^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} + 12\omega_6c_s^2\omega_{13}\omega_7\omega_8\omega_5\omega_9^2\omega_{12} - 2\omega_6^2v_1^2\omega_{13}^2\omega_8\omega_5\omega_9^2\omega_{12} + 4\omega_6v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12} + 2\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12} - 4\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12} - 9\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2 + 4\omega_6\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} + 4\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_9^2 - 12\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_9\omega_{12} + 4\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9 + 9\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12} + 24\omega_6c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} - 4\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_9\omega_{12} - 12\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_5\omega_9\omega_{12} + 6\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9 + 8\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12} - 6\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_{12} - 12\omega_6c_s^2\omega_{13}^2\omega_7\omega_8\omega_5\omega_9^2\omega_{12} - 12\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_9^2 - 4\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_9^2 - 4\omega_6v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_9^2 - 4\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_{12} + 2\omega_6^2\omega_{13}\omega_7\omega_8\omega_5\omega_9^2\omega_{12} - 3\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2 - 24\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12} - 6\omega_6^2c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} + 12\omega_6c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12} + 2\omega_6^2v_1^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} + 4\omega_6v_1^2\omega_{13}\omega_7\omega_8\omega_5\omega_9^2\omega_{12} + 4\omega_6\omega_{13}\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} + 4\omega_6^2v_1^2\omega_{13}^2\omega_5\omega_9^2\omega_{12} - 12\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_9^2 - 4\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_9\omega_{12} + 6\omega_6^2c_s^2\omega_{13}\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} - 8\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} + 4\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_5\omega_9\omega_{12} - 4\omega_6v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9 + 4\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_9\omega_{12} - 2\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9 + 4\omega_6v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_9\omega_{12} - 4\omega_6\omega_{13}^2\omega_7\omega_5\omega_9^2\omega_{12} + 2\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_{12} + 4\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_9^2 - 4\omega_6^2\omega_{13}^2\omega_5\omega_9^2\omega_{12} + 4\omega_6v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_{12} + 12\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_9\omega_{12} + 2\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_8\omega_5\omega_9^2\omega_{12} - 12c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} - 2\omega_6^2v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12} - 12\omega_6c_s^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} - 6\omega_6^2c_s^2\omega_{13}\omega_7\omega_8\omega_5\omega_9^2\omega_{12} + 12\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2 - 4\omega_6\omega_{13}\omega_7\omega_8\omega_5\omega_9^2\omega_{12} + 12\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12} + 4\omega_6^2v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_9\omega_{12} - 4\omega_6v_1^2\omega_{13}\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} + 12\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_9^2 - 2\omega_6^2\omega_{13}\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} + 12\omega_6c_s^2\omega_{13}^2\omega_7\omega_5\omega_9^2\omega_{12} + 6\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_8\omega_5\omega_9^2\omega_{12} - 4\omega_6^2v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_9^2 + 12\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_{12} - 3\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12} + 2\omega_6^2v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^2 + 4\omega_6\omega_{13}^2\omega_7\omega_8\omega_5\omega_9^2\omega_{12} + 12\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_9\omega_{12} + 4\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_5\omega_9\omega_{12} - 8\omega_6v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12} - 12\omega_6c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9 - 2\omega_6^2v_1^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} + 12\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_5\omega_9\omega_{12} + 4\omega_6^2\omega_{13}^2\omega_{14}\omega_5\omega_9\omega_{12} + 12\omega_6^2c_s^2\omega_{13}^2\omega_5\omega_9^2\omega_{12} + 6\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^2 + 4\omega_6^2\omega_{13}^2\omega_7\omega_5\omega_9^2\omega_{12} - 12\omega_6c_s^2\omega_{13}\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} + 2\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} + 4\omega_6v_1^2\omega_{13}^2\omega_7\omega_5\omega_9^2\omega_{12} - 4\omega_6\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12} + 4\omega_6v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2 + 3\omega_6^2v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12} + 8\omega_6v_1^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} - 2\omega_6^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} - 4\omega_6v_1^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} - 2\omega_6^2v_1^2\omega_{13}\omega_7\omega_8\omega_5\omega_9^2\omega_{12} + 2\omega_6^2\omega_{13}^2\omega_8\omega_5\omega_9^2\omega_{12} + 3\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2 - 6\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12})\frac{v_3v_2v_1}{4\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x^3\mathrm{D}_y\rho} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^3\mathrm{D}_y\rho}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x^3\mathrm{D}_y\rho} = 0$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x^3\mathrm{D}_y\rho} = 0$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x^3\mathrm{D}_y\rho} = 0$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x^3\mathrm{D}_y\rho} = (-\omega_1 - 3c_s^2\omega_2 - v_2^2\omega_2 + \omega_2 + v_2^2\omega_1 + 3c_s^2\omega_1)\frac{v_3v_2v_1}{12\omega_1\omega_2}$

coefficient $C^{(3)}_{\mathrm{D}_x^3\mathrm{D}_y v_1}$ **at** $\frac{\partial^4 v_1}{\partial x_1^3\partial x_2}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x^3\mathrm{D}_y v_1} = 0$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^3\mathrm{D}_y v_1} = (-4\omega_6^2c_s^2\omega_{13}^2\omega_{14}\omega_5\omega_9\omega_{12} - 2\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^2 - 2\omega_6^2\omega_{13}^2\omega_7\omega_8\omega_5\omega_9^2\omega_{12} - 12\omega_6v_1^2\omega_{13}^2\omega_7\omega_8\omega_5\omega_9^2\omega_{12} - 4\omega_6^2c_s^2\omega_{13}^2\omega_7\omega_5\omega_9^2\omega_{12} -$

$6\omega_6^2 v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_{12} + 12v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12} + 6\omega_6^2 v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9 - 12\omega_6 v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_5\omega_9\omega_{12} + 4\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} -$
$2\omega_6^2 c_s^2\omega_{13}^2\omega_8\omega_5\omega_9^2\omega_{12} - 4\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_5\omega_9\omega_{12} - 12\omega_6^2 v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_9\omega_{12} - 12v_1^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} + 6\omega_6^2 v_1^2\omega_{13}\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} +$
$4\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_9^2 - 12\omega_6^2 v_1^2\omega_{13}^2\omega_7\omega_5\omega_9^2\omega_{12} - 12\omega_6^2 v_1^2\omega_{13}^2\omega_{14}\omega_5\omega_9\omega_{12} - 4\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2 + 2\omega_6^2 c_s^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} +$
$4\omega_6 c_s^2\omega_{13}\omega_7\omega_8\omega_5\omega_9^2\omega_{12} - 6\omega_6^2 v_1^2\omega_{13}^2\omega_8\omega_5\omega_9^2\omega_{12} + 12\omega_6 v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12} + 2\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12} - 4\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12} -$
$3\omega_6^2 c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2 + 4\omega_6\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} + 4\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_9^2 - 4\omega_6^2 c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_9\omega_{12} + 4\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9 +$
$3\omega_6^2 c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12} + 8\omega_6 c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} - 4\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_9\omega_{12} - 4\omega_6 c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_5\omega_9\omega_{12} + 2\omega_6^2 c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9 +$
$8\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12} - 2\omega_6^2 c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_{12} - 4\omega_6 c_s^2\omega_{13}^2\omega_7\omega_8\omega_5\omega_9^2\omega_{12} - 4\omega_6^2 c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_9^2 - 4\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_9^2 -$
$12\omega_6 v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_9^2 - 4\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_{12} + 2\omega_6^2\omega_{13}\omega_7\omega_8\omega_5\omega_9^2\omega_{12} - 9\omega_6^2 v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2 - 8\omega_6 c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12} -$
$2\omega_6^2 c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} + 4\omega_6 c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12} + 6\omega_6^2 v_1^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} + 12\omega_6 v_1^2\omega_{13}\omega_7\omega_8\omega_5\omega_9^2\omega_{12} + 4\omega_6\omega_{13}\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} +$
$12\omega_6^2 v_1^2\omega_{13}^2\omega_5\omega_9^2\omega_{12} - 4\omega_6 c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_9^2 - 4\omega_6^2\omega_{13}^2\omega_{14}\omega_8\omega_9\omega_{12} + 2\omega_6^2 c_s^2\omega_{13}\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} - 8\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} +$
$12\omega_6^2 v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_5\omega_9\omega_{12} - 12\omega_6 v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9 + 4\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_9\omega_{12} - 2\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9 + 12\omega_6 v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_9\omega_{12} -$
$4\omega_6\omega_{13}^2\omega_7\omega_5\omega_9^2\omega_{12} + 2\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_{12} + 12\omega_6^2 v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_9^2 - 4\omega_6^2\omega_{13}^2\omega_5\omega_9^2\omega_{12} + 12\omega_6 v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_{12} +$
$4\omega_6^2 c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_9\omega_{12} + 6\omega_6^2 v_1^2\omega_{13}^2\omega_7\omega_8\omega_5\omega_9^2\omega_{12} - 4c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} - 6\omega_6^2 v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12} - 4\omega_6 c_s^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} -$
$2\omega_6^2 c_s^2\omega_{13}\omega_7\omega_8\omega_5\omega_9^2\omega_{12} + 4\omega_6 c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2 - 4\omega_6\omega_{13}\omega_7\omega_8\omega_5\omega_9^2\omega_{12} + 4c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12} + 12\omega_6^2 v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_9\omega_{12} -$
$12\omega_6 v_1^2\omega_{13}\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} + 4\omega_6^2 c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_9^2 - 2\omega_6^2\omega_{13}\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} + 4\omega_6 c_s^2\omega_{13}^2\omega_7\omega_5\omega_9^2\omega_{12} + 2\omega_6^2 c_s^2\omega_{13}^2\omega_7\omega_8\omega_5\omega_9^2\omega_{12} -$
$12\omega_6^2 v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_9^2 + 4\omega_6 c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_{12} - 3\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12} + 6\omega_6^2 v_1^2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^2 + 4\omega_6\omega_{13}^2\omega_7\omega_8\omega_5\omega_9^2\omega_{12} +$
$4\omega_6 c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_9\omega_{12} + 4\omega_6\omega_{13}^2\omega_7\omega_{14}\omega_5\omega_9\omega_{12} - 24\omega_6 v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12} - 4\omega_6 c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9 - 6\omega_6^2 v_1^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} +$
$4\omega_6^2 c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_5\omega_9\omega_{12} + 4\omega_6^2\omega_{13}^2\omega_{14}\omega_5\omega_9\omega_{12} + 4\omega_6^2 c_s^2\omega_{13}^2\omega_5\omega_9^2\omega_{12} + 2\omega_6^2 c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9^2 + 4\omega_6^2\omega_{13}^2\omega_7\omega_5\omega_9^2\omega_{12} -$
$4\omega_6 c_s^2\omega_{13}\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} + 2\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} + 12\omega_6 v_1^2\omega_{13}^2\omega_7\omega_5\omega_9^2\omega_{12} - 4\omega_6\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12} + 12\omega_6 v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2 +$
$9\omega_6^2 v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12} + 24\omega_6 v_1^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} - 2\omega_6^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} - 12\omega_6 v_1^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} - 6\omega_6^2 v_1^2\omega_{13}\omega_7\omega_8\omega_5\omega_9^2\omega_{12} +$
$2\omega_6^2\omega_{13}^2\omega_8\omega_5\omega_9^2\omega_{12} + 3\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2 - 2\omega_6^2 c_s^2\omega_{13}^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12})\frac{v_3 v_2\rho}{4\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12}}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x^3\mathrm{D}_y v_1} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^3\mathrm{D}_y v_1}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x^3\mathrm{D}_y v_1} = 0$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x^3\mathrm{D}_y v_1} = 0$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x^3\mathrm{D}_y v_1} = 0$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x^3\mathrm{D}_y v_1} = (-\omega_1 - 3c_s^2\omega_2 - v_2^2\omega_2 + \omega_2 + v_2^2\omega_1 + 3c_s^2\omega_1)\frac{v_3 v_2\rho}{36\omega_1\omega_2}$

coefficient $C^{(3)}_{\mathrm{D}_x^3\mathrm{D}_y v_2}$ **at** $\frac{\partial^4 v_2}{\partial x_1^3\partial x_2}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x^3\mathrm{D}_y v_2} = (2 - 2v_1^2 + v_1^2\omega - \omega + 3c_s^2\omega - 6c_s^2)\frac{v_3 v_1\rho}{12\omega}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^3\mathrm{D}_y v_2} = (18\omega_6^2 c_s^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12} - 12\omega_6^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2 + 30\omega_6^2 c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12} + 6\omega_6^2\omega_{13}\omega_7^2\omega_8^2\omega_5^2\omega_9^2\omega_{12} +$
$12\omega_6 v_1^2\omega_{13}\omega_7^2\omega_8^2\omega_5^2\omega_9^2\omega_{12} + 6\omega_6^2 v_1^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9 - 12\omega_6 v_1^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2 - 12\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} + 12\omega_6\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12} +$
$12\omega_6^2 c_s^2\omega_{13}^2\omega_7\omega_8\omega_5^2\omega_9^2\omega_{12} - \omega_6^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12} - 12v_1^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12} - 6\omega_6^2 v_1^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_{12} + 6\omega_6^2 c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2 -$
$12\omega_6 c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12} + 6\omega_6\omega_{13}^2\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12} + \omega_6^2 v_1^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12} - 9\omega_6^2 c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2 + 12\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12} -$
$12\omega_6\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2 - 54\omega_6 c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12} - 12\omega_6\omega_{13}^2\omega_7^2\omega_8\omega_5^2\omega_9^2\omega_{12} - 12\omega_6 c_s^2\omega_{13}^2\omega_7^2\omega_8^2\omega_5^2\omega_9^2\omega_{12} + 42\omega_6^2 c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12} +$
$12\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^2 - 12\omega_6^2 c_s^2\omega_{13}^2\omega_7^2\omega_8\omega_5^2\omega_9^2\omega_{12} + 12v_1^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} - 12\omega_6\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_{12} + 6\omega_6^2 v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2 -$
$18\omega_6^2 c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_{12} - 6\omega_6\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12} - 18\omega_6\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12} + 12\omega_6 c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12} + 6\omega_6^2\omega_{13}^2\omega_7\omega_8^2\omega_5^2\omega_9^2\omega_{12} +$
$12\omega_6^2 v_1^2\omega_{13}^2\omega_7\omega_8\omega_5^2\omega_9^2\omega_{12} - 36\omega_6^2 c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12} - 12\omega_6 c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2 - 54\omega_6 c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_5^2\omega_9\omega_{12} +$
$12\omega_6 c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_5^2\omega_9^2\omega_{12} - 9\omega_6^2 c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12} + 12\omega_6 c_s^2\omega_{13}\omega_7^2\omega_8^2\omega_5^2\omega_9^2\omega_{12} + 6\omega_6^2 c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9 +$
$24\omega_6^2 c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_9^2\omega_{12} + 12\omega_6\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9 + 6\omega_6^2 v_1^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12} + 18\omega_6\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} - 42\omega_6^2 c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12} -$
$6\omega_6^2\omega_{13}^2\omega_7^2\omega_8^2\omega_5^2\omega_9^2\omega_{12} - 12\omega_6^2 v_1^2\omega_{13}^2\omega_7^2\omega_8\omega_5^2\omega_9^2\omega_{12} - 24\omega_6^2 c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_9^2\omega_{12} - 12\omega_6 v_1^2\omega_{13}^2\omega_7^2\omega_8^2\omega_5^2\omega_9^2\omega_{12} + 12\omega_6^2 c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} +$
$54\omega_6 c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12} - 9\omega_6^2 v_1^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2 + 54\omega_6 c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12} - 12\omega_6^2 c_s^2\omega_{13}^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12} +$
$36c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} + 12\omega_6 v_1^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_{12} - 6\omega_6^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12} + 6\omega_6^2 v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12} + 6\omega_6^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_{12} -$
$6\omega_6^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9 - 36\omega_6 c_s^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12} - 6\omega_6 v_1^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12} - 6\omega_6^2 c_s^2\omega_{13}^2\omega_7^2\omega_8^2\omega_5^2\omega_9^2\omega_{12} - 24\omega_6 c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12} -$
$12\omega_6^2 c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12} + 12\omega_6^2 v_1^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2 - 6\omega_6^2 v_1^2\omega_{13}\omega_7^2\omega_8^2\omega_5^2\omega_9^2\omega_{12} + 3\omega_6^2 c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12} - 12\omega_6 v_1^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9 +$
$6\omega_6^2 c_s^2\omega_{13}^2\omega_7^2\omega_8^2\omega_5^2\omega_9^2\omega_{12} + 12\omega_6\omega_{13}^2\omega_7^2\omega_8^2\omega_5^2\omega_9^2\omega_{12} + 12\omega_6 c_s^2\omega_{13}^2\omega_7^2\omega_8\omega_5^2\omega_9^2\omega_{12} - 24c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12} - 36c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12} -$
$12\omega_6^2 v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^2 + 12\omega_6^2 c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} + 12\omega_6 c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2 + 12\omega_6^2 c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12} +$
$24\omega_6 c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12} - 6\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12} + 6\omega_6^2 v_1^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12} - 6\omega_6^2 c_s^2\omega_{13}\omega_7^2\omega_8^2\omega_5^2\omega_9^2\omega_{12} - 12\omega_6 c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9 +$
$6\omega_6 v_1^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12} + 12\omega_6^2 c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2 - 12\omega_6^2 c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_5^2\omega_9^2\omega_{12} + 4\omega_6^2 v_1^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} +$
$18\omega_6 v_1^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12} - 6\omega_6^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12} - 12\omega_6 v_1^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12} - 12\omega_6^2\omega_{13}^2\omega_7\omega_8\omega_5^2\omega_9^2\omega_{12} - 6\omega_6^2 v_1^2\omega_{13}^2\omega_7\omega_8^2\omega_5^2\omega_9^2\omega_{12} -$
$12\omega_6^2 c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} - 12\omega_6\omega_{13}\omega_7^2\omega_8^2\omega_5^2\omega_9^2\omega_{12} + 12\omega_6\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2 - 24\omega_6 c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_9^2\omega_{12} - 6\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9^2 +$
$12\omega_6^2 c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12} + 3\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12} + 36\omega_6 c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_{12} + 6\omega_6^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12} - 6\omega_6^2 v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12} +$
$9\omega_6^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2 + 12\omega_6 c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8\omega_5\omega_9^2\omega_{12} - 18\omega_6 v_1^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} - 3\omega_6^2 v_1^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12} + 12\omega_6 v_1^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2 +$
$6\omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12} - 6\omega_6^2 v_1^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9^2\omega_{12} - 12\omega_6^2 c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2\omega_5\omega_9^2 + 12\omega_6^2 c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_5^2\omega_9^2\omega_{12} + 12\omega_6 v_1^2\omega_{13}^2\omega_7^2\omega_8\omega_5^2\omega_9^2\omega_{12} -$

$4\omega_6^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12} + 12\omega_6^2\omega_{13}^2\omega_7^2\omega_8\omega_5^2\omega_9^2\omega_{12} + 6\omega_6^2 v_1^2\omega_{13}^2\omega_7^2\omega_8^2\omega_5^2\omega_9^2\omega_{12} + 24c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_9^2\omega_{12})\frac{v_3 v_1 \rho}{12\omega_6^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9^2\omega_{12}}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x^3\mathrm{D}_y v_2} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^3\mathrm{D}_y v_2}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x^3\mathrm{D}_y v_2} = (-\omega_9\omega_{12} + 3c_s^2\omega_9\omega_{12} + v_1^2\omega_{12} - 3v_1^2\omega_9 + v_1^2\omega_9\omega_{12} - 9c_s^2\omega_9 + 3\omega_9 - \omega_{12} + 3c_s^2\omega_{12})\frac{v_3 v_1 \rho}{12\omega_9\omega_{12}}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x^3\mathrm{D}_y v_2} = C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x^3\mathrm{D}_y v_2}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x^3\mathrm{D}_y v_2} = (-3v_1^2\omega_4 + v_1^2\omega_9 - \omega_4\omega_9 + 3c_s^2\omega_4\omega_9 + 3\omega_4 - 9c_s^2\omega_4 + 3c_s^2\omega_9 - \omega_9 + v_1^2\omega_4\omega_9)\frac{v_3 v_1 \rho}{12\omega_4\omega_9}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x^3\mathrm{D}_y v_2} = (-18\omega_3 v_2^2\omega_4\omega_2 + 9\omega_4\omega_1\omega_2 - 27\omega_3 c_s^2\omega_1\omega_2 - 27c_s^2\omega_4\omega_1\omega_2 + 12\omega_3 c_s^2\omega_4\omega_1 + 6\omega_3 c_s^2\omega_4\omega_2 + 18\omega_3 v_2^2\omega_4\omega_1 - 9v_1^2\omega_4\omega_1\omega_2 - 6\omega_3\omega_4\omega_1\omega_2 + 2\omega_3\omega_4\omega_2 - 9\omega_3 v_1^2\omega_1\omega_2 + 2\omega_3 v_1^2\omega_4\omega_1 + 6\omega_3 v_1^2\omega_4\omega_1\omega_2 + 18\omega_3 c_s^2\omega_4\omega_1\omega_2 - 8\omega_3\omega_4\omega_1 + 4\omega_3 v_1^2\omega_4\omega_2 + 9\omega_3\omega_1\omega_2)\frac{v_3 v_1 \rho}{72\omega_3\omega_4\omega_1\omega_2}$

coefficient $C^{(3)}_{\mathrm{D}_x^3\mathrm{D}_y v_3}$ **at** $\frac{\partial^4 v_3}{\partial x_1^3\partial x_2}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x^3\mathrm{D}_y v_3} = 0$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^3\mathrm{D}_y v_3} = (4\omega_6^2 c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8 - \omega_6^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2 - \omega_6^3 v_1^2\omega_{13}\omega_7^2\omega_8^2 - \omega_6^3 v_1^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2 - 2\omega_6^2 v_1^2\omega_7^2\omega_{14}\omega_8^2 - \omega_6^3\omega_{13}^2\omega_7^2\omega_8^2 - 2\omega_6^2 v_1^2\omega_{13}^2\omega_7^2\omega_8^2 - 2\omega_6^2\omega_{13}^2\omega_7^2\omega_8 + 2\omega_6^3 c_s^2\omega_{13}^2\omega_7\omega_8 - 6\omega_6 c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2 - \omega_6^3\omega_7^2\omega_{14}\omega_8^2 - \omega_6^3 v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8 + 4\omega_6^2 c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2 - \omega_6^2 v_1^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2 + 2\omega_6^2 c_s^2\omega_{13}^2\omega_7^2\omega_8 + 2\omega_6^3 c_s^2\omega_{13}^2\omega_{14}\omega_8 - \omega_6^3 v_1^2\omega_{13}^2\omega_7\omega_8^2 - \omega_6^3\omega_{13}\omega_7\omega_{14}\omega_8^2 - 2\omega_6 c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2 - 2\omega_6^2 c_s^2\omega_7^2\omega_{14}\omega_8^2 + \omega_6 v_1^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2 - \omega_6^3 c_s^2\omega_{13}\omega_7^2\omega_8^2 + 2\omega_6^2 c_s^2\omega_{13}^2\omega_7^2\omega_{14} - 4\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2 - 2\omega_6^2 c_s^2\omega_{13}^2\omega_7^2\omega_8^2 - \omega_6^2 v_1^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8 + \omega_6^3 c_s^2\omega_{13}\omega_7\omega_{14}\omega_8^2 + 2\omega_6^3 v_1^2\omega_{13}^2\omega_7\omega_8 + 2\omega_6^2 v_1^2\omega_{13}^2\omega_7^2\omega_8 + 2\omega_6^2\omega_{13}^2\omega_7^2\omega_8^2 - \omega_6^3 c_s^2\omega_{13}^2\omega_7\omega_8^2 + 2\omega_6\omega_{13}\omega_7^2\omega_{14}\omega_8^2 - \omega_6^3\omega_{13}^2\omega_7^2\omega_{14}\omega_8 + 2\omega_6^3 c_s^2\omega_{13}^2\omega_7\omega_{14} + 7\omega_6^2 c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2 + 2\omega_6^2\omega_7^2\omega_{14}\omega_8^2 + 5\omega_6^3 c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8 - 2\omega_6^2 v_1^2\omega_{13}\omega_7\omega_{14}\omega_8^2 + 2\omega_6^3\omega_{13}^2\omega_7^2\omega_8 - 8c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2 + \omega_6^3 c_s^2\omega_{13}^2\omega_7^2\omega_8^2 - 2\omega_6^2 c_s^2\omega_{13}^2\omega_{14}\omega_8^2 + \omega_6^3\omega_{13}\omega_7^2\omega_{14}\omega_8^2 - 2\omega_6^3 c_s^2\omega_{13}^2\omega_7^2\omega_{14} - \omega_6^3 c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2 + 2\omega_6^2 c_s^2\omega_{13}\omega_7^2\omega_8^2 + \omega_6^3 c_s^2\omega_7^2\omega_{14}\omega_8^2 - 2\omega_6^3\omega_{13}^2\omega_7\omega_8 + 2\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8^2 + 6\omega_6 c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8 + \omega_6^3\omega_{13}^2\omega_7\omega_{14}\omega_8 - 2\omega_6^2\omega_{13}\omega_7^2\omega_8^2 + 4\omega_6^2 v_1^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2 - 7\omega_6^3 c_s^2\omega_{13}^2\omega_7\omega_{14}\omega_8 - 2\omega_6^3 v_1^2\omega_{13}^2\omega_7^2\omega_8 + \omega_6^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8 - 5\omega_6^2 c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2 + \omega_6^3\omega_{13}\omega_7^2\omega_8^2 + \omega_6^3 v_1^2\omega_{13}^2\omega_7^2\omega_8^2 + \omega_6^3 v_1^2\omega_{13}\omega_7\omega_{14}\omega_8^2 - 11\omega_6^2 c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8 + \omega_6^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2 - 2\omega_6 v_1^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2 + 13\omega_6 c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2 + \omega_6^3 v_1^2\omega_7^2\omega_{14}\omega_8^2 + 2\omega_6^2 v_1^2\omega_{13}\omega_7^2\omega_8^2 + \omega_6^2 v_1^2\omega_{13}^2\omega_7\omega_{14}\omega_8^2 - 2\omega_6^2 c_s^2\omega_{13}\omega_7\omega_{14}\omega_8^2 + \omega_6^3\omega_{13}^2\omega_7\omega_8^2 + \omega_6^3 v_1^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8 - 2\omega_6^3 c_s^2\omega_{13}^2\omega_7^2\omega_8 - \omega_6\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2)\frac{v_2 v_1 \rho}{2\omega_6^3\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x^3\mathrm{D}_y v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^3\mathrm{D}_y v_3}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x^3\mathrm{D}_y v_3} = 0$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x^3\mathrm{D}_y v_3} = 0$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x^3\mathrm{D}_y v_3} = 0$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x^3\mathrm{D}_y v_3} = (2\omega_3\omega_4^2\omega_1 + 18\omega_3 c_s^2\omega_4^2 + 3v_1^2\omega_4^2\omega_1 - 2\omega_3^2\omega_4\omega_1 + 6\omega_3 v_2^2\omega_4^2 - 18\omega_3 c_s^2\omega_4\omega_1 - 6\omega_3^2 v_1^2 + 12\omega_4^2 + 3\omega_3^2 v_1^2\omega_1 - 6v_1^2\omega_4^2 + 36\omega_3 c_s^2\omega_4 + 6\omega_3^2\omega_4 - 2\omega_3 v_2^2\omega_4^2\omega_1 - 6v_2^2\omega_4^2 - 6\omega_3 v_1^2\omega_4\omega_1 - 6\omega_3^2 v_2^2\omega_4 - 12\omega_3\omega_4 + 12\omega_3 v_1^2\omega_4 - 3\omega_3^2 v_2^2\omega_1 + 18c_s^2\omega_4^2\omega_1 + 6\omega_3^2 c_s^2\omega_4\omega_1 + 6\omega_3^2 v_2^2 - 36c_s^2\omega_4^2 - 18\omega_3^2 c_s^2\omega_4 - 6\omega_4^2\omega_1 - 6\omega_3 c_s^2\omega_4^2\omega_1 + 6\omega_3\omega_4\omega_1 - 6\omega_3\omega_4^2 + 3v_2^2\omega_4^2\omega_1 + 2\omega_3^2 v_2^2\omega_4\omega_1)\frac{v_2 v_1 \rho}{8\omega_3^2\omega_4^2\omega_1}$

coefficient $C^{(3)}_{\mathrm{D}_x^2\mathrm{D}_y^2\rho}$ **at** $\frac{\partial^4 \rho}{\partial x_1^2\partial x_2^2}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_y^2\rho} = (-2+\omega)\frac{v_3 c_s^4}{6\omega}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y^2\rho} = (-12\omega_6^2\omega_7^2\omega_5^2 - 24\omega_6\omega_7^2\omega_8\omega_5^2 - 12\omega_7^2\omega_8^2\omega_5 - 14\omega_6^2\omega_7^2\omega_8^2\omega_5 + 12\omega_6^2\omega_8\omega_5^2 + 12\omega_6^2\omega_7^2\omega_8^2 + \omega_6^2\omega_7^2\omega_8^2\omega_5^2 - 24\omega_6^2\omega_7\omega_8\omega_5^2 + 24\omega_6\omega_7^2\omega_8^2\omega_5 + 12\omega_7^2\omega_8\omega_5^2 - 12\omega_6^2\omega_8^2\omega_5 + 12\omega_6^2\omega_7^2\omega_8\omega_5^2 + 12\omega_6\omega_7^2\omega_5^2 - 12\omega_6^2\omega_7\omega_8^2 - 12\omega_6\omega_7^2\omega_8^2 + 24\omega_6^2\omega_7\omega_8^2\omega_5 + 12\omega_6^2\omega_7\omega_5^2)\frac{v_3 c_s^4}{6\omega_6^2\omega_7^2\omega_8^2\omega_5^2}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_y^2\rho} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y^2\rho}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y^2\rho} = (-2+\omega_5)\frac{v_3 c_s^4}{6\omega_5}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y^2\rho} = C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y^2\rho}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y^2\rho} = (-2+\omega_1)\frac{v_3 c_s^4}{6\omega_1}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y^2\rho} = (3v_1^2\omega_1 - 3v_1^2\omega_2 + 6c_s^2\omega_1\omega_2 - 2\omega_1 - 14c_s^2\omega_2 - 3v_2^2\omega_2 + 2\omega_2 + 3v_2^2\omega_1 + 2c_s^2\omega_1)\frac{v_3 c_s^2}{36\omega_1\omega_2}$

coefficient $C^{(3)}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_1}$ **at** $\frac{\partial^4 v_1}{\partial x_1^2 \partial x_2^2}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_1} = 0$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_1} = (-2\omega_6\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12} - 4\omega_6\omega_7^2\omega_8^2\omega_5^2\omega_9\omega_{12} + 2\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5\omega_9\omega_{12} - 4\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12} +$
$2\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_{12} - 4\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9 + 4\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_9\omega_{12} + 4\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5\omega_9 + 4\omega_6\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12} +$
$4\omega_6\omega_{13}\omega_7^2\omega_8^2\omega_5^2\omega_9\omega_{12} - 4\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_9\omega_{12} - 6\omega_6\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12} - 4\omega_6\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9 - 4\omega_6^2\omega_{13}\omega_7\omega_8\omega_5^2\omega_9\omega_{12} +$
$2\omega_6\omega_{13}\omega_7^2\omega_{14}\omega_5^2\omega_9\omega_{12} + 2\omega_6\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12} + 4\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12} + 6\omega_6\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12} - 2\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12} +$
$2\omega_6^2\omega_7^2\omega_8^2\omega_5^2\omega_9\omega_{12} + 4\omega_6^2\omega_{13}\omega_7^2\omega_8\omega_5^2\omega_9\omega_{12} - 2\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_5^2\omega_9\omega_{12} + 2\omega_6^2\omega_{13}\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12} + 4\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12} -$
$2\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2 + 2\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12} - 4\omega_6\omega_{13}\omega_7^2\omega_8\omega_5^2\omega_9\omega_{12} + 2\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_5^2\omega_9\omega_{12} - 4\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_5^2\omega_9\omega_{12} -$
$2\omega_6^2\omega_{13}\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12} - 4\omega_6\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_{12} - 2\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8^2\omega_5^2\omega_9 + 2\omega_6^2\omega_{13}\omega_7\omega_8^2\omega_5^2\omega_9\omega_{12} - 4\omega_6\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_9\omega_{12} +$
$4\omega_6\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9 - 2\omega_6^2\omega_{13}\omega_7^2\omega_8^2\omega_5^2\omega_9\omega_{12} - 2\omega_6^2\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12} - 3\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5\omega_9\omega_{12} + 3\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9 +$
$4\omega_6\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2 + 2\omega_6\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5\omega_9\omega_{12})\frac{v_3 c_s^2 v_1\rho}{2\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_5^2\omega_9\omega_{12}}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_1} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_1}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_1} = 0$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_1} = 0$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_1} = 0$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_1} = (v_1^2\omega_1 - v_1^2\omega_2 - \omega_1 - 3c_s^2\omega_2 + \omega_2 + 3c_s^2\omega_1)\frac{v_3 v_1\rho}{36\omega_1\omega_2}$

coefficient $C^{(3)}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_2}$ **at** $\frac{\partial^4 v_2}{\partial x_1^2 \partial x_2^2}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_2} = 0$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_2} = (-4\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_8\omega_5^2\omega_{15} - 2\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_8^2\omega_5^2\omega_{15} + 2\omega_6^2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_5^2\omega_{15} + 4\omega_6^2\omega_{16}\omega_7\omega_{17}\omega_8^2\omega_5^2 +$
$2\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} - 4\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_{15} + 3\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2 + 2\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15} - 4\omega_6^2\omega_{16}\omega_{10}\omega_7\omega_8\omega_5^2\omega_{15} -$
$4\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5 - 4\omega_6^2\omega_{16}\omega_7\omega_{17}\omega_8^2\omega_5\omega_{15} + 6\omega_6^2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8^2\omega_5\omega_{15} - 3\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15} - 4\omega_6^2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8^2\omega_{15} -$
$4\omega_6^2\omega_{10}\omega_7\omega_8^2\omega_5^2\omega_{15} - 6\omega_6^2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15} + 2\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_5^2\omega_{15} + 2\omega_6^2\omega_{16}\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15} + 4\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5 +$
$4\omega_6^2\omega_{16}\omega_{10}\omega_7\omega_8^2\omega_5^2\omega_{15} - 2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15} + 2\omega_6^2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15} + 4\omega_6^2\omega_{16}\omega_{10}\omega_{17}\omega_8\omega_5^2\omega_{15} + 4\omega_6^2\omega_{10}\omega_7\omega_{17}\omega_8^2\omega_5\omega_{15} -$
$4\omega_6^2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8^2\omega_5^2 - 2\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_6^2\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15} - 2\omega_6^2\omega_{16}\omega_7^2\omega_{17}\omega_8^2\omega_5^2 - 4\omega_6^2\omega_{16}\omega_{10}\omega_{17}\omega_8^2\omega_5\omega_{15} -$
$2\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_5^2\omega_{15} + 2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15} - 2\omega_6\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8^2\omega_5\omega_{15} + 4\omega_6^2\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8^2\omega_5 - 4\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15} +$
$4\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_8\omega_5^2\omega_{15} + 2\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_8^2\omega_5^2\omega_{15} + 2\omega_6\omega_{16}\omega_{10}\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15} - 2\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2 + 4\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_{15} +$
$2\omega_6^2\omega_{10}\omega_7^2\omega_8^2\omega_5^2\omega_{15} + 4\omega_6\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15})\frac{v_3 c_s^2 v_2\rho}{2\omega_6^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_2} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_2}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_2} = 0$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_2} = 0$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_2} = 0$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_2} = (-\omega_1 - 3c_s^2\omega_2 - v_2^2\omega_2 + \omega_2 + v_2^2\omega_1 + 3c_s^2\omega_1)\frac{v_3 v_2\rho}{36\omega_1\omega_2}$

coefficient $C^{(3)}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_3}$ **at** $\frac{\partial^4 v_3}{\partial x_1^2 \partial x_2^2}$**:**

$$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_3} = (-2-\omega^2+3\omega)\frac{c_s^4\rho}{\omega^3}$$

$$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_3} = (-\omega_6^3 c_s^2\omega_{16}\omega_7^2\omega_{17}\omega_{14}\omega_8^2+2\omega_6^2 c_s^2\omega_{16}\omega_{13}\omega_7^3\omega_{17}\omega_{14}\omega_8-2\omega_6^3\omega_{16}v_1^2\omega_{13}\omega_7^2\omega_{17}\omega_8+2\omega_6^3\omega_{16}v_1^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8-2\omega_6^2\omega_{16}v_1^2\omega_7^3\omega_{17}\omega_8^2+$$
$$2\omega_6\omega_{16}v_2^2\omega_{13}\omega_7^3\omega_{17}\omega_{14}\omega_8-2\omega_6^3\omega_{16}v_2^2\omega_{13}\omega_7^3\omega_{17}\omega_{14}-2\omega_6\omega_{16}v_2^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2-2\omega_6^3 c_s^2\omega_{16}\omega_{13}\omega_7^2\omega_{17}\omega_8-\omega_6^3\omega_{16}v_1^2\omega_7^2\omega_{17}\omega_{14}\omega_8^2-$$
$$2\omega_{16}v_2^2\omega_{13}\omega_7^3\omega_{17}\omega_{14}\omega_8^2-2\omega_6^3\omega_{16}v_1^2\omega_{13}\omega_{17}\omega_{14}\omega_8^2-4\omega_6^2\omega_{16}v_2^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2-6\omega_6^2 c_s^2\omega_{16}\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2+2\omega_6^3\omega_{16}v_2^2\omega_{13}\omega_7^3\omega_{14}\omega_8+$$
$$\omega_6^3 c_s^2\omega_{13}\omega_7^3\omega_{14}\omega_8^2-6\omega_6^3\omega_{16}v_2^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8+2\omega_6^3 c_s^2\omega_{16}\omega_{13}\omega_7^2\omega_{14}\omega_8^2-\omega_6^2 v_2^2\omega_{13}\omega_7^3\omega_{17}\omega_{14}\omega_8^2-6\omega_6^2\omega_{16}v_1^2\omega_{13}\omega_7^3\omega_{17}\omega_{14}\omega_8+\omega_6^3 c_s^2\omega_{16}\omega_7^3\omega_{17}\omega_8^2+$$
$$4\omega_6^2\omega_{16}v_1^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2+\omega_6^2\omega_{16}v_2^2\omega_{13}\omega_7^3\omega_{14}\omega_8^2+2\omega_6^2 v_2^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2+2\omega_6^2\omega_{16}v_1^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8+2\omega_6^3\omega_{16}v_2^2\omega_{13}\omega_7^3\omega_{17}\omega_{14}\omega_8-$$
$$2\omega_6^2\omega_{16}v_2^2\omega_{13}\omega_7^3\omega_{14}\omega_8-\omega_6^3\omega_{16}v_2^2\omega_{13}\omega_7^3\omega_{14}\omega_8^2-2\omega_6^3 c_s^2\omega_{16}\omega_{13}\omega_7^2\omega_{14}\omega_8-\omega_6^3 c_s^2\omega_{16}\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2+\omega_6^3 c_s^2\omega_{16}\omega_{13}\omega_7^2\omega_{17}\omega_8^2+$$
$$\omega_6^3 v_2^2\omega_{13}\omega_7^3\omega_{14}\omega_8^2+2\omega_6^2 c_s^2\omega_{16}\omega_7^2\omega_{17}\omega_{14}\omega_8^2+\omega_6^3\omega_{16}v_1^2\omega_{13}\omega_7^2\omega_{17}\omega_8^2+\omega_6^2 c_s^2\omega_{16}\omega_{13}\omega_7^3\omega_{17}\omega_{14}\omega_8^2+3\omega_6^3\omega_{16}v_1^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2+$$
$$2\omega_6^2\omega_{16}v_1^2\omega_7^2\omega_{17}\omega_{14}\omega_8^2+3\omega_6\omega_{16}v_2^2\omega_{13}\omega_7^3\omega_{17}\omega_{14}\omega_8^2+2\omega_6^3\omega_{16}v_1^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}+2\omega_6^2\omega_{16}v_2^2\omega_{13}\omega_7^3\omega_{17}\omega_{14}-2\omega_6^2 c_s^2\omega_{16}\omega_{13}\omega_7^3\omega_{14}\omega_8-$$
$$2\omega_6^2 c_s^2\omega_{16}\omega_7^3\omega_{17}\omega_8^2+2\omega_6^2 c_s^2\omega_{16}\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2+4\omega_6^2\omega_{16}v_2^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2+2\omega_6 c_s^2\omega_{16}\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2-2\omega_6^3 c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2-$$
$$2\omega_6^3\omega_{16}v_2^2\omega_{13}\omega_7^2\omega_{14}\omega_8-4\omega_6^2\omega_{16}v_2^2\omega_{13}\omega_7^3\omega_{17}\omega_{14}\omega_8-\omega_6^3 c_s^2\omega_{16}\omega_{13}\omega_7^3\omega_{14}\omega_8^2-4\omega_6^3\omega_{16}v_1^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8+2\omega_6^3 c_s^2\omega_{16}\omega_{13}\omega_7^3\omega_{17}\omega_8+$$
$$2\omega_6^2\omega_{16}v_1^2\omega_{13}\omega_7^3\omega_{17}\omega_{14}+2\omega_6^3\omega_{16}v_2^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}-4\omega_6\omega_{16}v_1^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2-2\omega_6^2\omega_{16}v_1^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8^2+2\omega_6^2\omega_{16}v_1^2\omega_{13}\omega_7^3\omega_{17}\omega_8^2+$$
$$4\omega_6^3\omega_{16}v_2^2\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8+2\omega_6^3 c_s^2\omega_{16}\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8+2\omega_6^3\omega_{16}v_1^2\omega_{13}\omega_7^3\omega_{17}\omega_8-\omega_6^2 c_s^2\omega_{13}\omega_7^3\omega_{17}\omega_{14}\omega_8^2+4\omega_6\omega_{16}v_1^2\omega_{13}\omega_7^3\omega_{17}\omega_{14}\omega_8+$$
$$\omega_6^3\omega_{16}v_1^2\omega_7^3\omega_{17}\omega_8^2+2\omega_6^2 c_s^2\omega_{16}\omega_{13}\omega_7^3\omega_{17}\omega_8^2+\omega_6^3 c_s^2\omega_{16}\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2-\omega_6^3\omega_{16}v_1^2\omega_{13}\omega_7^3\omega_{17}\omega_8^2-2\omega_6^3\omega_{16}v_1^2\omega_{13}\omega_7^3\omega_{17}\omega_{14}-$$
$$2\omega_6^2 c_s^2\omega_{16}\omega_{13}\omega_7^3\omega_{17}\omega_8-\omega_6^3 c_s^2\omega_{16}\omega_{13}\omega_7^3\omega_{17}\omega_8^2+2\omega_6^2 c_s^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2-2\omega_6^2\omega_{16}v_1^2\omega_{13}\omega_7^2\omega_{17}\omega_8-2\omega_6^3 c_s^2\omega_{16}\omega_{13}\omega_7^3\omega_{17}\omega_{14}\omega_8-$$
$$2\omega_6^3 v_2^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2-\omega_6 c_s^2\omega_{16}\omega_{13}\omega_7^3\omega_{17}\omega_{14}\omega_8^2+2\omega_6^3\omega_{16}v_2^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2-\omega_6^2\omega_{16}v_2^2\omega_{13}\omega_7^3\omega_{17}\omega_{14}\omega_8^2-\omega_6^3\omega_{16}v_1^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8^2+$$
$$2\omega_6^3 c_s^2\omega_{16}\omega_{13}\omega_7^3\omega_{14}\omega_8+2\omega_6^3\omega_{16}v_1^2\omega_{13}\omega_7^3\omega_{17}\omega_{14}\omega_8+\omega_6^2 c_s^2\omega_{16}\omega_{13}\omega_7^3\omega_{14}\omega_8^2+2\omega_6^2\omega_{16}v_2^2\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8)\frac{c_s^2\rho}{2\omega_6^3\omega_{16}\omega_{13}\omega_7^3\omega_{17}\omega_{14}\omega_8^2}$$

$$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_3}$$

$$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_3} = (-2\omega_6\omega_{16}\omega_7^2\omega_{17}\omega_8+2\omega_6\omega_{16}\omega_7\omega_{17}\omega_{14}\omega_8-2\omega_6^2\omega_{16}\omega_{13}\omega_7\omega_{17}+2\omega_6^2\omega_{16}\omega_{13}\omega_7\omega_{14}\omega_8+\omega_6^2\omega_{13}\omega_7^2\omega_{14}\omega_8+$$
$$2\omega_6^2\omega_{16}\omega_{13}\omega_7\omega_{17}\omega_{14}-\omega_6\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8+\omega_6^2\omega_{16}\omega_7^2\omega_{17}\omega_8+\omega_6^2\omega_{16}\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8-2\omega_6^2\omega_{16}\omega_{13}\omega_7\omega_{14}+2\omega_{16}\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8+$$
$$\omega_6^2\omega_{16}\omega_{13}\omega_7\omega_{17}\omega_8+\omega_6\omega_{16}\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8-\omega_6^2\omega_{16}\omega_7\omega_{17}\omega_{14}\omega_8+2\omega_6\omega_{16}\omega_{13}\omega_7^2\omega_{17}\omega_{14}+2\omega_6\omega_{16}\omega_{13}\omega_{17}\omega_{14}\omega_8-\omega_6^2\omega_{16}\omega_{13}\omega_7^2\omega_{17}\omega_8+$$
$$\omega_6\omega_{16}\omega_{13}\omega_7^2\omega_{14}\omega_8+2\omega_6\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8-2\omega_6\omega_{16}\omega_{13}\omega_7^2\omega_{17}-\omega_6^2\omega_{16}\omega_{13}\omega_7^2\omega_{14}\omega_8-\omega_{16}\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8+2\omega_6^2\omega_{16}\omega_{13}\omega_7^2\omega_{14}-$$
$$2\omega_6^2\omega_{16}\omega_{13}\omega_7^2\omega_{17}\omega_{14}-2\omega_6^2\omega_{13}\omega_7\omega_{14}\omega_8-2\omega_6\omega_{16}\omega_{13}\omega_7^2\omega_{14}-\omega_6^2\omega_{16}\omega_{13}\omega_{17}\omega_{14}\omega_8-6\omega_6\omega_{16}\omega_{13}\omega_7\omega_{17}\omega_{14}\omega_8+2\omega_6\omega_{16}\omega_{13}\omega_7^2\omega_{17}\omega_8+$$
$$2\omega_6^2\omega_{16}\omega_{13}\omega_7^2\omega_{17})\frac{c_s^4\rho}{2\omega_6^2\omega_{16}\omega_{13}\omega_7^2\omega_{17}\omega_{14}\omega_8}$$

$$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_3} = C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_3}$$

$$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_3} = (-\omega_2^2+2\omega_3^2\omega_2-\omega_3\omega_{13}\omega_2-\omega_3^2\omega_2^2+\omega_{13}\omega_2+2\omega_3\omega_2^2-\omega_3^2-2\omega_3\omega_2+\omega_3\omega_{13})\frac{c_s^4\rho}{\omega_3^2\omega_{13}\omega_2^2}$$

$$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y^2 v_3} = (-3\omega_3^2 v_2^2\omega_4\omega_1^3\omega_5-6\omega_3^2 v_1^2\omega_1^2\omega_5+8\omega_3 c_s^2\omega_4^2\omega_1^2\omega_5-18c_s^2 v_2^2\omega_4^2\omega_1^2\omega_5+12\omega_3 c_s^2 v_2^2\omega_4^2\omega_1\omega_5+18\omega_3^2 c_s^2 v_1^2\omega_1^2\omega_5-3v_2^2\omega_4^2\omega_1^3\omega_5+$$
$$6\omega_3 c_s^2 v_1^2\omega_4^2\omega_1^2\omega_5-32\omega_3^2 c_s^4\omega_4^2\omega_1+3\omega_3 v_1^2\omega_4^2\omega_1^3\omega_5+6\omega_3^2 c_s^2 v_2^2\omega_4\omega_1^3\omega_5+8\omega_3^2 c_s^2\omega_4\omega_1\omega_5-3\omega_3^2 v_1^4\omega_1^3\omega_5-2\omega_3^2 c_s^4\omega_4\omega_1^3\omega_5+6\omega_3 v_2^4\omega_4^2\omega_1^2\omega_5-$$
$$6v_1^4\omega_4^2\omega_1^2\omega_5-6\omega_3^2 v_1^4\omega_4\omega_1^2\omega_5-12\omega_3^2 c_s^2 v_1^2\omega_4\omega_1\omega_5+6\omega_3^2 v_1^4\omega_1^2\omega_5-6\omega_3^2 c_s^2 v_2^2\omega_4\omega_1^2\omega_5-6\omega_3 v_1^2\omega_4^2\omega_1^2\omega_5-8\omega_3^2 c_s^4\omega_4^2\omega_1^3-9\omega_3^2 c_s^2 v_1^2\omega_1^3\omega_5-$$
$$6\omega_3 c_s^2 v_1^2\omega_4^2\omega_1^3\omega_5+6v_2^2\omega_4^2\omega_1^2\omega_5-2\omega_3 c_s^2\omega_4^2\omega_1^3\omega_5+3\omega_3^2 v_1^2\omega_1^3\omega_5+6\omega_3^2 v_2^2\omega_4\omega_1^2\omega_5-8\omega_3^2 c_s^4\omega_4^2\omega_1\omega_5+9c_s^2 v_2^2\omega_4^2\omega_1^3\omega_5+3\omega_3^2 v_1^4\omega_4\omega_1^3\omega_5+$$
$$3v_1^4\omega_4^2\omega_1^3\omega_5+8\omega_3 c_s^4\omega_4^2\omega_1\omega_5-3\omega_3 v_2^4\omega_4^2\omega_1^3\omega_5+8\omega_3^2 c_s^4\omega_4\omega_1^2\omega_5+32\omega_3^2 c_s^4\omega_4^2\omega_1^2+3v_2^4\omega_4^2\omega_1^3\omega_5-8\omega_3 c_s^4\omega_4^2\omega_1^2\omega_5+3\omega_3^2 v_2^4\omega_4\omega_1^3\omega_5-$$
$$8\omega_3^2 c_s^4\omega_4\omega_1\omega_5+16\omega_3^2 c_s^4\omega_4^2\omega_5-3\omega_3 v_1^4\omega_4^2\omega_1^3\omega_5-6\omega_3 v_2^2\omega_4^2\omega_1^2\omega_5-6\omega_3^2 c_s^2 v_1^2\omega_4\omega_1^2\omega_5-9\omega_3^2 c_s^2 v_2^2\omega_1^3\omega_5+2\omega_3^2 c_s^2\omega_4\omega_1^3\omega_5+3\omega_3^2 v_2^2\omega_1^3\omega_5-$$
$$12\omega_3^2 c_s^2 v_2^2\omega_4\omega_1\omega_5+9c_s^2 v_1^2\omega_4^2\omega_1^3\omega_5+6\omega_3^2 v_2^4\omega_1^2\omega_5+6\omega_3^2 v_1^2\omega_4\omega_1^2\omega_5-6\omega_3 c_s^2 v_2^2\omega_4^2\omega_1^3\omega_5+6v_1^2\omega_4^2\omega_1^2\omega_5+6\omega_3 v_1^4\omega_4^2\omega_1^2\omega_5-6\omega_3^2 v_2^4\omega_4\omega_1^2\omega_5+$$
$$2\omega_3 c_s^4\omega_4^2\omega_1^3\omega_5-6v_2^4\omega_4^2\omega_1^2\omega_5-3v_1^2\omega_4^2\omega_1^3\omega_5+6\omega_3 c_s^2 v_2^2\omega_4^2\omega_1^2\omega_5-8\omega_3 c_s^2\omega_4^2\omega_1\omega_5-3\omega_3^2 v_2^4\omega_1^3\omega_5+12\omega_3 c_s^2 v_1^2\omega_4^2\omega_1\omega_5-18c_s^2 v_1^2\omega_4^2\omega_1^2\omega_5-$$
$$3\omega_3^2 v_1^2\omega_4\omega_1^3\omega_5-6\omega_3^2 v_2^2\omega_1^2\omega_5-8\omega_3^2 c_s^2\omega_4\omega_1^2\omega_5+18\omega_3^2 c_s^2 v_2^2\omega_1^2\omega_5+6\omega_3^2 c_s^2 v_1^2\omega_4\omega_1^3\omega_5+3\omega_3 v_2^2\omega_4^2\omega_1^3\omega_5)\frac{\rho}{8\omega_3^2\omega_4^2\omega_1^3\omega_5}$$

coefficient $C^{(3)}_{\mathrm{D}_x\mathrm{D}_y^3\rho}$ **at** $\frac{\partial^4\rho}{\partial x_1\partial x_2^3}$**:**

$$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y^3\rho} = 0$$

$$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^3\rho} = (-2\omega_6\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5-12\omega_6 c_s^2\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5+4\omega_6\omega_{16}^2 v_2^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5-12c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_5\omega_{15}-$$
$$4\omega_6\omega_{16}^2 v_2^2\omega_{10}^2\omega_7^2\omega_5\omega_{15}+2\omega_6\omega_{16}^2 v_2^2\omega_{10}^2\omega_7^2\omega_8\omega_5\omega_{15}+4\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}-4\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_{15}+2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8\omega_5\omega_{15}-$$
$$4\omega_6\omega_{16}^2 v_2^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_{15}-4\omega_6\omega_{16}^2\omega_{10}^2\omega_7\omega_5\omega_{15}-6c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}+2\omega_6\omega_{16}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}-12\omega_6 c_s^2\omega_{16}\omega_{10}^2\omega_{17}\omega_8\omega_5\omega_{15}-$$
$$12\omega_6 c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_{15}+12c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_5\omega_{15}-4\omega_6\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_{15}-4\omega_6\omega_{16}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15}+12c_s^2\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15}+$$
$$12\omega_6 c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5-4\omega_{16}^2 v_2^2\omega_{10}\omega_7^2\omega_{17}\omega_5\omega_{15}+3\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5-4\omega_6\omega_{16}^2 v_2^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5-12\omega_6 c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8+$$
$$4\omega_6\omega_{16}^2\omega_{10}^2\omega_7\omega_8\omega_5\omega_{15}+6\omega_6 c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_8\omega_5\omega_{15}-2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}-12c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8+4\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_5\omega_{15}+$$
$$4\omega_{16}^2 v_2^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15}+12c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_{15}+12\omega_6 c_s^2\omega_{16}^2\omega_{10}\omega_{17}\omega_8\omega_5\omega_{15}-2\omega_6\omega_{16}v_2^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}-6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8\omega_5\omega_{15}+$$

$24\omega_6 c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15} - 4\omega_6 v_2^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_6\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} + 6\omega_6 c_s^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} + 12\omega_6 c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_5\omega_{15} +$
$4\omega_6\omega_{16}^2 v_2^2\omega_{10}\omega_7^2\omega_{17}\omega_5\omega_{15} - 4\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5\omega_{15} + 4\omega_6\omega_{16} v_2^2\omega_{10}^2\omega_7\omega_8\omega_5\omega_{15} - 6\omega_6 c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_8\omega_5\omega_{15} - 6\omega_6 c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} +$
$8\omega_6\omega_{16} v_2^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15} - 8\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15} - 12\omega_6 c_s^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_{16}^2 v_2^2\omega_{10}^2\omega_7^2\omega_8\omega_5\omega_{15} + 2\omega_6 v_2^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} +$
$12\omega_6 c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_5\omega_{15} + 4\omega_6\omega_{16}^2 v_2^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8 + 4\omega_6\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_5\omega_{15} + 4\omega_6\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8 - 2\omega_{16}^2 v_2^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} +$
$4\omega_6\omega_{16}^2 v_2^2\omega_{10}\omega_{17}\omega_8\omega_5\omega_{15} + 4\omega_{16}^2 v_2^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_{15} - 4\omega_{16}^2\omega_{10}^2\omega_7^2\omega_5\omega_{15} - 6\omega_6 c_s^2\omega_{16}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_{16} v_2^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} -$
$4\omega_6\omega_{16} v_2^2\omega_{10}^2\omega_{17}\omega_8\omega_5\omega_{15} - 12c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15} + 4\omega_6\omega_{16}\omega_{10}^2\omega_{17}\omega_8\omega_5\omega_{15} + 4\omega_6\omega_{16}^2 v_2^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5 +$
$4\omega_6\omega_{16}^2 v_2^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_{15} - 8\omega_6\omega_{16}^2 v_2^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} - 4\omega_6\omega_{16}^2 v_2^2\omega_{10}^2\omega_7\omega_8\omega_5\omega_{15} - 12\omega_6 c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_5\omega_{15} +$
$4\omega_6\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5 + 6\omega_6 c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5 - 3\omega_6\omega_{16}^2 v_2^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5 - 2\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8\omega_5\omega_{15} - 4\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15} -$
$4\omega_6\omega_{16}^2 v_2^2\omega_{10}^2\omega_7\omega_{17}\omega_8 - 12\omega_6 c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_8\omega_5\omega_{15} + 3\omega_6\omega_{16}^2 v_2^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} - 9\omega_6 c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5 - 4\omega_6\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5 +$
$2\omega_6\omega_{16}^2 v_2^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5 + 12\omega_6 c_s^2\omega_{16}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_6\omega_{16}^2 v_2^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} + 6c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} - 4\omega_{16} v_2^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15} -$
$4\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8 + 12\omega_6 c_s^2\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_{15} + 4\omega_{16}^2 v_2^2\omega_{10}^2\omega_7^2\omega_5\omega_{15} + 4\omega_6\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_{15} + 4\omega_6\omega_{16}^2 v_2^2\omega_{10}^2\omega_7\omega_5\omega_{15} -$
$4\omega_6\omega_{16}^2 v_2^2\omega_{10}\omega_7\omega_{17}\omega_5\omega_{15} + 6c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5 + 2\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8\omega_5\omega_{15} + 12\omega_6 c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5\omega_{15} - 2\omega_6\omega_{16} v_2^2\omega_{10}^2\omega_7^2\omega_8\omega_5\omega_{15} +$
$8\omega_6\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15} + 9\omega_6 c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_6\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} - 4\omega_6\omega_{16}^2\omega_{10}\omega_{17}\omega_8\omega_5\omega_{15} + 4\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_5\omega_{15} -$
$4\omega_{16}^2 v_2^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8 + 4\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8 + 12\omega_6 c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8 - 12\omega_6 c_s^2\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_5\omega_{15} + 2\omega_{16}^2 v_2^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5 -$
$4\omega_6\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_5\omega_{15} - 3\omega_6\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} - 24\omega_6 c_s^2\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15} + 4\omega_6\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15})\frac{v_3 v_2 v_1}{4\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y^3\rho} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^3\rho}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y^3\rho} = 0$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y^3\rho} = 0$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y^3\rho} = 0$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y^3\rho} = (v_1^2\omega_1 - v_1^2\omega_2 - \omega_1 - 3c_s^2\omega_2 + \omega_2 + 3c_s^2\omega_1)\frac{v_3 v_2 v_1}{12\omega_1\omega_2}$

coefficient $C^{(3)}_{\mathrm{D}_x\mathrm{D}_y^3 v_1}$ **at** $\frac{\partial^4 v_1}{\partial x_1 \partial x_2^3}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y^3 v_1} = (2 - \omega + v_2^2\omega + 3c_s^2\omega - 6c_s^2 - 2v_2^2)\frac{v_3 v_2 \rho}{12\omega}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^3 v_1} = (-12\omega_6^2 c_s^2\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8^2\omega_5^2 + 12\omega_6^2\omega_{16}^2 v_2^2\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2 - 6\omega_6^2\omega_{16}^2 v_2^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 24\omega_6^2 c_s^2\omega_{16}^2\omega_{10}^2\omega_{17}\omega_8\omega_5^2\omega_{15} +$
$6\omega_6\omega_{16}^2 v_2^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15} + 6\omega_6\omega_{16}^2 v_2^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2 + 6\omega_6^2\omega_{16}^2 v_2^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15} + 36\omega_6^2 c_s^2\omega_{16}^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$6\omega_6 c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8^2\omega_5^2\omega_{15} + 6\omega_6^2\omega_{16}^2 v_2^2\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5\omega_{15} - 12\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7\omega_8\omega_5^2\omega_{15} - 24\omega_6^2 c_s^2\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8^2\omega_5\omega_{15} +$
$12\omega_6^2\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 12\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5 - 12\omega_6^2 c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_8^2\omega_5^2\omega_{15} - 6\omega_6\omega_{16}^2 v_2^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15} - \omega_6^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$24\omega_6^2 c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8^2\omega_5\omega_{15} + 6\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2\omega_8^2\omega_5^2\omega_{15} - 6\omega_6^2\omega_{16}^2 v_2^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15} - 6\omega_6\omega_{16}^2 v_2^2\omega_{10}^2\omega_7^2\omega_8^2\omega_5^2\omega_{15} - 12\omega_6^2\omega_{16}^2 v_2^2\omega_{10}^2\omega_7^2\omega_8^2\omega_5\omega_{15} -$
$6\omega_6^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 12\omega_6^2 c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15} - 12\omega_6^2 c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_5^2\omega_{15} - 12\omega_6^2\omega_{16}^2\omega_{10}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 12\omega_6^2 c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2 -$
$12\omega_6^2\omega_{16}^2 v_2^2\omega_{10}\omega_7\omega_{17}\omega_8^2\omega_5^2 - 12\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 12\omega_6^2\omega_{16}^2 v_2^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 6\omega_6 c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2 -$
$6\omega_6^2\omega_{16}^2 v_2^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15} - 18\omega_6^2 c_s^2\omega_{16}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 12\omega_6^2 c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5 - 6\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8^2\omega_5^2\omega_{15} - 4\omega_6^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} -$
$12\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15} - 36\omega_6^2 c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15} - 12\omega_6^2 c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15} - 12\omega_6 c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5 -$
$42\omega_6 c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15} - 54\omega_6^2 c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15} - 6\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15} - 3\omega_6^2\omega_{16} v_2^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$54\omega_6^2 c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 12\omega_6 c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5\omega_{15} - 6\omega_6^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2 + 24\omega_6^2 c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_{15} +$
$30\omega_6^2 c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15} - 9\omega_6^2 c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 18\omega_6^2\omega_{16} v_2^2\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 42\omega_6 c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15} +$
$12\omega_6^2\omega_{16}\omega_{10}^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 9\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2 - 12\omega_6^2\omega_{16}^2 v_2^2\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5 + 18\omega_6^2\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 12\omega_6\omega_{16}^2 v_2^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5 +$
$12\omega_6^2 c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_8^2\omega_5^2\omega_{15} - 6\omega_6^2\omega_{16} v_2^2\omega_{10}^2\omega_7^2\omega_8^2\omega_5^2\omega_{15} + 6\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15} + 54\omega_6^2 c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5\omega_{15} +$
$12\omega_6 c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15} - 12\omega_6^2\omega_{16}^2 v_2^2\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15} - 12\omega_6^2 c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15} - 12\omega_6^2 c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} +$
$12\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5 + 6\omega_6^2 c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8^2\omega_5^2\omega_{15} + 6\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8^2\omega_5^2\omega_{15} + 12\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15} - 18\omega_6^2\omega_{16}^2 v_2^2\omega_{10}\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$6\omega_6^2 c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2 + 12c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15} - 9\omega_6^2\omega_{16}^2 v_2^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2 - 36\omega_6^2 c_s^2\omega_{16}\omega_{10}^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} +$
$4\omega_6^2\omega_{16}^2 v_2^2\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 6\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2 + 12\omega_6 c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} - 9\omega_6^2 c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2 +$
$6\omega_6^2\omega_{16}^2 v_2^2\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2 + 3\omega_6^2 c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 24\omega_6^2 c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5\omega_{15} - 12c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15} +$
$6\omega_6^2\omega_{16}^2 v_2^2\omega_{10}^2\omega_7^2\omega_8^2\omega_5^2\omega_{15} + 12\omega_6^2 c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15} + 12\omega_6^2 c_s^2\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_5^2\omega_{15} + 12\omega_6 c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2 -$
$12\omega_6^2\omega_{16}\omega_{10}^2\omega_7\omega_8^2\omega_5^2\omega_{15} + \omega_6^2\omega_{16}^2 v_2^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 12\omega_6^2\omega_{16}^2 v_2^2\omega_{10}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 12\omega_6^2\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8^2\omega_5^2 + 6\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5\omega_{15} +$
$12\omega_6^2 c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 12\omega_6^2\omega_{16}^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 12\omega_6^2 c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_8\omega_5^2\omega_{15} + 12\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5 + 12\omega_6^2 c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5 +$
$12\omega_6^2\omega_{16}^2\omega_{10}\omega_7\omega_8^2\omega_5^2\omega_{15} - 18\omega_6^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 36\omega_6^2 c_s^2\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 6\omega_6^2 v_2^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 12\omega_6 c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15} +$
$6\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5^2\omega_{15} + 12\omega_6^2\omega_{16} v_2^2\omega_{10}^2\omega_7\omega_8^2\omega_5^2\omega_{15} - 6\omega_6^2 c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_8^2\omega_5^2\omega_{15} + 12\omega_6^2\omega_{16}^2 v_2^2\omega_{10}^2\omega_7\omega_8\omega_5^2\omega_{15} -$
$12\omega_6^2 v_2^2\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 3\omega_6^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 18\omega_6^2 c_s^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 12\omega_6\omega_{16}^2 v_2^2\omega_{10}^2\omega_7^2\omega_8\omega_5^2\omega_{15} -$
$6\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5^2\omega_{15} + 12\omega_6^2\omega_{16}^2 v_2^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5 - 12\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5^2 - 6\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_5\omega_{15} - 24\omega_6 c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_{15} +$
$36\omega_6^2 c_s^2\omega_{16}^2\omega_{10}\omega_{17}\omega_8^2\omega_5^2\omega_{15} + 6\omega_6^2\omega_{16}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 54\omega_6^2 c_s^2\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8^2\omega_5^2\omega_{15} - 24\omega_6^2 c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8^2\omega_{15})\frac{v_3 v_2 \rho}{12\omega_6^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8^2\omega_5^2\omega_{15}}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y^3 v_1} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^3 v_1}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y^3 v_1} = (3\omega_{10} - 9c_s^2\omega_{10} - 3v_2^2\omega_{10} + v_2^2\omega_{10}\omega_{15} + 3c_s^2\omega_{15} - \omega_{15} - \omega_{10}\omega_{15} + 3c_s^2\omega_{10}\omega_{15} + v_2^2\omega_{15})\frac{v_3 v_2 \rho}{12\omega_{10}\omega_{15}}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y^3 v_1} = C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y^3 v_1}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y^3 v_1} = (-\omega_7\omega_5 + 3c_s^2\omega_7\omega_5 - 3v_2^2\omega_5 + v_2^2\omega_7\omega_5 - \omega_7 - 9c_s^2\omega_5 + v_2^2\omega_7 + 3c_s^2\omega_7 + 3\omega_5)\frac{v_3 v_2 \rho}{12\omega_7\omega_5}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y^3 v_1} = (4\omega_3 v_2^2\omega_4\omega_2 + 9\omega_4\omega_1\omega_2 - 27\omega_3 c_s^2\omega_1\omega_2 - 27c_s^2\omega_4\omega_1\omega_2 + 12\omega_3 c_s^2\omega_4\omega_1 + 6\omega_3 c_s^2\omega_4\omega_2 + 2\omega_3 v_2^2\omega_4\omega_1 + 6\omega_3 v_2^2\omega_4\omega_1\omega_2 - 9\omega_3 v_2^2\omega_1\omega_2 - 6\omega_3\omega_4\omega_1\omega_2 - 9v_2^2\omega_4\omega_1\omega_2 + 2\omega_3\omega_4\omega_2 + 18\omega_3 v_1^2\omega_4\omega_1 + 18\omega_3 c_s^2\omega_4\omega_1\omega_2 - 8\omega_3\omega_4\omega_1 - 18\omega_3 v_1^2\omega_4\omega_2 + 9\omega_3\omega_1\omega_2)\frac{v_3 v_2 \rho}{72\omega_3\omega_4\omega_1\omega_2}$

coefficient $C^{(3)}_{\mathrm{D}_x\mathrm{D}_y^3 v_2}$ **at** $\frac{\partial^4 v_2}{\partial x_1 \partial x_2^3}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y^3 v_2} = 0$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^3 v_2} = (-2\omega_6\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5 - 4\omega_6 c_s^2\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5 + 12\omega_6\omega_{16}^2 v_2^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5 - 4c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_5\omega_{15} - 12\omega_6\omega_{16}^2 v_2^2\omega_{10}^2\omega_7^2\omega_5\omega_{15} + 6\omega_6\omega_{16}^2 v_2^2\omega_{10}^2\omega_7^2\omega_8\omega_5\omega_{15} + 4\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15} - 4\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_{15} + 2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8\omega_5\omega_{15} - 12\omega_6\omega_{16}^2 v_2^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_{15} - 4\omega_6\omega_{16}^2\omega_{10}^2\omega_7\omega_5\omega_{15} - 2c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_6\omega_{16}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} - 4\omega_6 c_s^2\omega_{16}\omega_{10}^2\omega_{17}\omega_8\omega_5\omega_{15} - 4\omega_6 c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_{15} + 4c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_5\omega_{15} - 4\omega_6\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_{15} - 4\omega_6\omega_{16}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15} + 4c_s^2\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15} + 4\omega_6 c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5 - 12\omega_{16}^2 v_2^2\omega_{10}\omega_7^2\omega_{17}\omega_5\omega_{15} + 3\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5 - 12\omega_6\omega_{16}^2 v_2^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5 - 4\omega_6 c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8 + 4\omega_6\omega_{16}^2\omega_{10}^2\omega_7\omega_8\omega_5\omega_{15} + 2\omega_6 c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8\omega_5\omega_{15} - 2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} - 4c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8 + 4\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_5\omega_{15} + 12\omega_{16}^2 v_2^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15} + 4c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_{15} + 4\omega_6 c_s^2\omega_{16}^2\omega_{10}\omega_{17}\omega_8\omega_5\omega_{15} - 6\omega_6\omega_{16} v_2^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} - 2c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8\omega_5\omega_{15} + 8\omega_6 c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15} - 12\omega_6 v_2^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_6\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_6 c_s^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} + 4\omega_6 c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_5\omega_{15} + 12\omega_6\omega_{16}^2 v_2^2\omega_{10}\omega_7^2\omega_{17}\omega_5\omega_{15} - 4\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5\omega_{15} + 12\omega_6\omega_{16} v_2^2\omega_{10}^2\omega_7\omega_8\omega_5\omega_{15} - 2\omega_6 c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_8\omega_5\omega_{15} - 2\omega_6 c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} + 24\omega_6\omega_{16} v_2^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15} - 8\omega_6\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15} - 4\omega_6 c_s^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15} - 6\omega_{16}^2 v_2^2\omega_{10}^2\omega_7^2\omega_8\omega_5\omega_{15} + 6\omega_6 v_2^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} + 4\omega_6 c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_5\omega_{15} + 12\omega_6\omega_{16}^2 v_2^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8 + 4\omega_6\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_5\omega_{15} + 4\omega_6\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8 - 6\omega_{16}^2 v_2^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} + 12\omega_6\omega_{16}^2 v_2^2\omega_{10}\omega_{17}\omega_8\omega_5\omega_{15} + 12\omega_{16}^2 v_2^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_{15} - 4\omega_{16}^2\omega_{10}^2\omega_7^2\omega_5\omega_{15} - 2\omega_6 c_s^2\omega_{16}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} + 6\omega_{16} v_2^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} - 12\omega_6\omega_{16} v_2^2\omega_{10}\omega_{17}\omega_8\omega_5\omega_{15} - 4c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15} + 4\omega_6\omega_{16}\omega_{10}^2\omega_{17}\omega_8\omega_5\omega_{15} + 12\omega_6\omega_{16}^2 v_2^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5 + 12\omega_6\omega_{16}^2 v_2^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_{15} - 24\omega_6\omega_{16}^2 v_2^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15} + 2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} - 12\omega_6\omega_{16}^2 v_2^2\omega_{10}^2\omega_7\omega_8\omega_5\omega_{15} - 4\omega_6 c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_5\omega_{15} + 4\omega_6\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5 + 2\omega_6 c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5 - 9\omega_6\omega_{16}^2 v_2^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5 - 2\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_8\omega_5\omega_{15} - 4\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15} - 12\omega_6\omega_{16}^2 v_2^2\omega_{10}^2\omega_7\omega_{17}\omega_8 - 4\omega_6 c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_8\omega_5\omega_{15} + 9\omega_6\omega_{16}^2 v_2^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} - 3\omega_6 c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5 - 4\omega_6\omega_{16}^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5 + 6\omega_6\omega_{16}^2 v_2^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5 + 4\omega_6 c_s^2\omega_{16}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15} - 6\omega_6\omega_{16}^2 v_2^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} + 2c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} - 12\omega_{16} v_2^2\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15} - 4\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8 + 4\omega_6 c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_{15} + 12\omega_{16}^2 v_2^2\omega_{10}^2\omega_7^2\omega_5\omega_{15} + 4\omega_6\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_{15} + 12\omega_6\omega_{16}^2 v_2^2\omega_{10}^2\omega_7\omega_5\omega_{15} - 12\omega_6\omega_{16}^2 v_2^2\omega_{10}\omega_7\omega_{17}\omega_5\omega_{15} + 2c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5 + 2\omega_6\omega_{16}\omega_{10}^2\omega_7^2\omega_8\omega_5\omega_{15} + 4\omega_6 c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_8\omega_5\omega_{15} - 6\omega_6\omega_{16} v_2^2\omega_{10}^2\omega_7^2\omega_8\omega_5\omega_{15} + 8\omega_6\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15} + 3\omega_6 c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} - 2\omega_6\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} - 4\omega_6\omega_{16}^2\omega_{10}\omega_{17}\omega_8\omega_5\omega_{15} + 4\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_5\omega_{15} - 12\omega_{16}^2 v_2^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8 + 4\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8 + 4\omega_6 c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8 - 4\omega_6 c_s^2\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_5\omega_{15} + 6\omega_{16}^2 v_2^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5 - 4\omega_6\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_5\omega_{15} - 3\omega_6\omega_{16}^2\omega_{10}\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15} - 8\omega_6 c_s^2\omega_{16}^2\omega_{10}\omega_7\omega_{17}\omega_8\omega_5\omega_{15} + 4\omega_6\omega_{10}^2\omega_7\omega_{17}\omega_8\omega_5\omega_{15})\frac{v_3 v_1 \rho}{4\omega_6\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{17}\omega_8\omega_5\omega_{15}}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y^3 v_2} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^3 v_2}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y^3 v_2} = 0$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y^3 v_2} = 0$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y^3 v_2} = 0$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y^3 v_2} = (v_1^2\omega_1 - v_1^2\omega_2 - \omega_1 - 3c_s^2\omega_2 + \omega_2 + 3c_s^2\omega_1)\frac{v_3 v_1 \rho}{36\omega_1\omega_2}$

coefficient $C^{(3)}_{\mathrm{D}_x\mathrm{D}_y^3 v_3}$ **at** $\frac{\partial^4 v_3}{\partial x_1 \partial x_2^3}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y^3 v_3} = 0$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^3 v_3} = (-6\omega_6 c_s^2\omega_{16}^2\omega_7\omega_{17}\omega_8^2 - 2\omega_6^2\omega_{16}\omega_7^2\omega_8^2 + \omega_6\omega_{16}^2 v_2^2\omega_7^2\omega_{17}\omega_8^2 - 2\omega_6^2 c_s^2\omega_7^2\omega_{17}\omega_8^2 + 2\omega_6\omega_{16}^2 v_2^2\omega_7^3\omega_8 - 7\omega_6 c_s^2\omega_{16}^2\omega_7^3\omega_{17}\omega_8 + \omega_6\omega_{16}^2\omega_7^3\omega_8^2 + \omega_6^2 v_2^2\omega_7^3\omega_{17}\omega_8^2 - 2\omega_6^2\omega_{16}^2 v_2^2\omega_7^2\omega_8^2 - \omega_6^2\omega_{16}^2\omega_7\omega_{17}\omega_8^2 + 6\omega_6^2 c_s^2\omega_{16}^2\omega_7\omega_{17}\omega_8 - \omega_6^2\omega_{16}^2 v_2^2\omega_7^2\omega_{17}\omega_8 - \omega_6^2\omega_{16}^2\omega_7^3\omega_{17}\omega_8 + \omega_6\omega_{16}^2\omega_7^3\omega_{17}\omega_8 + 4\omega_6^2 c_s^2\omega_{16}\omega_7^2\omega_{17}\omega_8^2 - 2\omega_6\omega_{16} v_2^2\omega_7^2\omega_{17}\omega_8^2 + 2\omega_6^2\omega_7^2\omega_{17}\omega_8^2 + 2\omega_6^2 c_s^2\omega_{16}\omega_7^2\omega_8^2 - 2\omega_6^2\omega_{16}^2 v_2^2\omega_7^3\omega_8 - 4\omega_6^2\omega_{16}\omega_7^2\omega_{17}\omega_8^2 + \omega_6^2\omega_{16}^2 v_2^2\omega_7^3\omega_8^2 +$

$2c_s^2\omega_{16}^2\omega_7^3\omega_{17}\omega_8 - 2\omega_6c_s^2\omega_{16}\omega_7^2\omega_{17}\omega_8^2 + 4\omega_6^2\omega_{16}v_2^2\omega_7^2\omega_{17}\omega_8^2 + \omega_6^2\omega_{16}\omega_7^3\omega_8^2 + 2\omega_6^2\omega_{16}^2v_2^2\omega_7^2\omega_8 - \omega_6^2c_s^2\omega_{16}\omega_7^3\omega_8^2 - \omega_6^2\omega_{16}^2v_2^2\omega_7^2\omega_{17}\omega_8^2 +$
$13\omega_6^2c_s^2\omega_{16}^2\omega_7\omega_{17}\omega_8^2 - 8\omega_6^2c_s^2\omega_{16}^2\omega_{17}\omega_8^2 + 5\omega_6^2c_s^2\omega_{16}^3\omega_7^3\omega_{17}\omega_8 + 2\omega_{6\omega_{16}}\omega_7^2\omega_{17}\omega_8^2 - \omega_6\omega_{16}^2v_2^2\omega_7^3\omega_8^2 - 2\omega_6\omega_{16}^3\omega_7^3\omega_8 - 2\omega_6^2c_s^2\omega_{16}^2\omega_7^3\omega_{17} +$
$\omega_6\omega_{16}v_2^2\omega_7^3\omega_{17}\omega_8^2 + 2\omega_6^2c_s^2\omega_{16}^2\omega_7^2\omega_8 - \omega_6^2c_s^2\omega_{16}\omega_7^3\omega_{17}\omega_8^2 + 2\omega_6^2\omega_{16}v_2^2\omega_7^2\omega_8^2 + 2\omega_6^2\omega_{16}\omega_7\omega_{17}\omega_8^2 - \omega_6^2\omega_7^3\omega_{17}\omega_8^2 - 2c_s^2\omega_{16}^2\omega_7^2\omega_{17}\omega_8^2 - \omega_6^2\omega_{16}^2\omega_7^3\omega_8^2 -$
$2\omega_6^2\omega_{16}v_2^2\omega_7\omega_{17}\omega_8^2 - \omega_6c_s^2\omega_{16}^2\omega_7^3\omega_8^2 + \omega_6^2\omega_{16}^2v_2^2\omega_7^3\omega_{17}\omega_8 - 2\omega_6^2v_2^2\omega_7^2\omega_{17}\omega_8^2 + \omega_6^2\omega_{16}^2v_2^2\omega_7\omega_{17}\omega_8^2 - 5\omega_6^2c_s^2\omega_{16}^2\omega_7\omega_{17}\omega_8^2 + \omega_6^2\omega_{16}^2\omega_7^2\omega_{17}\omega_8 +$
$\omega_6^2c_s^2\omega_{16}^2\omega_7^3\omega_8^2 + 2\omega_6c_s^2\omega_{16}^2\omega_7^3\omega_{17} + \omega_6^2c_s^2\omega_7^3\omega_{17}\omega_8^2 - 2\omega_6^2\omega_{16}^2\omega_7^2\omega_8 + 4\omega_6c_s^2\omega_{16}^2\omega_7^2\omega_{17}\omega_8 - \omega_6\omega_{16}^2v_2^2\omega_7^3\omega_{17}\omega_8 - \omega_6\omega_{16}\omega_7^3\omega_{17}\omega_8^2 + 7\omega_6c_s^2\omega_{16}^2\omega_7^2\omega_{17}\omega_8^2 +$
$2\omega_6^2\omega_{16}^2\omega_7^2\omega_8^2 - \omega_6^2\omega_{16}v_2^2\omega_7^3\omega_8^2 + \omega_6^2\omega_{16}^2\omega_7^2\omega_{17}\omega_8^2 - 11\omega_6^2c_s^2\omega_{16}^2\omega_7^2\omega_{17}\omega_8 - 2\omega_6^2c_s^2\omega_{16}^2\omega_7^3\omega_8 + 2\omega_6^2c_s^2\omega_{16}^2\omega_7^2\omega_{17} - \omega_6^2\omega_{16}v_2^2\omega_7^3\omega_{17}\omega_8^2 +$
$\omega_6c_s^2\omega_{16}\omega_7^3\omega_{17}\omega_8^2 + 2\omega_6^2\omega_{16}^2\omega_7^3\omega_8 - \omega_6\omega_{16}^2\omega_7^2\omega_{17}\omega_8^2 + 2\omega_6c_s^2\omega_{16}^2\omega_7^3\omega_8 - 2\omega_6^2c_s^2\omega_{16}^2\omega_7^2\omega_8^2 + \omega_6^2\omega_{16}\omega_7^3\omega_{17}\omega_8^2 - 2\omega_6^2c_s^2\omega_{16}\omega_7\omega_{17}\omega_8^2)\frac{v_2v_1\rho}{2\omega_6^2\omega_{16}^2\omega_7^3\omega_{17}\omega_8^2}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y^3v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^3v_3}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y^3v_3} = 0$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y^3v_3} = 0$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y^3v_3} = 0$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y^3v_3} = (2\omega_3\omega_4^2\omega_1 + 18\omega_3c_s^2\omega_4^2 + 2\omega_3^2v_1^2\omega_4\omega_1 + 3v_1^2\omega_4^2\omega_1 - 2\omega_3^2\omega_4\omega_1 - 18\omega_3c_s^2\omega_4\omega_1 + 6\omega_3^2v_1^2 + 12\omega_4^2 - 3\omega_3^2v_1^2\omega_1 + 12\omega_3v_2^2\omega_4 -$
$6\omega_3v_2^2\omega_4\omega_1 - 6\omega_3^2v_1^2\omega_4 - 6v_1^2\omega_4^2 + 36\omega_3c_s^2\omega_4 - 2\omega_3v_1^2\omega_4^2\omega_1 + 6\omega_3^2\omega_4 - 6v_2^2\omega_4^2 - 12\omega_3\omega_4 + 3\omega_3^2v_2^2\omega_1 + 18c_s^2\omega_4^2\omega_1 + 6\omega_3^2c_s^2\omega_4\omega_1 - 6\omega_3^2v_2^2 -$
$36c_s^2\omega_4^2 - 18\omega_3^2c_s^2\omega_4 - 6\omega_4^2\omega_1 - 6\omega_3c_s^2\omega_4^2\omega_1 + 6\omega_3v_1^2\omega_4^2 + 6\omega_3\omega_4\omega_1 - 6\omega_3\omega_4^2 + 3v_2^2\omega_4^2\omega_1)\frac{v_2v_1\rho}{8\omega_3^2\omega_4^2\omega_1}$

coefficient $C^{(3)}_{\mathrm{D}_y^4\rho}$ **at** $\frac{\partial^4\rho}{\partial x_2^4}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_y^4\rho} = (24c_s^2v_2^2 + 6v_2^4 + 2c_s^4 - c_s^4\omega - 3v_2^4\omega + 3v_2^2\omega - 12c_s^2v_2^2\omega + c_s^2\omega - 2c_s^2 - 6v_2^2)\frac{v_3}{24\omega}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y^4\rho} =$
$(12v_2^4\omega_{10}^2\omega_7^2 + 150c_s^2\omega_{16}^2v_2^2\omega_{10}\omega_7^2 + 432c_s^2\omega_{16}v_2^2\omega_{10}^2\omega_7 - 12c_s^4\omega_{16}\omega_{10}^2\omega_7^2 + 36\omega_{16}^2v_2^4\omega_{10}\omega_7^2 - 12c_s^2\omega_{10}^2\omega_7^2 - 144c_s^2v_2^2\omega_{10}^2\omega_7 + 96\omega_{16}v_2^4\omega_{10}^2\omega_7 +$
$96\omega_{16}^2v_2^2\omega_{10}\omega_7 - 24c_s^4\omega_{10}^2\omega_7 + 30\omega_{16}v_2^2\omega_{10}^2\omega_7^2 - 36\omega_{16}^2v_2^4\omega_7^2 + 24v_2^2\omega_{10}^2\omega_7 + 24c_s^2\omega_{16}\omega_{10}^2 + 14c_s^4\omega_{16}^3\omega_{10}\omega_7^2 - 12v_2^2\omega_{10}^2\omega_7^2 - 216c_s^2\omega_{16}v_2^2\omega_{10}^2 -$
$48c_s^4\omega_{16}^2\omega_{10}\omega_7 + 12c_s^4\omega_{10}^2\omega_7^2 - 36\omega_{16}^2v_2^2\omega_{10}\omega_7^2 + c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2 - 96\omega_{16}v_2^2\omega_{10}^2\omega_7 + 72\omega_{16}^2v_2^4\omega_7 + 24c_s^2\omega_{10}^2\omega_7 - 96\omega_{16}^2v_2^4\omega_{10}\omega_7 + 48c_s^4\omega_{16}\omega_{10}^2\omega_7 +$
$72c_s^2v_2^2\omega_{10}^2\omega_7^2 - 30\omega_{16}v_2^4\omega_{10}^2\omega_7^2 + 48\omega_{16}v_2^2\omega_{10}^2 - 24c_s^4\omega_{16}\omega_{10}^2 + 48\omega_{16}^2v_2^4\omega_{10} - 432c_s^2\omega_{16}^2v_2^2\omega_{10}\omega_7 - 24v_2^4\omega_{10}^2\omega_7 - 126c_s^2\omega_{16}v_2^2\omega_{10}^2\omega_7^2 + 24\omega_{16}v_2^4\omega_{10}\omega_7^2 -$
$24c_s^2\omega_{16}^2\omega_7 + 36\omega_{16}^2v_2^2\omega_7^2 + 12c_s^2\omega_{16}\omega_{10}^2\omega_7^2 + 72c_s^2\omega_{16}v_2^2\omega_{10}\omega_7^2 - 24c_s^2\omega_{16}^2\omega_{10} - 144c_s^2\omega_{16}^2v_2^2\omega_7^2 + 3\omega_{16}^2v_2^2\omega_{10}^2\omega_7^2 - 14c_s^2\omega_{16}^2\omega_{10}\omega_7^2 - 12c_s^4\omega_{16}^2\omega_7^2 +$
$48\omega_{16}v_2^2\omega_{10}\omega_7 + 48c_s^2\omega_{16}^2\omega_{10}\omega_7 + 24c_s^4\omega_{16}^2\omega_7 - 48\omega_{16}v_2^4\omega_{10}^2 - 24\omega_{16}v_2^2\omega_{10}\omega_7^2 - 48\omega_{16}^2v_2^2\omega_{10} + 288c_s^2\omega_{16}^2v_2^2\omega_7 - c_s^4\omega_{16}^2\omega_{10}^2\omega_7^2 - 12c_s^2\omega_{16}^2v_2^2\omega_{10}^2\omega_7^2 +$
$24c_s^4\omega_{16}^2\omega_{10} - 48c_s^2\omega_{16}\omega_{10}^2\omega_7 - 144c_s^2\omega_{16}v_2^2\omega_{10}\omega_7 - 3\omega_{16}^2v_2^4\omega_{10}^2\omega_7^2 - 48\omega_{16}v_2^4\omega_{10}\omega_7 + 216c_s^2\omega_{16}^2v_2^2\omega_{10} + 12c_s^2\omega_{16}^2\omega_7^2 - 72\omega_{16}^2v_2^2\omega_7)\frac{v_3}{24\omega_{16}^2\omega_{10}^2\omega_7^2}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_y^4\rho} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y^4\rho}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_y^4\rho} = (24c_s^2v_2^2 - 3v_2^4\omega_{10} - c_s^4\omega_{10} + 6v_2^4 + 2c_s^4 + c_s^2\omega_{10} + 3v_2^2\omega_{10} - 12c_s^2v_2^2\omega_{10} - 2c_s^2 - 6v_2^2)\frac{v_3}{24\omega_{10}}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_y^4\rho} = C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_y^4\rho}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_y^4\rho} = (24c_s^2v_2^2 + 6v_2^4 + 2c_s^4 + 3v_2^2\omega_5 - 12c_s^2v_2^2\omega_5 + c_s^2\omega_5 - c_s^4\omega_5 - 3v_2^4\omega_5 - 2c_s^2 - 6v_2^2)\frac{v_3}{24\omega_5}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_y^4\rho} = (9v_2^2\omega_1\omega_2 - 3c_s^4\omega_1\omega_2 + 12v_2^4\omega_2 - 36c_s^2v_2^2\omega_1\omega_2 + 4c_s^4\omega_2 - 9v_2^4\omega_1\omega_2 + 2c_s^4\omega_1 + 3c_s^2\omega_1\omega_2 + 6v_2^4\omega_1 - 4c_s^2\omega_2 + 48c_s^2v_2^2\omega_2 -$
$12v_2^2\omega_2 + 24c_s^2v_2^2\omega_1 - 6v_2^2\omega_1 - 2c_s^2\omega_1)\frac{v_3}{72\omega_1\omega_2}$

coefficient $C^{(3)}_{\mathrm{D}_y^4v_2}$ **at** $\frac{\partial^4v_2}{\partial x_2^4}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_y^4v_2} = (-4 + 2\omega - 5v_2^2\omega - 3c_s^2\omega + 6c_s^2 + 10v_2^2)\frac{v_3v_2\rho}{12\omega}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y^4v_2} =$
$(-12\omega_{10}^2\omega_7^2 - 24c_s^2\omega_{16}\omega_{10}\omega_7 + 24c_s^2\omega_{10}^2\omega_7^2 + 36\omega_{16}\omega_{10}^2 - 168\omega_{16}^2v_2^2\omega_{10}\omega_7 + 24\omega_{16}\omega_{10}\omega_7 - 51\omega_{16}v_2^2\omega_{10}^2\omega_7^2 - 48v_2^2\omega_{10}^2\omega_7 - 60c_s^2\omega_{16}\omega_{10}^2 + 24v_2^2\omega_{10}^2\omega_7^2 -$
$12\omega_{16}\omega_{10}\omega_7^2 + 61\omega_{16}^2v_2^2\omega_{10}\omega_7^2 - 3c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2 + 168\omega_{16}v_2^2\omega_{10}^2\omega_7 - 48c_s^2\omega_{10}^2\omega_7 - 84\omega_{16}v_2^2\omega_{10}^2 + 24\omega_{10}^2\omega_7 + 12c_s^2\omega_{16}\omega_{10}\omega_7^2 + 2\omega_{16}^2\omega_{10}^2\omega_7^2 + 72c_s^2\omega_{16}^2\omega_7 -$
$60\omega_{16}^2v_2^2\omega_7^2 - 25\omega_{16}^2\omega_{10}\omega_7^2 - 48\omega_{16}^2\omega_7 - 33c_s^2\omega_{16}\omega_{10}^2\omega_7^2 + 60c_s^2\omega_{16}^2\omega_{10} - 5\omega_{16}^2v_2^2\omega_{10}^2\omega_7^2 + 39c_s^2\omega_{16}^2\omega_{10}\omega_7^2 + 21\omega_{16}\omega_{10}^2\omega_7^2 - 36\omega_{16}^2\omega_{10} - 72\omega_{16}v_2^2\omega_{10}\omega_7 -$
$72\omega_{16}\omega_{10}^2\omega_7 - 120c_s^2\omega_{16}^2\omega_{10}\omega_7 + 36\omega_{16}v_2^2\omega_{10}\omega_7^2 + 84\omega_{16}^2v_2^2\omega_{10} + 120c_s^2\omega_{16}\omega_{10}^2\omega_7 + 72\omega_{16}^2\omega_{10}\omega_7 + 24\omega_{16}^2\omega_7^2 - 36c_s^2\omega_{16}^2\omega_7^2 + 120\omega_{16}^2v_2^2\omega_7)\frac{v_3v_2\rho}{12\omega_{16}^2\omega_{10}^2\omega_7^2}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}^4_y v_2} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}^4_y v_2}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}^4_y v_2} = (-4 + 2\omega_{10} - 3c_s^2\omega_{10} - 5v_2^2\omega_{10} + 6c_s^2 + 10v_2^2)\frac{v_3 v_2 \rho}{12\omega_{10}}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}^4_y v_2} = C^{(3),\mathrm{CLBM1}}_{\mathrm{D}^4_y v_2}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}^4_y v_2} = (-4 - 5v_2^2\omega_5 - 3c_s^2\omega_5 + 2\omega_5 + 6c_s^2 + 10v_2^2)\frac{v_3 v_2 \rho}{12\omega_5}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}^4_y v_2} = (-15v_2^2\omega_1\omega_2 + 6\omega_1\omega_2 - 9c_s^2\omega_1\omega_2 - 4\omega_1 + 12c_s^2\omega_2 + 20v_2^2\omega_2 - 8\omega_2 + 10v_2^2\omega_1 + 6c_s^2\omega_1)\frac{v_3 v_2 \rho}{36\omega_1\omega_2}$

coefficient $C^{(3)}_{\mathrm{D}^4_y v_3}$ at $\frac{\partial^4 v_3}{\partial x_2^4}$:

$C^{(3),\mathrm{SRT}}_{\mathrm{D}^4_y v_3} = (-144c_s^2v_2^2 - 3c_s^4\omega^3 - 42v_2^4\omega^2 - 72v_2^4 + 3v_2^4\omega^3 + 30c_s^4\omega^2 + 48c_s^4 - 72c_s^4\omega + 108v_2^4\omega + 6c_s^2v_2^2\omega^3 - 3v_2^2\omega^3 - 14c_s^2\omega^2 - 84c_s^2v_2^2\omega^2 + c_s^2\omega^3 + 42v_2^2\omega^2 - 108v_2^2\omega + 216c_s^2v_2^2\omega + 36c_s^2\omega - 24c_s^2 + 72v_2^2)\frac{\rho}{24\omega^3}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}^4_y v_3} = (3\omega_{16}^2v_2^4\omega_7^3 + 24c_s^2\omega_{16}\omega_7^2 - 24c_s^2\omega_{16}v_2^2\omega_7 - 96c_s^2\omega_{16}^2v_2^2 + 24c_s^4\omega_{16}\omega_7 - 24\omega_{16}^2v_2^4\omega_7^2 + 48\omega_{16}v_2^2\omega_7 - 6c_s^2\omega_{16}\omega_7^3 - 72\omega_{16}v_2^2\omega_7^2 - 12c_s^2\omega_{16}v_2^2\omega_7^3 - 24v_2^4\omega_7^2 + 24\omega_{16}^2v_2^4\omega_7 - 24c_s^4\omega_{16}\omega_7^2 + 48c_s^2\omega_{16}v_2^2\omega_7^2 - 24c_s^2\omega_{16}\omega_7 + 18\omega_{16}v_2^2\omega_7^3 + 6c_s^4\omega_{16}\omega_7^3 + 12v_2^4\omega_7^3 + 6c_s^2\omega_{16}^2v_2^2\omega_7^3 + 12c_s^2\omega_{16}^2\omega_7 + 24\omega_{16}^2v_2^2\omega_7^2 - 48\omega_{16}v_2^4\omega_7 - 3c_s^4\omega_{16}^2\omega_7^3 - 3\omega_{16}^2v_2^2\omega_7^3 - 72c_s^2\omega_{16}^2v_2^2\omega_7^2 + 24c_s^4\omega_{16}^2 + 24c_s^4\omega_{16}^2\omega_7^2 - 48c_s^4\omega_{16}^2\omega_7 + 12c_s^2v_2^2\omega_7^3 - 18\omega_{16}v_2^4\omega_7^3 + c_s^2\omega_{16}^2\omega_7^3 + 156c_s^2\omega_{16}^2v_2^2\omega_7 - 12v_2^2\omega_7^3 - 24c_s^2v_2^2\omega_7^2 + 72\omega_{16}v_2^4\omega_7^2 + 24v_2^2\omega_7^2 - 8c_s^2\omega_{16}^2\omega_7^2 - 24\omega_{16}^2v_2^2\omega_7)\frac{\rho}{24\omega_{16}^2\omega_7^3}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}^4_y v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}^4_y v_3}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}^4_y v_3} = (3\omega_{16}^2v_2^4\omega_7^3 + 24c_s^2\omega_{16}\omega_7^2 + 72c_s^2\omega_{16}v_2^2\omega_7 + 24c_s^4\omega_{16}\omega_7 - 12\omega_{16}^2v_2^4\omega_7^2 - 6c_s^2\omega_{16}\omega_7^3 - 72\omega_{16}v_2^2\omega_7^2 - 72c_s^2\omega_{16}v_2^2\omega_7^3 - 72v_2^4\omega_7^2 - 24c_s^4\omega_{16}\omega_7^2 + 144c_s^2\omega_{16}v_2^2\omega_7^2 - 24c_s^2\omega_{16}\omega_7 + 30\omega_{16}v_2^2\omega_7^3 + 6c_s^4\omega_{16}\omega_7^3 + 36v_2^4\omega_7^3 + 6c_s^2\omega_{16}^2v_2^2\omega_7^3 + 12c_s^2\omega_{16}^2\omega_7 + 12\omega_{16}^2v_2^2\omega_7^2 - 3c_s^4\omega_{16}^2\omega_7^3 - 3\omega_{16}^2v_2^2\omega_7^3 - 12c_s^2\omega_{16}^2v_2^2\omega_7^2 + 24c_s^4\omega_{16}^2 + 24c_s^4\omega_{16}^2\omega_7^2 - 48c_s^4\omega_{16}^2\omega_7 + 108c_s^2v_2^2\omega_7^3 - 30\omega_{16}v_2^4\omega_7^3 + c_s^2\omega_{16}^2\omega_7^3 - 36c_s^2\omega_{16}^2v_2^2\omega_7 - 36v_2^2\omega_7^3 - 216c_s^2v_2^2\omega_7^2 + 72\omega_{16}v_2^4\omega_7^2 + 72v_2^2\omega_7^2 - 8c_s^2\omega_{16}^2\omega_7^2)\frac{\rho}{24\omega_{16}^2\omega_7^3}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}^4_y v_3} = C^{(3),\mathrm{CLBM1}}_{\mathrm{D}^4_y v_3}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}^4_y v_3} = (12\omega_3^2v_2^2\omega_{11}^2 - 36\omega_3c_s^2v_2^2\omega_{11}^2 + 3\omega_3^3v_2^4\omega_{11}^2 - 8\omega_3^2c_s^2\omega_{11}^2 - 3\omega_3^3c_s^4\omega_{11}^2 + 36\omega_3^3v_2^4 + 24\omega_3c_s^4\omega_{11} + 6\omega_3^3c_s^4\omega_{11} - 48\omega_3c_s^4\omega_{11}^2 + 24\omega_3^2c_s^2\omega_{11} + 72\omega_3c_s^2v_2^2\omega_{11} - 72\omega_3^2v_2^4 - 30\omega_3^3v_2^4\omega_{11} - 216\omega_3^2c_s^2v_2^2 - 72\omega_3^2v_2^2\omega_{11} + 24\omega_3^2c_s^4\omega_{11}^2 - 12\omega_3^2c_s^2v_2^2\omega_{11}^2 + \omega_3^3c_s^2\omega_{11}^2 - 72\omega_3^3c_s^2v_2^2\omega_{11} - 24\omega_3c_s^2\omega_{11} - 12\omega_3^2v_2^4\omega_{11}^2 + 72\omega_3^2v_2^2 - 3\omega_3^3v_2^2\omega_{11}^2 + 30\omega_3^3v_2^2\omega_{11} + 108\omega_3^3c_s^2v_2^2 + 72\omega_3^2v_2^4\omega_{11} - 6\omega_3^3c_s^2\omega_{11} - 36\omega_3^3v_2^2 + 6\omega_3^3c_s^2v_2^2\omega_{11}^2 + 12\omega_3c_s^2\omega_{11}^2 - 24\omega_3^2c_s^4\omega_{11} + 24c_s^4\omega_{11}^2 + 144\omega_3^2c_s^2v_2^2\omega_{11})\frac{\rho}{24\omega_3^3\omega_{11}^2}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}^4_y v_3} = (3\omega_3^2v_2^4\omega_4^2\omega_1^3 - 48\omega_3^2c_s^4\omega_4^2\omega_1 - 36\omega_3^2c_s^2v_2^2\omega_4^2\omega_1 + \omega_3^2c_s^2\omega_4^2\omega_1^3 + 36\omega_3v_2^2\omega_4\omega_1^2 + 36\omega_3c_s^2v_2^2\omega_4^2\omega_1 - 12\omega_3^2v_2^4\omega_4^2\omega_1^2 - 18\omega_3v_2^2\omega_4\omega_1^3 - 8\omega_3^2c_s^2\omega_4^2\omega_1^2 - 3\omega_3^2v_2^2\omega_4^2\omega_1^3 + 12\omega_3^2c_s^2\omega_4^2\omega_1 + 6\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^3 - 36\omega_3v_2^4\omega_4\omega_1^2 - 3\omega_3^2c_s^4\omega_4^2\omega_1^3 + 72\omega_3c_s^2v_2^2\omega_4^2\omega_1^2 + 9\omega_3^2v_2^4\omega_1^3 - 54\omega_3^2c_s^2v_2^2\omega_1^2 - 12\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^2 + 12\omega_3^2v_2^2\omega_4^2\omega_1^2 + 24\omega_3^2c_s^4\omega_4^2 + 27\omega_3^2c_s^2v_2^2\omega_1^3 - 18\omega_3^2v_2^4\omega_1^2 - 36\omega_3c_s^2v_2^2\omega_4^2\omega_1^3 + 24\omega_3^2c_s^4\omega_4^2\omega_1^2 + 18\omega_3v_2^4\omega_4\omega_1^3 + 72\omega_3^2c_s^2v_2^2\omega_4\omega_1^2 + 18v_2^2\omega_4^2\omega_1^2 - 36\omega_3^2v_2^2\omega_4\omega_1^2 - 3\omega_3c_s^2\omega_4^2\omega_1^3 + 27c_s^2v_2^2\omega_4^2\omega_1^3 + 12\omega_3c_s^4\omega_4^2\omega_1 + 54\omega_3c_s^2v_2^2\omega_4\omega_1^3 - 12\omega_3^2c_s^4\omega_4\omega_1^2 - 15\omega_3v_2^4\omega_4^2\omega_1^3 + 12\omega_3c_s^2\omega_4^2\omega_1^2 + 15\omega_3^2v_2^2\omega_4\omega_1^3 - 54c_s^2v_2^2\omega_4^2\omega_1^2 - 9v_2^2\omega_4^2\omega_1^3 - 36\omega_3^2c_s^2v_2^2\omega_4\omega_1^3 - 12\omega_3^2c_s^2\omega_4\omega_1 + 36\omega_3v_2^4\omega_4^2\omega_1^2 + 3\omega_3^2c_s^4\omega_4\omega_1^3 - 108\omega_3c_s^2v_2^2\omega_4\omega_1^2 + 3\omega_3c_s^4\omega_4^2\omega_1^3 + 36\omega_3^2v_2^2\omega_4\omega_1^2 - 18v_2^4\omega_4^2\omega_1^2 - 12\omega_3c_s^2\omega_4^2\omega_1 + 18\omega_3^2v_2^2\omega_1^2 + 15\omega_3v_2^2\omega_4^2\omega_1^3 + 12\omega_3^2c_s^2\omega_4\omega_1^2 + 9v_2^4\omega_4^2\omega_1^3 - 15\omega_3^2v_2^4\omega_4\omega_1^3 - 12\omega_3c_s^4\omega_4^2\omega_1^2 + 12\omega_3^2c_s^4\omega_4\omega_1 - 3\omega_3^2c_s^2\omega_4\omega_1^3 - 36\omega_3v_2^2\omega_4^2\omega_1^2 + 36\omega_3^2c_s^2v_2^2\omega_4\omega_1 - 9\omega_3^2v_2^2\omega_1^3)\frac{\rho}{24\omega_3^2\omega_4^2\omega_1^3}$

coefficient $C^{(3)}_{\mathrm{D}^3_x \mathrm{D}_z \rho}$ at $\frac{\partial^4 \rho}{\partial x_1^3 \partial x_3}$:

$C^{(3),\mathrm{SRT}}_{\mathrm{D}^3_x \mathrm{D}_z \rho} = (24 - 24v_1^2 + 36v_1^2\omega - 14v_1^2\omega^2 - \omega^3 + 14\omega^2 + v_1^2\omega^3 - 36\omega - 42c_s^2\omega^2 + 3c_s^2\omega^3 + 108c_s^2\omega - 72c_s^2)\frac{c_s^2 v_1}{12\omega^3}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}^3_x \mathrm{D}_z \rho} = (3\omega_6^3\omega_{22}c_s^4\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2 + 18\omega_6^2\omega_{22}c_s^2v_1^2\omega_{13}\omega_{11}\omega_{18}\omega_9^2 - 12\omega_6^2c_s^2\omega_{13}^2\omega_{11}\omega_9^2 - 12\omega_6^3\omega_{22}v_3^2\omega_{13}^2\omega_{11}\omega_9 - 12\omega_6^3c_s^2\omega_{13}^2\omega_9^2 + 48\omega_6^2\omega_{22}v_3^2v_1^2\omega_{13}\omega_{11}\omega_{18}\omega_9^2 - 72\omega_6\omega_{22}v_3^2c_s^2\omega_{13}\omega_{11}\omega_{18}\omega_9^2 - 18\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9 + 36\omega_6^3v_3^2c_s^2\omega_{13}^2\omega_9^2 + 36\omega_6^3\omega_{22}c_s^4\omega_{13}^2\omega_{11}\omega_9 + 36\omega_6^2\omega_{22}v_3^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9 + 12\omega_6\omega_{22}c_s^2v_1^2\omega_{13}\omega_{11}\omega_{18}\omega_9^2 + 12\omega_6^2v_3^2v_1^2\omega_{13}\omega_{11}\omega_{18}\omega_9^2 - 72\omega_6^2\omega_{22}v_3^2c_s^2\omega_{13}\omega_{18}\omega_9^2 - 96\omega_{22}c_s^4\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2 - \omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2 + 12\omega_6^2c_s^2v_1^2\omega_{13}\omega_{11}\omega_{18}\omega_9^2 + 54\omega_6^2\omega_{22}c_s^4\omega_{13}^2\omega_{11}\omega_{18}\omega_9 - 36\omega_6^2v_3^2c_s^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2 - 36\omega_6^3\omega_{22}c_s^4\omega_{13}^2\omega_9 + 6\omega_6^3\omega_{22}v_3^2\omega_{13}^2\omega_{18}\omega_9 + 12\omega_6\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18}\omega_9^2 + 12\omega_6^3c_s^2v_1^2\omega_{13}^2\omega_9^2 + 24\omega_6^2\omega_{22}v_3^2\omega_{13}\omega_{18}\omega_9^2 + 18\omega_6^3\omega_{22}c_s^4\omega_{13}^2\omega_{18}\omega_9 + 24\omega_6\omega_{22}v_3^2\omega_{13}\omega_{11}\omega_{18}\omega_9^2 + 18\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}\omega_{11}\omega_{18}\omega_9 + 12\omega_6^3\omega_{22}v_3^2v_1^2\omega_{13}\omega_{18}\omega_9^2 - 5\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9 + 12\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_9 + 12\omega_6^2c_s^2v_1^2\omega_{13}^2\omega_{11}\omega_9^2 + 12\omega_6^2v_3^2v_1^2\omega_{13}^2\omega_{11}\omega_9^2 + 12\omega_6\omega_{22}c_s^4\omega_{13}\omega_{11}\omega_{18}\omega_9^2 + 9\omega_6^3\omega_{22}v_3^2v_1^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9 + 12\omega_6^2\omega_{22}c_s^2\omega_{11}\omega_{18}\omega_9^2 - 6\omega_6^3c_s^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2 + 36\omega_6^3c_s^4\omega_{13}^2\omega_9^2 -$

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

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x^3\mathrm{D}_z\rho}=C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^3\mathrm{D}_z\rho}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x^3\mathrm{D}_z\rho}=(-3\omega_6^2\omega_{22}v_1^2\omega_{13}\omega_{11}\omega_{18}\omega_9+54\omega_6\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_{18}+12\omega_6v_1^2\omega_{13}^2\omega_{11}\omega_9+3\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9+12\omega_6^2\omega_{22}\omega_{13}^2-$
$12\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}+6\omega_6^2v_1^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9-12\omega_{22}v_1^2\omega_{13}^2\omega_{11}\omega_{18}+12\omega_{22}\omega_{13}\omega_{11}\omega_{18}\omega_9+36\omega_6^2c_s^2\omega_{13}^2\omega_9-6\omega_6^2v_1^2\omega_{13}^2\omega_{18}\omega_9-$
$12\omega_6\omega_{22}v_1^2\omega_{11}\omega_{18}\omega_9-18\omega_6^2c_s^2\omega_{13}\omega_{11}\omega_{18}\omega_9+3\omega_6^2\omega_{22}\omega_{13}\omega_{11}\omega_{18}\omega_9-5\omega_6^2\omega_{22}v_1^2\omega_{13}^2\omega_{11}\omega_{18}+18\omega_6^2\omega_{22}c_s^2\omega_{11}\omega_{18}\omega_9-36\omega_6^2\omega_{22}c_s^2\omega_{13}^2-$
$12\omega_6^2v_1^2\omega_{13}^2\omega_{11}\omega_9+36\omega_6c_s^2\omega_{13}^2\omega_{11}\omega_9+6\omega_6^2\omega_{22}v_1^2\omega_{13}^2\omega_{18}+12\omega_6^2\omega_{13}^2\omega_{11}\omega_9-36\omega_6\omega_{22}c_s^2\omega_{13}^2\omega_{11}-18\omega_6\omega_{22}\omega_{13}\omega_{11}\omega_{18}\omega_9+$
$18\omega_6\omega_{22}v_1^2\omega_{13}^2\omega_{11}\omega_{18}-36\omega_6\omega_{22}c_s^2\omega_{11}\omega_{18}\omega_9-12\omega_6\omega_{22}v_1^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9-18\omega_6^2c_s^2\omega_{13}^2\omega_{18}\omega_9+54\omega_6\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18}\omega_9-$
$12\omega_6\omega_{13}\omega_{11}\omega_{18}\omega_9-36\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_{18}-15\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_{18}+6\omega_6^2\omega_{13}\omega_{11}\omega_{18}\omega_9+6\omega_6^2\omega_{13}^2\omega_{18}\omega_9-36\omega_6^2c_s^2\omega_{13}^2\omega_{11}\omega_9-$
$12\omega_6v_1^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9+36\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9+6\omega_6^2\omega_{22}v_1^2\omega_{11}\omega_{18}\omega_9-12\omega_{22}v_1^2\omega_{13}\omega_{11}\omega_{18}\omega_9+36\omega_6c_s^2\omega_{13}\omega_{11}\omega_{18}\omega_9+36\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_{11}-$
$6\omega_6^2\omega_{22}\omega_{13}^2\omega_{18}-12\omega_6^2\omega_{13}^2\omega_9+18\omega_6^2c_s^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9-6\omega_6^2v_1^2\omega_{13}\omega_{11}\omega_{18}\omega_9+12\omega_6\omega_{22}\omega_{13}^2\omega_{11}-12\omega_{22}\omega_{13}^2\omega_{11}\omega_{18}\omega_9-18\omega_6\omega_{22}\omega_{13}^2\omega_{11}\omega_{18}-$
$9\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18}\omega_9+\omega_6^2\omega_{22}v_1^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9+12\omega_{22}\omega_{13}^2\omega_{11}\omega_{18}-\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}\omega_{18}\omega_9+12\omega_6^2v_1^2\omega_{13}^2\omega_9+5\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}\omega_{18}-$
$36\omega_6\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9+12\omega_6\omega_{13}^2\omega_{11}\omega_{18}\omega_9+18\omega_6\omega_{22}v_1^2\omega_{13}\omega_{11}\omega_{18}\omega_9-12\omega_6\omega_{13}^2\omega_{11}\omega_9+12\omega_6\omega_{22}\omega_{13}^2\omega_{11}\omega_{18}\omega_9+12\omega_6^2\omega_{22}v_1^2\omega_{13}^2\omega_{11}+$
$12\omega_6\omega_{22}\omega_{11}\omega_{18}\omega_9+12\omega_{22}v_1^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9-36\omega_6c_s^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9-12\omega_6\omega_{22}v_1^2\omega_{13}^2\omega_{11}-12\omega_6^2\omega_{22}v_1^2\omega_{13}^2+18\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_{18}+$
$12\omega_6v_1^2\omega_{13}\omega_{11}\omega_{18}\omega_9-36\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18}\omega_9-6\omega_6^2\omega_{22}\omega_{11}\omega_{18}\omega_9-6\omega_6^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9)\frac{c_s^2v_1}{12\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}\omega_{18}\omega_9}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x^3\mathrm{D}_z\rho}=C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x^3\mathrm{D}_z\rho}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x^3\mathrm{D}_z\rho}=(6\omega_2^2\omega_{12}+3c_s^2\omega_4\omega_2^2\omega_{12}^2-18c_s^2\omega_2^2\omega_{12}-12\omega_4\omega_{12}^2-36c_s^2\omega_4\omega_2+6v_1^2\omega_2\omega_{12}^2-3v_1^2\omega_4\omega_2^2\omega_{12}+36c_s^2\omega_4\omega_{12}^2-\omega_4\omega_2^2\omega_{12}^2+$
$12\omega_4\omega_2-36c_s^2\omega_4\omega_{12}-6\omega_4\omega_2^2+3\omega_4\omega_2^2\omega_{12}+12\omega_4\omega_{12}+18c_s^2\omega_4\omega_2^2+v_1^2\omega_4\omega_2^2\omega_{12}^2-12v_1^2\omega_{12}^2+12v_1^2\omega_2\omega_{12}-9c_s^2\omega_4\omega_2^2\omega_{12}+3c_s^2\omega_2^2\omega_{12}^2-$
$\omega_2^2\omega_{12}^2+12\omega_{12}^2+54c_s^2\omega_4\omega_2\omega_{12}+18c_s^2\omega_2\omega_{12}^2-36c_s^2\omega_{12}^2-12v_1^2\omega_4\omega_2+12v_1^2\omega_4\omega_{12}^2-6\omega_2\omega_{12}^2-18\omega_4\omega_2\omega_{12}-6v_1^2\omega_2^2\omega_{12}-12v_1^2\omega_4\omega_2\omega_{12}^2+$
$18v_1^2\omega_4\omega_2\omega_{12}+v_1^2\omega_2^2\omega_{12}^2+12\omega_4\omega_2\omega_{12}^2-12v_1^2\omega_4\omega_{12}-12\omega_2\omega_{12}-36c_s^2\omega_4\omega_2\omega_{12}^2+36c_s^2\omega_2\omega_{12}+6v_1^2\omega_4\omega_2^2)\frac{c_s^2v_1}{12\omega_4\omega_2^2\omega_{12}^2}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x^3\mathrm{D}_z\rho}=(-56\omega_3^2c_s^2v_1^2\omega_4^2\omega_1\omega_2^2+9\omega_3^2c_s^2\omega_4\omega_1^3\omega_2^3+36\omega_3^2c_s^2v_1^2\omega_4\omega_1^2\omega_2^3+120\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^2+36\omega_3^2c_s^2\omega_1^2\omega_2^3-18c_s^2\omega_4^2\omega_1^3\omega_2^3+120\omega_3^2v_1^4\omega_4^2\omega_1^2\omega_2+$
$6\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2^3+18c_s^2v_1^2\omega_4^2\omega_1^3\omega_2^3+32\omega_3^2v_1^2\omega_4^2\omega_1\omega_2^2-104\omega_3^2c_s^2\omega_4^2\omega_1^3-342\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^2+54\omega_3^2c_s^4\omega_1^3\omega_2^3-276\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2+78\omega_3^2v_1^4\omega_4^2\omega_1^3\omega_2^2+$
$216\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^3+1232\omega_3^2c_s^2v_1^2\omega_4^2\omega_1\omega_2^3+48\omega_3c_s^4\omega_4^2\omega_1^3\omega_2+12\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^2-288\omega_3^2c_s^4\omega_4^2\omega_2^3-256\omega_3^2v_1^2\omega_4^2\omega_1\omega_2^3-108\omega_3^2c_s^4\omega_1^2\omega_2^3+$
$18\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^3+72\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2+56\omega_3c_s^2\omega_4^2\omega_1\omega_2^3-36c_s^2v_1^2\omega_4^2\omega_1^2\omega_2^3-56\omega_3c_s^2v_1^2\omega_4^2\omega_1\omega_2^3+144\omega_3^2c_s^4\omega_4^2\omega_1^3-8\omega_3^2\omega_4^2\omega_1\omega_2^2+36c_s^2\omega_4^2\omega_1^2\omega_2^3-$
$78\omega_3^2v_1^4\omega_4^2\omega_1^2\omega_2^3-132\omega_3^2v_1^4\omega_4^2\omega_1^3\omega_2+56\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^2-18\omega_3^2c_s^2\omega_1^3\omega_2^2-108\omega_3c_s^4\omega_4^2\omega_1^3\omega_2^2-9\omega_3^2c_s^2v_1^2\omega_4\omega_1^3\omega_2^3-36\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^2-6\omega_3^2v_3^2\omega_4^2\omega_1^3\omega_2^2+$
$144\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^2-27\omega_3c_s^4\omega_4^2\omega_1^3\omega_2^3+208\omega_3^2c_s^2\omega_4^2\omega_2^3-368\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^3+28\omega_3^2\omega_4^2\omega_1\omega_2^3-96\omega_3^2v_1^4\omega_4^2\omega_1^2\omega_2^2+40\omega_3c_s^2v_1^2\omega_4^2\omega_1^2\omega_2^2+54c_s^4\omega_4^2\omega_1^3\omega_2^3-$
$18\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^2\omega_2^3-136\omega_3^2v_1^2\omega_4^2\omega_1^2\omega_2-40\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^2-27\omega_3^2c_s^4\omega_4\omega_1^3\omega_2^3+8\omega_3^2\omega_4^2\omega_1^3+6\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^3\omega_2^3-144\omega_3^2v_1^4\omega_4^2\omega_2^3+184\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^3+$
$448\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^2\omega_2+208\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2-24\omega_3^2v_1^4\omega_4^2\omega_1\omega_2^2-14\omega_3^2\omega_4^2\omega_1^2\omega_2^3-6\omega_3^2v_3^4\omega_4^2\omega_1^2\omega_2^3-20\omega_3^2\omega_4^2\omega_1^3\omega_2-72\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^3-16\omega_3c_s^2\omega_4^2\omega_1^3\omega_2+$
$16\omega_3c_s^2v_1^2\omega_4^2\omega_1^3\omega_2-36\omega_3^2c_s^2v_1^2\omega_1^2\omega_2^3-92\omega_3^2v_1^2\omega_4^2\omega_1^3\omega_2^2+72\omega_3c_s^2v_1^2\omega_4^2\omega_1^2\omega_2^3-56\omega_3^2v_1^2\omega_4^2\omega_1^3+228\omega_3^2v_1^4\omega_4^2\omega_1\omega_2^3-8\omega_3^2\omega_4^2\omega_1^2\omega_2^2+320\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^3+$
$394\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^3\omega_2^2+52\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^2+16\omega_3^2\omega_4^2\omega_1^2\omega_2-6\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2^3-460\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^2\omega_2^3-168\omega_3c_s^4\omega_4^2\omega_1\omega_2^3-88\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2-$
$712\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^3\omega_2-144\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^2+108\omega_3^2c_s^4\omega_4\omega_1^2\omega_2^3+160\omega_3^2v_1^2\omega_4^2\omega_2^3+36\omega_3c_s^2\omega_4^2\omega_1^3\omega_2^2+92\omega_3^2v_1^2\omega_4^2\omega_1^2\omega_2^3-36\omega_3c_s^2v_1^2\omega_4^2\omega_1^3\omega_2^2-$
$108c_s^4\omega_4^2\omega_1^2\omega_2^3+152\omega_3^2v_1^2\omega_4^2\omega_1^3\omega_2-784\omega_3^2c_s^2v_1^2\omega_4^2\omega_2^3-118\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2^2-412\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^2\omega_2^2+6\omega_3^2v_3^4\omega_4^2\omega_1^3\omega_2^2+14\omega_3^2\omega_4^2\omega_1^3\omega_2^2+18\omega_3^2c_s^2v_1^2\omega_1^3\omega_2^3+$
$18\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^3\omega_2^2-9\omega_3c_s^2v_1^2\omega_4^2\omega_1^3\omega_2^3+48\omega_3^2v_1^4\omega_4^2\omega_1^3+104\omega_3^2v_1^2\omega_4^2\omega_1^2\omega_2^2-16\omega_3^2\omega_4^2\omega_2^3+9\omega_3c_s^2\omega_4^2\omega_1^3\omega_2^3+588\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^3)\frac{v_1}{72\omega_3^2\omega_4^2\omega_1^3\omega_2^3}$

coefficient $C^{(3)}_{\mathrm{D}^3_x\mathrm{D}_z v_1}$ **at** $\frac{\partial^4 v_1}{\partial x_1^3 \partial x_3}$**:**

$$C^{(3),\mathrm{SRT}}_{\mathrm{D}^3_x\mathrm{D}_z v_1} = (-12 + 36v_1^2 - 54v_1^2\omega + 18v_1^2\omega^2 - 6\omega^2 + 18\omega + 2c_s^2\omega^2 - c_s^2\omega^3)\frac{c_s^2\rho}{12\omega^3}$$

$$\begin{aligned}
C^{(3),\mathrm{MRT1}}_{\mathrm{D}^3_x\mathrm{D}_z v_1} = {} & (-\omega_6^3\omega_{22}c_s^4\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2 - 102\omega_6^2\omega_{22}c_s^2v_1^2\omega_{13}\omega_{11}\omega_{18}\omega_9^2 - 12\omega_6^2c_s^2\omega_{13}^2\omega_{11}\omega_9^2 - 12\omega_6^3\omega_{22}v_3^2\omega_{13}^2\omega_{11}\omega_9 - 12\omega_6^3c_s^2\omega_{13}^2\omega_9^2 + \\
& 144\omega_6^2\omega_{22}v_3^2v_1^2\omega_{13}\omega_{11}\omega_{18}\omega_9^2 - 24\omega_6\omega_{22}v_3^2c_s^2\omega_{13}\omega_{11}\omega_{18}\omega_9^2 - 18\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9 + 12\omega_6^3v_3^2c_s^2\omega_{13}^2\omega_9^2 + 12\omega_6^3\omega_{22}c_s^4\omega_{13}^2\omega_{11}\omega_9 + \\
& 36\omega_6^2\omega_{22}v_3^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9 + 60\omega_6\omega_{22}c_s^2v_1^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2 + 36\omega_6^2v_3^2v_1^2\omega_{13}\omega_{11}\omega_{18}\omega_9^2 - 24\omega_6^2\omega_{22}v_3^2c_s^2\omega_{13}\omega_{18}\omega_9^2 - 12\omega_{22}c_s^4\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2 + \\
& 36\omega_6^2c_s^2v_1^2\omega_{13}\omega_{11}\omega_{18}\omega_9^2 + 18\omega_6^2\omega_{22}c_s^4\omega_{13}^2\omega_{11}\omega_{18}\omega_9 - 12\omega_6^2v_3^2c_s^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2 - 12\omega_6^3\omega_{22}c_s^4\omega_{13}^2\omega_9 + 6\omega_6^3\omega_{22}v_3^2\omega_{13}^2\omega_{18}\omega_9 - \\
& 12\omega_6\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18}\omega_9^2 + 36\omega_6^3c_s^2v_1^2\omega_{13}^2\omega_9^2 + 24\omega_6^2\omega_{22}v_3^2\omega_{13}\omega_{18}\omega_9^2 + 6\omega_6^3\omega_{22}c_s^4\omega_{13}^2\omega_{18}\omega_9 + 24\omega_6\omega_{22}v_3^2\omega_{13}\omega_{11}\omega_{18}\omega_9^2 + \\
& 6\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}\omega_{11}\omega_{18}\omega_9 + 36\omega_6^3\omega_{22}v_3^2v_1^2\omega_{13}\omega_{18}\omega_9^2 - 15\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9 + 12\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_9 + 36\omega_6^2c_s^2v_1^2\omega_{13}^2\omega_{11}\omega_9^2 + \\
& 36\omega_6^2v_3^2v_1^2\omega_{13}^2\omega_{11}\omega_9^2 + 12\omega_6\omega_{22}c_s^4\omega_{13}\omega_{11}\omega_{18}\omega_9^2 + 27\omega_6^3\omega_{22}v_3^2v_1^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9 - 6\omega_6^3c_s^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2 + 12\omega_6^3c_s^4\omega_{13}^2\omega_9^2 - \\
& 15\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}\omega_{11}\omega_{18}\omega_9^2 - 6\omega_6^3v_3^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2 - 12\omega_6^3c_s^4\omega_{13}^2\omega_{11}\omega_9^2 - 12\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}^2\omega_9 + 6\omega_6^3c_s^4\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2 + 6\omega_6^3\omega_{22}v_3^2\omega_{13}^2\omega_{11}\omega_{18} - \\
& 72\omega_6^2\omega_{22}v_3^2v_1^2\omega_{13}\omega_{18}\omega_9^2 + 12\omega_6^3v_3^2\omega_{13}^2\omega_{11}\omega_9^2 - 9\omega_6^3\omega_{22}v_3^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9 + 12\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_9 - 48\omega_{22}c_s^2v_1^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2 + 5\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9 - \\
& 12\omega_6^2v_3^2\omega_{13}\omega_{11}\omega_{18}\omega_9^2 - 12\omega_6^2c_s^2\omega_{13}\omega_{11}\omega_{18}\omega_9^2 - 5\omega_6^2\omega_{22}c_s^4\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2 + 6\omega_6^3v_3^2c_s^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2 - 5\omega_6^3\omega_{22}c_s^4\omega_{13}^2\omega_{11}\omega_{18}\omega_9 + \\
& 72\omega_6\omega_{22}v_3^2v_1^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9 - 6\omega_6^3c_s^4\omega_{13}^2\omega_{18}\omega_9^2 - 36\omega_6^2\omega_{22}v_3^2c_s^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9 - 36\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}^2\omega_9 - 6\omega_6^3\omega_{22}v_3^2\omega_{11}\omega_{18}\omega_9^2 - \\
& 18\omega_6^3c_s^2v_1^2\omega_{13}\omega_{11}\omega_{18}\omega_9^2 + 12\omega_6^2v_3^2c_s^2\omega_{13}^2\omega_{11}\omega_9^2 + \omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2 + 12\omega_6^2c_s^4\omega_{13}\omega_{11}\omega_{18}\omega_9^2 - 36\omega_6^2\omega_{22}v_3^2v_1^2\omega_{13}\omega_{11}\omega_{18}\omega_9 - \\
& 36\omega_6\omega_{22}c_s^2v_1^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9 + 6\omega_6^3v_3^2\omega_{13}^2\omega_{18}\omega_9^2 + 12\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}\omega_{18}\omega_9^2 - 18\omega_6^3v_3^2v_1^2\omega_{13}\omega_{11}\omega_{18}\omega_9^2 - 12\omega_6^2v_3^2\omega_{13}^2\omega_{11}\omega_9^2 - 12\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_9 - \\
& 36\omega_6^2c_s^2v_1^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2 + 12\omega_6^2v_3^2c_s^2\omega_{13}\omega_{11}\omega_{18}\omega_9^2 - 12\omega_6^2\omega_{22}v_3^2c_s^2\omega_{13}^2\omega_{11}\omega_9 - 36\omega_6^2v_3^2v_1^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2 + 12\omega_6^2c_s^4\omega_{13}^2\omega_{11}\omega_9^2 + \\
& 15\omega_6^3\omega_{22}v_3^2\omega_{13}\omega_{11}\omega_{18}\omega_9^2 - 18\omega_6^3\omega_{22}v_3^2v_1^2\omega_{13}^2\omega_{18}\omega_9 - 36\omega_6^3v_3^2v_1^2\omega_{13}^2\omega_{11}\omega_9^2 - 6\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18}\omega_9^2 + 18\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}^2\omega_{18}\omega_9 - \\
& 36\omega_6^3c_s^2v_1^2\omega_{13}^2\omega_{11}\omega_9^2 + 6\omega_6^3\omega_{22}v_3^2c_s^2\omega_{11}\omega_{18}\omega_9^2 - 24\omega_6^2\omega_{22}v_3^2\omega_{13}^2\omega_{18}\omega_9 + 36\omega_6^2\omega_{22}v_3^2v_1^2\omega_{13}^2\omega_{11}\omega_{18} + 12\omega_6^2\omega_{22}v_3^2\omega_{13}\omega_{11}\omega_{18}\omega_9 + \\
& 60\omega_6\omega_{22}c_s^2v_1^2\omega_{13}\omega_{11}\omega_{18}\omega_9^2 - 15\omega_6^2\omega_{22}c_s^2v_1^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2 + 6\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_{11}\omega_{18}\omega_9^2 - 12\omega_6^3\omega_{22}v_3^2\omega_{13}\omega_{18}\omega_9^2 - 72\omega_6\omega_{22}v_3^2v_1^2\omega_{13}\omega_{11}\omega_{18}\omega_9^2 + \\
& 48\omega_6^2\omega_{22}v_3^2c_s^2\omega_{13}\omega_{11}\omega_{18}\omega_9^2 + 12\omega_6^3\omega_{22}v_3^2\omega_{13}^2\omega_9 + 18\omega_6\omega_{22}c_s^4\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2 - 6\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_{18}\omega_9 + 18\omega_6^3\omega_{22}v_3^2v_1^2\omega_{13}\omega_{11}\omega_{18}\omega_9 - \\
& 18\omega_6^3c_s^2v_1^2\omega_{13}^2\omega_{18}\omega_9^2 + 36\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}^2\omega_{11}\omega_9 + 9\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9 - 18\omega_6^3v_3^2v_1^2\omega_{13}^2\omega_{18}\omega_9^2 + 36\omega_6^3\omega_{22}v_3^2v_1^2\omega_{13}^2\omega_{11}\omega_9 + 36\omega_6^3v_3^2v_1^2\omega_{13}^2\omega_9^2 + \\
& 24\omega_6^2\omega_{22}v_3^2c_s^2\omega_{13}^2\omega_{18}\omega_9 + 24\omega_6^2\omega_{22}c_s^2v_1^2\omega_{11}\omega_{18}\omega_9^2 - 6\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}^2\omega_{11}\omega_{18} - 36\omega_6^2\omega_{22}v_3^2v_1^2\omega_{11}\omega_{18}\omega_9^2 + 12\omega_6^2\omega_{22}v_3^2\omega_{13}^2\omega_{11}\omega_9 - \\
& 12\omega_6^2\omega_{22}c_s^4\omega_{13}^2\omega_{11}\omega_9 - 6\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}^2\omega_{18}\omega_9 - 12\omega_6^3v_3^2c_s^2\omega_{13}^2\omega_{11}\omega_9^2 + 12\omega_6\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9 + 12\omega_6^2\omega_{22}v_3^2\omega_{11}\omega_{18}\omega_9^2 - 36\omega_6^2\omega_{22}v_3^2v_1^2\omega_{13}^2\omega_{11}\omega_9 - \\
& 24\omega_6\omega_{22}v_3^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9 - 12\omega_6^3v_3^2\omega_{13}^2\omega_9^2 - 36\omega_6^2\omega_{22}c_s^2v_1^2\omega_{13}^2\omega_{11}\omega_9 - 6\omega_6^3c_s^4\omega_{13}\omega_{11}\omega_{18}\omega_9^2 - 45\omega_6^3\omega_{22}v_3^2v_1^2\omega_{13}\omega_{11}\omega_{18}\omega_9^2 - \\
& 12\omega_6\omega_{22}c_s^4\omega_{13}^2\omega_{11}\omega_{18}\omega_9 + 12\omega_6^3c_s^2\omega_{13}^2\omega_{11}\omega_9^2 + 18\omega_6^3\omega_{22}v_3^2v_1^2\omega_{11}\omega_{18}\omega_9^2 + 6\omega_6^3c_s^2\omega_{13}\omega_{11}\omega_{18}\omega_9^2 + 30\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_{11}\omega_{18}\omega_9^2 - \\
& 12\omega_6^3\omega_{22}c_s^2v_1^2\omega_{11}\omega_{18}\omega_9^2 + 12\omega_6^2\omega_{22}v_3^2c_s^2\omega_{13}^2\omega_{11}\omega_{18} + 6\omega_6^3v_3^2\omega_{13}\omega_{11}\omega_{18}\omega_9^2 + 18\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18}\omega_9^2 - 108\omega_6^2\omega_{22}v_3^2v_1^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9 - \\
& 12\omega_6^2\omega_{22}v_3^2\omega_{13}^2\omega_{11}\omega_{18} + 24\omega_6\omega_{22}v_3^2c_s^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9 - 12\omega_6^2c_s^4\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2 - 48\omega_6^2\omega_{22}v_3^2\omega_{13}\omega_{11}\omega_{18}\omega_9^2 + 72\omega_6^2\omega_{22}v_3^2v_1^2\omega_{13}^2\omega_{18}\omega_9 - \\
& 6\omega_6^3v_3^2c_s^2\omega_{13}^2\omega_{18}\omega_9^2 + 18\omega_6^3v_3^2v_1^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2 + 12\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}^2\omega_{11}\omega_9 - 6\omega_6^3v_3^2c_s^2\omega_{13}\omega_{11}\omega_{18}\omega_9^2 + 54\omega_6^2\omega_{22}c_s^2v_1^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9 - \\
& 12\omega_6^2\omega_{22}v_3^2c_s^2\omega_{13}\omega_{11}\omega_{18}\omega_9 + 18\omega_6^3c_s^2v_1^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2 + 12\omega_6^2v_3^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2 + 12\omega_6^2c_s^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2 - 18\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_{11}\omega_{18}\omega_9^2 - \\
& 36\omega_6^3\omega_{22}v_3^2v_1^2\omega_{13}^2\omega_9 - 6\omega_6^3\omega_{22}v_3^2\omega_{13}\omega_{11}\omega_{18}\omega_9 - 18\omega_6^3\omega_{22}v_3^2v_1^2\omega_{13}^2\omega_{11}\omega_{18} - 12\omega_6^2\omega_{22}v_3^2c_s^2\omega_{11}\omega_{18}\omega_9^2 + 6\omega_6^3c_s^2\omega_{13}^2\omega_{18}\omega_9^2)\frac{\rho}{12\omega_6^3\omega_{22}\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2}
\end{aligned}$$

$$C^{(3),\mathrm{MRT2}}_{\mathrm{D}^3_x\mathrm{D}_z v_1} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}^3_x\mathrm{D}_z v_1}$$

$$\begin{aligned}
C^{(3),\mathrm{CLBM1}}_{\mathrm{D}^3_x\mathrm{D}_z v_1} = {} & (-3\omega_6^2\omega_{22}v_1^2\omega_{13}\omega_{11}\omega_{18}\omega_9 - 6\omega_6^3\omega_{22}\omega_{13}\omega_{18} - 18\omega_6^3v_1^2\omega_{13}\omega_{18}\omega_9 - 5\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18} + 36\omega_6\omega_{22}v_1^2\omega_{11}\omega_{18}\omega_9 - \\
& 12\omega_6^2c_s^2\omega_{13}\omega_{11}\omega_{18}\omega_9 + 6\omega_6^3\omega_{11}\omega_{18}\omega_9 - 12\omega_6^3\omega_{22}c_s^2\omega_{13} + \omega_6^2\omega_{22}\omega_{13}\omega_{11}\omega_{18}\omega_9 - 36\omega_6^3v_1^2\omega_{13}\omega_{11}\omega_9 - 18\omega_6^2\omega_{22}c_s^2\omega_{11}\omega_{18}\omega_9 - \\
& 6\omega_6^3\omega_{22}\omega_{11}\omega_{18}\omega_9 + 36\omega_6^3v_1^2\omega_{13}\omega_9 - 36\omega_6^2\omega_{22}v_1^2\omega_{13}\omega_{11} + 36\omega_6^2v_1^2\omega_{11}\omega_{18}\omega_9 + 18\omega_6^3v_1^2\omega_{13}\omega_{11}\omega_{18}\omega_9 - 6\omega_6^3c_s^2\omega_{13}\omega_{18}\omega_9 + 12\omega_6\omega_{22}\omega_{13}\omega_{11}\omega_{18} + \\
& 12\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_{11} - 12\omega_6^2\omega_{11}\omega_{18}\omega_9 - 15\omega_6^3\omega_{22}v_1^2\omega_{13}\omega_{11}\omega_{18} + 12\omega_6\omega_{22}c_s^2\omega_{11}\omega_{18}\omega_9 + 18\omega_6\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18}\omega_9 - 12\omega_6^3c_s^2\omega_{13}\omega_{11}\omega_9 + \\
& 12\omega_6^2\omega_{13}\omega_{11}\omega_{18}\omega_9 - 18\omega_6^2\omega_{22}\omega_{13}\omega_{11}\omega_{18} + 18\omega_6^3\omega_{22}v_1^2\omega_{13}\omega_{18} + 12\omega_6^2c_s^2\omega_{11}\omega_{18}\omega_9 - 54\omega_6^2\omega_{22}v_1^2\omega_{11}\omega_{18}\omega_9 - 36\omega_6\omega_{22}v_1^2\omega_{13}\omega_{11}\omega_{18} + \\
& 6\omega_6^3\omega_{22}c_s^2\omega_{11}\omega_{18}\omega_9 - 12\omega_6^2\omega_{13}\omega_{11}\omega_9 - 36\omega_6^2v_1^2\omega_{13}\omega_{11}\omega_{18}\omega_9 + 12\omega_6^3c_s^2\omega_{13}\omega_9 - 5\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18}\omega_9 - 12\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{11} - \\
& 12\omega_6^3\omega_{22}\omega_{13}\omega_{11} + 6\omega_6^3c_s^2\omega_{13}\omega_{11}\omega_{18}\omega_9 + 5\omega_6^3\omega_{22}\omega_{13}\omega_{11}\omega_{18} + 18\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18} - 6\omega_6^3c_s^2\omega_{11}\omega_{18}\omega_9 - 6\omega_6^3\omega_{13}\omega_{11}\omega_{18}\omega_9 + \\
& 12\omega_6^2c_s^2\omega_{13}\omega_{11}\omega_9 - 12\omega_6\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18} + 12\omega_6^3\omega_{22}\omega_{13} + 6\omega_6^3\omega_{13}\omega_{18}\omega_9 + 18\omega_6^3\omega_{22}v_1^2\omega_{11}\omega_{18}\omega_9 + 6\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_{18} - 12\omega_6^3\omega_{13}\omega_9 - \\
& 12\omega_6\omega_{22}\omega_{11}\omega_{18}\omega_9 - 18\omega_6^3v_1^2\omega_{11}\omega_{18}\omega_9 + 36\omega_6^3\omega_{22}v_1^2\omega_{13}\omega_{11} + 54\omega_6^2\omega_{22}v_1^2\omega_{13}\omega_{11}\omega_{18} + 12\omega_6^3\omega_{13}\omega_{11}\omega_9 - 12\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18}\omega_9 + \\
& 18\omega_6^2\omega_{22}\omega_{11}\omega_{18}\omega_9 - 36\omega_6^3\omega_{22}v_1^2\omega_{13} + 36\omega_6^2v_1^2\omega_{13}\omega_{11}\omega_9 + 12\omega_6^2\omega_{22}\omega_{13}\omega_{11} - \omega_6^3\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18}\omega_9)\frac{c_s^2\rho}{12\omega_6^3\omega_{22}\omega_{13}\omega_{11}\omega_{18}\omega_9}
\end{aligned}$$

$$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}^3_x\mathrm{D}_z v_1} = C^{(3),\mathrm{CLBM1}}_{\mathrm{D}^3_x\mathrm{D}_z v_1}$$

$$\begin{aligned}
C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}^3_x\mathrm{D}_z v_1} = {} & (-6\omega_2^2\omega_{12} - 12\omega_2^2 - 18v_1^2\omega_2^3 + 6c_s^2\omega_2^2\omega_{12} + 12c_s^2\omega_4\omega_2 - 3v_1^2\omega_4\omega_2^2\omega_{12} + 36v_1^2\omega_2^2 + 6\omega_2^3 - c_s^2\omega_4\omega_2^3\omega_{12} - 12\omega_4\omega_2 - 12c_s^2\omega_4\omega_{12} + \\
& c_s^2\omega_2^3\omega_{12} + 18\omega_4\omega_2^2 + \omega_4\omega_2^2\omega_{12} - \omega_2^3\omega_{12} - 18c_s^2\omega_4\omega_2^2 - 36v_1^2\omega_2\omega_{12} - 6\omega_4\omega_2^3 - 5c_s^2\omega_4\omega_2^2\omega_{12} + 6c_s^2\omega_4\omega_2^3 + 18c_s^2\omega_4\omega_2\omega_{12} + 36v_1^2\omega_4\omega_2 + \\
& 18v_1^2\omega_2^2\omega_{12} - 6c_s^2\omega_2^3 + 18v_1^2\omega_4\omega_2^3 + 3v_1^2\omega_2^3\omega_{12} + 12c_s^2\omega_2^2 + 12\omega_2\omega_{12} - 12c_s^2\omega_2\omega_{12} - 54v_1^2\omega_4\omega_2^2)\frac{c_s^2\rho}{12\omega_4\omega_2^3\omega_{12}}
\end{aligned}$$

$$\begin{aligned}
C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}^3_x\mathrm{D}_z v_1} = {} & (94\omega_3c_s^4\omega_4\omega_1\omega_2^3 - 4\omega_3\omega_4\omega_1\omega_2^2 - 312\omega_3c_s^2v_1^2\omega_4\omega_2^3 + 84\omega_3v_1^2\omega_4\omega_1^2\omega_2^2 + 40\omega_3c_s^2\omega_4\omega_2^3 + 8c_s^4\omega_4\omega_1^3\omega_2 + \omega_3v_3^4\omega_4\omega_1^3\omega_2^2 - \\
& 18c_s^4\omega_4\omega_1^2\omega_2^3 + 153\omega_3c_s^2v_1^2\omega_4\omega_1^3\omega_2^2 - 24\omega_3c_s^2\omega_4\omega_1^3\omega_2^2 + 138\omega_3v_1^2\omega_4\omega_1^3\omega_2 + 81\omega_3v_1^2\omega_4\omega_1^2\omega_2^3 + 14\omega_3\omega_4\omega_1\omega_2^3 - 3\omega_3v_3^2c_s^2\omega_4\omega_1^2\omega_2^3 - 28\omega_3c_s^4\omega_4\omega_1\omega_2^2 + \\
& 16\omega_3c_s^4\omega_4\omega_1^3 - 16\omega_3c_s^2\omega_4\omega_1^2\omega_2 + 20c_s^4\omega_4\omega_1^2\omega_2^2 + 36\omega_3c_s^4\omega_1\omega_2^3 + 120\omega_3c_s^2v_1^2\omega_4\omega_1^2\omega_2 - 6\omega_3c_s^2\omega_4\omega_1^2\omega_2^2 - 68\omega_3c_s^4\omega_4\omega_2^3 + 408\omega_3v_1^4\omega_4\omega_1\omega_2^3 + \\
& 9c_s^4\omega_4\omega_1^3\omega_2^3 - 90\omega_3c_s^2v_1^2\omega_4\omega_1^2\omega_2^2 - 81\omega_3v_1^2\omega_4\omega_1^3\omega_2^2 + 3\omega_3v_3^2c_s^2\omega_4\omega_1^3\omega_2^2 + 24c_s^2v_1^2\omega_4\omega_1\omega_2^3 - 153\omega_3c_s^2v_1^2\omega_4\omega_1^2\omega_2^3 - 18c_s^4\omega_4\omega_1^3\omega_2^2 - \omega_3v_3^4\omega_4\omega_1^2\omega_2^3 - \\
& 288\omega_3c_s^2v_1^2\omega_4\omega_1^3\omega_2 - 24\omega_3v_1^4\omega_4\omega_1\omega_2^2 + 42\omega_3c_s^2\omega_4\omega_1^3\omega_2 - 20\omega_3c_s^2\omega_4\omega_1^3 + 144\omega_3c_s^2v_1^2\omega_4\omega_1^3 + 24\omega_3c_s^2\omega_4\omega_1^2\omega_2^3 - 8c_s^2\omega_4\omega_1\omega_2^3 - 96\omega_3v_1^2\omega_4\omega_1^2\omega_2 - \\
& 36\omega_3c_s^2\omega_1\omega_2^3 + 108\omega_3c_s^2v_1^2\omega_1\omega_2^3 + 9\omega_3c_s^4\omega_1^3\omega_2^3 - 168\omega_3v_1^4\omega_4\omega_1^2\omega_2^2 + 24c_s^2v_1^2\omega_4\omega_1^3\omega_2 - 54c_s^2v_1^2\omega_4\omega_1^2\omega_2^3 + 432\omega_3c_s^2v_1^2\omega_4\omega_1\omega_2^3 - 54\omega_3c_s^2\omega_4\omega_1\omega_2^3 +
\end{aligned}$$

$96\omega_3 v_1^4\omega_4\omega_1^3 + 17\omega_3 c_s^4\omega_4\omega_1^3\omega_2^2 + 8\omega_3\omega_4\omega_1^2\omega_2 - \omega_3 v_3^2\omega_4\omega_1^3\omega_2^2 - 108\omega_3 c_s^2 v_1^2\omega_1^2\omega_2^3 - 8c_s^2\omega_4\omega_1^3\omega_2 + 18c_s^2\omega_4\omega_1^2\omega_2^3 + 36\omega_3 c_s^2\omega_1^2\omega_2^3 +$
$32\omega_3 c_s^2\omega_4\omega_1\omega_2^2 + 144\omega_3 v_1^2\omega_4\omega_2^3 - 60\omega_3 c_s^2 v_1^2\omega_4\omega_1\omega_2^2 - 240\omega_3 v_1^4\omega_4\omega_1^3\omega_2 + 60c_s^2 v_1^2\omega_4\omega_1^2\omega_2^2 - 138\omega_3 v_1^4\omega_4\omega_1^2\omega_2^3 - 20c_s^2\omega_4\omega_1^2\omega_2^2 + 8\omega_3 c_s^4\omega_4\omega_1^2\omega_2 +$
$7\omega_3\omega_4\omega_1^3\omega_2^2 + 4\omega_3\omega_4\omega_1^3 - 3\omega_3 c_s^4\omega_4\omega_1^3\omega_2^3 - 222\omega_3 v_1^2\omega_4\omega_1\omega_2^3 + 27\omega_3 c_s^2 v_1^2\omega_1^3\omega_2^3 - 9c_s^2\omega_4\omega_1^3\omega_2^3 - 9\omega_3 c_s^2\omega_1^3\omega_2^3 - 10\omega_3\omega_4\omega_1^3\omega_2 + 10\omega_3 c_s^4\omega_4\omega_1^2\omega_2^2 -$
$60\omega_3 v_1^2\omega_4\omega_1^3 - 7\omega_3\omega_4\omega_1^2\omega_2^3 - 36\omega_3 c_s^4\omega_1^2\omega_2^3 + 138\omega_3 v_1^4\omega_4\omega_1^3\omega_2^2 - 8\omega_3\omega_4\omega_2^3 + 27c_s^2 v_1^2\omega_4\omega_1^3\omega_2^3 - 4\omega_3\omega_4\omega_1^2\omega_2^2 - 32\omega_3 c_s^4\omega_4\omega_1^3\omega_2 - 29\omega_3 c_s^4\omega_4\omega_1^2\omega_2^3 +$
$18c_s^2\omega_4\omega_1^3\omega_2^2 + 12\omega_3 v_1^2\omega_4\omega_1\omega_2^2 - 264\omega_3 v_1^4\omega_4\omega_2^3 + \omega_3 v_3^2\omega_4\omega_1^2\omega_2^3 - 54c_s^2 v_1^2\omega_4\omega_1^3\omega_2^2 + 8c_s^4\omega_4\omega_1\omega_2^3 + 192\omega_3 v_1^4\omega_4\omega_1^2\omega_2)\frac{\rho}{36\omega_3\omega_4\omega_1^3\omega_2^3}$

coefficient $C^{(3)}_{\mathrm{D}_x^3\mathrm{D}_z v_3}$ **at** $\frac{\partial^4 v_3}{\partial x_1^3\partial x_3}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x^3\mathrm{D}_z v_3} = (2 - 2v_1^2 + v_1^2\omega - \omega + 3c_s^2\omega - 6c_s^2)\frac{v_3 v_1\rho}{12\omega}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^3\mathrm{D}_z v_3} = (-36\omega_6\omega_{22}c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9^2 + 12\omega_6^2\omega_{22}\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9 - 24\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18}^2\omega_9^2 + 12\omega_6^2\omega_{22}v_1^2\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^2 -$
$6\omega_6^3\omega_{22}v_1^2\omega_{13}^2\omega_{11}^2\omega_{18}^2 - 12\omega_6^3\omega_{22}\omega_{13}\omega_{11}\omega_{18}^2\omega_9^2 + 12\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9^2 + 12\omega_6\omega_{22}v_1^2\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2 + 36\omega_6\omega_{22}\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9^2 -$
$24\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_{11}^2\omega_9^2 - 84\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2 - 24\omega_6^3 v_1^2\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9^2 - 42\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9 - 24\omega_6^2\omega_{22}v_1^2\omega_{11}^2\omega_{18}^2\omega_9^2 -$
$12\omega_6^2\omega_{22}v_1^2\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9^2 - 12\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^2 - 12\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}^2\omega_{18}^2 - 4\omega_6^3\omega_{22}\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9 - 96\omega_{22}c_s^2\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2 -$
$12\omega_6^2\omega_{22}v_1^2\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9 - 18\omega_6^3\omega_{22}v_1^2\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9^2 - 12\omega_6^3 v_1^2\omega_{13}\omega_{11}\omega_{18}^2\omega_9^2 - 24\omega_6^2\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9^2 + 24\omega_6^2 c_s^2\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9^2 +$
$3\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2 + 6\omega_6^3\omega_{22}v_1^2\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9 + 24\omega_6^3 c_s^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2 - 18\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_{11}^2\omega_{18}^2 + 24\omega_6^2 c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9^2 -$
$24\omega_6^2\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9^2 - 24\omega_6^2 v_1^2\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2 + 12\omega_6^3\omega_{22}v_1^2\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9^2 + 12\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9 - 66\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2 -$
$72\omega_6\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^2 + 66\omega_6^2\omega_{22}v_1^2\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9^2 - 24\omega_6^3\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2 - \omega_6^3\omega_{22}\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2 - 12\omega_6^3 v_1^2\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9^2 +$
$12\omega_6^3 c_s^2\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2 + 12\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18}^2\omega_9^2 - 48\omega_6^2\omega_{22}c_s^2\omega_{11}^2\omega_{18}^2\omega_9^2 - 12\omega_6^3\omega_{22}\omega_{11}^2\omega_{18}^2\omega_9^2 - 66\omega_6^2\omega_{22}\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9^2 - 12\omega_6^3\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2 +$
$12\omega_6^3\omega_{22}\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2 + 48\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18}\omega_9^2 + 12\omega_6\omega_{22}v_1^2\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9 + 72\omega_6\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2 - 12\omega_6^3\omega_{22}v_1^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2 -$
$24\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_{18}^2\omega_9^2 - 12\omega_6\omega_{22}\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2 - 24\omega_6^3 c_s^2\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9^2 - 24\omega_6^2\omega_{22}v_1^2\omega_{13}\omega_{11}\omega_{18}^2\omega_9^2 + 24\omega_6^3\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9^2 +$
$12\omega_6^3\omega_{22}v_1^2\omega_{11}^2\omega_{18}^2\omega_9^2 - 36\omega_6\omega_{22}v_1^2\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9^2 + 156\omega_6\omega_{22}c_s^2\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2 + 18\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9 + 84\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18}^2\omega_9^2 +$
$24\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_{11}^2\omega_9^2 - 24\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9^2 - 12\omega_6^3 c_s^2\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^2 + \omega_6^3\omega_{22}v_1^2\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2 + 24\omega_6^2\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2 + 24\omega_6^2 v_1^2\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9^2 -$
$6\omega_6^3\omega_{22}\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9 - 132\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{11}^2\omega_{18}\omega_9^2 - 18\omega_6^2\omega_{22}v_1^2\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9 + 24\omega_6^2\omega_{22}\omega_{11}^2\omega_{18}^2\omega_9^2 - 12\omega_6^3\omega_{22}\omega_{13}^2\omega_{11}^2\omega_{18}\omega_9^2 +$
$12\omega_6^3\omega_{13}^2\omega_{11}\omega_{18}^2\omega_9^2 - 12\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9 + 24\omega_6^2\omega_{22}\omega_{13}\omega_{11}\omega_{18}^2\omega_9^2 + 12\omega_6^2\omega_{22}v_1^2\omega_{13}^2\omega_{11}^2\omega_{18}^2 - 12\omega_6^2\omega_{22}v_1^2\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2 +$
$18\omega_6^3\omega_{22}\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9^2 + 90\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9^2 + 24\omega_6^2 v_1^2\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9^2 + 24\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_{18}\omega_9^2 + 24\omega_6^3 v_1^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2 +$
$6\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9 + 4\omega_6^3\omega_{22}v_1^2\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9 + 60\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_{18}\omega_9^2 + 24\omega_6^3\omega_{22}c_s^2\omega_{11}^2\omega_{18}^2\omega_9^2 - 24\omega_6^2 c_s^2\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2 +$
$12\omega_6^2\omega_{22}\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2 + 12\omega_6\omega_{22}c_s^2\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9 + 12\omega_6^3\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9^2 - 12\omega_6^3 c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2\omega_9^2 + 6\omega_6^3\omega_{22}\omega_{13}^2\omega_{11}^2\omega_{18}^2 + 24\omega_6^3\omega_{22}c_s^2\omega_{13}^2\omega_{11}\omega_9^2 +$
$36\omega_6^2\omega_{22}c_s^2\omega_{13}^2\omega_{11}^2\omega_{18}^2 - 12\omega_6\omega_{22}\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9 + 12\omega_6^3 v_1^2\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2 + 12\omega_6^3\omega_{22}v_1^2\omega_{13}\omega_{11}\omega_{18}^2\omega_9^2)\frac{v_3 v_1\rho}{12\omega_6^3\omega_{22}\omega_{13}^2\omega_{11}^2\omega_{18}^2\omega_9^2}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x^3\mathrm{D}_z v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^3\mathrm{D}_z v_3}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x^3\mathrm{D}_z v_3} = (-3v_1^2\omega_9 - \omega_{13} + v_1^2\omega_{13} + v_1^2\omega_{13}\omega_9 + 3c_s^2\omega_{13} - 9c_s^2\omega_9 - \omega_{13}\omega_9 + 3c_s^2\omega_{13}\omega_9 + 3\omega_9)\frac{v_3 v_1\rho}{12\omega_{13}\omega_9}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x^3\mathrm{D}_z v_3} = C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x^3\mathrm{D}_z v_3}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x^3\mathrm{D}_z v_3} = (-3v_1^2\omega_4 + v_1^2\omega_{12} + 3c_s^2\omega_4\omega_{12} - \omega_4\omega_{12} + 3\omega_4 - 9c_s^2\omega_4 + v_1^2\omega_4\omega_{12} - \omega_{12} + 3c_s^2\omega_{12})\frac{v_3 v_1\rho}{12\omega_4\omega_{12}}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x^3\mathrm{D}_z v_3} = (9\omega_4\omega_1\omega_2 - 27\omega_3 c_s^2\omega_1\omega_2 - 27c_s^2\omega_4\omega_1\omega_2 + 12\omega_3 c_s^2\omega_4\omega_1 + 6\omega_3 c_s^2\omega_4\omega_2 - 9v_1^2\omega_4\omega_1\omega_2 - 6\omega_3\omega_4\omega_1\omega_2 + 2\omega_3\omega_4\omega_2 -$
$9\omega_3 v_1^2\omega_1\omega_2 + 2\omega_3 v_1^2\omega_4\omega_1 - 18\omega_3 v_3^2\omega_4\omega_2 + 6\omega_3 v_1^2\omega_4\omega_1\omega_2 + 18\omega_3 c_s^2\omega_4\omega_1\omega_2 - 8\omega_3\omega_4\omega_1 + 18\omega_3 v_3^2\omega_4\omega_1 + 4\omega_3 v_1^2\omega_4\omega_2 + 9\omega_3\omega_1\omega_2)\frac{v_3 v_1\rho}{72\omega_3\omega_4\omega_1\omega_2}$

coefficient $C^{(3)}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z\rho}$ **at** $\frac{\partial^4\rho}{\partial x_1^2\partial x_2\partial x_3}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z\rho} = (-36v_3^2 v_2 v_1^2\omega - 14v_3^2 c_s^2 v_1\omega^2 + 24c_s^2 v_2 v_1^2 + v_3^2 c_s^2 v_1\omega^3 + 36v_3^2 v_2^2 v_1\omega - v_3^2 v_2 v_1^2\omega^3 - 14v_3^2 v_2^2 v_1\omega^2 - 24v_3^2 c_s^2 v_1 + v_3^2 v_2^2 v_1\omega^3 +$
$14v_3^2 v_2 v_1^2\omega^2 + 36v_3^2 c_s^2 v_1\omega - 24v_3^2 v_2^2 v_1 - 36c_s^2 v_2 v_1^2\omega - 36v_3^2 c_s^2 v_2\omega + 24v_3^2 c_s^2 v_2 - 24c_s^2 v_2^2 v_1 + 36c_s^2 v_2^2 v_1\omega - v_3^2 c_s^2 v_2\omega^3 - c_s^2 v_2 v_1^2\omega^3 -$
$14c_s^2 v_2^2 v_1\omega^2 + c_s^2 v_2^2 v_1\omega^3 + 14c_s^2 v_2 v_1^2\omega^2 + 14v_3^2 c_s^2 v_2\omega^2 + 24v_3^2 v_2 v_1^2)\frac{1}{2\omega^3}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z\rho} = (-2\omega_6^2\omega_{22}\omega_{19}v_3^2 v_2 v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{22}\omega_{19}v_3^2 v_2^2 v_1\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{22}\omega_{19}v_3^2 v_2^2 v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} -$
$2\omega_6^3\omega_{22}\omega_{19}v_3^2 v_2 v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2 + 2\omega_6^3\omega_{22}\omega_{19}v_3^2 c_s^2 v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 - 2\omega_6^3\omega_{22}\omega_{19}v_3^2 c_s^2 v_1\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8\omega_{18} -$
$2\omega_6^3\omega_{22}\omega_{19}c_s^2 v_2^2 v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}v_3^2 v_2^2 v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 - 2\omega_6^3\omega_{22}\omega_{19}v_3^2 v_2 v_1^2\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8\omega_{18} -$
$\omega_6^3\omega_{22}c_s^2 v_2^2 v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{19}v_3^2 v_2 v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 + 2\omega_6^3\omega_{22}\omega_{19}v_3^2 v_2^2 v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} -$
$2\omega_6^2\omega_{22}\omega_{19}v_3^2 c_s^2 v_2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}v_3^2 c_s^2 v_2\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8^2 - \omega_6^3\omega_{22}\omega_{19}v_3^2 v_2 v_1^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} -$
$8\omega_6^2\omega_{22}\omega_{19}c_s^4 v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}v_3^2 c_s^2 v_2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}v_3^2 v_2 v_1^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18} +$
$2\omega_6^2\omega_{22}\omega_{19}v_3^2 c_s^2 v_1\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{22}\omega_{19}c_s^2 v_2^2 v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{22}\omega_{19}c_s^2 v_2 v_1^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} +$
$\omega_6^3\omega_{19}v_3^2 c_s^2 v_1\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{19}c_s^2 v_2 v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + \omega_6^3\omega_{19}v_3^2 c_s^2 v_1\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} +$
$2\omega_6^2\omega_{22}\omega_{19}c_s^2 v_2^2 v_1\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}c_s^2 v_2 v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 + 2\omega_6^3\omega_{22}\omega_{19}v_3^2 c_s^2 v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18} -$
$2\omega_6^3\omega_{22}\omega_{19}c_s^2 v_2 v_1^2\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8^2 + 2\omega_6^2\omega_{22}\omega_{19}v_3^2 c_s^2 v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + \omega_6^3\omega_{22}\omega_{19}c_s^2 v_2^2 v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} -$
$2\omega_6^2\omega_{19}c_s^2 v_2^2 v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 + 2\omega_6^3\omega_{22}\omega_{19}c_s^2 v_2 v_1^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2 - 2\omega_6^3\omega_{22}\omega_{19}v_3^2 v_2 v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18} -$

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

$\omega_6^3\omega_{22}c_s^2v_2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - \omega_6^3\omega_{22}c_s^2v_2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^3\omega_{19}v_3^2c_s^2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 +$
$4\omega_6^3\omega_{22}\omega_{19}c_s^4v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_6^3\omega_{22}v_3^2v_2v_1^2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{22}\omega_{19}c_s^2v_2v_1^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} +$
$2\omega_6^3\omega_{22}v_3^2c_s^2v_1\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{22}\omega_{19}v_3^2v_2v_1^2\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8^2 - 2\omega_6^2\omega_{22}\omega_{19}v_3^2c_s^2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18} +$
$2\omega_6^2\omega_{22}\omega_{19}v_3^2c_s^2v_2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{22}\omega_{19}c_s^2v_2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 - 2\omega_6^2\omega_{22}\omega_{19}c_s^2v_2^2v_1\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8\omega_{18} -$
$4\omega_6^3\omega_{22}\omega_{19}c_s^4v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}v_3^2v_2v_1^2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8^2\omega_{18} + \omega_6^3\omega_{19}c_s^2v_2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} -$
$2\omega_6^3\omega_{22}\omega_{19}c_s^2v_2v_1^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_{18} + \omega_6^3\omega_{22}\omega_{19}c_s^2v_2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_{18} - \omega_6^3\omega_{22}v_3^2c_s^2v_2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} +$
$2\omega_6^3\omega_{22}\omega_{19}v_3^2c_s^2v_1\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^3\omega_{22}v_3^2c_s^2v_1\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_{18} + \omega_6^3\omega_{22}\omega_{19}c_s^2v_2^2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8^2\omega_{18} +$
$2\omega_6^2\omega_{22}\omega_{19}v_3^2v_2^2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} - 2\omega_6^3\omega_{22}v_3^2v_2v_1^2\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{22}\omega_{19}v_3^2v_2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18} -$
$\omega_6^3\omega_{22}\omega_{19}v_3^2v_2^2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^3\omega_{19}v_3^2v_2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 - 2\omega_6^3\omega_{22}v_3^2c_s^2v_1\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8^2\omega_{18} +$
$\omega_6^3\omega_{19}v_3^2c_s^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}v_3^2v_2v_1^2\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 4\omega_6^3\omega_{22}\omega_{19}c_s^4v_2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_{18} +$
$2\omega_6^3\omega_{22}c_s^2v_2^2v_1\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{19}v_3^2c_s^2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{22}\omega_{19}v_3^2c_s^2v_1\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8\omega_{18} +$
$2\omega_6^2\omega_{22}\omega_{19}v_3^2v_2v_1^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{22}\omega_{19}c_s^2v_2^2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18} + 2\omega_6^2\omega_{22}\omega_{19}v_3^2c_s^2v_2\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8^2 -$
$4\omega_6\omega_{22}\omega_{19}c_s^4v_2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 4\omega_6^2\omega_{22}\omega_{19}c_s^4v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + \omega_6^3\omega_{22}\omega_{19}v_3^2c_s^2v_2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} -$
$\omega_6^3\omega_{22}\omega_{19}v_3^2v_2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^3\omega_{22}c_s^2v_2^2v_1\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^3\omega_{19}v_3^2v_2^2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2 -$
$\omega_6^3\omega_{19}v_3^2v_2^2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}c_s^2v_2^2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} - 2\omega_6^2\omega_{19}v_3^2c_s^2v_1\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} -$
$2\omega_6^2\omega_{22}\omega_{19}v_3^2c_s^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}c_s^2v_2^2v_1\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}v_3^2v_2v_1^2\omega_{13}\omega_7^2\omega_{14}\omega_8^2\omega_{18} -$
$\omega_6^3\omega_{22}\omega_{19}v_3^2c_s^2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}v_3^2c_s^2v_1\omega_{13}\omega_7^2\omega_{14}\omega_8^2 + 2\omega_6^3\omega_{19}c_s^2v_2^2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 +$
$\omega_6^3\omega_{22}\omega_{19}v_3^2c_s^2v_2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{22}\omega_{19}c_s^2v_2v_1^2\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8^2)\frac{1}{2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z\rho} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z\rho}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z\rho} = (2\omega_6\omega_{22}v_3^2c_s^2v_2\omega_{13}\omega_7\omega_{14}\omega_8\omega_{18} + 2\omega_6\omega_{22}\omega_{19}c_s^2v_2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_{18} + 2\omega_{22}\omega_{19}v_3^2c_s^2v_2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} +$
$\omega_6\omega_{22}v_3^2v_2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_{22}\omega_{19}c_s^2v_2^2v_1\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_6\omega_{22}\omega_{19}v_3^2c_s^2v_1\omega_{13}\omega_{11}\omega_{14}\omega_8\omega_{18} -$
$2\omega_6\omega_{19}v_3^2c_s^2v_1\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8 + 2\omega_{22}\omega_{19}v_3^2c_s^2v_2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_{18} + 2\omega_{22}\omega_{19}c_s^2v_2^2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 + \omega_6\omega_{22}\omega_{19}v_3^2c_s^2v_1\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18} +$
$2\omega_6\omega_{22}\omega_{19}c_s^2v_2^2v_1\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8 + 2\omega_{22}\omega_{19}c_s^2v_2v_1^2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_{18} - \omega_6\omega_{22}v_3^2v_2v_1^2\omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_6\omega_{22}c_s^2v_2v_1^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_{18} +$
$2\omega_{22}\omega_{19}c_s^2v_2^2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18} + \omega_6\omega_{22}c_s^2v_2^2v_1\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_{18} + 2\omega_{22}\omega_{19}v_3^2c_s^2v_1\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8\omega_{18} -$
$2\omega_{22}\omega_{19}v_3^2v_2v_1^2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} - \omega_6\omega_{19}v_3^2c_s^2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_{22}\omega_{19}v_3^2c_s^2v_2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{18} -$
$2\omega_6\omega_{19}c_s^2v_2^2v_1\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8 + 2\omega_6\omega_{22}\omega_{19}c_s^2v_2^2v_1\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8 + 2\omega_{22}\omega_{19}v_3^2c_s^2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 +$
$2\omega_6\omega_{22}\omega_{19}v_3^2c_s^2v_1\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8 + 2\omega_{22}\omega_{19}c_s^2v_2^2v_1\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8\omega_{18} + \omega_6\omega_{22}v_3^2c_s^2v_1\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_{18} +$
$2\omega_{22}\omega_{19}v_3^2c_s^2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18} + 2\omega_6\omega_{22}v_3^2v_2v_1^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_{18} - 2\omega_6\omega_{22}\omega_{19}c_s^2v_2^2v_1\omega_{13}\omega_{20}\omega_{11}\omega_{18} -$
$2\omega_6\omega_{22}c_s^2v_2v_1^2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_{22}\omega_{19}v_3^2c_s^2v_1\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} - \omega_6\omega_{22}c_s^2v_2^2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} -$
$2\omega_6\omega_{22}\omega_{19}v_3^2v_2^2v_1\omega_{13}\omega_{11}\omega_{14}\omega_{18} + 2\omega_{22}\omega_{19}v_3^2v_2v_1^2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8 + 2\omega_6\omega_{22}\omega_{19}v_3^2c_s^2v_1\omega_{13}\omega_{20}\omega_{11}\omega_8\omega_{18} +$
$2\omega_6\omega_{22}\omega_{19}v_3^2v_2^2v_1\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8 + \omega_6\omega_{22}v_3^2c_s^2v_1\omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} - 2\omega_6\omega_{22}v_3^2c_s^2v_2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8\omega_{18} -$
$2\omega_{22}\omega_{19}v_3^2v_2v_1^2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_{22}\omega_{19}c_s^2v_2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_6\omega_{22}\omega_{19}v_3^2v_2^2v_1\omega_{13}\omega_{11}\omega_{14}\omega_8\omega_{18} -$
$2\omega_6\omega_{19}v_3^2v_2^2v_1\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8 + 2\omega_6\omega_{22}\omega_{19}c_s^2v_2^2v_1\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8 + \omega_6\omega_{22}\omega_{19}v_3^2v_2^2v_1\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18} - 2\omega_6\omega_{22}\omega_{19}v_3^2v_2^2v_1\omega_{13}\omega_{20}\omega_{11}\omega_{18} +$
$\omega_6\omega_{22}\omega_{19}c_s^2v_2^2v_1\omega_{13}\omega_{20}\omega_{11}\omega_8\omega_{18} + 2\omega_{22}\omega_{19}v_3^2v_2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{18} - 2\omega_6\omega_{22}\omega_{19}c_s^2v_2^2v_1\omega_{13}\omega_{11}\omega_{14}\omega_{18} + 2\omega_6\omega_{22}v_3^2v_2^2v_1\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8\omega_{18} +$
$2\omega_{22}\omega_{19}v_3^2v_2^2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 - 2\omega_{22}\omega_{19}v_3^2c_s^2v_2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_6\omega_{22}c_s^2v_2v_1^2\omega_{13}\omega_{11}\omega_{14}\omega_8\omega_{18} -$
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$\omega_6\omega_{22}\omega_{19}v_3^2v_2^2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + \omega_6\omega_{22}v_3^2v_2^2v_1\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_{18} + 2\omega_{22}\omega_{19}v_3^2v_2^2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18} +$
$2\omega_6\omega_{22}\omega_{19}v_3^2c_s^2v_1\omega_{13}\omega_7\omega_{14}\omega_8\omega_{18} - 2\omega_{22}\omega_{19}v_3^2c_s^2v_1\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8 + 2\omega_6\omega_{22}\omega_{19}v_3^2v_2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_{18} -$
$2\omega_6\omega_{22}\omega_{19}c_s^2v_2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{18} - 2\omega_{22}\omega_{19}v_3^2c_s^2v_2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18} - \omega_6\omega_{22}v_3^2c_s^2v_2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_{18} - 2\omega_{22}\omega_{19}c_s^2v_2v_1^2\omega_{13}\omega_{11}\omega_{14}\omega_{18} + 2\omega_6\omega_{22}v_3^2v_2^2v_1\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8\omega_{18} +$
$2\omega_6\omega_{22}\omega_{19}v_3^2c_s^2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 - 2\omega_6\omega_{22}\omega_{19}v_3^2c_s^2v_2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + \omega_6\omega_{22}v_3^2v_2^2v_1\omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} -$
$\omega_6\omega_{22}c_s^2v_2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_{18} - 2\omega_{22}\omega_{19}v_3^2c_s^2v_2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_6\omega_{22}\omega_{19}v_3^2c_s^2v_1\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8\omega_{18} +$
$2\omega_{22}\omega_{19}v_3^2c_s^2v_2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8\omega_{18} - 2\omega_{19}v_3^2c_s^2v_2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} - 2\omega_6\omega_{22}v_3^2v_2v_1^2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8\omega_{18} +$
$2\omega_6\omega_{22}\omega_3^2v_2v_1^2\omega_{13}\omega_{11}\omega_{14}\omega_8\omega_{18} - 2\omega_6\omega_{22}\omega_{19}v_3^2c_s^2v_2\omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_{18} + 2\omega_6\omega_{22}\omega_{19}c_s^2v_2v_1^2\omega_{13}\omega_{11}\omega_{14}\omega_{18} - 2\omega_6\omega_{22}\omega_{19}v_3^2c_s^2v_1\omega_{13}\omega_7\omega_{14}\omega_8 -$
$2\omega_6\omega_{22}\omega_{19}c_s^2v_2v_1^2\omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_{18} + \omega_6\omega_{19}v_3^2v_2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} - \omega_6\omega_{22}\omega_{19}c_s^2v_2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} -$
$2\omega_6\omega_{22}\omega_{19}v_3^2v_2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{18} + 2\omega_6\omega_{22}\omega_{19}v_3^2v_2v_1^2\omega_{13}\omega_{20}\omega_{11}\omega_{18} + 2\omega_6\omega_{22}\omega_{19}v_3^2c_s^2v_2\omega_{13}\omega_{11}\omega_{14}\omega_{18} +$
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$2\omega_6\omega_{22}c_s^2v_2^2v_1\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_6\omega_{22}\omega_{19}v_3^2v_2^2v_1\omega_{13}\omega_7\omega_{14}\omega_8\omega_{18} - 2\omega_6\omega_{22}\omega_{19}v_3^2v_2v_1^2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_{18} -$
$2\omega_{22}\omega_{19}v_3^2v_2^2v_1\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8 - 2\omega_{22}\omega_{19}c_s^2v_2v_1^2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_6\omega_{22}\omega_{19}v_3^2v_2v_1^2\omega_{13}\omega_{11}\omega_{14}\omega_{18} + 2\omega_6\omega_{22}\omega_{19}v_3^2c_s^2v_2\omega_{13}\omega_{20}\omega_{11}\omega_{18} +$
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$\omega_6\omega_{22}\omega_{19}v_3^2c_s^2v_1\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} - 2\omega_{22}\omega_{19}v_3^2c_s^2v_2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_6\omega_{22}\omega_{19}v_3^2c_s^2v_1\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8 +$
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$\omega_6\omega_{22}\omega_{19}v_3^2c_s^2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18} - 2\omega_6\omega_{22}\omega_{19}v_3^2c_s^2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 - 2\omega_{22}\omega_{19}c_s^2v_2^2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} -$

$$
2\omega_{19}v_3^2c_s^2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 + \omega_6\omega_{19}v_3^2c_s^2v_1\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_{18} - 2\omega_6\omega_{22}\omega_{19}v_3^2c_s^2v_2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8 - \omega_6\omega_{22}\omega_{19}c_s^2v_2v_1^2\omega_{13}\omega_{20}\omega_{11}\omega_8\omega_{18} -
2\omega_{22}\omega_{19}v_3^2v_2^2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{18} + \omega_6\omega_{22}c_s^2v_2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} - \omega_6\omega_{22}\omega_{19}v_3^2v_2v_1^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18} -
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\omega_6\omega_{22}\omega_{19}c_s^2v_2^2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18} - 2\omega_6\omega_{22}\omega_{19}v_3^2c_s^2v_1\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8\omega_{18} + \omega_6\omega_{22}\omega_{19}v_3^2c_s^2v_2\omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} +
\omega_6\omega_{22}v_3^2c_s^2v_2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} - 2\omega_6\omega_{22}c_s^2v_2^2v_1\omega_{13}\omega_7\omega_{14}\omega_8\omega_{18} - \omega_6\omega_{19}v_3^2c_s^2v_2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} - 2\omega_6\omega_{22}\omega_{19}c_s^2v_2v_1^2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8 -
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\omega_6\omega_{22}\omega_{19}c_s^2v_2v_1^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18} + \omega_6\omega_{22}\omega_{19}v_3^2c_s^2v_2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_{18} - 2\omega_{19}c_s^2v_2^2v_1\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} - 2\omega_6\omega_{22}\omega_{19}v_3^2c_s^2v_1\omega_{13}\omega_{11}\omega_{14}\omega_{18} -
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2\omega_{19}c_s^2v_2^2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 - \omega_6\omega_{22}\omega_{19}v_3^2v_2^2v_1\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_{18} + 2\omega_6\omega_{19}c_s^2v_2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8 - 2\omega_6\omega_{22}\omega_{19}c_s^2v_2v_1^2\omega_{13}\omega_{11}\omega_{14}\omega_8\omega_{18} +
\omega_6\omega_{22}\omega_{19}v_3^2v_2v_1^2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_{19}v_3^2c_s^2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} - 2\omega_6\omega_{22}\omega_{19}v_3^2v_2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8 -
\omega_6\omega_{22}\omega_{19}v_3^2c_s^2v_2\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18} - \omega_6\omega_{19}c_s^2v_2v_1^2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} - \omega_6\omega_{22}v_3^2v_2^2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_{22}\omega_{19}v_3^2v_2v_1^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18} -
2\omega_6\omega_{22}\omega_{19}v_3^2v_2^2v_1\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_6\omega_{22}\omega_{19}v_3^2v_2^2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{18} + 2\omega_6\omega_{22}\omega_{19}c_s^2v_2^2v_1\omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_{18} +
2\omega_6\omega_{19}v_3^2c_s^2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 - 2\omega_{19}v_3^2v_2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} - 2\omega_6\omega_{22}v_3^2v_2^2v_1\omega_{13}\omega_{11}\omega_{14}\omega_8\omega_{18} +
\omega_6\omega_{19}v_3^2c_s^2v_1\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} - \omega_6\omega_{22}\omega_{19}v_3^2c_s^2v_1\omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_6\omega_{22}\omega_{19}v_3^2c_s^2v_2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8\omega_{18} +
\omega_6\omega_{19}v_3^2c_s^2v_2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_6\omega_{22}\omega_{19}v_3^2c_s^2v_1\omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_{18} - \omega_6\omega_{19}v_3^2v_2^2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} +
2\omega_6\omega_{22}\omega_{19}c_s^2v_2v_1^2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8\omega_{18} + \omega_6\omega_{22}\omega_{19}c_s^2v_2^2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} - 2\omega_6\omega_{22}\omega_{19}v_3^2v_2v_1^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_{18} +
2\omega_6\omega_{22}\omega_{19}v_3^2v_2^2v_1\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_{18} + 2\omega_{22}\omega_{19}v_3^2v_2v_1^2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8 + 2\omega_{22}\omega_{19}v_3^2c_s^2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_{18} -
\omega_6\omega_{22}\omega_{19}v_3^2c_s^2v_1\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_{18} - 2\omega_{22}\omega_{19}v_3^2c_s^2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} - \omega_6\omega_{22}\omega_{19}v_3^2v_2^2v_1\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} +
2\omega_6\omega_{22}\omega_{19}v_3^2v_2^2v_1\omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_{18} - 2\omega_6\omega_{22}\omega_{19}c_s^2v_2^2v_1\omega_{13}\omega_7\omega_{14}\omega_8 + 2\omega_6\omega_{22}\omega_{19}v_3^2c_s^2v_2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 +
\omega_6\omega_{19}c_s^2v_2^2v_1\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} - \omega_6\omega_{19}c_s^2v_2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_{18} + 2\omega_{19}c_s^2v_2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 - 2\omega_{22}\omega_{19}v_3^2v_2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_{18} -
\omega_6\omega_{22}\omega_{19}c_s^2v_2^2v_1\omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_{22}\omega_{19}c_s^2v_2v_1^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18} + \omega_6\omega_{22}\omega_{19}v_3^2c_s^2v_2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18} +
2\omega_6\omega_{22}\omega_{19}v_3^2c_s^2v_1\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_{18} + 2\omega_6\omega_{22}\omega_{19}c_s^2v_2^2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{18} + \omega_6\omega_{22}\omega_{19}v_3^2v_2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_{18} +
2\omega_{22}\omega_{19}v_3^2c_s^2v_2\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18} + 2\omega_{19}c_s^2v_2v_1^2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} - \omega_6\omega_{22}\omega_{19}v_3^2v_2^2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18} - 2\omega_6\omega_{22}c_s^2v_2^2v_1\omega_{13}\omega_{11}\omega_{14}\omega_8\omega_{18} -
2\omega_6\omega_{22}\omega_{19}v_3^2v_2^2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 + \omega_6\omega_{22}\omega_{19}v_3^2c_s^2v_2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_{19}c_s^2v_2^2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} +
2\omega_6\omega_{19}c_s^2v_2^2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 - 2\omega_{19}v_3^2v_2^2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 + \omega_6\omega_{19}v_3^2v_2^2v_1\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_{18} +
2\omega_{22}\omega_{19}c_s^2v_2^2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_{18} + \omega_6\omega_{22}\omega_{19}v_3^2v_2v_1^2\omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_{19}v_3^2c_s^2v_2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} -
2\omega_6\omega_{22}\omega_{19}v_3^2v_2^2v_1\omega_{13}\omega_7\omega_{14}\omega_8 + 2\omega_6\omega_{22}\omega_{19}v_3^2c_s^2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{18} - \omega_6\omega_{22}\omega_{19}c_s^2v_2^2v_1\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_{18} + 2\omega_{22}\omega_{19}c_s^2v_2v_1^2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8 +
2\omega_6\omega_{22}\omega_{19}c_s^2v_2^2v_1\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_{18} - 2\omega_6\omega_{22}\omega_{19}c_s^2v_2v_1^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_{18} + \omega_6\omega_{22}\omega_{19}c_s^2v_2v_1^2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} -
\omega_6\omega_{19}v_3^2v_2v_1^2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_6\omega_{22}\omega_{19}c_s^2v_2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 + \omega_6\omega_{19}c_s^2v_2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} -
2\omega_6\omega_{22}v_3^2c_s^2v_1\omega_{13}\omega_{11}\omega_{14}\omega_8\omega_{18} - 2\omega_6\omega_{19}v_3^2v_2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 - 2\omega_{19}v_3^2v_2^2v_1\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} - 2\omega_6\omega_{22}\omega_{19}v_3^2c_s^2v_2\omega_{13}\omega_7\omega_{14}\omega_8\omega_{18} +
2\omega_{22}\omega_{19}v_3^2c_s^2v_2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8 + 2\omega_{19}v_3^2c_s^2v_2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 - \omega_6\omega_{19}v_3^2c_s^2v_2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_{18} -
\omega_6\omega_{22}\omega_{19}v_3^2v_2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + \omega_6\omega_{22}\omega_{19}c_s^2v_2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18}) \frac{1}{2\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}}
$$

$$
C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z\rho} = C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z\rho}
$$

$$
C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z\rho} = 0
$$

$$
C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z\rho} = (-432\omega_3^2c_s^2v_1^2\omega_4^2\omega_1\omega_2^2 - 27\omega_3^2c_s^2\omega_4\omega_1^3\omega_2^3 - 54\omega_3^2c_s^2v_2^2\omega_1^3\omega_2^3 + 192\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^2 - 108\omega_3^2c_s^2\omega_1^2\omega_2^3 - 54c_s^2\omega_4^2\omega_1^3\omega_2^3 +
32\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^2\omega_2^2 - 72\omega_3^2v_1^4\omega_4^2\omega_1^2\omega_2 + 96\omega_3^2v_1^2\omega_4^2\omega_1\omega_2^2 - 104\omega_3^2c_s^2\omega_4^2\omega_1^3 - 16\omega_3^2v_2^2\omega_4^2\omega_1^2\omega_2^2 - 30\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^3 - 162\omega_3^2c_s^4\omega_1^3\omega_2^3 - 27\omega_3c_s^2v_2^2\omega_4^2\omega_1^3\omega_2^3 -
168\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2 + 48\omega_3^2v_2^2v_1^2\omega_4^2\omega_1^3 - 8\omega_3^2v_2^2\omega_4^2\omega_2^3 - 40\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^3\omega_2 + 24c_s^2\omega_4^2\omega_1^3\omega_2^2 - 10\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^2\omega_2^3 + 32\omega_3^2c_s^2v_2^2\omega_4^2\omega_2^3 + 324\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^3 -
432\omega_3^2c_s^2v_1^2\omega_4^2\omega_1\omega_2^3 - 24\omega_3c_s^4\omega_4^2\omega_1^3\omega_2 + 8\omega_3^2v_2^2\omega_4^2\omega_1^3\omega_2 + 192\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^2 + 144\omega_3^2c_s^4\omega_4^2\omega_2^3 + 96\omega_3^2v_1^2\omega_4^2\omega_1\omega_2^3 + 108\omega_3c_s^2v_2^2\omega_4^2\omega_1^2\omega_2^3 +
324\omega_3^2c_s^4\omega_1^2\omega_2^3 - 72\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2 + 56\omega_3c_s^2\omega_4^2\omega_1\omega_2^3 - 8\omega_3^2v_2^2\omega_4^2\omega_1^3 - 8\omega_3c_s^2v_2^2\omega_4^2\omega_1^3\omega_2 - 96\omega_3^2v_2^2v_1^2\omega_4^2\omega_1\omega_2^2 + 32\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^3 + 144\omega_3^2c_s^4\omega_4^2\omega_1^3 +
10\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^3\omega_2^2 - 8\omega_3^2\omega_4^2\omega_1\omega_2^2 + 84c_s^2\omega_4^2\omega_1^2\omega_2^3 - 36\omega_3^2v_1^4\omega_4^2\omega_1^3\omega_2 + 128\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^2 + 54\omega_3^2c_s^2\omega_1^3\omega_2^3 + 108\omega_3^2c_s^2v_2^2\omega_1^2\omega_2^3 + 108\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^3 -
60\omega_3^2v_2^2v_1^2\omega_4^2\omega_1\omega_2^3 + 8\omega_3^2v_2^2\omega_4^2\omega_1^2\omega_2 + 30\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^2 + 64\omega_3c_s^2v_2^2\omega_4^2\omega_1^2\omega_2^2 - 81\omega_3c_s^4\omega_4^2\omega_1^3\omega_2^3 - 104\omega_3^2c_s^2\omega_4^2\omega_2^3 + 64\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^3 +
72\omega_3^2v_2^2v_1^2\omega_4^2\omega_2^3 - 8\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^2\omega_2 - 8\omega_3^2\omega_4^2\omega_1\omega_2^3 + 72\omega_3^2v_1^4\omega_4^2\omega_1^2\omega_2^2 + 162c_s^4\omega_4^2\omega_1^3\omega_2^3 - 60\omega_3^2v_2^2v_1^2\omega_4^2\omega_1^3\omega_2 + 96\omega_3^2v_1^2\omega_4^2\omega_1^2\omega_2 - 64\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^2 +
81\omega_3^2c_s^4\omega_4\omega_1^3\omega_2^3 + 8\omega_3^2\omega_4^2\omega_1^3 + 24\omega_3^2v_1^4\omega_4^2\omega_2^3 + 10\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^3 - 432\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^2\omega_2 + 112\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2 - 8\omega_3^2\omega_4^2\omega_1^3\omega_2 - 108\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^3 -
56\omega_3c_s^2v_2^2\omega_4^2\omega_1\omega_2^3 + 8\omega_3c_s^2\omega_4^2\omega_1^3\omega_2 - 84c_s^2v_2^2\omega_4^2\omega_1^2\omega_2^3 + 120\omega_3^2v_2^2v_1^2\omega_4^2\omega_1^2\omega_2^2 - 72c_s^4\omega_4^2\omega_1^3\omega_2^2 + 27\omega_3^2c_s^2v_2^2\omega_4\omega_1^3\omega_2^3 - 96\omega_3^2v_1^2\omega_4^2\omega_1^3 -
36\omega_3^2v_1^4\omega_4^2\omega_1\omega_2^3 + 16\omega_3^2\omega_4^2\omega_1^2\omega_2^2 + 432\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^3 - 176\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^2 + 8\omega_3^2c_s^2v_2^2\omega_4^2\omega_1\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^2\omega_2 - 168\omega_3c_s^4\omega_4^2\omega_1\omega_2^3 + 80\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2 -
432\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^3\omega_2 - 24c_s^2v_2^2\omega_4^2\omega_1^3\omega_2^2 - 216\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^2 + 8\omega_3^2v_2^2\omega_4^2\omega_1\omega_2^3 - 324\omega_3^2c_s^4\omega_4\omega_1^2\omega_2^3 - 96\omega_3^2v_1^2\omega_4^2\omega_2^3 - 24\omega_3^2v_2^2v_1^2\omega_4^2\omega_1^2\omega_2 -
252c_s^4\omega_4^2\omega_1^2\omega_2^3 + 96\omega_3^2v_1^2\omega_4^2\omega_1^3\omega_2 + 432\omega_3^2c_s^2v_1^2\omega_4^2\omega_2^3 - 10\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2^2 + 864\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^2\omega_2^2 - 108\omega_3^2c_s^2v_2^2\omega_4\omega_1^2\omega_2^3 - 56\omega_3^2c_s^2v_2^2\omega_4^2\omega_1\omega_2^2 +
48\omega_3^2v_1^4\omega_4^2\omega_1^3 - 192\omega_3^2v_1^2\omega_4^2\omega_1^2\omega_2^2 + 8\omega_3^2\omega_4^2\omega_2^3 + 27\omega_3c_s^2\omega_4^2\omega_1^3\omega_2^3 + 8\omega_3^2v_2^2\omega_4^2\omega_1\omega_2^2 + 54c_s^2v_2^2\omega_4^2\omega_1^3\omega_2^3 - 24\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^3) \frac{v_2}{72\omega_3^2\omega_4^2\omega_1^3\omega_2^3}
$$

coefficient $C^{(3)}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_1}$ **at** $\frac{\partial^4 v_1}{\partial x_1^2\partial x_2\partial x_3}$**:**

$$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_1} = (28c_s^2v_2v_1\omega^2 - 24c_s^2v_2^2 + 36v_3^2v_2^2\omega - 2c_s^2v_2v_1\omega^3 + 36v_3^2c_s^2\omega - 14v_3^2c_s^2\omega^2 + v_3^2v_2^2\omega^3 + 48c_s^2v_2v_1 - 24v_3^2v_2^2 - 14v_3^2v_2^2\omega^2 + v_3^2c_s^2\omega^3 - 72c_s^2v_2v_1\omega - 24v_3^2c_s^2 + 28v_3^2v_2v_1\omega^2 + c_s^2v_2^2\omega^3 + 48v_3^2v_2v_1 - 14c_s^2v_2^2\omega^2 - 2v_3^2v_2v_1\omega^3 + 36c_s^2v_2^2\omega - 72v_3^2v_2v_1\omega)\frac{\rho}{2\omega^3}$$

$$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_1} = (-2\omega_6^3\omega_{22}\omega_{19}v_3^2v_2^2\omega_{13}^2\omega_7\omega_{11}\omega_{14}\omega_8\omega_{18} - \omega_6^3\omega_{22}c_s^2v_2^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^3\omega_{19}v_3^2c_s^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 +$$
$$2\omega_6^2\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}^2\omega_7^2\omega_{11}\omega_{14}\omega_8\omega_{18} - 4\omega_6^2\omega_{22}\omega_{19}v_3^2v_2v_1\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} -$$
$$4\omega_6^3\omega_{22}c_s^2v_2v_1\omega_{13}^2\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{22}\omega_{19}c_s^2v_2^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}^2\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} +$$
$$4\omega_6^3\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}^2\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}c_s^2v_2^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2 + \omega_6^3\omega_{22}\omega_{19}c_s^2v_2^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} +$$
$$2\omega_6^3\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}^2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_{18} + 4\omega_6^3\omega_{19}v_3^2v_2v_1\omega_{13}^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2 - 2\omega_6^3\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18} +$$
$$4\omega_6^2\omega_{22}c_s^2v_2v_1\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_{18} + \omega_6^3\omega_{22}c_s^2v_2^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}c_s^2v_2^2\omega_{13}^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18} +$$
$$2\omega_6^3\omega_{22}\omega_{19}v_3^2v_2v_1\omega_{13}^2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 4\omega_6^3\omega_{19}c_s^2v_2v_1\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 + 2\omega_6^3\omega_{19}v_3^2v_2v_1\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} +$$
$$4\omega_6^2\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}^2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{22}\omega_{19}c_s^2v_2^2\omega_{13}^2\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^3\omega_{19}c_s^2v_2^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 +$$
$$2\omega_6^3\omega_{22}\omega_{19}c_s^2v_2^2\omega_{13}^2\omega_7^2\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}v_3^2v_2^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2 - 2\omega_6^3\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18} -$$
$$2\omega_6^3\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + \omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^3\omega_{22}v_3^2v_1\omega_{13}^2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} +$$
$$2\omega_6^3\omega_{22}\omega_{19}v_3^2v_2^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18} + 4\omega_6^2\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{19}v_3^2v_2^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} +$$
$$2\omega_6^2\omega_{22}\omega_{19}v_3^2v_2^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} + 6\omega_6^3\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + \omega_6^3\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} +$$
$$2\omega_6^3\omega_{22}\omega_{19}v_3^2v_2^2\omega_{13}^2\omega_7^2\omega_{11}\omega_{14}\omega_8^2 - 2\omega_6^3\omega_{22}\omega_{19}c_s^2v_2^2\omega_{13}^2\omega_7\omega_{11}\omega_{14}\omega_8\omega_{18} - 2\omega_6^3\omega_{22}v_3^2v_2^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_{18} -$$
$$\omega_6^3\omega_{22}\omega_{19}v_3^2v_2^2\omega_{13}^2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 4\omega_6^3\omega_{22}v_3^2v_2v_1\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_{18} + 4\omega_6^2\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}^2\omega_7^2\omega_{11}\omega_{14}\omega_8\omega_{18} +$$
$$4\omega_6^3\omega_{19}c_s^2v_2v_1\omega_{13}^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2 - 2\omega_6^3\omega_{22}\omega_{19}v_3^2v_2^2\omega_{13}^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18} - \omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} +$$
$$\omega_6^3\omega_{22}v_3^2v_2^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18} + 2\omega_6^2\omega_{22}\omega_{19}c_s^2v_2^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} +$$
$$\omega_6^3\omega_{22}v_3^2v_2^2\omega_{13}^2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} - 4\omega_6^2\omega_{22}\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} -$$
$$2\omega_6^3\omega_{19}v_3^2c_s^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2 + 2\omega_6^2\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}^2\omega_7\omega_{11}\omega_{14}\omega_8\omega_{18} +$$
$$4\omega_6^3\omega_{22}c_s^2v_2v_1\omega_{13}^2\omega_7\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^3\omega_{19}v_3^2v_2^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 - 2\omega_6^3\omega_{22}v_3^2v_2v_1\omega_{13}^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_{18} +$$
$$4\omega_6^3\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}c_s^2v_2^2\omega_{13}^2\omega_7^2\omega_{11}\omega_{14}\omega_8\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}c_s^2v_2^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2 +$$
$$\omega_6^3\omega_{19}v_3^2v_2^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}c_s^2v_2^2\omega_{13}^2\omega_7^2\omega_{11}\omega_{14}\omega_8^2 + 2\omega_6^2\omega_{22}\omega_{19}v_3^2v_2^2\omega_{13}^2\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^3\omega_{22}c_s^2v_2^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_{18} +$$
$$2\omega_6^3\omega_{22}\omega_{19}v_3^2v_2v_1\omega_{13}^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}v_3^2c_s^2v_2v_1\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_{18} + 2\omega_6^2\omega_{22}\omega_{19}c_s^2v_2^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} -$$
$$4\omega_6^3\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}^2\omega_7\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 4\omega_6^2\omega_{22}\omega_{19}v_3^2v_2v_1\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 - 2\omega_6^3\omega_{22}\omega_{19}v_3^2v_2^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2 +$$
$$2\omega_6^3\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} + \omega_6^3\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{22}\omega_{19}v_3^2v_2^2\omega_{13}^2\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} +$$
$$2\omega_6^3\omega_{22}v_3^2v_2^2\omega_{13}^2\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 4\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}^2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8^2 - 2\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}^2\omega_7\omega_{11}\omega_{14}\omega_8^2\omega_{18} +$$
$$6\omega_6\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_6^2\omega_{19}c_s^2v_2^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{22}\omega_{19}v_3^2v_2^2\omega_{13}^2\omega_7^2\omega_{11}\omega_{14}\omega_8^2 +$$
$$\omega_6^3\omega_{19}v_3^2c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}v_3^2v_2v_1\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} -$$
$$2\omega_6^2\omega_{22}\omega_{19}c_s^2v_2^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 + 4\omega_6^2\omega_{22}\omega_{19}v_3^2v_2v_1\omega_{13}^2\omega_7^2\omega_{11}\omega_{14}\omega_8\omega_{18} +$$
$$2\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{22}\omega_{19}v_3^2v_2^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2 +$$
$$4\omega_6^3\omega_{22}v_3^2v_2v_1\omega_{13}^2\omega_7\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 4\omega_6\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 8\omega_6^3\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}^2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} -$$
$$2\omega_6^2\omega_{22}\omega_{19}v_3^2v_2^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^3\omega_{22}c_s^2v_2v_1\omega_{13}^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_{18} + \omega_6^3\omega_{19}c_s^2v_2^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} +$$
$$2\omega_6^2\omega_{19}v_3^2c_s^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^3\omega_{22}v_3^2v_2v_1\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_{18} +$$
$$2\omega_6^3\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2 + 2\omega_6^3\omega_{19}c_s^2v_2v_1\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{22}\omega_{19}v_3^2v_2v_1\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} -$$
$$2\omega_6^2\omega_{22}\omega_{19}c_s^2v_2^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} -$$
$$2\omega_6^3\omega_{19}c_s^2v_2^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2 + 4\omega_6^2\omega_{19}v_3^2v_2v_1\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 - 2\omega_6^3\omega_{22}\omega_{19}v_3^2v_2^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} -$$
$$4\omega_6^3\omega_{22}\omega_{19}v_3^2v_2v_1\omega_{13}^2\omega_7^2\omega_{11}\omega_{14}\omega_8\omega_{18} + \omega_6^3\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{22}\omega_{19}c_s^2v_2^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 +$$
$$4\omega_6^2\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}^2\omega_7^2\omega_{11}\omega_{14}\omega_8^2 - \omega_6^3\omega_{22}\omega_{19}v_3^2v_2^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_{18} - 4\omega_6^3\omega_{22}\omega_{19}v_3^2v_2v_1\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_{18} -$$
$$4\omega_6^2\omega_{22}\omega_{19}v_3^2v_2v_1\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 + 10\omega_6\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 4\omega_6^3\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 +$$
$$2\omega_6^3\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} - 2\omega_6^2\omega_{19}v_3^2c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^3\omega_{19}v_3^2v_2^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2 -$$
$$\omega_6^3\omega_{19}c_s^2v_2^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 + 2\omega_6^3\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}^2\omega_7^2\omega_{11}\omega_{14}\omega_8^2 +$$
$$\omega_6^3\omega_{22}\omega_{19}c_s^2v_2\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} - 12\omega_6^2\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 4\omega_6^3\omega_{22}\omega_{19}v_3^2v_2v_1\omega_{13}^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18} -$$
$$2\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}v_3^2v_2^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} - \omega_6^3\omega_{22}\omega_{19}c_s^2v_2^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_{18} +$$
$$\omega_6^3\omega_{19}v_3^2c_s^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}c_s^2v_2^2\omega_{13}^2\omega_7\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} -$$

$$2\omega_6^2\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18} + 4\omega_6^2\omega_{22}\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^3\omega_{19}c_s^2v_2v_1\omega_{13}^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_{18} -$$
$$2\omega_6^2\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}^2\omega_7^2\omega_{11}\omega_{14}\omega_8^2 - \omega_6^3\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{22}\omega_{19}c_s^2v_2^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} -$$
$$4\omega_6^2\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}^2\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} + \omega_6^3\omega_{22}\omega_{19}v_3^2v_2^2\omega_{13}^2\omega_7\omega_{20}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{22}\omega_{19}v_3^2v_2^2\omega_{13}^2\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} -$$
$$2\omega_6^3\omega_{22}\omega_{19}v_3^2v_2^2\omega_{13}^2\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}^2\omega_7\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{19}v_3^2v_2^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} +$$
$$\omega_6^3\omega_{19}c_s^2v_2^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_{18} - 6\omega_6\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}^2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 4\omega_6^2\omega_{19}v_3^2v_2v_1\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} +$$
$$4\omega_6^2\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - \omega_6^3\omega_{22}\omega_{19}c_s^2v_2^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^3\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} -$$
$$2\omega_6^2\omega_{22}\omega_{19}c_s^2v_2^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18} + 4\omega_6^3\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}^2\omega_7\omega_{11}\omega_{14}\omega_8\omega_{18} + 4\omega_6^2\omega_{22}\omega_{19}c_s^2v_2v_1\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} -$$
$$2\omega_6^2\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}^2\omega_7^2\omega_{11}\omega_{14}\omega_8\omega_{18} - 2\omega_6^2\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}^2\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} +$$
$$4\omega_6^2\omega_{22}\omega_{19}v_3^2v_2v_1\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}v_3^2v_2^2\omega_{13}^2\omega_7\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}v_3^2v_2^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_{18} -$$
$$\omega_6^3\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 4\omega_6^3\omega_{22}\omega_{19}v_3^2v_2v_1\omega_{13}^2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} - 8\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} +$$
$$\omega_6^3\omega_{22}\omega_{19}c_s^2v_2^2\omega_{13}^2\omega_7\omega_{20}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}c_s^2v_2^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 4\omega_6^2\omega_{19}c_s^2v_2v_1\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 +$$
$$2\omega_6^3\omega_{22}c_s^2v_2v_1\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 4\omega_6^3\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}^2\omega_7^2\omega_{11}\omega_{14}\omega_8\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}c_s^2v_2^2\omega_{13}^2\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_{18} +$$
$$\omega_6^3\omega_{19}v_3^2v_2^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}c_s^2v_2^2\omega_{13}^2\omega_7^2\omega_{14}\omega_8^2\omega_{18} + 4\omega_6^2\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}^2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} -$$
$$2\omega_6^2\omega_{22}\omega_{19}c_s^2v_2^2\omega_{13}^2\omega_7^2\omega_{11}\omega_{14}\omega_8\omega_{18} - 2\omega_6^2\omega_{22}\omega_{19}v_3^2v_2^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} +$$
$$4\omega_6^3\omega_{22}\omega_{19}v_3^2v_2v_1\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2 - \omega_6^3\omega_{22}\omega_{19}v_3^2v_2^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_{18} - \omega_6^3\omega_{19}v_3^2v_2^2\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} +$$
$$2\omega_6^2\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_{18} + \omega_6^3\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}^2\omega_7\omega_{20}\omega_{11}\omega_8^2\omega_{18})\frac{\rho}{2\omega_6^3\omega_{22}\omega_{19}\omega_{13}^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18}}$$

$$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_1} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_1}$$

$$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_1} = (\omega_6\omega_{19}v_3^2c_s^2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_6\omega_{22}c_s^2v_2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} - 2\omega_{22}\omega_{19}v_3^2v_2^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} +$$
$$4\omega_6\omega_{22}v_3^2v_2v_1\omega_{13}\omega_{11}\omega_{14}\omega_8\omega_{18} - 2\omega_6\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8\omega_{18} - 4\omega_6\omega_{22}\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{18} - 2\omega_6\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}\omega_{20}\omega_{11}\omega_{18} +$$
$$2\omega_6\omega_{22}\omega_{19}c_s^2v_2^2\omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_{18} - 2\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{18} + 2\omega_6\omega_{19}v_3^2c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 - 4\omega_6\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_{18} -$$
$$2\omega_6\omega_{22}\omega_{19}c_s^2v_2^2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8\omega_{18} + \omega_6\omega_{19}c_s^2v_2^2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} - \omega_6\omega_{22}\omega_{19}v_3^2v_2^2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} +$$
$$2\omega_6\omega_{19}c_s^2v_2^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 - 2\omega_6\omega_{22}\omega_{19}v_3^2v_2^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 - \omega_6\omega_{22}c_s^2v_2^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} +$$
$$2\omega_6\omega_{22}\omega_{19}v_3^2v_2^2\omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_{18} + 2\omega_6\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_{18} - 4\omega_6\omega_{22}\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_{18} - 2\omega_6\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}\omega_{11}\omega_{14}\omega_{18} +$$
$$4\omega_6\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8\omega_{18} - \omega_6\omega_{22}\omega_{19}v_3^2v_2^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18} - 2\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_{18} + 4\omega_{19}c_s^2v_2v_1\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} -$$
$$\omega_6\omega_{22}\omega_{19}v_3^2c_s^2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 4\omega_6\omega_{22}c_s^2v_2v_1\omega_{13}\omega_{11}\omega_{14}\omega_8\omega_{18} - 2\omega_6\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 - 2\omega_6\omega_{22}v_3^2c_s^2\omega_{13}\omega_{11}\omega_{14}\omega_8\omega_{18} +$$
$$2\omega_6\omega_{22}\omega_{19}c_s^2v_2^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{18} - 4\omega_6\omega_{22}\omega_{19}v_3^2v_2v_1\omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_8 + 2\omega_6\omega_{22}\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_{18} -$$
$$4\omega_6\omega_{22}\omega_{19}v_3^2c_s^2v_2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{18} + 2\omega_6\omega_{22}\omega_{19}v_3^2v_2^2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 4\omega_{22}\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} +$$
$$4\omega_6\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 - \omega_6\omega_{22}\omega_{19}c_s^2v_2^2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 4\omega_{22}\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} +$$
$$4\omega_6\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 - \omega_6\omega_{22}v_3^2c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_6\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18} -$$
$$2\omega_6\omega_{22}\omega_{19}v_3^2v_2^2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8\omega_{18} - 4\omega_6\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_{18} + 2\omega_6\omega_{22}\omega_{19}v_3^2v_2^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{18} -$$
$$\omega_6\omega_{22}\omega_{19}c_s^2v_2^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18} + 2\omega_6\omega_{22}\omega_{19}v_3^2v_2v_1\omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_6\omega_{19}v_3^2v_2^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 -$$
$$2\omega_6\omega_{19}v_3^2v_2v_1\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} - 2\omega_6\omega_{22}\omega_{19}c_s^2v_2^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 + 2\omega_6\omega_{22}\omega_{19}c_s^2v_2^2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_{18} +$$
$$2\omega_6\omega_{22}\omega_{19}c_s^2v_2v_1\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_{22}\omega_{19}v_3^2v_2^2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} - 2\omega_6\omega_{22}\omega_{19}v_3^2v_2^2\omega_{13}\omega_{20}\omega_{11}\omega_{18} +$$
$$2\omega_{22}\omega_{19}c_s^2v_2^2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8\omega_{18} + 4\omega_6\omega_{22}\omega_{19}v_3^2v_2v_1\omega_{13}\omega_{11}\omega_{14}\omega_{18} + 2\omega_{22}\omega_{19}v_3^2v_2^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18} + 4\omega_{22}\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_{18} -$$
$$2\omega_{22}\omega_{19}c_s^2v_2^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 4\omega_6\omega_{22}v_3^2v_2v_1\omega_{13}\omega_7\omega_{14}\omega_8\omega_{18} - 2\omega_6\omega_{22}\omega_{19}c_s^2v_2^2\omega_{13}\omega_{20}\omega_{11}\omega_{18} + 2\omega_6\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8 +$$
$$4\omega_6\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}\omega_{20}\omega_{11}\omega_{18} + \omega_6\omega_{19}c_s^2v_2^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_{18} - \omega_6\omega_{22}\omega_{19}v_3^2v_2^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_{18} + 2\omega_{22}\omega_{19}v_3^2v_2^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 -$$
$$2\omega_6\omega_{22}\omega_{19}v_3^2v_2^2\omega_{13}\omega_{11}\omega_{14}\omega_{18} - 4\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8\omega_{18} - \omega_6\omega_{22}v_3^2v_2^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} +$$
$$4\omega_6\omega_{22}\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_6\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}\omega_{11}\omega_{14}\omega_8\omega_{18} - \omega_6\omega_{22}\omega_{19}v_3^2v_2^2\omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} -$$
$$2\omega_6\omega_{22}\omega_{19}c_s^2v_2^2\omega_{13}\omega_{11}\omega_{14}\omega_{18} + 4\omega_6\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}\omega_{11}\omega_{14}\omega_{18} + \omega_6\omega_{19}v_3^2c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_{18} + \omega_6\omega_{22}\omega_{19}v_3^2c_s^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18} +$$
$$4\omega_6\omega_{22}\omega_{19}v_3^2v_2v_1\omega_{13}\omega_{20}\omega_{11}\omega_{18} + 4\omega_{22}\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{18} + 2\omega_{22}\omega_{19}v_3^2v_2^2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8\omega_{18} - 2\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} -$$
$$2\omega_6\omega_{19}v_3^2c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8 - 2\omega_6\omega_{22}v_3^2c_s^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_{18} + 2\omega_6\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_{18} + 4\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 -$$
$$2\omega_6\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_{18} + 2\omega_{22}\omega_{19}c_s^2v_2^2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} - 4\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_{18} + 4\omega_6\omega_{22}c_s^2v_2v_1\omega_{13}\omega_7\omega_{14}\omega_8\omega_{18} -$$
$$2\omega_{22}\omega_{19}v_3^2v_2^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18} - 2\omega_6\omega_{22}\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} - \omega_6\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} +$$
$$\omega_6\omega_{19}v_3^2v_2^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_{18} + 4\omega_{19}v_3^2v_2v_1\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_{22}\omega_{19}c_s^2v_2^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 - \omega_6\omega_{22}\omega_{19}c_s^2v_2^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_{18} +$$
$$2\omega_{22}\omega_{19}c_s^2v_2^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18} - 2\omega_{22}\omega_{19}c_s^2v_2^2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8 + 4\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_{18} + 2\omega_6\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} +$$
$$2\omega_6\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8 + 2\omega_6\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_{22}\omega_{19}v_3^2c_s^2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} -$$
$$2\omega_6\omega_{19}c_s^2v_2v_1\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_6\omega_{22}\omega_{19}v_3^2v_2v_1\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18} -$$
$$4\omega_6\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 + 4\omega_6\omega_{22}\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 - 2\omega_{22}\omega_{19}c_s^2v_2^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18} + 4\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{18} +$$
$$2\omega_6\omega_{22}\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18} + \omega_6\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}\omega_{20}\omega_{11}\omega_8\omega_{18} - \omega_6\omega_{22}\omega_{19}c_s^2v_2^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} - 2\omega_{22}\omega_{19}v_3^2v_2^2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8 -$$
$$\omega_6\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_{18} + 2\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 - 2\omega_{22}\omega_{19}c_s^2v_2^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{18} + 4\omega_{22}\omega_{19}c_s^2v_2v_1\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18} +$$
$$\omega_6\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_{18} + 4\omega_6\omega_{22}\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_{18} + 2\omega_6\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_{18} + \omega_6\omega_{22}c_s^2v_2^2\omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} +$$
$$2\omega_6\omega_{22}\omega_{19}v_3^2v_2^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_{18} - \omega_6\omega_{19}v_3^2c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 4\omega_6\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7\omega_{14}\omega_8 - 2\omega_{22}\omega_{19}v_3^2v_2^2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_{18} -$$
$$2\omega_6\omega_{22}\omega_{19}c_s^2v_2^2\omega_{13}\omega_7\omega_{14}\omega_8 + 2\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_{18} - 2\omega_6\omega_{22}c_s^2v_2v_1\omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} - 2\omega_6\omega_{22}\omega_{19}v_3^2v_2^2\omega_{13}\omega_7\omega_{14}\omega_8 +$$
$$2\omega_6\omega_{22}\omega_{19}c_s^2v_2^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_{18} - 2\omega_{22}\omega_{19}v_3^2v_2^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{18} + 2\omega_6\omega_{22}v_3^2v_2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_{22}\omega_{19}c_s^2v_2^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_{18} -$$
$$4\omega_{22}\omega_{19}c_s^2v_2v_1\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} - 2\omega_{22}\omega_{19}c_s^2v_2^2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_{18} + \omega_6\omega_{22}c_s^2v_2^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_{18} + 4\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8 -$$
$$4\omega_6\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7\omega_{14}\omega_8\omega_{18} + 4\omega_6\omega_{22}\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7\omega_{14}\omega_8 - 2\omega_{19}v_3^2v_2^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 + \omega_6\omega_{22}v_3^2c_s^2\omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} -$$
$$2\omega_6\omega_{22}c_s^2v_2v_1\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_{18} - 4\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18} - 2\omega_{19}v_3^2v_2^2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} - 4\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 +$$
$$2\omega_6\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{18} - 2\omega_6\omega_{22}c_s^2v_2^2\omega_{13}\omega_{11}\omega_{14}\omega_8\omega_{18} + 4\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_{18} + 4\omega_{22}\omega_{19}v_3^2v_2v_1\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18} -$$
$$2\omega_{19}v_3^2c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 + \omega_6\omega_{22}v_3^2v_2^2\omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} - 4\omega_6\omega_{22}v_3^2v_2v_1\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8\omega_{18} - 2\omega_{19}v_3^2c_s^2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} -$$

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

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_1} = C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_1}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_1} = 0$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_1} = (-6c_s^2\omega_1\omega_2^3 - 4\omega_3v_2^2\omega_1\omega_2^2 + 14\omega_3\omega_1^2\omega_2 + 28\omega_3c_s^2\omega_1^3 + 2\omega_1\omega_2^3 + 26\omega_3v_1^2\omega_1^2\omega_2^2 - 3\omega_3v_2^2\omega_1\omega_2^3 + 4\omega_3v_2^2\omega_1^3 - 13\omega_3v_1^2\omega_1^3\omega_2 +$
$10\omega_3\omega_1^3\omega_2 - 2v_2^2\omega_1\omega_2^3 - 24\omega_3c_s^2\omega_1\omega_2^2 + 4\omega_3v_2^2\omega_2^3 - 20\omega_3\omega_1^2\omega_2^2 - 22\omega_3v_1^2\omega_1^2\omega_2 + 26\omega_3c_s^2\omega_2^3 - 24\omega_3c_s^2\omega_1\omega_2^3 + 8\omega_3\omega_1\omega_2^2 - 4\omega_3v_2^2\omega_1^2\omega_2 +$
$4v_2^2\omega_1^2\omega_2^2 - 24\omega_3c_s^2\omega_1^3\omega_2 - 10\omega_3\omega_2^3 + 10\omega_3v_1^2\omega_2^3 + 10\omega_3\omega_1\omega_2^3 - 2v_2^2\omega_1^3\omega_2 + 48\omega_3c_s^2\omega_1^2\omega_2^2 - 30\omega_3c_s^2\omega_1^2\omega_2 + 16\omega_3v_1^2\omega_1^3 - 3\omega_3v_2^2\omega_1^3\omega_2 +$
$12c_s^2\omega_1^2\omega_2^2 - 13\omega_3v_1^2\omega_1\omega_2^3 - 4\omega_1^2\omega_2^2 + 6\omega_3v_2^2\omega_1^2\omega_2^2 - 6c_s^2\omega_1^3\omega_2 - 4\omega_3v_1^2\omega_1\omega_2^2 + 2\omega_1^3\omega_2 - 12\omega_3\omega_1^3)\frac{v_2v_1\rho}{6\omega_3\omega_1^3\omega_2^3}$

coefficient $C^{(3)}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_2}$ **at** $\frac{\partial^4 v_2}{\partial x_1^2\partial x_2\partial x_3}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_2} = (-168c_s^2v_2v_1\omega^2 - c_s^4\omega^3 - 216c_s^2v_1^2\omega + 12c_s^2v_2v_1\omega^3 - 216v_3^2c_s^2\omega - 16c_s^4\omega^2 - 36c_s^4 + 84v_3^2c_s^2\omega^2 + 54c_s^4\omega + 84c_s^2v_1^2\omega^2 -$
$288c_s^2v_2v_1 - 6v_3^2c_s^2\omega^3 + 432c_s^2v_2v_1\omega - 6c_s^2v_1^2\omega^3 + 144v_3^2c_s^2 - 168v_3^2v_2v_1\omega^2 + 84v_3^2v_1^2\omega^2 + 144v_3^2v_1^2 - 288v_3^2v_2v_1 + 12v_3^2v_2v_1\omega^3 - 6v_3^2v_1^2\omega^3 -$
$216v_3^2v_1^2\omega + 432v_3^2v_2v_1\omega + 144c_s^2v_1^2)\frac{\rho}{12\omega^3}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_2} = (-24\omega_6^3\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} - 6\omega_6^3\omega_{22}\omega_{19}v_3^2v_1^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$6\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}v_3^2v_1^2\omega_{13}\omega_7^3\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} + 6\omega_6^3\omega_{19}v_3^2c_s^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$24\omega_6^2\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2 + 12\omega_6^3\omega_{22}\omega_{19}c_s^2v_1^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2 - 12\omega_6^2\omega_{22}\omega_{19}v_3^2v_1^2\omega_{13}\omega_7^3\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$12\omega_6^3\omega_{22}\omega_{19}v_3^2v_2v_1\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 6\omega_6^3\omega_{19}c_s^2v_1^2\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6^3\omega_{22}c_s^2v_2v_1\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$12\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} - 12\omega_6^2\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^3\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} + 12\omega_6^2\omega_{19}v_3^2v_1^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2 +$
$12\omega_6\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 24\omega_6^3\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} +$
$36\omega_6^2\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_5^2\omega_{18} - 24\omega_6^3\omega_{22}\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} +$
$24\omega_6^2\omega_{22}\omega_{19}c_s^2v_2v_1\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 24\omega_6\omega_{22}\omega_{19}c_s^2v_1^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} + 6\omega_6^3\omega_{22}v_3^2v_1^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$6\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_7^3\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} + 6\omega_6^3\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$24\omega_6^2\omega_{22}\omega_{19}c_s^2v_2v_1\omega_7^3\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^3\omega_{14}\omega_8^2\omega_5^2 + 24\omega_6^3\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7^3\omega_{11}\omega_{14}\omega_8^2\omega_5^2 -$
$2\omega_6^2\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2\omega_{22}\omega_{19}c_s^2v_1^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2\omega_{22}\omega_{19}c_s^2v_1^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$24\omega_6^2\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} + 24\omega_6^3\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^2\omega_{19}v_3^2c_s^2\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2\omega_{22}\omega_{19}c_s^2v_1^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_5^2\omega_{18} + 6\omega_6^3\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$24\omega_6^3\omega_{22}\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7^3\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^3\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$24\omega_6^3\omega_{22}\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} + 24\omega_6^2\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7^3\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6^2\omega_{19}c_s^2v_2v_1\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$24\omega_6^3\omega_{22}v_3^2v_2v_1\omega_{13}\omega_7^3\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6^3\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2 - 6\omega_6^3\omega_{22}\omega_{19}v_3^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^2\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} + 24\omega_6^3\omega_{22}\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^2 - 24\omega_6^2\omega_{22}\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} +$
$24\omega_6^3\omega_{22}v_3^2v_2v_1\omega_{13}\omega_7^3\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^2\omega_{19}c_s^2v_1^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 36\omega_6^3\omega_{22}\omega_{19}c_s^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} -$
$12\omega_6^3\omega_{22}\omega_{19}c_s^2v_1^2\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5 + 24\omega_6^2\omega_{22}\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2 -$
$12\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18} - 12\omega_6^2\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2 - 6\omega_6^3\omega_{22}v_3^2v_1^2\omega_{13}\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$18\omega_6^3\omega_{22}\omega_{19}c_s^2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 24\omega_6^3\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} - 12\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} -$
$12\omega_6^3\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 24\omega_6^2\omega_{22}\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} - 24\omega_6^3\omega_{22}\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7^3\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$60\omega_6^2\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} - 24\omega_6^3\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} - 12\omega_6^2\omega_{22}\omega_{19}v_3^2v_1^2\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 6\omega_6^3\omega_{22}\omega_{19}v_3^2c_s^2\omega_7^3\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} +$
$10\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} - 6\omega_6^3\omega_{19}v_3^2c_s^2\omega_{13}\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 6\omega_6^3\omega_{22}\omega_{19}v_3^2v_1^2\omega_{13}\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$6\omega_6^3\omega_{19}v_3^2v_1^2\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 6\omega_6^3\omega_{22}\omega_{19}v_3^2c_s^2\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6^3\omega_{22}\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} -$

$12\omega_6^2\omega_{22}\omega_{19}c_s^2v_1^2\omega_{13}\omega_7^3\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^2\omega_{22}\omega_{19}v_3^2v_1^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} + 12\omega_6^2\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5 +$
$24\omega_6^3\omega_{22}\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} + 12\omega_6^2\omega_{22}\omega_{19}v_3^2v_1^2\omega_{13}\omega_7^3\omega_{11}\omega_{14}\omega_8^2\omega_5^2 - 12\omega_6^3\omega_{22}\omega_{19}c_s^2v_1^2\omega_{13}\omega_7^3\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} +$
$12\omega_6^3\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{22}c_s^2v_2v_1\omega_{13}\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}v_3^2v_1^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2 -$
$24\omega_6^3\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}\omega_7^3\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18} - 12\omega_6^3\omega_{19}v_3^2c_s^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2 + 12\omega_6^3\omega_{22}\omega_{19}c_s^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_5^2\omega_{18} -$
$12\omega_6^3\omega_{22}\omega_{19}v_3^2v_1^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} + 24\omega_6^3\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2 + 24\omega_6^3\omega_{22}\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7^3\omega_{11}\omega_{14}\omega_8^2\omega_5^2 -$
$12\omega_6^3\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} - 18\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} -$
$12\omega_6^3\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} + 12\omega_6^2\omega_{19}c_s^2v_1^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2 +$
$12\omega_6^3\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} - 12\omega_6^2\omega_{22}\omega_{19}v_3^2v_1^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{22}v_3^2v_1^2\omega_{13}\omega_7^3\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$24\omega_6^2\omega_{22}\omega_{19}v_3^2v_2v_1\omega_7^3\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 24\omega_6^3\omega_{22}\omega_{19}c_s^2v_1^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} - 24\omega_6^3\omega_{22}\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7^3\omega_{14}\omega_8^2\omega_5^2 -$
$12\omega_6^2\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} - 24\omega_6^3\omega_{22}c_s^2v_2v_1\omega_{13}\omega_7^3\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$24\omega_6^3\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^2 - 6\omega_6^3\omega_{22}\omega_{19}v_3^2v_1^2\omega_7^3\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^2\omega_{22}\omega_{19}c_s^4\omega_7^3\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$24\omega_6^3\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7^3\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$24\omega_6^3\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7^3\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7^3\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 6\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^2\omega_{22}\omega_{19}c_s^2v_1^2\omega_{13}\omega_7^3\omega_{11}\omega_{14}\omega_8^2\omega_5^2 + 24\omega_6^3\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} + 6\omega_6^3\omega_{22}\omega_{19}v_3^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18} - 6\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 18\omega_6^2\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^3\omega_{19}v_3^2v_2v_1\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{22}v_3^2v_1^2\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^2\omega_{22}\omega_{19}c_s^2v_1^2\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$24\omega_6^2\omega_{22}\omega_{19}c_s^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 24\omega_6^2\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 6\omega_6^3\omega_{22}\omega_{19}c_s^2v_1^2\omega_{13}\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$12\omega_6^3\omega_{22}\omega_{19}v_3^2v_1^2\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_7^3\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} -$
$6\omega_6^3\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6^2\omega_{22}\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7^3\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} - 6\omega_6^3\omega_{22}v_3^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$6\omega_6^3\omega_{19}v_3^2v_1^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6^3\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7^3\omega_{14}\omega_8^2\omega_5^2 - 6\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$6\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 24\omega_6\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 6\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^2\omega_{22}\omega_{19}v_3^2v_1^2\omega_7^3\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6^3\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5 -$
$6\omega_6^3\omega_{19}v_3^2v_1^2\omega_{13}\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 6\omega_6^3\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$6\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}c_s^2v_1^2\omega_{13}\omega_7^3\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^2\omega_{22}\omega_{19}v_3^2c_s^2\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$24\omega_6^2\omega_{22}\omega_{19}v_3^2v_2v_1\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}c_s^2v_1^2\omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 24\omega_6^2\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}\omega_7^3\omega_{20}\omega_{14}\omega_8\omega_5^2\omega_{18} -$
$12\omega_6^2\omega_{22}\omega_{19}v_3^2v_1^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2 - 6\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} +$
$12\omega_6^3\omega_{22}c_s^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_7^3\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 24\omega_6^3\omega_{22}\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^2\omega_{22}\omega_{19}c_s^2v_1^2\omega_{13}\omega_7^3\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}c_s^2v_1^2\omega_{13}\omega_7^3\omega_{11}\omega_{14}\omega_8^2\omega_5^2 + 12\omega_6^2\omega_{22}\omega_{19}v_3^2v_1^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^3\omega_{19}v_3^2v_1^2\omega_{13}\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^2 - 12\omega_6^3\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 24\omega_6^2\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$6\omega_6^3\omega_{22}\omega_{19}c_s^2v_1^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6^2\omega_{22}\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7^3\omega_{11}\omega_{14}\omega_8^2\omega_5^2 -$
$24\omega_6^2\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2 + 12\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6^3\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^2 +$
$12\omega_6^2\omega_{22}\omega_{19}v_3^2v_1^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} - 6\omega_6^3\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} -$
$12\omega_6^2\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} - 24\omega_6^3\omega_{22}v_3^2v_2v_1\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^3\omega_{22}\omega_{19}v_3^2v_2v_1\omega_7^3\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}c_s^2v_2v_1\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 6\omega_6^3\omega_{22}\omega_{19}v_3^2v_1^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^2\omega_{22}\omega_{19}c_s^4\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 18\omega_6^3\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} - 24\omega_6^2\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18} +$
$12\omega_6^3\omega_{22}\omega_{19}v_3^2v_1^2\omega_{13}\omega_7^3\omega_{14}\omega_8^2\omega_5^2 - 12\omega_6^3\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}v_3^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} +$
$12\omega_6^2\omega_{19}v_3^2v_1^2\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 24\omega_6^3\omega_{22}\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_5^2\omega_{18} +$
$24\omega_6^2\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2 + 12\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7^3\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}v_3^2v_1^2\omega_{13}\omega_7^3\omega_{11}\omega_{14}\omega_8^2\omega_5^2 -$
$24\omega_6^3\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7^3\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{19}c_s^2v_1^2\omega_{13}\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 12\omega_6^2\omega_{19}v_3^2c_s^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2 +$
$12\omega_6^3\omega_{22}v_3^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^3\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^2\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^3\omega_{11}\omega_{14}\omega_8^2\omega_5^2 +$
$12\omega_6^3\omega_{22}\omega_{19}c_s^2v_1^2\omega_{13}\omega_7^3\omega_{14}\omega_8^2\omega_5^2 + 12\omega_6^3\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18} +$
$12\omega_6^3\omega_{22}\omega_{19}v_3^2v_1^2\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} + 6\omega_6^3\omega_{22}\omega_{19}c_s^2v_1^2\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6^2\omega_{19}v_3^2v_2v_1\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$6\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 24\omega_6^2\omega_{22}\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7^3\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 42\omega_6^3\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} +$
$24\omega_6^2\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6\omega_{22}\omega_{19}c_s^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6^2\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} -$
$12\omega_6^2\omega_{22}\omega_{19}c_s^2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3\omega_{19}c_s^2v_1^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2 - 24\omega_6^3\omega_{22}\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2 -$
$12\omega_6^2\omega_{19}v_3^2v_1^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} + 24\omega_6^3\omega_{22}c_s^2v_2v_1\omega_{13}\omega_7^3\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^2\omega_{22}\omega_{19}c_s^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} - 12\omega_6^2\omega_{22}\omega_{19}c_s^2v_1^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2 + 12\omega_6^2\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^3\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$24\omega_6^3\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2 - 12\omega_6^3\omega_{22}v_3^2v_2v_1\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^2\omega_{19}v_3^2c_s^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^2\omega_{22}\omega_{19}v_3^2v_1^2\omega_{13}\omega_7^3\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} - 12\omega_6^3\omega_{22}v_3^2v_1^2\omega_{13}\omega_7^3\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 6\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} -$
$12\omega_6^3\omega_{22}\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 6\omega_6^3\omega_{19}c_s^2v_1^2\omega_{13}\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^3\omega_{22}\omega_{19}v_3^2v_1^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}v_3^2v_1^2\omega_{13}\omega_7^3\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}c_s^2v_2v_1\omega_7^3\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^2\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5 - 48\omega_6^2\omega_{22}\omega_{19}c_s^2v_1^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} +$
$12\omega_6^3\omega_{19}v_3^2c_s^2\omega_{13}\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^2 - 12\omega_6^3\omega_{22}\omega_{19}v_3^2v_1^2\omega_{13}\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^2 - 24\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$24\omega_6^3\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} - 24\omega_6^2\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6^3\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18} +$
$12\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5 - 24\omega_6\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} + 12\omega_6^2\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_5^2\omega_{18} -$
$12\omega_6^3\omega_{22}\omega_{19}v_3^2v_1^2\omega_{13}\omega_7^3\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 6\omega_6^3\omega_{22}\omega_{19}c_s^2v_1^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - \omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$
$60\omega_6^3\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} + 12\omega_6^2\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} - 24\omega_6^2\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7^3\omega_{11}\omega_{14}\omega_8^2\omega_5^2 +$
$12\omega_6^3\omega_{22}v_3^2v_2v_1\omega_{13}\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2\omega_{22}\omega_{19}v_3^2c_s^2\omega_7^3\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^3\omega_{11}\omega_{14}\omega_8^2\omega_5^2 +$
$12\omega_6^3\omega_{22}\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6^3\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7^3\omega_{20}\omega_{14}\omega_8^2\omega_5^2 + 12\omega_6^3\omega_{19}c_s^2v_2v_1\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} - 12\omega_6^3\omega_{22}c_s^2v_2v_1\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^2\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^3\omega_{22}\omega_{19}v_3^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} + 24\omega_6^2\omega_{22}\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}c_s^2v_1^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_5^2\omega_{18} +$
$6\omega_6^3\omega_{19}c_s^2v_1^2\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 6\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_{18} +$
$12\omega_6^2\omega_{19}c_s^2v_1^2\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6^2\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7^3\omega_{11}\omega_{14}\omega_8\omega_5^2\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7^3\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5^2\omega_{18} -$

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

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_2} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_2}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_2} = (-24\omega_6^2\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_5\omega_{18} + 6\omega_6^3\omega_{22}\omega_{19}v_3^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_5\omega_{18} +$
$12\omega_6^3\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_5\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}v_3^2v_2v_1\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} +$
$12\omega_6^2\omega_{22}\omega_{19}v_3^2v_1^2\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8\omega_5 - 6\omega_6^3\omega_{19}v_3^2v_1^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} + 6\omega_6^3\omega_{22}\omega_{19}v_3^2c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} -$
$6\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} - 6\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} - 24\omega_6^3\omega_{22}\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_5\omega_{18} -$
$24\omega_6^3\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5 - 12\omega_6^3\omega_{22}\omega_{19}c_s^2v_1^2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5\omega_{18} + 12\omega_6\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} +$
$12\omega_6^2\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} + 12\omega_6^2\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8 - 12\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} -$
$12\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_5\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} - 6\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18} +$
$24\omega_6^2\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_5\omega_{18} + 24\omega_6^2\omega_{22}\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5 - 12\omega_6^2\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5 +$
$12\omega_6^3\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_5\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_5\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}c_s^2v_1^2\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} +$
$12\omega_6^2\omega_{22}\omega_{19}v_3^2v_1^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} + 24\omega_6^3\omega_{22}\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8\omega_5 + 6\omega_6^3\omega_{22}\omega_{19}c_s^2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} +$
$6\omega_6^3\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18} - 6\omega_6^3\omega_{19}v_3^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18} + 12\omega_6^2\omega_{22}\omega_{19}c_s^2v_1^2\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8\omega_5 +$
$24\omega_6^3\omega_{22}c_s^2v_2v_1\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} - 24\omega_6^2\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5 + 12\omega_6^3\omega_{22}\omega_{19}c_s^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5 -$
$12\omega_6^3\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_5\omega_{18} + 24\omega_6^2\omega_{22}\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} - 24\omega_6^2\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_5\omega_{18} -$
$12\omega_6^3\omega_{22}\omega_{19}v_3^2v_1^2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5\omega_{18} - 12\omega_6^2\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} + 6\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} -$
$12\omega_6^3\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_5\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_5\omega_{18} + 24\omega_6^3\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5 -$
$6\omega_6^3\omega_{22}\omega_{19}c_s^2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} + 12\omega_6^3\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_5\omega_{18} +$
$12\omega_6^3\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_5\omega_{18} + 12\omega_6^2\omega_{19}v_3^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5 - 24\omega_6^3\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} +$
$12\omega_6^3\omega_{19}v_3^2v_2v_1\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} - 12\omega_6^2\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_{18} - 12\omega_6^2\omega_{22}\omega_{19}c_s^2v_1^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} -$
$12\omega_6^3\omega_{22}\omega_{19}v_3^2v_1^2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} - 12\omega_6^2\omega_{22}\omega_{19}v_3^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_5\omega_{18} + 12\omega_6^2\omega_{22}\omega_{19}c_s^2v_1^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} -$
$18\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 12\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} + 24\omega_6\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} -$
$6\omega_6^3\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} + 12\omega_6^3\omega_{22}v_3^2v_1^2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} + 6\omega_6^3\omega_{19}v_3^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} -$
$12\omega_6^3\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_5\omega_{18} + 12\omega_6^2\omega_{22}\omega_{19}v_3^2c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} +$
$12\omega_6^3\omega_{22}v_3^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18} - 6\omega_6^3\omega_{22}\omega_{19}v_3^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} - 24\omega_6^3\omega_{22}c_s^2v_2v_1\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} +$
$12\omega_6^3\omega_{22}\omega_{19}v_3^2v_1^2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_5\omega_{18} + 6\omega_6^3\omega_{19}v_3^2c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}c_s^2v_1^2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5 +$
$6\omega_6^3\omega_{22}\omega_{19}c_s^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} - 24\omega_6^2\omega_{22}\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_5\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}c_s^2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_5\omega_{18} -$
$12\omega_6^3\omega_{22}\omega_{19}v_3^2v_1^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} - 6\omega_6^3\omega_{19}c_s^2v_1^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} +$
$12\omega_6^3\omega_{22}\omega_{19}c_s^2v_2v_1\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}c_s^2v_1^2\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_5\omega_{18} + 24\omega_6^2\omega_{22}\omega_{19}c_s^2v_2v_1\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} +$
$6\omega_6^3\omega_{22}\omega_{19}v_3^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} + 24\omega_6^3\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8\omega_5 + 6\omega_6^3\omega_{22}\omega_{19}c_s^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5 +$
$24\omega_6^3\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8\omega_5 + 6\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8 -$
$6\omega_6^3\omega_{19}c_s^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5\omega_{18} - 12\omega_6^3\omega_{22}v_3^2v_1^2\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} -$
$2\omega_6^2\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} + 12\omega_6^2\omega_{22}\omega_{19}c_s^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} - 12\omega_6^3\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} +$
$12\omega_6^3\omega_{22}\omega_{19}v_3^2v_1^2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5 - 12\omega_6^2\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_5\omega_{18} + 12\omega_6^2\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8\omega_5 +$
$12\omega_6^2\omega_{19}v_3^2c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} + 12\omega_6^2\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}v_3^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_5\omega_{18} +$
$12\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5\omega_{18} + 10\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} - 12\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} -$
$24\omega_6^2\omega_{22}\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_5\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8 - 24\omega_6^2\omega_{19}c_s^2v_2v_1\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} +$
$12\omega_6^3\omega_{22}\omega_{19}c_s^2v_1^2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_5\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} - 6\omega_6^3\omega_{22}\omega_{19}v_3^2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} +$
$24\omega_6^3\omega_{22}\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8\omega_5 - 12\omega_6^3\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} + 12\omega_6^3\omega_{22}c_s^2v_2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} -$
$12\omega_6^2\omega_{19}c_s^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}v_3^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5 - 12\omega_6^3\omega_{19}v_3^2c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5 +$
$12\omega_6^3\omega_{22}\omega_{19}v_3^2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_5\omega_{18} + 24\omega_6^3\omega_{22}\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_5\omega_{18} + 24\omega_6^3\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5 -$
$12\omega_6^2\omega_{22}\omega_{19}c_s^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_5\omega_{18} - 12\omega_6^2\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_5\omega_{18} + 12\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} -$
$12\omega_6^3\omega_{22}\omega_{19}v_3^2v_1^2\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_5\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5 - 12\omega_6^3\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5\omega_{18} +$
$12\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_5\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}c_s^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_5\omega_{18} + 24\omega_6^2\omega_{22}\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} -$
$12\omega_6^2\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} + 12\omega_6^2\omega_{19}c_s^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5 + 12\omega_6^2\omega_{22}\omega_{19}c_s^4\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} -$
$12\omega_6^3\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}c_s^2v_1^2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} - 12\omega_6^2\omega_{22}\omega_{19}v_3^2v_1^2\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} -$
$12\omega_6^2\omega_{19}v_3^2c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} + 12\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} - 24\omega_6^3\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5 -$
$12\omega_6^2\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_5\omega_{18} + 24\omega_6^2\omega_{22}\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_5\omega_{18} + 24\omega_6^2\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5 -$
$12\omega_6^3\omega_{22}v_3^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} + 6\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} + 6\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} +$
$12\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5\omega_{18} + 12\omega_6^3\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} - 24\omega_6^2\omega_{22}\omega_{19}c_s^2v_2v_1\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} -$
$12\omega_6^3\omega_{22}\omega_{19}v_3^2c_s^2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} + 24\omega_6^3\omega_{22}\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_5\omega_{18} + 6\omega_6^3\omega_{22}\omega_{19}v_3^2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} +$
$12\omega_6^2\omega_{19}v_3^2c_s^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5 - 12\omega_6^2\omega_{22}\omega_{19}c_s^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} - 24\omega_6^3\omega_{22}c_s^2v_2v_1\omega_{13}\omega_7^2\omega_{14}\omega_8\omega_5 +$
$12\omega_6^2\omega_{22}\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} - 12\omega_6^3\omega_{22}\omega_{19}c_s^2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} + 24\omega_6^3\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8\omega_5 -$
$18\omega_6^2\omega_{22}\omega_{19}c_s^4\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18} - 24\omega_6^2\omega_{22}\omega_{19}c_s^2v_2v_1\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8\omega_5 - 24\omega_6^3\omega_{22}\omega_{19}v_3^2v_2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_5\omega_{18} -$

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

$$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_2} = C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_2}$$

$$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_2} = (-12\omega_1\omega_2^3 + 12\omega_3\omega_{13}\omega_1\omega_2 + 12\omega_3^2\omega_1\omega_2^2 - 12\omega_3^2\omega_2^2 - 6\omega_3\omega_{13}\omega_1\omega_2^2 - 12\omega_3^2\omega_1\omega_2^3 - 6\omega_3\omega_{13}\omega_2^3 + 12\omega_3^2\omega_2^3 - 12\omega_3\omega_1\omega_2^2 -$$
$$24\omega_3^2\omega_{13}\omega_1 - 6\omega_3^2\omega_{13}\omega_2^2 - 12\omega_3\omega_2^3 + 24\omega_3\omega_1\omega_2^3 + 24\omega_3^2\omega_{13}\omega_1\omega_2 - 2\omega_3^2\omega_{13}\omega_2^3 - 2\omega_3^2\omega_{13}\omega_1\omega_2^2 + 12\omega_{13}\omega_2^3 + 12\omega_3^2\omega_{13}\omega_2 - \omega_3^2\omega_{13}\omega_1\omega_2^3)\frac{c_s^4\rho}{12\omega_3^2\omega_{13}\omega_1\omega_2^3}$$

$$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_2} = (-18\omega_3^2v_1^4\omega_4^2\omega_1^2\omega_5\omega_2^3 - 12\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^3\omega_5\omega_2 + 24\omega_3^2v_2^2\omega_4^2\omega_1\omega_5\omega_2^3 + 36\omega_3^2v_1^4\omega_4\omega_1^3\omega_5\omega_2^2 - 168\omega_3^2c_s^2v_2^2\omega_4^2\omega_1\omega_5\omega_2^2 +$$
$$24\omega_3^2v_1^2\omega_4^2\omega_5\omega_2^3 + 2\omega_3^2v_3^4\omega_4^2\omega_1^3\omega_5\omega_2^2 + 4\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_5\omega_2^2 - 16\omega_3c_s^2\omega_4^2\omega_1^3\omega_5\omega_2 + 288\omega_3^2c_s^4\omega_4\omega_1^2\omega_5\omega_2^3 + 264\omega_3c_s^2v_2^2\omega_4^2\omega_1^2\omega_5\omega_2^2 + 36v_1^2\omega_4^2\omega_1^3\omega_5\omega_2^2 -$$
$$72\omega_3c_s^2v_1^2\omega_4^2\omega_1^3\omega_5\omega_2 - 36\omega_3^2v_1^2\omega_4\omega_1^3\omega_5\omega_2^2 + 18\omega_3^2v_1^2\omega_4^2\omega_1^2\omega_5\omega_2^3 - 288\omega_3^2c_s^2\omega_4\omega_1^2\omega_5\omega_2^3 + 288\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^3 - 36v_1^4\omega_4^2\omega_1^3\omega_5\omega_2^2 - 4\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_5\omega_2^2 +$$
$$16\omega_3c_s^4\omega_4^2\omega_1^3\omega_5\omega_2 - 216\omega_3^2c_s^2v_1^2\omega_4^2\omega_5\omega_2^3 + 108\omega_3^2c_s^2v_1^2\omega_4\omega_1^3\omega_5\omega_2^3 - 2\omega_3^2v_3^2\omega_4^2\omega_1^3\omega_5\omega_2^2 + 48\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^2\omega_5\omega_2^2 - 96\omega_3^2v_1^2\omega_4^2\omega_1^3\omega_5 - 6\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_5\omega_2^3 -$$
$$468\omega_3c_s^2v_2^2\omega_4^2\omega_1^2\omega_5\omega_2^3 - 54v_1^2\omega_4^2\omega_1^3\omega_5\omega_2^3 + 24\omega_3^2v_2^2\omega_4^2\omega_1^3\omega_5\omega_2 - 120\omega_3^2c_s^2v_2^2\omega_4^2\omega_1\omega_5\omega_2^3 - 160\omega_3c_s^2\omega_4^2\omega_1\omega_5\omega_2^3 + 24\omega_3^2v_2^2\omega_4^2\omega_1\omega_5\omega_2^2 -$$
$$36\omega_3^2v_1^2\omega_4^2\omega_1^2\omega_5\omega_2^2 + 54\omega_3^2v_1^4\omega_4\omega_1^3\omega_5\omega_2^3 + 108\omega_3^2c_s^2v_1^2\omega_4\omega_1^3\omega_5\omega_2^2 - 60\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^2\omega_5\omega_2^3 + 264\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^3\omega_5 + 54v_1^4\omega_4^2\omega_1^3\omega_5\omega_2^3 +$$
$$180\omega_3c_s^2v_1^2\omega_4^2\omega_1\omega_5\omega_2^3 - 216c_s^2v_1^2\omega_4^2\omega_1^2\omega_5\omega_2^3 + 6\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^3\omega_5\omega_2^2 - 54\omega_3^2v_1^2\omega_4\omega_1^3\omega_5\omega_2^3 - 84\omega_3^2v_1^2\omega_4^2\omega_1^2\omega_5\omega_2^2 + 160\omega_3c_s^4\omega_4^2\omega_1\omega_5\omega_2^3 -$$
$$9\omega_3v_3^4\omega_4^2\omega_1^3\omega_5\omega_2^3 - 180\omega_3^2v_2^2v_1^2\omega_4^2\omega_1^3\omega_5\omega_2 - 88\omega_3^2c_s^2\omega_4^2\omega_5\omega_2^3 - 36\omega_3^2v_1^2\omega_4\omega_1\omega_5\omega_2^3 - 72\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^3 + 72\omega_3c_s^4\omega_4^2\omega_1^3\omega_5\omega_2^3 - 162\omega_3^2c_s^2v_1^2\omega_1^3\omega_5\omega_2^3 +$$
$$12\omega_3v_1^4\omega_4^2\omega_1^2\omega_5\omega_2^2 + 8\omega_3^2\omega_4^2\omega_5\omega_2^3 - 288\omega_3^2v_2^2v_1^2\omega_4^2\omega_1\omega_5\omega_2^2 + 36\omega_3^2c_s^2\omega_4^2\omega_1\omega_5\omega_2^3 - 108\omega_3c_s^2v_1^2\omega_4^2\omega_1^3\omega_5\omega_2^3 - 72\omega_3c_s^2\omega_4^2\omega_1^3\omega_5\omega_2^3 + 54\omega_3^2v_1^2\omega_1^3\omega_5\omega_2^3 +$$
$$36\omega_3^2v_1^4\omega_4\omega_1\omega_5\omega_2^3 + 9\omega_3v_3^2\omega_4^2\omega_1^3\omega_5\omega_2^3 + 216\omega_3^2v_2^2v_1^2\omega_4^2\omega_5\omega_2^3 + 8\omega_3^2c_s^4\omega_4^2\omega_1\omega_5\omega_2^3 + 24\omega_3^2v_1^4\omega_4^2\omega_1^2\omega_5\omega_2 - 12\omega_3v_1^2\omega_4^2\omega_1^2\omega_5\omega_2^2 - 8\omega_3^2\omega_4^2\omega_1\omega_5\omega_2^3 +$$
$$64\omega_3^2c_s^2\omega_4^2\omega_1\omega_5\omega_2^2 + 108\omega_3c_s^2v_1^2\omega_4\omega_1^2\omega_5\omega_2^3 + 8\omega_3^2\omega_4^2\omega_1^3\omega_5 + 180\omega_3c_s^2v_1^2\omega_4^2\omega_1^3\omega_5\omega_2^2 + 36\omega_3v_1^4\omega_4^2\omega_1^2\omega_5\omega_2^3 - 180\omega_3^2v_2^2v_1^2\omega_4^2\omega_1\omega_5\omega_2^3 -$$
$$36\omega_3v_1^4\omega_4\omega_1^3\omega_5\omega_2^2 - 108\omega_3^2c_s^2v_1^2\omega_4\omega_1\omega_5\omega_2^3 + 36\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_5\omega_2 + 108\omega_3^2v_1^4\omega_1^2\omega_5\omega_2^3 - 72\omega_3c_s^4\omega_4^2\omega_1^3\omega_5\omega_2^2 - 40\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_5 - 24\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^2\omega_5\omega_2 +$$
$$648\omega_3^2c_s^2v_2^2\omega_4\omega_1^2\omega_5\omega_2^3 + 36\omega_3v_1^2\omega_4\omega_1^3\omega_5\omega_2^2 - 8\omega_3^2\omega_4^2\omega_1\omega_5\omega_2^2 + 6\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^3\omega_5\omega_2^2 - 36\omega_3v_1^2\omega_4^2\omega_1^2\omega_5\omega_2^3 - 56\omega_3^2c_s^4\omega_4^2\omega_1\omega_5\omega_2^2 - 8\omega_3^2\omega_4^2\omega_1^3\omega_5\omega_2 +$$
$$144\omega_3^2v_2^2v_1^2\omega_4^2\omega_1^3\omega_5 - 28\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_5\omega_2 + 72\omega_3c_s^2\omega_4^2\omega_1^3\omega_5\omega_2^2 + 162c_s^2v_1^2\omega_4^2\omega_1^3\omega_5\omega_2^3 + 4\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_5\omega_2^3 - 72v_1^4\omega_4^2\omega_1^2\omega_5\omega_2^3 + 27\omega_3^2v_3^2c_s^2\omega_4\omega_1^3\omega_5\omega_2^3 -$$
$$96\omega_3^2v_1^4\omega_4^2\omega_5\omega_2^3 + 2\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_5\omega_2^3 - 108\omega_3^2c_s^2v_1^2\omega_4\omega_1^2\omega_5\omega_2^2 + 360\omega_3^2v_2^2v_1^2\omega_4^2\omega_1^2\omega_5\omega_2^2 - 24\omega_3v_1^4\omega_4^2\omega_1^3\omega_5\omega_2 - 18\omega_3^2v_1^2\omega_4^2\omega_1^3\omega_5\omega_2^2 +$$
$$144\omega_3^2v_1^2\omega_4\omega_1^2\omega_5\omega_2^3 - 2\omega_3^2v_3^4\omega_4^2\omega_1^2\omega_5\omega_2^3 + 24\omega_3^2v_2^2\omega_4^2\omega_1^2\omega_5\omega_2 + 72v_1^2\omega_4^2\omega_1^2\omega_5\omega_2^3 + 162\omega_3c_s^2v_2^2\omega_4^2\omega_1^3\omega_5\omega_2^3 - 28\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_5\omega_2^3 -$$
$$144\omega_3^2v_1^4\omega_4\omega_1^2\omega_5\omega_2^3 + 24\omega_3v_1^2\omega_4^2\omega_1^3\omega_5\omega_2 + 18\omega_3^2v_1^4\omega_4^2\omega_1^3\omega_5\omega_2^2 + 36\omega_3^2v_1^2\omega_4\omega_1^2\omega_5\omega_2^2 + 12\omega_3v_1^4\omega_4^2\omega_1\omega_5\omega_2^3 + 60\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^3\omega_5\omega_2^2 -$$
$$9\omega_3^2v_3^2\omega_4\omega_1^3\omega_5\omega_2^3 - 216\omega_3^2c_s^2v_1^2\omega_4\omega_1^2\omega_5\omega_2^3 + 48\omega_3^2v_1^4\omega_4^2\omega_1^3\omega_5 - 6\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^2\omega_5\omega_2^3 - 72\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_5\omega_2^2 - 108c_s^2v_1^2\omega_4^2\omega_1^3\omega_5\omega_2^2 +$$

$72\omega_3^2c_s^2\omega_4\omega_1^3\omega_5\omega_2^3 - 36\omega_3^2v_1^4\omega_4\omega_1^2\omega_5\omega_2^2 - 96\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^2\omega_5\omega_2 - 72\omega_3^2c_s^4\omega_4\omega_1^3\omega_5\omega_2^3 - 180\omega_3c_s^2v_2^2\omega_4^2\omega_1^3\omega_5\omega_2^2 + 56\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_5\omega_2^2 +$
$9\omega_3^2v_3^4\omega_4\omega_1^3\omega_5\omega_2^3 - 648\omega_3^2c_s^2v_2^2\omega_4\omega_1\omega_5\omega_2^3 + 16\omega_3^2\omega_4^2\omega_1^2\omega_5\omega_2^2 - 12\omega_3v_1^2\omega_4^2\omega_1\omega_5\omega_2^3 - 288\omega_3^2c_s^4\omega_4\omega_1\omega_5\omega_2^3 + 132\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^2\omega_5\omega_2^2 +$
$54\omega_3v_1^2\omega_4^2\omega_1^3\omega_5\omega_2^3 - 162\omega_3^2c_s^2v_2^2\omega_4\omega_1^3\omega_5\omega_2^3 + 152\omega_3^2c_s^4\omega_4^2\omega_5\omega_2^3 - 112\omega_3c_s^2\omega_4^2\omega_1^2\omega_5\omega_2^2 - 56\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_5\omega_2 + 48\omega_3c_s^2v_2^2\omega_4^2\omega_1^3\omega_5\omega_2 +$
$108\omega_3^2v_1^4\omega_4^2\omega_1\omega_5\omega_2^3 - 24\omega_3^2v_2^2\omega_4^2\omega_1^3\omega_5 - 8\omega_3^2\omega_4^2\omega_1^2\omega_5\omega_2 - 27\omega_3v_3^2c_s^2\omega_4^2\omega_1^3\omega_5\omega_2^3 - 24\omega_3^2c_s^2v_1^2\omega_4^2\omega_1\omega_5\omega_2^2 - 54\omega_3v_1^4\omega_4^2\omega_1^3\omega_5\omega_2^3 +$
$108\omega_3c_s^2v_1^2\omega_4^2\omega_1^2\omega_5\omega_2^2 + 288\omega_3^2c_s^2\omega_4\omega_1\omega_5\omega_2^3 - 48\omega_3^2v_1^2\omega_4^2\omega_1\omega_5\omega_2^3 - 348\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^3\omega_5\omega_2 + 112\omega_3c_s^4\omega_4^2\omega_1^2\omega_5\omega_2^2 + 24\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^3\omega_5 -$
$54\omega_3^2v_1^4\omega_1^3\omega_5\omega_2^3 + 64\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_5\omega_2 + 32\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_5 - 48\omega_3^2v_2^2\omega_4^2\omega_1^2\omega_5\omega_2^2 + 24\omega_3^2v_1^4\omega_4^2\omega_1\omega_5\omega_2^2 - 108\omega_3^2v_1^2\omega_1^2\omega_5\omega_2^3 + 216\omega_3c_s^2\omega_4^2\omega_1^2\omega_5\omega_2^3 -$
$24\omega_3^2v_2^2\omega_4^2\omega_5\omega_2^3 - 72\omega_3v_1^2\omega_4^2\omega_1^3\omega_5\omega_2^2 - 72\omega_3^2v_1^4\omega_4^2\omega_1^3\omega_5\omega_2 - 6\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^2\omega_5\omega_2^3 - 36\omega_3v_1^2\omega_4\omega_1^2\omega_5\omega_2^3 + 336\omega_3c_s^2v_2^2\omega_4^2\omega_1\omega_5\omega_2^3 +$
$324\omega_3^2c_s^2v_1^2\omega_1^2\omega_5\omega_2^3 - 216\omega_3c_s^4\omega_4^2\omega_1^2\omega_5\omega_2^3 - 72\omega_3^2v_2^2v_1^2\omega_4^2\omega_1^2\omega_5\omega_2 + 240\omega_3^2c_s^2v_2^2\omega_4^2\omega_5\omega_2^3 + 72\omega_3^2v_1^2\omega_4^2\omega_1\omega_5\omega_2^2 - 72\omega_3c_s^2v_1^2\omega_4^2\omega_1^2\omega_5\omega_2^3 -$
$108\omega_3c_s^2v_1^2\omega_4\omega_1^3\omega_5\omega_2^2 + 36\omega_3v_1^4\omega_4\omega_1^2\omega_5\omega_2^3 + 300\omega_3^2c_s^2v_1^2\omega_4^2\omega_1\omega_5\omega_2^3 + 72\omega_3v_1^4\omega_4^2\omega_1^3\omega_5\omega_2^2 + 132\omega_3^2v_1^2\omega_4^2\omega_1^3\omega_5\omega_2 - 288\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^3)\frac{\rho}{72\omega_3^2\omega_4^2\omega_1^3\omega_5\omega_2^3}$

coefficient $C^{(3)}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_3}$ **at** $\frac{\partial^4 v_3}{\partial x_1^2\partial x_2\partial x_3}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_3} = (24v_2v_1^2 - 36c_s^2v_2\omega + 14c_s^2v_2\omega^2 - c_s^2v_2\omega^3 + 24c_s^2v_2 - 24c_s^2v_1 + 36v_2^2v_1\omega + c_s^2v_1\omega^3 - 24v_2^2v_1 - 14c_s^2v_1\omega^2 - 36v_2v_1^2\omega +$
$36c_s^2v_1\omega + v_2^2v_1\omega^3 + 14v_2v_1^2\omega^2 - v_2v_1^2\omega^3 - 14v_2^2v_1\omega^2)\frac{v_3\rho}{\omega^3}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_3} = (-4\omega_6^3\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7^2\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^2\omega_{19}c_s^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18} +$
$9\omega_6^3\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6^3\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18} +$
$4\omega_6^2\omega_{22}\omega_{19}v_2^2v_1\omega_{13}\omega_7^2\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6^3\omega_{22}\omega_{19}v_2v_1^2\omega_{13}\omega_7^2\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}v_2v_1^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 +$
$4\omega_6^3\omega_{22}c_s^2v_1\omega_{13}\omega_7^2\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^2\omega_{22}\omega_{19}v_2^2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18} - 4\omega_6^2\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7^2\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2 +$
$4\omega_6^3\omega_{22}\omega_{19}v_2^2v_1\omega_{13}\omega_7^2\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2 + 4\omega_6^2\omega_{22}\omega_{19}v_2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{19}c_s^2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{21}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 -$
$2\omega_6^3\omega_{22}c_s^2v_2\omega_{13}\omega_7\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6^3\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5 + 4\omega_6^3\omega_{22}v_2v_1^2\omega_{13}\omega_7\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 -$
$2\omega_6^3\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_5\omega_{18}^2 - 2\omega_6\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_{18}^2 - 4\omega_6^2\omega_{22}c_s^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 -$
$4\omega_6^3\omega_{22}\omega_{19}v_2v_1^2\omega_{13}\omega_7^2\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^2\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_{18}^2 + 2\omega_6^3\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{21}^2\omega_8^2\omega_5\omega_{18}^2 +$
$2\omega_6^3\omega_{22}v_2^2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^3\omega_{22}\omega_{19}v_2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{22}\omega_{19}v_2^2v_1\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 -$
$2\omega_6^3\omega_{19}v_2v_1^2\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^2\omega_{22}\omega_{19}c_s^2v_1\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^2\omega_{22}c_s^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2 +$
$4\omega_6^2\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 - 4\omega_6^3\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}^2 + 4\omega_6^3\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2 -$
$4\omega_6^2\omega_{22}\omega_{19}v_2^2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 - 12\omega_6^2\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18} + 4\omega_6^2\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2 +$
$4\omega_6^3\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 + 4\omega_6^3\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}c_s^2v_2\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 +$
$2\omega_6^3\omega_{22}\omega_{19}c_s^2v_1\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6^3\omega_{22}c_s^2v_1\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6^2\omega_{19}v_2^2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18} -$
$2\omega_6^3\omega_{22}\omega_{19}v_2^2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6^3\omega_{22}\omega_{19}v_2^2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2 + 4\omega_6^3\omega_{22}\omega_{19}v_2v_1^2\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} -$
$2\omega_6^3\omega_{22}\omega_{19}v_2^2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^2\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6^2\omega_{19}v_2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 +$
$2\omega_6^3\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{19}c_s^2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 -$
$\omega_6^2\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6^3\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} + 4\omega_6^3\omega_{22}v_2v_1^2\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2 -$
$4\omega_6^2\omega_{22}\omega_{19}v_2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^3\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} +$
$2\omega_6^2\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7\omega_{20}\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{22}\omega_{19}v_2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6^3\omega_{22}\omega_{19}v_2v_1^2\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2 +$
$6\omega_6\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2 + 4\omega_6^2\omega_{19}v_2^2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6^3\omega_{19}c_s^2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} +$
$4\omega_6^2\omega_{19}v_2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18} - 4\omega_6^3\omega_{22}\omega_{19}v_2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 + 4\omega_6^3\omega_{22}\omega_{19}v_2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2 -$
$4\omega_6\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6^3\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{22}c_s^2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2 +$
$2\omega_6^3\omega_{19}c_s^2v_1\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6^2\omega_{22}\omega_{19}v_2v_1^2\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{22}\omega_{19}v_2^2v_1\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 -$
$2\omega_6^3\omega_{22}\omega_{19}c_s^2v_2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_{18}^2 + 2\omega_6^3\omega_{22}\omega_{19}v_2^2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 -$
$2\omega_6^3\omega_{22}v_2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{22}c_s^2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^3\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 -$
$4\omega_6^3\omega_{22}\omega_{19}v_2^2v_1\omega_{13}\omega_7^2\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18} + 2\omega_6^2\omega_{19}c_s^2v_2\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^3\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18} -$
$4\omega_6^3\omega_{22}c_s^2v_1\omega_{13}\omega_7^2\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^3\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2 - 4\omega_6^3\omega_{22}v_2v_1^2\omega_{13}\omega_7^2\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 +$
$4\omega_6^2\omega_{22}\omega_{19}v_2v_1^2\omega_{13}\omega_7^2\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2 + 8\omega_6^2\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6^2\omega_{19}c_s^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 +$
$2\omega_6^3\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7\omega_{20}\omega_{11}^2\omega_{14}\omega_5\omega_{18}^2 + 4\omega_6^3\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7^2\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18} - 4\omega_6^2\omega_{22}\omega_{19}v_2^2v_1\omega_{13}\omega_7^2\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18} -$
$4\omega_6^2\omega_{19}v_2^2v_1\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6^3\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18} + 2\omega_6^3\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 +$
$4\omega_6^2\omega_{22}\omega_{19}v_2^2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^3\omega_{22}\omega_{19}v_2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5 - 2\omega_6^3\omega_{19}c_s^2v_2\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 -$
$4\omega_6^3\omega_{19}v_2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18} + 4\omega_6^2\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18} + 8\omega_6^2\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 -$
$14\omega_6^2\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2 + 4\omega_6^3\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{19}v_2^2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 -$
$12\omega_6^3\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} - 4\omega_6^3\omega_{22}\omega_{19}v_2^2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{22}\omega_{19}v_2v_1^2\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 +$
$2\omega_6^3\omega_{19}v_2^2v_1\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{22}v_2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 +$
$2\omega_6^2\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8\omega_{18}^2 - 4\omega_6^2\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^3\omega_{22}\omega_{19}v_2^2v_1\omega_{13}\omega_7\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 -$
$2\omega_6^3\omega_{22}v_2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{22}c_s^2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^3\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_{20}\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2 -$
$4\omega_6^3\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6^2\omega_{22}v_2^2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{22}\omega_{19}v_2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2 +$
$4\omega_6^3\omega_{22}\omega_{19}v_2^2v_1\omega_{13}\omega_7^2\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18} - 4\omega_6^2\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7^2\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18} - 4\omega_6^2\omega_{22}\omega_{19}v_2^2v_1\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 +$
$4\omega_6^2\omega_{22}\omega_{19}v_2^2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{19}c_s^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6^2\omega_{19}c_s^2v_1\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 +$
$4\omega_6^3\omega_{22}\omega_{19}v_2^2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} - 4\omega_6\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6^3\omega_{22}\omega_{19}v_2v_1^2\omega_{13}\omega_7^2\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2 +$

$$4\omega_6^3\omega_{19}v_2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} - 4\omega_6^2\omega_{19}c_s^2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18} - 8\omega_6^2\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2 +$$
$$4\omega_6^2\omega_{22}\omega_{19}c_s^2v_2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6^3\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2 + 8\omega_6^3\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18} -$$
$$2\omega_6^3\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6^2\omega_{22}\omega_{19}v_2v_1^2\omega_{13}\omega_7^2\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^2\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_5\omega_{18}^2 +$$
$$2\omega_6^3\omega_{19}v_2^2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6^2\omega_{22}\omega_{19}v_2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2 - 4\omega_6^3\omega_{22}\omega_{19}v_2^2v_1\omega_{13}\omega_7^2\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 -$$
$$4\omega_6^3\omega_{22}\omega_{19}v_2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} - 2\omega_6^3\omega_{22}\omega_{19}v_2^2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6^3\omega_{19}c_s^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18} +$$
$$4\omega_6^2\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7^2\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 12\omega_6^3\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7\omega_{20}\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2 + 4\omega_6^2\omega_{19}c_s^2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 +$$
$$4\omega_6^3\omega_{22}v_2^2v_1\omega_{13}\omega_7^2\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6^2\omega_{22}\omega_{19}v_2^2v_1\omega_{13}\omega_7^2\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{19}v_2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2 -$$
$$4\omega_6^3\omega_{19}v_2^2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} + 4\omega_6^3\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7^2\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2 + 4\omega_6^2\omega_{22}\omega_{19}v_2v_1^2\omega_{13}\omega_7^2\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18} -$$
$$2\omega_6^3\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^2\omega_{19}v_2v_1^2\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{22}v_2^2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2 +$$
$$2\omega_6^2\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_5\omega_{18}^2 + 4\omega_6^3\omega_{22}\omega_{19}v_2v_1^2\omega_{13}\omega_7^2\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2 - 4\omega_6^2\omega_{22}\omega_{19}c_s^2v_1\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 +$$
$$4\omega_6^2\omega_{22}c_s^2v_2\omega_{13}\omega_7\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^2\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5 - 4\omega_6^2\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{14}\omega_8^2\omega_5\omega_{18}^2 +$$
$$2\omega_6^3\omega_{22}c_s^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 8\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6^2\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 -$$
$$2\omega_6^3\omega_{22}v_2^2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{22}\omega_{19}v_2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6^3\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 +$$
$$4\omega_6^2\omega_{22}\omega_{19}v_2v_1^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{22}c_s^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{22}\omega_{19}c_s^2v_1\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 +$$
$$4\omega_6^2\omega_{22}\omega_{19}v_2^2v_1\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^3\omega_{22}\omega_{19}v_2v_1^2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18} + 4\omega_6^3\omega_{22}\omega_{19}v_2^2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}^2\omega_{14}\omega_8\omega_5\omega_{18}^2 -$$
$$4\omega_6^2\omega_{22}\omega_{19}c_s^2v_2\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^3\omega_{22}\omega_{19}v_2^2v_1\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6^2\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 +$$
$$4\omega_6^3\omega_{19}c_s^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18} + 4\omega_6^3\omega_{22}\omega_{19}v_2^2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{22}\omega_{19}v_2^2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 +$$
$$4\omega_6\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18} - 4\omega_6^3\omega_{22}v_2^2v_1\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6^2\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 +$$
$$4\omega_6^2\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 +$$
$$4\omega_6^2\omega_{22}\omega_{19}c_s^2v_2\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^3\omega_{22}\omega_{19}v_2^2v_1\omega_{13}\omega_7^2\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6^2\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 +$$
$$4\omega_6^3\omega_{22}\omega_{19}v_2^2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7^2\omega_{20}\omega_{11}\omega_{14}\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^2\omega_{22}\omega_{19}v_2^2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 +$$
$$4\omega_6^3\omega_{19}v_2^2v_1\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18})\frac{v_3\rho}{2\omega_6^3\omega_{22}\omega_{19}\omega_{13}\omega_7^2\omega_{20}\omega_{11}^2\omega_{14}\omega_8^2\omega_5\omega_{18}^2}$$

$$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_3}$$

$$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_3} = (-2\omega_6\omega_{22}\omega_{19}v_2^2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_{18} - 2\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + \omega_6\omega_{22}\omega_{19}c_s^2v_1\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18} +$$
$$2\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8 - 2\omega_{22}\omega_{19}v_2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_{18} - 2\omega_6\omega_{19}v_2^2v_1\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8 + 2\omega_6\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_{11}\omega_{14}\omega_8\omega_{18} -$$
$$2\omega_6\omega_{22}v_2^2v_1\omega_{13}\omega_7\omega_{14}\omega_8\omega_{18} - \omega_6\omega_{22}v_2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_{18} + 2\omega_6\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_{18} + 2\omega_6\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8 +$$
$$\omega_6\omega_{22}\omega_{19}v_2^2v_1\omega_{13}\omega_{20}\omega_{11}\omega_8\omega_{18} - 2\omega_{19}c_s^2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 + 2\omega_6\omega_{22}\omega_{19}v_2^2v_1\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8 - 2\omega_{19}c_s^2v_1\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} -$$
$$\omega_6\omega_{22}v_2v_1^2\omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_{22}\omega_{19}c_s^2v_2\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18} + 2\omega_{22}\omega_{19}v_2v_1^2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8 + 2\omega_6\omega_{22}\omega_{19}v_2^2v_1\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8 +$$
$$\omega_6\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_{20}\omega_{11}\omega_8\omega_{18} - 2\omega_6\omega_{22}c_s^2v_2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8\omega_{18} + \omega_6\omega_{22}c_s^2v_1\omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} - \omega_6\omega_{19}v_2^2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} +$$
$$2\omega_{19}v_2v_1^2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_6\omega_{22}v_2^2v_1\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8\omega_{18} - 2\omega_6\omega_{22}\omega_{19}v_2^2v_1\omega_{13}\omega_{11}\omega_{14}\omega_{18} + 2\omega_6\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8 +$$
$$\omega_6\omega_{22}v_2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + \omega_{19}v_2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 + \omega_6\omega_{22}c_s^2v_1\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_{18} + \omega_6\omega_{22}\omega_{19}v_2^2v_1\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18} +$$
$$2\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_{18} + 2\omega_{22}\omega_{19}v_2v_1^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18} + \omega_6\omega_{19}c_s^2v_2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} - 2\omega_6\omega_{19}c_s^2v_1\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8 +$$
$$2\omega_6\omega_{22}\omega_{19}v_2^2v_1\omega_{13}\omega_{11}\omega_{14}\omega_8\omega_{18} - 2\omega_6\omega_{22}c_s^2v_1\omega_{13}\omega_7\omega_{14}\omega_8\omega_{18} - 2\omega_6\omega_{22}\omega_{19}v_2^2v_1\omega_{13}\omega_{20}\omega_{11}\omega_{18} + 2\omega_6\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7\omega_{14}\omega_8\omega_{18} -$$
$$2\omega_6\omega_{22}v_2^2v_1\omega_{13}\omega_{11}\omega_{14}\omega_8\omega_{18} - 2\omega_6\omega_{22}\omega_{19}v_2v_1^2\omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_{18} + \omega_6\omega_{22}v_2^2v_1\omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} - 2\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_{18} -$$
$$\omega_6\omega_{22}c_s^2v_2\omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_6\omega_{22}c_s^2v_1\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8\omega_{18} - 2\omega_6\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{18} - \omega_6\omega_{22}c_s^2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} +$$
$$\omega_6\omega_{22}v_2^2v_1\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_{18} - 2\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{18} + 2\omega_{22}\omega_{19}v_2^2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_{18} - 2\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_{18} -$$
$$2\omega_6\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_{18} + 2\omega_6\omega_{22}\omega_{19}v_2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_{18} - \omega_6\omega_{22}c_s^2v_2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_{18} -$$
$$2\omega_6\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_{18} - 2\omega_{22}\omega_{19}v_2^2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{18} - 2\omega_6\omega_{22}\omega_{19}v_2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{18} + 2\omega_6\omega_{22}\omega_{19}v_2v_1^2\omega_{13}\omega_{20}\omega_{11}\omega_{18} +$$
$$2\omega_6\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_{11}\omega_{14}\omega_{18} + \omega_6\omega_{22}\omega_{19}v_2^2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} - 2\omega_{19}c_s^2v_2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} -$$
$$2\omega_6\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_{18} - 2\omega_6\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7\omega_{14}\omega_8 + 2\omega_{19}v_2^2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} - \omega_6\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} +$$
$$2\omega_6\omega_{22}\omega_{19}v_2^2v_1\omega_{13}\omega_7\omega_{14}\omega_8\omega_{18} - 2\omega_6\omega_{22}\omega_{19}v_2v_1^2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_{18} - 2\omega_6\omega_{22}c_s^2v_1\omega_{13}\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_{19}c_s^2v_2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} -$$
$$2\omega_6\omega_{22}v_2v_1^2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8\omega_{18} - 2\omega_{19}v_2^2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 - 2\omega_{22}\omega_{19}v_2^2v_1\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_{18} + 2\omega_{19}c_s^2v_2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 -$$
$$2\omega_{19}v_2^2v_1\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_{22}\omega_{19}v_2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_6\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_{18} + 2\omega_6\omega_{22}c_s^2v_2\omega_{13}\omega_7\omega_{14}\omega_8\omega_{18} +$$
$$2\omega_6\omega_{22}v_2v_1^2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8\omega_{18} + \omega_6\omega_{19}v_2^2v_1\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_{18} - 2\omega_6\omega_{22}\omega_{19}v_2v_1^2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8 - \omega_6\omega_{19}v_2v_1^2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} +$$
$$\omega_6\omega_{22}c_s^2v_2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_6\omega_{19}c_s^2v_2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8 - 2\omega_{22}\omega_{19}v_2^2v_1\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8 - 2\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8\omega_{18} -$$
$$\omega_6\omega_{22}v_2^2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} - \omega_6\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_{20}\omega_{11}\omega_8\omega_{18} - 2\omega_6\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8\omega_{18} - \omega_6\omega_{22}\omega_{19}c_s^2v_1\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} -$$
$$2\omega_{22}\omega_{19}v_2^2v_1\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18} - 2\omega_6\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 + \omega_6\omega_{19}v_2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} - \omega_6\omega_{22}\omega_{19}v_2v_1^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18} -$$
$$2\omega_6\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8 - \omega_6\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18} - 2\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 + 2\omega_6\omega_{22}\omega_{19}v_2v_1^2\omega_{13}\omega_7\omega_{14}\omega_8 +$$
$$\omega_6\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_{18} + 2\omega_{22}\omega_{19}v_2^2v_1\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} - 2\omega_6\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8 + \omega_6\omega_{22}\omega_{19}v_2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18} +$$
$$2\omega_6\omega_{22}v_2v_1^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_{18} - 2\omega_6\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{18} + 2\omega_6\omega_{19}v_2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8 + 2\omega_6\omega_{22}\omega_{19}v_2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 -$$
$$2\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18} - 2\omega_{22}\omega_{19}c_s^2v_1\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18} + \omega_6\omega_{22}\omega_{19}v_2v_1^2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_{22}\omega_{19}v_2^2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18} -$$
$$2\omega_{22}\omega_{19}c_s^2v_2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + \omega_6\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_{22}\omega_{19}v_2^2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 -$$
$$\omega_6\omega_{22}\omega_{19}v_2^2v_1\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_{18} - 2\omega_6\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_{11}\omega_{14}\omega_{18} + 2\omega_{19}c_s^2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + \omega_6\omega_{19}c_s^2v_1\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} +$$
$$2\omega_6\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7\omega_{14}\omega_8 - \omega_6\omega_{22}\omega_{19}c_s^2v_2\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18} - 2\omega_6\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8\omega_{18} + \omega_6\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} -$$
$$2\omega_6\omega_{22}\omega_{19}v_2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8 - \omega_6\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} - 2\omega_6\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_{11}\omega_{14}\omega_8\omega_{18} - \omega_6\omega_{22}\omega_{19}v_2v_1^2\omega_{13}\omega_{20}\omega_{11}\omega_8\omega_{18} +$$
$$2\omega_6\omega_{19}c_s^2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 - 2\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8 - 2\omega_{22}\omega_{19}v_2^2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_{22}\omega_{19}c_s^2v_1\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} +$$
$$2\omega_6\omega_{22}c_s^2v_2\omega_{13}\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_6\omega_{22}\omega_{19}v_2^2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{18} + 2\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18} - 2\omega_{19}v_2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} +$$
$$2\omega_{22}\omega_{19}v_2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{18} + 2\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 - \omega_6\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_{18} + \omega_6\omega_{19}v_2^2v_1\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} -$$
$$2\omega_6\omega_{19}c_s^2v_2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 - 2\omega_6\omega_{22}\omega_{19}v_2^2v_1\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8\omega_{18} - \omega_6\omega_{19}v_2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_{18} -$$
$$\omega_6\omega_{22}\omega_{19}v_2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_{22}\omega_{19}v_2v_1^2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_{18} - \omega_6\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} +$$

$2\omega_6\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_6\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_{18} + 2\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} +$
$2\omega_6\omega_{19}v_2^2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 - 2\omega_6\omega_{22}\omega_{19}v_2v_1^2\omega_{13}\omega_7\omega_{14}\omega_8\omega_{18} + 2\omega_6\omega_{22}\omega_{19}v_2^2v_1\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_{18} - 2\omega_{22}\omega_{19}v_2v_1^2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8\omega_{18} -$
$\omega_6\omega_{19}c_s^2v_2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{18} + \omega_6\omega_{22}\omega_{19}v_2v_1^2\omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} -$
$\omega_6\omega_{19}c_s^2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_6\omega_{22}\omega_{19}v_2^2v_1\omega_{13}\omega_{20}\omega_{11}\omega_{14}\omega_{18} + \omega_6\omega_{19}c_s^2v_1\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_{18} + 2\omega_6\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_{18} +$
$2\omega_6\omega_{22}v_2v_1^2\omega_{13}\omega_{11}\omega_{14}\omega_8\omega_{18} + 2\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7\omega_{11}\omega_{14}\omega_{18} + \omega_6\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18} - 2\omega_{22}\omega_{19}v_2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 +$
$\omega_6\omega_{22}\omega_{19}v_2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{14}\omega_8\omega_{18} - 2\omega_6\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7\omega_{14}\omega_8\omega_{18} - \omega_6\omega_{22}\omega_{19}v_2^2v_1\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} - 2\omega_{22}\omega_{19}v_2v_1^2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18} +$
$2\omega_6\omega_{22}\omega_{19}c_s^2v_2\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 - 2\omega_6\omega_{22}\omega_{19}v_2^2v_1\omega_{13}\omega_7\omega_{14}\omega_8 - 2\omega_6\omega_{22}\omega_{19}v_2^2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8 + 2\omega_6\omega_{22}\omega_{19}c_s^2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{18} +$
$\omega_6\omega_{22}\omega_{19}c_s^2v_2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} - 2\omega_{22}\omega_{19}v_2v_1^2\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18} - \omega_6\omega_{22}\omega_{19}v_2^2v_1\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18})\frac{v_3\rho}{\omega_6\omega_{22}\omega_{19}\omega_{13}\omega_7\omega_{20}\omega_{11}\omega_{14}\omega_8\omega_{18}}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_3} = C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_3}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_3} = 0$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_y\mathrm{D}_z v_3} = (-2\omega_3v_2^2\omega_4\omega_2 + 9\omega_4\omega_1\omega_2 + 27\omega_3c_s^2\omega_1\omega_2 - 27c_s^2\omega_4\omega_1\omega_2 + 6\omega_3c_s^2\omega_4\omega_1 - 6\omega_3c_s^2\omega_4\omega_2 + 2\omega_3v_2^2\omega_4\omega_1 + 9\omega_3v_2^2\omega_1\omega_2 -$
$9v_2^2\omega_4\omega_1\omega_2 + 2\omega_3\omega_4\omega_2 - 2\omega_3\omega_4\omega_1 - 9\omega_3\omega_1\omega_2)\frac{v_3v_2\rho}{72\omega_3\omega_4\omega_1\omega_2}$

coefficient $C^{(3)}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z\rho}$ **at** $\frac{\partial^4\rho}{\partial x_1\partial x_2^2\partial x_3}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z\rho} = (36v_3c_s^2v_1^2\omega - 24v_3c_s^2v_2^2 + v_3v_2^2v_1^2\omega^3 + 14v_3^2c_s^2v_1\omega^2 - v_3^2c_s^2v_1\omega^3 - 14v_3v_2^2v_1^2\omega^2 - 36v_3^2v_2^2v_1\omega + 36v_3v_2^2v_1^2\omega + 14v_3^2v_2^2v_1\omega^2 +$
$v_3c_s^2v_1^2\omega^3 + 24v_3^2c_s^2v_1 - 14v_3c_s^2v_1^2\omega^2 - v_3^2v_2^2v_1\omega^3 - 36v_3^2c_s^2v_1\omega + 24v_3^2v_2^2v_1 - 14v_3c_s^2v_2^2\omega^2 + v_3c_s^2v_2^2\omega^3 + 24c_s^2v_2^2v_1 - 36c_s^2v_2^2v_1\omega - 24v_3v_2^2v_1^2 +$
$14c_s^2v_2^2v_1\omega^2 - c_s^2v_2^2v_1\omega^3 + 36v_3c_s^2v_2^2\omega - 24v_3c_s^2v_1^2)\frac{1}{2\omega^3}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z\rho} = (2\omega_6^2c_s^2\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2v_3\omega_{16}v_2^2v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + \omega_6^2\omega_{19}v_3c_s^2v_2^2\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} +$
$2\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} - \omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 8\omega_6\omega_{19}c_s^4\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} -$
$4\omega_6^2\omega_{19}c_s^4\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{18} - 2\omega_6^2v_3\omega_{16}v_2^2v_1^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_{18} + 2\omega_6\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} +$
$2\omega_6^2c_s^2\omega_{16}v_2^2v_1\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_{18} - \omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_7^2\omega_{20}\omega_{17}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{19}v_3^2v_2^2v_1\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} -$
$2\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} - 8\omega_6^2\omega_{19}c_s^4\omega_{16}v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} +$
$2\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + \omega_6^2\omega_{19}v_3^2v_2^2v_1^2\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + \omega_6\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} -$
$\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2 + \omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2 + \omega_6^2\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_{18} +$
$2\omega_6^2v_3c_s^2\omega_{16}v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_{18} + 2\omega_6^2v_3^2c_s^2\omega_{16}v_1\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + \omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} -$
$\omega_6^2\omega_{19}v_3c_s^2v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - \omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} -$
$2\omega_6^2v_3^2c_s^2\omega_{16}v_1\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} +$
$2\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_{18} + 2\omega_6^2v_3^2\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{19}c_s^2v_2^2v_1\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} -$
$2\omega_6^2v_3c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} - 2\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} +$
$2\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - \omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2 +$
$\omega_6^2\omega_{19}v_3^2v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_6\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2 +$
$\omega_6\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} - 4\omega_{19}c_s^4\omega_{16}v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} +$
$2\omega_6\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_6\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + \omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} +$
$12\omega_6^2\omega_{19}c_s^4\omega_{16}v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2v_3^2c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_{18} +$
$2\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_6^2v_3^2\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} -$
$\omega_6\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + \omega_6\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + \omega_6\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} -$
$\omega_6\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - \omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} +$
$2\omega_6\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2 - 2\omega_6\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2 + 2\omega_6^2\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} -$
$2\omega_6\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - \omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2 - \omega_6^2\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_{18} -$
$2\omega_6^2v_3c_s^2\omega_{16}v_1^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_{18} + 2\omega_6^2v_3c_s^2\omega_{16}v_1^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} +$
$\omega_6^2\omega_{19}v_3c_s^2v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2v_3c_s^2\omega_{16}v_1^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} -$
$\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2 + \omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2 + 2\omega_6\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} +$
$2\omega_6^2\omega_{19}v_3^2c_s^2v_1\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - \omega_6\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} +$
$\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2 + \omega_6\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2 - 2\omega_6^2\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} -$
$\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} +$
$2\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - \omega_6\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2 - 2\omega_6^2\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} +$
$\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2 + \omega_6\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2 - 2\omega_6^2\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} -$
$\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} -$
$2\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_7^3\omega_{23}\omega_{17}\omega_8^2 - 2\omega_6\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} - \omega_6^2\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2 -$
$4\omega_6\omega_{19}c_s^4\omega_{16}v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - \omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} + \omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} -$
$2\omega_6^2v_3^2\omega_{16}v_2^2v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} +$
$\omega_6\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{19}c_s^2v_2^2v_1\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} + \omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_{18} +$
$2\omega_6^2v_3^2\omega_{16}v_2^2v_1\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_{18} + \omega_6\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2 - 2\omega_6^2v_3\omega_{16}v_2^2v_1^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} +$
$2\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2c_s^2\omega_{16}v_2^2v_1\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2v_3\omega_{16}v_2^2v_1^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} -$
$2\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2c_s^2\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} +$
$2\omega_6\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2 + \omega_6^2\omega_{19}v_3v_2^2v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2v_3c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} +$
$\omega_6^2\omega_{19}v_3c_s^2v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2v_3c_s^2\omega_{16}v_2^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} +$
$\omega_6\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2 - \omega_6\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2 + 2\omega_6^2\omega_{19}v_3^2v_2^2v_1\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} -$

$\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2 - 2\omega_6^2v_3\omega_{16}v_2^2v_1^2\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_{18} + 2\omega_6^2c_s^2\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{17}\omega_8^2 -$
$2\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_{18} + 2\omega_6\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} + 2\omega_6\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2 +$
$2\omega_6^2\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + 4\omega_6^2\omega_{19}c_s^4\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} -$
$2\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_6^2\omega_{19}v_3^2c_s^2v_1\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} + \omega_6^2\omega_{19}v_3c_s^2v_1^2\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} +$
$2\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2c_s^2\omega_{16}v_2^2v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} +$
$2\omega_6^2v_3\omega_{16}v_2^2v_1^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_{18} - 2\omega_6^2v_3c_s^2\omega_{16}v_1^2\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_{18} +$
$2\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_6^2\omega_{19}v_3^2v_2^2v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2v_3\omega_{16}v_2^2v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_{18} -$
$\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2 - 2\omega_6^2c_s^2\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_{18} + \omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_{18} -$
$2\omega_6^2v_3^2\omega_{16}v_2^2v_1\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2v_3^2\omega_{16}v_2^2v_1\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} -$
$\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2v_3c_s^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{17}\omega_8^2 +$
$2\omega_6^2\omega_{19}v_3c_s^2v_1^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2v_3^2c_s^2\omega_{16}v_1\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} -$
$\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_{18} + \omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_{18} + 2\omega_6^2v_3c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_{18} -$
$2\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2v_3c_s^2\omega_{16}v_1^2\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{19}v_3c_s^2v_1^2\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} -$
$2\omega_6^2\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2v_3c_s^2\omega_{16}v_1^2\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} +$
$\omega_6^2\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2v_3^2c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_{18} + \omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_{18} -$
$\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_{18} - 2\omega_6^2v_3c_s^2\omega_{16}v_2^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_{18} - 2\omega_6^2v_3^2c_s^2\omega_{16}v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} -$
$\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_{18} + \omega_6^2\omega_{19}v_3\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2 - \omega_6^2\omega_{19}v_3^2c_s^2v_1\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} -$
$2\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_6^2\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} + 8\omega_6\omega_{19}c_s^4\omega_{16}v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} +$
$\omega_6^2\omega_{19}c_s^2v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{19}c_s^2\omega_{16}v_1^2\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_2^2v_1^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} +$
$2\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2 + 2\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2 -$
$2\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_8^2 + 2\omega_6^2\omega_{19}v_3c_s^2v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - \omega_6^2\omega_{19}c_s^2v_2^2v_1\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} +$
$2\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_{18} + 2\omega_6\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} +$
$2\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2v_3^2c_s^2\omega_{16}v_1\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2v_3c_s^2\omega_{16}v_1^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} -$
$2\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2v_3^2c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} +$
$2\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} -$
$2\omega_6\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2 + 4\omega_{19}c_s^4\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + \omega_6^2\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2 +$
$2\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - \omega_6\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2 + 2\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} +$
$2\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2 - 2\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} + 2\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} -$
$2\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - \omega_6^2\omega_{19}v_3^2v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} + 4\omega_6^2\omega_{19}c_s^4\omega_{16}v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{18} -$
$2\omega_6^2\omega_{19}v_3^2c_s^2v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_6^2\omega_{19}v_3^2\omega_{16}v_2^2v_1^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2 + \omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} -$
$2\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 8\omega_6^2\omega_{19}c_s^4\omega_{16}v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} +$
$2\omega_6\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + \omega_6\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - \omega_6\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2 -$
$\omega_6^2\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} - 2\omega_6^2v_3c_s^2\omega_{16}v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} +$
$2\omega_6\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_6\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} -$
$2\omega_6\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} + 2\omega_6\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - \omega_6^2\omega_{19}v_3c_s^2v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} -$
$2\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}v_2^2v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2v_3^2c_s^2\omega_{16}v_1^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} -$
$8\omega_6^2\omega_{19}c_s^4\omega_{16}v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - \omega_6^2\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + \omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} -$
$\omega_6^2\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} - 2\omega_6^2v_3c_s^2\omega_{16}v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} +$
$2\omega_6\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - \omega_6^2\omega_{19}v_3c_s^2v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} +$
$\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2 - \omega_6^2\omega_{19}v_3^2c_s^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} -$
$\omega_6^2\omega_{19}v_3v_2^2v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2 + 2\omega_6\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} -$
$2\omega_6^2v_3c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}v_1^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} +$
$\omega_6\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} - \omega_6\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_7^3\omega_{23}\omega_{17}\omega_8^2 -$
$2\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} +$
$2\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2 - 2\omega_6^2\omega_{19}c_s^2v_2^2v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2v_3\omega_{16}v_2^2v_1^2\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} +$
$2\omega_6^2c_s^2\omega_{16}v_2^2v_1\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + \omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2v_3\omega_{16}v_2^2v_1^2\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} +$
$2\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_6^2c_s^2\omega_{16}v_2^2v_1\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} -$
$\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_{18} - 2\omega_6^2v_3^2c_s^2\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2 -$
$\omega_6^2\omega_{19}v_3^2v_2^2v_1\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_6^2v_3^2c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} +$
$\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2v_3c_s^2\omega_{16}v_2^2\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{19}v_3c_s^2v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} -$
$\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} - 4\omega_6^2\omega_{19}c_s^4\omega_{16}v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} -$
$2\omega_6^2v_3c_s^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} +$
$2\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} + \omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + \omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_{18} -$
$\omega_6^2\omega_{19}c_s^2v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} -$
$2\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18})\frac{1}{2\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z\rho} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z\rho}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z\rho} = (2\omega_6\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{18} - 2\omega_6\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_7\omega_{23}\omega_{17}\omega_8 - 2\omega_6\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{18} +$
$2\omega_6\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_6\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_6v_3c_s^2\omega_{16}v_1^2\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} -$
$2\omega_6\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_{18} + 2\omega_6v_3^2\omega_{16}v_2^2v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_6\omega_{19}v_3c_s^2v_1^2\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} -$
$2\omega_6v_3^2c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_{18} - 2\omega_6\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{18} - 2\omega_6v_3\omega_{16}v_2^2v_1^2\omega_7\omega_{23}\omega_{17}\omega_8\omega_{18} +$
$2\omega_6v_3c_s^2\omega_{16}v_2^2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + \omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_{18} +$
$\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} + \omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + \omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_{18} -$
$\omega_6^2\omega_{19}c_s^2v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} -$
$2\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18})$

$2\omega_6\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_{23}\omega_{17}\omega_{11}\omega_{18} + \omega_6\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 + 2\omega_6\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} -$
$\omega_6\omega_{19}v_3^2c_s^2v_1\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_6\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - \omega_6\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} +$
$\omega_6\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 + \omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_6v_3^2\omega_{16}v_2^2v_1\omega_7\omega_{20}\omega_{17}\omega_8\omega_{18} - 2\omega_6v_3\omega_{16}v_2^2v_1^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} +$
$2\omega_6c_s^2\omega_{16}v_2^2v_1\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_{18} - 2\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_{18} - 2\omega_6\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_{23}\omega_{20}\omega_{11}\omega_{18} +$
$2\omega_6\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_7\omega_{23}\omega_{17}\omega_8\omega_{18} + \omega_6\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} - \omega_6\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} -$
$\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} - 2\omega_6v_3^2c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_6c_s^2\omega_{16}v_2^2v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} -$
$\omega_6\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_6v_3\omega_{16}v_2^2v_1^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + \omega_6\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_{18} +$
$\omega_6\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 - \omega_6\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 - \omega_6\omega_{19}c_s^2v_2^2v_1\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} -$
$2\omega_6v_3^2c_s^2\omega_{16}v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - \omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_6\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_{23}\omega_{17}\omega_{11}\omega_{18} -$
$2\omega_6v_3c_s^2\omega_{16}v_1^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_6v_3^2c_s^2\omega_{16}v_1\omega_7\omega_{20}\omega_{17}\omega_8\omega_{18} - 2\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_{18} - 2\omega_6v_3c_s^2\omega_{16}v_2^2\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} +$
$\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_6\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_{23}\omega_{17}\omega_{11}\omega_{18} - \omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} +$
$2\omega_6\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8 - \omega_6\omega_{19}v_3c_s^2v_1^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + \omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 -$
$2\omega_6\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_{18} - \omega_6\omega_{19}v_3^2v_2^2v_1\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} + 2\omega_6\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} -$
$2\omega_6\omega_{19}v_3v_2^2v_1^2\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} - 2\omega_6v_3c_s^2\omega_{16}v_2^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_6v_3c_s^2\omega_{16}v_1^2\omega_7\omega_{23}\omega_{17}\omega_8\omega_{18} +$
$2\omega_6\omega_{19}v_3v_2^2v_1^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_6\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} -$
$2\omega_6\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_6\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_{18} - 2\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{18} +$
$\omega_6\omega_{19}v_3^2v_2^2v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_6\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{17}\omega_8 - 2\omega_6\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_7\omega_{23}\omega_{17}\omega_8 - 2\omega_6v_3^2\omega_{16}v_2^2v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} +$
$2\omega_6\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_7\omega_{23}\omega_{17}\omega_8\omega_{18} - \omega_6\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + \omega_6\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} -$
$\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} - 2\omega_6v_3^2\omega_{16}v_2^2v_1\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} + \omega_6\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_7\omega_{20}\omega_{17}\omega_8\omega_{18} +$
$\omega_6\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_{18} - 2\omega_6\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_6\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{18} -$
$\omega_6\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - \omega_6\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_6\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_{18} -$
$2\omega_6\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_{18} + 2\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_{18} + 2\omega_6v_3^2\omega_{16}v_2^2v_1\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_6v_3\omega_{16}v_2^2v_1^2\omega_7\omega_{20}\omega_{17}\omega_8\omega_{18} +$
$2\omega_6c_s^2\omega_{16}v_2^2v_1\omega_7\omega_{20}\omega_{17}\omega_8\omega_{18} + 2\omega_6\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} + 2\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} - \omega_6\omega_{19}v_3^2c_s^2v_1\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} -$
$\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 + \omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 + 2\omega_6\omega_{19}v_3c_s^2v_1^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} -$
$2\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{18} - 2\omega_6\omega_{19}v_3c_s^2v_1^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + \omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 - 2\omega_6\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_{23}\omega_{20}\omega_{11}\omega_{18} -$
$2\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} - \omega_6\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 -$
$2\omega_6c_s^2\omega_{16}v_2^2v_1\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_6v_3\omega_{16}v_2^2v_1^2\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8 - 2\omega_6\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} +$
$2\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_{18} - 2\omega_6v_3^2\omega_{16}v_2^2v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_{18} - 2\omega_6v_3c_s^2\omega_{16}v_1^2\omega_7\omega_{20}\omega_{17}\omega_8\omega_{18} + 2\omega_6v_3^2c_s^2\omega_{16}v_1\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} +$
$2\omega_6\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_{23}\omega_{20}\omega_{11}\omega_{18} - 2\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8 + 2\omega_6\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} -$
$2\omega_6\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{18} + \omega_6\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 + \omega_6\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} -$
$\omega_6\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_{18} + 2\omega_6v_3c_s^2\omega_{16}v_2^2\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} -$
$2\omega_6\omega_{19}v_3v_2^2v_1^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - \omega_6\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 - \omega_6\omega_{19}v_3^2v_2^2v_1\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_6v_3^2c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{17}\omega_8\omega_{18} -$
$2\omega_6\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} - \omega_6\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} - \omega_6\omega_{19}c_s^2v_2^2v_1\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} +$
$2\omega_6\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_{18} + \omega_6\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_6\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} -$
$\omega_6\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 + 2\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8 - 2\omega_6\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{18} +$
$2\omega_6\omega_{19}v_3c_s^2\omega_{16}v_2^2v_1\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_6v_3c_s^2\omega_{16}v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - \omega_6\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 + 2\omega_6\omega_{19}v_3^2v_2^2v_1\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} -$
$\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 + \omega_6\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 + \omega_6\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} +$
$2\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{18} + 2\omega_6\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_7\omega_{23}\omega_{17}\omega_8 + 2\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_{18} - 2\omega_6\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_{23}\omega_{17}\omega_{11}\omega_{18} -$
$2\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8 + 2\omega_6\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_7\omega_{23}\omega_{17}\omega_8\omega_{18} -$
$2\omega_6\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} + \omega_6\omega_{19}c_s^2v_2^2v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{18} +$
$2\omega_6c_s^2\omega_{16}v_2^2v_1\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{18} - 2\omega_6v_3\omega_{16}v_2^2v_1^2\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_6\omega_{19}v_3^2c_s^2v_1\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} -$
$\omega_6\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_{18} - 2\omega_6\omega_{19}v_3c_s^2v_2^2\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} + \omega_6\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} +$
$\omega_6\omega_{19}v_3c_s^2v_1^2\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} + 2\omega_6v_3c_s^2\omega_{16}v_1^2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} + \omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} -$
$\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} + 2\omega_6v_3c_s^2\omega_{16}v_1^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_6\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8 -$
$2\omega_6\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8 - 2\omega_6\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_7\omega_{20}\omega_{17}\omega_8\omega_{18} - 2\omega_6\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_{18} +$
$\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} - \omega_6\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_7\omega_{20}\omega_{17}\omega_8\omega_{18} - 2\omega_6\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{18} +$
$2\omega_6\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_{18} + 2\omega_6\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_6\omega_{19}c_s^2v_2^2v_1\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} -$
$2\omega_6\omega_{19}v_3^2c_s^2v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_6\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_{18} - 2\omega_6\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} -$
$\omega_6\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_7\omega_{20}\omega_{17}\omega_8\omega_{18} + \omega_6\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_7\omega_{20}\omega_{17}\omega_8\omega_{18} + 2\omega_6\omega_{19}v_3^2v_2^2v_1\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} - \omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 -$
$2\omega_6\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_{23}\omega_{20}\omega_{11}\omega_{18} + 2\omega_6\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_{18} + 2\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{18} +$
$2\omega_6\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{18} - 2\omega_6\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{18} - 2\omega_6\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8 +$
$2\omega_6v_3^2c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} + \omega_6\omega_{19}v_3c_s^2\omega_{16}v_2^2v_1\omega_7\omega_{20}\omega_{17}\omega_8\omega_{18} +$
$2\omega_6\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} - 2\omega_6c_s^2\omega_{16}v_2^2v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_6\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} +$
$2\omega_6v_3\omega_{16}v_2^2v_1^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + \omega_6\omega_{19}v_3v_2^2v_1^2\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} - 2\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8 - 2\omega_6v_3c_s^2\omega_{16}v_2^2\omega_7\omega_{20}\omega_{17}\omega_8\omega_{18} -$
$\omega_6\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_{18} + 2\omega_6v_3^2c_s^2\omega_{16}v_1\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} + \omega_6\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_{18} -$
$2\omega_6c_s^2\omega_{16}v_2^2v_1\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_6v_3\omega_{16}v_2^2v_1^2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} + \omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} +$

$\omega_6\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_6v_3c_s^2\omega_{16}v_2^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + \omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} +$
$\omega_6\omega_{19}v_3c_s^2v_2^2\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} + 2\omega_6v_3c_s^2\omega_{16}v_2^2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_{18} + 2\omega_6\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_{23}\omega_{20}\omega_{11}\omega_{18} -$
$\omega_6\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_{18} - 2\omega_6\omega_{19}v_3^2v_2^2v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_6\omega_{19}c_s^2v_2^2v_1\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} +$
$2\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8 - 2\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8 + 2\omega_6\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} - 2\omega_6\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{17}\omega_8\omega_{18} +$
$2\omega_6v_3^2\omega_{16}v_2^2v_1\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} + \omega_6\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} + \omega_6\omega_{19}v_3c_s^2v_1^2\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_6\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_{23}\omega_{17}\omega_{11}\omega_{18} -$
$2\omega_6\omega_{19}v_3c_s^2v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_6v_3c_s^2\omega_{16}v_1^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_{18} -$
$\omega_6\omega_{19}v_3c_s^2v_2^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_{18} - 2\omega_6\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_{18} -$
$2\omega_6c_s^2\omega_{16}v_2^2v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_{18} + 2\omega_6v_3\omega_{16}v_2^2v_1^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_{18} + \omega_6\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_7\omega_{20}\omega_{17}\omega_8\omega_{18} -$
$\omega_6\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 - 2\omega_6\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_6\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} +$
$2\omega_6\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_6v_3^2\omega_{16}v_2^2v_1\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - \omega_6\omega_{19}v_3v_2^2v_1^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} +$
$2\omega_6\omega_{19}v_3^2c_s^2v_1\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} + 2\omega_6\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{18} - 2\omega_6\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} +$
$2\omega_6\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_6\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_6v_3c_s^2\omega_{16}v_2^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_{18} -$
$\omega_6\omega_{19}v_3\omega_{16}v_2^2v_1^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 + \omega_6\omega_{19}c_s^2\omega_{16}v_2^2v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 + 2\omega_6\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_{23}\omega_{20}\omega_{11}\omega_{18} -$
$\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + \omega_6\omega_{19}v_3^2c_s^2v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_6\omega_{19}v_3c_s^2\omega_{16}v_1^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{18} -$
$2\omega_6\omega_{19}v_3c_s^2\omega_{16}v_2^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_6\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8)\frac{1}{2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z\rho} = C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z\rho}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z\rho} = 0$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z\rho} = (-56\omega_3^2c_s^2v_1^2\omega_4^2\omega_1\omega_2^2 + 48\omega_3^2v_2^4\omega_4^2\omega_1^3 - 27\omega_3^2c_s^2\omega_4\omega_1^3\omega_2^3 - 108\omega_3^2c_s^2v_1^2\omega_4\omega_1^2\omega_2^3 + 192\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^2 - 108\omega_3^2c_s^2\omega_1^2\omega_2^3 -$
$54c_s^2\omega_4^2\omega_1^2\omega_2^3 + 864\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^2\omega_2^2 + 54c_s^2v_1^2\omega_4^2\omega_1^3\omega_2^3 + 8\omega_3^2v_1^2\omega_4^2\omega_1\omega_2^2 - 104\omega_3^2c_s^2\omega_4^2\omega_1^3 - 192\omega_3^2v_2^2\omega_4^2\omega_1^2\omega_2^2 - 30\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^3 - 162\omega_3^2c_s^4\omega_1^3\omega_2^3 -$
$168\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2 + 48\omega_3^2v_2^2v_1^2\omega_4^2\omega_1^3 - 96\omega_3^2v_2^2\omega_4^2\omega_2^3 - 432\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^3\omega_2 + 24c_s^2\omega_4^2\omega_1^3\omega_2^2 + 432\omega_3^2c_s^2v_2^2\omega_4^2\omega_2^3 + 324\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^3 +$
$8\omega_3^2c_s^2v_1^2\omega_4^2\omega_1\omega_2^3 - 24\omega_3c_s^4\omega_4^2\omega_1^3\omega_2 + 96\omega_3^2v_2^2\omega_4^2\omega_1^3\omega_2 + 192\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^2 + 144\omega_3^2c_s^4\omega_4^2\omega_2^3 + 8\omega_3^2v_1^2\omega_4^2\omega_1\omega_2^3 - 24c_s^2v_1^2\omega_4^2\omega_1^3\omega_2^2 + 324\omega_3^2c_s^4\omega_1^2\omega_2^3 -$
$72\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2 + 56\omega_3c_s^2\omega_4^2\omega_1\omega_2^3 - 96\omega_3^2v_2^2\omega_4^2\omega_1^3 - 84c_s^2v_1^2\omega_4^2\omega_1^2\omega_2^3 - 56\omega_3c_s^2v_1^2\omega_4^2\omega_1\omega_2^3 - 96\omega_3^2v_2^2v_1^2\omega_4^2\omega_1\omega_2^2 + 432\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^3 + 144\omega_3^2c_s^4\omega_4^2\omega_1^3 -$
$8\omega_3^2\omega_4^2\omega_1\omega_2^3 + 84c_s^2\omega_4^2\omega_1^2\omega_2^3 + 128\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^2 - 36\omega_3^2v_2^4\omega_4^2\omega_1\omega_2^3 + 54\omega_3^2c_s^2\omega_1^3\omega_2^3 + 27\omega_3^2c_s^2v_1^2\omega_4\omega_1^3\omega_2^3 + 108\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^3 - 60\omega_3^2v_2^2v_1^2\omega_4^2\omega_1\omega_2^3 +$
$24\omega_3^2v_2^4\omega_4^2\omega_2^3 + 96\omega_3^2v_2^2\omega_4^2\omega_1^2\omega_2 + 30\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^2 - 81\omega_3c_s^4\omega_4^2\omega_1^3\omega_2^3 - 104\omega_3^2c_s^2\omega_4^2\omega_2^3 + 64\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^3 + 72\omega_3^2v_2^2v_1^2\omega_4^2\omega_2^3 - 432\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^2\omega_2 -$
$8\omega_3^2\omega_4^2\omega_1\omega_2^3 + 64\omega_3c_s^2v_1^2\omega_4^2\omega_1^2\omega_2^2 + 162c_s^4\omega_4^2\omega_1^3\omega_2^3 - 60\omega_3^2v_2^2v_1^2\omega_4^2\omega_1^3\omega_2 + 8\omega_3^2v_1^2\omega_4^2\omega_1^2\omega_2 - 64\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^2 + 81\omega_3^2c_s^4\omega_4\omega_1^3\omega_2^3 + 8\omega_3^2\omega_4^2\omega_1^3 +$
$72\omega_3^2v_2^4\omega_4^2\omega_1^2\omega_2^2 + 10\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^3 - 8\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^2\omega_2 + 112\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2 - 8\omega_3^2\omega_4^2\omega_1^3\omega_2 - 108\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^3 + 8\omega_3c_s^2\omega_4^2\omega_1^3\omega_2 - 8\omega_3c_s^2v_1^2\omega_4^2\omega_1^3\omega_2 +$
$108\omega_3^2c_s^2v_1^2\omega_1^2\omega_2^3 + 120\omega_3^2v_2^2v_1^2\omega_4^2\omega_1^2\omega_2^2 - 72c_s^4\omega_4^2\omega_1^3\omega_2^2 + 108\omega_3c_s^2v_1^2\omega_4^2\omega_1^2\omega_2^3 - 8\omega_3^2v_1^2\omega_4^2\omega_1^3 + 16\omega_3^2\omega_4^2\omega_1^2\omega_2^2 + 32\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^3 -$
$36\omega_3^2v_2^4\omega_4^2\omega_1^3\omega_2 + 10\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^3\omega_2^2 - 176\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^2 - 432\omega_3^2c_s^2v_2^2\omega_4^2\omega_1\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^2\omega_2 - 10\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^2\omega_2^3 - 168\omega_3c_s^4\omega_4^2\omega_1\omega_2^3 +$
$80\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2 - 40\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^3\omega_2 - 216\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^2 + 96\omega_3^2v_2^2\omega_4^2\omega_1\omega_2^3 - 324\omega_3^2c_s^4\omega_4\omega_1^2\omega_2^3 - 8\omega_3^2v_1^2\omega_4^2\omega_2^3 - 24\omega_3^2v_2^2v_1^2\omega_4^2\omega_1^2\omega_2 -$
$252c_s^4\omega_4^2\omega_1^2\omega_2^3 + 8\omega_3^2v_1^2\omega_4^2\omega_1^3\omega_2 + 32\omega_3^2c_s^2v_1^2\omega_4^2\omega_2^3 - 72\omega_3^2v_2^4\omega_4^2\omega_1^2\omega_2 - 10\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2^2 + 32\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^2\omega_2^2 - 432\omega_3^2c_s^2v_2^2\omega_4^2\omega_1\omega_2^2 -$
$54\omega_3^2c_s^2v_1^2\omega_1^3\omega_2^3 - 27\omega_3c_s^2v_1^2\omega_4^2\omega_1^3\omega_2^3 - 16\omega_3^2v_1^2\omega_4^2\omega_1^2\omega_2^2 + 8\omega_3^2\omega_4^2\omega_2^3 + 27\omega_3c_s^2\omega_4^2\omega_1^3\omega_2^3 + 96\omega_3^2v_2^2\omega_4^2\omega_1\omega_2^2 - 24\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^3)\frac{v_1}{72\omega_3^2\omega_4^2\omega_1^3\omega_2^3}$

coefficient $C^{(3)}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_1}$ **at** $\frac{\partial^4 v_1}{\partial x_1\partial x_2^2\partial x_3}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_1} = (144c_s^2v_2^2 - 216v_3^2v_2^2\omega - c_s^4\omega^3 - 216v_3^2c_s^2\omega - 16c_s^4\omega^2 - 36c_s^4 + 84v_3^2c_s^2\omega^2 + 54c_s^4\omega - 6v_3^2v_2^2\omega^3 + 144v_3^2v_2^2 + 84v_3^2v_2^2\omega^2 -$
$6v_3^2c_s^2\omega^3 + 144v_3^2c_s^2 - 168v_3c_s^2v_1\omega^2 - 6c_s^2v_2^2\omega^3 - 288v_3c_s^2v_1 + 432v_3v_2^2v_1\omega + 12v_3c_s^2v_1\omega^3 + 84c_s^2v_2^2\omega^2 - 288v_3v_2^2v_1 - 168v_3v_2^2v_1\omega^2 -$
$216c_s^2v_2^2\omega + 432v_3c_s^2v_1\omega + 12v_3v_2^2v_1\omega^3)\frac{\rho}{12\omega^3}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_1} = (12\omega_6^3\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5 + 18\omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$24\omega_6^3\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2 + 12\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} + 12\omega_6^3\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} +$
$12\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3v_3^2\omega_{16}v_2^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} - 36\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} -$
$24\omega_6^3\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^2 - 24\omega_6^3\omega_{19}v_3^2c_s^2\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} + 6\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} -$
$24\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} - 24\omega_6\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} + 12\omega_6^3\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} -$
$12\omega_6^3\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3v_3^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3v_3^2\omega_{16}v_2^2\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} -$
$24\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3c_s^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} +$
$24\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3c_s^2\omega_{16}v_2^2\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{19}v_3^2c_s^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$24\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 6\omega_6^3\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} + 24\omega_6^3\omega_{19}v_3v_2^2v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} -$
$12\omega_6^3\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} - 12\omega_6^3\omega_{19}c_s^4\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2 + 12\omega_6^3\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} - 24\omega_6^3\omega_{19}v_3c_s^2v_1\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} -$
$12\omega_6^3\omega_{19}v_3^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} + 12\omega_6^3\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 24\omega_6^3\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$24\omega_6^3\omega_{19}c_s^4\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2 + 24\omega_6^3\omega_{19}v_3^2c_s^2\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} +$
$24\omega_6\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} - 24\omega_6^3\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} + 12\omega_6^3v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18} -$
$12\omega_6^3\omega_{19}v_3^2v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} -$
$6\omega_6^2\omega_{19}v_3^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} - 12\omega_6^2\omega_{19}v_3^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} +$
$12\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5 + 24\omega_6^3v_3c_s^2\omega_{16}v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 6\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$24\omega_6^3v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} -$
$24\omega_6^3v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 24\omega_6^3\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$

$12\omega_6^3\omega_{19}c_s^2v_2^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6^3v_3\omega_{16}v_2^2v_1\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6^3\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} -$
$12\omega_6^3c_s^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3\omega_{19}v_3^2\omega_{16}v_2^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 6\omega_6^3\omega_{19}v_3^2c_s^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} -$
$12\omega_6^3\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2\omega_{19}v_3^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2 +$
$12\omega_6^3\omega_{19}v_3^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} + 24\omega_6^3\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} +$
$12\omega_6^3\omega_{19}v_3v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3v_3^2c_s^2\omega_{16}\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18} +$
$12\omega_6^2\omega_{19}v_3^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} - 6\omega_6^2\omega_{19}v_3^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2 + 12\omega_6^3v_3^2c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} +$
$6\omega_6^3\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6^3\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^2 + 12\omega_6^3c_s^2\omega_{16}v_2^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} -$
$12\omega_6^3\omega_{19}v_3c_s^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 18\omega_6^3\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} - 12\omega_6^3\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} +$
$12\omega_6^3\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 - 18\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} + 24\omega_6^3\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} -$
$12\omega_6^3\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_5^2\omega_{18} - 12\omega_6^3\omega_{19}c_s^4\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} +$
$12\omega_6^3\omega_{19}v_3c_s^2v_1\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 6\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{19}v_3^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} -$
$6\omega_6^3\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 18\omega_6^3\omega_{19}c_s^4\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} +$
$12\omega_6^3\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} - 24\omega_6^3v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^3\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2 - 24\omega_6^3\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3\omega_{19}v_3^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^3\omega_{19}c_s^4\omega_{16}\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 6\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2 - 12\omega_6^3\omega_{19}v_3^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$24\omega_6^3\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} - 12\omega_6^3\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2 + 6\omega_6^3\omega_{19}v_3^2\omega_{16}v_2^2\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} -$
$12\omega_6^3\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 24\omega_6^3\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} -$
$6\omega_6^3\omega_{19}c_s^2v_2^2\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 12\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 24\omega_6^3v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} -$
$24\omega_6^3v_3\omega_{16}v_2^2v_1\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 24\omega_6^3\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 48\omega_6^3\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} +$
$24\omega_6^3\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2 - 24\omega_6^3\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} -$
$12\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6^3v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 6\omega_6^3\omega_{19}c_s^2v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} -$
$6\omega_6^3\omega_{19}v_3^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - \omega_6^3\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} +$
$6\omega_6^3\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2 + 12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5 + 24\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} +$
$42\omega_6^3\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} + 12\omega_6^2\omega_{19}c_s^4\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 6\omega_6^3\omega_{19}c_s^4\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} -$
$24\omega_6^3\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} - 18\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3c_s^2\omega_{16}v_2^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} -$
$6\omega_6^3\omega_{19}v_3^2c_s^2\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} -$
$12\omega_6^3\omega_{19}v_3^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 6\omega_6^3\omega_{19}v_3^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{19}c_s^4\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^3\omega_{19}v_3^2v_2^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2\omega_{19}c_s^2v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$24\omega_6^3\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2 - 12\omega_6^3\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_5^2\omega_{18} +$
$12\omega_6^3c_s^4\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} + 24\omega_6^3\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} + 12\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} +$
$24\omega_6^3\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3\omega_{19}v_3^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2 + 12\omega_6^3\omega_{19}c_s^4\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^3v_3^2c_s^2\omega_{16}\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6^3v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} + 24\omega_6^3\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{18} -$
$12\omega_6^3\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 6\omega_6^3\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3v_3^2\omega_{16}v_2^2\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} -$
$12\omega_6^3\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} - 12\omega_6^3\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_5^2\omega_{18} - 12\omega_6^3\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5 -$
$24\omega_6^3\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3v_3^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{19}v_3v_2^2v_1\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$10\omega_6^3\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} - 12\omega_6^3\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2 + 24\omega_6^3\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} +$
$12\omega_6^3\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{19}v_3^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} - 12\omega_6^3\omega_{19}c_s^4\omega_{16}\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} -$
$24\omega_6^3v_3c_s^2\omega_{16}v_1\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 24\omega_6^3\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6^3\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18} -$
$24\omega_6^3\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6^3\omega_{19}v_3c_s^2v_1\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 24\omega_6^2v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$36\omega_6^3\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} - 24\omega_6^3\omega_{19}c_s^4\omega_{16}\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2 +$
$24\omega_6^3\omega_{19}v_3c_s^2v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5\omega_{18} + 6\omega_6^3\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2 -$
$6\omega_6^2\omega_{19}c_s^2v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 6\omega_6^3\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} -$
$12\omega_6^3c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{18} - 6\omega_6^3\omega_{19}v_3^2v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{19}v_3^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^3\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 6\omega_6^3\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 6\omega_6^3\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} -$
$12\omega_6^3\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 24\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2 - 6\omega_6^3\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} -$
$12\omega_6^3v_3^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} + 24\omega_6^3\omega_{19}v_3^2c_s^2\omega_{16}v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} + 12\omega_6^3\omega_{19}v_3^2c_s^2\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} -$
$6\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2 + 12\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} + 6\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} -$
$12\omega_6^3c_s^4\omega_{16}\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 60\omega_6^3\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} + 12\omega_6^3\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5 -$
$6\omega_6^2\omega_{19}c_s^4\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{19}v_3^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 24\omega_6^3v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} -$
$2\omega_6^3\omega_{19}c_s^4\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_5^2\omega_{18} + 24\omega_6^3v_3\omega_{16}v_2^2v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} -$
$12\omega_6^3\omega_{19}c_s^2v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} - 6\omega_6^3\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 + 12\omega_6^3\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^3v_3^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{18} + 24\omega_6^3\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5^2\omega_{18} - 6\omega_6^3\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2 +$
$12\omega_6^3\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^2 - 12\omega_6^3\omega_{19}v_3v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} -$
$24\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2 - 12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} - 6\omega_6^3\omega_{19}v_3^2c_s^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} -$
$24\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5^2\omega_{18} + 12\omega_6^3\omega_{19}c_s^4\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} + 6\omega_6^3\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} + 24\omega_6^3\omega_{19}c_s^2\omega_{16}v_2^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} - 12\omega_6^3\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$36\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} - 6\omega_6\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{19}v_3^2v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_5^2\omega_{18} -$
$12\omega_6^3v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3v_3^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} -$
$24\omega_6^3\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} + 24\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2 - 6\omega_6^3\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2 - 12\omega_6^3\omega_{19}v_3^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 6\omega_6^2\omega_{19}v_3^2\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} +$
$12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} +$
$12\omega_6^3\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} - 12\omega_6^3v_3^2c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} + 12\omega_6^3c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} -$
$6\omega_6^3\omega_{19}v_3^2\omega_{16}v_2^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_5^2\omega_{18} - 60\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5^2\omega_{18} - 24\omega_6^3\omega_{19}v_3v_2^2v_1\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5^2\omega_{18} -$

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

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_1} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_1}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_1} = (6\omega_6^2\omega_{19}v_3^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} - 12\omega_6\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} + 12\omega_6^2\omega_{19}v_3^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5 -$
$12\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_5\omega_{18} + 12\omega_6^2c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} + 12\omega_6^2\omega_{19}v_3^2v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} -$
$12\omega_6^2\omega_{19}v_3^2c_s^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} + 6\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18} - 6\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} -$
$6\omega_6\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} - 12\omega_6^2v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18} + 6\omega_6\omega_{19}v_3^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} -$
$6\omega_6^2\omega_{19}v_3^2c_s^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} - 12\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} - 24\omega_6^2\omega_{19}v_3v_2^2v_1\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} +$
$24\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5\omega_{18} + 12\omega_6^2\omega_{19}v_3^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} + 12\omega_6\omega_{19}v_3^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5 +$
$12\omega_6^2\omega_{19}v_3c_s^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} - 24\omega_6^2v_3c_s^2\omega_{16}v_1\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} + 12\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5 -$
$24\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_5\omega_{18} + 24\omega_6^2v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} + 24\omega_6\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_5\omega_{18} +$
$6\omega_6^2\omega_{19}v_3^2v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} - 24\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_5\omega_{18} + 12\omega_6^2c_s^2\omega_{16}v_2^2\omega_7^3\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18} -$
$6\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^3\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18} + 12\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} + 24\omega_6^2v_3\omega_{16}v_2^2v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} -$
$12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_5\omega_{18} + 12\omega_6\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5 + 12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_5\omega_{18} -$
$12\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} + 12\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_5\omega_{18} - 6\omega_6^2\omega_{19}c_s^2v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} +$
$12\omega_6^2v_3^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} - 6\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} - 12\omega_6^2v_3^2c_s^2\omega_{16}\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} +$
$12\omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_5\omega_{18} + 6\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} + 12\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5 -$
$12\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} + 12\omega_6^2v_3^2c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} - 6\omega_6\omega_{19}c_s^4\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} -$
$6\omega_6^2\omega_{19}v_3^2\omega_{16}v_2^2\omega_7^3\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18} + 24\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_5\omega_{18} - 12\omega_6^2c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} -$
$12\omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} + 6\omega_6^2\omega_{19}c_s^4\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} - 24\omega_6^2v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18} -$
$12\omega_6^2v_3^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} + 12\omega_6\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} + 6\omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} -$
$24\omega_6\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_5\omega_{18} + 12\omega_6^2v_3^2\omega_{16}v_2^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} - 12\omega_6^2v_3^2c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} +$
$12\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} + 24\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5 - 24\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} - 24\omega_6\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5 -$
$12\omega_6^2v_3^2c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} + 12\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} + 24\omega_6^2\omega_{19}v_3c_s^2v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} -$
$18\omega_6\omega_{19}c_s^4\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} + 12\omega_6^2\omega_{19}v_3^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_5\omega_{18} + 6\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5 -$
$12\omega_6\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_5\omega_{18} - 18\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + 24\omega_6\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} +$
$12\omega_6\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 - 12\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5 - 12\omega_6^2v_3^2\omega_{16}v_2^2\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} +$
$12\omega_6^2v_3^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} - 12\omega_6^2\omega_{19}c_s^4\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} + 12\omega_6^2c_s^4\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} +$
$12\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} - 12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_{18} - 12\omega_6^2v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} -$
$24\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5 + 12\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} + 12\omega_6^2v_3^2c_s^2\omega_{16}\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} -$
$6\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} - 12\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} - 24\omega_6\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_5\omega_{18} +$
$24\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_5\omega_{18} + 24\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} + 12\omega_6^2\omega_{19}c_s^2v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} +$
$12\omega_6\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} - 24\omega_6^2v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18} + 12\omega_6\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5 -$
$24\omega_6\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5 + 10\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + 12\omega_6^2v_3^2\omega_{16}v_2^2\omega_7^3\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18} -$
$24\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} - 24\omega_6^2v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} - 12\omega_6^2\omega_{19}v_3^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_5\omega_{18} -$
$24\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} - 12\omega_6^2\omega_{19}c_s^2v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} + 24\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5 +$
$12\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_5\omega_{18} - 2\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} - 6\omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5 -$
$12\omega_6\omega_{19}v_3^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_5\omega_{18} + 24\omega_6^2v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18} + 12\omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5 +$
$24\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} + 12\omega_6\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_5\omega_{18} + 12\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_5\omega_{18} -$
$12\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} + 12\omega_6^2v_3^2c_s^2\omega_{16}\omega_7^3\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18} - 6\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18} +$
$12\omega_6^2\omega_{19}v_3v_2^2v_1\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} - 6\omega_6\omega_{19}v_3^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} - 12\omega_6^2v_3^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18} +$
$12\omega_6^2\omega_{19}v_3^2c_s^2\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} - 12\omega_6^2\omega_{19}v_3v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} + 6\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} -$
$12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 + 24\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5\omega_{18} - 6\omega_6^2\omega_{19}v_3^2v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} +$
$12\omega_6^2\omega_{19}v_3^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_5\omega_{18} + 12\omega_6\omega_{19}v_3^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_5\omega_{18} - 12\omega_6^2\omega_{19}v_3^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} +$
$12\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5 + 12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_5\omega_{18} - 24\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_5\omega_{18} +$
$24\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_5\omega_{18} - 12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_5\omega_{18} - 24\omega_6^2v_3c_s^2\omega_{16}v_1\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} -$
$12\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_5\omega_{18} + 24\omega_6^2v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} - 24\omega_6^2\omega_{19}v_3c_s^2v_1\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} -$

$12\omega_6\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_5\omega_{18} - 24\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5 - 12\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18} +$
$12\omega_6\omega_{19}v_3^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_5\omega_{18} + 12\omega_6\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5 + 12\omega_6^2c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} -$
$\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} - 6\omega_6^2\omega_{19}v_3^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5 + 24\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} +$
$12\omega_6^2\omega_{19}v_3^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_5\omega_{18} + 12\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} - 12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5 +$
$24\omega_6^2v_3c_s^2\omega_{16}v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} - 12\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5 + 6\omega_6^2\omega_{19}c_s^2v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} +$
$12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5\omega_{18} + 12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} - 12\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5 +$
$6\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} + 24\omega_6^2v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18} - 12\omega_6\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} -$
$12\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} - 12\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_5\omega_{18} - 12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_5\omega_{18} +$
$6\omega_6\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} + 6\omega_6^2\omega_{19}v_3^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18} - 6\omega_6^2\omega_{19}c_s^2v_2^2\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} -$
$12\omega_6\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_5\omega_{18} + 24\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} + 12\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5 -$
$24\omega_6^2v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5\omega_{18} - 24\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_5\omega_{18} - 12\omega_6^2\omega_{19}v_3^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{17}\omega_8\omega_5\omega_{18} +$
$24\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_5\omega_{18} + 12\omega_6^2\omega_{19}v_3c_s^2v_1\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} - 12\omega_6^2\omega_{19}v_3^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5 -$
$24\omega_6\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_5\omega_{18} + 12\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_5\omega_{18} + 6\omega_6^2\omega_{19}v_3^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5 -$
$12\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5\omega_{18} + 12\omega_6^2c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5\omega_{18} + 12\omega_{6}\omega_{19}c_s^4\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} +$
$12\omega_6\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_5\omega_{18} - 6\omega_6\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5 + 24\omega_6^2v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} +$
$12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5 + 12\omega_6^2\omega_{19}v_3^2v_2^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} - 24\omega_6^2v_3\omega_{16}v_2^2v_1\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} +$
$12\omega_6\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_5\omega_{18} + 12\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + 12\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_5\omega_{18} -$
$12\omega_6^2\omega_{19}v_3^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} - 6\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5 + 6\omega_6^2\omega_{19}v_3^2\omega_{16}v_2^2\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} -$
$12\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18} + 24\omega_6^2\omega_{19}v_3v_2^2v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} + 12\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18} -$
$12\omega_6\omega_{19}v_3^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} - 24\omega_6^2\omega_{19}v_3v_2^2v_1\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} + 12\omega_6^2c_s^2\omega_{16}v_2^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} -$
$6\omega_6^2\omega_{19}v_3^2c_s^2\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} - 12\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} + 24\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_5\omega_{18} +$
$12\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} - 12\omega_6^2c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} - 24\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} -$
$24\omega_6^2v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} - 24\omega_6\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_5\omega_{18} + 6\omega_6\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} +$
$24\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_5\omega_{18} - 12\omega_6^2\omega_{19}v_3^2v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} - 12\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_5\omega_{18} +$
$12\omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} - 6\omega_6\omega_{19}v_3^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5 - 12\omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_5\omega_{18} -$
$24\omega_6^2\omega_{19}v_3c_s^2v_1\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} - 6\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5 - 6\omega_6^2\omega_{19}v_3^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} +$
$6\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5 + 24\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} + 12\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_5\omega_{18} +$
$12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_5\omega_{18} - 12\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} + 12\omega_6^2c_s^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} -$
$12\omega_6^2c_s^2\omega_{16}v_2^2\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} + 12\omega_6^2\omega_{19}v_3^2c_s^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} + 6\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} -$
$24\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_5\omega_{18} + 12\omega_6^2\omega_{19}v_3v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} - 12\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5\omega_{18} +$
$12\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5\omega_{18} - 12\omega_6^2c_s^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} - 12\omega_6^2\omega_{19}v_3^2\omega_{16}v_2^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} +$
$6\omega_6^2\omega_{19}v_3^2c_s^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} + 12\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} + 12\omega_6^2\omega_{19}v_3^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} +$
$12\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18} - 6\omega_6^2\omega_{19}v_3^2v_2^2\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} - 12\omega_6\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} +$
$24\omega_6^2v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} + 24\omega_6\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_5\omega_{18} - 12\omega_6^2\omega_{19}v_3^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} +$
$24\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} - 18\omega_6\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - 12\omega_6^2\omega_{19}v_3c_s^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} +$
$12\omega_6^2v_3^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5\omega_{18} + 12\omega_6\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} + 6\omega_6\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} -$
$12\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} - 12\omega_6\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5 + 12\omega_6^2v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} -$
$12\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5 + 12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8 - 12\omega_6^2c_s^4\omega_{16}\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} -$
$6\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} - 12\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_5\omega_{18} + 6\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18} -$
$12\omega_6^2c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18} - 6\omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5 + 24\omega_6^2v_3\omega_{16}v_2^2v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18} +$
$12\omega_6^2c_s^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{17}\omega_8\omega_5\omega_{18} - 6\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5 + 6\omega_6^2\omega_{19}v_3^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5 -$
$12\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} + 12\omega_6^2c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_5\omega_{18} - 24\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} +$
$12\omega_6^2\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_8\omega_5\omega_{18} + 24\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} - 12\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_5\omega_{18} -$
$12\omega_6^2\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} - 12\omega_6^2v_3^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18})\frac{\rho}{12\omega_6^2\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18}}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_1} = C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_1}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_1} = (12\omega_3^3\omega_2^2 - 12\omega_3^3\omega_1 - 24\omega_{13}\omega_1\omega_2^2 - 2\omega_3^3\omega_{13}\omega_2^2 + 12\omega_3\omega_{13}\omega_1\omega_2 - 12\omega_3^2\omega_1\omega_2 + 12\omega_3^2\omega_1\omega_2^2 - 6\omega_3^3\omega_{13}\omega_2 - 12\omega_3^2\omega_2^2 + 24\omega_3\omega_{13}\omega_1\omega_2^2 +$
$12\omega_3\omega_{13}\omega_2^2 + 12\omega_3^3\omega_{13} - 12\omega_3^3\omega_2 + 24\omega_3^3\omega_1\omega_2 - 6\omega_3^2\omega_{13}\omega_2^2 - \omega_3^3\omega_{13}\omega_1\omega_2^2 - 6\omega_3^2\omega_{13}\omega_1\omega_2 - 2\omega_3^2\omega_{13}\omega_1\omega_2^2 - 12\omega_3^3\omega_1\omega_2^2)\frac{c_s^4\rho}{12\omega_3^3\omega_{13}\omega_1\omega_2^2}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_1} = (-348\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^3\omega_5\omega_2 - 48\omega_3^2v_2^2\omega_4^2\omega_1\omega_5\omega_2^3 - 24\omega_3^2c_s^2v_2^2\omega_4^2\omega_1\omega_5\omega_2^2 - 54\omega_3v_2^4\omega_4^2\omega_1^3\omega_5\omega_2^3 - 24\omega_3^2v_1^2\omega_4^2\omega_5\omega_2^3 + 2\omega_3^2v_3^4\omega_4^2\omega_1^3\omega_5\omega_2^2 +$
$4\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_5\omega_2^2 - 16\omega_3c_s^2\omega_4^2\omega_1^3\omega_5\omega_2 + 288\omega_3^2c_s^4\omega_4\omega_1^2\omega_5\omega_2^3 + 108\omega_3c_s^2v_2^2\omega_4^2\omega_1^2\omega_5\omega_2^2 - 108\omega_3^2v_2^2\omega_1^2\omega_5\omega_2^3 + 48\omega_3c_s^2v_1^2\omega_4^2\omega_1^3\omega_5\omega_2 +$
$108\omega_3^2v_2^4\omega_4^2\omega_1\omega_5\omega_2^3 - 288\omega_3^2c_s^2\omega_4\omega_1^2\omega_5\omega_2^3 + 288\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^3 - 4\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_5\omega_2^2 + 16\omega_3c_s^4\omega_4^2\omega_1^3\omega_5\omega_2 + 240\omega_3^2c_s^2v_1^2\omega_4^2\omega_5\omega_2^2 -$
$162\omega_3^2c_s^2v_1^2\omega_4\omega_1^3\omega_5\omega_2^2 + 324\omega_3^2c_s^2v_2^2\omega_1^2\omega_5\omega_2^3 + 54\omega_3v_2^2\omega_4^2\omega_1^3\omega_5\omega_2^3 - 2\omega_3^2v_3^2\omega_4^2\omega_1^3\omega_5\omega_2^2 + 132\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^2\omega_5\omega_2^2 - 108\omega_3c_s^2v_2^2\omega_4\omega_1^3\omega_5\omega_2^2 -$
$24\omega_3^2v_1^2\omega_4^2\omega_1^3\omega_5 - 6\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_5\omega_2^3 - 72\omega_3c_s^2v_2^2\omega_4^2\omega_1^2\omega_5\omega_2^3 + 132\omega_3^2v_2^2\omega_4^2\omega_1^3\omega_5\omega_2 + 300\omega_3^2c_s^2v_2^2\omega_4^2\omega_1\omega_5\omega_2^3 + 72\omega_3v_2^4\omega_4^2\omega_1^3\omega_5\omega_2^2 +$
$36\omega_3v_2^4\omega_4\omega_1^2\omega_5\omega_2^3 - 160\omega_3c_s^2\omega_4^2\omega_1\omega_5\omega_2^3 + 72\omega_3^2v_2^2\omega_4^2\omega_1\omega_5\omega_2^2 - 36\omega_3v_2^2\omega_4\omega_1^2\omega_5\omega_2^3 - 54\omega_3^2v_2^4\omega_1^3\omega_5\omega_2^3 - 6\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^2\omega_5\omega_2^3 + 24\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^3\omega_5 -$
$72\omega_3^2v_2^4\omega_4^2\omega_1^3\omega_5\omega_2 - 72\omega_3v_2^2\omega_4^2\omega_1^3\omega_5\omega_2^2 + 336\omega_3c_s^2v_1^2\omega_4^2\omega_1\omega_5\omega_2^3 + 6\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^3\omega_5\omega_2^2 + 24\omega_3^2v_2^4\omega_4^2\omega_1\omega_5\omega_2^2 - 48\omega_3^2v_1^2\omega_4^2\omega_1^2\omega_5\omega_2^2 +$
$160\omega_3c_s^4\omega_4^2\omega_1\omega_5\omega_2^3 + 18\omega_3^2v_2^4\omega_4^2\omega_1^3\omega_5\omega_2^2 + 24\omega_3v_2^2\omega_4^2\omega_1^3\omega_5\omega_2 - 9\omega_3v_3^4\omega_4^2\omega_1^3\omega_5\omega_2^3 - 144\omega_3^2v_2^4\omega_4\omega_1^2\omega_5\omega_2^3 - 180\omega_3^2v_2^2v_1^2\omega_4^2\omega_1^3\omega_5\omega_2 -$
$88\omega_3^2c_s^2\omega_4^2\omega_5\omega_2^3 - 72\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^3 + 72\omega_3c_s^4\omega_4^2\omega_1^3\omega_5\omega_2^3 + 48\omega_3^2v_2^4\omega_4^2\omega_1^3\omega_5 + 24\omega_3^2v_1^2\omega_4^2\omega_1^2\omega_5\omega_2 + 8\omega_3^2\omega_4^2\omega_5\omega_2^3 - 288\omega_3^2v_2^2v_1^2\omega_4^2\omega_1\omega_5\omega_2^2 +$
$36\omega_3^2c_s^2\omega_4^2\omega_1\omega_5\omega_2^3 + 72v_2^2\omega_4^2\omega_1^2\omega_5\omega_2^3 + 162\omega_3c_s^2v_1^2\omega_4^2\omega_1^3\omega_5\omega_2^3 - 72\omega_3c_s^2\omega_4^2\omega_1^3\omega_5\omega_2^3 + 144\omega_3^2v_2\omega_4\omega_1^2\omega_5\omega_2^3 - 18\omega_3^2v_2^2\omega_4^2\omega_1^3\omega_5\omega_2^2 + 9\omega_3v_3^2\omega_4^2\omega_1^3\omega_5\omega_2^3 -$
$24\omega_3v_2^4\omega_4^2\omega_1^3\omega_5\omega_2 + 216\omega_3^2v_2^2v_1^2\omega_4^2\omega_5\omega_2^3 - 72v_2^4\omega_4^2\omega_1^2\omega_5\omega_2^3 + 162c_s^2v_2^2\omega_4^2\omega_1^3\omega_5\omega_2^3 + 8\omega_3^2c_s^4\omega_4^2\omega_1\omega_5\omega_2^3 - 108\omega_3^2c_s^2v_2\omega_4\omega_1^2\omega_5\omega_2^2 - 8\omega_3^2\omega_4^2\omega_1\omega_5\omega_2^3 +$

$64\omega_3^2c_s^2\omega_4^2\omega_1\omega_5\omega_2^2 + 8\omega_3^2\omega_4^2\omega_1^3\omega_5 - 180\omega_3c_s^2v_1^2\omega_4^2\omega_1^3\omega_5\omega_2^2 - 12\omega_3v_2^2\omega_4^2\omega_1\omega_5\omega_2^3 - 180\omega_3^2v_2^2v_1^2\omega_4^2\omega_1\omega_5\omega_2^3 - 648\omega_3^2c_s^2v_1^2\omega_4\omega_1\omega_5\omega_2^3 +$
$36\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_5\omega_2 - 72\omega_3c_s^4\omega_4^2\omega_1^3\omega_5\omega_2^2 - 40\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_5 - 96\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^2\omega_5\omega_2 - 96\omega_3^2v_2^4\omega_4^2\omega_5\omega_2^3 - 36\omega_3^2v_2^4\omega_4\omega_1^2\omega_5\omega_2^2 - 216\omega_3^2c_s^2v_2^2\omega_4\omega_1^2\omega_5\omega_2^3 +$
$12\omega_3v_2^4\omega_4^2\omega_1\omega_5\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1\omega_5\omega_2^2 + 60\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^3\omega_5\omega_2^2 - 56\omega_3^2c_s^4\omega_4^2\omega_1\omega_5\omega_2^2 - 108c_s^2v_2^2\omega_4^2\omega_1^3\omega_5\omega_2^2 + 36\omega_3^2v_2^2\omega_4\omega_1^2\omega_5\omega_2^2 - 8\omega_3^2\omega_4^2\omega_1^3\omega_5\omega_2 +$
$144\omega_3^2v_2^2v_1^2\omega_4^2\omega_1^3\omega_5 - 28\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_5\omega_2 + 72\omega_3c_s^2\omega_4^2\omega_1^3\omega_5\omega_2^2 + 4\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_5\omega_2^3 + 27\omega_3^2v_3^2c_s^2\omega_4\omega_1^3\omega_5\omega_2^3 + 108\omega_3^2v_2^4\omega_1^2\omega_5\omega_2^3 - 12\omega_3v_2^2\omega_4^2\omega_1^2\omega_5\omega_2^2 +$
$24\omega_3^2v_2^4\omega_4^2\omega_1^2\omega_5\omega_2 + 2\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_5\omega_2^3 + 360\omega_3^2v_2^2v_1^2\omega_4^2\omega_1^2\omega_5\omega_2^2 + 36\omega_3^2v_2^4\omega_4\omega_1\omega_5\omega_2^3 + 12\omega_3v_2^4\omega_4^2\omega_1^2\omega_5\omega_2^2 - 2\omega_3^2v_3^4\omega_4^2\omega_1^2\omega_5\omega_2^3 -$
$108\omega_3c_s^2v_2^2\omega_4^2\omega_1^3\omega_5\omega_2^3 - 28\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_5\omega_2^3 - 36\omega_3^2v_2^2\omega_4\omega_1\omega_5\omega_2^3 - 36\omega_3v_2^2\omega_4^2\omega_5\omega_2^3 + 6\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^3\omega_5\omega_2^2 - 9\omega_3^2v_3^2\omega_4\omega_1^3\omega_5\omega_2^3 +$
$36\omega_3v_2^2\omega_4\omega_1^3\omega_5\omega_2^2 - 162\omega_3^2c_s^2v_2^2\omega_1^3\omega_5\omega_2^3 + 648\omega_3^2c_s^2v_1^2\omega_4\omega_1^2\omega_5\omega_2^3 - 6\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^2\omega_5\omega_2^3 - 72\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_5\omega_2^2 + 72\omega_3^2c_s^2\omega_4\omega_1^3\omega_5\omega_2^3 -$
$24\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^2\omega_5\omega_2 - 72\omega_3^2c_s^4\omega_4\omega_1^3\omega_5\omega_2^3 + 54\omega_3^2v_2^2\omega_1^3\omega_5\omega_2^3 + 180\omega_3c_s^2v_2^2\omega_4^2\omega_1^3\omega_5\omega_2^2 + 56\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_5\omega_2^2 + 108\omega_3c_s^2v_2^2\omega_4\omega_1^2\omega_5\omega_2^3 +$
$9\omega_3^2v_3^4\omega_4\omega_1^3\omega_5\omega_2^3 - 36\omega_3v_2^4\omega_4\omega_1^3\omega_5\omega_2^2 - 108\omega_3^2c_s^2v_2^2\omega_4\omega_1\omega_5\omega_2^3 + 36\omega_3v_2^4\omega_4^2\omega_1^2\omega_5\omega_2^3 + 16\omega_3^2\omega_4^2\omega_1^2\omega_5\omega_2^2 - 36v_2^4\omega_4^2\omega_1^3\omega_5\omega_2^2 - 288\omega_3^2c_s^4\omega_4\omega_1\omega_5\omega_2^3 +$
$48\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^2\omega_5\omega_2^2 + 108\omega_3^2c_s^2v_2^2\omega_4\omega_1^3\omega_5\omega_2^3 + 152\omega_3^2c_s^4\omega_4^2\omega_5\omega_2^3 - 112\omega_3c_s^2\omega_4^2\omega_1^2\omega_5\omega_2^3 - 56\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_5\omega_2 - 72\omega_3c_s^2v_2^2\omega_4^2\omega_1^3\omega_5\omega_2 -$
$96\omega_3^2v_2^2\omega_4^2\omega_1^3\omega_5 + 18\omega_3^2v_2^2\omega_4^2\omega_1^2\omega_5\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^2\omega_5\omega_2 - 36\omega_3^2v_2^2\omega_4\omega_1^3\omega_5\omega_2^2 - 27\omega_3v_3^2c_s^2\omega_4^2\omega_1^3\omega_5\omega_2^3 - 168\omega_3^2c_s^2v_1^2\omega_4^2\omega_1\omega_5\omega_2^2 +$
$264\omega_3c_s^2v_1^2\omega_4^2\omega_1^2\omega_5\omega_2^2 + 36v_2^2\omega_4^2\omega_1^3\omega_5\omega_2^2 + 288\omega_3^2c_s^2\omega_4\omega_1\omega_5\omega_2^3 + 36\omega_3^2v_2^4\omega_4\omega_1^3\omega_5\omega_2^2 + 24\omega_3^2v_1^2\omega_4^2\omega_1\omega_5\omega_2^3 - 12\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^3\omega_5\omega_2 -$
$18\omega_3^2v_2^4\omega_4^2\omega_1^2\omega_5\omega_2^3 + 112\omega_3c_s^4\omega_4^2\omega_1^2\omega_5\omega_2^2 + 264\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^3\omega_5 + 64\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_5\omega_2 + 32\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_5 - 84\omega_3^2v_2^2\omega_4^2\omega_1^2\omega_5\omega_2^2 - 54\omega_3^2v_2^2\omega_4\omega_1^3\omega_5\omega_2^3 +$
$216\omega_3c_s^2\omega_4^2\omega_1^2\omega_5\omega_2^3 + 24\omega_3^2v_2^2\omega_4^2\omega_5\omega_2^3 - 60\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^2\omega_5\omega_2^3 + 108\omega_3^2c_s^2v_2^2\omega_4\omega_1^3\omega_5\omega_2^2 - 216c_s^2v_2^2\omega_4^2\omega_1^2\omega_5\omega_2^3 + 180\omega_3c_s^2v_2^2\omega_4^2\omega_1\omega_5\omega_2^3 +$
$54v_2^4\omega_4^2\omega_1^3\omega_5\omega_2^3 - 216\omega_3c_s^4\omega_4^2\omega_1^2\omega_5\omega_2^3 - 72\omega_3^2v_2^2v_1^2\omega_4^2\omega_1^2\omega_5\omega_2 + 54\omega_3^2v_2^2\omega_4\omega_1^3\omega_5\omega_2^3 - 36\omega_3^2v_2^4\omega_4^2\omega_1^2\omega_5\omega_2^2 - 216\omega_3^2c_s^2v_2^2\omega_4^2\omega_5\omega_2^3 +$
$24\omega_3^2v_1^2\omega_4^2\omega_1\omega_5\omega_2^2 - 468\omega_3c_s^2v_1^2\omega_4^2\omega_1^2\omega_5\omega_2^3 - 54v_2^2\omega_4^2\omega_1^3\omega_5\omega_2^3 - 120\omega_3^2c_s^2v_1^2\omega_4^2\omega_1\omega_5\omega_2^3 + 24\omega_3^2v_1^2\omega_4^2\omega_1^3\omega_5\omega_2 - 288\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^3)\frac{\rho}{72\omega_3^2\omega_4^2\omega_1^3\omega_5\omega_2^3}$

coefficient $C^{(3)}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_2}$ **at** $\frac{\partial^4 v_2}{\partial x_1\partial x_2^2\partial x_3}$**:**

$$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_2} = (-36v_3^2v_1\omega + 36v_3v_1^2\omega - v_3^2v_1\omega^3 - 14v_3v_1^2\omega^2 - 24v_3v_1^2 + v_3v_1^2\omega^3 + 14v_3^2v_1\omega^2 + 24c_s^2v_1 - 14v_3c_s^2\omega^2 - 24v_3c_s^2 - c_s^2v_1\omega^3 + v_3c_s^2\omega^3 + 14c_s^2v_1\omega^2 - 36c_s^2v_1\omega + 24v_3^2v_1 + 36v_3c_s^2\omega)\frac{v_2\rho}{\omega^3}$$

$$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_2} = (2\omega_6^2v_3^2\omega_{16}^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{19}c_s^2\omega_{16}^2v_1\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_{18} + \omega_6\omega_{19}c_s^2\omega_{16}^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} -$
$2\omega_6^2\omega_{19}c_s^2\omega_{16}^2v_1\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} + \omega_6^2\omega_{19}v_3c_s^2\omega_{16}^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_{18} - \omega_6^2\omega_{19}v_3^2\omega_{16}^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2 +$
$\omega_6^2\omega_{19}c_s^2\omega_{16}^2v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{19}v_3^2\omega_{16}^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_6\omega_{19}v_3^2\omega_{16}^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} +$
$\omega_6\omega_{19}v_3c_s^2\omega_{16}^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2v_3c_s^2\omega_{16}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_{18} + \omega_6\omega_{19}v_3\omega_{16}^2v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} +$
$2\omega_6^2v_3\omega_{16}^2v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{19}v_3^2\omega_{16}^2v_1\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} - \omega_6^2\omega_{19}v_3\omega_{16}v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} +$
$2\omega_6^2\omega_{19}v_3c_s^2\omega_{16}^2\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{19}v_3\omega_{16}^2v_1^2\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6\omega_{19}v_3\omega_{16}^2v_1^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} -$
$2\omega_6\omega_{19}v_3c_s^2\omega_{16}^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_6\omega_{19}v_3^2\omega_{16}^2v_1\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + \omega_6^2\omega_{19}v_3^2\omega_{16}^2v_1\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} -$
$2\omega_6^2\omega_{19}v_3^2\omega_{16}^2v_1\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_6^2\omega_{19}v_3c_s^2\omega_{16}^2\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_6^2\omega_{19}v_3^2\omega_{16}^2v_1\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} -$
$2\omega_6^2\omega_{19}v_3^2\omega_{16}^2v_1\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_{18} + 3\omega_6^2\omega_{19}c_s^2\omega_{16}^2v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - 6\omega_6^2\omega_{19}c_s^2\omega_{16}v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} -$
$2\omega_6^2\omega_{19}v_3\omega_{16}^2v_1^2\omega_7^3\omega_{23}\omega_{17}\omega_8^2 - \omega_6\omega_{19}c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2c_s^2\omega_{16}^2v_1\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - \omega_6^2\omega_{19}c_s^2\omega_{16}^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2 +$
$2\omega_6^2c_s^2\omega_{16}^2v_1\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6\omega_{19}v_3\omega_{16}^2v_1^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2 + \omega_6^2\omega_{19}v_3c_s^2\omega_{16}\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + \omega_6^2\omega_{19}v_3\omega_{16}v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} -$
$4\omega_6^2\omega_{19}c_s^2\omega_{16}^2v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2v_3c_s^2\omega_{16}^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2v_3\omega_{16}^2v_1^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} +$
$\omega_6^2\omega_{19}v_3^2\omega_{16}^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2 - 2\omega_6^2v_3\omega_{16}^2v_1^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_{18} - 2\omega_6^2v_3\omega_{16}^2v_1^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2v_3c_s^2\omega_{16}^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} +$
$\omega_6^2\omega_{19}v_3^2\omega_{16}^2v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + \omega_6^2\omega_{19}v_3c_s^2\omega_{16}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + \omega_6^2\omega_{19}v_3\omega_{16}v_1^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} +$
$\omega_6^2\omega_{19}c_s^2\omega_{16}^2v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{18} + 2\omega_6^2\omega_{19}v_3\omega_{16}^2v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} + \omega_6^2\omega_{19}v_3^2\omega_{16}^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} +$
$2\omega_6\omega_{19}c_s^2\omega_{16}v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{19}v_3c_s^2\omega_{16}^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} + \omega_6\omega_{19}c_s^2\omega_{16}^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{18} +$
$2\omega_6^2\omega_{19}c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + \omega_{19}c_s^2\omega_{16}^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_6^2\omega_{19}v_3c_s^2\omega_{16}^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} +$
$2\omega_6^2\omega_{19}v_3\omega_{16}^2v_1^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{19}v_3^2\omega_{16}^2v_1\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_6^2\omega_{19}v_3\omega_{16}^2v_1^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} +$
$2\omega_6^2\omega_{19}v_3c_s^2\omega_{16}^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6\omega_{19}c_s^2\omega_{16}^2v_1\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{19}v_3c_s^2\omega_{16}^2\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_{18} -$
$2\omega_6^2\omega_{19}v_3c_s^2\omega_{16}^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{19}v_3\omega_{16}^2v_1^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{19}c_s^2\omega_{16}^2v_1\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} +$
$\omega_6^2\omega_{19}c_s^2\omega_{16}^2v_1\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_{18} - \omega_6\omega_{19}v_3c_s^2\omega_{16}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - \omega_6\omega_{19}v_3\omega_{16}^2v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - \omega_6\omega_{19}v_3\omega_{16}^2v_1^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} +$
$\omega_6^2\omega_{19}c_s^2\omega_{16}^2v_1\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_{18} + \omega_6\omega_{19}v_3c_s^2\omega_{16}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2 + \omega_6\omega_{19}v_3\omega_{16}^2v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2 + 2\omega_6^2v_3^2\omega_{16}^2v_1\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} +$
$2\omega_6^2\omega_{19}v_3^2\omega_{16}v_1\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} - \omega_6^2\omega_{19}c_s^2\omega_{16}^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2v_3^2\omega_{16}^2v_1\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} -$
$2\omega_6^2\omega_{19}v_3c_s^2\omega_{16}^2\omega_7^2\omega_{23}\omega_{17}\omega_8^2 + \omega_6^2\omega_{19}v_3c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} - \omega_6^2\omega_{19}v_3\omega_{16}^2v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_{18} +$
$2\omega_6\omega_{19}c_s^2\omega_{16}^2v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - \omega_6^2\omega_{19}v_3c_s^2\omega_{16}^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{19}v_3\omega_{16}^2v_1^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2 - 2\omega_6^2v_3\omega_{16}^2v_1^2\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_{18} +$
$\omega_6^2\omega_{19}v_3\omega_{16}v_1^2\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2v_3^2\omega_{16}^2v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6\omega_{19}v_3^2\omega_{16}^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} +$
$2\omega_6^2\omega_{19}c_s^2\omega_{16}v_1\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{19}v_3\omega_{16}v_1^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + \omega_6^2\omega_{19}v_3c_s^2\omega_{16}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2 -$
$\omega_6^2\omega_{19}v_3^2\omega_{16}^2v_1\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_{18} + \omega_6^2\omega_{19}c_s^2\omega_{16}^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2 - 2\omega_6^2\omega_{19}v_3^2\omega_{16}^2v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} +$
$2\omega_6^2\omega_{19}v_3c_s^2\omega_{16}^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2v_3c_s^2\omega_{16}^2\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{19}v_3\omega_{16}v_1^2\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2v_3^2\omega_{16}^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} -$
$2\omega_6^2v_3\omega_{16}^2v_1^2\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 3\omega_6^2\omega_{19}c_s^2\omega_{16}^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - \omega_6\omega_{19}v_3^2\omega_{16}^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2 -$
$2\omega_6^2\omega_{19}v_3c_s^2\omega_{16}\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - \omega_6^2\omega_{19}v_3^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + \omega_6^2\omega_{19}v_3\omega_{16}^2v_1^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_{18} +$
$2\omega_6\omega_{19}c_s^2\omega_{16}^2v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + \omega_6^2\omega_{19}v_3^2\omega_{16}^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_{18} + 2\omega_6^2c_s^2\omega_{16}^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} +$
$\omega_6\omega_{19}v_3^2\omega_{16}^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{19}v_3^2\omega_{16}^2v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{19}v_3^2\omega_{16}^2v_1\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} +$
$2\omega_6^2\omega_{19}v_3c_s^2\omega_{16}^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - \omega_6^2\omega_{19}v_3^2\omega_{16}^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{19}v_3^2\omega_{16}^2v_1\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} +$
$2\omega_6^2\omega_{19}v_3^2\omega_{16}^2v_1\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_6^2\omega_{19}v_3^2\omega_{16}^2v_1\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{19}v_3^2\omega_{16}^2v_1\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} +$
$2\omega_6^2\omega_{19}v_3^2\omega_{16}^2v_1\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_6^2\omega_{19}v_3c_s^2\omega_{16}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - \omega_6^2\omega_{19}v_3c_s^2\omega_{16}^2v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} +$
$2\omega_6^2\omega_{19}v_3^2\omega_{16}^2v_1\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{19}v_3^2\omega_{16}^2v_1\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{19}v_3^2\omega_{16}^2v_1\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} +$
$2\omega_6^2\omega_{19}v_3^2\omega_{16}^2v_1^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_6^2\omega_{19}v_3c_s^2\omega_{16}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + \omega_6^2\omega_{19}c_s^2\omega_{16}^2v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} +$
$2\omega_6^2\omega_{19}v_3^2\omega_{16}^2v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_6\omega_{19}v_3c_s^2\omega_{16}^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2 + 2\omega_6^2\omega_{19}v_3c_s^2\omega_{16}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} -$

$2\omega_6^2\omega_{19}v_3^2\omega_{16}v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2v_3c_s^2\omega_{16}^2\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_{18} + 2\omega_6\omega_{19}c_s^2\omega_{16}^2v_1\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_6^2c_s^2\omega_{16}^2v_1\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_{18} +$
$2\omega_6\omega_{19}v_3\omega_{16}^2v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_6^2c_s^2\omega_{16}^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{19}c_s^2\omega_{16}^2v_1\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2 +$
$2\omega_6\omega_{19}v_3c_s^2\omega_{16}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + 5\omega_6^2\omega_{19}c_s^2\omega_{16}^2v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - \omega_6^2\omega_{19}c_s^2\omega_{16}v_1\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} +$
$2\omega_6\omega_{19}v_3^2\omega_{16}^2v_1\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2 + 2\omega_6^2\omega_{19}v_3c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - \omega_{19}c_s^2\omega_{16}^2v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} +$
$2\omega_6^2v_3^2\omega_{16}^2v_1\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_{18} + \omega_6^2\omega_{19}c_s^2\omega_{16}^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_{18} - 2\omega_6^2v_3c_s^2\omega_{16}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{19}c_s^2\omega_{16}^2v_1\omega_7^3\omega_{23}\omega_{17}\omega_8^2 -$
$\omega_6\omega_{19}c_s^2\omega_{16}^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2 - 2\omega_6^2v_3\omega_{16}^2v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - \omega_6^2\omega_{19}v_3\omega_{16}^2v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2 +$
$2\omega_6^2v_3^2\omega_{16}^2v_1\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2v_3^2\omega_{16}^2v_1\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{19}v_3\omega_{16}^2v_1^2\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_{18} - \omega_6^2\omega_{19}v_3^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} -$
$\omega_6^2\omega_{19}v_3c_s^2\omega_{16}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2 - 2\omega_6^2\omega_{19}v_3\omega_{16}v_1^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + \omega_6^2\omega_{19}v_3^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} -$
$2\omega_6^2\omega_{19}v_3c_s^2\omega_{16}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_6^2\omega_{19}v_3\omega_{16}^2v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_6^2\omega_{19}v_3^2\omega_{16}^2v_1\omega_7^3\omega_{23}\omega_{17}\omega_8^2 -$
$2\omega_6^2\omega_{19}v_3c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{19}c_s^2\omega_{16}^2v_1\omega_7^2\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 4\omega_6\omega_{19}c_s^2\omega_{16}^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} +$
$2\omega_6^2\omega_{19}c_s^2\omega_{16}^2v_1\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2c_s^2\omega_{16}^2v_1\omega_7^3\omega_{20}\omega_{17}\omega_8^2\omega_{18} + 2\omega_6\omega_{19}c_s^2\omega_{16}^2v_1\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2 + 2\omega_6^2\omega_{19}v_3c_s^2\omega_{16}^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2 +$
$2\omega_6^2\omega_{19}c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - 6\omega_6^2\omega_{19}c_s^2\omega_{16}^2v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_6^2v_3c_s^2\omega_{16}^2\omega_7^3\omega_{23}\omega_{17}\omega_8^2\omega_{18} -$
$2\omega_6^2\omega_{19}v_3^2\omega_{16}^2v_1\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6^2\omega_{19}v_3c_s^2\omega_{16}^2\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} - 2\omega_6^2\omega_{19}v_3\omega_{16}^2v_1^2\omega_7^2\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} -$
$2\omega_6^2v_3^2\omega_{16}^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2\omega_{18} - \omega_6\omega_{19}v_3^2\omega_{16}^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8^2\omega_{18} - 2\omega_6\omega_{19}v_3c_s^2\omega_{16}^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} -$
$2\omega_6\omega_{19}v_3\omega_{16}^2v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} - \omega_6^2\omega_{19}v_3^2\omega_{16}^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - \omega_6^2\omega_{19}c_s^2\omega_{16}^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{18} +$
$2\omega_6^2\omega_{19}v_3\omega_{16}^2v_1^2\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - \omega_6^2\omega_{19}v_3c_s^2\omega_{16}^2\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{19}v_3c_s^2\omega_{16}^2\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} -$
$\omega_6^2\omega_{19}v_3\omega_{16}^2v_1^2\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} - \omega_6^2\omega_{19}c_s^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6^2\omega_{19}v_3^2\omega_{16}^2v_1\omega_7^2\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} +$
$\omega_6^2\omega_{19}v_3\omega_{16}^2v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_8^2 - 2\omega_6^2c_s^2\omega_{16}^2v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6\omega_{19}v_3\omega_{16}^2v_1^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} +$
$2\omega_6\omega_{19}v_3c_s^2\omega_{16}^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_{18} + 2\omega_6\omega_{19}v_3^2\omega_{16}^2v_1\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18})\frac{v_2\rho}{\omega_6^2\omega_{19}\omega_{16}^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_{18}}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_2} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_2}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_2} = (-\omega_6\omega_{19}v_3^2\omega_{16}v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 - 2\omega_6\omega_{19}v_3c_s^2\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} - \omega_{19}v_3^2\omega_{16}v_1\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} -$
$2\omega_6\omega_{19}v_3c_s^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_6\omega_{19}c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{17}\omega_8 + \omega_{19}v_3\omega_{16}v_1^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 + 2\omega_6\omega_{19}c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{18} +$
$2\omega_6\omega_{19}v_3\omega_{16}v_1^2\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} - 2\omega_6\omega_{19}v_3c_s^2\omega_{16}\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - \omega_6\omega_{19}v_3c_s^2\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 + \omega_6\omega_{19}v_3c_s^2\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} +$
$2\omega_{19}v_3\omega_{16}v_1^2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} - \omega_6\omega_{19}v_3^2v_1\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} + 2\omega_6c_s^2\omega_{16}v_1\omega_7\omega_{20}\omega_{17}\omega_8\omega_{18} + \omega_6\omega_{19}c_s^2v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} -$
$2\omega_6v_3c_s^2\omega_{16}\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} + \omega_6\omega_{19}v_3v_1^2\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + \omega_6\omega_{19}v_3^2\omega_{16}v_1\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_6v_3^2\omega_{16}v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_{18} +$
$2\omega_6\omega_{19}v_3^2\omega_{16}v_1\omega_7\omega_{23}\omega_{17}\omega_8 - 2\omega_6v_3\omega_{16}v_1^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_{19}c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_{18} + \omega_6\omega_{19}v_3\omega_{16}v_1^2\omega_7\omega_{20}\omega_{17}\omega_8\omega_{18} -$
$2\omega_6\omega_{19}v_3^2\omega_{16}v_1\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_6\omega_{19}v_3\omega_{16}v_1^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{18} + 2\omega_{19}c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8 - 2\omega_{19}v_3^2\omega_{16}v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{18} -$
$2\omega_{19}v_3c_s^2\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_{18} + \omega_6\omega_{19}c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} - \omega_{19}v_3c_s^2\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_6v_3\omega_{16}v_1^2\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} +$
$2\omega_6v_3c_s^2\omega_{16}\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - \omega_6\omega_{19}c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 - \omega_6\omega_{19}v_3c_s^2\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_{18} + 2\omega_6\omega_{19}v_3c_s^2\omega_{16}\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} -$
$2\omega_6v_3^2\omega_{16}v_1\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_6v_3^2\omega_{16}v_1\omega_7\omega_{20}\omega_{17}\omega_8\omega_{18} - 2\omega_6\omega_{19}v_3v_1^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - \omega_6\omega_{19}c_s^2v_1\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} -$
$2\omega_6v_3^2\omega_{16}v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_{19}v_3\omega_{16}v_1^2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_{18} + \omega_6\omega_{19}v_3\omega_{16}v_1^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_6\omega_{19}v_3c_s^2\omega_{16}\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{18} +$
$2\omega_{19}v_3^2\omega_{16}v_1\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_{18} + 2\omega_{19}v_3^2\omega_{16}v_1\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8 + \omega_6\omega_{19}v_3c_s^2\omega_{16}\omega_7\omega_{20}\omega_{17}\omega_8\omega_{18} - 2\omega_6\omega_{19}c_s^2\omega_{16}v_1\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} +$
$2\omega_6\omega_{19}v_3c_s^2\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_{18} + \omega_6\omega_{19}v_3^2v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_6c_s^2\omega_{16}v_1\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} -$
$\omega_6\omega_{19}v_3c_s^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + \omega_6\omega_{19}c_s^2\omega_{16}v_1\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_6c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_{18} - \omega_{19}c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} +$
$2\omega_6\omega_{19}v_3^2\omega_{16}v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{18} + 2\omega_6c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_6\omega_{19}v_3^2\omega_{16}v_1\omega_{23}\omega_{20}\omega_{11}\omega_{18} + 2\omega_6\omega_{19}v_3c_s^2\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8 -$
$2\omega_6\omega_{19}c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_{18} + 2\omega_6\omega_{19}v_3\omega_{16}v_1^2\omega_7\omega_{23}\omega_{17}\omega_8\omega_{18} - \omega_6\omega_{19}v_3^2v_1\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_6c_s^2\omega_{16}v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} +$
$\omega_6\omega_{19}v_3\omega_{16}v_1^2\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} + \omega_6\omega_{19}v_3^2\omega_{16}v_1\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} + \omega_{19}v_3^2\omega_{16}v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} -$
$2\omega_6\omega_{19}v_3c_s^2\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} - 2\omega_6\omega_{19}v_3\omega_{16}v_1^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_6\omega_{19}v_3\omega_{16}v_1^2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_6\omega_{19}v_3\omega_{16}v_1^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} +$
$2\omega_6\omega_{19}c_s^2\omega_{16}v_1\omega_{23}\omega_{20}\omega_{11}\omega_{18} + \omega_{19}v_3c_s^2\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 + 2\omega_6\omega_{19}v_3\omega_{16}v_1^2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8 - 2\omega_6c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} +$
$2\omega_6\omega_{19}v_3c_s^2\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_8\omega_{18} - 2\omega_6c_s^2\omega_{16}v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_6v_3^2\omega_{16}v_1\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - \omega_6\omega_{19}c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} -$
$2\omega_6\omega_{19}v_3^2\omega_{16}v_1\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_{18} + 2\omega_6\omega_{19}v_3\omega_{16}v_1^2\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_{18} + 2\omega_6c_s^2\omega_{16}v_1\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_6v_3^2\omega_{16}v_1\omega_7\omega_{23}\omega_{17}\omega_8\omega_{18} -$
$2\omega_6\omega_{19}v_3^2\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} - \omega_6\omega_{19}c_s^2v_1\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_6v_3\omega_{16}v_1^2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_{18} - 2\omega_6\omega_{19}c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{17}\omega_8\omega_{18} - \omega_{19}v_3\omega_{16}v_1^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} +$
$\omega_6\omega_{19}v_3^2\omega_{16}v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_{18} - 2\omega_6\omega_{19}v_3^2\omega_{16}v_1\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_{18} - 2\omega_6v_3^2\omega_{16}v_1\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_6\omega_{19}v_3c_s^2\omega_{16}\omega_{23}\omega_{20}\omega_{11}\omega_{18} -$
$2\omega_{19}c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_{19}v_3c_s^2\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{18} - 2\omega_6v_3c_s^2\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_6\omega_{19}c_s^2\omega_{16}v_1\omega_{23}\omega_{17}\omega_{11}\omega_{18} -$
$2\omega_6v_3c_s^2\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_8\omega_{18} - \omega_{19}c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_6\omega_{19}v_3\omega_{16}v_1^2\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_{18} - 2\omega_6\omega_{19}v_3^2\omega_{16}v_1\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} -$
$\omega_6\omega_{19}v_3\omega_{16}v_1^2\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} + \omega_6\omega_{19}v_3^2\omega_{16}v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 - 2\omega_6\omega_{19}v_3\omega_{16}v_1^2\omega_{23}\omega_{20}\omega_{11}\omega_{18} + 2\omega_6v_3c_s^2\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_{18} -$
$\omega_6\omega_{19}v_3c_s^2\omega_{16}\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + \omega_6\omega_{19}v_3c_s^2\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_{18} - 2\omega_6\omega_{19}c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8 - 2\omega_6\omega_{19}c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_{18} -$
$2\omega_6v_3c_s^2\omega_{16}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_6\omega_{19}v_3^2\omega_{16}v_1\omega_{23}\omega_{17}\omega_{11}\omega_{18} + 2\omega_6\omega_{19}v_3^2\omega_{16}v_1\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} + \omega_{19}v_3c_s^2\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} -$
$2\omega_6\omega_{19}v_3^2\omega_{16}v_1\omega_7\omega_{23}\omega_{17}\omega_8\omega_{18} + 2\omega_6\omega_{19}v_3^2\omega_{16}v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_6\omega_{19}v_3v_1^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_{19}v_3^2\omega_{16}v_1\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_{18} -$
$\omega_6\omega_{19}c_s^2\omega_{16}v_1\omega_7\omega_{20}\omega_{17}\omega_8\omega_{18} + \omega_{19}c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_6\omega_{19}c_s^2v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_6\omega_{19}v_3c_s^2\omega_{16}\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} -$
$2\omega_{19}v_3\omega_{16}v_1^2\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_{18} + 2\omega_6\omega_{19}c_s^2v_1\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} + 2\omega_6v_3\omega_{16}v_1^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_{19}v_3\omega_{16}v_1^2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8 -$
$2\omega_6\omega_{19}c_s^2\omega_{16}v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{18} + 2\omega_6v_3\omega_{16}v_1^2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_6\omega_{19}c_s^2\omega_{16}v_1\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} + 2\omega_6v_3^2\omega_{16}v_1\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} +$
$\omega_6\omega_{19}c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_{18} - 2\omega_6c_s^2\omega_{16}v_1\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_6\omega_{19}v_3^2v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + \omega_6\omega_{19}v_3c_s^2\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 -$
$2\omega_6v_3\omega_{16}v_1^2\omega_7\omega_{20}\omega_{17}\omega_8\omega_{18} + 2\omega_6v_3^2\omega_{16}v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_6\omega_{19}v_3^2v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_6\omega_{19}v_3c_s^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} +$
$2\omega_{19}c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_{18} - 2\omega_{19}v_3c_s^2\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8 - \omega_{19}v_3^2\omega_{16}v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 - \omega_6\omega_{19}v_3^2\omega_{16}v_1\omega_7\omega_{20}\omega_{17}\omega_8\omega_{18} +$
$\omega_{19}v_3\omega_{16}v_1^2\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} - 2\omega_6\omega_{19}v_3^2\omega_{16}v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{18} + 2\omega_6v_3\omega_{16}v_1^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_{18} - 2\omega_6\omega_{19}v_3\omega_{16}v_1^2\omega_7\omega_{23}\omega_{17}\omega_8 -$

$\omega_6\omega_{19}v_3\omega_{16}v_1^2\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_6\omega_{19}v_3\omega_{16}v_1^2\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_{19}v_3c_s^2\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_{18} - 2\omega_{19}v_3^2\omega_{16}v_1\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} - \omega_6\omega_{19}v_3c_s^2\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} - 2\omega_6\omega_{19}v_3c_s^2\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{18} + 2\omega_6\omega_{19}c_s^2\omega_{16}v_1\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} + \omega_6\omega_{19}v_3\omega_{16}v_1^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 - 2\omega_6v_3c_s^2\omega_{16}\omega_7\omega_{20}\omega_{17}\omega_8\omega_{18} + 2\omega_6c_s^2\omega_{16}v_1\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_6\omega_{19}v_3^2\omega_{16}v_1\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} + 2\omega_6\omega_{19}c_s^2\omega_{16}v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - \omega_6\omega_{19}v_3v_1^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + \omega_6\omega_{19}c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 + 2\omega_{19}v_3\omega_{16}v_1^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{18} - \omega_6\omega_{19}v_3^2\omega_{16}v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_6\omega_{19}v_3c_s^2\omega_{16}\omega_7\omega_{23}\omega_{17}\omega_8)\frac{v_2\rho}{\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_2} = C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_2}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_2} = 0$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_2} = (-6c_s^2\omega_1\omega_2^3 - 4\omega_3v_2^2\omega_1\omega_2^2 + 14\omega_3\omega_1^2\omega_2 + 28\omega_3c_s^2\omega_1^3 + 2\omega_1\omega_2^3 + 6\omega_3v_1^2\omega_1^2\omega_2^2 - 13\omega_3v_2^2\omega_1\omega_2^3 + 16\omega_3v_2^2\omega_1^3 - 3\omega_3v_1^2\omega_1^3\omega_2 - 2v_1^2\omega_1^3\omega_2 + 10\omega_3\omega_1^3\omega_2 - 24\omega_3c_s^2\omega_1\omega_2^2 + 10\omega_3v_2^2\omega_2^3 - 20\omega_3\omega_1^2\omega_2^2 - 4\omega_3v_1^2\omega_1^2\omega_2 + 4v_1^2\omega_1^2\omega_2^2 + 26\omega_3c_s^2\omega_2^3 - 24\omega_3c_s^2\omega_1\omega_2^3 + 8\omega_3\omega_1\omega_2^2 - 22\omega_3v_2^2\omega_1^2\omega_2 - 24\omega_3c_s^2\omega_1^3\omega_2 - 10\omega_3\omega_2^3 - 2v_1^2\omega_1\omega_2^3 + 4\omega_3v_1^2\omega_2^3 + 10\omega_3\omega_1\omega_2^3 + 48\omega_3c_s^2\omega_1^2\omega_2^2 - 30\omega_3c_s^2\omega_1^2\omega_2 + 4\omega_3v_1^2\omega_1^3 - 13\omega_3v_2^2\omega_1^3\omega_2 + 12c_s^2\omega_1^2\omega_2^2 - 3\omega_3v_1^2\omega_1\omega_2^3 - 4\omega_1^2\omega_2^2 + 26\omega_3v_2^2\omega_1^2\omega_2^2 - 6c_s^2\omega_1^3\omega_2 - 4\omega_3v_1^2\omega_1\omega_2^2 + 2\omega_1^3\omega_2 - 12\omega_3\omega_1^3)\frac{v_2v_1\rho}{6\omega_3\omega_1^3\omega_2^3}$

coefficient $C^{(3)}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_3}$ **at** $\frac{\partial^4 v_3}{\partial x_1\partial x_2^2\partial x_3}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_3} = (-14v_2^2v_1^2\omega^2 - 24c_s^2v_2^2 + 36c_s^2v_1^2\omega + v_2^2v_1^2\omega^3 - 14c_s^2v_1^2\omega^2 + 36v_2^2v_1^2\omega + c_s^2v_1^2\omega^3 + 28v_3c_s^2v_1\omega^2 + c_s^2v_2^2\omega^3 + 48v_3c_s^2v_1 - 72v_3v_2^2v_1\omega - 2v_3c_s^2v_1\omega^3 - 14c_s^2v_2^2\omega^2 + 48v_3v_2^2v_1 + 28v_3v_2^2v_1\omega^2 + 36c_s^2v_2^2\omega - 24v_2^2v_1^2 - 24c_s^2v_1^2 - 72v_3c_s^2v_1\omega - 2v_3v_2^2v_1\omega^3)\frac{\rho}{2\omega^3}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_3} = (4\omega_6^2\omega_{19}^2v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5 - 4\omega_6^2v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - 2\omega_6^2\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - 12\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - 2\omega_6\omega_{19}^2v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18} + \omega_6\omega_{19}^2\omega_{16}v_2^2v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 4\omega_6^2\omega_{19}^2v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - 2\omega_6\omega_{19}^2c_s^2\omega_{16}v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 2\omega_6\omega_{19}^2v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - 2\omega_6\omega_{19}^2v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5 - 2\omega_6^2\omega_{19}c_s^2\omega_{16}v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - 4\omega_6^2\omega_{19}^2v_3\omega_{16}v_2^2v_1\omega_7^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 2\omega_6^2\omega_{19}^2v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5 - 2\omega_6^2\omega_{19}c_s^2\omega_{16}v_1^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 4\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7^2\omega_{23}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - 14\omega_6^2\omega_{19}^2v_3c_s^2\omega_{16}v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18} - 2\omega_6^2\omega_{19}^2c_s^2\omega_{16}v_1^2\omega_7^2\omega_{23}\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 2\omega_6^2\omega_{19}\omega_{16}v_2^2v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} + 2\omega_6^2\omega_{19}^2c_s^2v_1^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - 4\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 2\omega_6^2\omega_{19}\omega_{16}v_2^2v_1^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 4\omega_6^2\omega_{19}^2v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} - 2\omega_6^2\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} + 2\omega_6^2\omega_{19}\omega_{16}v_2^2v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - 4\omega_6^2\omega_{19}^2v_3c_s^2v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - 2\omega_6^2\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18} + 2\omega_6^2\omega_{19}^2c_s^2\omega_{16}v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 4\omega_6^2\omega_{19}^2v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 2\omega_6^2\omega_{19}^2v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} - 2\omega_6^2\omega_{19}\omega_{16}v_2^2v_1^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18} + 2\omega_6^2\omega_{19}^2v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + \omega_6\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - 2\omega_6^2\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - 2\omega_6^2\omega_{19}\omega_{16}v_2^2v_1^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} + 2\omega_6^2\omega_{19}^2v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - 2\omega_6^2\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}^2\omega_8^2\omega_5 - 2\omega_6^2\omega_{19}^2c_s^2\omega_{16}v_1^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 2\omega_6^2\omega_{19}\omega_{16}v_2^2v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 2\omega_6^2\omega_{19}^2c_s^2v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - 2\omega_6^2\omega_{19}^2v_3v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + \omega_6^2\omega_{19}^2v_2^2v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - \omega_6\omega_{19}^2\omega_{16}v_2^2v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - 2\omega_6^2\omega_{19}^2v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} - 2\omega_6^2\omega_{19}^2c_s^2\omega_{16}v_1^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5 - 2\omega_6^2\omega_{19}^2\omega_{16}v_2^2v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18} + 2\omega_6\omega_{19}^2v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8\omega_{18} - 2\omega_6^2\omega_{19}^2c_s^2v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 4\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18} - \omega_6^2\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} - 12\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + \omega_6^2\omega_{19}^2c_s^2v_1^2\omega_7^3\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - 2\omega_6^2\omega_{19}^2v_3c_s^2v_1\omega_7^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - 2\omega_6\omega_{19}^2c_s^2\omega_{16}v_1^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}^2\omega_8^2\omega_5 + 4\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - 4\omega_6^2\omega_{19}^2v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} + 8\omega_6\omega_{19}^2v_3c_s^2\omega_{16}v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + \omega_6^2\omega_{19}^2\omega_{16}v_2^2v_1^2\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} + 2\omega_6^2\omega_{19}\omega_{16}v_2^2v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 4\omega_6^2\omega_{19}^2v_3\omega_{16}v_2^2v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 2\omega_6^2\omega_{19}^2v_3v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 12\omega_6^2\omega_{19}^2v_3c_s^2\omega_{16}v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - 2\omega_6^2\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5 - 4\omega_6\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - \omega_6^2\omega_{19}^2v_2^2v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 2\omega_6^2\omega_{19}c_s^2\omega_{16}v_1^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} + \omega_6^2\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} - 2\omega_6^2\omega_{19}^2v_2^2v_1^2\omega_7^2\omega_{23}\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 8\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} - 12\omega_6\omega_{19}^2v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18} + 4\omega_6^2\omega_{19}^2v_3v_2^2v_1\omega_7^2\omega_{23}\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - 2\omega_6^2\omega_{19}\omega_{16}v_2^2v_1^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5 + 4\omega_6^2\omega_{19}^2v_3c_s^2\omega_{16}v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5 + 2\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18} - \omega_6^2\omega_{19}^2\omega_{16}v_2^2v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 2\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5 + 8\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 4\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + \omega_6^2\omega_{19}^2c_s^2\omega_{16}v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - 2\omega_6^2\omega_{19}\omega_{16}v_2^2v_1^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 2\omega_6^2\omega_{19}\omega_{16}v_2^2v_1^2\omega_7^3\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - 4\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 2\omega_6^2\omega_{19}^2c_s^2\omega_{16}v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} - \omega_6^2\omega_{19}^2\omega_{16}v_2^2v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} + 4\omega_6^2\omega_{19}^2v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5 + 2\omega_6^2\omega_{19}^2c_s^2\omega_{16}v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - \omega_6^2\omega_{19}^2\omega_{16}v_2^2v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 2\omega_6^2\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5 + 4\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 2\omega_6^2\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 8\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + \omega_6^2\omega_{19}^2c_s^2\omega_{16}v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - 2\omega_6^2\omega_{19}\omega_{16}v_2^2v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 2\omega_6^2\omega_{19}\omega_{16}v_2^2v_1^2\omega_7^3\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - 4\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 2\omega_6^2\omega_{19}^2c_s^2\omega_{16}v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} - \omega_6^2\omega_{19}^2\omega_{16}v_2^2v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} + 4\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5 + 2\omega_6^2\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 2\omega_6\omega_{19}^2c_s^2\omega_{16}v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} + \omega_6^2\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5 + 2\omega_6^2\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18} + 2\omega_6^2\omega_{19}\omega_{16}v_2^2v_1^2\omega_7^3\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 2\omega_6^2\omega_{19}c_s^2\omega_{16}v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18} + 2\omega_6^2\omega_{19}\omega_{16}v_2^2v_1^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18} - \omega_6^2\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - 4\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5 + 2\omega_6^2\omega_{19}^2c_s^2\omega_{16}v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + \omega_6^2\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + \omega_6^2\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5 + 2\omega_6^2\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 2\omega_6^2\omega_{19}\omega_{16}v_2^2v_1^2\omega_7^3\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 2\omega_6^2\omega_{19}c_s^2\omega_{16}v_1^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 2\omega_6^2\omega_{19}c_s^2\omega_{16}v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18} + 2\omega_6^2\omega_{19}\omega_{16}v_2^2v_1^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18} - \omega_6^2\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - 4\omega_6^2\omega_{19}^2v_3c_s^2\omega_{16}v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5 + 4\omega_6^2\omega_{19}^2v_3\omega_{16}v_2^2v_1\omega_7^2\omega_{23}\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 4\omega_6^2\omega_{19}^2v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5 - \omega_6^2\omega_{19}^2c_s^2\omega_{16}v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5 + 4\omega_6^2\omega_{19}^2v_3\omega_{16}v_2^2v_1\omega_7^2\omega_{23}\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} +$

$$2\omega_6^2\omega_{19}^2v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} + 2\omega_6\omega_{19}^2v_3c_s^2\omega_{16}v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18} + \omega_6^2\omega_{19}^2c_s^2\omega_{16}v_1^2\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} +$$
$$\omega_6^2\omega_{19}^2v_2^2v_1^2\omega_7^3\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - 2\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} - 2\omega_6^2\omega_{19}^2v_3v_2^2v_1\omega_7^3\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} +$$
$$4\omega_6\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 2\omega_6^2\omega_{19}^2v_2^2v_1^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - 2\omega_6^2\omega_{19}^2v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} -$$
$$4\omega_6^2\omega_{19}^2v_3v_2^2v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 4\omega_6^2\omega_{19}^2v_3c_s^2\omega_{16}v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} + 2\omega_6\omega_{19}^2v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} -$$
$$2\omega_6^2\omega_{19}\omega_{16}v_2^2v_1^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} + 4\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} - 2\omega_6^2\omega_{19}\omega_{16}v_2^2v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} +$$
$$2\omega_6^2\omega_{19}^2\omega_{16}v_2^2v_1^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}^2\omega_8^2\omega_5 + 2\omega_6^2\omega_{19}^2v_3c_s^2\omega_{16}v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8\omega_{18} - 4\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} +$$
$$4\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 2\omega_6^2\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}^2\omega_8^2\omega_5 + \omega_6^2\omega_{19}^2c_s^2v_2^2\omega_7^3\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} +$$
$$4\omega_6^2v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} - 2\omega_6^2\omega_{19}^2c_s^2v_1^2\omega_7^2\omega_{23}\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - 4\omega_6^2\omega_{19}^2v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} -$$
$$4\omega_6^2\omega_{19}^2v_3\omega_{16}v_2^2v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18} + 4\omega_6^2\omega_{19}^2v_3c_s^2v_1\omega_7^2\omega_{23}\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 2\omega_6^2\omega_{19}c_s^2\omega_{16}v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} +$$
$$6\omega_6^2\omega_{19}^2v_3c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18} - \omega_6^2\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5 - \omega_6\omega_{19}^2c_s^2\omega_{16}v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} +$$
$$2\omega_6^2\omega_{19}^2v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 4\omega_6^2\omega_{19}^2v_3\omega_{16}v_2^2v_1\omega_7^2\omega_{23}\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18} - 2\omega_6^2\omega_{19}^2c_s^2\omega_{16}v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18} -$$
$$\omega_6^2\omega_{19}^2c_s^2\omega_{16}v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - 2\omega_6^2\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 2\omega_6^2\omega_{19}c_s^2\omega_{16}v_1^2\omega_7^3\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} -$$
$$4\omega_6^2\omega_{19}^2v_3c_s^2\omega_{16}v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5 + 2\omega_6^2\omega_{19}^2\omega_{16}v_2^2v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 4\omega_6\omega_{19}^2v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{17}\omega_{11}^2\omega_8^2\omega_5 +$$
$$2\omega_6^2\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - 2\omega_6^2\omega_{19}c_s^2\omega_{16}v_1^2\omega_7^2\omega_{23}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 4\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} +$$
$$\omega_6^2\omega_{19}^2c_s^2\omega_{16}v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5 - 4\omega_6^2\omega_{19}^2v_3\omega_{16}v_2^2v_1\omega_7^2\omega_{23}\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 2\omega_6^2\omega_{19}^2c_s^2v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} -$$
$$\omega_6^2\omega_{19}^2\omega_{16}v_2^2v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5 - 2\omega_6\omega_{19}^2v_3c_s^2\omega_{16}v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_{18} - 2\omega_6^2\omega_{19}^2v_3c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_5\omega_{18} +$$
$$4\omega_6^2\omega_{19}^2v_3c_s^2\omega_{16}v_1\omega_7^2\omega_{23}\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} + 2\omega_6^2\omega_{19}^2\omega_{16}v_2^2v_1^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - 2\omega_6^2\omega_{19}^2v_3c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_{18} -$$
$$2\omega_6^2\omega_{19}^2c_s^2\omega_{16}v_1^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - 2\omega_6^2\omega_{19}^2\omega_{16}v_2^2v_1^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 2\omega_6^2\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} +$$
$$2\omega_6^2\omega_{19}^2c_s^2\omega_{16}v_1^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18} - 2\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - 4\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} +$$
$$2\omega_6^2\omega_{19}c_s^2\omega_{16}v_1^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - \omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - 4\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} +$$
$$\omega_6\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5 + 2\omega_6^2\omega_{19}^2v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5 - 2\omega_6^2\omega_{19}c_s^2\omega_{16}v_1^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} +$$
$$2\omega_6^2\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - 2\omega_6^2\omega_{19}\omega_{16}v_2^2v_1^2\omega_7^2\omega_{23}\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} - 2\omega_6^2\omega_{19}^2v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5 +$$
$$4\omega_6\omega_{19}^2v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_5\omega_{18} + 2\omega_6^2\omega_{19}^2c_s^2\omega_{16}v_1^2\omega_7^2\omega_{23}\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - \omega_6^2\omega_{19}^2v_3c_s^2\omega_{16}v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} -$$
$$4\omega_6^2\omega_{19}^2v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18} - 4\omega_6\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18} + \omega_6\omega_{19}^2c_s^2\omega_{16}v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18} -$$
$$4\omega_6^2\omega_{19}^2v_3c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} + 4\omega_6\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} - 4\omega_6^2\omega_{19}^2v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{17}\omega_{11}^2\omega_8^2\omega_5 -$$
$$2\omega_6\omega_{19}^2v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5 + 2\omega_6^2\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18} - 4\omega_6^2\omega_{19}^2v_3c_s^2\omega_{16}v_1\omega_7^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} +$$
$$2\omega_6\omega_{19}^2v_3c_s^2\omega_{16}v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - 2\omega_6^2\omega_{19}^2c_s^2\omega_{16}v_1^2\omega_7^2\omega_{23}\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18} + 2\omega_6^2\omega_{19}^2v_3c_s^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} -$$
$$8\omega_6\omega_{19}^2v_3c_s^2\omega_{16}v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} + \omega_6\omega_{19}^2\omega_{16}v_2^2v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5 + 2\omega_6^2\omega_{19}^2\omega_{16}v_2^2v_1^2\omega_7^2\omega_{23}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} +$$
$$9\omega_6^2\omega_{19}^2v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18} + 2\omega_6\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18} - 2\omega_6^2\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} -$$
$$\omega_6^2\omega_{19}^2c_s^2v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - \omega_6^2\omega_{19}^2\omega_{16}v_2^2v_1^2\omega_7^3\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 4\omega_6\omega_{19}^2v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18} +$$
$$2\omega_6\omega_{19}^2v_3c_s^2\omega_{16}v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 2\omega_6^2\omega_{19}^2v_3c_s^2\omega_{16}v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_5\omega_{18} - 4\omega_6^2\omega_{19}^2v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} -$$
$$2\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18} - 4\omega_6\omega_{19}^2v_3c_s^2\omega_{16}v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} + 2\omega_6^2\omega_{19}^2v_3c_s^2\omega_{16}v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_{18} +$$
$$4\omega_6^2v_3c_s^2\omega_{16}v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + \omega_6^2\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 8\omega_6^2\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} -$$
$$2\omega_6\omega_{19}^2c_s^2\omega_{16}v_1^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18} + 2\omega_6^2\omega_{19}^2v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 2\omega_6^2\omega_{19}^2\omega_{16}v_2^2v_1^2\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18} +$$
$$4\omega_6^2\omega_{19}^2v_3v_2^2v_1\omega_7^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - 2\omega_6^2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} + 2\omega_6^2\omega_{19}^2c_s^2\omega_{16}v_1^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} -$$
$$2\omega_6^2\omega_{19}^2v_2^2v_1^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 4\omega_{19}^2v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18} - 2\omega_6^2\omega_{19}^2v_3c_s^2v_1\omega_7^3\omega_{23}\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18} -$$
$$2\omega_6^2\omega_{19}^2v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} + \omega_6^2\omega_{19}^2\omega_{16}v_2^2v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + \omega_6^2\omega_{19}^2c_s^2v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18} +$$
$$2\omega_6^2\omega_{19}^2c_s^2\omega_{16}v_1^2\omega_7^3\omega_{23}\omega_{17}\omega_{11}^2\omega_8^2\omega_5 - 2\omega_6^2\omega_{19}^2c_s^2v_2^2\omega_7^2\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 2\omega_6\omega_{19}^2\omega_{16}v_2^2v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8\omega_5\omega_{18} -$$
$$2\omega_6^2\omega_{19}^2v_3c_s^2\omega_{16}v_1\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8\omega_{18} - 4\omega_{19}^2v_3c_s^2\omega_{16}v_1\omega_7^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - \omega_6^2\omega_{19}^2c_s^2\omega_{16}v_1^2\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} +$$
$$4\omega_6^2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7^3\omega_{23}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18} - 2\omega_6^2\omega_{19}\omega_{16}v_2^2v_1^2\omega_7^3\omega_{20}\omega_{17}\omega_{11}\omega_8^2\omega_5\omega_{18}\Big)\frac{\rho}{2\omega_6^2\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}\omega_{20}\omega_{17}\omega_{11}^2\omega_8^2\omega_5\omega_{18}}$$

$$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z\,v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z\,v_3}$$

$$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z\,v_3} = (-4\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{18} + 2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} + \omega_{19}\omega_{16}v_2^2v_1^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 -$$
$$2\omega_6\omega_{19}\omega_{16}v_2^2v_1^2\omega_{23}\omega_{17}\omega_{11}\omega_{18} + 2\omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} + 4\omega_6\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{23}\omega_{17}\omega_{11}\omega_{18} - 2\omega_6c_s^2\omega_{16}v_2^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} +$$
$$4\omega_6v_3c_s^2\omega_{16}v_1\omega_7\omega_{20}\omega_{17}\omega_8\omega_{18} - 2\omega_6\omega_{16}v_2^2v_1^2\omega_7\omega_{23}\omega_{17}\omega_8\omega_{18} + \omega_{19}c_s^2\omega_{16}v_2^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 + 4\omega_6\omega_{19}v_3v_2^2v_1\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} +$$
$$2\omega_{19}\omega_{16}v_2^2v_1^2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_6\omega_{19}c_s^2v_1^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_6\omega_{16}v_2^2v_1^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} +$$
$$\omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_7\omega_{20}\omega_{17}\omega_8\omega_{18} - 2\omega_6\omega_{16}v_2^2v_1^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_6\omega_{19}\omega_{16}v_2^2v_1^2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_{18} - 4\omega_6\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_{18} -$$
$$2\omega_6\omega_{19}v_3v_2^2v_1\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} - 4\omega_6v_3\omega_{16}v_2^2v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_6\omega_{19}c_s^2v_2^2\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} + 2\omega_6c_s^2\omega_{16}v_1^2\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} +$$
$$4\omega_6v_3\omega_{16}v_2^2v_1\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} + 2\omega_6\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_{18} -$$
$$\omega_6\omega_{19}c_s^2\omega_{16}v_1^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_{18} + 2\omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{18} + \omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} -$$
$$2\omega_6\omega_{19}v_3c_s^2v_1\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_6c_s^2\omega_{16}v_1^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_6c_s^2\omega_{16}v_2^2\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_6\omega_{19}c_s^2\omega_{16}v_1^2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_{18} -$$
$$4\omega_6\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_{18} + 4\omega_6\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7\omega_{23}\omega_{17}\omega_8 - 2\omega_6c_s^2\omega_{16}v_1^2\omega_7\omega_{23}\omega_{17}\omega_8 - \omega_6\omega_{19}c_s^2\omega_{16}v_1^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 +$$
$$2\omega_6\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 + \omega_6\omega_{19}\omega_{16}v_2^2v_1^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + 4\omega_6v_3\omega_{16}v_2^2v_1\omega_7\omega_{20}\omega_{17}\omega_8\omega_{18} -$$
$$2\omega_6c_s^2\omega_{16}v_1^2\omega_7\omega_{23}\omega_{17}\omega_8\omega_{18} - 2\omega_6\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_{18} +$$
$$4\omega_6\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_6\omega_{19}c_s^2\omega_{16}v_1^2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} + 4\omega_6\omega_{19}v_3c_s^2v_1\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} -$$
$$4\omega_6v_3\omega_{16}v_2^2v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_{18} - 2\omega_6\omega_{19}c_s^2\omega_{16}v_1^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + 4\omega_6\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} -$$
$$2\omega_6\omega_{19}c_s^2v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_6\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 + \omega_6\omega_{19}c_s^2\omega_{16}v_1^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 - 2\omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_{23}\omega_{17}\omega_{11}\omega_{18} -$$
$$\omega_6\omega_{19}c_s^2v_2^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_6\omega_{19}v_3v_2^2v_1\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_{19}\omega_{16}v_2^2v_1^2\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_{18} + 2\omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_7\omega_{23}\omega_{17}\omega_8\omega_{18} -$$
$$2\omega_{19}\omega_{16}v_2^2v_1^2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8 + 4\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_{18} + 4\omega_6v_3c_s^2\omega_{16}v_1\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} -$$
$$\omega_{19}c_s^2\omega_{16}v_1^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + 4\omega_6\omega_{19}v_3v_2^2v_1\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} - \omega_6\omega_{19}\omega_{16}v_2^2v_1^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 +$$

$2\omega_6\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 - 2\omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} +$
$2\omega_6\omega_{19}c_s^2\omega_{16}v_1^2\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} - 4\omega_6\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_6\omega_{19}\omega_{16}v_2^2v_1^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} +$
$4\omega_6\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + 4\omega_6\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_6\omega_{19}\omega_{16}v_2^2v_1^2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} +$
$4\omega_6v_3c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{17}\omega_8\omega_{18} - 2\omega_6\omega_{16}v_2^2v_1^2\omega_7\omega_{20}\omega_{17}\omega_8\omega_{18} - \omega_6\omega_{19}v_2^2v_1^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - \omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 -$
$4\omega_6v_3c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_{18} + 2\omega_6\omega_{19}c_s^2v_2^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + 4\omega_6\omega_{19}v_3c_s^2v_1\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} -$
$4\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{18} + 2\omega_6\omega_{19}v_3v_2^2v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8 +$
$\omega_{19}c_s^2\omega_{16}v_1^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 + 2\omega_6\omega_{19}\omega_{16}v_2^2v_1^2\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} - 4\omega_6\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_{18} +$
$4\omega_6\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{23}\omega_{20}\omega_{11}\omega_{18} - 2\omega_6\omega_{19}c_s^2\omega_{16}v_1^2\omega_{23}\omega_{20}\omega_{11}\omega_{18} + 2\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + 4\omega_6v_3\omega_{16}v_2^2v_1\omega_7\omega_{23}\omega_{17}\omega_8\omega_{18} -$
$2\omega_6c_s^2\omega_{16}v_1^2\omega_7\omega_{20}\omega_{17}\omega_8\omega_{18} + 2\omega_{19}c_s^2\omega_{16}v_1^2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_6\omega_{19}v_2^2v_1^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - \omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_{18} +$
$2\omega_6c_s^2\omega_{16}v_2^2\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_6\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 + \omega_6\omega_{19}\omega_{16}v_2^2v_1^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 - 2\omega_{19}c_s^2\omega_{16}v_1^2\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_{18} +$
$2\omega_6\omega_{16}v_2^2v_1^2\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - 4\omega_6v_3c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} - 2\omega_{19}c_s^2\omega_{16}v_1^2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8 -$
$2\omega_6\omega_{19}v_3c_s^2v_1\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} + 2\omega_6\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_{18} - \omega_6\omega_{19}\omega_{16}v_2^2v_1^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_{18} +$
$4\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_{18} + 4\omega_6v_3\omega_{16}v_2^2v_1\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + 4\omega_6v_3c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} -$
$4\omega_6v_3c_s^2\omega_{16}v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_{19}c_s^2\omega_{16}v_1^2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_{18} + \omega_{19}c_s^2\omega_{16}v_1^2\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} - 2\omega_6c_s^2\omega_{16}v_2^2\omega_7\omega_{23}\omega_{17}\omega_8\omega_{18} +$
$4\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8 + \omega_6\omega_{19}v_2^2v_1^2\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} - 4\omega_6\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} + 2\omega_6\omega_{19}\omega_{16}v_2^2v_1^2\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} +$
$4\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_{18} + \omega_6\omega_{19}c_s^2v_2^2\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} + 2\omega_6c_s^2\omega_{16}v_1^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_{18} - \omega_{19}c_s^2\omega_{16}v_2^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} -$
$\omega_6\omega_{19}c_s^2\omega_{16}v_1^2\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_6\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_6c_s^2\omega_{16}v_1^2\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_6c_s^2\omega_{16}v_2^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} -$
$4\omega_6\omega_{19}v_3c_s^2v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + \omega_6\omega_{19}\omega_{16}v_2^2v_1^2\omega_7\omega_{20}\omega_{17}\omega_8\omega_{18} - 2\omega_6\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7\omega_{20}\omega_{17}\omega_8\omega_{18} -$
$4\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} - \omega_{19}\omega_{16}v_2^2v_1^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_6c_s^2\omega_{16}v_1^2\omega_{23}\omega_{17}\omega_{11}\omega_{18} + 4\omega_6\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{23}\omega_{17}\omega_{11}\omega_{18} -$
$4\omega_6\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{18} + 2\omega_6\omega_{19}\omega_{16}v_2^2v_1^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{18} - 2\omega_6\omega_{19}v_2^2v_1^2\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} + 2\omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_{18} -$
$2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 - \omega_6\omega_{19}c_s^2v_1^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_{19}c_s^2\omega_{16}v_1^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{18} -$
$2\omega_6\omega_{16}v_2^2v_1^2\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_6\omega_{19}v_3c_s^2v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + \omega_6\omega_{19}c_s^2\omega_{16}v_1^2\omega_7\omega_{20}\omega_{17}\omega_8\omega_{18} - 2\omega_6\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7\omega_{20}\omega_{17}\omega_8\omega_{18} +$
$2\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{18} - 4\omega_6\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{18} +$
$4\omega_6\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{17}\omega_8 + 2\omega_6\omega_{19}c_s^2\omega_{16}v_1^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{18} - 2\omega_6\omega_{19}\omega_{16}v_2^2v_1^2\omega_7\omega_{23}\omega_{17}\omega_8 + 2\omega_6c_s^2\omega_{16}v_1^2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} -$
$4\omega_6v_3\omega_{16}v_2^2v_1\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_6c_s^2\omega_{16}v_1^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + 4\omega_6\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{18} - 2\omega_6\omega_{19}c_s^2v_1^2\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} -$
$2\omega_6\omega_{19}\omega_{16}v_2^2v_1^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{18} - \omega_6\omega_{19}\omega_{16}v_2^2v_1^2\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} + 2\omega_6\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} -$
$2\omega_{19}\omega_{16}v_2^2v_1^2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_{18} - 4\omega_6\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_6\omega_{19}c_s^2\omega_{16}v_1^2\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} + 4\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8 -$
$2\omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_{23}\omega_{20}\omega_{11}\omega_{18} + 4\omega_6v_3\omega_{16}v_2^2v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + 4\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_{18} -$
$\omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} + \omega_6\omega_{19}c_s^2v_1^2\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_{18} + 2\omega_6c_s^2\omega_{16}v_2^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} +$
$2\omega_6c_s^2\omega_{16}v_2^2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_6\omega_{19}v_2^2v_1^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_6\omega_{16}v_2^2v_1^2\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + 4\omega_6\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{18} -$
$2\omega_6\omega_{19}c_s^2\omega_{16}v_1^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{18} + 4\omega_6v_3\omega_{16}v_2^2v_1\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_6\omega_{16}v_2^2v_1^2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8 -$
$4\omega_6v_3c_s^2\omega_{16}v_1\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - 4\omega_6\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{17}\omega_8\omega_{18} + 2\omega_6\omega_{19}\omega_{16}v_2^2v_1^2\omega_7\omega_{23}\omega_{17}\omega_8\omega_{18} + \omega_6\omega_{19}c_s^2v_2^2\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} -$
$4\omega_6\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8 + 2\omega_6\omega_{19}c_s^2\omega_{16}v_1^2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8 - \omega_6\omega_{19}c_s^2\omega_{16}v_1^2\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} +$
$2\omega_6\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} - 2\omega_6c_s^2\omega_{16}v_2^2\omega_7\omega_{20}\omega_{17}\omega_8\omega_{18} - 2\omega_6c_s^2\omega_{16}v_1^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} -$
$4\omega_6\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_{18} + 2\omega_6\omega_{19}c_s^2\omega_{16}v_1^2\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_{18} + 2\omega_6\omega_{19}\omega_{16}v_2^2v_1^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} -$
$4\omega_6\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + \omega_6\omega_{19}v_2^2v_1^2\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - 4\omega_6\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8 + 2\omega_6\omega_{19}\omega_{16}v_2^2v_1^2\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8 -$
$\omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_6c_s^2\omega_{16}v_2^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_{18} + \omega_6\omega_{19}c_s^2v_1^2\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} + \omega_{19}\omega_{16}v_2^2v_1^2\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} +$
$2\omega_6\omega_{16}v_2^2v_1^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8\omega_{18} - \omega_6\omega_{19}\omega_{16}v_2^2v_1^2\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_6\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_7\omega_{23}\omega_{17}\omega_8 +$
$\omega_{19}c_s^2\omega_{16}v_2^2\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_8\omega_{18} - 4\omega_6\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_{18} + 2\omega_6\omega_{19}\omega_{16}v_2^2v_1^2\omega_7\omega_{23}\omega_{20}\omega_{11}\omega_{18} + 2\omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} +$
$2\omega_6\omega_{19}c_s^2\omega_{16}v_1^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - 4\omega_6\omega_{19}v_3\omega_{16}v_2^2v_1\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - 4\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} +$
$2\omega_{19}c_s^2\omega_{16}v_2^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{18} - 4\omega_6\omega_{19}v_3v_2^2v_1\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} + 4\omega_6\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{23}\omega_{20}\omega_{11}\omega_{18} -$
$2\omega_6\omega_{19}\omega_{16}v_2^2v_1^2\omega_{23}\omega_{20}\omega_{11}\omega_{18} + \omega_6\omega_{19}c_s^2\omega_{16}v_2^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_8 - 2\omega_6\omega_{19}c_s^2v_1^2\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_{19}v_3c_s^2\omega_{16}v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8 +$
$4\omega_6\omega_{19}v_3c_s^2\omega_{16}v_1\omega_{23}\omega_{17}\omega_{11}\omega_8\omega_{18} + 2\omega_{19}\omega_{16}v_2^2v_1^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_{18} - 4\omega_6\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7\omega_{23}\omega_{17}\omega_8\omega_{18} + 2\omega_6\omega_{19}c_s^2\omega_{16}v_1^2\omega_7\omega_{23}\omega_{17}\omega_8\omega_{18} +$
$\omega_6\omega_{19}c_s^2\omega_{16}v_1^2\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18} - 2\omega_6\omega_{19}v_3\omega_{16}v_2^2v_1\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18})\frac{\rho}{2\omega_6\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{20}\omega_{17}\omega_{11}\omega_8\omega_{18}}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_3} = C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_3}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_3} = 0$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y^2\mathrm{D}_z v_3} = (9\omega_4\omega_1\omega_2 + 27\omega_3c_s^2\omega_1\omega_2 - 27c_s^2\omega_4\omega_1\omega_2 + 6\omega_3c_s^2\omega_4\omega_1 - 6\omega_3c_s^2\omega_4\omega_2 - 9v_1^2\omega_4\omega_1\omega_2 + 2\omega_3\omega_4\omega_2 + 9\omega_3v_1^2\omega_1\omega_2 + 2\omega_3v_1^2\omega_4\omega_1 -$
$2\omega_3\omega_4\omega_1 - 2\omega_3v_1^2\omega_4\omega_2 - 9\omega_3\omega_1\omega_2)\frac{v_3v_1\rho}{72\omega_3\omega_4\omega_1\omega_2}$

coefficient $C^{(3)}_{\mathrm{D}_y^3\mathrm{D}_z\rho}$ **at** $\frac{\partial^4\rho}{\partial x_2^3\partial x_3}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_y^3\mathrm{D}_z\rho} = (24 - \omega^3 + 14\omega^2 - 36\omega + v_2^2\omega^3 - 42c_s^2\omega^2 + 3c_s^2\omega^3 - 14v_2^2\omega^2 + 36v_2^2\omega + 108c_s^2\omega - 72c_s^2 - 24v_2^2)\frac{c_s^2v_2}{12\omega^3}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y^3\mathrm{D}_z\rho} = (36\omega_{19}v_3^2c_s^2\omega_{16}\omega_{10}^2\omega_7^3\omega_{23} + 15\omega_{19}c_s^4\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}\omega_{11} - 12\omega_{19}c_s^2\omega_{16}^2v_2^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11} + 12\omega_{19}v_3^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11} +$
$36v_3^2c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{11} - 45\omega_{19}v_3^2c_s^2\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}\omega_{11} + 72\omega_{19}v_3^2c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{23} - 36\omega_{19}v_3^2c_s^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11} - 108\omega_{19}v_3^2c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11} -$
$18\omega_{19}v_3^2c_s^2\omega_{16}^2\omega_7^3\omega_{23}\omega_{11} + 12v_3^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11} - \omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11} + 54\omega_{19}c_s^4\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11} + 12c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11} -$
$6\omega_{19}c_s^4\omega_{10}^2\omega_7^3\omega_{23}\omega_{11} - 36\omega_{19}v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11} + 15\omega_{19}v_3^2\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}\omega_{11} - 36\omega_{19}v_3^2c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{11} - 12\omega_{19}v_3^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{11} -$

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

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_y^3\mathrm{D}_{z\rho}} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y^3\mathrm{D}_{z\rho}}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_y^3\mathrm{D}_{z\rho}} = (18\omega_{19}\omega_{16}v_2^2\omega_{10}\omega_7\omega_{23}\omega_{11} - 9\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11} + 36\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7\omega_{11} - 12\omega_{19}\omega_{16}^2\omega_{10}\omega_{23}\omega_{11} - 36c_s^2\omega_{16}^2\omega_7^2\omega_{23} +$
$18\omega_{19}c_s^2\omega_{10}\omega_7^2\omega_{23}\omega_{11} + 6\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2 + 18\omega_{19}c_s^2\omega_{16}^2\omega_7^2\omega_{23} - 12\omega_{16}^2v_2^2\omega_7\omega_{23}\omega_{11} - 12\omega_{19}\omega_{16}^2v_2^2\omega_{23}\omega_{11} + 36c_s^2\omega_{16}^2\omega_7^2\omega_{23}\omega_{11} +$
$3\omega_{19}c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11} + 18\omega_{19}\omega_{16}^2v_2^2\omega_7\omega_{23}\omega_{11} - 15\omega_{19}c_s^2\omega_{16}^2\omega_7^2\omega_{23}\omega_{11} - 6\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{11} + 12\omega_{16}^2\omega_{10}\omega_7^2\omega_{11} + 12\omega_{16}^2\omega_7^2\omega_{23} +$
$12\omega_{16}^2v_2^2\omega_{10}\omega_7\omega_{11} + 36\omega_{19}c_s^2\omega_{16}^2\omega_{10}\omega_{23}\omega_{11} - 12\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{11} - 12\omega_{19}\omega_{16}^2v_2^2\omega_{10}\omega_7\omega_{11} - 18\omega_{19}\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{11} - 6\omega_{19}\omega_{10}\omega_7^2\omega_{23}\omega_{11} +$
$6\omega_{19}v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{11} + 12\omega_{16}^2v_2^2\omega_{10}\omega_7^2 - 6\omega_{19}\omega_{16}^2v_2^2\omega_{10}\omega_7^2 + 12\omega_{19}\omega_{16}^2\omega_{23}\omega_{11} + 12\omega_{19}\omega_{16}v_2^2\omega_{10}\omega_7\omega_{11} - 12\omega_{19}\omega_{16}^2v_2^2\omega_{10}\omega_7\omega_{23}\omega_{11} +$
$12\omega_{19}\omega_{16}^2\omega_{10}\omega_7\omega_{23}\omega_{11} - 36c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{11} - 12\omega_{16}^2\omega_7^2\omega_{23}\omega_{11} + 5\omega_{19}\omega_{16}^2\omega_7^2\omega_{23}\omega_{11} + 18\omega_{19}c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{11} - 6\omega_{19}\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{11} +$
$12\omega_{19}\omega_{16}^2v_2^2\omega_{10}\omega_{23}\omega_{11} + 36c_s^2\omega_{16}^2\omega_{10}\omega_7\omega_{11} + 12\omega_{19}\omega_{16}\omega_{10}\omega_{23}\omega_{11} - 12\omega_{16}^2\omega_{10}\omega_7^2 - 12\omega_{19}v_2^2\omega_{10}\omega_7\omega_{23}\omega_{11} + 12\omega_{19}\omega_{10}\omega_7\omega_{23}\omega_{11} +$
$3\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11} - 36\omega_{19}c_s^2\omega_{16}^2\omega_{10}\omega_7\omega_{11} - 12\omega_{16}^2v_2^2\omega_{10}\omega_7^2\omega_{11} + \omega_{19}\omega_{16}^2v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{11} - \omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11} + 6\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{11} +$
$36c_s^2\omega_{16}^2\omega_{10}\omega_7^2 - 18\omega_{19}\omega_{16}^2\omega_7\omega_{23}\omega_{11} + 6\omega_{19}\omega_{16}^2v_2^2\omega_{10}\omega_7^2\omega_{11} - 12\omega_{19}\omega_{16}v_2^2\omega_{10}\omega_{23}\omega_{11} - 18\omega_{19}c_s^2\omega_{16}^2\omega_{10}\omega_7^2 - 6\omega_{19}\omega_{16}^2\omega_7^2\omega_{23} +$
$12\omega_{16}^2\omega_7\omega_{23}\omega_{11} - 36\omega_{19}c_s^2\omega_{16}^2\omega_{23}\omega_{11} + 54\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{11} - 3\omega_{19}\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{11} + 12\omega_{19}\omega_{16}^2\omega_{10}\omega_7\omega_{11} - 36\omega_{19}c_s^2\omega_{10}\omega_7\omega_{23}\omega_{11} -$
$12\omega_{16}^2\omega_{10}\omega_7\omega_{11} - 36\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_{23}\omega_{11} - 18\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{11} + 12\omega_{16}^2v_2^2\omega_7^2\omega_{23}\omega_{11} - 36c_s^2\omega_{16}^2\omega_7\omega_{23}\omega_{11} - 12\omega_{16}^2v_2^2\omega_7^2\omega_{23} -$
$5\omega_{19}\omega_{16}^2v_2^2\omega_7^2\omega_{23}\omega_{11} + 54\omega_{19}c_s^2\omega_{16}^2\omega_7\omega_{23}\omega_{11} + 6\omega_{19}\omega_{16}^2v_2^2\omega_7^2\omega_{23} - 36\omega_{19}c_s^2\omega_{16}^2\omega_{10}\omega_7\omega_{23}\omega_{11})\frac{c_s^2v_2}{12\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_y^3\mathrm{D}_{z\rho}} = C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_y^3\mathrm{D}_{z\rho}}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_y^3\mathrm{D}_{z\rho}} = (-6\omega_3\omega_{11}^2 + 3\omega_3^2c_s^2\omega_{11}^2\omega_5 + \omega_3^2v_2^2\omega_{11}^2 - 36c_s^2\omega_{11}\omega_5 + 12\omega_{11}\omega_5 + 18\omega_3^2c_s^2\omega_5 + 18\omega_3v_2^2\omega_{11}\omega_5 + 3\omega_3^2c_s^2\omega_{11}^2 + 6\omega_3^2v_2^2\omega_5 +$
$12\omega_3\omega_5 + 12\omega_3\omega_{11}^2\omega_5 - 36c_s^2\omega_{11}^2 - 18\omega_3^2c_s^2\omega_{11} + \omega_3^2v_2^2\omega_{11}^2\omega_5 - 12v_2^2\omega_{11}\omega_5 + 3\omega_3^2\omega_{11}\omega_5 - 12\omega_3\omega_{11} + 54\omega_3c_s^2\omega_{11}\omega_5 - 12v_2^2\omega_{11}^2 - 6\omega_3^2v_2^2\omega_{11} -$
$\omega_3^2\omega_{11}^2\omega_5 - 36\omega_3c_s^2\omega_{11}^2\omega_5 + 6\omega_3^2\omega_{11} + 36\omega_3c_s^2\omega_{11} - 18\omega_3\omega_{11}\omega_5 + 12\omega_{11}^2 + 12\omega_3v_2^2\omega_{11} + 12v_2^2\omega_{11}^2\omega_5 - 3\omega_3^2v_2^2\omega_{11}\omega_5 + 6\omega_3v_2^2\omega_{11}^2 -$
$12\omega_3v_2^2\omega_{11}^2\omega_5 - 36\omega_3c_s^2\omega_5 - 6\omega_3^2\omega_5 - \omega_3^2\omega_{11}^2 + 36c_s^2\omega_{11}^2\omega_5 + 18\omega_3c_s^2\omega_{11}^2 - 9\omega_3^2c_s^2\omega_{11}\omega_5 - 12\omega_{11}^2\omega_5 - 12\omega_3v_2^2\omega_5)\frac{c_s^2v_2}{12\omega_3^2\omega_{11}^2\omega_5}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_y^3\mathrm{D}_{z\rho}} = (48\omega_3^2v_2^4\omega_4^2\omega_1^3 + 9\omega_3^2c_s^2\omega_4\omega_1^3\omega_2^3 + 18\omega_3^2c_s^2v_2^2\omega_1^3\omega_2^3 + 120\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^2 + 36\omega_3^2c_s^2\omega_1^2\omega_2^3 - 18c_s^2\omega_4^2\omega_1^3\omega_2^3 - 412\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^2\omega_2^2 +$
$6\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2^3 - 104\omega_3^2c_s^2\omega_4^2\omega_1^3 + 104\omega_3^2v_2^2\omega_4^2\omega_1^2\omega_2^2 - 342\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^3 + 54\omega_3^2c_s^4\omega_1^3\omega_2^3 - 9\omega_3c_s^2v_2^2\omega_4^2\omega_1^3\omega_2^3 - 276\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2 + 160\omega_3^2v_2^2\omega_4^2\omega_2^3 -$
$712\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^3\omega_2 - 460\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^2\omega_2^3 - 784\omega_3^2c_s^2v_2^2\omega_4^2\omega_2^3 + 216\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^3 + 48\omega_3c_s^4\omega_4^2\omega_1^3\omega_2 + 152\omega_3^2v_2^2\omega_4^2\omega_1^3\omega_2 - 36\omega_3c_s^2v_2^2\omega_4^2\omega_1^3\omega_2^2 +$
$12\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^2 + 92\omega_3^2v_2^2\omega_4^2\omega_1^2\omega_2^3 - 288\omega_3^2c_s^4\omega_4^2\omega_2^3 + 72\omega_3c_s^2v_2^2\omega_4^2\omega_1^2\omega_2^3 - 108\omega_3^2c_s^4\omega_1^2\omega_2^3 - 92\omega_3^2v_2^2\omega_4^2\omega_1^3\omega_2^2 + 18\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^3 + 72\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2 +$
$56\omega_3c_s^2\omega_4^2\omega_1\omega_2^3 - 56\omega_3^2v_2^2\omega_4^2\omega_1^3 + 16\omega_3c_s^2v_2^2\omega_4^2\omega_1^3\omega_2 + 320\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^3 + 144\omega_3^2c_s^4\omega_4^2\omega_1^3 + 394\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^3\omega_2^2 - 8\omega_3^2\omega_4^2\omega_1\omega_2^2 + 36c_s^2\omega_4^2\omega_1^2\omega_2^3 +$
$56\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^2 + 228\omega_3^2v_2^4\omega_4^2\omega_1\omega_2^3 - 18\omega_3^2c_s^2\omega_1^3\omega_2^3 - 108\omega_3c_s^4\omega_4^2\omega_1^3\omega_2^2 - 36\omega_3^2c_s^2v_2^2\omega_1^2\omega_2^3 - 36\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^3 - 144\omega_3^2v_2^2\omega_4^2\omega_2^3 - 6\omega_3^2v_3^2\omega_4^2\omega_1^3\omega_2^2 -$
$136\omega_3^2v_2^2\omega_4^2\omega_1^2\omega_2 + 144\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^2 + 40\omega_3c_s^2v_2^2\omega_4^2\omega_1^2\omega_2^2 - 27\omega_3c_s^4\omega_4^2\omega_1^3\omega_2^3 + 208\omega_3^2c_s^2\omega_4^2\omega_2^3 - 24\omega_3^2v_2^4\omega_4^2\omega_1\omega_2^2 - 368\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^3 +$
$448\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^2\omega_2 + 28\omega_3^2\omega_4^2\omega_1\omega_2^3 + 6\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^3\omega_2^3 + 54c_s^4\omega_4^2\omega_1^3\omega_2^3 - 18\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^2\omega_2^3 - 40\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^2 - 27\omega_3^2c_s^4\omega_4\omega_1^3\omega_2^3 + 8\omega_3^2\omega_4^2\omega_1^3 -$
$96\omega_3^2v_2^4\omega_4^2\omega_1^2\omega_2^2 + 184\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^3 + 208\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2 - 14\omega_3^2\omega_4^2\omega_1^2\omega_2^3 - 6\omega_3^2v_3^4\omega_4^2\omega_1^2\omega_2^3 - 20\omega_3^2\omega_4^2\omega_1^3\omega_2 - 72\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^3 - 56\omega_3c_s^2v_2^2\omega_4^2\omega_1\omega_2^3 -$
$16\omega_3c_s^2\omega_4^2\omega_1^3\omega_2 - 36c_s^2v_2^2\omega_4^2\omega_1^2\omega_2^3 - 9\omega_3^2c_s^2v_2^2\omega_4\omega_1^3\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^2\omega_2^2 - 132\omega_3^2v_2^4\omega_4^2\omega_1^3\omega_2 + 52\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^2 - 78\omega_3^2v_2^4\omega_4^2\omega_1^2\omega_2^3 + 1232\omega_3^2c_s^2v_2^2\omega_4^2\omega_1\omega_2^3 +$

$16\omega_3^2\omega_4^2\omega_1^2\omega_2+78\omega_3^2v_2^4\omega_4^2\omega_1^3\omega_2^2-6\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2^3-168\omega_3c_s^4\omega_4^2\omega_1\omega_2^3-88\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2-144\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^2-256\omega_3^2v_2^2\omega_4^2\omega_1\omega_2^3+108\omega_3^2c_s^4\omega_4\omega_1^2\omega_2^3+$
$36\omega_3c_s^2\omega_4^2\omega_1^3\omega_2^2-108c_s^4\omega_4^2\omega_1^2\omega_2^3+120\omega_3^2v_2^4\omega_4^2\omega_1^2\omega_2-118\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2^2+36\omega_3^2c_s^2v_2^2\omega_4\omega_1^2\omega_2^3+6\omega_3^2v_3^4\omega_4^2\omega_1^3\omega_2^2-56\omega_3^2c_s^2v_2^2\omega_4^2\omega_1\omega_2^2+$
$14\omega_3^2\omega_4^2\omega_1^3\omega_2^2+18\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^3\omega_2^2-16\omega_3^2\omega_4^2\omega_2^3+9\omega_3c_s^2\omega_4^2\omega_1^3\omega_2^3+32\omega_3^2v_2^2\omega_4^2\omega_1\omega_2^2+18c_s^2v_2^2\omega_4^2\omega_1^3\omega_2^2+588\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^3)\frac{v_2}{72\omega_3^2\omega_4^2\omega_1^3\omega_2^3}$

coefficient $C^{(3)}_{\mathrm{D}_y^3\mathrm{D}_z v_2}$ **at** $\frac{\partial^4 v_2}{\partial x_2^3\partial x_3}$**:**

$$C^{(3),\mathrm{SRT}}_{\mathrm{D}_y^3\mathrm{D}_z v_2}=(-12-6\omega^2+18\omega+2c_s^2\omega^2-c_s^2\omega^3+18v_2^2\omega^2-54v_2^2\omega+36v_2^2)\frac{c_s^2\rho}{12\omega^3}$$

$$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y^3\mathrm{D}_z v_2}=(12\omega_{19}v_3^2c_s^2\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}+6\omega_{19}c_s^4\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}-15\omega_{19}c_s^2\omega_{16}^2v_2^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}+12\omega_{19}v_3^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11}+$
$12v_3^2c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{11}-15\omega_{19}v_3^2c_s^2\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}+24\omega_{19}v_3^2c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}-12\omega_{19}v_3^2c_s^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}-36\omega_{19}v_3^2c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}-$
$6\omega_{19}v_3^2c_s^2\omega_{16}^2\omega_7^3\omega_{23}\omega_{11}+12v_3^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}+18\omega_{19}c_s^4\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}+12c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}-12\omega_{19}v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11}+$
$15\omega_{19}v_3^2\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}-12\omega_{19}v_3^2c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{11}-12\omega_{19}v_3^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{11}-15\omega_{19}c_s^2\omega_{16}^2v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}-12\omega_{19}c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{11}+$
$12v_3^2c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3-6\omega_{19}c_s^2\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}-12\omega_{19}v_3^2\omega_{16}^2\omega_7^2\omega_{23}\omega_{11}-\omega_{19}c_s^4\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}-6\omega_{19}v_3^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}-$
$18\omega_{19}c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}-12c_s^4\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}+12\omega_{19}c_s^4\omega_{16}\omega_{10}^2\omega_7^2\omega_{11}-6\omega_{19}v_3^2c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3+36\omega_{19}v_3^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}-$
$72\omega_{19}v_3^2\omega_{16}v_2^2\omega_{10}^2\omega_7^2\omega_{23}+27\omega_{19}v_3^2\omega_{16}^2v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}+72\omega_{19}v_3^2\omega_{16}^2v_2^2\omega_{10}\omega_7\omega_{23}\omega_{11}-12v_3^2c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}+18\omega_{19}c_s^4\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}\omega_{11}-$
$12v_3^2c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{11}+24\omega_{19}c_s^2v_2^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}-6\omega_{19}v_3^2c_s^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}-12\omega_{19}c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{23}\omega_{11}-36\omega_{19}c_s^2\omega_{16}^2v_2^2\omega_{10}\omega_7\omega_{23}\omega_{11}-$
$24\omega_{19}v_3^2c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}+18\omega_{19}v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}-36\omega_{19}v_3^2v_2^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}+24\omega_{19}v_3^2\omega_{16}\omega_{10}^2\omega_7\omega_{23}\omega_{11}-6\omega_{19}c_s^4\omega_{16}\omega_{10}^2\omega_7^3\omega_{11}+$
$36v_3^2\omega_{16}^2v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}-102\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}+36\omega_{19}v_3^2\omega_{16}v_2^2\omega_{10}^2\omega_7^3\omega_{23}+36\omega_{19}v_3^2\omega_{16}^2v_2^2\omega_7^2\omega_{23}\omega_{11}+6\omega_{19}v_3^2\omega_{16}\omega_{10}^2\omega_7^3\omega_{11}+$
$6\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3+6\omega_{19}c_s^2\omega_{16}\omega_{10}^2\omega_7^3\omega_{11}-24\omega_{19}v_3^2c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{11}+144\omega_{19}v_3^2\omega_{16}v_2^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}+36c_s^2\omega_{16}^2v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}-$
$12v_3^2c_s^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}+12\omega_{19}c_s^4\omega_{16}\omega_{10}^2\omega_7\omega_{23}\omega_{11}-12c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3+6\omega_{19}v_3^2c_s^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{11}-18\omega_{19}v_3^2\omega_{16}v_2^2\omega_{10}^2\omega_7^3\omega_{11}+$
$5\omega_{19}c_s^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}+12\omega_{19}v_3^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}+12c_s^4\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}-5\omega_{19}c_s^4\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}+6\omega_{19}v_3^2\omega_{16}^2\omega_7^3\omega_{23}\omega_{11}-$
$108\omega_{19}v_3^2\omega_{16}^2v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}-18\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}^2\omega_7^3\omega_{11}-9\omega_{19}v_3^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}-48\omega_{19}v_3^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}+18\omega_{19}c_s^2\omega_{16}^2v_2^2\omega_{10}\omega_7^3\omega_{23}-$
$36c_s^2\omega_{16}^2v_2^2\omega_{10}^2\omega_7^3\omega_{11}-12\omega_{19}v_3^2\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}+6\omega_{19}v_3^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}-18\omega_{19}v_3^2\omega_{16}^2v_2^2\omega_{10}\omega_7^3\omega_{23}+18\omega_{19}c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}-$
$24\omega_{19}v_3^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}+54\omega_{19}c_s^2\omega_{16}^2v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}-12\omega_{19}c_s^4\omega_{16}^2\omega_{10}^2\omega_{23}\omega_{11}-36v_3^2\omega_{16}^2v_2^2\omega_{10}^2\omega_7^3\omega_{11}-12\omega_{19}c_s^4\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{11}-$
$12v_3^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}-12c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{11}-12v_3^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{11}+12\omega_{19}v_3^2c_s^2\omega_{16}^2\omega_7^2\omega_{23}\omega_{11}+9\omega_{19}v_3^2c_s^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}+$
$6\omega_{19}v_3^2c_s^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}-5\omega_{19}c_s^4\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}-12c_s^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}+60\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}^2\omega_7\omega_{23}\omega_{11}+\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}+$
$18\omega_{19}v_3^2\omega_{16}^2v_2^2\omega_{10}^2\omega_7^3\omega_{11}+12\omega_{19}v_3^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{11}-36v_3^2\omega_{16}^2v_2^2\omega_{10}\omega_7^3\omega_{23}-18\omega_{19}c_s^4\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}+12\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{11}+$
$12c_s^4\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{11}-72\omega_{19}v_3^2\omega_{16}v_2^2\omega_{10}^2\omega_7\omega_{23}\omega_{11}+48\omega_{19}v_3^2c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}+18\omega_{19}c_s^2\omega_{16}^2v_2^2\omega_{10}^2\omega_7^3\omega_{11}-36c_s^2\omega_{16}^2v_2^2\omega_{10}\omega_7^3\omega_{23}+$
$12\omega_{19}v_3^2c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{11}-6\omega_{19}v_3^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}-36c_s^2\omega_{16}^2v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}+6\omega_{19}v_3^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}-45\omega_{19}v_3^2\omega_{16}v_2^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}+$
$72\omega_{19}v_3^2\omega_{16}^2v_2^2\omega_{10}\omega_7^2\omega_{23}-12c_s^4\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}-6\omega_{19}c_s^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}+36v_3^2\omega_{16}^2v_2^2\omega_{10}^2\omega_7^2\omega_{11}+36v_3^2\omega_{16}^2v_2^2\omega_{10}^2\omega_7^3+36c_s^2\omega_{16}^2v_2^2\omega_{10}^2\omega_7^3+$
$60\omega_{19}c_s^2\omega_{16}^2v_2^2\omega_{10}^2\omega_7\omega_{23}\omega_{11}+24\omega_{19}v_3^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}+36c_s^2\omega_{16}^2v_2^2\omega_{10}^2\omega_7^2\omega_{11}+36\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}^2\omega_7^2\omega_{11}+30\omega_{19}c_s^2\omega_{16}v_2^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}-$
$12\omega_{19}c_s^4\omega_{16}^2\omega_{10}\omega_7\omega_{23}\omega_{11}+12c_s^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}-36v_3^2\omega_{16}^2v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}+6\omega_{19}c_s^4\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}+12v_3^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}+$
$36\omega_{19}v_3^2\omega_{16}v_2^2\omega_{10}^2\omega_7^2\omega_{11}-18\omega_{19}c_s^2\omega_{16}^2v_2^2\omega_{10}^2\omega_7^3-18\omega_{19}v_3^2\omega_{16}^2v_2^2\omega_7^3\omega_{23}\omega_{11}-48\omega_{19}c_s^2\omega_{16}^2v_2^2\omega_{10}^2\omega_{23}\omega_{11}-18\omega_{19}v_3^2\omega_{16}^2v_2^2\omega_{10}^2\omega_7^3+$
$24\omega_{19}v_3^2c_s^2\omega_{16}^2\omega_{10}\omega_7\omega_{23}\omega_{11}-36\omega_{19}c_s^2\omega_{16}^2v_2^2\omega_{10}^2\omega_7^2\omega_{11}-12\omega_{19}c_s^2v_2^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}-6\omega_{19}v_3^2c_s^2\omega_{16}\omega_{10}^2\omega_7^3\omega_{11}-6\omega_{19}v_3^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{11}+$
$18\omega_{19}v_3^2v_2^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}-36\omega_{19}v_3^2\omega_{16}^2v_2^2\omega_{10}^2\omega_7^2\omega_{11}-36\omega_{19}v_3^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}-12v_3^2\omega_{16}^2\omega_{10}^2\omega_7^3-6\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{11}-12c_s^4\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{11}+$
$12c_s^4\omega_{16}^2\omega_{10}^2\omega_7^3+6\omega_{19}v_3^2\omega_{16}^2\omega_{10}^2\omega_7^3-24\omega_{19}v_3^2\omega_{16}^2\omega_{10}\omega_7\omega_{23}\omega_{11}-12v_3^2\omega_{16}^2\omega_{10}^2\omega_7^3-6\omega_{19}c_s^4\omega_{16}^2\omega_{10}^2\omega_7^3+6\omega_{19}c_s^4\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{11}+$
$12c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{11}+12\omega_{19}c_s^2\omega_{16}^2\omega_{10}\omega_7\omega_{23}\omega_{11}+12v_3^2c_s^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}+12v_3^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{11})\frac{\rho}{12\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}}$

$$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_y^3\mathrm{D}_z v_2}=C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y^3\mathrm{D}_z v_2}$$

$$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_y^3\mathrm{D}_z v_2}=(-5\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11}-36\omega_{19}\omega_{16}v_2^2\omega_7\omega_{23}\omega_{11}+12c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{11}+6\omega_{19}\omega_{10}\omega_7^3\omega_{11}-18\omega_{19}v_2^2\omega_{10}\omega_7^3\omega_{11}-$
$18\omega_{19}c_s^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}-5\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{11}+12\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{11}-6\omega_{19}\omega_{16}\omega_7^3\omega_{23}-36\omega_{16}v_2^2\omega_7^3\omega_{23}+18\omega_{19}\omega_{16}v_2^2\omega_7^3\omega_{23}+$
$36\omega_{19}v_2^2\omega_{10}\omega_7^2\omega_{11}-12\omega_{19}\omega_{10}\omega_7^2\omega_{11}+12c_s^2\omega_{16}\omega_{10}\omega_7^3+18\omega_{19}\omega_{10}\omega_7^2\omega_{23}\omega_{11}-54\omega_{19}v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}+5\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{11}-$
$6\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3-12\omega_{16}\omega_7^3\omega_{23}\omega_{11}-12\omega_{19}c_s^2\omega_{16}\omega_7\omega_{23}\omega_{11}+36\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11}-12\omega_{16}\omega_{10}\omega_7^3-15\omega_{19}\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11}-12c_s^2\omega_{16}\omega_7^3\omega_{23}-$
$36\omega_{19}\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{11}+6\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}+36\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{11}+36\omega_{19}v_2^2\omega_{10}\omega_7\omega_{23}\omega_{11}-12\omega_{19}\omega_{10}\omega_7\omega_{23}\omega_{11}+\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11}-$
$12\omega_{16}\omega_{10}\omega_7^2\omega_{11}+12\omega_{16}\omega_7^3\omega_{23}+18\omega_{19}c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}-12c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{11}+12\omega_{19}\omega_{16}\omega_{10}\omega_7^2\omega_{11}+6\omega_{19}c_s^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}-6\omega_{19}c_s^2\omega_{10}\omega_7^3\omega_{11}-$
$\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}+6\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{11}-12c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}-36\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{11}+54\omega_{19}\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{11}+18\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{11}-$
$3\omega_{19}\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}+12\omega_{19}c_s^2\omega_{10}\omega_7\omega_{23}\omega_{11}-36\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{11}-12\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_{23}\omega_{11}+18\omega_{19}\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{11}-$
$18\omega_{19}\omega_{16}\omega_7^2\omega_{23}\omega_{11}+18\omega_{19}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}-6\omega_{19}\omega_{10}\omega_7^3\omega_{23}\omega_{11}+36\omega_{16}v_2^2\omega_{10}\omega_7^3-12\omega_{19}c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{11}-18\omega_{19}\omega_{16}v_2^2\omega_{10}\omega_7^3+$
$12\omega_{16}\omega_7^2\omega_{23}\omega_{11}+12\omega_{19}c_s^2\omega_{10}\omega_7^2\omega_{11}-6\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{11}+12c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{11}+6\omega_{19}\omega_{16}\omega_{10}\omega_7^3+12\omega_{16}\omega_{10}\omega_7^3\omega_{11})\frac{c_s^2\rho}{12\omega_{19}\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}}$

$$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_y^3\mathrm{D}_z v_2}=C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_y^3\mathrm{D}_z v_2}$$

$$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_y^3\mathrm{D}_z v_2}=(-12c_s^2\omega_{11}\omega_5-18\omega_3^2c_s^2\omega_5-54\omega_3^2v_2^2\omega_5-12\omega_3\omega_5+6\omega_3^2c_s^2\omega_{11}+\omega_3^2\omega_{11}\omega_5+12\omega_3\omega_{11}+18\omega_3c_s^2\omega_{11}\omega_5+18\omega_3^2v_2^2\omega_{11}-$
$6\omega_3^3\omega_5-\omega_3^3c_s^2\omega_{11}\omega_5+18\omega_3^3v_2^2\omega_5-6\omega_3^2\omega_{11}+6\omega_3^3-12\omega_3c_s^2\omega_{11}+12\omega_3^2c_s^2+6\omega_3^3c_s^2\omega_5-36\omega_3v_2^2\omega_{11}-12\omega_3^2+36\omega_3^2v_2^2-3\omega_3^2v_2^2\omega_{11}\omega_5+$
$3\omega_3^3v_2^2\omega_{11}-\omega_3^3\omega_{11}+12\omega_3c_s^2\omega_5+18\omega_3^2\omega_5+\omega_3^3c_s^2\omega_{11}-18\omega_3^3v_2^2-5\omega_3^2c_s^2\omega_{11}\omega_5-6\omega_3^3c_s^2+36\omega_3v_2^2\omega_5)\frac{c_s^2\rho}{12\omega_3^3\omega_{11}\omega_5}$

$$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}^3_y\mathrm{D}_z v_2} = (12\omega_3 v_2^2\omega_4\omega_1\omega_2^2 + 94\omega_3 c_s^4\omega_4\omega_1\omega_2^3 - 4\omega_3\omega_4\omega_1\omega_2^2 + 40\omega_3 c_s^2\omega_4\omega_2^3 + 8c_s^4\omega_4\omega_1^3\omega_2 + \omega_3 v_3^4\omega_4\omega_1^3\omega_2^2 - 18c_s^4\omega_4\omega_1^2\omega_2^3 - 264\omega_3 v_2^4\omega_4\omega_2^3 -$$
$$24\omega_3 c_s^2\omega_4\omega_1^3\omega_2^2 + 192\omega_3 v_2^4\omega_4\omega_1^2\omega_2 - 54c_s^2 v_2^2\omega_4\omega_1^3\omega_2^2 + 14\omega_3\omega_4\omega_1\omega_2^3 - 3\omega_3 v_3^2 c_s^2\omega_4\omega_1^2\omega_2^3 - 28\omega_3 c_s^4\omega_4\omega_1\omega_2^2 - 222\omega_3 v_2^2\omega_4\omega_1\omega_2^3 + 16\omega_3 c_s^4\omega_4\omega_1^3 +$$
$$27c_s^2 v_2^2\omega_4\omega_1^3\omega_2^3 - 16\omega_3 c_s^2\omega_4\omega_1^2\omega_2 + 27\omega_3 c_s^2 v_2^2\omega_1^3\omega_2^3 + 138\omega_3 v_2^4\omega_4\omega_1^3\omega_2^2 + 20c_s^4\omega_4\omega_1^2\omega_2^2 - 60\omega_3 v_2^2\omega_4\omega_1^3 + 36\omega_3 c_s^4\omega_1\omega_2^3 - 6\omega_3 c_s^2\omega_4\omega_1^2\omega_2^2 -$$
$$138\omega_3 v_2^4\omega_4\omega_1^2\omega_2^3 + 60c_s^2 v_2^2\omega_4\omega_1^2\omega_2^2 - 240\omega_3 v_2^4\omega_4\omega_1^3\omega_2 - 60\omega_3 c_s^2 v_2^2\omega_4\omega_1\omega_2^2 - 68\omega_3 c_s^4\omega_4\omega_2^3 + 9c_s^4\omega_4\omega_1^3\omega_2^3 + 3\omega_3 v_3^2 c_s^2\omega_4\omega_1^3\omega_2^2 + 144\omega_3 v_2^2\omega_4\omega_2^3 -$$
$$18c_s^4\omega_4\omega_1^3\omega_2^2 - \omega_3 v_3^4\omega_4\omega_1^2\omega_2^3 + 42\omega_3 c_s^2\omega_4\omega_1^3\omega_2 + 432\omega_3 c_s^2 v_2^2\omega_4\omega_1\omega_2^3 - 54c_s^2 v_2^2\omega_4\omega_1^2\omega_2^3 - 20\omega_3 c_s^2\omega_4\omega_1^3 + 24c_s^2 v_2^2\omega_4\omega_1^3\omega_2 - 168\omega_3 v_2^4\omega_4\omega_1^2\omega_2^2 +$$
$$24\omega_3 c_s^2\omega_4\omega_1^2\omega_2^3 - 108\omega_3 c_s^2 v_2^2\omega_1^2\omega_2^3 - 8c_s^2\omega_4\omega_1\omega_2^3 - 36\omega_3 c_s^2\omega_1\omega_2^3 + 96\omega_3 v_2^4\omega_4\omega_1^3 + 9\omega_3 c_s^4\omega_1^3\omega_2^3 + 108\omega_3 c_s^2 v_2^2\omega_1\omega_2^3 - 24\omega_3 v_2^4\omega_4\omega_1\omega_2^2 -$$
$$288\omega_3 c_s^2 v_2^2\omega_4\omega_1^3\omega_2 - 54\omega_3 c_s^2\omega_4\omega_1\omega_2^3 - 153\omega_3 c_s^2 v_2^2\omega_4\omega_1^2\omega_2^3 + 24c_s^2 v_2^2\omega_4\omega_1\omega_2^3 + 17\omega_3 c_s^4\omega_4\omega_1^3\omega_2^2 + 8\omega_3\omega_4\omega_1^2\omega_2 - 96\omega_3 v_2^2\omega_4\omega_1^2\omega_2 - \omega_3 v_3^2\omega_4\omega_1^3\omega_2^2 +$$
$$144\omega_3 c_s^2 v_2^2\omega_4\omega_1^3 - 8c_s^2\omega_4\omega_1^3\omega_2 + 18c_s^2\omega_4\omega_1^2\omega_2^3 + 36\omega_3 c_s^2\omega_1^2\omega_2^3 - 90\omega_3 c_s^2 v_2^2\omega_4\omega_1^2\omega_2^2 + 32\omega_3 c_s^2\omega_4\omega_1\omega_2^2 + 408\omega_3 v_2^4\omega_4\omega_1\omega_2^3 - 20c_s^2\omega_4\omega_1^2\omega_2^2 +$$
$$8\omega_3 c_s^4\omega_4\omega_1^2\omega_2 + 7\omega_3\omega_4\omega_1^3\omega_2^2 + 4\omega_3\omega_4\omega_1^3 - 81\omega_3 v_2^2\omega_4\omega_1^3\omega_2^2 - 3\omega_3 c_s^4\omega_4\omega_1^3\omega_2^3 - 9c_s^2\omega_4\omega_1^3\omega_2^3 - 9\omega_3 c_s^2\omega_1^3\omega_2^3 - 10\omega_3\omega_4\omega_1^3\omega_2 + 10\omega_3 c_s^4\omega_4\omega_1^2\omega_2^2 +$$
$$81\omega_3 v_2^2\omega_4\omega_1^2\omega_2^3 + 138\omega_3 v_2^2\omega_4\omega_1^3\omega_2 - 7\omega_3\omega_4\omega_1^2\omega_2^3 + 120\omega_3 c_s^2 v_2^2\omega_4\omega_1^2\omega_2 - 36\omega_3 c_s^4\omega_1^2\omega_2^3 - 8\omega_3\omega_4\omega_2^3 - 4\omega_3\omega_4\omega_1^2\omega_2^2 - 32\omega_3 c_s^4\omega_4\omega_1^3\omega_2 +$$
$$84\omega_3 v_2^2\omega_4\omega_1^2\omega_2^2 - 29\omega_3 c_s^4\omega_4\omega_1^2\omega_2^3 + 18c_s^2\omega_4\omega_1^3\omega_2^2 + \omega_3 v_3^2\omega_4\omega_1^2\omega_2^3 + 8c_s^4\omega_4\omega_1\omega_2^3 + 153\omega_3 c_s^2 v_2^2\omega_4\omega_1^3\omega_2^2 - 312\omega_3 c_s^2 v_2^2\omega_4\omega_2^3)\frac{\rho}{36\omega_3\omega_4\omega_1^3\omega_2^3}$$

coefficient $C^{(3)}_{\mathrm{D}^3_y\mathrm{D}_z v_3}$ **at** $\frac{\partial^4 v_3}{\partial x_2^3\partial x_3}$**:**

$$C^{(3),\mathrm{SRT}}_{\mathrm{D}^3_y\mathrm{D}_z v_3} = (2 - \omega + v_2^2\omega + 3c_s^2\omega - 6c_s^2 - 2v_2^2)\frac{v_3 v_2\rho}{12\omega}$$

$$C^{(3),\mathrm{MRT1}}_{\mathrm{D}^3_y\mathrm{D}_z v_3} = (-12\omega_{19}^2\omega_{16}v_2^2\omega_{10}^2\omega_7^3\omega_{11}^2 + 24\omega_{19}\omega_{16}^2 v_2^2\omega_{10}^2\omega_7^2\omega_{11}^2 + 24\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23} - 4\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2 + 6\omega_{19}^2 c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2 -$$
$$18\omega_{19}^2\omega_{16}^2 v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2 - 66\omega_{19}^2 c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}^2 + 72\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}\omega_{11}^2 - 66\omega_{19}^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}^2 - 84\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11} +$$
$$24\omega_{19}\omega_{16}^2 v_2^2\omega_{10}^2\omega_7^3\omega_{11} + 24\omega_{19}^2 c_s^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}^2 + 90\omega_{19}^2 c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}^2 - 36\omega_{19}^2\omega_{16}v_2^2\omega_{10}^2\omega_7\omega_{23}\omega_{11}^2 - 24\omega_{19}^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{11}^2 +$$
$$36\omega_{19}^2 c_s^2\omega_{16}^2\omega_7^2\omega_{23}\omega_{11}^2 + 12\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}^2 + 12\omega_{19}\omega_{16}^2 v_2^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11} + 24c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11} + 12\omega_{19}^2\omega_{16}^2 v_2^2\omega_{10}^2\omega_7^3\omega_{11}^2 -$$
$$24\omega_{19}^2 c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23} - 12\omega_{19}^2\omega_{16}^2\omega_7^2\omega_{23}\omega_{11}^2 - 6\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2 + 24\omega_{19}^2 c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{11}^2 - 12\omega_{19}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}^2 + 12\omega_{19}^2 c_s^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2 +$$
$$\omega_{19}^2\omega_{16}^2 v_2^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}^2 + 12\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}^2 - 12\omega_{19}\omega_{16}^2 v_2^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}^2 - 24c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}^2 + 12\omega_{19}^2\omega_{16}^2 v_2^2\omega_{10}^2\omega_7\omega_{23}\omega_{11}^2 -$$
$$12\omega_{19}^2\omega_{16}^2 v_2^2\omega_{10}^2\omega_7^3\omega_{11} + 12\omega_{19}^2 c_s^2\omega_{16}^2\omega_{10}\omega_7\omega_{23}\omega_{11}^2 - 24\omega_{19}^2 c_s^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}\omega_{11} - 24\omega_{19}\omega_{16}^2 v_2^2\omega_{10}^2\omega_7^3\omega_{11}^2 - 12\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11} -$$
$$6\omega_{19}^2\omega_{16}^2 v_2^2\omega_7^3\omega_{23}\omega_{11}^2 - 18\omega_{19}^2\omega_{16}v_2^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}^2 + 24\omega_{19}^2\omega_{16}v_2^2\omega_{10}^2\omega_7^2\omega_{11}^2 + 84\omega_{19}^2 c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11} - 12\omega_{19}^2 c_s^2\omega_{16}\omega_{10}^2\omega_7^3\omega_{11}^2 +$$
$$24\omega_{19}^2\omega_{16}\omega_{10}^2\omega_7^2\omega_{23}\omega_{11} + 12\omega_{19}^2 v_2^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}^2 - 24\omega_{19}^2\omega_{16}^2 v_2^2\omega_{10}^2\omega_7^2\omega_{11}^2 + 60\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}^2 - 12\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7\omega_{23}\omega_{11}^2 -$$
$$12\omega_{19}^2\omega_{16}v_2^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2 + 12\omega_{19}^2\omega_{16}\omega_{10}^2\omega_7^3\omega_{11}^2 + 12\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11} - 12\omega_{19}\omega_{16}^2 v_2^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11} - 12\omega_{19}^2\omega_{16}^2 v_2^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}^2 -$$
$$12\omega_{19}^2 c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{11} - 24\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{11}^2 - 42\omega_{19}^2 c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2 + 24\omega_{19}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}^2 + 6\omega_{19}^2\omega_{16}^2\omega_7^3\omega_{23}\omega_{11}^2 + 12\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2 -$$
$$\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}^2 + 12\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{11} - 18\omega_{19}^2 c_s^2\omega_{16}^2\omega_7^3\omega_{23}\omega_{11}^2 - 48\omega_{19}^2 c_s^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}^2 - 24\omega_{19}^2 c_s^2\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}^2 -$$
$$96\omega_{19}^2 c_s^2\omega_{16}^2\omega_{10}^2\omega_{23}\omega_{11}^2 - 24\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{11}^2 - 24\omega_{19}^2\omega_{16}v_2^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11} - 24\omega_{19}^2 c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{11}^2 + 18\omega_{19}^2\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}^2 -$$
$$24\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{11} + 3\omega_{19}^2 c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}^2 + 4\omega_{19}^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2 + 48\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11} - 72\omega_{19}^2 c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}\omega_{11} -$$
$$12\omega_{19}^2 c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2 + 24\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{11}^2 + 18\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2 + 6\omega_{19}^2\omega_{16}v_2^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2 + 24\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{11}^2 +$$
$$24\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{11}^2 - 12\omega_{19}^2\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}\omega_{11} - 132\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}^2 - 24\omega_{19}^2 v_2^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}^2 + 36\omega_{19}^2\omega_{16}\omega_{10}^2\omega_7\omega_{23}\omega_{11}^2 +$$
$$12\omega_{19}^2\omega_{16}^2 v_2^2\omega_{10}\omega_7\omega_{23}\omega_{11}^2 + 156\omega_{19}^2 c_s^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}\omega_{11}^2 - 12\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{11}^2 + 12\omega_{19}^2 c_s^2\omega_{16}\omega_{10}^2\omega_7^3\omega_{23}\omega_{11} - 12\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7\omega_{23}\omega_{11}^2 +$$
$$24\omega_{19}c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{11} + 66\omega_{19}^2\omega_{16}v_2^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}^2 - 36\omega_{19}^2 c_s^2\omega_{16}\omega_{10}^2\omega_7\omega_{23}\omega_{11}^2 + 12\omega_{19}^2\omega_{16}^2 v_2^2\omega_7^2\omega_{23}\omega_{11}^2 + 24c_s^2\omega_{16}^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11}^2 +$$
$$12\omega_{19}\omega_{16}^2 v_2^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}^2 - 12\omega_{19}\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}^2 + 12\omega_{19}^2\omega_{16}^2 v_2^2\omega_{10}^2\omega_7^2\omega_{23}\omega_{11} + 12\omega_{19}^2 c_s^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{11}^2)\frac{v_3 v_2\rho}{12\omega_{19}^2\omega_{16}^2\omega_{10}^2\omega_7^3\omega_{23}\omega_{11}^2}$$

$$C^{(3),\mathrm{MRT2}}_{\mathrm{D}^3_y\mathrm{D}_z v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}^3_y\mathrm{D}_z v_3}$$

$$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}^3_y\mathrm{D}_z v_3} = (\omega_{16}v_2^2\omega_{10} - \omega_{16} + 3\omega_{10} + 3c_s^2\omega_{16}\omega_{10} - \omega_{16}\omega_{10} + 3c_s^2\omega_{16} - 9c_s^2\omega_{10} - 3v_2^2\omega_{10} + \omega_{16}v_2^2)\frac{v_3 v_2\rho}{12\omega_{16}\omega_{10}}$$

$$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}^3_y\mathrm{D}_z v_3} = C^{(3),\mathrm{CLBM1}}_{\mathrm{D}^3_y\mathrm{D}_z v_3}$$

$$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}^3_y\mathrm{D}_z v_3} = (3c_s^2\omega_{11}\omega_5 + v_2^2\omega_{11} - \omega_{11}\omega_5 + 3c_s^2\omega_{11} - 3v_2^2\omega_5 + v_2^2\omega_{11}\omega_5 - 9c_s^2\omega_5 - \omega_{11} + 3\omega_5)\frac{v_3 v_2\rho}{12\omega_{11}\omega_5}$$

$$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}^3_y\mathrm{D}_z v_3} = (4\omega_3 v_2^2\omega_4\omega_2 + 9\omega_4\omega_1\omega_2 - 27\omega_3 c_s^2\omega_1\omega_2 - 27c_s^2\omega_4\omega_1\omega_2 + 12\omega_3 c_s^2\omega_4\omega_1 + 6\omega_3 c_s^2\omega_4\omega_2 + 2\omega_3 v_2^2\omega_4\omega_1 + 6\omega_3 v_2^2\omega_4\omega_1\omega_2 -$$
$$9\omega_3 v_2^2\omega_1\omega_2 - 6\omega_3\omega_4\omega_1\omega_2 - 9v_2^2\omega_4\omega_1\omega_2 + 2\omega_3\omega_4\omega_2 - 18\omega_3 v_3^2\omega_4\omega_2 + 18\omega_3 c_s^2\omega_4\omega_1\omega_2 - 8\omega_3\omega_4\omega_1 + 18\omega_3 v_3^2\omega_4\omega_1 + 9\omega_3\omega_1\omega_2)\frac{v_3 v_2\rho}{72\omega_3\omega_4\omega_1\omega_2}$$

coefficient $C^{(3)}_{\mathrm{D}^2_x\mathrm{D}^2_z\rho}$ **at** $\frac{\partial^4\rho}{\partial x_1^2\partial x_3^2}$**:**

$$C^{(3),\mathrm{SRT}}_{\mathrm{D}^2_x\mathrm{D}^2_z\rho} = (24 - \omega^3 + 14\omega^2 - 36\omega + 36v_3^2\omega - 46c_s^2\omega^2 + 5c_s^2\omega^3 + v_3^2\omega^3 - 24v_3^2 + 108c_s^2\omega - 72c_s^2 - 14v_3^2\omega^2)\frac{v_3 c_s^2}{12\omega^3}$$

$$C^{(3),\mathrm{MRT1}}_{\mathrm{D}^2_x\mathrm{D}^2_z\rho} = (6\omega_6^3\omega_{22}v_3^2 c_s^2\omega_{11}^2\omega_{18}^2 + 12\omega_6^2\omega_{22}v_1^2\omega_{13}\omega_{11}^2\omega_{18} + 72\omega_6\omega_{22}c_s^2 v_1^2\omega_{13}\omega_{11}^2\omega_{18}^2 - 12\omega_6^3\omega_{22}v_3^2 c_s^2\omega_{13}\omega_{11}^2 - 6\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_{11}^2\omega_{18}^2 +$$
$$24\omega_6\omega_{22}v_3^2 v_1^2\omega_{13}\omega_{11}^2\omega_{18}^2 - 12\omega_6^3\omega_{22}v_1^2\omega_{13}\omega_{18}^2 - 36\omega_6^3 c_s^4\omega_{13}\omega_{11}^3\omega_{18} - 12\omega_6\omega_{22}c_s^2\omega_{13}\omega_{11}^3\omega_{18}^2 + 36\omega_6^3\omega_{22}c_s^2 v_1^2\omega_{13}\omega_{11}^3 + 12\omega_6^2 v_3^2 v_1^2\omega_{11}^3\omega_{18}^2 -$$
$$12\omega_6^3\omega_{22}v_3^2 c_s^2\omega_{13}\omega_{11}\omega_{18}^2 - 12\omega_6^2 c_s^2\omega_{11}^3\omega_{18}^2 - 18\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{11}^3\omega_{18} - 12\omega_6^2\omega_{22}v_3^2 v_1^2\omega_{11}^2\omega_{18}^2 + 12\omega_6\omega_{22}v_3^2 c_s^2\omega_{13}\omega_{11}^3\omega_{18}^2 -$$
$$24\omega_6\omega_{22}v_1^2\omega_{13}\omega_{11}^2\omega_{18}^2 - 12\omega_6^2 v_3^2 v_1^2\omega_{13}\omega_{11}^3\omega_{18}^2 + 12\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18} - 12\omega_6^2 v_1^2\omega_{13}\omega_{11}^3\omega_{18} - 12\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_{11}^3 - 36\omega_6^2 c_s^2 v_1^2\omega_{13}\omega_{11}^3\omega_{18}^2 +$$
$$12\omega_6^2 v_3^2 c_s^2\omega_{13}\omega_{11}^3\omega_{18} + 18\omega_6^3\omega_{22}v_1^2\omega_{13}\omega_{11}\omega_{18}^2 + 12\omega_6^2 c_s^2\omega_{13}\omega_{11}^3\omega_{18}^2 - 36\omega_6^3\omega_{22}c_s^2 v_1^2\omega_{13}\omega_{11}^2 + 18\omega_6^3\omega_{22}c_s^2 v_1^2\omega_{11}^2\omega_{18}^2 - 72\omega_6\omega_{22}c_s^2 v_1^2\omega_{13}\omega_{11}^3\omega_{18} +$$

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

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_z^2\rho} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_z^2\rho}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_z^2\rho} = (12\omega_6^2\omega_{22}\omega_{13}\omega_{11}\omega_{18}^2 - 36\omega_{22}c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2 + 12\omega_6^2\omega_{22}v_3^2\omega_{13}\omega_{11}^3 - 40\omega_6\omega_{22}c_s^2\omega_{13}\omega_{11}^3\omega_{18}^2 + 36\omega_6^2c_s^2\omega_{13}\omega_{11}^2\omega_{18} - 18\omega_6^2c_s^2\omega_{11}^3\omega_{18}^2 -$
$18\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{11}^3\omega_{18} - 12\omega_6^2\omega_{22}\omega_{13}\omega_{18}^2 - 36\omega_6c_s^2\omega_{13}\omega_{11}^3\omega_{18}^2 - 12\omega_6\omega_{22}v_3^2\omega_{11}^2\omega_{18}^2 - 6\omega_6^2\omega_{13}\omega_{11}^3\omega_{18}^2 + 12\omega_6\omega_{22}\omega_{11}^2\omega_{18}^2 + 18\omega_6^2c_s^2\omega_{13}\omega_{11}^3\omega_{18}^2 +$
$6\omega_6^2\omega_{22}v_3^2\omega_{11}^2\omega_{18}^2 - 12\omega_6^2\omega_{22}v_3^2\omega_{13}\omega_{11}^2 - 12\omega_6^2\omega_{22}v_3^2\omega_{13}\omega_{11}^3\omega_{18} - 36\omega_{22}c_s^2\omega_{13}\omega_{11}^3\omega_{18} + 12\omega_6\omega_{22}\omega_{13}\omega_{11}^3 - 12\omega_6^2\omega_{13}\omega_{11}^2\omega_{18} - 12\omega_6\omega_{22}v_3^2\omega_{13}\omega_{11}^3 - 84\omega_6\omega_{22}c_s^4\omega_{13}\omega_{11}^2\omega_{18}^2 -$
$6\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2 - 12\omega_6\omega_{11}^3\omega_{18}^2 + 6\omega_6^2\omega_{13}\omega_{11}^2\omega_{18}^2 + 12\omega_6v_3^2\omega_{11}^3\omega_{18}^2 + 54\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{11}^2\omega_{18} - 36\omega_6^2c_s^2\omega_{13}\omega_{11}^3\omega_{18} + 54\omega_6\omega_{22}c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2 -$
$12\omega_6^2\omega_{22}v_3^2\omega_{13}\omega_{11}\omega_{18}^2 + 36\omega_{22}c_s^2\omega_{13}\omega_{11}^3\omega_{18}^2 + 5\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{11}^3\omega_{18}^2 + 36\omega_6c_s^2\omega_{13}\omega_{11}^3\omega_{18} + 12\omega_6^2\omega_{13}\omega_{11}^3\omega_{18} + 12\omega_6^2\omega_{22}\omega_{13}\omega_{11}\omega_{18} +$
$54\omega_6\omega_{22}c_s^2\omega_{13}\omega_{11}^3\omega_{18} + 36\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{18}^2 - 18\omega_6^2c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2 - 12\omega_{22}v_3^2\omega_{13}\omega_{11}^2\omega_{18}^2 - 12\omega_6\omega_{22}v_3^2\omega_{13}\omega_{11}^3\omega_{18}^2 + 12\omega_6\omega_{13}\omega_{11}^3\omega_{18}^2 +$
$12\omega_6^2\omega_{22}\omega_{13}\omega_{11}^2 - 6\omega_6^2\omega_{22}\omega_{11}^2\omega_{18}^2 + 36\omega_6c_s^2\omega_{11}^3\omega_{18}^2 + 6\omega_6^2\omega_{11}^3\omega_{18}^2 + 12\omega_6\omega_{22}\omega_{13}\omega_{11}^3\omega_{18}^2 + 12\omega_6^2v_3^2\omega_{13}\omega_{11}^2\omega_{18} - 6\omega_6^2\omega_{22}v_3^2\omega_{13}\omega_{11}^3\omega_{18} -$
$12\omega_6v_3^2\omega_{13}\omega_{11}^3\omega_{18}^2 - 18\omega_6^2\omega_{22}\omega_{13}\omega_{11}^2\omega_{18} - 12\omega_{22}\omega_{13}\omega_{11}^3\omega_{18}^2 + 6\omega_6^2v_3^2\omega_{13}\omega_{11}^3\omega_{18}^2 - 12\omega_6^2\omega_{22}\omega_{13}\omega_{11}^3 - 12\omega_{22}v_3^2\omega_{13}\omega_{11}^3\omega_{18} - 36\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18} +$
$12\omega_6^2\omega_{22}v_3^2\omega_{13}\omega_{18}^2 - 2\omega_6^2\omega_{22}v_3^2\omega_{13}\omega_{11}^2\omega_{18}^2 - \omega_6^2\omega_{22}\omega_{13}\omega_{11}^3\omega_{18}^2 + 36\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{11}^3 + 18\omega_6^2\omega_{22}v_3^2\omega_{13}\omega_{11}^2\omega_{18} + 6\omega_6^2\omega_{22}\omega_{13}\omega_{11}^3\omega_{18} -$
$6\omega_6^2v_3^2\omega_{11}^3\omega_{18}^2 + 12\omega_{22}\omega_{13}\omega_{11}^3\omega_{18} - 12\omega_6^2v_3^2\omega_{13}\omega_{11}^3\omega_{18} - 18\omega_6\omega_{22}\omega_{13}\omega_{11}^2\omega_{18}^2 - 36\omega_6\omega_{22}c_s^2\omega_{11}^2\omega_{18}^2 + 18\omega_6\omega_{22}v_3^2\omega_{13}\omega_{11}^2\omega_{18}^2 + 12\omega_{22}v_3^2\omega_{13}\omega_{11}^3\omega_{18}^2 -$
$36\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18}^2 + \omega_6^2\omega_{22}v_3^2\omega_{13}\omega_{11}^3\omega_{18}^2 + 2\omega_6^2\omega_{22}\omega_{13}\omega_{11}^2\omega_{18}^2 + 12\omega_6v_3^2\omega_{13}\omega_{11}^3\omega_{18} + 18\omega_6^2\omega_{22}c_s^2\omega_{11}^2\omega_{18}^2 - 36\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{11}^2 -$
$36\omega_6\omega_{22}c_s^2\omega_{13}\omega_{11}^3 - 12\omega_6\omega_{13}\omega_{11}^3\omega_{18} + 18\omega_6\omega_{22}v_3^2\omega_{13}\omega_{11}^3\omega_{18} + 12\omega_{22}\omega_{13}\omega_{11}^2\omega_{18}^2 - 6\omega_6^2v_3^2\omega_{13}\omega_{11}^2\omega_{18}^2 - 18\omega_6\omega_{22}\omega_{13}\omega_{11}^3\omega_{18})\frac{v_3c_s^2}{12\omega_6^2\omega_{22}\omega_{13}\omega_{11}^3\omega_{18}^2}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_z^2\rho} = C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_z^2\rho}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_z^2\rho} = (-18\omega_6^3\omega_8\omega_2 - 12\omega_6^2v_3^2\omega_2^2 + 12\omega_6^3\omega_2 + 6\omega_6^2v_3^2\omega_8^2\omega_2 + 36\omega_6^3c_s^2\omega_8^2 + \omega_6^3v_3^2\omega_8^2\omega_2^2 - 12\omega_6^3v_3^2\omega_8 - 4\omega_6^2\omega_8^2\omega_2^2 - 54\omega_6c_s^2\omega_8^2\omega_2^2 +$
$36\omega_6^2c_s^2\omega_8\omega_2 + 12\omega_6^2\omega_2^2 - 18\omega_6^3c_s^2\omega_8\omega_2^2 + 54\omega_6^3c_s^2\omega_8\omega_2 - 6\omega_6^2\omega_8^2\omega_2 + 18\omega_6^2c_s^2\omega_8\omega_2^2 - 12\omega_6^3v_3^2\omega_8^2\omega_2 - 36\omega_6^2c_s^2\omega_2^2 + 12\omega_6^3v_3^2\omega_8^2 + 12v_3^2\omega_8^2\omega_2^2 +$
$6\omega_6^3\omega_8\omega_2^2 - 12\omega_6^3\omega_2^2 - 36\omega_6^3c_s^2\omega_8 + 4\omega_6^2v_3^2\omega_8^2\omega_2^2 + 18\omega_6^3v_3^2\omega_8\omega_2 - \omega_6^3\omega_8^2\omega_2^2 + 6\omega_6^2v_3^2\omega_8\omega_2^2 - 40\omega_6^3c_s^2\omega_8^2\omega_2 - 12\omega_8^2\omega_2^2 - 36\omega_6^2c_s^2\omega_2 - 12\omega_6^3\omega_8^2 +$
$36c_s^2\omega_8^2\omega_2^2 + 12\omega_6^3v_3^2\omega_2^2 - 12\omega_6^2\omega_8\omega_2 - 36\omega_6^2c_s^2\omega_8^2 + 12\omega_6^2c_s^2\omega_8^2\omega_2^2 - 6\omega_6^2\omega_8\omega_2^2 - 12\omega_6^3v_3^2\omega_2 + 18\omega_6^2c_s^2\omega_8^2\omega_2 + 5\omega_6^3c_s^2\omega_8^2\omega_2^2 + 36\omega_6^3c_s^2\omega_2^2 -$
$12\omega_6^2v_3^2\omega_8^2 + 12\omega_6^3\omega_8 - 18\omega_6v_3^2\omega_8^2\omega_2^2 + 12\omega_6^3\omega_8^2\omega_2 + 12\omega_6^2v_3^2\omega_8\omega_2 + 18\omega_6\omega_8^2\omega_2^2 - 6\omega_6^3v_3^2\omega_8\omega_2^2 + 12\omega_6^2\omega_8^2)\frac{v_3c_s^2}{12\omega_8^3\omega_8^2\omega_2^2}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_z^2\rho} = (9\omega_3^2c_s^2\omega_4\omega_1^3\omega_2^3 - 48\omega_3^2v_3^2v_1^2\omega_4^2\omega_1\omega_2^2 - 28\omega_3v_3^2c_s^2\omega_4^2\omega_1\omega_2^3 - 24v_3^2c_s^2\omega_4^2\omega_1^2\omega_2^3 + 96\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^2 + 36\omega_3^2c_s^2\omega_1^2\omega_2^3 - 18c_s^2\omega_4^2\omega_1^3\omega_2^3 -$
$9\omega_3^2v_3^2c_s^2\omega_4\omega_1^3\omega_2^3 + 12\omega_3^2v_1^2\omega_4^2\omega_1\omega_2^2 + 4\omega_3^2v_3^2\omega_4^2\omega_1^3\omega_2 - 52\omega_3^2c_s^2\omega_4^2\omega_1^3 - 119\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^3 + 54\omega_3^2c_s^4\omega_1^3\omega_2^3 - 102\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2 + 12c_s^2\omega_4^2\omega_1^3\omega_2^2 +$
$27\omega_3^2v_1^4\omega_4^2\omega_1^3\omega_2^2 - 30\omega_3^2v_3^2v_1^2\omega_4^2\omega_1\omega_2^3 + 108\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^3 + 324\omega_3^2c_s^2v_1^2\omega_4^2\omega_1\omega_2^3 - 12\omega_3c_s^4\omega_4^2\omega_1^3\omega_2 + 24\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^2 + 24\omega_3^2v_3^2v_1^2\omega_4^2\omega_1^3 -$
$8\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2^2 - 42\omega_3^2v_1^2\omega_4^2\omega_1\omega_2^3 - 108\omega_3^2c_s^4\omega_1^2\omega_2^3 + 15\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^3 + 28\omega_3c_s^2\omega_4^2\omega_1\omega_2^3 + 36\omega_3^2v_3^2c_s^2\omega_4\omega_1^2\omega_2^3 - 28\omega_3^2v_3^2c_s^2\omega_4^2\omega_1\omega_2^2 + 4\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2 +$
$72\omega_3^2c_s^4\omega_4^2\omega_1^3 - 4\omega_3^2\omega_4^2\omega_1\omega_2^2 + 24c_s^2\omega_4^2\omega_1^2\omega_2^3 - 27\omega_3^2v_1^4\omega_4^2\omega_1^2\omega_2^3 - 36\omega_3^2v_1^4\omega_4^2\omega_1^3\omega_2 + 28\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^2 + 36\omega_3^2v_3^2v_1^2\omega_4^2\omega_2^3 + 18v_3^2c_s^2\omega_4^2\omega_1^3\omega_2^3 -$
$18\omega_3^2c_s^2\omega_1^3\omega_2^3 - 36\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^3 + 4\omega_3^2v_3^2c_s^2\omega_4^2\omega_1\omega_2^3 + 35\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^2 - 27\omega_3c_s^4\omega_4^2\omega_1^3\omega_2^3 - 12v_3^2c_s^2\omega_4^2\omega_1^3\omega_2^2 + 20\omega_3^2c_s^2\omega_4^2\omega_2^3 - 58\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^3 -$
$4\omega_3^2\omega_4^2\omega_1\omega_2^3 - 36\omega_3^2v_1^4\omega_4^2\omega_1^2\omega_2^2 - 20\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^3\omega_2 + 54c_s^4\omega_4^2\omega_1^3\omega_2^3 - 32\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^2\omega_2^3 + 12\omega_3^2v_1^2\omega_4^2\omega_1^2\omega_2 - 36\omega_3^2v_3^2c_s^2\omega_1^2\omega_2^3 - 32\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^2 -$
$27\omega_3^2c_s^4\omega_4\omega_1^3\omega_2^3 + 4\omega_3^2\omega_4^2\omega_1^3 - 12\omega_3^2v_3^2v_1^2\omega_4^2\omega_1^2\omega_2 - 60\omega_3^2v_1^4\omega_4^2\omega_2^3 + 49\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^3 + 74\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2 + 36\omega_3^2v_1^4\omega_4^2\omega_1\omega_2^2 - 4\omega_3^2\omega_4^2\omega_1^3\omega_2 +$
$16\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^3 - 36\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^3 + 4\omega_3c_s^2\omega_4^2\omega_1^3\omega_2 + 16\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^2\omega_2^2 - 27\omega_3^2v_1^2\omega_4^2\omega_1^3\omega_2^2 - 36c_s^4\omega_4^2\omega_1^3\omega_2^2 - 48\omega_3^2v_1^2\omega_4^2\omega_1^3 - 4\omega_3^2v_3^2\omega_4^2\omega_2^3 +$
$72\omega_3^2v_1^4\omega_4^2\omega_1\omega_2^2 + 8\omega_3^2\omega_4^2\omega_1^2\omega_2^2 + 216\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^3 - 9\omega_3v_3^2c_s^2\omega_4^2\omega_1^3\omega_2^2 + 138\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^3\omega_2^2 - 16\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^2 - 4\omega_3^2\omega_4^2\omega_1^2\omega_2 - 3\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2^3 -$
$138\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^2\omega_2^3 - 30\omega_3^2v_3^2v_1^2\omega_4^2\omega_1^3\omega_2 - 84\omega_3c_s^4\omega_4^2\omega_1\omega_2^3 + 32\omega_3v_3^2c_s^2\omega_4^2\omega_1^2\omega_2^2 + 4\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2 - 324\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^3\omega_2 - 72\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^2 +$
$108\omega_3^2c_s^4\omega_4\omega_1^2\omega_2^3 - 4\omega_3^2v_3^2\omega_4^2\omega_1^3 + 24\omega_3^2v_1^2\omega_4^2\omega_2^3 + 18\omega_3^2v_3^2c_s^2\omega_1^3\omega_2^3 + 27\omega_3^2v_1^2\omega_4^2\omega_1^2\omega_2^3 - 72c_s^4\omega_4^2\omega_1^2\omega_2^3 + 4\omega_3^2v_3^2\omega_4^2\omega_1\omega_2^2 - 4\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^2\omega_2 +$
$66\omega_3^2v_1^2\omega_4^2\omega_1^3\omega_2 + 3\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^3\omega_2^3 - 216\omega_3^2c_s^2v_1^2\omega_4^2\omega_2^3 + 36\omega_3v_3^2c_s^2\omega_4^2\omega_1^2\omega_2^3 + 60\omega_3^2v_3^2v_1^2\omega_4^2\omega_1^2\omega_2^2 - 25\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2^2 - 4\omega_3v_3^2c_s^2\omega_4^2\omega_1^3\omega_2 +$

$8\omega_3^2 v_3^2 c_s^2 \omega_4^2 \omega_1^3 \omega_2^2 + 24\omega_3^2 v_1^4 \omega_4^2 \omega_1^3 - 24\omega_3^2 v_1^2 \omega_4^2 \omega_1^2 \omega_2^2 + 4\omega_3^2 \omega_4^2 \omega_2^3 + 4\omega_3^2 v_3^2 \omega_4^2 \omega_1 \omega_2^3 + 16\omega_3^2 v_3^2 c_s^2 \omega_4^2 \omega_2^3 + 9\omega_3 c_s^2 \omega_4^2 \omega_1^3 \omega_2^3 + 78\omega_3^2 c_s^4 \omega_4^2 \omega_1 \omega_2^3) \frac{v_3}{36\omega_3^2 \omega_4^2 \omega_1^3 \omega_2^3}$

coefficient $C^{(3)}_{\mathrm{D}_x^2 \mathrm{D}_z^2 v_1}$ **at** $\frac{\partial^4 v_1}{\partial x_1^2 \partial x_3^2}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x^2 \mathrm{D}_z^2 v_1} = 0$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^2 \mathrm{D}_z^2 v_1} =$
$(-\omega_6^3 \omega_{22} \omega_{13} \omega_{11}^3 \omega_{18}^2 \omega_9 + 2\omega_6^3 \omega_{13}^2 \omega_{11}^2 \omega_{18}^2 \omega_9 + 4\omega_6^3 \omega_{22} \omega_{13}^2 \omega_{11} \omega_{18} \omega_9 - 4\omega_6^2 \omega_{22} v_3^2 \omega_{13}^2 \omega_{11}^3 \omega_9 - 2\omega_6^2 \omega_{22} v_3^2 \omega_{13} \omega_{11}^3 \omega_{18}^2 \omega_9 - 24\omega_6^2 \omega_{22} c_s^2 \omega_{13} \omega_{11}^3 \omega_{18}^2 \omega_9 -$
$2\omega_6^3 \omega_{22} c_s^2 \omega_{11}^3 \omega_{18}^2 \omega_9 - 4\omega_6^2 c_s^2 \omega_{13}^2 \omega_{11}^3 \omega_{18}^2 \omega_9 - 3\omega_6^3 \omega_{22} v_3^2 \omega_{13}^2 \omega_{11}^3 \omega_{18} \omega_9 - 2\omega_6^3 c_s^2 \omega_{13}^2 \omega_{11}^2 \omega_{18}^2 \omega_9 - 4\omega_6^2 v_3^2 \omega_{13}^2 \omega_{11}^3 \omega_{18}^2 \omega_9 - 5\omega_6^3 \omega_{22} c_s^2 \omega_{13}^2 \omega_{11}^3 \omega_{18} \omega_9 -$
$2\omega_6^3 v_3^2 \omega_{13}^2 \omega_{11}^2 \omega_{18}^2 \omega_9 - \omega_6^2 \omega_{22} c_s^2 \omega_{13}^2 \omega_{11}^2 \omega_{18}^2 \omega_9 - 3\omega_6^2 \omega_{22} v_3^2 \omega_{13}^2 \omega_{11}^2 \omega_{18}^2 \omega_9 + 2\omega_6^3 \omega_{13} \omega_{11}^3 \omega_{18}^2 \omega_9 - \omega_6^3 \omega_{22} \omega_{13}^2 \omega_{11}^2 \omega_{18}^2 \omega_9 + \omega_6^2 \omega_{22} \omega_{13}^2 \omega_{11}^3 \omega_{18}^2 \omega_9 -$
$2\omega_6^3 v_3^2 \omega_{13} \omega_{11}^3 \omega_{18}^2 \omega_9 - 2\omega_6^3 c_s^2 \omega_{13} \omega_{11}^3 \omega_{18}^2 \omega_9 + 8\omega_6^3 \omega_{22} c_s^2 \omega_{13}^2 \omega_{11}^3 \omega_9 + 12\omega_6^3 \omega_{22} c_s^2 \omega_{13}^2 \omega_{18}^2 \omega_9 - 2\omega_6 \omega_{22} \omega_{13}^2 \omega_{11}^3 \omega_{18}^2 \omega_9 + \omega_6^3 \omega_{22} v_3^2 \omega_{13}^2 \omega_{11}^2 \omega_{18}^2 \omega_9 -$
$4\omega_6^3 c_s^2 \omega_{13}^2 \omega_{11}^3 \omega_{18} \omega_9 + 3\omega_6^3 \omega_{22} c_s^2 \omega_{13}^2 \omega_{11}^2 \omega_{18}^2 \omega_9 - 4\omega_6^3 v_3^2 \omega_{13}^2 \omega_{11}^3 \omega_{18} \omega_9 + 4\omega_6^3 \omega_{13}^2 \omega_{11}^3 \omega_{18} \omega_9 + 4\omega_6^2 \omega_{22} \omega_{13}^2 \omega_{11}^3 \omega_9 - 2\omega_6^2 \omega_{22} \omega_{13}^2 \omega_{11} \omega_{18}^2 \omega_9 +$
$2\omega_6 \omega_{22} v_3^2 \omega_{13}^2 \omega_{11}^3 \omega_{18}^2 \omega_9 + 26\omega_6 \omega_{22} c_s^2 \omega_{13}^2 \omega_{11}^3 \omega_{18}^2 \omega_9 - 4\omega_6^3 \omega_{22} v_3^2 \omega_{13}^2 \omega_{11} \omega_{18} \omega_9 + 8\omega_6^3 \omega_{22} c_s^2 \omega_{13} \omega_{11}^3 \omega_{18}^2 \omega_9 + 4\omega_6^2 \omega_{22} c_s^2 \omega_{13} \omega_{11}^3 \omega_{18}^2 -$
$8\omega_6^3 \omega_{22} c_s^2 \omega_{13}^2 \omega_{11} \omega_{18} \omega_9 + \omega_6^3 \omega_{22} v_3^2 \omega_{13} \omega_{11}^3 \omega_{18}^2 \omega_9 - 8\omega_6^3 \omega_{22} c_s^2 \omega_{13}^2 \omega_{11}^2 \omega_9 + 4\omega_6^2 \omega_{13}^2 \omega_{11}^3 \omega_{18}^2 \omega_9 + 11\omega_6^2 \omega_{22} c_s^2 \omega_{13}^2 \omega_{11}^3 \omega_{18} \omega_9 + 9\omega_6^2 \omega_{22} v_3^2 \omega_{13}^2 \omega_{11}^3 \omega_{18} \omega_9 +$
$3\omega_6^3 \omega_{22} \omega_{13}^2 \omega_{11}^3 \omega_{18} \omega_9 + 2\omega_6^2 \omega_{22} \omega_{13}^2 \omega_{11}^2 \omega_{18} \omega_9 - 15\omega_6^3 \omega_{22} c_s^2 \omega_{13}^2 \omega_{11} \omega_{18}^2 \omega_9 + 4\omega_6^2 c_s^2 \omega_{13} \omega_{11}^3 \omega_{18}^2 \omega_9 - 5\omega_6^3 \omega_{22} v_3^2 \omega_{13}^2 \omega_{11} \omega_{18}^2 \omega_9 +$
$4\omega_6^2 v_3^2 \omega_{13} \omega_{11}^3 \omega_{18}^2 \omega_9 - 8\omega_6^2 \omega_{22} c_s^2 \omega_{13}^2 \omega_{11}^3 \omega_9 - 4\omega_6^3 \omega_{22} \omega_{13}^2 \omega_{11}^3 \omega_9 - 4\omega_6^2 \omega_{13}^2 \omega_{11}^3 \omega_{18} \omega_9 - \omega_6^2 \omega_{22} v_3^2 \omega_{13}^2 \omega_{11}^3 \omega_{18}^2 \omega_9 - 8\omega_6^2 \omega_{22} c_s^2 \omega_{13}^2 \omega_{11}^3 \omega_{18}^2 \omega_9 +$
$3\omega_6^2 \omega_{22} \omega_{13}^2 \omega_{11}^2 \omega_{18}^2 \omega_9 + 13\omega_6^3 \omega_{22} c_s^2 \omega_{13}^2 \omega_{11}^2 \omega_{18} \omega_9 + 2\omega_6^3 v_3^2 \omega_{13}^2 \omega_{11}^3 \omega_{18}^2 \omega_9 + 7\omega_6^3 \omega_{22} v_3^2 \omega_{13}^2 \omega_{11}^2 \omega_{18} \omega_9 + 2\omega_6^3 c_s^2 \omega_{13}^2 \omega_{11}^3 \omega_{18}^2 \omega_9 + 6\omega_6 \omega_{22} \omega_{13}^2 \omega_{11}^3 \omega_{18} \omega_9 +$
$2\omega_6^2 \omega_{22} c_s^2 \omega_{13}^2 \omega_{11}^3 \omega_{18}^2 + 4\omega_6^2 \omega_{22} c_s^2 \omega_{11}^3 \omega_{18}^2 \omega_9 - 2\omega_6^3 \omega_{13}^2 \omega_{11}^3 \omega_{18}^2 \omega_9 + 2\omega_6^2 \omega_{22} \omega_{13} \omega_{11}^3 \omega_{18}^2 \omega_9 + 8\omega_6^2 \omega_{22} c_s^2 \omega_{13} \omega_{11}^2 \omega_{18}^2 \omega_9 - 6\omega_6 \omega_{22} c_s^2 \omega_{13}^2 \omega_{11}^3 \omega_{18} \omega_9 -$
$6\omega_6 \omega_{22} v_3^2 \omega_{13}^2 \omega_{11}^3 \omega_{18} \omega_9 + 4\omega_6^3 \omega_{22} v_3^2 \omega_{13}^2 \omega_{11}^3 \omega_9 + 4\omega_6^3 \omega_{22} v_3^2 \omega_{13}^2 \omega_{18}^2 \omega_9 - 2\omega_6^2 \omega_{22} v_3^2 \omega_{13}^2 \omega_{11}^2 \omega_{18} \omega_9 + 12\omega_6 \omega_{22} c_s^2 \omega_{13} \omega_{11}^3 \omega_{18}^2 \omega_9 +$
$2\omega_6^2 \omega_{22} c_s^2 \omega_{13}^2 \omega_{11}^2 \omega_{18} \omega_9 - 7\omega_6^3 \omega_{22} \omega_{13}^2 \omega_{11}^2 \omega_{18} \omega_9 - 4\omega_6 \omega_{22} c_s^2 \omega_{13}^2 \omega_{11}^3 \omega_{18}^2 - 9\omega_6^2 \omega_{22} \omega_{13}^2 \omega_{11}^3 \omega_{18} \omega_9 - 2\omega_6^3 \omega_{22} c_s^2 \omega_{13} \omega_{11}^3 \omega_{18}^2 -$
$4\omega_6^3 \omega_{22} c_s^2 \omega_{13} \omega_{11}^2 \omega_{18}^2 \omega_9 + 4\omega_6^3 \omega_{22} \omega_{13}^2 \omega_{11}^2 \omega_9 + 5\omega_6^3 \omega_{22} \omega_{13}^2 \omega_{11} \omega_{18}^2 \omega_9 - 4\omega_6^3 \omega_{13}^2 \omega_{11}^2 \omega_{18} \omega_9 - 4\omega_6^3 \omega_{22} v_3^2 \omega_{13}^2 \omega_{11}^2 \omega_9 + 2\omega_6^2 \omega_{22} v_3^2 \omega_{13}^2 \omega_{11} \omega_{18}^2 \omega_9 -$
$16\omega_{22} c_s^2 \omega_{13}^2 \omega_{11}^3 \omega_{18}^2 \omega_9 - 6\omega_6 \omega_{22} c_s^2 \omega_{13}^2 \omega_{11}^2 \omega_{18}^2 \omega_9 + 2\omega_6^2 \omega_{22} c_s^2 \omega_{13}^2 \omega_{11} \omega_{18}^2 \omega_9 + 2\omega_6 \omega_{22} v_3^2 \omega_{13}^2 \omega_{11}^2 \omega_{18}^2 \omega_9 - 4\omega_6^3 \omega_{22} \omega_{13}^2 \omega_{18}^2 \omega_9 - 4\omega_6^2 \omega_{13} \omega_{11}^3 \omega_{18}^2 \omega_9 +$
$4\omega_6^2 v_3^2 \omega_{13}^2 \omega_{11}^3 \omega_{18} \omega_9 + 4\omega_6^3 v_3^2 \omega_{13}^2 \omega_{11}^2 \omega_{18} \omega_9 + 4\omega_6^2 c_s^2 \omega_{13}^2 \omega_{11}^3 \omega_{18} \omega_9 + 4\omega_6^3 c_s^2 \omega_{13}^2 \omega_{11}^2 \omega_{18} \omega_9 - 2\omega_6 \omega_{22} \omega_{13}^2 \omega_{11}^2 \omega_{18}^2 \omega_9) \frac{v_3 v_1 \rho}{2\omega_6^3 \omega_{22} \omega_{13}^2 \omega_{11}^3 \omega_{18}^2 \omega_9}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x^2 \mathrm{D}_z^2 v_1} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^2 \mathrm{D}_z^2 v_1}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x^2 \mathrm{D}_z^2 v_1} = 0$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x^2 \mathrm{D}_z^2 v_1} = 0$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x^2 \mathrm{D}_z^2 v_1} = 0$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x^2 \mathrm{D}_z^2 v_1} = (-18c_s^2 \omega_1 \omega_2^3 - 12\omega_3 v_3^2 \omega_1^2 \omega_2 + 12v_3^2 \omega_1^2 \omega_2^2 + 6\omega_3 \omega_1^2 \omega_2 + 84\omega_3 c_s^2 \omega_1^3 + 12\omega_3 v_3^2 \omega_2^3 + 6\omega_1 \omega_2^3 - 66\omega_3 v_1^2 \omega_1^2 \omega_2^2 - 6v_3^2 \omega_1^3 \omega_2 - 23\omega_3 \omega_1^3 \omega_2^2 -$
$50\omega_3 v_1^2 \omega_1^2 \omega_2^3 - 75\omega_3 v_1^2 \omega_1^3 \omega_2 + 48\omega_3 \omega_1^3 \omega_2 + 50\omega_3 v_1^2 \omega_1^3 \omega_2^2 + 23\omega_3 \omega_1^2 \omega_2^3 - 9\omega_3 v_3^2 \omega_1^3 \omega_2 + 12\omega_3 \omega_1^2 \omega_2^2 + 6\omega_3 v_1^2 \omega_1^2 \omega_2 + 18\omega_3 v_3^2 \omega_1^2 \omega_2^2 + 12\omega_3 v_3^2 \omega_1^3 -$
$66\omega_3 c_s^2 \omega_2^3 + 108\omega_3 c_s^2 \omega_1 \omega_2^3 - 12\omega_3 \omega_1 \omega_2^2 - 12\omega_3 v_3^2 \omega_1 \omega_2^2 - 108\omega_3 c_s^2 \omega_1^3 \omega_2 + 42\omega_3 \omega_2^3 - 42\omega_3 c_s^2 \omega_1^2 \omega_2^3 - 114\omega_3 v_1^2 \omega_2^3 - 60\omega_3 \omega_1 \omega_2^3 - 9\omega_3 v_3^2 \omega_1 \omega_2^3 -$
$6v_3^2 \omega_1 \omega_2^3 - 18\omega_3 c_s^2 \omega_1^2 \omega_2 + 48\omega_3 v_1^2 \omega_1^3 + 36c_s^2 \omega_1^2 \omega_2^2 + 141\omega_3 v_1^2 \omega_1 \omega_2^3 - 12\omega_1^2 \omega_2^2 - 18c_s^2 \omega_1^3 \omega_2 + 42\omega_3 c_s^2 \omega_1^3 \omega_2^2 + 60\omega_3 v_1^2 \omega_1 \omega_2^2 + 6\omega_1^3 \omega_2 - 36\omega_3 \omega_1^3) \frac{v_3 v_1 \rho}{18\omega_3 \omega_1^3 \omega_2^3}$

coefficient $C^{(3)}_{\mathrm{D}_x^2 \mathrm{D}_z^2 v_3}$ **at** $\frac{\partial^4 v_3}{\partial x_1^2 \partial x_3^2}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x^2 \mathrm{D}_z^2 v_3} = (-24 - 12\omega^2 + 36\omega - 108v_3^2 \omega + 8c_s^2 \omega^2 - c_s^2 \omega^3 + 72v_3^2 - 18c_s^2 \omega + 12c_s^2 + 36v_3^2 \omega^2) \frac{c_s^2 \rho}{12\omega^3}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^2 \mathrm{D}_z^2 v_3} = (18\omega_6^3 \omega_{22} v_3^2 c_s^2 \omega_{11}^2 \omega_{18}^2 + 12\omega_6^2 \omega_{22} v_1^2 \omega_{13} \omega_{11}^2 \omega_{18} + 24\omega_6 \omega_{22} c_s^2 v_1^2 \omega_{13} \omega_{11}^2 \omega_{18}^2 + 24\omega_6^3 \omega_{22} v_3^2 c_s^2 \omega_{13} \omega_{11}^2 - 6\omega_6^3 \omega_{22} c_s^4 \omega_{13} \omega_{11}^2 \omega_{18}^2 +$
$72\omega_6 \omega_{22} v_3^2 v_1^2 \omega_{13} \omega_{11}^2 \omega_{18}^2 - 12\omega_6^3 \omega_{22} v_1^2 \omega_{13} \omega_{18}^2 - 12\omega_6^3 c_s^4 \omega_{13} \omega_{11}^3 \omega_{18} + 12\omega_6^3 \omega_{22} c_s^2 v_1^2 \omega_{13} \omega_{11}^3 + 36\omega_6^2 v_3^2 v_1^2 \omega_{11}^3 \omega_{18}^2 + 18\omega_6^3 \omega_{22} v_3^2 c_s^2 \omega_{13} \omega_{11} \omega_{18}^2 -$
$12\omega_6^2 c_s^2 \omega_{11}^3 \omega_{18}^2 + 24\omega_6^2 \omega_{22} c_s^2 \omega_{13} \omega_{11}^3 \omega_{18} - 36\omega_6^2 \omega_{22} v_3^2 v_1^2 \omega_{11}^2 \omega_{18}^2 + 84\omega_6 \omega_{22} v_3^2 c_s^2 \omega_{13} \omega_{11}^3 \omega_{18}^2 - 24\omega_6 \omega_{22} v_1^2 \omega_{13} \omega_{11}^2 \omega_{18}^2 - 36\omega_6^2 v_3^2 v_1^2 \omega_{13} \omega_{11}^3 \omega_{18}^2 -$
$12\omega_6^2 v_1^2 \omega_{13} \omega_{11}^3 \omega_{18} - 12\omega_6^2 c_s^2 v_1^2 \omega_{13} \omega_{11}^3 \omega_{18}^2 + 36\omega_6^2 v_3^2 c_s^2 \omega_{13} \omega_{11}^3 \omega_{18} + 18\omega_6^3 \omega_{22} v_1^2 \omega_{13} \omega_{11} \omega_{18}^2 + 12\omega_6^2 c_s^2 \omega_{13} \omega_{11}^3 \omega_{18}^2 - 12\omega_6^3 \omega_{22} c_s^2 v_1^2 \omega_{13} \omega_{11}^2 +$
$6\omega_6^3 \omega_{22} c_s^2 v_1^2 \omega_{11}^2 \omega_{18}^2 - 24\omega_6 \omega_{22} c_s^2 v_1^2 \omega_{13} \omega_{11}^3 \omega_{18} + 36\omega_6^2 \omega_{22} v_3^2 v_1^2 \omega_{13} \omega_{11} \omega_{18}^2 + 12\omega_6^3 \omega_{22} c_s^4 \omega_{13} \omega_{11}^3 \omega_{18} - 72\omega_6 \omega_{22} v_3^2 v_1^2 \omega_{13} \omega_{11}^3 \omega_{18} -$
$24\omega_6^3 \omega_{22} v_3^2 c_s^2 \omega_{13} \omega_{11}^3 + 12\omega_6^2 \omega_{22} c_s^2 v_1^2 \omega_{13} \omega_{11} \omega_{18}^2 - 6\omega_6^3 c_s^4 \omega_{13} \omega_{11}^2 \omega_{18}^2 - 6\omega_6^3 \omega_{22} c_s^2 \omega_{11}^2 \omega_{18}^2 - 12\omega_6^3 \omega_{22} c_s^2 v_1^2 \omega_{13} \omega_{11} \omega_{18} + 36\omega_6^3 \omega_{22} v_3^2 v_1^2 \omega_{13} \omega_{18}^2 -$
$36\omega_6^3 \omega_{22} v_3^2 v_1^2 \omega_{13} \omega_{11} \omega_{18} - 24\omega_6^2 \omega_{22} c_s^2 \omega_{13} \omega_{11}^2 \omega_{18}^2 - 6\omega_6^3 c_s^4 \omega_{11}^3 \omega_{18}^2 - 36\omega_6^2 \omega_{22} v_3^2 v_1^2 \omega_{13} \omega_{11}^3 + 24\omega_6 \omega_{22} v_1^2 \omega_{13} \omega_{11}^3 \omega_{18} - 18\omega_6^3 \omega_{22} c_s^2 v_1^2 \omega_{13} \omega_{11} \omega_{18}^2 -$
$54\omega_6^3 \omega_{22} v_3^2 v_1^2 \omega_{13} \omega_{11} \omega_{18}^2 - 12\omega_6^2 \omega_{22} c_s^2 \omega_{13} \omega_{11}^2 \omega_{18} + 12\omega_6^2 \omega_{22} v_1^2 \omega_{11}^2 \omega_{18}^2 - 84\omega_6 \omega_{22} v_3^2 c_s^2 \omega_{13} \omega_{11}^2 \omega_{18}^2 + 12\omega_6^3 \omega_{22} v_1^2 \omega_{13} \omega_{11} \omega_{18} -$
$36\omega_6^2 v_3^2 c_s^2 \omega_{13} \omega_{11}^3 \omega_{18}^2 - 12\omega_6^2 \omega_{22} c_s^4 \omega_{13} \omega_{11} \omega_{18}^2 + 12\omega_6^2 c_s^4 \omega_{11}^3 \omega_{18}^2 - 12\omega_6^2 c_s^2 \omega_{13} \omega_{11}^3 \omega_{18} - 6\omega_6^3 c_s^2 v_1^2 \omega_{11}^3 \omega_{18}^2 - 36\omega_6^2 \omega_{22} v_1^2 \omega_{13} \omega_{11}^3 \omega_{18} +$
$12\omega_6 \omega_{22} c_s^2 \omega_{13} \omega_{11}^2 \omega_{18}^2 + 12\omega_6^3 c_s^4 \omega_{13} \omega_{11}^2 \omega_{18} - \omega_6^3 \omega_{22} c_s^4 \omega_{13} \omega_{11}^3 \omega_{18}^2 - 108\omega_6^2 \omega_{22} v_3^2 c_s^2 \omega_{13} \omega_{11} \omega_{18}^2 + 12\omega_6^2 \omega_{22} v_1^2 \omega_{13} \omega_{11}^3 + 60\omega_6 \omega_{22} v_3^2 c_s^2 \omega_{13} \omega_{11}^3 \omega_{18} -$
$6\omega_6^3 \omega_{22} c_s^2 \omega_{13} \omega_{11} \omega_{18}^2 + 36\omega_6^2 v_3^2 v_1^2 \omega_{13} \omega_{11}^3 \omega_{18} + 12\omega_6^2 c_s^2 v_1^2 \omega_{13} \omega_{11}^3 \omega_{18} + 12\omega_6^2 v_1^2 \omega_{13} \omega_{11}^3 \omega_{18}^2 - 18\omega_6^3 v_3^2 c_s^2 \omega_{11}^3 \omega_{18}^2 + 24\omega_6^2 \omega_{22} v_1^2 \omega_{13} \omega_{11}^2 \omega_{18}^2 +$
$6\omega_6^3 c_s^4 \omega_{13} \omega_{11}^3 \omega_{18}^2 - 12\omega_6 \omega_{22} c_s^2 \omega_{13} \omega_{11}^3 \omega_{18} - 12\omega_6^3 \omega_{22} c_s^4 \omega_{13} \omega_{11}^2 \omega_{18} + 6\omega_6^3 \omega_{22} c_s^4 \omega_{11}^2 \omega_{18}^2 + 6\omega_6^3 c_s^2 \omega_{11}^3 \omega_{18}^2 + 72\omega_6^3 \omega_{22} v_3^2 c_s^2 \omega_{13} \omega_{11} \omega_{18} +$
$12\omega_6^3 c_s^2 v_1^2 \omega_{13} \omega_{11}^2 \omega_{18} + 36\omega_6^3 v_3^2 v_1^2 \omega_{13} \omega_{11}^2 \omega_{18} + 180\omega_6^2 \omega_{22} v_3^2 c_s^2 \omega_{13} \omega_{11}^2 \omega_{18}^2 - 36\omega_6^3 \omega_{22} v_3^2 v_1^2 \omega_{13} \omega_{11}^3 \omega_{18} + 36\omega_6^3 \omega_{22} v_3^2 v_1^2 \omega_{13} \omega_{11}^3 +$
$12\omega_6^2 c_s^2 v_1^2 \omega_{11}^3 \omega_{18}^2 + 12\omega_6^3 c_s^2 \omega_{13} \omega_{11}^3 \omega_{18} + 18\omega_6 \omega_{22} c_s^4 \omega_{13} \omega_{11}^3 \omega_{18}^2 + 6\omega_6^3 \omega_{22} c_s^2 \omega_{13} \omega_{11}^2 \omega_{18}^2 - 12\omega_6^3 \omega_{22} c_s^2 v_1^2 \omega_{13} \omega_{11}^3 \omega_{18} - 12\omega_6^2 \omega_{22} c_s^2 v_1^2 \omega_{11}^2 \omega_{18}^2 -$
$12\omega_6^2 \omega_{22} v_1^2 \omega_{13} \omega_{11} \omega_{18}^2 - 36\omega_6^3 v_3^2 c_s^2 \omega_{13} \omega_{11}^3 \omega_{18} + 12\omega_6^3 \omega_{22} v_1^2 \omega_{13} \omega_{11}^2 - 6\omega_6^3 \omega_{22} v_1^2 \omega_{11}^2 \omega_{18}^2 + 24\omega_6^2 \omega_{22} v_3^2 c_s^2 \omega_{13} \omega_{11}^3 - 24\omega_6^2 \omega_{22} c_s^4 \omega_{13} \omega_{11}^3 \omega_{18} -$
$144\omega_6^3 \omega_{22} v_3^2 c_s^2 \omega_{13} \omega_{11}^2 \omega_{18} - 12\omega_6^3 v_1^2 \omega_{13} \omega_{11}^2 \omega_{18} + 18\omega_6^3 \omega_{22} v_3^2 v_1^2 \omega_{13} \omega_{11}^2 \omega_{18}^2 - 48\omega_{22} v_3^2 c_s^2 \omega_{13} \omega_{11}^3 \omega_{18}^2 + 18\omega_6^3 \omega_{22} v_3^2 v_1^2 \omega_{11}^2 \omega_{18}^2 +$

$6\omega_6^3c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2 - 36\omega_6^3\omega_{22}v_3^2v_1^2\omega_{13}\omega_{11}^2 - 12\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_{11}^3\omega_{18} + 6\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_{11}^2\omega_{18}^2 + 6\omega_6^3c_s^2v_1^2\omega_{13}\omega_{11}^3\omega_{18}^2 + 36\omega_6^2v_3^2c_s^2\omega_{11}^3\omega_{18}^2 -$
$12\omega_6^2\omega_{22}c_s^4\omega_{11}^2\omega_{18}^2 + 18\omega_6^3v_3^2v_1^2\omega_{13}\omega_{11}^3\omega_{18}^2 - 132\omega_6^2\omega_{22}v_3^2c_s^2\omega_{13}\omega_{11}^3\omega_{18} - 12\omega_6^2c_s^4\omega_{13}\omega_{11}^3\omega_{18}^2 + 24\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_{11}^2\omega_{18}^2 - 6\omega_6^3v_1^2\omega_{13}\omega_{11}^3\omega_{18}^2 -$
$12\omega_6^2v_1^2\omega_{11}^3\omega_{18}^2 - 24\omega_6^3\omega_{22}v_1^2\omega_{13}\omega_{11}^2\omega_{18} - 36\omega_6^2\omega_{22}v_3^2c_s^2\omega_{11}^2\omega_{18}^2 + 12\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_{18}^2 - 12\omega_6^3\omega_{22}v_1^2\omega_{13}\omega_{11}^3 - 12\omega_6^2\omega_{22}c_s^2v_1^2\omega_{13}\omega_{11}^2\omega_{18} -$
$18\omega_6^3v_3^2c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2 - 36\omega_6^2\omega_{22}v_3^2v_1^2\omega_{13}\omega_{11}^2\omega_{18} - 12\omega_6^2\omega_{22}c_s^2v_1^2\omega_{13}\omega_{11}^3 + 78\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}\omega_{11}^3\omega_{18} + 12\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_{11}^2\omega_{18} -$
$6\omega_6^3\omega_{22}v_1^2\omega_{13}\omega_{11}^2\omega_{18}^2 + 12\omega_6^3v_1^2\omega_{13}\omega_{11}^3\omega_{18} - 24\omega_6^2\omega_{22}c_s^2v_1^2\omega_{13}\omega_{11}^2\omega_{18}^2 - 72\omega_6^2\omega_{22}v_3^2v_1^2\omega_{13}\omega_{11}^2\omega_{18}^2 + 36\omega_6^3v_3^2c_s^2\omega_{13}\omega_{11}^2\omega_{18} +$
$72\omega_6^3\omega_{22}v_3^2v_1^2\omega_{13}\omega_{11}^2\omega_{18} + 24\omega_6^3\omega_{22}c_s^2v_1^2\omega_{13}\omega_{11}^2\omega_{18} - 18\omega_6^3v_3^2v_1^2\omega_{11}^3\omega_{18}^2 - 12\omega_{22}c_s^4\omega_{13}\omega_{11}^3\omega_{18}^2 - 12\omega_6\omega_{22}c_s^4\omega_{13}\omega_{11}^2\omega_{18}^2 - 12\omega_6^3c_s^2\omega_{13}\omega_{11}^2\omega_{18} +$
$6\omega_6^3v_1^2\omega_{11}^3\omega_{18}^2 - 12\omega_6^3c_s^2v_1^2\omega_{13}\omega_{11}^3\omega_{18} + 12\omega_6^2c_s^4\omega_{13}\omega_{11}^3\omega_{18} - 42\omega_6^2\omega_{22}v_3^2c_s^2\omega_{13}\omega_{11}^3\omega_{18}^2 - 36\omega_6^3v_3^2v_1^2\omega_{13}\omega_{11}^3\omega_{18} + 12\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18}^2 +$
$36\omega_6^2\omega_{22}c_s^2v_1^2\omega_{13}\omega_{11}^3\omega_{18} + 6\omega_6^3\omega_{22}c_s^4\omega_{13}\omega_{11}\omega_{18}^2 + 108\omega_6^2\omega_{22}v_3^2v_1^2\omega_{13}\omega_{11}^3\omega_{18} + 18\omega_6^3v_3^2c_s^2\omega_{13}\omega_{11}^3\omega_{18}^2 - 18\omega_6^3\omega_{22}v_3^2c_s^2\omega_{13}\omega_{11}^2\omega_{18}^2 +$
$12\omega_6^2\omega_{22}c_s^2\omega_{11}^2\omega_{18}^2 - 4\omega_6^2\omega_{22}c_s^4\omega_{13}\omega_{11}^3\omega_{18}^2 + 12\omega_6^3\omega_{22}v_1^2\omega_{13}\omega_{11}^3\omega_{18} + 6\omega_6^3v_1^2\omega_{13}\omega_{11}^2\omega_{18}^2 - 6\omega_6^3c_s^2v_1^2\omega_{13}\omega_{11}^2\omega_{18}^2 + 60\omega_6^2\omega_{22}v_3^2c_s^2\omega_{13}\omega_{11}^2\omega_{18} -$
$18\omega_6^3v_3^2v_1^2\omega_{13}\omega_{11}^2\omega_{18}^2 + 12\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_{11}^2\omega_{18} - 6\omega_6^3c_s^2\omega_{13}\omega_{11}^3\omega_{18}^2 + 12\omega_6\omega_{22}c_s^4\omega_{13}\omega_{11}^3\omega_{18})\frac{\rho}{12\omega_6^3\omega_{22}\omega_{13}\omega_{11}^3\omega_{18}^2}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x^2\mathrm{D}_z^2v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x^2\mathrm{D}_z^2v_3}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_z^2v_3} = (-6\omega_6^3\omega_{22}\omega_{13}\omega_{18} - 12\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{18} - 12\omega_6^2c_s^2\omega_{13}\omega_{11}^2\omega_{18} - 12\omega_6^3\omega_{13}\omega_{11} + 18\omega_6^3\omega_{22}v_3^2\omega_{13}\omega_{18} + 12\omega_6^2\omega_{22}\omega_{11}\omega_{18} +$
$6\omega_6^3\omega_{11}^2\omega_{18} + 36\omega_{6\omega_{22}}v_3^2\omega_{13}\omega_{11}^2 - 6\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18} - 12\omega_6\omega_{22}\omega_{13}\omega_{11}^2 - 12\omega_6^3c_s^2\omega_{13}\omega_{11}^2 - 72\omega_6^2\omega_{22}v_3^2\omega_{13}\omega_{11}^2 + 72\omega_6^2\omega_{22}v_3^2\omega_{13}\omega_{11}\omega_{18} +$
$18\omega_6\omega_{22}c_s^2\omega_{13}\omega_{11}^2\omega_{18} + 12\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_{11}^2 - 6\omega_6^3c_s^2\omega_{13}\omega_{11}\omega_{18} + 12\omega_6^2\omega_{13}\omega_{11}^2\omega_{18} + 12\omega_6^2c_s^2\omega_{11}^2\omega_{18} + 12\omega_6\omega_{22}\omega_{13}\omega_{11}\omega_{18} -$
$12\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_{11} + 12\omega_6^2c_s^2\omega_{13}\omega_{11}^2 - 4\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{11}^2\omega_{18} - 36\omega_6\omega_{22}v_3^2\omega_{13}\omega_{11}\omega_{18} - 6\omega_6^3c_s^2\omega_{11}^2\omega_{18} + 18\omega_6^3v_3^2\omega_{13}\omega_{11}^2\omega_{18} + 12\omega_6^3c_s^2\omega_{13}\omega_{11} +$
$36\omega_6^2\omega_{22}v_3^2\omega_{13}\omega_{11} - 6\omega_6^3\omega_{13}\omega_{11}^2\omega_{18} + 12\omega_6^3\omega_{13}\omega_{11}^2 + 12\omega_6^2\omega_{22}\omega_{13}\omega_{18} + 18\omega_6^3\omega_{22}v_3^2\omega_{11}\omega_{18} - 24\omega_6^2\omega_{22}\omega_{13}\omega_{11}\omega_{18} - 12\omega_{22}c_s^2\omega_{13}\omega_{11}^2\omega_{18} -$
$12\omega_6^2\omega_{22}c_s^2\omega_{11}\omega_{18} - 6\omega_6^3\omega_{22}\omega_{11}\omega_{18} - 36\omega_6^3\omega_{22}v_3^2\omega_{13}\omega_{11} + 24\omega_6^2\omega_{22}\omega_{13}\omega_{11}^2 + 36\omega_6^2v_3^2\omega_{13}\omega_{11}^2 - 36\omega_6^2v_3^2\omega_{13}\omega_{11}^2\omega_{18} - 18\omega_6^3v_3^2\omega_{11}^2\omega_{18} +$
$36\omega_6^3v_3^2\omega_{13}\omega_{11} + 12\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{11} - 18\omega_6^3\omega_{22}v_3^2\omega_{13}\omega_{11}\omega_{18} + 12\omega_6^3\omega_{22}\omega_{13}\omega_{11} - 12\omega_6^2\omega_{11}^2\omega_{18} + 6\omega_6^3\omega_{22}c_s^2\omega_{11}\omega_{18} + 6\omega_6^3\omega_{22}\omega_{13}\omega_{11}\omega_{18} +$
$24\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18} - 18\omega_6^3v_3^2\omega_{13}\omega_{11}\omega_{18} - 36\omega_6^2\omega_{22}v_3^2\omega_{11}\omega_{18} + 6\omega_6^3\omega_{13}\omega_{11}\omega_{18} - 12\omega_6\omega_{22}c_s^2\omega_{13}\omega_{11}\omega_{18} - 36\omega_6^2\omega_{22}v_3^2\omega_{13}\omega_{18} +$
$6\omega_6^3\omega_{22}c_s^2\omega_{13}\omega_{18} - 12\omega_6^2\omega_{13}\omega_{11}^2 + 6\omega_6^3c_s^2\omega_{13}\omega_{11}^2\omega_{18} + 12\omega_{6\omega_{22}}c_s^2\omega_{13}\omega_{11}^2 - 36\omega_6^3v_3^2\omega_{13}\omega_{11}^2 - 12\omega_6^3\omega_{22}\omega_{13}\omega_{11}^2 - 24\omega_6^2\omega_{22}c_s^2\omega_{13}\omega_{11}^2 +$
$36\omega_6^3\omega_{22}v_3^2\omega_{13}\omega_{11}^2 - 12\omega_6^2\omega_{22}\omega_{13}\omega_{11} + 36\omega_6^2v_3^2\omega_{11}^2\omega_{18} - \omega_6^3\omega_{22}c_s^2\omega_{13}\omega_{11}^2\omega_{18})\frac{c_s^2\rho}{12\omega_6^3\omega_{22}\omega_{13}\omega_{11}^2\omega_{18}}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x^2\mathrm{D}_z^2v_3} = C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x^2\mathrm{D}_z^2v_3}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x^2\mathrm{D}_z^2v_3} = (36\omega_6v_3^2\omega_8\omega_2^2 - 12\omega_6^2\omega_2^3 - 72\omega_6^2v_3^2\omega_2^2 - 12\omega_6\omega_8\omega_2^2 + 12\omega_6^2c_s^2\omega_2 + 18\omega_6^2c_s^2\omega_8\omega_2 + 24\omega_6^2\omega_2^2 + 36\omega_6^2v_3^2\omega_2^3 - 12\omega_2^3 + 12\omega_8\omega_2^2 +$
$12\omega_6^2c_s^2\omega_2^3 - 12c_s^2\omega_8\omega_2^2 - 4\omega_6^2c_s^2\omega_8\omega_2^2 - 12\omega_6^2\omega_2 - 24\omega_6^2c_s^2\omega_2^2 + 36\omega_6^2v_3^2\omega_2 - 36\omega_6v_3^2\omega_8\omega_2 - \omega_6^2c_s^2\omega_8\omega_2^3 + 12\omega_{6\omega_8\omega_2} - 24\omega_6c_s^2\omega_2^3 - 36v_3^2\omega_8\omega_2^2 +$
$36v_3^2\omega_2^3 + 24\omega_6c_s^2\omega_2^2 - 12\omega_6c_s^2\omega_8\omega_2 + 12\omega_6c_s^2\omega_8\omega_2^2 + 12c_s^2\omega_2^3 - 12\omega_6^2c_s^2\omega_8 - 24\omega_6\omega_2^2 + 72\omega_6v_3^2\omega_2^2 - 72\omega_6v_3^2\omega_2^3 + 24\omega_6\omega_2^3)\frac{c_s^2\rho}{12\omega_6^2\omega_8\omega_2^3}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x^2\mathrm{D}_z^2v_3} = (8\omega_3c_s^4\omega_4\omega_1\omega_2^3 + 32\omega_3^2c_s^2\omega_4\omega_1^2\omega_2 + 132\omega_3v_3^2c_s^2\omega_4\omega_1^2\omega_2^2 + 18\omega_3^2v_1^4\omega_1\omega_2^3 - 174\omega_3^2c_s^2v_1^2\omega_4\omega_1^3\omega_2 - 30\omega_3^2c_s^2v_1^2\omega_4\omega_1^2\omega_2^3 -$
$90\omega_3^2v_3^2v_1^2\omega_4\omega_1^3\omega_2 + 72\omega_3^2c_s^2\omega_1^2\omega_2^3 - 18\omega_3v_1^4\omega_1^3\omega_2^2 - 4\omega_3^2\omega_4\omega_1^2\omega_2 - 6\omega_3v_1^2\omega_4\omega_1^2\omega_2^2 + 4\omega_3^2\omega_4\omega_2^3 + 66\omega_3^2v_1^2\omega_4\omega_1^3\omega_2 + 24\omega_3^2v_1^4\omega_4\omega_1^3 +$
$9\omega_3^2v_1^2\omega_4\omega_1^2\omega_2^3 + 90\omega_3c_s^2v_1^2\omega_4\omega_1^3\omega_2^2 + 12\omega_3^2v_3^2\omega_4\omega_1\omega_2^2 - 48\omega_3^2v_3^2c_s^2\omega_4\omega_1^2\omega_2 + 18\omega_3^2c_s^4\omega_1^3\omega_2^3 + 36\omega_3c_s^2\omega_4\omega_1^3\omega_2^2 - 96\omega_3^2v_3^2c_s^2\omega_4\omega_2^3 -$
$28\omega_3^2c_s^4\omega_4\omega_1\omega_2^2 + \omega_3^2v_3^4\omega_4\omega_1^3\omega_2^2 + 12\omega_3v_1^2\omega_4\omega_1^3\omega_2 + 36\omega_3v_1^2\omega_4\omega_1^2\omega_2^3 - 18v_1^4\omega_4\omega_1^3\omega_2^2 + 24\omega_3v_3^2c_s^2\omega_4\omega_1^3\omega_2 - 2\omega_3^2c_s^2\omega_4\omega_1^3\omega_2^2 + 24\omega_3^2c_s^2v_1^2\omega_4\omega_1^2\omega_2^2 -$
$126\omega_3v_3^2c_s^2\omega_4\omega_1^2\omega_2^3 + 180\omega_3^2v_3^2v_1^2\omega_4\omega_1^2\omega_2^2 + 12\omega_3^2v_1^2\omega_4\omega_2^3 + 76\omega_3^2c_s^4\omega_4\omega_1\omega_2^3 - 12\omega_3^2v_3^2\omega_4\omega_1^3 - 18\omega_3c_s^2\omega_4\omega_1^3\omega_2^3 - 108\omega_3^2c_s^2v_1^2\omega_4\omega_2^3 -$
$42\omega_3^2v_1^2\omega_4\omega_1^2\omega_2^2 + 12\omega_3^2v_3^2\omega_4\omega_1\omega_2^3 - 18\omega_3v_1^2\omega_1^2\omega_2^3 + 6\omega_3^2v_3^2c_s^2\omega_4\omega_1^3\omega_2^2 - 56\omega_3c_s^2\omega_4\omega_1^2\omega_2^2 - 72\omega_3^2c_s^4\omega_1^2\omega_2^3 - 18\omega_3^2v_1^2\omega_1\omega_2^3 - 6\omega_3^2v_3^2c_s^2\omega_4\omega_1^2\omega_2^3 +$
$6\omega_3v_1^4\omega_4\omega_1\omega_2^3 - 6\omega_3^2v_3^2c_s^2\omega_4\omega_1^3\omega_2 + 54\omega_3^2c_s^2v_1^2\omega_1\omega_2^3 + 18\omega_3v_1^2\omega_1^3\omega_2^2 + 54\omega_3c_s^2v_1^2\omega_4\omega_1^2\omega_2^2 - 36\omega_3v_1^2\omega_4\omega_1^3\omega_2 - 4\omega_3^2\omega_4\omega_1^3\omega_2 + 12\omega_3^2v_1^4\omega_4\omega_1\omega_2^2 -$
$12\omega_3^2v_3^2\omega_4\omega_2^3 - \omega_3^2v_3^4\omega_4\omega_1^2\omega_2^3 - 48\omega_3^2v_1^2\omega_4\omega_1^3 - 12\omega_3^2c_s^2v_1^2\omega_4\omega_1^2\omega_2 - 90\omega_3v_3^2c_s^2\omega_4\omega_1^3\omega_2^2 + 18\omega_3^2c_s^2\omega_4\omega_1^3\omega_2 - 18\omega_3^2c_s^2\omega_1^3\omega_2^3 - 36\omega_3^2v_3^2v_1^2\omega_4\omega_1^2\omega_2 +$
$132\omega_3^2c_s^2v_1^2\omega_4\omega_1^3 + 18v_1^4\omega_4\omega_1^2\omega_2^3 + 2\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^3 - 9\omega_3^2v_1^2\omega_4\omega_1^3\omega_2^2 - 90\omega_3c_s^2v_1^2\omega_4\omega_1^2\omega_2^3 + 66\omega_3^2v_3^2c_s^2\omega_4\omega_1^2\omega_2^2 - 36\omega_3c_s^2v_1^2\omega_4\omega_1^3\omega_2 -$
$8\omega_3c_s^2\omega_4\omega_1^3\omega_2 + 216\omega_3^2v_3^2c_s^2\omega_1\omega_2^3 + 36\omega_3c_s^2\omega_4\omega_1^2\omega_2^3 + 30\omega_3^2c_s^2v_1^2\omega_4\omega_1^3\omega_2^2 - 36\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^2 - 48\omega_3^2v_1^4\omega_4\omega_2^3 + 4\omega_3^2\omega_4\omega_1^3 + 54\omega_3v_3^2c_s^2\omega_4\omega_1^3\omega_2^3 +$
$12\omega_3^2v_3^2c_s^2\omega_4\omega_1^3 + 54\omega_3^2v_1^4\omega_4\omega_1\omega_2^3 + 8\omega_3^2\omega_4\omega_1^2\omega_2^2 + 18\omega_3v_1^4\omega_1^2\omega_2^3 + 6\omega_3v_1^4\omega_4\omega_1^2\omega_2^2 - 84\omega_3^2v_3^2c_s^2\omega_4\omega_1\omega_2^2 + 12\omega_3^2v_3^2\omega_4\omega_1^2\omega_2 + 54c_s^2v_1^2\omega_4\omega_1^2\omega_2^3 -$
$18\omega_3c_s^2v_1^2\omega_4\omega_1\omega_2^3 - 54\omega_3^2c_s^2v_1^2\omega_1^2\omega_2^2 - 28\omega_3^2c_s^4\omega_4\omega_1^2\omega_2 - 8\omega_3c_s^2\omega_4\omega_1\omega_2^3 - 216\omega_3^2v_3^2c_s^2\omega_1^2\omega_2^3 - 3\omega_3^2c_s^4\omega_4\omega_1^3\omega_2^3 + 18\omega_3^2v_1^2\omega_1^2\omega_2^2 - 36\omega_3c_s^4\omega_4\omega_1^3\omega_2^2 +$
$18\omega_3^2v_1^4\omega_1^3\omega_2^2 + 32\omega_3^2c_s^2\omega_4\omega_1\omega_2^2 + 28\omega_3^2c_s^2\omega_4\omega_2^3 + 54\omega_3c_s^2v_1^2\omega_1^2\omega_2^3 - 36\omega_3^2v_1^4\omega_4\omega_1^3\omega_2 - 4\omega_3^2\omega_4\omega_1\omega_2^2 - 9\omega_3^2v_1^4\omega_4\omega_1^2\omega_2^2 + 18\omega_3^2v_1^2\omega_1^2\omega_2^3 +$
$2\omega_3^2c_s^4\omega_4\omega_1^3\omega_2^2 + 18v_1^2\omega_4\omega_1^3\omega_2^2 + 72\omega_3^2c_s^4\omega_1\omega_2^3 - 12\omega_3v_1^4\omega_4\omega_1^3\omega_2 - 54\omega_3^2c_s^2v_1^2\omega_1^2\omega_2^3 - \omega_3^2v_3^2\omega_4\omega_1^3\omega_2^2 - 36\omega_3v_1^4\omega_4\omega_1^2\omega_2^3 + 48\omega_3^2v_3^2c_s^2\omega_4\omega_1\omega_2^3 -$
$4\omega_3^2\omega_4\omega_1\omega_2^3 - 18\omega_3^2v_1^4\omega_4\omega_1^2\omega_2^2 + 16\omega_3^2c_s^4\omega_4\omega_1^3 - 18\omega_3^2c_s^2\omega_4\omega_1\omega_2^3 + 108\omega_3^2v_3^2v_1^2\omega_4\omega_2^3 + 18\omega_3c_s^4\omega_4\omega_1^3\omega_2^3 - 6\omega_3v_1^2\omega_4\omega_1\omega_2^3 + 12\omega_3^2v_1^4\omega_4\omega_1^2\omega_2 -$
$144\omega_3^2v_3^2v_1^2\omega_4\omega_1\omega_2^2 - 18\omega_3^2v_1^4\omega_1^2\omega_2^2 + 60\omega_3v_3^2c_s^2\omega_4\omega_1\omega_2^3 + 56\omega_3c_s^4\omega_4\omega_1^2\omega_2^2 - 12\omega_3^2c_s^2v_1^2\omega_4\omega_1\omega_2^2 - 68\omega_3^2c_s^4\omega_4\omega_2^3 - 14\omega_3^2c_s^4\omega_4\omega_1^3\omega_2 -$
$14\omega_3^2c_s^4\omega_4\omega_1^2\omega_2^3 - 18\omega_3^2v_1^2\omega_1^3\omega_2^2 - 18v_1^2\omega_4\omega_1^2\omega_2^3 + 54\omega_3^2v_3^2c_s^2\omega_1^3\omega_2^3 + 12\omega_3^2v_3^2\omega_4\omega_1^3\omega_2 + 36\omega_3v_1^4\omega_4\omega_1^3\omega_2^2 + 72\omega_3^2v_3^2v_1^2\omega_4\omega_1^3 + \omega_3^2v_3^2\omega_4\omega_1^2\omega_2^3 +$
$54\omega_3^2c_s^2v_1^2\omega_1^3\omega_2^2 + 36\omega_3^2v_1^2\omega_4\omega_1\omega_2^2 + 150\omega_3^2c_s^2v_1^2\omega_4\omega_1\omega_2^3 - 72\omega_3^2c_s^2\omega_1\omega_2^3 + 8\omega_3c_s^4\omega_4\omega_1^3\omega_2 - 90\omega_3^2v_3^2v_1^2\omega_4\omega_1\omega_2^3 - 36\omega_3c_s^4\omega_4\omega_1^2\omega_2^3 - 18\omega_3^2v_1^4\omega_1^2\omega_2^3 +$
$9\omega_3^2v_1^4\omega_4\omega_1^3\omega_2^2 - 54\omega_3c_s^2v_1^2\omega_1^3\omega_2^2 - 24\omega_3^2v_3^2\omega_4\omega_1^2\omega_2^2 - 54c_s^2v_1^2\omega_4\omega_1^3\omega_2^2 - 24\omega_3^2v_1^2\omega_4\omega_1\omega_2^3 - 20\omega_3^2c_s^2\omega_4\omega_1^3 + 28\omega_3^2c_s^4\omega_4\omega_1^2\omega_2^2)\frac{\rho}{36\omega_3^2\omega_4\omega_1^3\omega_2^2}$

coefficient $C^{(3)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2\rho}$ **at** $\frac{\partial^4\rho}{\partial x_1\partial x_2\partial x_3^2}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2\rho} = 0$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2\rho} = (-3\omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2 + \omega_6^2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 + 3\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - \omega_6^2\omega_{19}v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2 + \omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18} +$
$\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18} + \omega_6^2\omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 + \omega_{6\omega_{19}}\omega_7^2\omega_{20}\omega_{11}^3\omega_8 - 3\omega_6^2\omega_{19}^2c_s^2\omega_7^3\omega_{11}^3\omega_8\omega_{18}^2 - \omega_6^2\omega_{19}^2v_3^2\omega_7\omega_{11}^3\omega_8\omega_{18}^2 + \omega_6^2\omega_{19}^2\omega_7^2\omega_{11}^3\omega_{18}^2 -$
$\omega_6^2\omega_{19}^2\omega_7^2\omega_{11}^2\omega_8\omega_{18} + \omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2 + \omega_{6\omega_{19}}\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - \omega_{6\omega_{19}}\omega_7^2\omega_{11}^3\omega_{18}^2 + \omega_6^2\omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8 + \omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8 +$
$3\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8 - \omega_{6\omega_{19}}^2v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_{18}^2 + 3\omega_{6\omega_{19}}^2c_s^2\omega_7^2\omega_{11}^3\omega_8\omega_{18} + \omega_{6\omega_{19}}^2v_3^2\omega_7^2\omega_{11}^3\omega_8\omega_{18} - 3\omega_{6\omega_{19}}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_{18}^2 -$

$6\omega_6^2\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - \omega_6^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 - \omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18} - 3\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{11}^3\omega_{18}^2 - \omega_6^2\omega_{19}^2v_3^2\omega_7^2\omega_{11}^2\omega_8\omega_{18}^2 + \omega_6^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_{18}^2 -$
$2\omega_6^2\omega_{19}^2v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - 3\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{11}^2\omega_8\omega_{18}^2 - 3\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18} + 2\omega_6^2\omega_{19}v_3^2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 - 3\omega_6^2\omega_{19}c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 -$
$3\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{11}^3\omega_8\omega_{18}^2 - \omega_6^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18} - 3\omega_6^2\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18} - \omega_6\omega_{19}^2v_3^2\omega_7^2\omega_{11}^3\omega_8\omega_{18}^2 - \omega_6^2\omega_{19}^2v_3^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 +$
$6\omega_6^2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 + \omega_6^2\omega_{19}^2v_3^2\omega_7^2\omega_{11}^2\omega_8\omega_{18} + \omega_6^2\omega_{19}^2\omega_7\omega_{11}^3\omega_8\omega_{18}^2 - 2\omega_6\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - \omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18}^2 +$
$3\omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{11}^2\omega_8\omega_{18} + \omega_6^2\omega_{19}\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 - \omega_6^2\omega_{19}^2v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18} - 2\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 - \omega_6\omega_{19}v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 +$
$6\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18} + \omega_6\omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2 - \omega_6^2\omega_{19}\omega_7^2\omega_{11}^2\omega_8\omega_{18}^2 - 3\omega_6\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 + 3\omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{11}^2\omega_8\omega_{18}^2 +$
$2\omega_6\omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18} + 3\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2 + 3\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{11}^3\omega_{18}^2 + \omega_6^2\omega_{19}v_3^2\omega_7^2\omega_{11}^2\omega_8\omega_{18}^2 + \omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 -$
$\omega_6^2\omega_{19}^2v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_{18}^2 - 3\omega_6^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 + \omega_6^2\omega_{19}^2\omega_7^2\omega_{11}^2\omega_8\omega_{18}^2 - 3\omega_6\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18} - 3\omega_6^2\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_{18}^2 -$
$\omega_6^2v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - \omega_6\omega_{19}^2v_3^2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18} + \omega_6^2\omega_{19}v_3^2\omega_7\omega_{11}^3\omega_8\omega_{18}^2 - \omega_6^2\omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8 - \omega_6^2\omega_{19}v_3^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 +$
$3\omega_6^2\omega_{19}c_s^2\omega_7\omega_{11}^3\omega_8\omega_{18}^2 - 3\omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8 + 6\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18} - \omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8 + \omega_6^2\omega_{19}^2v_3^2\omega_7\omega_{11}^3\omega_{18}^2 + \omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18} +$
$2\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - \omega_6^2\omega_{19}\omega_7\omega_{11}^3\omega_8\omega_{18}^2 - 3\omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 + 2\omega_6^2\omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18} + 3\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2 +$
$\omega_6^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 + 2\omega_6^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 + 3\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{11}^3\omega_8\omega_{18}^2 + \omega_6^2\omega_{19}^2v_3^2\omega_7^2\omega_{11}^3\omega_8\omega_{18}^2 + \omega_6\omega_{19}^2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18} +$
$3\omega_6^2\omega_{19}^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - 6\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - 2\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_8\omega_{18}^2 + \omega_6^2\omega_{19}^2v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 + \omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 -$
$2\omega_6\omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 + \omega_6^2\omega_{19}^2\omega_7^2\omega_{11}^3\omega_8\omega_{18} + 6\omega_6\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - \omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_{18}^2 + 2\omega_6\omega_{19}^2v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 -$
$\omega_6\omega_{19}\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 - \omega_6^2\omega_{19}v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18} - \omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - \omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2 + \omega_6\omega_{19}\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 -$
$3\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2 - \omega_6^2\omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 - 2\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18} + \omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_{18}^2 - 2\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18} -$
$3\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 - 3\omega_6^2\omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2 - \omega_6\omega_{19}^2\omega_7^2\omega_{11}^3\omega_8\omega_{18} + 2\omega_6^2\omega_{19}v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 + 2\omega_6^2\omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_8\omega_{18}^2 -$
$\omega_6^2\omega_{19}^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - \omega_6^2\omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18} - 9\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2 - \omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 + 6\omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 +$
$6\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_8\omega_{18}^2 - \omega_6^2\omega_{19}^2\omega_7^2\omega_{11}^3\omega_8\omega_{18}^2 + 3\omega_6^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 - 2\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - \omega_6\omega_{19}v_3^2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 -$
$\omega_6^2\omega_{19}^2\omega_7^2\omega_{11}^3\omega_{18}^2 + \omega_6^2v_3^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 - 3\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 + \omega_6\omega_{19}^2v_3^2\omega_7^2\omega_{11}^3\omega_{18}^2 - \omega_6\omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8 + \omega_6^2\omega_{19}\omega_7^2\omega_{11}^3\omega_8\omega_{18}^2 -$
$3\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8 + \omega_6\omega_{19}v_3^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 - 3\omega_6^2c_s^2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 - \omega_6^2\omega_{19}v_3^2\omega_7^2\omega_{11}^3\omega_8\omega_{18}^2 + 3\omega_6\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 -$
$3\omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{11}^3\omega_8\omega_{18}^2 - \omega_6^2v_3^2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 + \omega_6^2\omega_{19}^2v_3^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18}^2 + 3\omega_6^2\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18} + \omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 +$
$\omega_6^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18} + 3\omega_6^2\omega_{19}^2c_s^2\omega_7\omega_{11}^3\omega_{18}^2 + 3\omega_6^2\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18}^2 + \omega_6^2\omega_{19}^2v_3^2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18} + 3\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 +$
$\omega_6^2\omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_{18}^2 - 3\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{11}^3\omega_8\omega_{18} - \omega_6^2\omega_{19}^2v_3^2\omega_7^2\omega_{11}^3\omega_8\omega_{18} + 3\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_{18}^2)\frac{v_3v_2v_1}{\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2\rho} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2\rho}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2\rho} = 0$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2\rho} = 0$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2\rho} = 0$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2\rho} = (-18c_s^2\omega_1\omega_2^3 + 6\omega_1\omega_2^3 + 2v_1^2\omega_2^3 - 6v_1^2\omega_1^2\omega_2 + 36c_s^2\omega_1\omega_2^2 - 12\omega_1\omega_2^2 - 3v_1^2\omega_1^3\omega_2 - 3v_2^2\omega_1\omega_2^3 - 12\omega_1^3 + 6v_1^2\omega_1^2\omega_2^2 - 12v_3^2\omega_1^2\omega_2 +$
$4v_1^2\omega_1^3 + 4v_2^2\omega_1^3 + 6v_2^2\omega_1^2\omega_2^2 - 3v_1^2\omega_1\omega_2^3 - 4v_3^2\omega_2^3 + 24\omega_1^2\omega_2 + 36c_s^2\omega_1^3 - 3v_2^2\omega_1^3\omega_2 - 72c_s^2\omega_1^2\omega_2 + 36c_s^2\omega_1^2\omega_2^2 + 4v_3^2\omega_1^3 - 12\omega_1^2\omega_2^2 + 2v_2^2\omega_2^3 -$
$18c_s^2\omega_1^3\omega_2 - 6v_2^2\omega_1^2\omega_2 + 12v_3^2\omega_1\omega_2^2 + 6\omega_1^3\omega_2)\frac{v_3v_2v_1}{6\omega_1^3\omega_2^3}$

coefficient $C^{(3)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_1}$ **at** $\frac{\partial^4 v_1}{\partial x_1\partial x_2\partial x_3^2}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_1} = 0$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2 v_1} = (-4\omega_6^3\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 - 3\omega_6^3\omega_{19}\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18} + \omega_6^3\omega_{19}^2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2 -$
$\omega_6^2\omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 11\omega_6^3\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2 - 3\omega_6^3\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^2\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18} +$
$6\omega_6^3c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^2\omega_{19}^2\omega_7^2\omega_{11}^3\omega_8\omega_5\omega_{18}^2 + 2\omega_6^2\omega_{19}^2v_3^2\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 2\omega_6^3\omega_{19}^2c_s\omega_7\omega_{20}\omega_{11}^3\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{19}c_s^2\omega_7^2\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 -$
$8\omega_6^2\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - \omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^3\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - \omega_6^3\omega_{19}^2v_3^2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2 + 2\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{11}^3\omega_8^2\omega_5\omega_{18} -$
$8\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{19}v_3^2\omega_7^2\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^3v_3^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^2\omega_{19}^2v_3^2\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18} + 2\omega_6^3\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 +$
$2\omega_6^3\omega_{19}^2v_3^2\omega_7\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5 - 6\omega_6^3\omega_{19}c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^3\omega_{19}^2c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2 -$
$2\omega_6^3\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18} + \omega_6\omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5 - \omega_6^3\omega_{19}v_3^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 -$
$2\omega_6^3\omega_{19}v_3^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18} + 2\omega_6^3\omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5 + 4\omega_6^3\omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_8^2\omega_5\omega_{18}^2 + 6\omega_6^3\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2 -$
$4\omega_6^2\omega_{19}^2c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 3\omega_6^3\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18} + 15\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 +$
$12\omega_6^3\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{19}^2\omega_7\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6^3\omega_{19}^2\omega_7^2\omega_{20}\omega_8^2\omega_5\omega_{18}^2 + 3\omega_6^3\omega_{19}v_3^2\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{19}^2v_3^2\omega_7\omega_{11}^3\omega_8\omega_5\omega_{18}^2 +$
$2\omega_6^3\omega_{19}v_3^2\omega_7\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18} - 5\omega_6^3\omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{19}^2c_s^2\omega_7\omega_{11}^3\omega_8\omega_5\omega_{18}^2 +$
$3\omega_6^3\omega_{19}v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{19}^2\omega_7\omega_{11}^3\omega_8\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{19}c_s^2\omega_7\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5 + 9\omega_6^3\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 -$
$4\omega_6^2\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6\omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18} + 2\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_{18}^2 - 15\omega_6^3\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2 +$
$9\omega_6^3\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 + 5\omega_6^3\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 -$
$\omega_6^3\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2 - 2\omega_6^2\omega_{19}^2v_3^2\omega_7^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 6\omega_6^3c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^2\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_{18}^2 + 2\omega_6^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18} +$
$\omega_6^3\omega_{19}\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^3\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 - 2\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18} -$
$6\omega_6^3c_s^2\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + \omega_6^2\omega_{19}^2v_3^2\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 + 8\omega_6^3\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2 +$
$\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^3v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{19}^2v_3^2\omega_7^2\omega_{11}^3\omega_8\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{19}v_3^2\omega_7^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 8\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 -$

$2\omega_6^3\omega_{19}^2c_s^2\omega_7^2\omega_{11}^3\omega_8\omega_5\omega_{18}^2 - 2\omega_6^3v_3^2\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^3\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^2\omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18} + \omega_6^3\omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2 +$
$11\omega_6^2\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{19}^2\omega_7^2\omega_{11}^3\omega_8\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{19}c_s^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{19}^2\omega_7\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{19}^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 +$
$6\omega_6^3\omega_{19}^2c_s^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{19}^2c_s^2\omega_7\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{19}\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{19}^2v_3^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 -$
$2\omega_6^3\omega_{19}^2v_3^2\omega_7\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5 + 2\omega_6^3\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18} + 2\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{11}^3\omega_8\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{19}^2v_3^2\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18} +$
$2\omega_6^3\omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5 + 2\omega_6^3\omega_{19}^2v_3^2\omega_7^2\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 3\omega_6^3\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{11}^3\omega_8\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{19}^2v_3^2\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18} +$
$2\omega_6^3\omega_{19}^2c_s^2\omega_7^2\omega_{11}^2\omega_8^2\omega_5\omega_{18} - 9\omega_6^3\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{19}^2\omega_7^2\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 2\omega_6^2\omega_{19}^2v_3^2\omega_7^2\omega_{11}^3\omega_8\omega_5\omega_{18}^2 - 2\omega_6^2\omega_{19}^2\omega_7^2\omega_{11}^3\omega_8^2\omega_5\omega_{18} +$
$4\omega_6^3\omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 2\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 + 2\omega_6^2\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2 - 4\omega_6^3\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18} -$
$2\omega_6^3\omega_{19}^2\omega_7^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{19}^2c_s^2\omega_7^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18} - 3\omega_6^3\omega_{19}^2v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{19}^2\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18} +$
$4\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{19}\omega_7^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + \omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{19}^2v_3^2\omega_7^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^3\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18} +$
$2\omega_6^3\omega_{19}^2\omega_7^2\omega_{11}^3\omega_8^2\omega_5\omega_{18} - 2\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_{18}^2 - \omega_6^3\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 6\omega_6^3\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18} -$
$\omega_6^2\omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{19}^2c_s^2\omega_7^2\omega_{11}^3\omega_8^2\omega_5\omega_{18} - 2\omega_6^3\omega_{19}^2v_3^2\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18} + 2\omega_6^3\omega_{19}v_3^2\omega_7^2\omega_{11}^3\omega_8^2\omega_5\omega_{18} + 2\omega_6^3\omega_{19}v_3^2\omega_7^2\omega_{11}^3\omega_8^2\omega_5\omega_{18} +$
$3\omega_6^3\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18} - 2\omega_6^3\omega_{19}^2v_3^2\omega_7^2\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{19}v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2 +$
$2\omega_6^3\omega_{19}\omega_7^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 13\omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - 2\omega_6^3\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - 2\omega_6^3\omega_{19}^2c_s^2\omega_7^2\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 +$
$\omega_6^3\omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^2\omega_{19}^2\omega_7^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{19}^2\omega_7^2\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^3\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18} + 4\omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 -$
$8\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^3\omega_{19}\omega_7\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - \omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2 -$
$2\omega_6^2\omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5 - 2\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5 + 6\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2 + 2\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_5\omega_{18}^2)\frac{v_3v_2\rho}{2\omega_6^3\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_1} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_1}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_1} = 0$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_1} = 0$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_1} = 0$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_1} = (-24\omega_3v_2^2\omega_4^2\omega_1^3\omega_2 - 108\omega_3\omega_4^2\omega_1^2\omega_2^3 + 189\omega_3^2c_s^2\omega_4\omega_1^3\omega_2^3 + 48\omega_3\omega_4^2\omega_1^3\omega_2 + 144\omega_3v_2^2\omega_4^2\omega_1^2\omega_2^3 + 324c_s^2\omega_4^2\omega_1^3\omega_2^3 + 72\omega_4^2\omega_1^3\omega_2^2 -$
$63\omega_3^2\omega_4\omega_1^3\omega_2^3 + 12\omega_3v_3^2\omega_4^2\omega_1^2\omega_2^2 - 54\omega_3^2v_2^2\omega_1^3\omega_2^3 - 36\omega_3^2v_3^2\omega_4^2\omega_1^3\omega_2 + 336\omega_3^2c_s^2\omega_4^2\omega_1^3 - 36\omega_3^2v_2^2\omega_4^2\omega_1^2\omega_2^2 + 216\omega_3c_s^2\omega_4\omega_1^3\omega_2^2 + 72\omega_3^2v_2^2\omega_4\omega_1\omega_2^3 +$
$72\omega_3^2\omega_4\omega_1^3\omega_2^2 - 108\omega_4^2\omega_1^3\omega_2^3 - 96\omega_3^2v_2^2\omega_4^2\omega_2^3 - 36\omega_3v_3^2\omega_4^2\omega_1^2\omega_2^3 - 216c_s^2\omega_4^2\omega_1^3\omega_2^2 - 24\omega_3v_3^2\omega_4^2\omega_1^3\omega_2 - 216\omega_3^2c_s^2\omega_4\omega_1^3\omega_2^2 - 60\omega_3v_2^2\omega_4^2\omega_1^2\omega_2^2 +$
$48\omega_3\omega_4^2\omega_1^2\omega_2^2 - 72\omega_3^2v_2^2\omega_4^2\omega_1^3\omega_2 - 20\omega_3^2v_2^2\omega_4^2\omega_1^2\omega_2^3 - 324\omega_3c_s^2\omega_4\omega_1^3\omega_2^3 - 36\omega_3^2v_3^2\omega_4\omega_1\omega_2^3 + 72\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2^2 - 108\omega_3^2v_1^2\omega_4^2\omega_1\omega_2^3 +$
$20\omega_3^2v_2^2\omega_4^2\omega_1^3\omega_2^2 - 36\omega_3c_s^2\omega_4^2\omega_1\omega_2^3 + 48\omega_3^2v_2^2\omega_4^2\omega_1^3 - 48\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2 + 24\omega_3^2\omega_4^2\omega_1\omega_2^2 - 432c_s^2\omega_4^2\omega_1^2\omega_2^3 + 108\omega_3^2v_2^2\omega_1^2\omega_2^3 + 36\omega_3v_3^2\omega_4^2\omega_1^3\omega_2^2 +$
$144\omega_3^2\omega_4\omega_1^2\omega_2^3 - 72\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^2 + 63\omega_3\omega_4^2\omega_1^3\omega_2^3 - 63\omega_3v_2^2\omega_4^2\omega_1^3\omega_2^3 - 432\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^3 + 24\omega_3^2v_2^2\omega_4^2\omega_1^2\omega_2 + 432\omega_3c_s^2\omega_4\omega_1^2\omega_2^3 + 72\omega_3v_2^2\omega_4^2\omega_1^3\omega_2^2 +$
$216\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^2 - 120\omega_3^2c_s^2\omega_4^2\omega_2^3 - 108\omega_3\omega_4^2\omega_1^3\omega_2^2 + 180\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^3 + 144\omega_4^2\omega_1^2\omega_2^3 - 72\omega_3^2\omega_4\omega_1^2\omega_2^2 - 36\omega_3^2\omega_4^2\omega_1\omega_2^3 - 36v_2^2\omega_4^2\omega_1^3\omega_2^2 -$
$216\omega_3^2v_1^2\omega_4^2\omega_1^2\omega_2 + 54v_3^2\omega_4^2\omega_1^3\omega_2^3 - 144\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^2 - 36\omega_3^2v_2^2\omega_4\omega_1^3\omega_2^2 - 144\omega_3^2\omega_4^2\omega_1^3 - 60\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^3 + 108\omega_3\omega_4\omega_1^3\omega_2^3 - 360\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2 +$
$36\omega_3v_2^2\omega_4\omega_1^3\omega_2^2 + 20\omega_3^2\omega_4^2\omega_1^2\omega_2^3 + 54\omega_3^2v_2^2\omega_1^3\omega_2^3 + 144\omega_3^2\omega_4^2\omega_1^3\omega_2 + 324\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^3 + 63\omega_3^2v_2^2\omega_4\omega_1^3\omega_2^3 - 144\omega_3c_s^2\omega_4^2\omega_1^3\omega_2 - 36v_3^2\omega_4^2\omega_1^3\omega_2^2 -$
$36\omega_3^2v_2^2\omega_4\omega_1^3\omega_2^2 + 54v_2^2\omega_4^2\omega_1^3\omega_2^3 - 36\omega_3^2\omega_4\omega_1\omega_2^3 + 144\omega_3^2v_1^2\omega_4^2\omega_1^3 + 48\omega_3^2v_3^2\omega_4^2\omega_2^3 - 108\omega_3v_3^2\omega_4\omega_1^3\omega_2^3 - 108\omega_3^2\omega_4^2\omega_1^2\omega_2^2 + 108\omega_3^2c_s^2\omega_4\omega_1\omega_2^3 -$
$72\omega_3\omega_4\omega_1^3\omega_2^2 + 36\omega_3v_2^2\omega_4\omega_1^3\omega_2^2 + 180\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^2 + 96\omega_3^2\omega_4^2\omega_1^2\omega_2 + 12\omega_3v_3^2\omega_4^2\omega_1\omega_2^3 - 108\omega_3^2v_3^2\omega_1^2\omega_2^3 - 36\omega_3v_2^2\omega_4\omega_1^2\omega_2^3 - 144\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2 -$
$144\omega_3\omega_4\omega_1^2\omega_2^3 - 72v_3^2\omega_4^2\omega_1^2\omega_2^3 + 108\omega_3^2v_2^2\omega_4^2\omega_1\omega_2^3 + 36\omega_3^2v_2^2\omega_4\omega_1^2\omega_2^2 + 48\omega_3^2v_3^2\omega_4^2\omega_1^3 + 72\omega_3^2v_1^2\omega_4^2\omega_2^3 + 324\omega_3c_s^2\omega_4^2\omega_1^3\omega_2^2 - 48\omega_3^2v_3^2\omega_4^2\omega_1\omega_2^2 +$
$36\omega_3^2v_3^2\omega_4\omega_1^2\omega_2^3 - 108\omega_3^2v_1^2\omega_4^2\omega_1^3\omega_2 - 24\omega_3v_2^2\omega_4^2\omega_1\omega_2^3 + 60\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2^2 + 12\omega_3\omega_4^2\omega_1\omega_2^3 - 20\omega_3^2\omega_4^2\omega_1^3\omega_2^2 + 180\omega_3v_3^2\omega_4\omega_1^2\omega_2^3 + 36\omega_3^2v_3^2\omega_4\omega_1^2\omega_2^2 -$
$72v_2^2\omega_4^2\omega_1^2\omega_2^3 + 216\omega_3^2v_1^2\omega_4^2\omega_1^2\omega_2^2 + 24\omega_3^2\omega_4^2\omega_2^3 - 36\omega_3^2v_3^2\omega_4^2\omega_1\omega_2^3 - 180\omega_3^2v_2^2\omega_4\omega_1^2\omega_2^3 - 189\omega_3c_s^2\omega_4^2\omega_1^3\omega_2^3 + 24\omega_3^2v_2^2\omega_4^2\omega_1\omega_2^2)\frac{v_3v_2\rho}{72\omega_3^2\omega_4^2\omega_1^3\omega_2^3}$

coefficient $C^{(3)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_2}$ **at** $\frac{\partial^4 v_2}{\partial x_1\partial x_2\partial x_3^2}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_2} = 0$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_2} =$
$(-2\omega_6\omega_{19}^2\omega_7^3\omega_{11}^3\omega_8\omega_5\omega_{18}^2 + 2\omega_6\omega_{19}v_3^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - 2\omega_6^2\omega_{19}^2\omega_7^3\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^2c_s^2\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 -$
$\omega_6^2\omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - \omega_6^2\omega_{19}^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2 + 2\omega_6^2\omega_{19}\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6^2\omega_{19}^2c_s^2\omega_7^3\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 - 2\omega_6^2\omega_{19}\omega_7^3\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 -$
$2\omega_6^2\omega_{19}^2\omega_7^2\omega_{11}^3\omega_8\omega_5\omega_{18}^2 - 4\omega_6^2\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^2\omega_{19}c_s^2\omega_7^3\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - \omega_6^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 +$
$2\omega_6\omega_{19}c_s^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^2\omega_{19}c_s^2\omega_7^3\omega_{11}^2\omega_8^2\omega_5\omega_{18} - 8\omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^2v_3^2\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^2\omega_{19}v_3^2\omega_7^3\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 +$
$4\omega_6\omega_{19}^2c_s^2\omega_7^3\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 + 6\omega_6^2\omega_{19}^2c_s^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5 - 3\omega_6\omega_{19}\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18} + 2\omega_6^2\omega_{19}\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5 + \omega_6\omega_{19}^2v_3^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 -$
$2\omega_6\omega_{19}^2c_s^2\omega_7^3\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 6\omega_{19}^2c_s^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18} - 2\omega_6^2\omega_{19}^2c_s^2\omega_7^3\omega_{20}\omega_{11}^3\omega_5\omega_{18}^2 - 2\omega_6^2\omega_{19}v_3^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^2\omega_{19}v_3^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5 +$
$2\omega_{19}^2v_3^2\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 6\omega_6^2\omega_{19}^2c_s^2\omega_7^3\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18} - 2\omega_6\omega_{19}^2v_3^2\omega_7^3\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6\omega_{19}\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 5\omega_6^2\omega_{19}^2\omega_7^3\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2 -$
$2\omega_{19}^2v_3^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18} - 8\omega_6^2\omega_{19}^2c_s^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^2\omega_{19}^2v_3^2\omega_7^3\omega_{20}\omega_8^2\omega_5\omega_{18}^2 + 11\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 -$
$2\omega_6^2\omega_{19}^2v_3^2\omega_7^3\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18} - 2\omega_6^2\omega_{19}c_s^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 3\omega_6\omega_{19}^2\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 + 12\omega_6^2\omega_{19}^2c_s^2\omega_7^3\omega_{20}\omega_8^2\omega_5\omega_{18}^2 +$
$2\omega_6^2\omega_{19}^2\omega_7^3\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18} + 4\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18} + 4\omega_6^2\omega_{19}v_3^2\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 + 2\omega_{19}^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18} -$
$5\omega_6^2\omega_{19}^2v_3^2\omega_7^3\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2 - 11\omega_6\omega_{19}^2c_s^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2 - 4\omega_6\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 2\omega_{19}^2\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 +$
$2\omega_6\omega_{19}^2c_s^2\omega_7^3\omega_{11}^2\omega_8^2\omega_5\omega_{18} + 2\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_{18}^2 + 4\omega_6^2\omega_{19}c_s^2\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 15\omega_6^2\omega_{19}^2c_s^2\omega_7^3\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2 -$
$8\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - \omega_6\omega_{19}^2v_3^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2 + 2\omega_6\omega_{19}^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5 + 2\omega_6\omega_{19}^2v_3^2\omega_7^3\omega_{11}^3\omega_8^2\omega_5\omega_{18} + 8\omega_6^2\omega_{19}^2c_s^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2 -$
$2\omega_6^2\omega_{19}^2v_3^2\omega_7^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6^2\omega_{19}\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^2\omega_{19}\omega_7^3\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^2c_s^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^2\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_{18}^2 +$

$$2\omega_6\omega_{19}^2v_3^2\omega_7^3\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18} - 2\omega_6\omega_{19}v_3^2\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 -$$
$$2\omega_6^2\omega_{19}^2c_s^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 + 2\omega_6^2\omega_{19}^2\omega_7^3\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 + \omega_6^2\omega_{19}^2v_3^2\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + \omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^2\omega_{19}v_3^2\omega_7^3\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 +$$
$$\omega_6^2\omega_{19}^2v_3^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2 + 6\omega_6\omega_{19}^2c_s^2\omega_7^3\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^2\omega_{19}^2\omega_7^3\omega_{11}^3\omega_8^2\omega_5\omega_{18} + 2\omega_6^2v_3^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 8\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 -$$
$$2\omega_6^2\omega_{19}^2v_3^2\omega_7^3\omega_{11}^3\omega_8\omega_5\omega_{18}^2 - 2\omega_6^2\omega_{19}c_s^2\omega_7^3\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6\omega_{19}c_s^2\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 + 15\omega_6^2\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 -$$
$$2\omega_6^2\omega_{19}^2c_s^2\omega_7^3\omega_{11}^3\omega_8\omega_5\omega_{18}^2 - 4\omega_6^2\omega_{19}^2\omega_7^3\omega_{20}\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^2\omega_{19}^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5 - 6\omega_6^2\omega_{19}^2c_s^2\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5 +$$
$$4\omega_{19}^2c_s^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2 - 2\omega_6\omega_{19}\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + \omega_6\omega_{19}^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2 - 2\omega_6^2\omega_{19}^2v_3^2\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5 + 4\omega_6^2\omega_{19}v_3^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 +$$
$$3\omega_6^2\omega_{19}^2v_3^2\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18} - 2\omega_6\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^2\omega_{19}^2v_3^2\omega_7^3\omega_{11}^2\omega_8^2\omega_5\omega_{18} +$$
$$2\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{11}^3\omega_8\omega_5\omega_{18}^2 - 2\omega_6\omega_{19}^2\omega_7^3\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^2\omega_{19}v_3^2\omega_7^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - \omega_6^2\omega_{19}^2\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^2\omega_{19}^2c_s^2\omega_7^3\omega_{11}^2\omega_8^2\omega_5\omega_{18} +$$
$$2\omega_6^2\omega_{19}^2v_3^2\omega_7^2\omega_{11}^3\omega_8\omega_5\omega_{18}^2 + 2\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 + 2\omega_6\omega_{19}^2c_s^2\omega_7^3\omega_{20}\omega_{11}^3\omega_5\omega_{18}^2 + 9\omega_6^2\omega_{19}^2c_s^2\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18} +$$
$$6\omega_6^2\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2 - 2\omega_6\omega_{19}v_3^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^2\omega_{19}^2c_s^2\omega_7^3\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + \omega_6^2\omega_{19}^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18} -$$
$$6\omega_6\omega_{19}^2c_s^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5 - 2\omega_6^2\omega_{19}\omega_7^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 4\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_5\omega_{18}^2 + 2\omega_6^2\omega_{19}^2v_3^2\omega_7^3\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 +$$
$$\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2 - 2\omega_6\omega_{19}^2\omega_7^3\omega_{11}^3\omega_8^2\omega_5\omega_{18} - 2\omega_6\omega_{19}^2v_3^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5 - 2\omega_6^2\omega_{19}^2c_s^2\omega_7^3\omega_{11}^3\omega_8^2\omega_5\omega_{18} - 2\omega_6^2v_3^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 +$$
$$3\omega_6^2\omega_{19}^2c_s^2\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_{18}^2 - \omega_6^2\omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2 - 2\omega_6^2\omega_{19}^2v_3^2\omega_7^3\omega_{11}^3\omega_8^2\omega_5\omega_{18} + 2\omega_6^2\omega_{19}^2\omega_7^3\omega_{11}^3\omega_8\omega_5\omega_{18}^2 +$$
$$2\omega_6\omega_{19}^2\omega_7^3\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - \omega_6^2\omega_{19}^2v_3^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18} - 2\omega_6^2\omega_{19}c_s^2\omega_7^3\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 + \omega_6^2\omega_{19}^2v_3^2\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 -$$
$$2\omega_6^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 13\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2 - 2\omega_6^2\omega_{19}^2v_3^2\omega_7^3\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 3\omega_6^2\omega_{19}^2\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18} -$$
$$2\omega_6^2\omega_{19}v_3^2\omega_7^3\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^2\omega_{19}^2\omega_7^2\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^2\omega_{19}^2c_s^2\omega_7^3\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - 3\omega_6^2\omega_{19}^2c_s^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18} +$$
$$2\omega_6^2\omega_{19}v_3^2\omega_7^3\omega_{11}^3\omega_8\omega_5\omega_{18}^2 + 3\omega_6^2\omega_{19}v_3^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18} - 4\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 - \omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 -$$
$$2\omega_6^2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6\omega_{19}^2c_s^2\omega_7^3\omega_{11}^3\omega_8\omega_5\omega_{18}^2 - 9\omega_6\omega_{19}^2c_s^2\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 4\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_8^2\omega_5\omega_{18}^2 +$$
$$9\omega_6\omega_{19}^2c_s^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18} + 2\omega_6\omega_{19}\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 + 2\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2 - 2\omega_6^2\omega_{19}v_3^2\omega_7\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2 +$$
$$2\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_5\omega_{18}^2 + 2\omega_6\omega_{19}c_s^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 + 2\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_5\omega_{18}^2 - 3\omega_6\omega_{19}^2v_3^2\omega_7^3\omega_{20}\omega_{11}^2\omega_8^2\omega_5\omega_{18}^2)\frac{v_3v_1\rho}{2\omega_6^2\omega_{19}^2\omega_7^3\omega_{20}\omega_{11}^3\omega_8^2\omega_5\omega_{18}^2}$$

$$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_2} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_2}$$

$$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_2} = 0$$

$$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_2} = 0$$

$$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_2} = 0$$

$$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_2} = (-108\omega_3\omega_4^2\omega_1^2\omega_2^3 + 189\omega_3^2c_s^2\omega_4\omega_1^3\omega_2^3 + 48\omega_3\omega_4^2\omega_1^3\omega_2 + 324c_s^2\omega_4^2\omega_1^3\omega_2^3 + 72\omega_4^2\omega_1^3\omega_2^2 - 24\omega_3v_1^2\omega_4^2\omega_1\omega_2^3 - 63\omega_3^2\omega_4\omega_1^3\omega_2^3 +$$
$$12\omega_3v_3^2\omega_4^2\omega_1^2\omega_2^2 + 24\omega_3^2v_1^2\omega_4^2\omega_1\omega_2^2 - 36\omega_3^2v_3^2\omega_4^2\omega_1^3\omega_2 + 336\omega_3^2c_s^2\omega_4^2\omega_1^3 - 180\omega_3^2v_1^2\omega_4\omega_1^2\omega_2^2 + 216\omega_3^2v_2^2\omega_4^2\omega_1^2\omega_2^2 - 72v_1^2\omega_4^2\omega_1^2\omega_2^3 + 216\omega_3c_s^2\omega_4\omega_1^3\omega_2^2 +$$
$$72\omega_3^2\omega_4\omega_1^3\omega_2^2 - 108\omega_4^2\omega_1^3\omega_2^3 + 72\omega_3^2v_2^2\omega_4^2\omega_2^3 - 36\omega_3v_3^2\omega_4^2\omega_1^2\omega_2^2 - 216c_s^2\omega_4^2\omega_1^2\omega_2^2 - 36\omega_3v_1^2\omega_4\omega_1^2\omega_2^3 - 24\omega_3v_3^2\omega_4^2\omega_1^3\omega_2 - 216\omega_3^2c_s^2\omega_4\omega_1^3\omega_2^2 +$$
$$48\omega_3\omega_4^2\omega_1^2\omega_2^2 - 108\omega_3^2v_2^2\omega_4^2\omega_1^3\omega_2 - 324\omega_3c_s^2\omega_4\omega_1^3\omega_2^3 + 36\omega_3^2v_1^2\omega_4\omega_1^2\omega_2^2 - 36\omega_3^2v_3^2\omega_4\omega_1\omega_2^3 + 72\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2^2 + 108\omega_3^2v_1^2\omega_4^2\omega_1\omega_2^3 + 54v_1^2\omega_4^2\omega_1^3\omega_2^3 -$$
$$36\omega_3c_s^2\omega_4^2\omega_1\omega_2^3 + 144\omega_3^2v_2^2\omega_4^2\omega_1^3 - 48\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2 + 63\omega_3^2v_1^2\omega_4\omega_1^3\omega_2^3 + 36\omega_3v_1^2\omega_4\omega_1^3\omega_2^2 + 24\omega_3^2\omega_4^2\omega_1\omega_2^2 - 432c_s^2\omega_4^2\omega_1^2\omega_2^2 + 36\omega_3v_3^2\omega_4^2\omega_1^3\omega_2^2 +$$
$$144\omega_3^2\omega_4\omega_1^2\omega_2^3 - 72\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^2 + 63\omega_3\omega_4^2\omega_1^3\omega_2^3 - 432\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^3 - 36\omega_3^2v_1^2\omega_4\omega_1^3\omega_2^2 - 216\omega_3^2v_2^2\omega_4^2\omega_1^2\omega_2 + 432\omega_3c_s^2\omega_4\omega_1^2\omega_2^3 - 36v_1^2\omega_4^2\omega_1^3\omega_2^2 +$$
$$216\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^2 - 120\omega_3^2c_s^2\omega_4^2\omega_2^3 - 108\omega_3\omega_4^2\omega_1^3\omega_2^2 + 180\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^3 + 144\omega_4^2\omega_1^2\omega_2^3 - 72\omega_3^2\omega_4\omega_1^2\omega_2^2 - 36\omega_3^2\omega_4^2\omega_1\omega_2^3 + 24\omega_3^2v_1^2\omega_4^2\omega_1^2\omega_2 +$$
$$54v_3^2\omega_4^2\omega_1^3\omega_2^3 - 144\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^2 - 144\omega_3^2\omega_4^2\omega_1^3 - 60\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^3 + 108\omega_3\omega_4\omega_1^3\omega_2^3 - 360\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2 + 36\omega_3v_3^2\omega_4\omega_1^3\omega_2^2 + 20\omega_3^2\omega_4^2\omega_1^2\omega_2^3 +$$
$$72\omega_3v_1^2\omega_4^2\omega_1^3\omega_2^2 + 54\omega_3^2v_3^2\omega_1^3\omega_2^3 + 144\omega_3^2\omega_4^2\omega_1^3\omega_2 + 324\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^3 + 108\omega_3^2v_1^2\omega_1^2\omega_2^3 - 144\omega_3c_s^2\omega_4^2\omega_1^3\omega_2 - 36v_3^2\omega_4^2\omega_1^3\omega_2^2 - 36\omega_3^2v_3^2\omega_4\omega_1^3\omega_2^2 +$$
$$20\omega_3^2v_1^2\omega_4^2\omega_1^3\omega_2^2 - 36\omega_3^2\omega_4\omega_1\omega_2^3 + 48\omega_3^2v_1^2\omega_4^2\omega_1^3 - 63\omega_3v_1^2\omega_4^2\omega_1^3\omega_2^3 + 48\omega_3^2v_3^2\omega_4^2\omega_2^3 - 108\omega_3v_3^2\omega_4\omega_1^3\omega_2^3 - 108\omega_3^2\omega_4^2\omega_1^2\omega_2^2 + 108\omega_3^2c_s^2\omega_4\omega_1\omega_2^3 -$$
$$72\omega_3\omega_4\omega_1^3\omega_2^2 + 180\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^2 + 96\omega_3^2\omega_4^2\omega_1^2\omega_2 + 12\omega_3v_3^2\omega_4^2\omega_1\omega_2^2 - 108\omega_3^2v_3^2\omega_1^2\omega_2^3 - 60\omega_3v_1^2\omega_4^2\omega_1^2\omega_2^2 - 144\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2 - 144\omega_3\omega_4\omega_1^2\omega_2^3 -$$
$$72v_3^2\omega_4^2\omega_1^2\omega_2^3 - 108\omega_3^2v_2^2\omega_4^2\omega_1\omega_2^3 + 48\omega_3^2v_3^2\omega_4^2\omega_1^3 - 96\omega_3^2v_1^2\omega_4^2\omega_2^3 + 324\omega_3c_s^2\omega_4^2\omega_1^3\omega_2^2 - 20\omega_3^2v_1^2\omega_4^2\omega_1^2\omega_2^3 - 48\omega_3^2v_3^2\omega_4^2\omega_1\omega_2^2 + 36\omega_3^2v_3^2\omega_4\omega_1^2\omega_2^3 -$$
$$72\omega_3^2v_1^2\omega_4^2\omega_1^3\omega_2 + 60\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2^2 + 12\omega_3\omega_4^2\omega_1\omega_2^3 + 144\omega_3v_1^2\omega_4^2\omega_1^2\omega_2^3 - 20\omega_3^2\omega_4^2\omega_1^3\omega_2^2 - 24\omega_3v_1^2\omega_4^2\omega_1^3\omega_2 + 180\omega_3v_3^2\omega_4\omega_1^2\omega_2^3 +$$
$$36\omega_3^2v_3^2\omega_4\omega_1^2\omega_2^2 + 72\omega_3^2v_1^2\omega_4\omega_1\omega_2^3 - 36\omega_3^2v_1^2\omega_4^2\omega_1^2\omega_2^2 + 24\omega_3^2\omega_4^2\omega_2^3 - 36\omega_3^2v_3^2\omega_4^2\omega_1\omega_2^3 - 54\omega_3^2v_1^2\omega_1^3\omega_2^3 - 189\omega_3c_s^2\omega_4^2\omega_1^3\omega_2^3)\frac{v_3v_1\rho}{72\omega_3^2\omega_4^2\omega_1^3\omega_2^3}$$

coefficient $C^{(3)}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_3}$ **at** $\frac{\partial^4 v_3}{\partial x_1\partial x_2\partial x_3^2}$**:**

$$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_3} = 0$$

$$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_3} = (-\omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2 + \omega_6^2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 + \omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - 3\omega_6^2\omega_{19}v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2 + \omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18} +$$
$$\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18} + 3\omega_6^2\omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 + \omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8 - \omega_6^2\omega_{19}^2c_s^2\omega_7\omega_{11}^3\omega_8\omega_{18}^2 - 3\omega_6^2\omega_{19}^2v_3^2\omega_7\omega_{11}^3\omega_8\omega_{18}^2 + \omega_6^2\omega_{19}^2\omega_7^2\omega_{11}^3\omega_{18}^2 -$$
$$\omega_6^2\omega_{19}^2\omega_7^2\omega_{11}^2\omega_8\omega_{18} + \omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2 + \omega_6\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - \omega_6\omega_{19}^2\omega_7^2\omega_{11}^3\omega_{18}^2 + 3\omega_6^2\omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8 + \omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8 +$$
$$\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8 - 3\omega_6\omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_{18}^2 + \omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{11}^3\omega_8\omega_{18} + 3\omega_6\omega_{19}^2v_3^2\omega_7^2\omega_{11}^3\omega_8\omega_{18} - \omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_{18}^2 -$$
$$2\omega_6^2\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - \omega_6^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 - 3\omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18} - \omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{11}^3\omega_{18}^2 - 3\omega_6^2\omega_{19}^2v_3^2\omega_7^2\omega_{11}^2\omega_8\omega_{18}^2 + \omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}^2\omega_{18}^2 -$$
$$6\omega_6^2\omega_{19}^2v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - \omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{11}^2\omega_8\omega_{18}^2 - \omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18} + 6\omega_6^2\omega_{19}v_3^2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 - \omega_6^2\omega_{19}c_s^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 -$$
$$\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{11}^3\omega_8\omega_{18}^2 - \omega_6^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18} - \omega_6^2\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18} - 3\omega_6\omega_{19}^2v_3^2\omega_7^2\omega_{11}^3\omega_8\omega_{18}^2 - 3\omega_6^2\omega_{19}v_3^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 +$$
$$2\omega_6^2\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 + 3\omega_6^2\omega_{19}^2v_3^2\omega_7^2\omega_{11}^2\omega_8\omega_{18} + \omega_6^2\omega_{19}^2\omega_7\omega_{11}^3\omega_8\omega_{18}^2 - 2\omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - \omega_6^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18}^2 +$$
$$\omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{11}^2\omega_8\omega_{18} + \omega_6^2\omega_{19}\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 - 3\omega_6^2\omega_{19}^2v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - 2\omega_6^2\omega_{19}\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 - 3\omega_6\omega_{19}v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 +$$
$$2\omega_6\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18} + 3\omega_6\omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2 - \omega_6^2\omega_{19}\omega_7^2\omega_{11}^2\omega_8\omega_{18}^2 - \omega_6\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 + \omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{11}^2\omega_8\omega_{18}^2 +$$
$$6\omega_6^2\omega_{19}v_3^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18} + \omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2 + \omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{11}^3\omega_{18}^2 + 3\omega_6^2\omega_{19}v_3^2\omega_7^2\omega_{11}^2\omega_8\omega_{18}^2 + \omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 -$$

$3\omega_6^2\omega_{19}^2v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_{18}^2 - \omega_6^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 + \omega_6^2\omega_{19}^2\omega_7^2\omega_{11}^2\omega_8\omega_{18}^2 - \omega_6\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18} - \omega_6^2\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_{18}^2 -$
$3\omega_6^2v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - 3\omega_6\omega_{19}^2v_3^2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18} + 3\omega_6^2\omega_{19}v_3^2\omega_7\omega_{11}^3\omega_8\omega_{18}^2 - 3\omega_6^2\omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8 - 3\omega_6^2\omega_{19}v_3^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 +$
$\omega_6^2\omega_{19}c_s^2\omega_7\omega_{11}^3\omega_8\omega_{18}^2 - \omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8 + 2\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18} - \omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8 + 3\omega_6^2\omega_{19}^2v_3^2\omega_7\omega_{11}^3\omega_{18}^2 + \omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18} +$
$2\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - \omega_6^2\omega_{19}\omega_7\omega_{11}^3\omega_8\omega_{18}^2 - \omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 + 6\omega_6^2\omega_{19}^2v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18} + 3\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2 +$
$\omega_6^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 + 2\omega_6^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 + \omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{11}^3\omega_8\omega_{18}^2 + 3\omega_6^2\omega_{19}^2v_3^2\omega_7^2\omega_{11}^3\omega_8\omega_{18}^2 + \omega_6\omega_{19}^2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18} +$
$\omega_6^2\omega_{19}^2c_s^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - 2\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - 2\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_8\omega_{18}^2 + 3\omega_6^2\omega_{19}^2v_3^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 + \omega_6\omega_{19}\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 -$
$6\omega_6\omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 + \omega_6^2\omega_{19}^2\omega_7^2\omega_{11}^3\omega_8\omega_{18} + 2\omega_6\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - \omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_{18}^2 + 6\omega_6\omega_{19}^2v_3^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 -$
$\omega_6\omega_{19}\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 - 3\omega_6^2\omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18} - \omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - \omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2 + \omega_6\omega_{19}^2\omega_7^2\omega_{11}^3\omega_8\omega_{18}^2 -$
$\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18} - 3\omega_6^2\omega_{19}^2v_3^2\omega_7^2\omega_{11}^3\omega_{18}^2 - 2\omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18} + \omega_6\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_{18}^2 - 2\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18} -$
$\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18} - 9\omega_6^2\omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2 - \omega_6\omega_{19}^2\omega_7^2\omega_{11}^3\omega_8\omega_{18} + 6\omega_6^2\omega_{19}v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 + 6\omega_6^2\omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_8\omega_{18}^2 -$
$\omega_6^2\omega_{19}^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - 3\omega_6^2\omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18} - 3\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}\omega_8\omega_{18}^2 - \omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 + 2\omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 +$
$2\omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_8\omega_{18}^2 - \omega_6^2\omega_{19}^2\omega_7^2\omega_{11}^3\omega_8\omega_{18}^2 + \omega_6^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 - 2\omega_6^2\omega_{19}\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 - 3\omega_6\omega_{19}v_3^2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 -$
$\omega_6^2\omega_{19}\omega_7\omega_{11}^3\omega_{18}^2 + 3\omega_6^2v_3^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 - \omega_6\omega_{19}c_s^2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 + 3\omega_6\omega_{19}^2v_3^2\omega_7^2\omega_{11}^3\omega_{18}^2 - 3\omega_6\omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8 + \omega_6^2\omega_{19}\omega_7^2\omega_{11}^3\omega_8\omega_{18}^2 -$
$\omega_6\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8 + 3\omega_6\omega_{19}v_3^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 - \omega_6^2c_s^2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 - 3\omega_6^2\omega_{19}v_3^2\omega_7^2\omega_{11}^3\omega_8\omega_{18}^2 + \omega_6\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 -$
$\omega_6^2\omega_{19}c_s^2\omega_7^2\omega_{11}^3\omega_8\omega_{18}^2 - 3\omega_6^2v_3^2\omega_7\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 + 3\omega_6^2\omega_{19}^2v_3^2\omega_7^2\omega_{11}^3\omega_8\omega_{18}^2 + \omega_6\omega_{19}c_s^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 + 3\omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 +$
$\omega_6^2\omega_{19}^2\omega_7\omega_{20}\omega_{11}^2\omega_8\omega_{18} + \omega_6^2\omega_{19}^2c_s^2\omega_7\omega_{11}^3\omega_{18}^2 + \omega_6^2\omega_{19}^2c_s^2\omega_7\omega_{20}\omega_{11}\omega_8\omega_{18}^2 + 3\omega_6^2\omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2 + \omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_8\omega_{18}^2 +$
$3\omega_6^2\omega_{19}^2v_3^2\omega_7^2\omega_{20}\omega_{11}^2\omega_{18}^2 - \omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{11}^3\omega_8\omega_{18} - 3\omega_6^2\omega_{19}^2v_3^2\omega_7^2\omega_{11}^3\omega_8\omega_{18} + \omega_6^2\omega_{19}^2c_s^2\omega_7^2\omega_{20}\omega_{11}^2\omega_{18}^2)\frac{v_2v_1\rho}{\omega_6^2\omega_{19}^2\omega_7^2\omega_{20}\omega_{11}^3\omega_8\omega_{18}^2}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_3}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_3} = 0$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_3} = 0$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_3} = 0$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_y\mathrm{D}_z^2v_3} =$
$(-36\omega_3^2c_s^2\omega_4\omega_1^2\omega_2 + 18\omega_3^2c_s^2\omega_1^2\omega_2^3 + 20\omega_3^2\omega_4\omega_1^2\omega_2 + \omega_3v_1^2\omega_4\omega_1^2\omega_2^2 - 4\omega_3^2\omega_4\omega_2^3 - 3\omega_3^2v_1^2\omega_4\omega_1^3\omega_2 + 36\omega_3^2v_3^2\omega_4\omega_1\omega_2^2 + 18\omega_3c_s^2\omega_4\omega_1^3\omega_2^2 - 3\omega_3^2v_3^2\omega_4\omega_1\omega_2^3 -$
$3\omega_3^2v_2^2\omega_1^3\omega_2^2 - 2\omega_3v_1^2\omega_4\omega_1^3\omega_2 - 3\omega_3v_1^2\omega_4\omega_1^2\omega_2^3 - 2\omega_3\omega_4\omega_1\omega_2^3 + 18\omega_3^2c_s^2\omega_1^2\omega_2^2 + \omega_3v_2^2\omega_4\omega_1\omega_2^3 + 4\omega_3^2v_1^2\omega_4\omega_2^3 - 4\omega_3^2v_2^2\omega_4\omega_1\omega_2^2 + 12\omega_3^2v_3^2\omega_4\omega_1^3 +$
$3v_2^2\omega_4\omega_1^2\omega_2^3 - 6\omega_3\omega_1^3\omega_2^2 + 6\omega_3^2v_1^2\omega_4\omega_1^2\omega_2^2 - 3\omega_3v_1^2\omega_1^2\omega_2^3 + 6\omega_3c_s^2\omega_4\omega_1^2\omega_2^2 - 3\omega_3^2v_1^2\omega_1\omega_2^3 - 4\omega_3^2v_1^2\omega_4\omega_1^2\omega_2 + 3\omega_3v_1^2\omega_1^3\omega_2^2 - 3v_2^2\omega_4\omega_1^3\omega_2^2 + 6\omega_3\omega_1^2\omega_2^3 +$
$3\omega_3v_1^2\omega_4\omega_1^3\omega_2^2 + 6\omega_3^2\omega_4\omega_1^3\omega_2 + 3\omega_3^2v_2^2\omega_1^2\omega_2^3 - 12\omega_3^2v_3^2\omega_4\omega_2^3 + 4\omega_3^2v_1^2\omega_4\omega_1^3 - 18\omega_3^2c_s^2\omega_4\omega_1^3\omega_2 + 6\omega_3^2\omega_1\omega_2^3 - 12\omega_3c_s^2\omega_4\omega_1^3\omega_2 - 18\omega_3c_s^2\omega_4\omega_1^2\omega_2^3 -$
$18\omega_3^2c_s^2\omega_1^2\omega_2^2 + 36\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^2 - 12\omega_3^2\omega_4\omega_1^3 + 3\omega_3^2v_2^2\omega_1^2\omega_2^2 - 12\omega_3^2\omega_4\omega_1^2\omega_2^2 - 6\omega_3^2\omega_1^2\omega_2^3 - 36\omega_3^2v_3^2\omega_4\omega_1^2\omega_2 + 6\omega_3c_s^2\omega_4\omega_1\omega_2^3 + 3\omega_3^2v_1^2\omega_1^2\omega_2^2 -$
$12\omega_3^2c_s^2\omega_4\omega_1\omega_2^2 + 20\omega_3^2c_s^2\omega_4\omega_2^3 - 4\omega_3^2\omega_4\omega_1\omega_2^2 + 18c_s^2\omega_4\omega_1^2\omega_2^3 - 18\omega_3c_s^2\omega_1^2\omega_2^3 + 4\omega_3^2v_2^2\omega_4\omega_1^3 + 3\omega_3^2v_1^2\omega_1^2\omega_2^3 - 3v_1^2\omega_4\omega_1^3\omega_2^2 - 4\omega_3^2v_2^2\omega_4\omega_1^2\omega_2 - 6\omega_3^2\omega_1^2\omega_2^2 +$
$6\omega_3^2\omega_4\omega_1\omega_2^3 - 3\omega_3^2v_2^2\omega_1\omega_2^3 - 6\omega_4\omega_1^2\omega_2^3 - 18\omega_3^2c_s^2\omega_4\omega_1\omega_2^3 - 6\omega_3\omega_4\omega_1^3\omega_2^2 + 3\omega_3v_2^2\omega_1^3\omega_2^2 + 3\omega_3v_2^2\omega_4\omega_1^3\omega_2^2 + \omega_3v_1^2\omega_4\omega_1\omega_2^3 + 6\omega_4\omega_1^3\omega_2^2 + 4\omega_3^2v_2^2\omega_4\omega_2^3 +$
$4\omega_3\omega_4\omega_1^3\omega_2 - 3\omega_3v_2^2\omega_4\omega_1^2\omega_2^2 - 3\omega_3v_2^2\omega_1^2\omega_2^3 - 2\omega_3v_2^2\omega_4\omega_1^3\omega_2 + 6\omega_3\omega_4\omega_1^2\omega_2^3 + 6\omega_3^2v_2^2\omega_4\omega_1^2\omega_2^2 - 3\omega_3^2v_1^2\omega_1^3\omega_2^2 + 3v_1^2\omega_4\omega_1^2\omega_2^3 - 4\omega_3^2v_1^2\omega_4\omega_1\omega_2^2 -$
$18\omega_3^2c_s^2\omega_1\omega_2^3 - 2\omega_3\omega_4\omega_1^2\omega_2^2 + \omega_3v_2^2\omega_4\omega_1^2\omega_2^2 + 18\omega_3c_s^2\omega_1^3\omega_2^2 - 18c_s^2\omega_4\omega_1^3\omega_2^2 - 3\omega_3^2v_1^2\omega_4\omega_1\omega_2^3 + 28\omega_3^2c_s^2\omega_4\omega_1^3 + 6\omega_3^2\omega_1^3\omega_2^2 - 3\omega_3^2v_2^2\omega_4\omega_1^3\omega_2)\frac{v_2v_1\rho}{6\omega_3^2\omega_4\omega_1^3\omega_2^3}$

coefficient $C^{(3)}_{\mathrm{D}_y^2\mathrm{D}_z^2\rho}$ **at** $\frac{\partial^4\rho}{\partial x_2^2\partial x_3^2}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_y^2\mathrm{D}_z^2\rho} = (24 - \omega^3 + 14\omega^2 - 36\omega + 36v_3^2\omega - 46c_s^2\omega^2 + 5c_s^2\omega^3 + v_3^2\omega^3 - 24v_3^2 + 108c_s^2\omega - 72c_s^2 - 14v_3^2\omega^2)\frac{v_3c_s^2}{12\omega^3}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z^2\rho} = (-6\omega_{19}^2c_s^2\omega_{16}\omega_7^3\omega_{11}^3 + 36\omega_{19}v_3^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{11}^3 - 12\omega_{19}^2\omega_{16}v_2^2\omega_7^3\omega_{23} + 12\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{11} + 2\omega_{19}^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{11}^2 +$
$108\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{11}^3 - 24\omega_{19}\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11}^2 - 24\omega_{19}^2\omega_{16}v_2^2\omega_7\omega_{23}\omega_{11}^2 + 36\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23} + 12\omega_{19}^2v_3^2\omega_{16}v_2^2\omega_7^3\omega_{23} +$
$18\omega_{19}^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11} + 12\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11}^2 + 12\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{11} - 6\omega_{19}^2c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{11}^2 + 6\omega_{19}^2v_3^2c_s^2\omega_{16}\omega_7^3\omega_{11}^3 - 12\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{11}^2 +$
$\omega_{19}^2v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{11}^3 - 36\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{11}^2 - 36c_s^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{11}^3 - 6\omega_{19}^2v_3^2c_s^2\omega_7^3\omega_{11}^3 - \omega_{19}^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{11}^3 + 12\omega_{19}\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11}^3 +$
$12\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^2\omega_{11}^3 + 72\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7\omega_{23}\omega_{11}^2 - 18\omega_{19}^2v_3^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11} + 12\omega_{19}^2v_3^2v_2^2\omega_7^2\omega_{11}^3 + 12\omega_{19}c_s^4\omega_{16}\omega_7\omega_{23}\omega_{11}^3 -$
$12\omega_{19}v_3^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{11}^2 - 12v_3^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{11}^3 + 24\omega_{19}^2v_3^2\omega_{16}v_2^2\omega_7\omega_{23}\omega_{11}^2 - 54\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11} + 6\omega_{19}^2c_s^2\omega_{16}\omega_7^3\omega_{11}^2 -$
$6\omega_{19}^2v_3^2c_s^2\omega_{16}\omega_7^3\omega_{11}^2 + 12\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{11}^3 - 2\omega_{19}^2v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{11}^2 + 36\omega_{19}^2c_s^4\omega_{16}\omega_7^3\omega_{23} - 12\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11}^3 + 5\omega_{19}^2c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{11}^3 +$
$12\omega_{19}c_s^2\omega_{16}\omega_7\omega_{23}\omega_{11}^3 - 12\omega_{19}^2v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{11} - 12c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{11}^3 + 6\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{11}^3 - 12\omega_{19}^2v_3^2c_s^2\omega_{16}\omega_7^2\omega_{11}^3 + 12\omega_{19}^2v_2^2\omega_7^2\omega_{23}\omega_{11}^2 +$
$6\omega_{19}^2v_3^2c_s^2\omega_7^3\omega_{23}\omega_{11}^2 - 12\omega_{19}^2v_3^2c_s^2\omega_{16}\omega_7\omega_{23}\omega_{11}^2 + 180\omega_{19}^2c_s^4\omega_{16}\omega_7\omega_{23}\omega_{11}^3 - 12v_3^2c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}^3 - 12c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{11}^3 + 30\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{11}^3 +$
$6\omega_{19}^2v_3^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11}^2 + 12\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^3\omega_{11}^2 - 6\omega_{19}^2c_s^2\omega_7^3\omega_{23}\omega_{11}^2 - 12\omega_{19}^2v_3^2v_2^2\omega_7^2\omega_{23}\omega_{11}^2 + 24\omega_{19}\omega_{16}v_2^2\omega_7\omega_{23}\omega_{11}^3 + 12\omega_{19}^2c_s^2\omega_{16}\omega_7^2\omega_{11}^3 -$
$12\omega_{19}^2c_s^2\omega_{16}\omega_7\omega_{23}\omega_{11}^3 - 36\omega_{19}^2c_s^2v_2^2\omega_7^2\omega_{23}\omega_{11}^2 + 18\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11}^2 - 84\omega_{19}^2c_s^4\omega_{16}\omega_7\omega_{23}\omega_{11}^2 + 18\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}^3 +$
$12\omega_{19}^2v_3^2c_s^2\omega_{16}\omega_7\omega_{23}\omega_{11}^3 - 18\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{11}^2 - 36\omega_{19}^2c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{11} + 12c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{11}^2 - 6\omega_{19}^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11}^2 - 36\omega_{19}^2c_s^4\omega_7^2\omega_{23}\omega_{11}^2 -$
$12\omega_{19}c_s^2\omega_{16}\omega_7^2\omega_{11}^3 - 6\omega_{19}^2v_3^2v_2^2\omega_7^3\omega_{11}^3 + 12\omega_{19}^2c_s^2\omega_{16}\omega_7\omega_{23}\omega_{11}^2 - 12\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^3\omega_{11}^3 + 12\omega_{19}^2v_3^2c_s^2\omega_7^2\omega_{11}^3 + 12\omega_{19}\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11} -$
$42\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{11}^2 + 12c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{11}^2 + 12\omega_{19}^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{11} - 88\omega_{19}^2c_s^4\omega_{16}\omega_7^2\omega_{23}\omega_{11}^3 + 12\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{11}^3 - 6\omega_{19}^2v_3^2\omega_{16}v_2^2\omega_7^3\omega_{11}^2 +$
$12\omega_{19}\omega_{16}v_2^2\omega_7^3\omega_{11}^3 + 18\omega_{19}^2v_3^2c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}^2 - 18\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^3\omega_{11}^2 + 18\omega_{19}^2c_s^4\omega_{16}\omega_7^3\omega_{11}^3 - 12\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{11} + 12\omega_{19}v_3^2\omega_{16}v_2^2\omega_7^2\omega_{11}^3 +$
$12\omega_{19}^2v_3^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{11} - 36\omega_{19}\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{11}^3 + 36\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^2\omega_{11}^3 + 36c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11}^3 + 36\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{11}^2 + 72\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11}^2 +$
$12\omega_{19}^2c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}^3 + 36\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{11} + 6\omega_{19}^2\omega_{16}v_2^2\omega_7^3\omega_{11}^2 + 12v_3^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11}^3 + 24\omega_{19}v_3^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11}^2 - 18\omega_{19}^2c_s^4\omega_{16}\omega_7^3\omega_{11}^2 -$
$12\omega_{19}^2v_2^2\omega_7^2\omega_{11}^3 + 12\omega_{19}^2v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23} - 12\omega_{19}^2v_3^2c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}^3 + 18\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^3\omega_{11}^3 + 36\omega_{19}^2c_s^2v_2^2\omega_7^2\omega_{11}^3 + 150\omega_{19}^2c_s^4\omega_{16}\omega_7^2\omega_{23}\omega_{11}^2 -$

$12\omega_{19}v_3^2c_s^2\omega_{16}\omega_7\omega_{23}\omega_{11}^3+6\omega_{19}^2v_3^2\omega_{16}v_2^2\omega_7^3\omega_{11}^3-12\omega_{19}\omega_{16}v_2^2\omega_7^3\omega_{11}^2-12\omega_{19}^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{11}+6\omega_{19}^2c_s^2\omega_7^3\omega_{11}^3+36\omega_{19}^2c_s^4\omega_7^2\omega_{11}^3-$
$6\omega_{19}^2\omega_{16}v_2^2\omega_7^3\omega_{11}^3-12v_3^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11}^2-12\omega_{19}v_3^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11}^3-12\omega_{19}^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{11}+18\omega_{19}^2\omega_{16}v_2^2\omega_{23}\omega_{11}^2-18\omega_{19}^2c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}^2-$
$36c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11}^2-36\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11}^3-36\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{11}^3-72\omega_{19}c_s^2\omega_{16}v_2^2\omega_7\omega_{23}\omega_{11}^3-24\omega_{19}v_3^2\omega_{16}v_2^2\omega_7\omega_{23}\omega_{11}^3-$
$12\omega_{19}v_3^2\omega_{16}v_2^2\omega_7^3\omega_{11}^3-36\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{11}^3-36\omega_{19}^2c_s^4\omega_{16}\omega_7^2\omega_{11}^3-6\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{11}^3-12v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{11}^2-12\omega_{19}\omega_{16}v_2^2\omega_7^2\omega_{11}^3+$
$24\omega_{19}^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{11}^2+18\omega_{19}^2c_s^4\omega_7^3\omega_{23}\omega_{11}^2-48\omega_{19}^2c_s^4\omega_{16}\omega_7^2\omega_{23}\omega_{11}+36\omega_{19}c_s^4\omega_{16}\omega_7^2\omega_{11}^3+12\omega_{19}^2c_s^2\omega_7^2\omega_{23}\omega_{11}^2+36\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{11}^2-$
$24\omega_{19}^2v_3^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{11}^2-42\omega_{19}c_s^4\omega_{16}\omega_7^2\omega_{23}\omega_{11}^3+12c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}^3-36\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11}+12\omega_{19}v_3^2\omega_{16}v_2^2\omega_7^3\omega_{11}^2-18\omega_{19}^2c_s^4\omega_7^3\omega_{11}^3+$
$18\omega_{19}^2c_s^2v_2^2\omega_7^3\omega_{23}\omega_{11}^2+12\omega_{19}^2\omega_{16}v_2^2\omega_7^2\omega_{11}^3-72\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{11}^2-12\omega_{19}v_3^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11}+6\omega_{19}^2v_3^2v_2^2\omega_7^3\omega_{23}\omega_{11}^2-96\omega_{19}^2c_s^4\omega_{16}\omega_{23}\omega_{11}^3-$
$6\omega_{19}^2v_2^2\omega_7^3\omega_{23}\omega_{11}^2-36\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^2\omega_{11}^3-18\omega_{19}^2c_s^2v_2^2\omega_7^3\omega_{11}^3-18\omega_{19}c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}^3+12c_s^4\omega_{16}\omega_7^2\omega_{23}\omega_{11}^3-12\omega_{19}^2c_s^2\omega_7^2\omega_{11}^3-$
$12\omega_{19}^2v_3^2\omega_{16}v_2^2\omega_7^2\omega_{11}^3+18\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{11}^2+12v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{11}^3+6\omega_{19}^2v_2^2\omega_7^3\omega_{11}^3-12\omega_{19}^2v_3^2c_s^2\omega_7^2\omega_{23}\omega_{11}^2)\frac{v_3}{12\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}\omega_{11}^3}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_y^2\mathrm{D}_z^2\rho}=C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z^2\rho}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z^2\rho}=(12\omega_{19}v_3^2\omega_{16}\omega_7\omega_{11}^3+36\omega_{19}^2c_s^2\omega_7\omega_{11}^3+12\omega_{19}^2\omega_7\omega_{23}\omega_{11}^2-36c_s^2\omega_{16}\omega_7\omega_{23}\omega_{11}^3-12\omega_{19}\omega_{16}\omega_7\omega_{11}^3-12v_3^2\omega_{16}\omega_7\omega_{23}\omega_{11}^3-$
$36\omega_{19}^2c_s^2\omega_7\omega_{23}\omega_{11}^2-6\omega_{19}^2v_3^2\omega_7^2\omega_{11}^3+18\omega_{19}v_3^2\omega_{16}\omega_7\omega_{23}\omega_{11}^3-12\omega_{19}^2v_3^2\omega_{16}\omega_7\omega_{11}^3+54\omega_{19}c_s^2\omega_{16}\omega_7\omega_{23}\omega_{11}^3+12\omega_{19}^2\omega_{16}\omega_7\omega_{23}\omega_{11}^3+$
$12\omega_{19}^2\omega_{16}\omega_{23}\omega_{11}^2+36\omega_{19}c_s^2\omega_{16}\omega_7^2\omega_{11}^2-36\omega_{19}^2c_s^2\omega_{16}\omega_{23}\omega_{11}^2-6\omega_{19}^2\omega_{16}\omega_7^2\omega_{11}^3-36\omega_{19}c_s^2\omega_{16}\omega_{23}\omega_{11}^3+18\omega_{19}^2c_s^2\omega_{16}\omega_7^2\omega_{11}^3-40\omega_{19}^2c_s^2\omega_{16}\omega_7\omega_{23}\omega_{11}^3-$
$12\omega_{19}^2v_3^2\omega_{16}\omega_7\omega_{23}\omega_{11}^3+12\omega_{19}^2v_3^2\omega_{16}\omega_7^2\omega_{23}+6\omega_{19}^2v_3^2\omega_7^2\omega_{23}\omega_{11}^2+36\omega_{19}^2c_s^2\omega_{16}\omega_{23}\omega_{11}^3-12\omega_{19}^2\omega_{16}\omega_{23}\omega_{11}^3-36\omega_{19}c_s^2\omega_{16}\omega_7^2\omega_{11}^3-$
$18\omega_{19}^2\omega_{16}\omega_7\omega_{23}\omega_{11}^2+18\omega_{19}^2v_3^2\omega_{16}\omega_7\omega_{23}\omega_{11}^2-18\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{11}^3+6\omega_{19}^2\omega_7^2\omega_{11}^3-18\omega_{19}^2c_s^2\omega_{16}\omega_7^2\omega_{11}^2+54\omega_{19}^2c_s^2\omega_{16}\omega_7\omega_{23}\omega_{11}^2+12\omega_{16}\omega_7\omega_{23}\omega_{11}^3+$
$6\omega_{19}^2\omega_{16}\omega_7^2\omega_{11}^2-\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}^3+36\omega_{19}c_s^2\omega_{16}\omega_7\omega_{11}^3+\omega_{19}^2v_3^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}^3-18\omega_{19}\omega_{16}\omega_7^2\omega_{23}\omega_{11}^2-12\omega_{19}^2\omega_7\omega_{11}^3+5\omega_{19}^2c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}^3+$
$12\omega_{16}\omega_7^2\omega_{23}\omega_{11}^2+2\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}^2-12\omega_{19}v_3^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}-36\omega_{19}c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}-12\omega_{19}^2v_3^2\omega_7\omega_{23}\omega_{11}^2+12\omega_{19}^2\omega_{16}\omega_7\omega_{11}^3-12\omega_{16}\omega_7^2\omega_{23}\omega_{11}^3-$
$6\omega_{19}^2c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}^2-2\omega_{19}^2v_3^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}^2+6\omega_{19}\omega_{16}\omega_7^2\omega_{23}\omega_{11}^3-36\omega_{19}^2c_s^2\omega_{16}\omega_7\omega_{11}^3+12\omega_{19}v_3^2\omega_{16}\omega_7^2\omega_{11}^2-36\omega_{19}^2c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}-$
$36c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}^2-12\omega_{19}^2v_3^2\omega_{16}\omega_{23}\omega_{11}^2+12\omega_{19}\omega_{16}\omega_7^2\omega_{11}^3-12\omega_{19}^2v_3^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}-12v_3^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}^2+12\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}+12\omega_{19}^2v_3^2\omega_7\omega_{11}^3-$
$12\omega_{19}v_3^2\omega_{16}\omega_{23}\omega_{11}^3+18\omega_{19}v_3^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}^2+6\omega_{19}^2v_3^2\omega_{16}\omega_7^2\omega_{11}^3+54\omega_{19}c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}^2+12v_3^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}^3+12\omega_{19}\omega_{16}\omega_7^2\omega_{23}\omega_{11}-$
$12\omega_{19}\omega_{16}\omega_7^2\omega_{11}^2+18\omega_{19}^2c_s^2\omega_7^2\omega_{23}\omega_{11}^2+36\omega_{19}^2c_s^2\omega_{16}\omega_7^2\omega_{23}+36c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}^3+12\omega_{19}^2v_3^2\omega_{16}\omega_{23}\omega_{11}^3-12\omega_{19}v_3^2\omega_{16}\omega_7^2\omega_{11}^3-6\omega_{19}^2\omega_7^2\omega_{23}\omega_{11}^2-$
$12\omega_{19}^2\omega_{16}\omega_7^2\omega_{23}+12\omega_{19}\omega_{16}\omega_{23}\omega_{11}^3-18\omega_{19}c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}^3-18\omega_{19}^2c_s^2\omega_7^2\omega_{11}^3-6\omega_{19}^2v_3^2\omega_{16}\omega_7^2\omega_{11}^2-6\omega_{19}v_3^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}^3)\frac{v_3c_s^2}{12\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}\omega_{11}^3}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_y^2\mathrm{D}_z^2\rho}=C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z^2\rho}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z^2\rho}=(6\omega_6^3\omega_3^2\omega_{10}+18\omega_6\omega_3^2\omega_{10}^2+12\omega_6^3\omega_{10}-12\omega_6^2v_3^2\omega_{10}^2-54\omega_6\omega_3^2c_s^2\omega_{10}^2-12\omega_6^2\omega_3^2v_3^2-6\omega_6^2\omega_3\omega_{10}^2+6\omega_6^2\omega_3v_3^2\omega_{10}^2-36\omega_6^2\omega_3^2c_s^2-$
$40\omega_6^3\omega_3c_s^2\omega_{10}^2+36\omega_6^2\omega_3c_s^2\omega_{10}+12\omega_6^2\omega_{10}^2+18\omega_6^3\omega_3v_3^2\omega_{10}+18\omega_6^2\omega_3c_s^2\omega_{10}^2-12\omega_3^2\omega_{10}^2-12\omega_6^3\omega_3v_3^2-12\omega_3^3\omega_3v_3^2\omega_{10}^2-12\omega_6^2\omega_3\omega_{10}+$
$12\omega_6^2\omega_3v_3^2\omega_{10}+54\omega_6^3\omega_3c_s^2\omega_{10}-12\omega_6^3\omega_{10}^2-\omega_6^3\omega_3^2\omega_{10}^2-36\omega_6^2c_s^2\omega_{10}^2-18\omega_6\omega_3^2v_3^2\omega_{10}^2-36\omega_6^3\omega_3c_s^2+\omega_6^3\omega_3^2v_3^2\omega_{10}^2+36\omega_3^2c_s^2\omega_{10}^2+12\omega_6^2\omega_3^2c_s^2\omega_{10}^2+$
$12\omega_6^2\omega_3^2-18\omega_6^3\omega_3^2c_s^2\omega_{10}+12\omega_6^3\omega_3\omega_{10}^2+36\omega_6^3\omega_3^2c_s^2+6\omega_6^2\omega_3^2v_3^2\omega_{10}+12\omega_6^3v_3^2\omega_{10}^2+12\omega_6^3\omega_3+12\omega_6^3\omega_3^2v_3^2-36\omega_6^3c_s^2\omega_{10}-6\omega_6^2\omega_3^2\omega_{10}+36\omega_6^3c_s^2\omega_{10}^2-$
$4\omega_6^2\omega_3^2\omega_{10}^2-12\omega_6^3v_3^2\omega_{10}-12\omega_6^3\omega_3^2+5\omega_6^3\omega_3^2c_s^2\omega_{10}^2+12\omega_3^2v_3^2\omega_{10}^2-18\omega_6^3\omega_3\omega_{10}+4\omega_6^2\omega_3^2v_3^2\omega_{10}^2-6\omega_6^3\omega_3^2v_3^2\omega_{10}+18\omega_6^2\omega_3^2c_s^2\omega_{10})\frac{v_3c_s^2}{12\omega_6^3\omega_3^2\omega_{10}^2}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_y^2\mathrm{D}_z^2\rho}=(24\omega_3^2v_2^4\omega_4^2\omega_1^3+9\omega_3^2c_s^2\omega_4\omega_1^3\omega_2^3-28\omega_3v_3^2c_s^2\omega_4^2\omega_1\omega_2^3-24v_3^2c_s^2\omega_4^2\omega_1^2\omega_2^3+96\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^2+36\omega_3^2c_s^2\omega_1^2\omega_2^3-18c_s^2\omega_4^2\omega_1^3\omega_2^3+$
$60\omega_3^2v_3^2v_2^2\omega_4^2\omega_1^2\omega_2^2-9\omega_3^2v_3^2c_s^2\omega_4\omega_1^3\omega_2^3+4\omega_3^2v_3^2\omega_4^2\omega_1^3\omega_2-52\omega_3^2c_s^2\omega_4^2\omega_1^3-24\omega_3^2v_2^2\omega_4^2\omega_1^2\omega_2^2-119\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^3+54\omega_3^2c_s^4\omega_1^3\omega_2^3-102\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2+$
$24\omega_3^2v_2^2\omega_4^2\omega_2^3-324\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^3\omega_2+12c_s^2\omega_4^2\omega_1^3\omega_2^2-30\omega_3^2v_3^2v_2^2\omega_4^2\omega_1^3\omega_2-138\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^2\omega_2^3-216\omega_3^2c_s^2v_2^2\omega_4^2\omega_2^3+108\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^3-$
$12\omega_3c_s^4\omega_4^2\omega_1^3\omega_2+66\omega_3^2v_2^2\omega_4^2\omega_1^3\omega_2+24\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^2+27\omega_3^2v_2^2\omega_4^2\omega_1^2\omega_2^3-8\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2^2-108\omega_3^2c_s^4\omega_1^2\omega_2^3-27\omega_3^2v_2^2\omega_4^2\omega_1^3\omega_2^2+15\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^3+$
$28\omega_3c_s^2\omega_4^2\omega_1\omega_2^3-48\omega_3^2v_2^2\omega_4^2\omega_1^3+36\omega_3^2v_3^2c_s^2\omega_4\omega_1^2\omega_2^3+216\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^3-28\omega_3^2v_3^2c_s^2\omega_4^2\omega_1\omega_2^2+4\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2+72\omega_3^2c_s^4\omega_4^2\omega_1^3+138\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^3\omega_2^2-$
$4\omega_3^2\omega_4^2\omega_1\omega_2^2+24c_s^2\omega_4^2\omega_1^2\omega_2^3+28\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^2+72\omega_3^2v_2^4\omega_4^2\omega_1\omega_2^3+18v_3^2c_s^2\omega_4^2\omega_1^3\omega_2^3-18\omega_3^2c_s^2\omega_1^3\omega_2^3-36\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^3+4\omega_3^2v_3^2c_s^2\omega_4^2\omega_1\omega_2^3-$
$60\omega_3^2v_2^4\omega_4^2\omega_2^3+12\omega_3^2v_2^2\omega_4^2\omega_1^2\omega_2+35\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^2-27\omega_3c_s^4\omega_4^2\omega_1^3\omega_2^3-12v_3^2c_s^2\omega_4^2\omega_1^3\omega_2^2+20\omega_3^2c_s^2\omega_4^2\omega_2^3+36\omega_3^2v_2^4\omega_4^2\omega_1\omega_2^2-58\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^3-$
$4\omega_3^2\omega_4^2\omega_1\omega_2^3-12\omega_3^2v_3^2v_2^2\omega_4^2\omega_1^2\omega_2-20\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^3\omega_2+54c_s^4\omega_4^2\omega_1^3\omega_2^3-32\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^2\omega_2^3-36\omega_3^2v_3^2c_s^2\omega_1^2\omega_2^3-32\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^2-27\omega_3^2c_s^4\omega_4\omega_1^3\omega_2^3+$
$4\omega_3^2\omega_4^2\omega_1^3-36\omega_3^2v_2^4\omega_4^2\omega_1^2\omega_2^2+49\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^3+74\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2-4\omega_3^2\omega_4^2\omega_1^3\omega_2+16\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^3-36\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^3+4\omega_3c_s^2\omega_4^2\omega_1^3\omega_2+$
$16\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^2\omega_2^2+36\omega_3^2v_3^2v_2^2\omega_4^2\omega_2^3-36c_s^4\omega_4^2\omega_1^3\omega_2^2-4\omega_3^2v_3^2\omega_4^2\omega_2^3+8\omega_3^2\omega_4^2\omega_1^2\omega_2^2-36\omega_3^2v_2^4\omega_4^2\omega_1^3\omega_2-9\omega_3v_3^2c_s^2\omega_4^2\omega_1^3\omega_2^3-16\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^2-$
$27\omega_3^2v_2^4\omega_4^2\omega_1^2\omega_2^3+324\omega_3^2c_s^2v_2^2\omega_4^2\omega_1\omega_2^3-4\omega_3^2\omega_4^2\omega_1^2\omega_2-30\omega_3^2v_3^2v_2^2\omega_4^2\omega_1\omega_2^3+27\omega_3^2v_2^4\omega_4^2\omega_1^3\omega_2^2-3\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2^3-84\omega_3c_s^4\omega_4^2\omega_1\omega_2^3+24\omega_3^2v_3^2v_2^2\omega_4^2\omega_1^3+$
$32\omega_3v_3^2c_s^2\omega_4^2\omega_1^2\omega_2^2+4\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2-72\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^2-42\omega_3^2v_2^2\omega_4^2\omega_1\omega_2^3+108\omega_3^2c_s^4\omega_4\omega_1^2\omega_2^3-4\omega_3^2v_3^2\omega_4^2\omega_1^3+18\omega_3^2v_3^2c_s^2\omega_1^3\omega_2^3-72c_s^4\omega_4^2\omega_1^2\omega_2^3+$
$4\omega_3^2v_3^2\omega_4^2\omega_1\omega_2^2-4\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^2\omega_2+3\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^3\omega_2^3+36\omega_3v_3^2c_s^2\omega_4^2\omega_1^2\omega_2^3-25\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2^2-4\omega_3v_3^2c_s^2\omega_4^2\omega_1^3\omega_2-48\omega_3^2v_3^2v_2^2\omega_4^2\omega_1\omega_2^2+$
$8\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^2\omega_2^2+4\omega_3^2\omega_4^2\omega_2^3+4\omega_3^2v_3^2\omega_4^2\omega_1\omega_2^3+16\omega_3^2v_3^2c_s^2\omega_4^2\omega_2^3+9\omega_3c_s^2\omega_4^2\omega_1^3\omega_2^3+12\omega_3^2v_2^2\omega_4^2\omega_1\omega_2^2+78\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^3)\frac{v_3}{36\omega_3^2\omega_4^2\omega_1^3\omega_2^3}$

coefficient $C^{(3)}_{\mathrm{D}_y^2\mathrm{D}_z^2v_2}$ **at** $\frac{\partial^4v_2}{\partial x_2^2\partial x_3^2}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_y^2\mathrm{D}_z^2v_2}=0$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z^2v_2}=$
$(-2\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{11}^3-\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2-4\omega_{19}^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2+2\omega_{19}^2c_s^2\omega_{16}^2\omega_7^2\omega_{23}\omega_{11}^3-\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}^3+2\omega_{19}^2c_s^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{11}^3+$
$4\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}-4\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{11}^2+2\omega_{19}^2v_3^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{11}^3+4\omega_{19}v_3^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{11}^3-2\omega_{19}^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{11}^3+4\omega_{19}^2c_s^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}^3+$
$8\omega_{19}^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}^3+4\omega_{19}c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{11}^3+\omega_{19}^2v_3^2\omega_{16}\omega_{10}\omega_7^3\omega_{23}\omega_{11}^3+2\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{11}^2+4\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{11}^3-2\omega_{19}^2v_3^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{11}^2+$
$\omega_{19}^2v_3^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2-2\omega_{19}^2c_s^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{11}^2+6\omega_{19}\omega_{16}^2\omega_{10}\omega_7\omega_{23}\omega_{11}^3+3\omega_{19}^2c_s^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2-8c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}^3-4\omega_{19}^2c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{11}^3+$

$2\omega_{19}c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2 + 3\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}^3 - 4\omega_{19}^2v_3^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{11}^3 - 5\omega_{19}^2v_3^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11} - 6\omega_{19}^2c_s^2\omega_{16}^2\omega_{10}\omega_7\omega_{23}\omega_{11}^2 -$
$4v_3^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}^3 - 2\omega_{19}v_3^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2 - 15\omega_{19}^2c_s^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11} + 2\omega_{19}^2v_3^2\omega_{16}^2\omega_{10}\omega_7\omega_{23}\omega_{11}^2 + 4\omega_{19}c_s^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{11}^2 -$
$4\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}^3 + 4\omega_{19}v_3^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{11}^2 + 12\omega_{19}^2c_s^2\omega_{16}\omega_{10}\omega_7\omega_{23}\omega_{11}^3 + 4\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{11}^3 - 2\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7\omega_{23}\omega_{11}^3 + 2\omega_{19}^2v_3^2\omega_{16}^2\omega_{10}\omega_7\omega_{23}\omega_{11}^3 +$
$9\omega_{19}v_3^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}^3 - 4\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{11}^3 + 26\omega_{19}^2c_s^2\omega_{16}^2\omega_{10}\omega_7\omega_{23}\omega_{11}^3 + 11\omega_{19}c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}^3 - 7\omega_{19}\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2 -$
$2\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7\omega_{23}\omega_{11}^2 + 4\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2 + 5\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11} - 4\omega_{19}v_3^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{11}^3 - 16\omega_{19}^2c_s^2\omega_{16}^2\omega_{10}\omega_{23}\omega_{11}^3 - 4\omega_{19}c_s^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{11}^3 -$
$2\omega_{19}^2c_s^2\omega_{16}\omega_{10}\omega_7^3\omega_{11}^3 - 3\omega_{19}^2v_3^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2 - 8\omega_{19}c_s^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11} - 2\omega_{19}^2v_3^2\omega_{16}\omega_{10}\omega_7^3\omega_{11}^3 - \omega_{19}^2c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2 -$
$4\omega_{19}v_3^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11} + \omega_{19}^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}^3 - 2\omega_{19}^2c_s^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}^3 - 24\omega_{19}^2c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11}^3 + 4\omega_{19}^2c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}^3 +$
$2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^3\omega_{11}^3 - 2\omega_{19}^2v_3^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11}^3 + 12\omega_{19}^2c_s^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23} - 6\omega_{19}c_s^2\omega_{16}^2\omega_{10}\omega_7\omega_{23}\omega_{11}^3 + 2\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11}^3 +$
$4\omega_{19}^2v_3^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23} - 8\omega_{19}^2c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}^3 - 6\omega_{19}v_3^2\omega_{16}^2\omega_{10}\omega_7\omega_{23}\omega_{11}^3 - \omega_{19}^2v_3^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}^3 + 8\omega_{19}^2c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2 -$
$4\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23} + 3\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2 - 4\omega_{19}^2c_s^2\omega_{16}^2\omega_7\omega_{23}\omega_{11}^3 - 4\omega_{19}^2\omega_{16}\omega_{10}\omega_7^2\omega_{11}^3 - 2\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11} - 3\omega_{19}v_3^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}^3 -$
$4v_3^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2 + 2\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}^2 + 4\omega_{19}^2c_s^2\omega_{16}\omega_{10}\omega_7^2\omega_{11}^3 - 5\omega_{19}c_s^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}^3 - 8c_s^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2 +$
$4\omega_{19}^2v_3^2\omega_{16}\omega_{10}\omega_7^2\omega_{11}^3 + 4\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}^3 + 2\omega_{19}^2v_3^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11} - 9\omega_{19}\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11}^3 + 13\omega_{19}c_s^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2 +$
$8c_s^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}^3 + 2\omega_{19}^2c_s^2\omega_{16}^2\omega_{10}\omega_7^2\omega_{23}\omega_{11} + 7\omega_{19}v_3^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}^2 + 4v_3^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}^3)\frac{v_3v_2\rho}{2\omega_{19}^2\omega_{16}^2\omega_{10}\omega_7^3\omega_{23}\omega_{11}^3}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_y^2\mathrm{D}_z^2v_2} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z^2v_2}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z^2v_2} = 0$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_y^2\mathrm{D}_z^2v_2} = 0$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z^2v_2} = 0$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_y^2\mathrm{D}_z^2v_2} = (-18c_s^2\omega_1\omega_2^3 - 12\omega_3v_3^2\omega_1^2\omega_2 + 60\omega_3v_2^2\omega_1\omega_2^2 + 12v_3^2\omega_1^2\omega_2^2 + 6\omega_3\omega_1^2\omega_2 + 84\omega_3c_s^2\omega_1^3 + 12\omega_3v_3^2\omega_2^3 + 6\omega_1\omega_2^3 - 6v_3^2\omega_1^3\omega_2 + 141\omega_3v_2^2\omega_1\omega_2^3 -$
$23\omega_3\omega_1^3\omega_2^2 + 48\omega_3v_2^2\omega_1^3 + 48\omega_3\omega_1^3\omega_2 + 23\omega_3\omega_1^2\omega_2^3 - 9\omega_3v_3^2\omega_1^3\omega_2 - 114\omega_3v_2^2\omega_2^3 + 12\omega_3\omega_1^2\omega_2^2 + 18\omega_3v_3^2\omega_1^2\omega_2^2 + 12\omega_3v_3^2\omega_1^3 - 66\omega_3c_s^2\omega_2^3 + 108\omega_3c_s^2\omega_1\omega_2^3 -$
$12\omega_3\omega_1\omega_2^2 + 6\omega_3v_2^2\omega_1^2\omega_2 - 12\omega_3v_3^2\omega_1\omega_2^2 - 108\omega_3c_s^2\omega_1^3\omega_2 + 42\omega_3\omega_2^3 - 42\omega_3c_s^2\omega_1^2\omega_2^3 - 60\omega_3\omega_1\omega_2^3 - 9\omega_3v_3^2\omega_1\omega_2^3 + 50\omega_3v_2^2\omega_1^3\omega_2^2 - 6v_3^2\omega_1\omega_2^3 -$
$18\omega_3c_s^2\omega_1^2\omega_2 - 75\omega_3v_2^2\omega_1^3\omega_2 + 36c_s^2\omega_1^2\omega_2^2 - 50\omega_3v_2^2\omega_1^2\omega_2^3 - 12\omega_1^2\omega_2^2 - 66\omega_3v_2^2\omega_1^2\omega_2^2 - 18c_s^2\omega_1^3\omega_2 + 42\omega_3c_s^2\omega_1^3\omega_2^2 + 6\omega_1^3\omega_2 - 36\omega_3\omega_1^3)\frac{v_3v_2\rho}{18\omega_3\omega_1^3\omega_2^3}$

coefficient $C^{(3)}_{\mathrm{D}_y^2\mathrm{D}_z^2v_3}$ **at** $\frac{\partial^4 v_3}{\partial x_2^2\partial x_3^2}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_y^2\mathrm{D}_z^2v_3} = (-24 - 12\omega^2 + 36\omega - 108v_3^2\omega + 8c_s^2\omega^2 - c_s^2\omega^3 + 72v_3^2 - 18c_s^2\omega + 12c_s^2 + 36v_3^2\omega^2)\frac{c_s^2\rho}{12\omega^3}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z^2v_3} = (-6\omega_{19}^2c_s^2\omega_{16}\omega_7^3\omega_{11}^3 + 108\omega_{19}v_3^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{11}^3 - 12\omega_{19}^2\omega_{16}v_2^2\omega_7^3\omega_{23} + 6\omega_{19}^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{11}^2 + 36\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{11}^3 -$
$24\omega_{19}\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11}^2 - 24\omega_{19}^2\omega_{16}v_2^2\omega_7\omega_{23}\omega_{11}^2 + 12\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23} + 36\omega_{19}^2v_3^2\omega_{16}v_2^2\omega_7^3\omega_{23} + 18\omega_{19}^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11} + 12\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11}^2 -$
$6\omega_{19}^2c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{11}^2 + 18\omega_{19}^2v_3^2c_s^2\omega_{16}\omega_7^3\omega_{11}^3 - 12\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{11}^2 - 12\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{11}^2 - 12c_s^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{11}^3 - 18\omega_{19}^2v_3^2c_s^2\omega_7^3\omega_{11}^3 +$
$12\omega_{19}\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11}^3 + 36\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^2\omega_{11}^3 + 24\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7\omega_{23}\omega_{11}^2 - 54\omega_{19}^2v_3^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11} + 36\omega_{19}^2v_3^2v_2^2\omega_7^2\omega_{11}^3 + 12\omega_{19}c_s^4\omega_{16}\omega_7\omega_{23}\omega_{11}^3 -$
$36\omega_{19}v_3^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{11}^2 - 36v_3^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{11}^3 + 72\omega_{19}^2v_3^2\omega_{16}v_2^2\omega_7\omega_{23}\omega_{11}^2 - 18\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11} + 6\omega_{19}^2c_s^2\omega_{16}\omega_7^3\omega_{11}^2 - 18\omega_{19}^2v_3^2c_s^2\omega_{16}\omega_7^3\omega_{11}^2 +$
$12\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{11}^3 - 18\omega_{19}^2v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{11}^2 - 12\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11}^3 - \omega_{19}^2c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{11}^3 - 12\omega_{19}c_s^2\omega_{16}\omega_7\omega_{23}\omega_{11}^3 + 18\omega_{19}^2v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{11} -$
$12\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{11}^3 - 36\omega_{19}^2v_3^2c_s^2\omega_{16}\omega_7^2\omega_{11}^3 + 12\omega_{19}^2v_2^2\omega_7^2\omega_{23}\omega_{11}^2 + 18\omega_{19}^2v_3^2c_s^2\omega_7^3\omega_{23}\omega_{11}^2 - 84\omega_{19}^2v_3^2c_s^2\omega_{16}\omega_7\omega_{23}\omega_{11}^2 + 18\omega_{19}^2c_s^4\omega_{16}\omega_7\omega_{23}\omega_{11}^3 +$
$24v_3^2c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}^3 + 60\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}^2 + 12\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{11}^3 + 18\omega_{19}^2v_3^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11}^2 + 36\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^3\omega_{11}^2 - 6\omega_{19}^2c_s^2\omega_7^3\omega_{23}\omega_{11}^2 -$
$36\omega_{19}^2v_3^2v_2^2\omega_7^2\omega_{23}\omega_{11}^2 + 24\omega_{19}\omega_{16}v_2^2\omega_7\omega_{23}\omega_{11}^3 + 12\omega_{19}^2c_s^2\omega_{16}\omega_7^2\omega_{11}^3 - 12\omega_{19}^2c_s^2v_2^2\omega_7^2\omega_{23}\omega_{11}^2 + 6\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11}^2 - 12\omega_{19}^2c_s^4\omega_{16}\omega_7\omega_{23}\omega_{11}^2 -$
$132\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}^3 + 84\omega_{19}^2v_3^2c_s^2\omega_{16}\omega_7\omega_{23}\omega_{11}^3 + 12\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{11}^2 + 6\omega_{19}^2c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{11} - 6\omega_{19}^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11}^2 -$
$12\omega_{19}^2c_s^4\omega_7^2\omega_{23}\omega_{11}^2 - 12\omega_{19}c_s^2\omega_{16}\omega_7^2\omega_{11}^3 - 18\omega_{19}^2v_3^2v_2^2\omega_7^3\omega_{11}^3 + 12\omega_{19}^2c_s^2\omega_{16}\omega_7\omega_{23}\omega_{11}^2 - 36\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^3\omega_{11}^3 + 36\omega_{19}^2v_3^2c_s^2\omega_7^2\omega_{11}^3 -$
$48\omega_{19}^2v_3^2c_s^2\omega_{16}\omega_{23}\omega_{11}^3 + 12\omega_{19}\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11} - 12\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{23}\omega_{11}^2 - 6\omega_{19}^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{11} - 4\omega_{19}c_s^4\omega_{16}\omega_7^2\omega_{23}\omega_{11}^3 + 12\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{11}^3 -$
$18\omega_{19}^2v_3^2\omega_{16}v_2^2\omega_7^3\omega_{11}^2 + 12\omega_{19}\omega_{16}v_2^2\omega_7^2\omega_{11}^3 + 180\omega_{19}^2v_3^2c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}^2 - 6\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^3\omega_{11}^2 + 6\omega_{19}^2c_s^4\omega_{16}\omega_7^3\omega_{11}^3 + 72\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{11} +$
$36\omega_{19}v_3^2\omega_{16}v_2^2\omega_7^2\omega_{11}^3 + 36\omega_{19}^2v_3^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{11} - 36\omega_{19}\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{11}^3 + 12\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^2\omega_{11}^3 + 12c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11}^3 + 12\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{11}^2 +$
$24\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11}^2 + 12\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{11} + 6\omega_{19}^2\omega_{16}v_2^2\omega_7^3\omega_{11}^2 + 36v_3^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11}^3 + 72\omega_{19}v_3^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11}^2 - 6\omega_{19}^2c_s^4\omega_{16}\omega_7^3\omega_{11}^2 -$
$12\omega_{19}^2v_2^2\omega_7^2\omega_{11}^3 - 42\omega_{19}^2v_3^2c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}^3 + 6\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^3\omega_{11}^3 + 12\omega_{19}^2c_s^2v_2^2\omega_7^2\omega_{11}^3 + 24\omega_{19}^2c_s^4\omega_{16}\omega_7^2\omega_{23}\omega_{11}^2 + 60\omega_{19}v_3^2c_s^2\omega_{16}\omega_7\omega_{23}\omega_{11}^3 +$
$18\omega_{19}^2v_3^2\omega_{16}v_2^2\omega_7^3\omega_{11}^3 - 12\omega_{19}\omega_{16}v_2^2\omega_7^3\omega_{11}^2 - 12\omega_{19}^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{11} + 6\omega_{19}^2c_s^3\omega_7^3\omega_{11}^3 + 12\omega_{19}^2c_s^4\omega_7^2\omega_{11}^3 - 6\omega_{19}^2\omega_{16}v_2^2\omega_7^3\omega_{11}^3 - 36v_3^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11}^2 -$
$36\omega_{19}v_3^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11}^3 + 12\omega_{19}\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{11}^2 - 24\omega_{19}^2c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}^2 - 12c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11}^2 - 12\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{11}^3 -$
$12\omega_{19}c_s^4\omega_{16}\omega_7^3\omega_{11}^3 - 24\omega_{19}c_s^2\omega_{16}v_2^2\omega_7\omega_{23}\omega_{11}^3 - 72\omega_{19}v_3^2\omega_{16}v_2^2\omega_7\omega_{23}\omega_{11}^3 + 12\omega_{19}^2c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{11} + 12\omega_{19}c_s^4\omega_{16}\omega_7^2\omega_{23}\omega_{11}^2 -$
$36\omega_{19}v_3^2\omega_{16}v_2^2\omega_7^3\omega_{11}^2 - 12\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{11}^3 - 12\omega_{19}^2c_s^4\omega_{16}\omega_7^2\omega_{11}^3 + 78\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{11}^3 + 24v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{11}^2 - 12\omega_{19}\omega_{16}v_2^2\omega_7^2\omega_{11}^3 +$
$24\omega_{19}^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{11}^2 + 6\omega_{19}^2c_s^4\omega_7^3\omega_{23}\omega_{11}^2 - 12\omega_{19}^2c_s^4\omega_{16}\omega_7^2\omega_{23}\omega_{11} - 12\omega_{19}c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}^2 + 12\omega_{19}c_s^4\omega_{16}\omega_7^2\omega_{11}^3 + 12\omega_{19}^2c_s^2\omega_7^2\omega_{23}\omega_{11}^2 +$
$12\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{11}^2 - 72\omega_{19}^2v_3^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{11}^2 - 24\omega_{19}c_s^4\omega_{16}\omega_7^2\omega_{23}\omega_{11}^3 - 12\omega_{19}c_s^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11} + 36\omega_{19}v_3^2\omega_{16}v_2^2\omega_7^3\omega_{11}^2 - 6\omega_{19}^2c_s^4\omega_7^3\omega_{11}^3 +$
$6\omega_{19}^2c_s^2v_2^2\omega_7^3\omega_{23}\omega_{11}^2 + 12\omega_{19}^2\omega_{16}v_2^2\omega_7^2\omega_{11}^3 - 24\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^2\omega_{23}\omega_{11}^2 - 36\omega_{19}v_3^2\omega_{16}v_2^2\omega_7^3\omega_{23}\omega_{11} + 18\omega_{19}^2v_3^2v_2^2\omega_7^3\omega_{23}\omega_{11}^2 - 12\omega_{19}^2c_s^4\omega_{16}\omega_{23}\omega_{11}^3 -$
$6\omega_{19}^2v_2^2\omega_7^3\omega_{23}\omega_{11}^2 - 12\omega_{19}^2c_s^2\omega_{16}v_2^2\omega_7^2\omega_{11}^3 - 6\omega_{19}^2c_s^2v_2^2\omega_7^3\omega_{11}^3 + 24\omega_{19}c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}^3 - 12\omega_{19}^2c_s^2\omega_7^2\omega_{11}^3 - 36\omega_{19}^2v_3^2\omega_{16}v_2^2\omega_7^2\omega_{11}^3 -$
$108\omega_{19}^2v_3^2c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{11} - 144\omega_{19}v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{11}^2 - 24v_3^2c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{11}^3 + 6\omega_{19}v_2^2\omega_7^3\omega_{11}^3 - 36\omega_{19}^2v_3^2c_s^2\omega_7^2\omega_{23}\omega_{11}^2)\frac{\rho}{12\omega_{19}^2\omega_{16}\omega_7^3\omega_{23}\omega_{11}^3}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_y^2\mathrm{D}_z^2v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y^2\mathrm{D}_z^2v_3}$

$$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_3} = (36v_3^2\omega_{16}\omega_7\omega_{23}\omega_{11}^2 + 12c_s^2\omega_{16}\omega_7\omega_{23}\omega_{11}^2 + 12\omega_{19}\omega_7^2\omega_{23}\omega_{11} - 36v_3^2\omega_{16}\omega_7^3\omega_{23}\omega_{11} + 18\omega_{19}v_3^2\omega_{16}\omega_7^3\omega_{23} - 12c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{11} + 18\omega_{19}c_s^2\omega_{16}\omega_7\omega_{23}\omega_{11}^2 - 12c_s^2\omega_{16}\omega_7^3\omega_{11}^2 + 6\omega_{19}c_s^2\omega_7^3\omega_{23}\omega_{11} - 6\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{11} - 6\omega_{19}c_s^2\omega_7^3\omega_{11}^2 + 6\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{11}^2 - 18\omega_{19}v_3^2\omega_{16}\omega_7^3\omega_{23}\omega_{11} - 36\omega_{19}v_3^2\omega_7^2\omega_{23}\omega_{11} + 12\omega_{19}\omega_{16}\omega_7\omega_{23}\omega_{11} - 6\omega_{19}\omega_{16}\omega_7^3\omega_{23} - 12\omega_{16}\omega_7^3\omega_{23}\omega_{11}^2 + 12\omega_{16}\omega_7^3\omega_{11}^2 + 12\omega_{19}c_s^2\omega_7^2\omega_{11}^2 - 12\omega_{19}c_s^2\omega_{16}\omega_7^2\omega_{11}^2 - 12\omega_{16}\omega_7^3\omega_{11} + 12c_s^2\omega_{16}\omega_7^2\omega_{11}^2 - 36\omega_{19}v_3^2\omega_{16}\omega_7^2\omega_{23} - 12\omega_{16}\omega_7\omega_{23}\omega_{11}^2 + 6\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{11} + 12\omega_{16}\omega_7^3\omega_{23}\omega_{11} - 12\omega_{19}c_s^2\omega_{16}\omega_7\omega_{23}\omega_{11} - 36\omega_{19}v_3^2\omega_{16}\omega_7\omega_{23}\omega_{11} - 12\omega_{16}\omega_7^2\omega_{11}^2 + 12c_s^2\omega_{16}\omega_7^3\omega_{11} - \omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{11}^2 - 6\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{11} + 12\omega_{19}\omega_{16}\omega_7^2\omega_{23} + 36v_3^2\omega_{16}\omega_7^3\omega_{23}\omega_{11}^2 - 12\omega_{19}c_s^2\omega_{16}\omega_{23}\omega_{11}^2 + 12c_s^2\omega_{16}\omega_7^3\omega_{23}\omega_{11}^2 + 36\omega_{19}v_3^2\omega_7^2\omega_{11}^2 + 6\omega_{19}c_s^2\omega_{16}\omega_7^3\omega_{23} - 12\omega_{19}\omega_7^2\omega_{11}^2 + 18\omega_{19}v_3^2\omega_7^3\omega_{23}\omega_{11} - 36v_3^2\omega_{16}\omega_7^3\omega_{11}^2 + 24\omega_{16}\omega_7^2\omega_{23}\omega_{11}^2 + 18\omega_{19}v_3^2\omega_{16}\omega_7^3\omega_{11}^2 - 12\omega_{19}c_s^2\omega_7^2\omega_{23}\omega_{11} + 72\omega_{19}v_3^2\omega_{16}\omega_7^2\omega_{23}\omega_{11} + 24\omega_{19}c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{11} - 6\omega_{19}\omega_7^3\omega_{23}\omega_{11} + 12c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{11} - 6\omega_{19}\omega_{16}\omega_7^3\omega_{11}^2 + 36v_3^2\omega_{16}\omega_7^2\omega_{23}\omega_{11} - 36\omega_{19}v_3^2\omega_{16}\omega_7^2\omega_{11}^2 + 6\omega_{19}\omega_7^3\omega_{11}^2 + 6\omega_{19}\omega_{16}\omega_7^3\omega_{11} - 24c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}^2 - 72v_3^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}^2 + 36v_3^2\omega_{16}\omega_7^2\omega_{11}^2 - 12\omega_{19}c_s^2\omega_{16}\omega_7^2\omega_{23} - 18\omega_{19}v_3^2\omega_7^3\omega_{11}^2 - 4\omega_{19}c_s^2\omega_{16}\omega_7^2\omega_{23}\omega_{11}^2 - 24\omega_{19}\omega_{16}\omega_7^2\omega_{23}\omega_{11} + 12\omega_{19}\omega_{16}\omega_7^2\omega_{11}^2 + 36v_3^2\omega_{16}\omega_7^3\omega_{11} - 12\omega_{16}\omega_7^2\omega_{23}\omega_{11} - 18\omega_{19}v_3^2\omega_{16}\omega_7^3\omega_{11})\frac{c_s^2\rho}{12\omega_{19}\omega_{16}\omega_7^3\omega_{23}\omega_{11}^2}$$

$$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_3} = C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_3}$$

$$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_3} = (36\omega_6\omega_3^2v_3^2\omega_{10} - 12\omega_6^2c_s^2\omega_{10} - 72\omega_6^2\omega_3^2v_3^2 - 24\omega_6^2\omega_3^2c_s^2 + 12\omega_3^2\omega_{10} + 18\omega_6^2\omega_3c_s^2\omega_{10} + 36\omega_6^2\omega_3^3v_3^2 + 24\omega_6\omega_3^3 - \omega_6^2\omega_3^3c_s^2\omega_{10} + 12\omega_6\omega_3^2c_s^2\omega_{10} - 24\omega_6\omega_3^3 + 12\omega_6^2\omega_3^3c_s^2 - 12\omega_6\omega_3^2\omega_{10} - 72\omega_6\omega_3^3v_3^2 + 24\omega_6^2\omega_3^3 - 36\omega_3^2v_3^2\omega_{10} - 12\omega_3^3 + 12\omega_6\omega_3\omega_{10} - 12\omega_6^2\omega_3^3 - 12\omega_6\omega_3c_s^2\omega_{10} - 24\omega_6\omega_3^3c_s^2 + 36\omega_3^3v_3^2 - 36\omega_6\omega_3v_3^2\omega_{10} + 12\omega_6^2\omega_3c_s^2 + 72\omega_6\omega_3^2v_3^2 + 24\omega_6\omega_3^2c_s^2 - 12\omega_3^2c_s^2\omega_{10} + 12\omega_3^3c_s^2 - 12\omega_6^2\omega_3 + 36\omega_6^2\omega_3v_3^2 - 4\omega_6^2\omega_3^2c_s^2\omega_{10})\frac{c_s^2\rho}{12\omega_6^2\omega_3^3\omega_{10}}$$

$$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_y^2\mathrm{D}_z^2 v_3} = (8\omega_3c_s^4\omega_4\omega_1\omega_2^3 + 32\omega_3^2c_s^2\omega_4\omega_1^2\omega_2 + 132\omega_3v_3^2c_s^2\omega_4\omega_1^2\omega_2^2 + 9\omega_3^2v_2^4\omega_4\omega_1^3\omega_2^2 + 72\omega_3^2c_s^2\omega_1^2\omega_2^3 - 4\omega_3^2\omega_4\omega_1^2\omega_2 - 90\omega_3^2v_3^2v_2^2\omega_4\omega_1\omega_2^3 + 150\omega_3^2c_s^2v_2^2\omega_4\omega_1\omega_2^3 + 4\omega_3^2\omega_4\omega_2^3 - 18\omega_3^2v_2^4\omega_1^2\omega_2^3 + 12\omega_3^2v_3^2\omega_4\omega_1\omega_2^2 - 48\omega_3^2v_3^2c_s^2\omega_4\omega_1^2\omega_2 + 18\omega_3^2c_s^4\omega_1^3\omega_2^3 - 54\omega_3c_s^2v_2^2\omega_1^3\omega_2^2 + 36\omega_3c_s^2\omega_4\omega_1^3\omega_2^2 - 24\omega_3^2v_2^2\omega_4\omega_1\omega_2^3 - 54c_s^2v_2^2\omega_4\omega_1^3\omega_2^2 - 96\omega_3^2v_3^2c_s^2\omega_4\omega_2^3 - 28\omega_3^2c_s^4\omega_4\omega_1\omega_2^2 + \omega_3^2v_3^4\omega_4\omega_1^3\omega_2^2 - 12\omega_3^2c_s^2v_2^2\omega_4\omega_1\omega_2^2 - 18\omega_3^2v_2^2\omega_1^3\omega_2^2 - 144\omega_3^2v_3^2v_2^2\omega_4\omega_1\omega_2^2 + 24\omega_3v_3^2c_s^2\omega_4\omega_1^3\omega_2 - 2\omega_3^2c_s^2\omega_4\omega_1^3\omega_2^2 + 72\omega_3^2v_3^2v_2^2\omega_4\omega_1^3 + 54\omega_3^2c_s^2v_2^2\omega_1^3\omega_2^2 - 126\omega_3v_3^2c_s^2\omega_4\omega_1^2\omega_2^3 + 12\omega_3^2v_2^4\omega_4\omega_1^2\omega_2 - 6\omega_3v_2^2\omega_4\omega_1\omega_2^3 + 76\omega_3^2c_s^4\omega_4\omega_1\omega_2^3 + 36\omega_3^2v_2^2\omega_4\omega_1\omega_2^2 - 12\omega_3^2v_3^2\omega_4\omega_1^3 + 36\omega_3v_2^4\omega_4\omega_1^3\omega_2^2 - 18\omega_3c_s^2\omega_4\omega_1^3\omega_2^3 - 18v_2^2\omega_4\omega_1^2\omega_2^3 + 12\omega_3^2v_3^2\omega_4\omega_1\omega_2^3 - 18\omega_3^2v_2^4\omega_1^2\omega_2^2 + 6\omega_3^2v_3^2c_s^2\omega_4\omega_1^3\omega_2^2 - 56\omega_3c_s^2\omega_4\omega_1^2\omega_2^2 - 36\omega_3v_2^4\omega_4\omega_1^2\omega_2^3 - 72\omega_3^2c_s^4\omega_1^2\omega_2^3 - 12\omega_3v_2^4\omega_4\omega_1^3\omega_2 - 6\omega_3^2v_3^2c_s^2\omega_4\omega_1^2\omega_2^3 - 6\omega_3^2v_3^2c_s^2\omega_4\omega_1^3\omega_2 + 108\omega_3^2v_3^2v_2^2\omega_4\omega_2^3 + 18v_2^2\omega_4\omega_1^3\omega_2^3 - 4\omega_3^2\omega_4\omega_1^3\omega_2 + 18\omega_3^2v_2^2\omega_1^2\omega_2^3 - 12\omega_3^2v_3^2\omega_4\omega_2^3 - \omega_3^2v_3^4\omega_4\omega_1^2\omega_2^3 - 90\omega_3v_3^2c_s^2\omega_4\omega_1^3\omega_2^2 + 18\omega_3^2c_s^2\omega_4\omega_1^3\omega_2 - 18\omega_3^2c_s^2\omega_1^3\omega_2^3 - 54\omega_3^2c_s^2v_2^2\omega_1^2\omega_2^3 + 2\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^3 - 18\omega_3^2v_2^4\omega_4\omega_1^2\omega_2^2 + 66\omega_3^2v_3^2c_s^2\omega_4\omega_1^2\omega_2^2 + 18\omega_3^2v_2^4\omega_1^3\omega_2^2 - 8\omega_3c_s^2\omega_4\omega_1^3\omega_2 - 18\omega_3c_s^2v_2^2\omega_4\omega_1\omega_2^3 + 54c_s^2v_2^2\omega_4\omega_1^2\omega_2^3 + 216\omega_3^2v_3^2c_s^2\omega_1\omega_2^3 + 6\omega_3v_2^4\omega_4\omega_1^2\omega_2^2 + 36\omega_3c_s^2\omega_4\omega_1^2\omega_2^3 + 54\omega_3c_s^2v_2^2\omega_1^2\omega_2^3 - 54\omega_3^2c_s^2v_2^2\omega_1^2\omega_2^2 - 9\omega_3^2v_2^4\omega_4\omega_1^2\omega_2^3 - 36\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^2 + 4\omega_3^2\omega_4\omega_1^3 + 54\omega_3v_3^2c_s^2\omega_4\omega_1^2\omega_2^3 - 36\omega_3^2v_2^4\omega_4\omega_1^3\omega_2 + 18\omega_3^2v_2^2\omega_1^2\omega_2^2 + 12\omega_3^2v_3^2c_s^2\omega_4\omega_1^3 + 8\omega_3^2\omega_4\omega_1^2\omega_2^2 - 84\omega_3^2v_3^2c_s^2\omega_4\omega_1\omega_2^2 - 48\omega_3^2v_2^4\omega_4\omega_2^3 + 12\omega_3^2v_3^2\omega_4\omega_1^2\omega_2 + 18\omega_3v_2^4\omega_1^2\omega_2^3 - 28\omega_3^2c_s^4\omega_4\omega_1^2\omega_2 - 36\omega_3c_s^2v_2^2\omega_4\omega_1^3\omega_2 - 8\omega_3c_s^2\omega_4\omega_1\omega_2^3 - 216\omega_3^2v_3^2c_s^2\omega_1^2\omega_2^3 - 90\omega_3c_s^2v_2^2\omega_4\omega_1^2\omega_2^3 - 3\omega_3^2c_s^4\omega_4\omega_1^3\omega_2^3 - 9\omega_3^2v_2^2\omega_4\omega_1^3\omega_2^2 - 36\omega_3c_s^4\omega_4\omega_1^3\omega_2^2 + 54\omega_3^2v_2^4\omega_4\omega_1\omega_2^3 + 32\omega_3^2c_s^2\omega_4\omega_1\omega_2^2 + 28\omega_3^2c_s^2\omega_4\omega_2^3 - 4\omega_3^2\omega_4\omega_1\omega_2^2 + 30\omega_3^2c_s^2v_2^2\omega_4\omega_1^3\omega_2^2 - 48\omega_3^2v_2^2\omega_4\omega_1^3 + 2\omega_3^2c_s^4\omega_4\omega_1^3\omega_2^2 + 54\omega_3c_s^2v_2^2\omega_4\omega_1^2\omega_2^2 + 72\omega_3^2c_s^4\omega_1\omega_2^3 + 6\omega_3v_2^4\omega_4\omega_1\omega_2^3 + 132\omega_3^2c_s^2v_2^2\omega_4\omega_1^3 - \omega_3^2v_3^2\omega_4\omega_1^3\omega_2^2 + 48\omega_3^2v_3^2c_s^2\omega_4\omega_1\omega_2^3 - 4\omega_3^2\omega_4\omega_1\omega_2^3 - 36\omega_3^2v_3^2v_2^2\omega_4\omega_1^2\omega_2 - 18\omega_3^2v_2^2\omega_1\omega_2^3 + 18v_2^4\omega_4\omega_1^2\omega_2^3 - 12\omega_3^2c_s^2v_2^2\omega_4\omega_1^2\omega_2 + 16\omega_3^2c_s^4\omega_4\omega_1^3 - 18\omega_3^2c_s^2\omega_4\omega_1\omega_2^3 + 12\omega_3^2v_2^4\omega_4\omega_1\omega_2^2 + 18\omega_3v_2^2\omega_1^3\omega_2^2 + 54\omega_3^2c_s^2v_2^2\omega_1\omega_2^3 - 36\omega_3v_2^2\omega_4\omega_1^3\omega_2^2 + 18\omega_3c_s^4\omega_4\omega_1^3\omega_2^3 + 180\omega_3^2v_3^2v_2^2\omega_4\omega_1^2\omega_2^2 - 18v_2^4\omega_4\omega_1^3\omega_2^2 + 24\omega_3^2c_s^2v_2^2\omega_4\omega_1^2\omega_2^2 + 12\omega_3^2v_2^2\omega_4\omega_2^3 + 60\omega_3v_3^2c_s^2\omega_4\omega_1\omega_2^3 + 56\omega_3c_s^4\omega_4\omega_1^2\omega_2^2 + 36\omega_3v_2^2\omega_4\omega_1^2\omega_2^3 - 18\omega_3v_2^2\omega_1^2\omega_2^3 + 12\omega_3v_2^2\omega_4\omega_1^3\omega_2 - 108\omega_3^2c_s^2v_2^2\omega_4\omega_2^3 - 68\omega_3^2c_s^4\omega_4\omega_2^3 - 14\omega_3^2c_s^4\omega_4\omega_1^3\omega_2 - 14\omega_3^2c_s^4\omega_4\omega_1^2\omega_2^3 - 42\omega_3^2v_2^2\omega_4\omega_1^2\omega_2^2 + 54\omega_3^2v_3^2c_s^2\omega_1^3\omega_2^3 + 12\omega_3^2v_3^2\omega_4\omega_1^3\omega_2 + \omega_3^2v_3^2\omega_4\omega_1^2\omega_2^3 - 72\omega_3^2c_s^2\omega_1\omega_2^3 + 8\omega_3c_s^4\omega_4\omega_1^3\omega_2 + 24\omega_3^2v_2^4\omega_4\omega_1^3 - 6\omega_3v_2^2\omega_4\omega_1^2\omega_2^2 - 36\omega_3c_s^4\omega_4\omega_1^2\omega_2^3 - 90\omega_3^2v_3^2v_2^2\omega_4\omega_1^3\omega_2 - 30\omega_3^2c_s^2v_2^2\omega_4\omega_1^2\omega_2^3 - 174\omega_3^2c_s^2v_2^2\omega_4\omega_1^3\omega_2 - 24\omega_3^2v_3^2\omega_4\omega_1^2\omega_2^2 - 20\omega_3^2c_s^2\omega_4\omega_1^3 + 18\omega_3^2v_2^4\omega_1\omega_2^3 + 90\omega_3c_s^2v_2^2\omega_4\omega_1^3\omega_2^2 + 9\omega_3^2v_2^2\omega_4\omega_1^2\omega_2^3 + 28\omega_3^2c_s^4\omega_4\omega_1^2\omega_2 + 66\omega_3^2v_2^2\omega_4\omega_1^3\omega_2 - 18\omega_3v_2^4\omega_1^3\omega_2^2)\frac{\rho}{36\omega_3^2\omega_4\omega_1^3\omega_2^3}$$

coefficient $C^{(3)}_{\mathrm{D}_x\mathrm{D}_z^3\rho}$ **at** $\frac{\partial^4\rho}{\partial x_1\partial x_3^3}$**:**

$$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_z^3\rho} = 0$$

$$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^3\rho} = (4c_s^4\omega_{11}^2\omega_{18}^2 + 4\omega_6^2c_s^4\omega_{11}^2\omega_{18}^2 - 4\omega_6^2v_3^4\omega_{11}^2 + 20\omega_6v_3^2\omega_{11}^2\omega_{18}^2 - 144\omega_6^2v_3^2c_s^2\omega_{11}\omega_{18}^2 + 96\omega_6^2v_3^2c_s^2\omega_{18}^2 + 20\omega_6^2v_3^2\omega_{11}\omega_{18} - 24\omega_6^2v_3^2\omega_{18}^2 + 72\omega_6v_3^2c_s^2\omega_{11}\omega_{18}^2 - 16\omega_6v_3^4\omega_{11}^2\omega_{18} - 4\omega_6^2c_s^4\omega_{11}^3\omega_{18} - 4c_s^4\omega_{11}^3\omega_{18} - 36\omega_6^2v_3^4\omega_{11}\omega_{18}^2 + 4\omega_6c_s^2\omega_{11}^3 - 4\omega_6c_s^2\omega_{11}\omega_{18}^2 - 8\omega_6^2c_s^2\omega_{11}^2\omega_{18} - 20\omega_6v_3^2\omega_{11}^3\omega_{18} - 24\omega_6v_3^2c_s^2\omega_{11}^3 + 4\omega_6^2v_3^4\omega_{11}^3 - 8\omega_6^2c_s^2\omega_{18}^2 - 4c_s^2\omega_{11}^2\omega_{18}^2 - 4\omega_6^2c_s^2\omega_{11}^2\omega_{18}^2 + 4\omega_6v_3^2\omega_{11}^3 - 20\omega_6v_3^4\omega_{11}^2\omega_{18}^2 - 20\omega_6^2v_3^4\omega_{11}\omega_{18} + 4\omega_6^2c_s^4\omega_{11}^3 + 16\omega_6v_3^2\omega_{11}^2\omega_{18} + 4\omega_6^2c_s^2\omega_{11}^3\omega_{18} - 72\omega_6^2v_3^2c_s^2\omega_{11}\omega_{18} + 36\omega_6^2v_3^2\omega_{11}\omega_{18}^2 + 4c_s^2\omega_{11}^3\omega_{18} - 4\omega_6^2c_s^4\omega_{11}^2 + 4\omega_6c_s^4\omega_{11}\omega_{18}^2 + 8\omega_6^2c_s^4\omega_{11}^2\omega_{18} + 20\omega_6v_3^4\omega_{11}^3\omega_{18} + 120\omega_6^2v_3^2c_s^2\omega_{11}^2\omega_{18} + 24\omega_6^2v_3^4\omega_{18}^2 - 8v_3^2\omega_{11}^2\omega_{18}^2 - 13\omega_6^2v_3^2\omega_{11}^2\omega_{18}^2 - 24\omega_6^2v_3^2c_s^2\omega_{11}^2 - 4\omega_6c_s^4\omega_{11}^3 - 8\omega_6c_s^4\omega_{11}^2\omega_{18}^2 - 4\omega_6^2c_s^4\omega_{11}\omega_{18} - 4\omega_6^2v_3^2\omega_{11}^3 + 24\omega_6^2v_3^2c_s^2\omega_{11}^3 + 13\omega_6^2v_3^2\omega_{11}^3\omega_{18} + 12\omega_6^2c_s^2\omega_{11}\omega_{18}^2 + 8v_3^2\omega_{11}^3\omega_{18} - 48\omega_6v_3^2c_s^2\omega_{11}^2\omega_{18} + 20\omega_6v_3^4\omega_{11}\omega_{18}^2 + 4\omega_6^2v_3^2\omega_{11}^2 + 32\omega_6^2v_3^4\omega_{11}^2\omega_{18} + 8\omega_6c_s^4\omega_{11}^3\omega_{18} + 8v_3^4\omega_{11}^2\omega_{18}^2 - 84\omega_6v_3^2c_s^2\omega_{11}^2\omega_{18}^2 - 36v_3^2c_s^2\omega_{11}^3\omega_{18} + 13\omega_6^2v_3^4\omega_{11}^2\omega_{18}^2 + 4\omega_6^2c_s^2\omega_{11}^2 + 8\omega_6c_s^2\omega_{11}^2\omega_{18}^2 - 51\omega_6^2v_3^2c_s^2\omega_{11}^3\omega_{18} + 4\omega_6^2c_s^2\omega_{11}\omega_{18} + 8\omega_6^2c_s^4\omega_{18}^2 - 13\omega_6^2v_3^4\omega_{11}^3\omega_{18} - 8v_3^4\omega_{11}^3\omega_{18} - 12\omega_6^2c_s^4\omega_{11}\omega_{18}^2 + 84\omega_6v_3^2c_s^2\omega_{11}^3\omega_{18} + 36v_3^2c_s^2\omega_{11}^2\omega_{18}^2 + 51\omega_6^2v_3^2c_s^2\omega_{11}^2\omega_{18}^2 - 4\omega_6v_3^4\omega_{11}^3 - 20\omega_6v_3^2\omega_{11}\omega_{18}^2 - 32\omega_6^2v_3^2\omega_{11}^2\omega_{18} - 8\omega_6c_s^2\omega_{11}^3\omega_{18} - 4\omega_6^2c_s^2\omega_{11}^3)\frac{v_1}{4\omega_6^2\omega_{11}^3\omega_{18}^2}$$

$$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_z^3\rho} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^3\rho}$$

$$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_z^3\rho} = 0$$

$$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_z^3\rho} = 0$$

$$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_z^3\rho} = 0$$

$$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_z^3\rho} = (56\omega_3^2c_s^2\omega_1^3\omega_2 - 48\omega_3^2v_3^2v_1^2\omega_1^2\omega_2^2 + 5\omega_3^2c_s^2\omega_1^2\omega_2^3 - 4\omega_3^2v_1^2\omega_1^3 + 48\omega_3^2v_3^2\omega_1\omega_2^2 - 36\omega_3^2c_s^4\omega_2^3 - 12c_s^2v_1^2\omega_1^3\omega_2^2 + 24\omega_3^2v_3^4\omega_1^3 - 36\omega_3^2c_s^4\omega_1^2\omega_2 + 4\omega_3^2\omega_1^3 - 60\omega_3^2v_3^2\omega_1\omega_2^3 - 24\omega_3^2v_3^2v_1^2\omega_1^2\omega_2^2 - 34\omega_3^2c_s^2\omega_1^2\omega_2^2 - 48\omega_3^2v_3^2v_1^2\omega_1^3\omega_2 - 72\omega_3^2v_3^2v_1^2\omega_2^3 + 6\omega_3^2c_s^4\omega_1^3\omega_2^2 + 24\omega_3c_s^4\omega_1\omega_2^3 - 6\omega_3^2c_s^4\omega_1^2\omega_2^2 - 8\omega_3^2v_1^2\omega_1\omega_2^3 - 216\omega_3^2v_3^2c_s^2\omega_1\omega_2^2 - 84\omega_3^2c_s^4\omega_1^3\omega_2 + 8\omega_3^2\omega_1\omega_2^2 - 72\omega_3^2v_3^4\omega_1\omega_2^2 + 24\omega_3^2v_3^2v_1^2\omega_1^3 + 22\omega_3^2c_s^2v_1^2\omega_1\omega_2^3 + 40\omega_3^2c_s^2\omega_1^2\omega_2 + 24\omega_3^2v_3^2v_1^2\omega_1^3\omega_2^2 + 8\omega_3^2c_s^2v_1^2\omega_1\omega_2^2 - 36\omega_3^2v_3^4\omega_1\omega_2^3 + 8\omega_3^2\omega_1\omega_2^3 - 8\omega_3^2v_1^2\omega_1\omega_2^2 + 12c_s^2v_1^2\omega_1^2\omega_2^3 + 8\omega_3^2v_1^2\omega_2^3 + 108\omega_3^2v_3^2c_s^2\omega_1\omega_2^3 + 42\omega_3^2c_s^4\omega_1^2\omega_2^2 - 5\omega_3^2c_s^2\omega_1^3\omega_2^2 + 24\omega_3^2v_3^2v_1^2\omega_1^2\omega_2 - 8\omega_3c_s^2\omega_1\omega_2^3 - 8\omega_3^2\omega_2^3 + 48\omega_3^2v_3^4\omega_2^3 + 72\omega_3^2c_s^4\omega_1^3 + 8\omega_3c_s^2v_1^2\omega_1\omega_2^3 - \omega_3^2\omega_1^2\omega_2^3 - 4\omega_3^2\omega_1^3\omega_2 - 2\omega_3^2c_s^2v_1^2\omega_1^2\omega_2^2 - 36\omega_3^2v_3^4\omega_1^3\omega_2 + 16\omega_3^2c_s^2v_1^2\omega_1^3 - 324\omega_3^2v_3^2c_s^2\omega_1^3\omega_2 - 72\omega_3^2v_3^2c_s^2\omega_1^2\omega_2^3 + 4\omega_3^2v_1^2\omega_1^2\omega_2^2 + 12c_s^2\omega_1^3\omega_2^2 - 24\omega_3^2v_3^2\omega_1^2\omega_2 - 18\omega_3c_s^2v_1^2\omega_1^2\omega_2^3 + 216\omega_3^2v_3^2c_s^2\omega_1^3 + 4\omega_3c_s^2\omega_1^3\omega_2 - 4\omega_3c_s^2v_1^2\omega_1^3\omega_2 + 18\omega_3c_s^2\omega_1^2\omega_2^3 + 216\omega_3^2v_3^2c_s^2\omega_1^2\omega_2^2 + \omega_3^2v_1^2\omega_1^2\omega_2^3 + 36c_s^4\omega_1^2\omega_2^3 + 42\omega_3^2c_s^4\omega_1\omega_2^3 + 4\omega_3^2v_1^2\omega_1^3\omega_2 - 2\omega_3^2c_s^2v_1^2\omega_1^2\omega_2^3 + 54\omega_3c_s^4\omega_1^3\omega_2^2 - 4\omega_3^2\omega_1^2\omega_2^2 + 72\omega_3^2v_3^4\omega_1^2\omega_2^2 - 20\omega_3^2c_s^2v_1^2\omega_1^3\omega_2 - 24\omega_3^2v_3^2\omega_1^3\omega_2^2 + 4\omega_3c_s^2\omega_1^2\omega_2^2 - 4\omega_3c_s^2v_1^2\omega_1^2\omega_2^2 + 20\omega_3^2c_s^2\omega_2^3 - 48\omega_3^2v_3^2\omega_1^3 + 84\omega_3^2v_3^2\omega_1^3\omega_2 + 24\omega_3^2v_3^2\omega_1^2\omega_2^3 - 8\omega_3^2c_s^2\omega_1\omega_2^2 + 96\omega_3^2v_3^2v_1^2\omega_1\omega_2^3 - 36c_s^4\omega_1^3\omega_2^2 - \omega_3^2v_1^2\omega_1^3\omega_2^2 + 24\omega_3^2v_3^2\omega_2^3 - 54\omega_3c_s^4\omega_1^2\omega_2^3 + 2\omega_3^2c_s^2v_1^2\omega_1^3\omega_2^2 - 4\omega_3^2\omega_1^2\omega_2 - 52\omega_3^2c_s^2\omega_1^3 - 12\omega_3c_s^4\omega_1^3\omega_2 - 22\omega_3^2c_s^2\omega_1\omega_2^3 + 24\omega_3^2v_3^2v_1^2\omega_1\omega_2^2 - 12c_s^2\omega_1^2\omega_2^3 - 18\omega_3c_s^2\omega_1^3\omega_2^2 - 24\omega_3^2v_3^2\omega_1^2\omega_2^2 - 20\omega_3^2c_s^2v_1^2\omega_2^3 + 18\omega_3c_s^2v_1^2\omega_1^3\omega_2^2 - 4\omega_3^2c_s^2v_1^2\omega_1^2\omega_2 + \omega_3^2\omega_1^3\omega_2^2 - 12\omega_3c_s^4\omega_1^2\omega_2^2 + 72\omega_3^2v_3^2c_s^2\omega_1^3\omega_2^2 + 4\omega_3^2v_1^2\omega_1^2\omega_2)\frac{v_1}{36\omega_3^2\omega_1^3\omega_2^3}$$

coefficient $C^{(3)}_{\mathrm{D}_x\mathrm{D}_z^3 v_1}$ **at** $\frac{\partial^4 v_1}{\partial x_1\partial x_3^3}$**:**

$$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_z^3 v_1} = (-36v_3^4 - c_s^4\omega^3 + 54v_3^4\omega + 54v_3^2c_s^2\omega + 20c_s^4\omega^2 + 36c_s^4 - 42v_3^2c_s^2\omega^2 - 54c_s^4\omega - 26v_3^4\omega^2 + 12v_3^2c_s^2\omega^3 + 4v_3^4\omega^3 - 36v_3^2c_s^2 - 54v_3^2\omega - 12c_s^2\omega^2 - 4v_3^2\omega^3 + 36v_3^2 + 36c_s^2\omega - 24c_s^2 + 26v_3^2\omega^2)\frac{\rho}{12\omega^3}$$

$$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^3 v_1} = (90\omega_6^3v_3^2\omega_{11}\omega_{18}^2 - 21\omega_6^3v_3^2c_s^2\omega_{11}^3\omega_{18} + 12\omega_6^3v_3^2\omega_{11}^2 + 12\omega_6v_3^4\omega_{11}^3\omega_{18}^2 + 6\omega_6^2c_s^4\omega_{11}^2\omega_{18}^2 - 6\omega_6^3c_s^2\omega_{11}^3\omega_{18} - 5\omega_6^2c_s^2\omega_{11}^3\omega_{18}^2 - 6\omega_6^3c_s^4\omega_{11}^2\omega_{18} - 108\omega_6^2v_3^2c_s^2\omega_{11}\omega_{18}^2 - \omega_6^3c_s^2\omega_{11}^2\omega_{18}^2 - 18\omega_6^2c_s^4\omega_{11}^3\omega_{18} - 12\omega_6^3v_3^2\omega_{11}^3 + 60\omega_6^3v_3^2c_s^2\omega_{11}^2\omega_{18}^2 + 72\omega_6^3v_3^4\omega_{18}^2 - 36\omega_6^3v_3^4\omega_{11}\omega_{18} - \omega_6^3c_s^4\omega_{11}^3\omega_{18}^2 - 12\omega_6^2c_s^2\omega_{11}^2\omega_{18} + 24\omega_6v_3^2\omega_{11}^3\omega_{18} - 12\omega_6^2v_3^4\omega_{11}^3 - 90\omega_6^3v_3^4\omega_{11}\omega_{18}^2 - 12\omega_6v_3^2\omega_{11}^3\omega_{18}^2 - 6\omega_6^2c_s^2\omega_{11}^2\omega_{18}^2 + 6\omega_6^3c_s^4\omega_{11}^3\omega_{18} + 13\omega_6^2c_s^4\omega_{11}^3\omega_{18}^2 + 6\omega_6^3c_s^2\omega_{11}^2\omega_{18}^2 + 12\omega_6^2c_s^2\omega_{11}^2\omega_{18}^2 + 252\omega_6^3v_3^2c_s^2\omega_{18}^2 + 36\omega_6^3v_3^2\omega_{11}\omega_{18} + 12\omega_6^2c_s^4\omega_{11}^2\omega_{18} + 24\omega_6v_3^4\omega_{11}^3\omega_{18} - 12\omega_6^2v_3^2c_s^2\omega_{11}^2\omega_{18} - 12\omega_6^3c_s^4\omega_{11}\omega_{18}^2 + 6\omega_6c_s^2\omega_{11}^3\omega_{18}^2 - 12\omega_6^2v_3^2\omega_{11}^2\omega_{18}^2 - 27\omega_6^3v_3^4\omega_{11}^3\omega_{18} + 12\omega_6^3v_3^4\omega_{11}^3 - 18\omega_6^2v_3^4\omega_{11}^3\omega_{18}^2 - 60\omega_6^3v_3^2\omega_{11}^2\omega_{18} - 72\omega_6^3v_3^2\omega_{18}^2 + 102\omega_6v_3^2c_s^2\omega_{11}^3\omega_{18}^2 + 12\omega_6^2v_3^2\omega_{11}^3 - 12\omega_6^2v_3^2c_s^2\omega_{11}^3 + 19\omega_6^3v_3^4\omega_{11}^2\omega_{18}^2 - 48\omega_6^2v_3^2\omega_{11}^3\omega_{18} - 12\omega_6^3v_3^4\omega_{11}^2 - 81\omega_6^2v_3^2c_s^2\omega_{11}^3\omega_{18}^2 + 12\omega_6^2c_s^2\omega_{11}\omega_{18}^2 - 48v_3^2c_s^2\omega_{11}^3\omega_{18}^2 - 4\omega_6^3v_3^2\omega_{11}^3\omega_{18}^2 - 24\omega_6^2v_3^4\omega_{11}^2\omega_{18} - 36\omega_6^3v_3^2c_s^2\omega_{11}\omega_{18} + 12\omega_6c_s^4\omega_{11}^3\omega_{18} + 12\omega_6^3c_s^2\omega_{11}\omega_{18}^2 - 48\omega_6v_3^2c_s^2\omega_{11}^2\omega_{18}^2 - 306\omega_6^3v_3^2c_s^2\omega_{11}\omega_{18}^2 - 24\omega_6c_s^4\omega_{11}^3\omega_{18}^2 + 12\omega_6^2v_3^4\omega_{11}^2\omega_{18}^2 + 27\omega_6^3v_3^2\omega_{11}^3\omega_{18} + 12\omega_6^3v_3^2c_s^2\omega_{11}^3 + 18\omega_6^2v_3^2\omega_{11}^3\omega_{18}^2 + 60\omega_6^3v_3^4\omega_{11}^2\omega_{18} + 30\omega_6^2v_3^2c_s^2\omega_{11}^3\omega_{18} - 12\omega_6^3v_3^2c_s^2\omega_{11}^2 - 19\omega_6^3v_3^2\omega_{11}^2\omega_{18}^2 + 48\omega_6^2v_3^4\omega_{11}^3\omega_{18} - 12\omega_6^2c_s^4\omega_{11}\omega_{18}^2 - 12\omega_6v_3^2c_s^2\omega_{11}^3\omega_{18} + 162\omega_6^2v_3^2c_s^2\omega_{11}^2\omega_{18}^2 - 12\omega_6^3c_s^2\omega_{18}^2 + 4\omega_6^3v_3^4\omega_{11}^3\omega_{18}^2 + 24\omega_6^2v_3^2\omega_{11}^2\omega_{18} - 12\omega_6c_s^2\omega_{11}^3\omega_{18})\frac{\rho}{12\omega_6^3\omega_{11}^3\omega_{18}^2}$$

$$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_z^3 v_1} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^3 v_1}$$

$$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_z^3 v_1} = (90\omega_6^3v_3^2\omega_{11}\omega_{18}^2 - 99\omega_6^3v_3^2c_s^2\omega_{11}^3\omega_{18} + 36\omega_6^3v_3^2\omega_{11}^2 + 6\omega_6^2c_s^4\omega_{11}^2\omega_{18}^2 - 6\omega_6^3c_s^2\omega_{11}^3\omega_{18} - 5\omega_6^2c_s^2\omega_{11}^3\omega_{18}^2 - 6\omega_6^3c_s^4\omega_{11}^2\omega_{18} - 36\omega_6^2v_3^2c_s^2\omega_{11}\omega_{18}^2 - \omega_6^3c_s^2\omega_{11}^2\omega_{18}^2 - 18\omega_6^2c_s^4\omega_{11}^3\omega_{18} - 36\omega_6^3v_3^2\omega_{11}^3 + 60\omega_6^3v_3^2c_s^2\omega_{11}^2\omega_{18}^2 + 72\omega_6^3v_3^4\omega_{18}^2 - 36\omega_6^3v_3^4\omega_{11}\omega_{18} - \omega_6^3c_s^4\omega_{11}^3\omega_{18}^2 - 12\omega_6^2c_s^2\omega_{11}^2\omega_{18} - 36\omega_6^2v_3^4\omega_{11}^3 - 90\omega_6^3v_3^4\omega_{11}\omega_{18}^2 - 6\omega_6^2c_s^2\omega_{11}^2\omega_{18}^2 + 6\omega_6^3c_s^4\omega_{11}^3\omega_{18} + 13\omega_6^2c_s^4\omega_{11}^3\omega_{18}^2 + 6\omega_6^3c_s^2\omega_{11}^2\omega_{18} + 12\omega_6^2c_s^4\omega_{18}^2 + 198\omega_6^3v_3^2c_s^2\omega_{11}^2\omega_{18} + 12c_s^4\omega_{11}^3\omega_{18}^2 + \omega_6^3c_s^4\omega_{11}^2\omega_{18}^2 + 18\omega_6^2c_s^2\omega_{11}^3\omega_{18} + 12\omega_6^3v_3^2c_s^2\omega_{11}^3\omega_{18}^2 + 252\omega_6^3v_3^2c_s^2\omega_{18}^2 + 36\omega_6^3v_3^2\omega_{11}\omega_{18} + 12\omega_6^2c_s^4\omega_{11}^2\omega_{18} + 36\omega_6^2v_3^2c_s^2\omega_{11}\omega_{18} - 12\omega_6^3c_s^4\omega_{11}\omega_{18}^2 + 6\omega_6c_s^2\omega_{11}^3\omega_{18}^2 - 39\omega_6^3v_3^4\omega_{11}^3\omega_{18} + 36\omega_6^3v_3^4\omega_{11}^3 - 6\omega_6^2v_3^4\omega_{11}^3\omega_{18}^2 - 72\omega_6^3v_3^2\omega_{11}\omega_{18} - 72\omega_6^3v_3^2\omega_{18}^2 - 18\omega_6v_3^2c_s^2\omega_{11}^3\omega_{18}^2 + 36\omega_6^2v_3^2\omega_{11}^3 - 108\omega_6^2v_3^2c_s^2\omega_{11}^3 + 19\omega_6^3v_3^4\omega_{11}^2\omega_{18}^2 - 36\omega_6^2v_3^2\omega_{11}^3\omega_{18} - 36\omega_6^3v_3^4\omega_{11}^2 - 3\omega_6^2v_3^2c_s^2\omega_{11}^3\omega_{18}^2 + 12\omega_6^2c_s^2\omega_{11}\omega_{18}^2 - 4\omega_6^3v_3^4\omega_{11}^3\omega_{18}^2 - 108\omega_6^3v_3^2c_s^2\omega_{11}\omega_{18} + 12\omega_6c_s^4\omega_{11}^3\omega_{18} + 12\omega_6^2c_s^2\omega_{11}\omega_{18}^2 - 306\omega_6^3v_3^2c_s^2\omega_{11}\omega_{18}^2 - 24\omega_6c_s^4\omega_{11}^3\omega_{18}^2 + 36\omega_6v_3^4\omega_8\omega_2^3 - 18\omega_6^3c_s^4\omega_8\omega_2^2 + 108\omega_6^3v_3^2c_s^2\omega_{11}^3 + 6\omega_6^2v_3^2\omega_{11}^3\omega_{18}^2 + 72\omega_6^3v_3^4\omega_{11}\omega_{18} + 54\omega_6^2v_3^2c_s^2\omega_{11}^3\omega_{18} - 108\omega_6^3v_3^2c_s^2\omega_{11}^2 - 19\omega_6^3v_3^2\omega_{11}^2\omega_{18}^2 + 36\omega_6^2v_3^4\omega_{11}^3\omega_{18} - 12\omega_6^2c_s^4\omega_{11}\omega_{18}^2 + 36\omega_6v_3^2c_s^2\omega_{11}^3\omega_{18} + 18\omega_6^2v_3^2c_s^2\omega_{11}^2\omega_{18}^2 - 12\omega_6^3c_s^2\omega_{18}^2 + 4\omega_6^3v_3^4\omega_{11}^3\omega_{18}^2 - 12\omega_6c_s^2\omega_{11}^3\omega_{18})\frac{\rho}{12\omega_6^3\omega_{11}^3\omega_{18}^2}$$

$$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_z^3 v_1} = C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_z^3 v_1}$$

$$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_z^3 v_1} = (12\omega_6^3c_s^4\omega_8\omega_2 + 18\omega_6^2v_3^2c_s^2\omega_8^2\omega_2^2 + 12\omega_6c_s^2\omega_8^2\omega_2^3 - 108\omega_6^2v_3^2c_s^2\omega_2^3 + 6\omega_6^3v_3^2\omega_8^2\omega_2^2 - 99\omega_6^3v_3^2c_s^2\omega_8\omega_2^3 - 36\omega_6^3v_3^4\omega_2^2 + 19\omega_6^2v_3^4\omega_8^2\omega_2^3 - 6\omega_6^3c_s^2\omega_8\omega_2^3 + 72v_3^4\omega_8^2\omega_2^3 - 306\omega_6v_3^2c_s^2\omega_8^2\omega_2^3 + 12\omega_6^2c_s^4\omega_8\omega_2^2 + 12\omega_6c_s^2\omega_8^2\omega_2^2 + 60\omega_6^2v_3^2c_s^2\omega_8^2\omega_2^3 + 36\omega_6v_3^2\omega_8\omega_2^3 + 36\omega_6^2v_3^2\omega_2^3 - 6\omega_6^2c_s^4\omega_8\omega_2^3 + 18\omega_6^3c_s^2\omega_8\omega_2^2 - 36\omega_6v_3^2c_s^2\omega_8^2\omega_2^2 + 252v_3^2c_s^2\omega_8^2\omega_2^3 + 54\omega_6^3v_3^2c_s^2\omega_8\omega_2^2 + 36\omega_6^3v_3^4\omega_2^3 - 4\omega_6^3v_3^2\omega_8^2\omega_2^3 - 12\omega_6^3c_s^2\omega_8\omega_2 + 36\omega_6^3v_3^2c_s^2\omega_8\omega_2 - 12\omega_6c_s^4\omega_8^2\omega_2^3 - 108\omega_6^3v_3^2c_s^2\omega_2^2 - 19\omega_6^2v_3^2\omega_8^2\omega_2^3 - 6\omega_6^3v_3^4\omega_8^2\omega_2^2 - 12\omega_6^2c_s^2\omega_8\omega_2^2 - 72v_3^2\omega_8^2\omega_2^3 + 6\omega_6^3c_s^4\omega_8\omega_2^3 - 12\omega_6c_s^4\omega_8^2\omega_2^2 - 36\omega_6v_3^4\omega_8\omega_2^3 - 18\omega_6^3c_s^4\omega_8\omega_2^2 + 6\omega_6^2c_s^2\omega_8\omega_2^3 + 4\omega_6^3v_3^4\omega_8^2\omega_2^3 + 108\omega_6^3v_3^2c_s^2\omega_2^3 - 36\omega_6^2v_3^4\omega_2^3 - 90\omega_6v_3^4\omega_8^2\omega_2^3 - \omega_6^2c_s^2\omega_8^2\omega_2^3 + 13\omega_6^3c_s^4\omega_8^2\omega_2^2 - 36\omega_6^3v_3^2\omega_2^3 - 12c_s^2\omega_8^2\omega_2^3 - 39\omega_6^3v_3^4\omega_8\omega_2^3 + 6\omega_6^3c_s^2\omega_8^2\omega_2 - 18\omega_6^3v_3^2c_s^2\omega_8^2\omega_2 + 12\omega_6^3c_s^4\omega_8^2 + 36\omega_6^3v_3^4\omega_8\omega_2^2 - 72\omega_6^2v_3^2\omega_8\omega_2^3 + 36\omega_6^3v_3^2\omega_2^2 - \omega_6^3c_s^4\omega_8^2\omega_2^3 - 6\omega_6^2c_s^2\omega_8^2\omega_2^2 + 90\omega_6v_3^2\omega_8^2\omega_2^3 + 198\omega_6^2v_3^2c_s^2\omega_8\omega_2^3 - 5\omega_6^3c_s^2\omega_8^2\omega_2^2 + \omega_6^2c_s^4\omega_8^2\omega_2^3 + 39\omega_6^3v_3^2\omega_8\omega_2^3 + 12c_s^4\omega_8^2\omega_2^3 - 3\omega_6^3v_3^2c_s^2\omega_8^2\omega_2^2 + 36\omega_6^2v_3^2c_s^2\omega_8\omega_2^2 - 24\omega_6^3c_s^4\omega_8^2\omega_2 + 72\omega_6^2v_3^4\omega_8\omega_2^3 + 12\omega_6^3v_3^2c_s^2\omega_8^2\omega_2^3 - 36\omega_6^3v_3^2\omega_8\omega_2^2 + 6\omega_6^2c_s^4\omega_8^2\omega_2^2 - 108\omega_6v_3^2c_s^2\omega_8\omega_2^3)\frac{\rho}{12\omega_6^3\omega_8^2\omega_2^3}$$

$$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_z^3 v_1} = (54v_3^4\omega_4^2\omega_1^3\omega_2^3 + 48\omega_3^2c_s^2v_1^2\omega_4^2\omega_1\omega_2^2 - 18\omega_3^2c_s^2\omega_4\omega_1^3\omega_2^3 + 144\omega_3^2v_3^2v_1^2\omega_4^2\omega_1\omega_2^2 + 72\omega_3v_3^2c_s^2\omega_4^2\omega_1\omega_2^3 - 216v_3^2c_s^2\omega_4^2\omega_1^2\omega_2^3 + 40\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^2 - 117\omega_3^2v_3^4\omega_4\omega_1^3\omega_2^3 + 60\omega_3v_3^2\omega_4^2\omega_1^2\omega_2^2 + 8\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2^3 - 36\omega_3v_3^4\omega_4\omega_1^3\omega_2^2 - 297\omega_3^2v_3^2c_s^2\omega_4\omega_1^3\omega_2^3 - 48\omega_3^2v_1^2\omega_4^2\omega_1\omega_2^2 + 204\omega_3^2v_3^2\omega_4^2\omega_1^3\omega_2 - 40\omega_3^2c_s^2\omega_4^2\omega_1^3 + 86\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^3 - 28\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2 + 36\omega_3^2v_3^4\omega_4\omega_1^3\omega_2^2 - 216\omega_3v_3^2\omega_4^2\omega_1^2\omega_2^3 + 24\omega_3v_3^2\omega_4^2\omega_1^3\omega_2 + 576\omega_3^2v_3^2v_1^2\omega_4^2\omega_1\omega_2^3 - 36\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^3 - 540\omega_3v_3^2c_s^2\omega_4\omega_1^2\omega_2^3 - 12\omega_3^2c_s^2v_1^2\omega_4^2\omega_1\omega_2^3 - 36v_3^4\omega_4^2\omega_1^3\omega_2^2 + 16\omega_3c_s^4\omega_4^2\omega_1^3\omega_2 + 72\omega_3^2c_s^4\omega_4\omega_1\omega_2^3 + 20\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^2 + 80\omega_3^2c_s^4\omega_4^2\omega_2^3 +$$

$144\omega_3^2v_3^2v_1^2\omega_4^2\omega_1^3 + 72\omega_3^2v_3^2\omega_4\omega_1\omega_2^3 + 240\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2^2 - 48\omega_3^2v_1^2\omega_4^2\omega_1\omega_2^3 + 108\omega_3^2v_3^2c_s^2\omega_4\omega_1^3\omega_2^2 + 108\omega_3v_3^4\omega_4\omega_1^3\omega_2^3 - 6\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^3 -$
$56\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2 - 16\omega_3c_s^2\omega_4^2\omega_1\omega_2^3 + 648\omega_3^2v_3^2c_s^2\omega_4\omega_1^2\omega_2^3 - 96\omega_3c_s^2v_1^2\omega_4^2\omega_1\omega_2^3 - 24\omega_3^2v_3^2\omega_4^2\omega_1^3\omega_2^3 - 24\omega_3v_3^4\omega_4^2\omega_1\omega_2^3 + 336\omega_3^2v_3^2c_s^2\omega_4^2\omega_1\omega_2^2 -$
$144\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2 + 96\omega_3^2v_3^4\omega_4^2\omega_1\omega_2^2 + 32\omega_3^2c_s^4\omega_4^2\omega_1^3 + 16\omega_3^2\omega_4^2\omega_1\omega_2^2 - 108\omega_3v_3^2\omega_4^2\omega_1^3\omega_2^2 + 288\omega_3^2v_3^4\omega_4\omega_1^2\omega_2^3 - 32\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^2 - 108\omega_3v_3^2c_s^2\omega_4\omega_1^3\omega_2^2 -$
$72v_3^4\omega_4^2\omega_1^2\omega_2^3 - 432\omega_3^2v_3^2v_1^2\omega_4^2\omega_2^3 + 162v_3^2c_s^2\omega_4^2\omega_1^3\omega_2^3 - 36\omega_3c_s^4\omega_4^2\omega_1^3\omega_2^2 + 72\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^3 - 852\omega_3^2v_3^2c_s^2\omega_4^2\omega_1\omega_2^3 - 108\omega_3^2v_3^2c_s^2\omega_4\omega_1^2\omega_2^2 -$
$180\omega_3v_3^4\omega_4\omega_1^2\omega_2^3 - 86\omega_3^2v_3^2\omega_4^2\omega_1^3\omega_2^2 - 2\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^2 + 18\omega_3c_s^4\omega_4^2\omega_1^3\omega_2^3 - 108v_3^2c_s^2\omega_4^2\omega_1^3\omega_2^2 + 8\omega_3^2c_s^2\omega_4^2\omega_2^3 + 48\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^3 + 324\omega_3v_3^2c_s^2\omega_4\omega_1^3\omega_2^3 +$
$117\omega_3v_3^2\omega_4^2\omega_1^3\omega_2^3 - 36\omega_3^2v_3^4\omega_4\omega_1^2\omega_2^2 - 288\omega_3^2v_3^4\omega_4^2\omega_1\omega_2^3 + 16\omega_3^2\omega_4^2\omega_1\omega_2^3 - 492\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^3\omega_2 + 48\omega_3c_s^2v_1^2\omega_4^2\omega_1^2\omega_2^2 - 108\omega_3^2v_3^4\omega_1^2\omega_2^3 +$
$174\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^2\omega_2^3 - 60\omega_3v_3^4\omega_4^2\omega_1^2\omega_2^2 + 117\omega_3^2v_3^2\omega_4\omega_1^3\omega_2^3 + 24\omega_3^2v_1^2\omega_4^2\omega_1^2\omega_2 - 54v_3^2\omega_4^2\omega_1^3\omega_2^3 - 324\omega_3^2v_3^2c_s^2\omega_1^2\omega_2^3 - 40\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^2 + 18\omega_3^2c_s^4\omega_4\omega_1^3\omega_2^3 +$
$8\omega_3^2\omega_4^2\omega_1^3 + 48\omega_3^2v_3^4\omega_4^2\omega_1^3 + 144\omega_3^2v_3^2v_1^2\omega_4^2\omega_1^2\omega_2 - 36\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^3 - 96\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^2\omega_2 + 36\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2 + 288\omega_3v_3^2c_s^2\omega_4^2\omega_1^3\omega_2^2 + 36\omega_3v_3^2\omega_4\omega_1^3\omega_2^2 -$
$2\omega_3^2\omega_4^2\omega_1^2\omega_2^3 + 40\omega_3^2v_3^4\omega_4^2\omega_1^2\omega_2^3 - 54\omega_3^2v_3^2\omega_1^3\omega_2^3 - 108\omega_3^2v_3^4\omega_4^2\omega_1^3\omega_2 - 8\omega_3^2\omega_4^2\omega_1^3\omega_2 + 264\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^3 + 36\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^3 - 16\omega_3c_s^2\omega_4^2\omega_1^3\omega_2 +$
$36v_3^2\omega_4^2\omega_1^3\omega_2^2 + 216\omega_3v_3^4\omega_4^2\omega_1^2\omega_2^3 - 492\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^2\omega_2^2 + 48\omega_3c_s^2v_1^2\omega_4^2\omega_1^3\omega_2 - 36\omega_3^2v_3^2\omega_4\omega_1^3\omega_2^2 - 24\omega_3v_3^4\omega_4^2\omega_1^3\omega_2 - 6\omega_3^2v_1^2\omega_4^2\omega_1^3\omega_2^2 +$
$72\omega_3c_s^2v_1^2\omega_4^2\omega_1^2\omega_2^3 - 72\omega_3^2v_3^4\omega_4\omega_1\omega_2^3 - 24\omega_3^2v_1^2\omega_4^2\omega_1^3 - 48\omega_3^2v_3^2\omega_4^2\omega_2^3 - 108\omega_3v_3^2\omega_4\omega_1^3\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^2\omega_2^2 - 144\omega_3^2v_3^4\omega_4^2\omega_1^2\omega_2^2 + 144\omega_3^2v_3^2v_1^2\omega_4^2\omega_1^3\omega_2^2 +$
$24\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^3 - 72\omega_3^2c_s^2\omega_4\omega_1\omega_2^3 - 297\omega_3v_3^2c_s^2\omega_4^2\omega_1^3\omega_2^3 - 12\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^3\omega_2^2 - 12\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^2 + 24\omega_3^2v_3^4\omega_4^2\omega_1^3\omega_2^2 - 8\omega_3^2\omega_4^2\omega_1^2\omega_2 + 96\omega_3^2v_3^4\omega_4^2\omega_1^2\omega_2 +$
$24\omega_3v_3^2\omega_4\omega_1\omega_2^3 + 108\omega_3^2v_3^2\omega_1^2\omega_2^3 + 12\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^2\omega_2^3 - 288\omega_3^2v_3^2v_1^2\omega_4^2\omega_1^3\omega_2 + 16\omega_3c_s^4\omega_4^2\omega_1\omega_2^3 - 108\omega_3v_3^2c_s^2\omega_4^2\omega_1^2\omega_2^2 + 64\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2 -$
$144\omega_3^2v_3^2v_1^2\omega_4^2\omega_1^2\omega_2^3 - 12\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^3\omega_2 + 72v_3^2\omega_4^2\omega_1^2\omega_2^3 + 16\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^2 - 72\omega_3^2c_s^4\omega_4\omega_1^2\omega_2^3 - 96\omega_3^2v_3^2\omega_4^2\omega_1^3 + 48\omega_3^2v_1^2\omega_4^2\omega_2^3 + 36\omega_3c_s^2\omega_4^2\omega_1^3\omega_2^2 +$
$162\omega_3^2v_3^2c_s^2\omega_1^3\omega_2^2 + 54\omega_3^2v_3^4\omega_1^3\omega_2^2 + 6\omega_3^2v_1^2\omega_4^2\omega_1^2\omega_2^2 - 72\omega_3c_s^2v_1^2\omega_4^2\omega_1^3\omega_2^2 - 144\omega_3^2v_3^2\omega_4^2\omega_1\omega_2^2 + 264\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^2\omega_2 - 288\omega_3^2v_3^2\omega_4\omega_1^2\omega_2^2 +$
$24\omega_3^2v_1^2\omega_4^2\omega_1^3\omega_2 + 72\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^3\omega_2^2 + 24\omega_3^2c_s^2v_1^2\omega_4^2\omega_2^3 + 108\omega_3v_3^4\omega_4^2\omega_1^3\omega_2^2 + 468\omega_3v_3^2c_s^2\omega_4^2\omega_1^2\omega_2^3 - 288\omega_3^2v_3^2v_1^2\omega_4^2\omega_1^2\omega_2^2 - 72\omega_3v_3^2c_s^2\omega_4^2\omega_1^3\omega_2 +$
$24\omega_3^2c_s^2v_1^2\omega_4^2\omega_1^2\omega_2^2 + 38\omega_3^2v_3^4\omega_4^2\omega_1^3\omega_2^2 + 2\omega_3^2\omega_4^2\omega_1^3\omega_2^2 + 180\omega_3v_3^2\omega_4\omega_1^2\omega_2^3 + 36\omega_3^2v_3^2\omega_4\omega_1^2\omega_2^2 - 117\omega_3v_3^4\omega_4^2\omega_1^3\omega_2^3 + 168\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^3\omega_2^2 +$
$24\omega_3^2v_1^2\omega_4^2\omega_1^2\omega_2^2 + 192\omega_3^2v_3^4\omega_4^2\omega_2^3 - 16\omega_3^2\omega_4^2\omega_2^3 + 96\omega_3^2v_3^2\omega_4^2\omega_1\omega_2^3 + 432\omega_3^2v_3^2c_s^2\omega_4^2\omega_2^3 - 18\omega_3c_s^2\omega_4^2\omega_1^3\omega_2^3 - 172\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^3)\frac{\rho}{72\omega_3^2\omega_4^2\omega_1^3\omega_2^3}$

coefficient $C^{(3)}_{\mathrm{D}_x\mathrm{D}_z^3 v_3}$ **at** $\frac{\partial^4 v_3}{\partial x_1 \partial x_3^3}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_x\mathrm{D}_z^3 v_3} = 0$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^3 v_3} = (-32\omega_6^2\omega_{18}^2 - 68\omega_6v_3^2\omega_{11}^2\omega_{18}^2 + 28\omega_6\omega_{11}^2\omega_{18}^2 - 64\omega_6^2v_3^2\omega_{11}\omega_{18} + 80\omega_6^2v_3^2\omega_{18}^2 + 48\omega_6^2\omega_{11}\omega_{18}^2 - 28\omega_6\omega_{11}^3\omega_{18} - 16\omega_6c_s^2\omega_{11}^3 +$
$32\omega_6c_s^2\omega_{11}\omega_{18}^2 + 56\omega_6^2c_s^2\omega_{11}^2\omega_{18} + 68\omega_6v_3^2\omega_{11}^3\omega_{18} + 48\omega_6^2c_s^2\omega_{18}^2 + 24\omega_6^2\omega_{11}\omega_{18} + 20c_s^2\omega_{11}^2\omega_{18}^2 + 25\omega_6^2c_s^2\omega_{11}^2\omega_{18}^2 - 12\omega_{11}^2\omega_{18}^2 - 16\omega_6v_3^2\omega_{11}^3 +$
$8\omega_6\omega_{11}^3 - 48\omega_6v_3^2\omega_{11}^2\omega_{18} - 25\omega_6^2c_s^2\omega_{11}^3\omega_{18} + 16\omega_6\omega_{11}^2\omega_{18} - 120\omega_6^2v_3^2\omega_{11}\omega_{18}^2 - 20c_s^2\omega_{11}^3\omega_{18} + 12\omega_{11}^3\omega_{18} + 28v_3^2\omega_{11}^2\omega_{18}^2 + 43\omega_6^2v_3^2\omega_{11}^2\omega_{18}^2 + 8\omega_6^2\omega_{11}^2 +$
$16\omega_6^2v_3^2\omega_{11}^3 - 16\omega_6c_s^2\omega_{11}^2\omega_{18} - 43\omega_6^2v_3^2\omega_{11}^3\omega_{18} - 40\omega_6^2\omega_{11}^2\omega_{18} - 72\omega_6^2c_s^2\omega_{11}\omega_{18}^2 - 28v_3^2\omega_{11}^3\omega_{18} - 8\omega_6^2\omega_{11}^3 - 16\omega_6^2v_3^2\omega_{11}^2 - 16\omega_6^2c_s^2\omega_{11}^2 - 44\omega_6c_s^2\omega_{11}^2\omega_{18}^2 -$
$17\omega_6^2\omega_{11}^2\omega_{18}^2 - 32\omega_6^2c_s^2\omega_{11}\omega_{18} + 64\omega_6v_3^2\omega_{11}\omega_{18}^2 + 104\omega_6^2v_3^2\omega_{11}^2\omega_{18} + 44\omega_6c_s^2\omega_{11}^3\omega_{18} - 24\omega_6\omega_{11}\omega_{18}^2 + 17\omega_6^2\omega_{11}^3\omega_{18} + 16\omega_6^2c_s^2\omega_{11}^3)\frac{v_3v_1\rho}{4\omega_6^2\omega_{11}^3\omega_{18}^2}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_x\mathrm{D}_z^3 v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_x\mathrm{D}_z^3 v_3}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_x\mathrm{D}_z^3 v_3} = 0$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_x\mathrm{D}_z^3 v_3} = 0$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_x\mathrm{D}_z^3 v_3} = 0$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_x\mathrm{D}_z^3 v_3} = (36c_s^2\omega_1\omega_2^3 - 12\omega_3v_3^2\omega_1^2\omega_2 + 6\omega_3\omega_1^2\omega_2 + 84\omega_3c_s^2\omega_1^3 + 84\omega_3v_3^2\omega_2^3 - 12\omega_1\omega_2^3 - 9\omega_3v_1^2\omega_1^2\omega_2^2 + 9v_1^2\omega_1^3\omega_2^2 - 5\omega_3\omega_1^3\omega_2^2 -$
$5\omega_3v_1^2\omega_1^2\omega_2^3 - 18\omega_3v_1^2\omega_1^3\omega_2 - 9v_1^2\omega_1^2\omega_2^3 - 6v_1^2\omega_1^3\omega_2 + 48\omega_3\omega_1^3\omega_2 + 5\omega_3v_1^2\omega_1^3\omega_2^2 + 5\omega_3\omega_1^2\omega_2^3 - 54\omega_3c_s^2\omega_1\omega_2^2 - 66\omega_3v_3^2\omega_1^3\omega_2 - 51\omega_3\omega_1^2\omega_2^2 +$
$6\omega_3v_1^2\omega_1^2\omega_2 - 6v_1^2\omega_1^2\omega_2^2 + 132\omega_3v_3^2\omega_1^2\omega_2^2 + 48\omega_3v_3^2\omega_1^3 - 12\omega_3c_s^2\omega_2^3 + 27\omega_3c_s^2\omega_1\omega_2^3 + 42\omega_3\omega_1\omega_2^2 - 9\omega_1^3\omega_2^2 + 27c_s^2\omega_1^3\omega_2^2 - 120\omega_3v_3^2\omega_1\omega_2^2 -$
$108\omega_3c_s^2\omega_1^3\omega_2 - 12\omega_3\omega_2^3 - 15\omega_3c_s^2\omega_1^2\omega_2^3 + 12v_1^2\omega_1\omega_2^3 - 24\omega_3v_1^2\omega_2^3 + 3\omega_3\omega_1\omega_2^3 + 81\omega_3c_s^2\omega_1^2\omega_2^2 - 66\omega_3v_3^2\omega_1\omega_2^3 - 18\omega_3c_s^2\omega_1^2\omega_2 + 12\omega_3v_1^2\omega_1^3 -$
$18c_s^2\omega_1^2\omega_2^2 + 27\omega_3v_1^2\omega_1\omega_2^3 + 6\omega_1^2\omega_2^2 - 18c_s^2\omega_1^3\omega_2 - 27c_s^2\omega_1^2\omega_2^3 + 15\omega_3c_s^2\omega_1^3\omega_2^2 + 6\omega_3v_1^2\omega_1\omega_2^2 + 9\omega_1^2\omega_2^3 + 6\omega_1^3\omega_2 - 36\omega_3\omega_1^3)\frac{v_3v_1\rho}{18\omega_3\omega_1^3\omega_2^3}$

coefficient $C^{(3)}_{\mathrm{D}_y\mathrm{D}_z^3 \rho}$ **at** $\frac{\partial^4 \rho}{\partial x_2 \partial x_3^3}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_y\mathrm{D}_z^3 \rho} = 0$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^3 \rho} = (4v_3^2\omega_7^2\omega_{11}^2 + 8\omega_{19}c_s^4\omega_7^2\omega_{11}^2 + 4\omega_{19}^2c_s^4\omega_7\omega_{11} + 4c_s^2\omega_7\omega_{11}^3 + 20\omega_{19}v_3^4\omega_7\omega_{11}^3 + 96\omega_{19}^2v_3^2c_s^2\omega_7^2 - 72\omega_{19}v_3^2c_s^2\omega_7^2\omega_{11} - 13\omega_{19}^2v_3^2\omega_7^2\omega_{11}^2 +$
$8\omega_{19}^2v_3^4\omega_{11}^2 - 16\omega_{19}v_3^4\omega_7\omega_{11}^2 - 144\omega_{19}^2v_3^2c_s^2\omega_7^2\omega_{11} - 36\omega_{19}v_3^2c_s^2\omega_{11}^3 - 4\omega_{19}c_s^4\omega_7^2\omega_{11}^3 - 4v_3^2\omega_7^2\omega_{11}^3 - 36\omega_{19}^2v_3^4\omega_7^2\omega_{11} - 24\omega_{19}^2v_3^2\omega_7^2 +$
$4\omega_{19}c_s^2\omega_7^2\omega_{11} + 4\omega_{19}c_s^2\omega_{11}^3 + 8\omega_{19}^2c_s^2\omega_7\omega_{11}^2 - 8\omega_{19}c_s^2\omega_7^2\omega_{11}^2 - 4v_3^4\omega_7^2\omega_{11}^2 + 24v_3^2c_s^2\omega_7^2\omega_{11}^3 - 51\omega_{19}v_3^2c_s^2\omega_7^2\omega_{11}^3 - 20\omega_{19}v_3^2\omega_7\omega_{11}^3 - 4c_s^4\omega_7\omega_{11}^3 -$
$4\omega_{19}^2c_s^2\omega_7\omega_{11} - 8\omega_{19}^2c_s^2\omega_7^2 + 51\omega_{19}^2v_3^2c_s^2\omega_7^2\omega_{11}^2 + 8\omega_{19}v_3^2\omega_{11}^3 + 13\omega_{19}^2v_3^4\omega_7^2\omega_{11}^2 + 120\omega_{19}^2v_3^2c_s^2\omega_7^2\omega_{11}^2 + 16\omega_{19}v_3^2\omega_7\omega_{11}^2 + 36\omega_{19}^2v_3^2\omega_7^2\omega_{11} +$
$4v_3^4\omega_7^2\omega_{11}^3 + 4\omega_{19}c_s^2\omega_7^2\omega_{11}^3 - 24v_3^2c_s^2\omega_7^2\omega_{11}^2 - 4\omega_{19}c_s^4\omega_7^2\omega_{11} + 4\omega_{19}^2c_s^4\omega_{11}^2 - 8\omega_{19}^2c_s^4\omega_7\omega_{11}^2 - 4c_s^4\omega_7^2\omega_{11}^2 - 32\omega_{19}v_3^2\omega_7^2\omega_{11}^2 - 48\omega_{19}v_3^2c_s^2\omega_7\omega_{11}^2 -$
$4v_3^4\omega_7\omega_{11}^3 - 8\omega_{19}c_s^2\omega_7\omega_{11}^3 - 20\omega_{19}^2v_3^2\omega_7\omega_{11} + 24\omega_{19}^2v_3^4\omega_7^2 - 4\omega_{19}c_s^4\omega_{11}^3 + 4\omega_{19}^2c_s^4\omega_7^2\omega_{11}^2 + 36\omega_{19}^2v_3^2c_s^2\omega_{11}^2 - 24v_3^2c_s^2\omega_7\omega_{11}^3 + 12\omega_{19}^2c_s^2\omega_7^2\omega_{11} +$
$13\omega_{19}v_3^2\omega_7^2\omega_{11}^3 + 4c_s^4\omega_7^2\omega_{11}^3 + 84\omega_{19}v_3^2c_s^2\omega_7\omega_{11}^3 - 84\omega_{19}^2v_3^2c_s^2\omega_7\omega_{11}^2 - 20\omega_{19}v_3^4\omega_7^2\omega_{11} - 20\omega_{19}^2v_3^4\omega_7\omega_{11}^2 - 8\omega_{19}^2v_3^2\omega_{11}^2 + 72\omega_{19}^2v_3^2c_s^2\omega_7\omega_{11} +$
$32\omega_{19}v_3^4\omega_7^2\omega_{11}^2 + 4c_s^2\omega_7^2\omega_{11}^2 + 20\omega_{19}^2v_3^4\omega_7\omega_{11} + 8\omega_{19}c_s^4\omega_7\omega_{11}^3 + 4v_3^2\omega_7\omega_{11}^3 - 4\omega_{19}^2c_s^2\omega_7^2\omega_{11}^2 - 4\omega_{19}^2c_s^2\omega_{11}^2 - 4c_s^2\omega_7^2\omega_{11}^3 - 13\omega_{19}v_3^4\omega_7^2\omega_{11}^3 -$
$12\omega_{19}^2c_s^4\omega_7^2\omega_{11} + 8\omega_{19}^2c_s^4\omega_7^2 + 20\omega_{19}v_3^2\omega_7^2\omega_{11} - 8\omega_{19}v_3^4\omega_{11}^3 + 20\omega_{19}^2v_3^2\omega_7\omega_{11}^2)\frac{v_2}{4\omega_{19}^2\omega_7^2\omega_{11}^3}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_y\mathrm{D}_z^3\rho} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^3\rho}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_y\mathrm{D}_z^3\rho} = 0$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_y\mathrm{D}_z^3\rho} = 0$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_y\mathrm{D}_z^3\rho} = 0$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_y\mathrm{D}_z^3\rho} = (56\omega_3^2c_s^2\omega_1^3\omega_2 - 4\omega_3^2c_s^2v_2^2\omega_1^2\omega_2 + 5\omega_3^2c_s^2\omega_1^2\omega_2^3 + 4\omega_3^2v_2^2\omega_1^2\omega_2 + 48\omega_3^2v_3^2\omega_1\omega_2^2 + 24\omega_3^2v_3^2v_2^2\omega_1\omega_2^2 - 20\omega_3^2c_s^2v_2^2\omega_2^3 + 18\omega_3c_s^2v_2^2\omega_1^3\omega_2^2 - 36\omega_3^2c_s^4\omega_2^3 + 24\omega_3^2v_3^4\omega_1^3 - 36\omega_3^2c_s^4\omega_1^2\omega_2 + 4\omega_3^2\omega_1^3 - 60\omega_3^2v_3^2\omega_1\omega_2^3 - \omega_3^2v_2^2\omega_1^3\omega_2^2 - 34\omega_3^2c_s^2\omega_1^2\omega_2^2 + 2\omega_3^2c_s^2v_2^2\omega_1^3\omega_2^2 + 6\omega_3^2c_s^4\omega_1^3\omega_2^2 + 96\omega_3^2v_3^2v_2^2\omega_1\omega_2^2 + 24\omega_3c_s^4\omega_1\omega_2^3 - 6\omega_3^2c_s^4\omega_1^2\omega_2^3 - 4\omega_3c_s^2v_2^2\omega_1^2\omega_2^2 - 216\omega_3^2v_3^2c_s^2\omega_1\omega_2^2 - 84\omega_3^2c_s^4\omega_1^3\omega_2 + 8\omega_3^2\omega_1\omega_2^2 - 72\omega_3^2v_3^4\omega_1\omega_2^2 + 4\omega_3^2v_2^2\omega_1^3\omega_2 + \omega_3^2v_2^2\omega_2^2\omega_2^3 - 20\omega_3^2c_s^2v_2^2\omega_1^3\omega_2 + 40\omega_3^2c_s^2\omega_1^2\omega_2 - 2\omega_3^2c_s^2v_2^2\omega_1^2\omega_2^3 - 36\omega_3^2v_3^4\omega_1\omega_2^3 + 8\omega_3^2\omega_1\omega_2^3 - 4\omega_3c_s^2v_2^2\omega_1^3\omega_2 + 108\omega_3^2v_3^2c_s^2\omega_1\omega_2^2 - 18\omega_3c_s^2v_2^2\omega_1^2\omega_2^3 + 42\omega_3^2c_s^4\omega_1^2\omega_2^2 - 2\omega_3^2c_s^2v_2^2\omega_1^2\omega_2^2 - 5\omega_3^2c_s^2\omega_1^3\omega_2^2 + 16\omega_3^2c_s^2v_2^2\omega_1^3 - 8\omega_3c_s^2\omega_1\omega_2^3 + 4\omega_3^2v_2^2\omega_1^2\omega_2^2 - 8\omega_3^2\omega_2^3 + 48\omega_3^2v_3^4\omega_2^3 + 72\omega_3^2c_s^4\omega_1^3 + 24\omega_3^2v_3^2v_2^2\omega_1^2\omega_2 - \omega_3^2\omega_1^2\omega_2^3 - 4\omega_3^2\omega_1^3\omega_2 - 36\omega_3^2v_3^4\omega_1^3\omega_2 - 324\omega_3^2v_3^2c_s^2\omega_1^3\omega_2 + 8\omega_3c_s^2v_2^2\omega_1\omega_2^3 - 72\omega_3^2v_3^2c_s^2\omega_1^2\omega_2^3 + 8\omega_3^2v_2^2\omega_2^3 + 12c_s^2\omega_1^3\omega_2^2 + 8\omega_3^2c_s^2v_2^2\omega_1\omega_2^2 - 24\omega_3^2v_3^2\omega_1^2\omega_2 + 216\omega_3^2v_3^2c_s^2\omega_1^3 + 4\omega_3c_s^2\omega_1^3\omega_2 + 12c_s^2v_2^2\omega_1^2\omega_2^3 + 18\omega_3c_s^2\omega_1^2\omega_2^3 - 8\omega_3^2v_2^2\omega_1\omega_2^2 + 216\omega_3^2v_3^2c_s^2\omega_1^2\omega_2^2 + 36c_s^4\omega_1^2\omega_2^3 + 42\omega_3^2c_s^4\omega_1\omega_2^3 + 24\omega_3^2v_3^2v_2^2\omega_1^3\omega_2^2 + 54\omega_3c_s^4\omega_1^3\omega_2^2 - 4\omega_3^2\omega_1^2\omega_2^2 + 72\omega_3^2v_3^4\omega_1^2\omega_2^2 - 24\omega_3^2v_3^2\omega_1^3\omega_2^2 + 24\omega_3^2v_3^2v_2^2\omega_1^3 - 8\omega_3^2v_2^2\omega_1\omega_2^3 + 4\omega_3c_s^2\omega_1^2\omega_2^2 + 20\omega_3^2c_s^2\omega_2^3 + 22\omega_3^2c_s^2v_2^2\omega_1\omega_2^3 - 48\omega_3^2v_3^2\omega_1^3 + 84\omega_3^2v_3^2\omega_1^3\omega_2 + 24\omega_3^2v_3^2\omega_1^2\omega_2^3 - 8\omega_3^2c_s^2\omega_1\omega_2^2 - 36c_s^4\omega_1^3\omega_2^2 - 72\omega_3^2v_3^2v_2^2\omega_2^3 + 24\omega_3^2v_3^2\omega_2^3 - 48\omega_3^2v_3^2v_2^2\omega_1^3\omega_2 - 54\omega_3c_s^4\omega_1^2\omega_2^3 - 4\omega_3^2\omega_1^2\omega_2 - 52\omega_3^2c_s^2\omega_1^3 - 12\omega_3c_s^4\omega_1^3\omega_2 - 24\omega_3^2v_3^2v_2^2\omega_1^2\omega_2^3 - 22\omega_3^2c_s^2\omega_1\omega_2^3 - 12c_s^2\omega_1^2\omega_2^3 - 18\omega_3c_s^2\omega_1^3\omega_2^2 - 12c_s^2v_2^2\omega_1^3\omega_2^2 - 24\omega_3^2v_3^2\omega_1^2\omega_2^2 - 48\omega_3^2v_3^2v_2^2\omega_1^2\omega_2^2 + \omega_3^2\omega_1^3\omega_2^2 - 12\omega_3c_s^4\omega_1^2\omega_2^2 - 4\omega_3^2v_2^2\omega_1^3 + 72\omega_3^2v_3^2c_s^2\omega_1^3\omega_2^2)\frac{v_2}{36\omega_3^2\omega_1^3\omega_2^3}$

coefficient $C^{(3)}_{\mathrm{D}_y\mathrm{D}_z^3 v_2}$ **at** $\frac{\partial^4 v_2}{\partial x_2 \partial x_3^3}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_y\mathrm{D}_z^3 v_2} = (-36v_3^4 - c_s^4\omega^3 + 54v_3^4\omega + 54v_3^2c_s^2\omega + 20c_s^4\omega^2 + 36c_s^4 - 42v_3^2c_s^2\omega^2 - 54c_s^4\omega - 26v_3^4\omega^2 + 12v_3^2c_s^2\omega^3 + 4v_3^4\omega^3 - 36v_3^2c_s^2 - 54v_3^2\omega - 12c_s^2\omega^2 - 4v_3^2\omega^3 + 36v_3^2 + 36c_s^2\omega - 24c_s^2 + 26v_3^2\omega^2)\frac{\rho}{12\omega^3}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^3 v_2} = (12\omega_{19}c_s^4\omega_7^2\omega_{11}^2 + 19\omega_{19}^2v_3^4\omega_7^3\omega_{11}^2 + 60\omega_{19}^2v_3^2c_s^2\omega_7^3\omega_{11}^2 - 24\omega_{19}v_3^4\omega_7\omega_{11}^3 - 21\omega_{19}v_3^2c_s^2\omega_7^3\omega_{11}^3 + 6\omega_{19}^2c_s^2\omega_7\omega_{11}^3 - 12\omega_{19}^2v_3^2\omega_7^2\omega_{11}^2 + 12v_3^2c_s^2\omega_7^3\omega_{11}^3 - 12v_3^4\omega_7^3\omega_{11}^2 + 6\omega_{19}c_s^2\omega_7^3\omega_{11}^2 - 72\omega_{19}^2v_3^2\omega_7^3 + 12\omega_{19}^2v_3^2c_s^2\omega_7^3\omega_{11}^3 - 108\omega_{19}^2v_3^2c_s^2\omega_7^2\omega_{11} - 18\omega_{19}c_s^4\omega_7^2\omega_{11}^3 + 12v_3^2\omega_7^2\omega_{11}^3 + 4\omega_{19}^2v_3^4\omega_7^3\omega_{11}^3 + 90\omega_{19}^2v_3^2\omega_7^3\omega_{11} - 12v_3^2c_s^2\omega_7^3\omega_{11}^2 + 18\omega_{19}^2v_3^2\omega_7^2\omega_{11}^3 - 6\omega_{19}c_s^2\omega_7^3\omega_{11}^3 + 12v_3^4\omega_7^3\omega_{11}^3 + 252\omega_{19}^2v_3^2c_s^2\omega_7^3 + 54\omega_{19}v_3^2c_s^2\omega_7^3\omega_{11}^2 - 12\omega_{19}c_s^2\omega_7^2\omega_{11}^2 - 12v_3^2c_s^2\omega_7^2\omega_{11}^3 - 19\omega_{19}^2v_3^2\omega_7^3\omega_{11}^2 + 30\omega_{19}v_3^2c_s^2\omega_7^2\omega_{11}^3 + 24\omega_{19}v_3^2\omega_7\omega_{11}^3 - 36\omega_{19}v_3^2c_s^2\omega_7^3\omega_{11} + 12\omega_{19}^2c_s^4\omega_{11}^3 + 162\omega_{19}^2v_3^2c_s^2\omega_7^2\omega_{11}^2 - 24\omega_{19}^2c_s^4\omega_7\omega_{11}^3 + 12\omega_{19}^2v_3^4\omega_7^2\omega_{11}^2 - 6\omega_{19}c_s^4\omega_7^3\omega_{11}^2 + 12v_3^2\omega_7^3\omega_{11}^2 - 12\omega_{19}v_3^2c_s^2\omega_7^2\omega_{11}^2 - 12v_3^4\omega_7^2\omega_{11}^3 + 18\omega_{19}c_s^2\omega_7^2\omega_{11}^3 - 4\omega_{19}^2v_3^2\omega_7^3\omega_{11}^3 - 18\omega_{19}^2v_3^4\omega_7^2\omega_{11}^3 - 12v_3^2\omega_7^3\omega_{11}^3 + 6\omega_{19}c_s^4\omega_7^3\omega_{11}^3 - 90\omega_{19}^2v_3^4\omega_7^3\omega_{11} - 81\omega_{19}^2v_3^2c_s^2\omega_7^2\omega_{11}^3 - 306\omega_{19}^2v_3^2c_s^2\omega_7^3\omega_{11} - 12\omega_{19}^2c_s^2\omega_7^3 + 24\omega_{19}v_3^2\omega_7^2\omega_{11}^2 - \omega_{19}^2c_s^2\omega_7^3\omega_{11}^2 - 12\omega_{19}c_s^2\omega_7\omega_{11}^3 + 12\omega_{19}^2v_3^4\omega_7\omega_{11}^3 + 6\omega_{19}^2c_s^4\omega_7^2\omega_{11}^2 + 102\omega_{19}^2v_3^2c_s^2\omega_7\omega_{11}^3 + 60\omega_{19}v_3^4\omega_7^3\omega_{11}^2 + 36\omega_{19}v_3^2\omega_7^3\omega_{11} + 12\omega_{19}^2c_s^2\omega_7^2\omega_{11} - 48\omega_{19}v_3^2\omega_7^2\omega_{11}^3 - 12\omega_{19}v_3^2c_s^2\omega_7\omega_{11}^3 - 48\omega_{19}^2v_3^2c_s^2\omega_7\omega_{11}^2 - 48\omega_{19}^2v_3^2c_s^2\omega_{11}^3 + 13\omega_{19}^2c_s^4\omega_7^2\omega_{11}^3 - 27\omega_{19}v_3^4\omega_7^3\omega_{11}^3 - 12\omega_{19}^2c_s^4\omega_7^3\omega_{11} + 72\omega_{19}^2v_3^4\omega_7^3 - 24\omega_{19}v_3^4\omega_7^2\omega_{11}^2 + \omega_{19}^2c_s^4\omega_7^3\omega_{11}^2 + 12\omega_{19}c_s^4\omega_7\omega_{11}^3 - 12\omega_{19}^2v_3^2\omega_7\omega_{11}^3 - 6\omega_{19}^2c_s^2\omega_{11}^2 - 60\omega_{19}v_3^2\omega_7^3\omega_{11}^2 + 12\omega_{19}^2c_s^4\omega_7^3 + 48\omega_{19}v_3^4\omega_7^2\omega_{11}^3 - \omega_{19}^2c_s^4\omega_7^3\omega_{11}^3 - 36\omega_{19}v_3^4\omega_7^3\omega_{11} - 12\omega_{19}^2c_s^4\omega_7^2\omega_{11} + 12\omega_{19}^2c_s^2\omega_7^3\omega_{11} - 5\omega_{19}^2c_s^2\omega_7^2\omega_{11}^3 + 27\omega_{19}v_3^2\omega_7^3\omega_{11}^3)\frac{\rho}{12\omega_{19}^2\omega_7^3\omega_{11}^3}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_y\mathrm{D}_z^3 v_2} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^3 v_2}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_y\mathrm{D}_z^3 v_2} = (12\omega_{19}c_s^4\omega_7^2\omega_{11}^2 + 19\omega_{19}^2v_3^4\omega_7^3\omega_{11}^2 + 60\omega_{19}^2v_3^2c_s^2\omega_7^3\omega_{11}^2 - 99\omega_{19}v_3^2c_s^2\omega_7^3\omega_{11}^3 + 6\omega_{19}^2c_s^2\omega_7\omega_{11}^3 + 108v_3^2c_s^2\omega_7^3\omega_{11}^3 - 36v_3^4\omega_7^3\omega_{11}^2 + 6\omega_{19}c_s^2\omega_7^3\omega_{11}^2 - 72\omega_{19}^2v_3^2\omega_7^3 + 12\omega_{19}^2v_3^2c_s^2\omega_7^3\omega_{11}^3 - 36\omega_{19}^2v_3^2c_s^2\omega_7^2\omega_{11} - 18\omega_{19}c_s^4\omega_7^2\omega_{11}^3 + 36v_3^2\omega_7^2\omega_{11}^3 + 4\omega_{19}^2v_3^4\omega_7^3\omega_{11}^3 + 90\omega_{19}^2v_3^2\omega_7^3\omega_{11} - 108v_3^2c_s^2\omega_7^3\omega_{11}^2 + 6\omega_{19}^2v_3^2\omega_7^2\omega_{11}^3 - 6\omega_{19}c_s^2\omega_7^3\omega_{11}^3 + 36v_3^4\omega_7^3\omega_{11}^3 + 252\omega_{19}^2v_3^2c_s^2\omega_7^3 + 198\omega_{19}v_3^2c_s^2\omega_7^3\omega_{11}^2 - 12\omega_{19}c_s^2\omega_7^2\omega_{11}^2 - 108v_3^2c_s^2\omega_7^2\omega_{11}^3 - 19\omega_{19}^2v_3^2\omega_7^3\omega_{11}^2 + 54\omega_{19}v_3^2c_s^2\omega_7^2\omega_{11}^3 - 108\omega_{19}v_3^2c_s^2\omega_7^3\omega_{11} + 12\omega_{19}^2c_s^4\omega_{11}^3 + 18\omega_{19}^2v_3^2c_s^2\omega_7^2\omega_{11}^2 - 24\omega_{19}^2c_s^4\omega_7\omega_{11}^3 - 6\omega_{19}c_s^4\omega_7^3\omega_{11}^2 + 36v_3^2\omega_7^3\omega_{11}^2 + 36\omega_{19}v_3^2c_s^2\omega_7^2\omega_{11}^2 - 36v_3^4\omega_7^2\omega_{11}^3 + 18\omega_{19}c_s^2\omega_7^2\omega_{11}^3 - 4\omega_{19}^2v_3^2\omega_7^3\omega_{11}^3 - 6\omega_{19}^2v_3^4\omega_7^2\omega_{11}^3 - 36v_3^2\omega_7^3\omega_{11}^3 + 6\omega_{19}c_s^4\omega_7^3\omega_{11}^3 - 90\omega_{19}^2v_3^4\omega_7^3\omega_{11} - 3\omega_{19}^2v_3^2c_s^2\omega_7^2\omega_{11}^3 - 306\omega_{19}^2v_3^2c_s^2\omega_7^3\omega_{11} - 12\omega_{19}^2c_s^2\omega_7^3 - \omega_{19}^2c_s^2\omega_7^3\omega_{11}^2 - 12\omega_{19}c_s^2\omega_7\omega_{11}^3 + 6\omega_{19}^2c_s^4\omega_7^2\omega_{11}^2 - 18\omega_{19}^2v_3^2c_s^2\omega_7\omega_{11}^3 + 72\omega_{19}v_3^4\omega_7^3\omega_{11}^2 + 36\omega_{19}v_3^2\omega_7^3\omega_{11} + 12\omega_{19}^2c_s^2\omega_7^2\omega_{11} - 36\omega_{19}v_3^2\omega_7^2\omega_{11}^3 + 36\omega_{19}v_3^2c_s^2\omega_7\omega_{11}^3 + 13\omega_{19}^2c_s^4\omega_7^2\omega_{11}^3 - 39\omega_{19}v_3^4\omega_7^3\omega_{11}^3 - 12\omega_{19}^2c_s^4\omega_7^3\omega_{11} + 72\omega_{19}^2v_3^4\omega_7^3 + \omega_{19}^2c_s^4\omega_7^3\omega_{11}^2 + 12\omega_{19}c_s^4\omega_7\omega_{11}^3 - 6\omega_{19}^2c_s^2\omega_7^2\omega_{11}^2 - 72\omega_{19}v_3^2\omega_7^3\omega_{11}^2 + 12\omega_{19}^2c_s^4\omega_7^3 + 36\omega_{19}v_3^4\omega_7^2\omega_{11}^3 - \omega_{19}^2c_s^4\omega_7^3\omega_{11}^3 - 36\omega_{19}v_3^4\omega_7^3\omega_{11} - 12\omega_{19}^2c_s^4\omega_7^2\omega_{11} + 12\omega_{19}^2c_s^2\omega_7^3\omega_{11} - 5\omega_{19}^2c_s^2\omega_7^2\omega_{11}^3 + 39\omega_{19}v_3^2\omega_7^3\omega_{11}^3)\frac{\rho}{12\omega_{19}^2\omega_7^3\omega_{11}^3}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_y\mathrm{D}_z^3 v_2} = C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_y\mathrm{D}_z^3 v_2}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_y\mathrm{D}_z^3 v_2} = (-12\omega_6\omega_3^3c_s^4\omega_{10}^2 - 3\omega_6^3\omega_3^2v_3^2c_s^2\omega_{10}^2 - 36\omega_6\omega_3^3v_3^4\omega_{10} + 12\omega_6\omega_3^2c_s^2\omega_{10}^2 - 99\omega_6^3\omega_3^3v_3^2c_s^2\omega_{10} - 6\omega_6^3\omega_3^2v_3^4\omega_{10}^2 - 6\omega_6^3\omega_3^3c_s^2\omega_{10} + 36\omega_6^3\omega_3^3v_3^4 - 72\omega_6^2\omega_3^3v_3^2\omega_{10} + 6\omega_6^3\omega_3c_s^2\omega_{10}^2 + 6\omega_6^2\omega_3^2c_s^4\omega_{10}^2 - 18\omega_6^3\omega_3^2c_s^4\omega_{10} - 12\omega_3^3c_s^2\omega_{10}^2 - 4\omega_6^3\omega_3^3v_3^2\omega_{10}^2 - \omega_6^2\omega_3^3c_s^2\omega_{10}^2 + 36\omega_6^2\omega_3^3v_3^2 + 13\omega_6^3\omega_3^2c_s^4\omega_{10}^2 + 39\omega_6^3\omega_3^3v_3^2\omega_{10} + 6\omega_6^2\omega_3^3c_s^2\omega_{10} + 36\omega_6^3\omega_3^2v_3^4\omega_{10} - 72\omega_3^3v_3^2\omega_{10}^2 - 19\omega_6^2\omega_3^3v_3^2\omega_{10}^2 + 12\omega_6^2\omega_3^2c_s^4\omega_{10} - 12\omega_6^3\omega_3c_s^2\omega_{10} + 12\omega_6^3c_s^4\omega_{10}^2 - 90\omega_6\omega_3^3v_3^4\omega_{10}^2 - 108\omega_6^3\omega_3^2v_3^2c_s^2 + 12\omega_6^3\omega_3^3v_3^2c_s^2\omega_{10}^2 + 54\omega_6^3\omega_3^2v_3^2c_s^2\omega_{10} - 36\omega_6^3\omega_3^2v_3^4 + 6\omega_6^3\omega_3^2v_3^2\omega_{10}^2 - 306\omega_6\omega_3^3v_3^2c_s^2\omega_{10}^2 + 6\omega_6^3\omega_3^3c_s^4\omega_{10} + 72\omega_6^2\omega_3^3v_3^4\omega_{10} - 6\omega_6^2\omega_3^2c_s^2\omega_{10}^2 - 24\omega_6^3\omega_3c_s^4\omega_{10}^2 - 36\omega_6^2\omega_3^3v_3^4 + 18\omega_6^3\omega_3^2c_s^2\omega_{10} + 4\omega_6^3\omega_3^3v_3^4\omega_{10}^2 + 12\omega_3^3c_s^4\omega_{10}^2 + \omega_6^2\omega_3^3c_s^4\omega_{10}^2 - 18\omega_6^3\omega_3v_3^2c_s^2\omega_{10}^2 + 12\omega_6\omega_3^3c_s^2\omega_{10}^2 + 36\omega_6^2\omega_3^2v_3^2c_s^2\omega_{10} + 252\omega_3^3v_3^2c_s^2\omega_{10}^2 + 36\omega_6^3\omega_3^2v_3^2 + 36\omega_6\omega_3^3v_3^2\omega_{10} + 60\omega_6^2\omega_3^3v_3^2c_s^2\omega_{10}^2 - 12\omega_6\omega_3^2c_s^4\omega_{10}^2 - 108\omega_6^2\omega_3^3v_3^2c_s^2 + 90\omega_6\omega_3^3v_3^2\omega_{10}^2 + 198\omega_6^2\omega_3^3v_3^2c_s^2\omega_{10} + 18\omega_6^2\omega_3^2v_3^2c_s^2\omega_{10}^2 + 108\omega_6^3\omega_3^3v_3^2c_s^2 - 5\omega_6^3\omega_3^2c_s^2\omega_{10}^2 - 39\omega_6^3\omega_3^3v_3^4\omega_{10} + 36\omega_6^3\omega_3v_3^2c_s^2\omega_{10} - 36\omega_6\omega_3^2v_3^2c_s^2\omega_{10}^2 - 6\omega_6^2\omega_3^3c_s^4\omega_{10} -$

$36\omega_6^3\omega_3^2v_3^2\omega_{10} - \omega_6^3\omega_3^3c_s^4\omega_{10}^2 - 108\omega_6\omega_3^3v_3^2c_s^2\omega_{10} - 36\omega_6^3\omega_3^3v_3^2 + 72\omega_3^3v_3^4\omega_{10}^2 + 19\omega_6^2\omega_3^3v_3^4\omega_{10}^2 + 12\omega_6^3\omega_3c_s^4\omega_{10} - 12\omega_6^2\omega_3^2c_s^2\omega_{10})\frac{\rho}{12\omega_6^3\omega_3^3\omega_{10}^2}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_y\mathrm{D}_z^3v_2} = (54v_3^4\omega_4^2\omega_1^3\omega_2^3 - 18\omega_3^2c_s^2\omega_4\omega_1^3\omega_2^3 + 72\omega_3v_3^2c_s^2\omega_4^2\omega_1\omega_2^3 - 216v_3^2c_s^2\omega_4^2\omega_1^2\omega_2^3 + 40\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^2 + 24\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^2\omega_2^2 -$
$117\omega_3^2v_3^4\omega_4\omega_1^3\omega_2^3 - 288\omega_3^2v_3^2v_2^2\omega_4^2\omega_1^2\omega_2^2 + 60\omega_3v_3^2\omega_4^2\omega_1^2\omega_2^2 + 8\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2^3 - 36\omega_3v_3^4\omega_4\omega_1^3\omega_2^2 - 297\omega_3^2v_3^2c_s^2\omega_4\omega_1^3\omega_2^3 + 204\omega_3^2v_3^2\omega_4^2\omega_1^3\omega_2 -$
$40\omega_3^2c_s^2\omega_4^2\omega_1^3 + 24\omega_3^2v_2^2\omega_4^2\omega_1^2\omega_2^2 + 86\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^3 - 28\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2 + 36\omega_3^2v_3^4\omega_4\omega_1^3\omega_2^2 + 48\omega_3^2v_2^2\omega_4^2\omega_2^3 - 12\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^3\omega_2 - 216\omega_3v_3^2\omega_4^2\omega_1^2\omega_2^3 -$
$144\omega_3^2v_3^2v_2^2\omega_4^2\omega_1^2\omega_2^3 - 288\omega_3^2v_3^2v_2^2\omega_4^2\omega_1^3\omega_2 + 24\omega_3v_3^2\omega_4^2\omega_1^3\omega_2 + 12\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^2\omega_2^3 + 24\omega_3^2c_s^2v_2^2\omega_4^2\omega_2^3 - 36\omega_3c_s^4\omega_4^2\omega_1^2\omega_2^3 - 540\omega_3v_3^2c_s^2\omega_4\omega_1^2\omega_2^3 -$
$36v_3^4\omega_4^2\omega_1^3\omega_2^2 + 16\omega_3c_s^4\omega_4^2\omega_1^3\omega_2 + 24\omega_3^2v_2^2\omega_4^2\omega_1^3\omega_2 + 72\omega_3^2c_s^4\omega_4\omega_1\omega_2^3 - 72\omega_3c_s^2v_2^2\omega_4^2\omega_1^3\omega_2^2 + 20\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2^2 + 6\omega_3^2v_2^2\omega_4^2\omega_1^2\omega_2^3 + 80\omega_3^2c_s^4\omega_4^2\omega_2^3 +$
$72\omega_3^2v_3^2\omega_4\omega_1\omega_2^3 + 240\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2^2 + 108\omega_3^2v_3^2c_s^2\omega_4\omega_1^3\omega_2^2 + 108\omega_3v_3^4\omega_4\omega_1^3\omega_2^3 + 72\omega_3c_s^2v_2^2\omega_4^2\omega_1^2\omega_2^3 - 6\omega_3^2v_2^2\omega_4^2\omega_1^3\omega_2^2 - 6\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^3 -$
$56\omega_3^2c_s^4\omega_4^2\omega_1^2\omega_2 - 16\omega_3c_s^2\omega_4^2\omega_1\omega_2^3 - 24\omega_3^2v_2^2\omega_4^2\omega_1^3\omega_2 + 648\omega_3^2v_3^2c_s^2\omega_4\omega_1^2\omega_2^3 - 24\omega_3^2v_3^2\omega_4^2\omega_1^3\omega_2^3 - 24\omega_3v_3^4\omega_4^2\omega_1\omega_2^3 +$
$24\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^3 + 336\omega_3^2v_3^2c_s^2\omega_4^2\omega_1\omega_2^2 - 144\omega_3^2v_3^2\omega_4^2\omega_1^2\omega_2 + 96\omega_3^2v_3^4\omega_4^2\omega_1\omega_2^2 + 32\omega_3^2c_s^4\omega_4^2\omega_1^3 - 12\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^3\omega_2^2 + 16\omega_3^2\omega_4^2\omega_1\omega_2^2 -$
$108\omega_3v_3^2\omega_4^2\omega_1^3\omega_2^2 + 144\omega_3^2v_3^2v_2^2\omega_4^2\omega_1^3\omega_2^2 + 288\omega_3^2v_3^4\omega_4\omega_1^2\omega_2^3 - 32\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^2 - 108\omega_3v_3^2c_s^2\omega_4\omega_1^3\omega_2^2 - 72v_3^4\omega_4^2\omega_1^2\omega_2^3 + 162v_3^2c_s^2\omega_4^2\omega_1^3\omega_2^2 -$
$36\omega_3c_s^4\omega_4^2\omega_1^3\omega_2^2 + 72\omega_3^2c_s^2\omega_4\omega_1^2\omega_2^3 - 852\omega_3^2v_3^2c_s^2\omega_4^2\omega_1\omega_2^3 - 108\omega_3^2v_3^2c_s^2\omega_4\omega_1^2\omega_2^2 - 180\omega_3v_3^4\omega_4\omega_1^2\omega_2^3 - 86\omega_3^2v_3^2\omega_4^2\omega_1^3\omega_2^2 + 24\omega_3^2v_2^2\omega_4^2\omega_1^2\omega_2 -$
$2\omega_3^2c_s^4\omega_4^2\omega_1^3\omega_2^2 + 48\omega_3c_s^2v_2^2\omega_4^2\omega_1^2\omega_2^2 + 18\omega_3c_s^4\omega_4^2\omega_1^3\omega_2^2 - 108v_3^2c_s^2\omega_4^2\omega_1^3\omega_2^2 + 8\omega_3^2c_s^2\omega_4^2\omega_2^3 + 48\omega_3^2c_s^2\omega_4^2\omega_1\omega_2^3 + 324\omega_3v_3^2c_s^2\omega_4\omega_1^3\omega_2^3 + 117\omega_3v_3^2\omega_4^2\omega_1^3\omega_2^3 -$
$96\omega_3^2c_s^2v_2^2\omega_4^2\omega_1^2\omega_2 - 36\omega_3^2v_3^4\omega_4\omega_1^2\omega_2^2 - 288\omega_3^2v_3^4\omega_4^2\omega_1\omega_2^3 + 16\omega_3^2\omega_4^2\omega_1\omega_2^3 + 144\omega_3^2v_3^2v_2^2\omega_4^2\omega_1^2\omega_2 - 492\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^3\omega_2 - 108\omega_3^2v_3^4\omega_1^2\omega_2^3 +$
$174\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^2\omega_2^3 - 60\omega_3v_3^4\omega_4^2\omega_1^2\omega_2^2 + 117\omega_3^2v_3^2\omega_4\omega_1^3\omega_2^3 - 54v_3^2\omega_4^2\omega_1^3\omega_2^3 - 324\omega_3^2v_3^2c_s^2\omega_1^2\omega_2^3 - 40\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^2 + 18\omega_3^2c_s^4\omega_4\omega_1^3\omega_2^3 + 8\omega_3^2\omega_4^2\omega_1^3 +$
$48\omega_3^2v_3^4\omega_4^2\omega_1^3 - 36\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^3 + 36\omega_3^2c_s^2\omega_4^2\omega_1^3\omega_2 + 288\omega_3v_3^2c_s^2\omega_4^2\omega_1^3\omega_2^2 + 36\omega_3v_3^2\omega_4\omega_1^3\omega_2^2 - 2\omega_3^2\omega_4^2\omega_1^2\omega_2^3 + 40\omega_3^2v_3^4\omega_4^2\omega_1^2\omega_2^3 - 54\omega_3^2v_3^2\omega_1^3\omega_2^2 -$
$108\omega_3^2v_3^4\omega_4^2\omega_1^3\omega_2 - 8\omega_3^2\omega_4^2\omega_1^3\omega_2 + 264\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^3 + 36\omega_3c_s^2\omega_4^2\omega_1^2\omega_2^3 - 96\omega_3c_s^2v_2^2\omega_4^2\omega_1\omega_2^3 - 16\omega_3c_s^2\omega_4^2\omega_1^3\omega_2 + 36v_3^2\omega_4^2\omega_1^3\omega_2^2 + 216\omega_3v_3^4\omega_4^2\omega_1^2\omega_2^3 -$
$492\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^2\omega_2^2 - 432\omega_3^2v_3^2v_2^2\omega_4^2\omega_2^3 - 36\omega_3^2v_3^2\omega_4\omega_1^3\omega_2^2 - 24\omega_3v_3^4\omega_4^2\omega_1^3\omega_2 - 72\omega_3^2v_3^4\omega_4\omega_1\omega_2^3 - 48\omega_3^2v_3^2\omega_4^2\omega_2^3 - 108\omega_3v_3^2\omega_4\omega_1^3\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^2\omega_2^2 -$
$144\omega_3^2v_3^4\omega_4^2\omega_1^2\omega_2^2 - 72\omega_3^2c_s^2\omega_4\omega_1\omega_2^3 - 297\omega_3v_3^2c_s^2\omega_4^2\omega_1^3\omega_2^3 - 12\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2^2 + 24\omega_3^2v_3^4\omega_4^2\omega_1^3\omega_2^3 - 12\omega_3^2c_s^2v_2^2\omega_4^2\omega_1\omega_2^3 - 8\omega_3^2\omega_4^2\omega_1^2\omega_2 + 96\omega_3^2v_3^4\omega_4^2\omega_1^2\omega_2 +$
$24\omega_3v_3^2\omega_4^2\omega_1\omega_2^3 + 576\omega_3^2v_3^2v_2^2\omega_4^2\omega_1\omega_2^3 + 108\omega_3^2v_3^2\omega_1^2\omega_2^3 + 16\omega_3c_s^4\omega_4^2\omega_1\omega_2^3 + 144\omega_3^2v_3^2v_2^2\omega_4^2\omega_1^3 - 108\omega_3v_3^2c_s^2\omega_4^2\omega_1^2\omega_2^2 + 64\omega_3^2c_s^2\omega_4^2\omega_1^2\omega_2 + 72v_3^2\omega_4^2\omega_1^2\omega_2^3 +$
$16\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^2 - 48\omega_3^2v_2^2\omega_4^2\omega_1\omega_2^3 - 72\omega_3^2c_s^4\omega_4\omega_1^2\omega_2^3 - 96\omega_3^2v_3^2\omega_4^2\omega_1^3 + 36\omega_3c_s^2\omega_4^2\omega_1^3\omega_2^2 + 162\omega_3^2v_3^2c_s^2\omega_1^3\omega_2^3 + 54\omega_3^2v_3^4\omega_1^3\omega_2^3 - 144\omega_3^2v_3^2\omega_4^2\omega_1\omega_2^2 +$
$264\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^2\omega_2 - 288\omega_3^2v_3^2\omega_4\omega_1^2\omega_2^3 + 72\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^3\omega_2^3 + 108\omega_3v_3^4\omega_4^2\omega_1^3\omega_2^2 + 468\omega_3v_3^2c_s^2\omega_4^2\omega_1^2\omega_2^3 - 72\omega_3v_3^2c_s^2\omega_4^2\omega_1^3\omega_2 + 144\omega_3^2v_3^2v_2^2\omega_4^2\omega_1\omega_2^2 +$
$38\omega_3^2v_3^4\omega_4^2\omega_1^3\omega_2^2 + 48\omega_3^2c_s^2v_2^2\omega_4^2\omega_1\omega_2^2 + 2\omega_3^2\omega_4^2\omega_1^3\omega_2^2 + 180\omega_3v_3^2\omega_4\omega_1^2\omega_2^3 + 36\omega_3^2v_3^2\omega_4\omega_1^2\omega_2^2 - 117\omega_3v_3^4\omega_4^2\omega_1^3\omega_2^3 + 168\omega_3^2v_3^2c_s^2\omega_4^2\omega_1^3\omega_2^2 +$
$192\omega_3^2v_3^4\omega_4^2\omega_2^2 - 16\omega_3^2\omega_4^2\omega_2^3 + 96\omega_3^2v_3^2\omega_4^2\omega_1\omega_2^3 + 432\omega_3^2v_3^2c_s^2\omega_4^2\omega_2^3 - 18\omega_3c_s^2\omega_4^2\omega_1^3\omega_2^3 - 48\omega_3^2v_2^2\omega_4^2\omega_1\omega_2^2 - 172\omega_3^2c_s^4\omega_4^2\omega_1\omega_2^3)\frac{\rho}{72\omega_3^2\omega_4^2\omega_1^3\omega_2^3}$

coefficient $C^{(3)}_{\mathrm{D}_y\mathrm{D}_z^3v_3}$ at $\frac{\partial^4 v_3}{\partial x_2\partial x_3^3}$:

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_y\mathrm{D}_z^3v_3} = 0$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^3v_3} = (-16v_3^3\omega_7^2\omega_{11}^2 - 16c_s^2\omega_7\omega_{11}^3 - 12\omega_{19}^2\omega_{11}^2 + 43\omega_{19}^2v_3^2\omega_7^2\omega_{11}^2 + 8\omega_7\omega_{11}^3 + 16v_3^2\omega_7^2\omega_{11}^3 + 48\omega_{19}^2\omega_7^2\omega_{11} + 80\omega_{19}^2v_3^2\omega_7^2 - 32\omega_{19}c_s^2\omega_7^2\omega_{11} -$
$20\omega_{19}c_s^2\omega_{11}^3 - 44\omega_{19}^2c_s^2\omega_7\omega_{11}^2 + 56\omega_{19}c_s^2\omega_7^2\omega_{11}^2 + 68\omega_{19}v_3^2\omega_7\omega_{11}^3 + 32\omega_{19}^2c_s^2\omega_7\omega_{11} + 48\omega_{19}^2c_s^2\omega_7^2 - 28\omega_{19}\omega_7\omega_{11}^3 - 28\omega_{19}v_3^2\omega_{11}^3 - 17\omega_{19}^2\omega_7^2\omega_{11}^2 -$
$48\omega_{19}v_3^2\omega_7\omega_{11}^2 - 120\omega_{19}^2v_3^2\omega_7^2\omega_{11} - 25\omega_{19}c_s^2\omega_7^2\omega_{11}^3 + 16\omega_{19}\omega_7\omega_{11}^2 + 104\omega_{19}v_3^2\omega_7^2\omega_{11}^2 + 44\omega_{19}c_s^2\omega_7\omega_{11}^3 + 64\omega_{19}^2v_3^2\omega_7\omega_{11} - 32\omega_{19}^2\omega_7^2 - 40\omega_{19}\omega_7^2\omega_{11}^2 -$
$16\omega_{19}c_s^2\omega_7\omega_{11}^2 - 72\omega_{19}^2c_s^2\omega_7^2\omega_{11} - 43\omega_{19}v_3^2\omega_7^2\omega_{11}^3 + 28\omega_{19}\omega_7\omega_{11}^2 + 28\omega_{19}^2v_3^2\omega_{11}^2 + 17\omega_{19}\omega_7^2\omega_{11}^3 - 16c_s^2\omega_7^2\omega_{11}^2 - 24\omega_{19}^2\omega_7\omega_{11} - 16v_3^2\omega_7\omega_{11}^3 +$
$8\omega_7^2\omega_{11}^2 + 12\omega_{19}\omega_{11}^3 + 25\omega_{19}^2c_s^2\omega_7^2\omega_{11}^2 + 20\omega_{19}^2c_s^2\omega_{11}^2 + 24\omega_{19}\omega_7^2\omega_{11} + 16c_s^2\omega_7^2\omega_{11}^3 - 64\omega_{19}v_3^2\omega_7^2\omega_{11} - 8\omega_7^2\omega_{11}^3 - 68\omega_{19}^2v_3^2\omega_7\omega_{11}^2)\frac{v_3v_2\rho}{4\omega_{19}^2\omega_7^2\omega_{11}^3}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}_y\mathrm{D}_z^3v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}_y\mathrm{D}_z^3v_3}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}_y\mathrm{D}_z^3v_3} = 0$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}_y\mathrm{D}_z^3v_3} = 0$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}_y\mathrm{D}_z^3v_3} = 0$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}_y\mathrm{D}_z^3v_3} = (36c_s^2\omega_1\omega_2^3 - 12\omega_3v_3^2\omega_1^2\omega_2 + 6\omega_3v_2^2\omega_1\omega_2^2 + 6\omega_3\omega_1^2\omega_2 + 84\omega_3c_s^2\omega_1^3 + 84\omega_3v_3^2\omega_2^3 - 12\omega_1\omega_2^3 + 27\omega_3v_2^2\omega_1\omega_2^3 - 5\omega_3\omega_1^3\omega_2^2 +$
$12\omega_3v_2^2\omega_1^3 + 48\omega_3\omega_1^3\omega_2 + 5\omega_3\omega_1^2\omega_2^3 + 12v_2^2\omega_1\omega_2^3 - 54\omega_3c_s^2\omega_1\omega_2^2 - 66\omega_3v_3^2\omega_1^3\omega_2 - 24\omega_3v_2^2\omega_2^3 - 51\omega_3\omega_1^2\omega_2^2 + 132\omega_3v_3^2\omega_1^2\omega_2^2 + 48\omega_3v_3^2\omega_1^3 -$
$12\omega_3c_s^2\omega_2^3 + 27\omega_3c_s^2\omega_1\omega_2^2 + 42\omega_3\omega_1\omega_2^2 - 9\omega_1^3\omega_2^2 + 27c_s^2\omega_1^3\omega_2^2 + 6\omega_3v_2^2\omega_1^2\omega_2 - 120\omega_3v_3^2\omega_1\omega_2^2 - 6v_2^2\omega_1^2\omega_2^2 - 108\omega_3c_s^2\omega_1^3\omega_2 - 12\omega_3\omega_2^3 -$
$15\omega_3c_s^2\omega_1^2\omega_2^3 + 3\omega_3\omega_1\omega_2^3 - 6v_2^2\omega_1^3\omega_2 + 81\omega_3c_s^2\omega_1^2\omega_2^2 - 9v_2^2\omega_1^2\omega_2^3 - 66\omega_3v_3^2\omega_1\omega_2^3 + 5\omega_3v_2^2\omega_1^3\omega_2^2 - 18\omega_3c_s^2\omega_1^2\omega_2 + 9v_2^2\omega_1^3\omega_2^2 - 18\omega_3v_2^2\omega_1^3\omega_2 -$
$18c_s^2\omega_1^2\omega_2^2 - 5\omega_3v_2^2\omega_1^2\omega_2^3 + 6\omega_1^2\omega_2^2 - 9\omega_3v_2^2\omega_1^2\omega_2^2 - 18c_s^2\omega_1^3\omega_2 - 27c_s^2\omega_1^2\omega_2^3 + 15\omega_3c_s^2\omega_1^3\omega_2^2 + 9\omega_1^2\omega_2^3 + 6\omega_1^3\omega_2 - 36\omega_3\omega_1^3)\frac{v_3v_2\rho}{18\omega_3\omega_1^3\omega_2^3}$

coefficient $C^{(3)}_{\mathrm{D}_z^4\rho}$ at $\frac{\partial^4\rho}{\partial x_3^4}$:

$C^{(3),\mathrm{SRT}}_{\mathrm{D}_z^4\rho} = (12 + 144v_3^4 - 5c_s^4\omega^3 - 216v_3^4\omega - 1008v_3^2c_s^2\omega + 82c_s^4\omega^2 + 144c_s^4 + 404v_3^2c_s^2\omega^2 - 216c_s^4\omega - \omega^3 + 90v_3^4\omega^2 + 8\omega^2 - 34v_3^2c_s^2\omega^3 - 18\omega -$
$9v_3^4\omega^3 + 672v_3^2c_s^2 + 234v_3^2\omega - 78c_s^2\omega^2 + 6c_s^2\omega^3 + 10v_3^2\omega^3 - 156v_3^2 + 198c_s^2\omega - 132c_s^2 - 98v_3^2\omega^2)\frac{v_3}{12\omega^3}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}_z^4\rho} = (12 + 144v_3^4 + 10v_3^2\omega_{11}^3 + 198c_s^2\omega_{11} - 98v_3^2\omega_{11}^2 + 144c_s^4 + 234v_3^2\omega_{11} - 78c_s^2\omega_{11}^2 + 6c_s^2\omega_{11}^3 + 672v_3^2c_s^2 + 404v_3^2c_s^2\omega_{11}^2 - 216c_s^4\omega_{11} -$
$\omega_{11}^3 - 18\omega_{11} + 90v_3^4\omega_{11}^2 + 8\omega_{11}^2 - 34v_3^2c_s^2\omega_{11}^3 - 9v_3^4\omega_{11}^3 - 5c_s^4\omega_{11}^3 - 156v_3^2 - 216v_3^4\omega_{11} - 132c_s^2 - 1008v_3^2c_s^2\omega_{11} + 82c_s^4\omega_{11}^2)\frac{v_3}{12\omega_{11}^3}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}^4_z\rho} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}^4_z\rho}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}^4_z\rho} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}^4_z\rho}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}^4_z\rho} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}^4_z\rho}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}^4_z\rho} = (12 + 234\omega_6 v_3^2 + 82\omega_6^2 c_s^4 - 18\omega_6 + 144 v_3^4 + 198\omega_6 c_s^2 - 1008\omega_6 v_3^2 c_s^2 + 90\omega_6^2 v_3^4 + 144 c_s^4 - 34\omega_6^3 v_3^2 c_s^2 - 5\omega_6^3 c_s^4 - 9\omega_6^3 v_3^4 + 672 v_3^2 c_s^2 + 8\omega_6^2 + 6\omega_6^3 c_s^2 - \omega_6^3 + 10\omega_6^3 v_3^2 - 216\omega_6 v_3^4 - 78\omega_6^2 c_s^2 - 156 v_3^2 - 216\omega_6 c_s^4 - 98\omega_6^2 v_3^2 - 132 c_s^2 + 404\omega_6^2 v_3^2 c_s^2)\frac{v_3}{12\omega_6^3}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}^4_z\rho} = (-8c_s^2\omega_1\omega_2^3 - 104\omega_3 v_3^2\omega_1^2\omega_2 + 160\omega_3 v_3^2 c_s^2\omega_1^3 + 30\omega_3 v_3^2\omega_1^3\omega_2^3 + 72\omega_3 c_s^4\omega_1\omega_2^2 + 8\omega_3\omega_1^2\omega_2 - 52\omega_3 c_s^2\omega_1^3 - 3\omega_3\omega_1^3\omega_2^3 - 160\omega_3 v_3^2\omega_2^3 + 180\omega_3 v_3^4\omega_1^2\omega_2^3 - 84\omega_3 v_3^4\omega_1^3\omega_2 - 98\omega_3 v_3^2\omega_1^3\omega_2^2 - 264\omega_3 v_3^4\omega_1^2\omega_2^2 + 8\omega_3\omega_1^3\omega_2^2 - 372\omega_3 c_s^4\omega_1\omega_2^3 - 27\omega_3 v_3^4\omega_1^3\omega_2^3 + 96\omega_3 v_3^4\omega_1^2\omega_2 + 24c_s^4\omega_1\omega_2^3 + 8v_3^2 c_s^2\omega_1^3\omega_2 - 10\omega_3\omega_1^3\omega_2 + 16\omega_3\omega_1^2\omega_2^3 - 80\omega_3 c_s^2\omega_1\omega_2^2 - 1472\omega_3 v_3^2 c_s^2\omega_1\omega_2^3 + 94\omega_3 v_3^2\omega_1^3\omega_2 - 196\omega_3 v_3^2\omega_1^2\omega_2^3 - 16v_3^2 c_s^2\omega_1^2\omega_2^2 - 16\omega_3\omega_1^2\omega_2^2 + 760\omega_3 v_3^2 c_s^2\omega_2^3 + 90\omega_3 v_3^4\omega_1^3\omega_2^2 + 280\omega_3 v_3^2\omega_1^2\omega_2^2 - 28\omega_3 v_3^2\omega_1^3 - 184\omega_3 c_s^2\omega_2^3 + 656\omega_3 v_3^2 c_s^2\omega_1\omega_2^2 + 320\omega_3 c_s^2\omega_1\omega_2^3 - 15\omega_3 c_s^4\omega_1^3\omega_2^3 + 8\omega_3\omega_1\omega_2^2 + 72\omega_3 c_s^4\omega_1^2\omega_2 - 48c_s^4\omega_1^2\omega_2^2 - 1088\omega_3 v_3^2 c_s^2\omega_1^2\omega_2^2 - 176\omega_3 v_3^2\omega_1\omega_2^2 + 122\omega_3 c_s^2\omega_1^3\omega_2 + 16\omega_3\omega_2^3 - 156\omega_3 c_s^2\omega_1^2\omega_2^3 + 24c_s^4\omega_1^3\omega_2 - 28\omega_3\omega_1\omega_2^3 + 8v_3^2 c_s^2\omega_1\omega_2^3 + 82\omega_3 c_s^4\omega_1^3\omega_2^2 + 72\omega_3 c_s^4\omega_1^3 + 152\omega_3 c_s^2\omega_1^2\omega_2^2 + 144\omega_3 v_3^4\omega_2^2 + 328\omega_3 v_3^2\omega_1\omega_2^3 - 464\omega_3 v_3^2 c_s^2\omega_1^3\omega_2 + 808\omega_3 v_3^2 c_s^2\omega_1^2\omega_2^3 - 80\omega_3 c_s^2\omega_1^2\omega_2 + 18\omega_3 c_s^2\omega_1^3\omega_2^3 + 404\omega_3 v_3^2 c_s^2\omega_1^3\omega_2^2 + 16c_s^2\omega_1^2\omega_2^2 + 24\omega_3 v_3^4\omega_1^3 + 168\omega_3 v_3^4\omega_1\omega_2^2 + 216\omega_3 c_s^4\omega_2^3 + 164\omega_3 c_s^4\omega_1^2\omega_2^3 - 156\omega_3 c_s^4\omega_1^3\omega_2 + 440\omega_3 v_3^2 c_s^2\omega_1^2\omega_2 - 8c_s^2\omega_1^3\omega_2 - 102\omega_3 v_3^2 c_s^2\omega_1^3\omega_2^3 - 78\omega_3 c_s^2\omega_1^3\omega_2^2 - 120\omega_3 c_s^4\omega_1^2\omega_2^2 + 4\omega_3\omega_1^3 - 300\omega_3 v_3^4\omega_1\omega_2^3)\frac{v_3}{36\omega_3\omega_1^3\omega_2^3}$

coefficient $C^{(3)}_{\mathrm{D}^4_z v_3}$ **at** $\frac{\partial^4 v_3}{\partial x_3^4}$**:**

$C^{(3),\mathrm{SRT}}_{\mathrm{D}^4_z v_3} = (12 + 504 v_3^4 - c_s^4\omega^3 - 756 v_3^4\omega - 648 v_3^2 c_s^2\omega + 14c_s^4\omega^2 + 24c_s^4 + 252 v_3^2 c_s^2\omega^2 - 36c_s^4\omega - \omega^3 + 310 v_3^4\omega^2 + 8\omega^2 - 18 v_3^2 c_s^2\omega^3 - 18\omega - 29 v_3^4\omega^3 + 432 v_3^2 c_s^2 + 378 v_3^2\omega - 22c_s^2\omega^2 + 2c_s^2\omega^3 + 14 v_3^2\omega^3 - 252 v_3^2 + 54c_s^2\omega - 36c_s^2 - 154 v_3^2\omega^2)\frac{\rho}{12\omega^3}$

$C^{(3),\mathrm{MRT1}}_{\mathrm{D}^4_z v_3} = (12 + 504 v_3^4 + 14 v_3^2\omega_{11}^3 + 54c_s^2\omega_{11} - 154 v_3^2\omega_{11}^2 + 24c_s^4 + 378 v_3^2\omega_{11} - 22c_s^2\omega_{11}^2 + 2c_s^2\omega_{11}^3 + 432 v_3^2 c_s^2 + 252 v_3^2 c_s^2\omega_{11}^2 - 36c_s^4\omega_{11} - \omega_{11}^3 - 18\omega_{11} + 310 v_3^4\omega_{11}^2 + 8\omega_{11}^2 - 18 v_3^2 c_s^2\omega_{11}^3 - 29 v_3^4\omega_{11}^3 - c_s^4\omega_{11}^3 - 252 v_3^2 - 756 v_3^4\omega_{11} - 36c_s^2 - 648 v_3^2 c_s^2\omega_{11} + 14c_s^4\omega_{11}^2)\frac{\rho}{12\omega_{11}^3}$

$C^{(3),\mathrm{MRT2}}_{\mathrm{D}^4_z v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}^4_z v_3}$

$C^{(3),\mathrm{CLBM1}}_{\mathrm{D}^4_z v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}^4_z v_3}$

$C^{(3),\mathrm{CLBM2}}_{\mathrm{D}^4_z v_3} = C^{(3),\mathrm{MRT1}}_{\mathrm{D}^4_z v_3}$

$C^{(3),\mathrm{CuLBM1}}_{\mathrm{D}^4_z v_3} = (12 + 378\omega_6 v_3^2 + 14\omega_6^2 c_s^4 - 18\omega_6 + 504 v_3^4 + 54\omega_6 c_s^2 - 648\omega_6 v_3^2 c_s^2 + 310\omega_6^2 v_3^4 + 24c_s^4 - 18\omega_6^3 v_3^2 c_s^2 - \omega_6^3 c_s^4 - 29\omega_6^3 v_3^4 + 432 v_3^2 c_s^2 + 8\omega_6^2 + 2\omega_6^3 c_s^2 - \omega_6^3 + 14\omega_6^3 v_3^2 - 756\omega_6 v_3^4 - 22\omega_6^2 c_s^2 - 252 v_3^2 - 36\omega_6 c_s^4 - 154\omega_6^2 v_3^2 - 36c_s^2 + 252\omega_6^2 v_3^2 c_s^2)\frac{\rho}{12\omega_6^3}$

$C^{(3),\mathrm{CuLBM2}}_{\mathrm{D}^4_z v_3} = (-8c_s^2\omega_1\omega_2^3 - 168\omega_3 v_3^2\omega_1^2\omega_2 + 144\omega_3 v_3^2 c_s^2\omega_1^3 + 42\omega_3 v_3^2\omega_1^3\omega_2^3 + 8\omega_3 c_s^4\omega_1\omega_2^2 + 8\omega_3\omega_1^2\omega_2 - 20\omega_3 c_s^2\omega_1^3 - 3\omega_3\omega_1^3\omega_2^3 - 288\omega_3 v_3^2\omega_2^3 + 620\omega_3 v_3^4\omega_1^2\omega_2^3 - 312\omega_3 v_3^4\omega_1^3\omega_2 - 154\omega_3 v_3^2\omega_1^3\omega_2^2 - 888\omega_3 v_3^4\omega_1^2\omega_2^2 + 8\omega_3\omega_1^3\omega_2^2 - 68\omega_3 c_s^4\omega_1\omega_2^3 - 87\omega_3 v_3^4\omega_1^3\omega_2^3 + 336\omega_3 v_3^4\omega_1^2\omega_2 + 8c_s^4\omega_1\omega_2^3 + 24v_3^2 c_s^2\omega_1^3\omega_2 - 10\omega_3\omega_1^3\omega_2 + 16\omega_3\omega_1^2\omega_2^3 - 16\omega_3 c_s^2\omega_1\omega_2^2 - 1008\omega_3 v_3^2 c_s^2\omega_1\omega_2^3 + 174\omega_3 v_3^2\omega_1^3\omega_2 - 308\omega_3 v_3^2\omega_1^2\omega_2^3 - 48v_3^2 c_s^2\omega_1^2\omega_2^2 - 16\omega_3\omega_1^2\omega_2^2 + 552\omega_3 v_3^2 c_s^2\omega_2^3 + 310\omega_3 v_3^4\omega_1^3\omega_2^2 + 408\omega_3 v_3^2\omega_1^2\omega_2^2 - 60\omega_3 v_3^2\omega_1^3 - 56\omega_3 c_s^2\omega_2^3 + 336\omega_3 v_3^2 c_s^2\omega_1\omega_2^2 + 96\omega_3 c_s^2\omega_1\omega_2^3 - 3\omega_3 c_s^4\omega_1^3\omega_2^3 + 8\omega_3\omega_1\omega_2^2 + 8\omega_3 c_s^4\omega_1^2\omega_2 - 16c_s^4\omega_1^2\omega_2^2 - 576\omega_3 v_3^2 c_s^2\omega_1^2\omega_2^2 - 240\omega_3 v_3^2\omega_1\omega_2^2 + 42\omega_3 c_s^2\omega_1^3\omega_2 + 16\omega_3\omega_2^3 - 44\omega_3 c_s^2\omega_1^2\omega_2^3 + 8c_s^4\omega_1^3\omega_2 - 28\omega_3\omega_1\omega_2^3 + 24v_3^2 c_s^2\omega_1\omega_2^3 + 14\omega_3 c_s^4\omega_1^3\omega_2^2 + 16\omega_3 c_s^4\omega_1^3 + 24\omega_3 c_s^2\omega_1^2\omega_2^2 + 528\omega_3 v_3^4\omega_2^3 + 552\omega_3 v_3^2\omega_1\omega_2^3 - 360\omega_3 v_3^2 c_s^2\omega_1^3\omega_2 + 504\omega_3 v_3^2 c_s^2\omega_1^2\omega_2^3 - 16\omega_3 c_s^2\omega_1^2\omega_2 + 6\omega_3 c_s^2\omega_1^3\omega_2^3 + 252\omega_3 v_3^2 c_s^2\omega_1^3\omega_2^2 + 16c_s^2\omega_1^2\omega_2^2 + 96\omega_3 v_3^4\omega_1^3 + 552\omega_3 v_3^4\omega_1\omega_2^2 + 40\omega_3 c_s^4\omega_2^3 + 28\omega_3 c_s^4\omega_1^2\omega_2^3 - 32\omega_3 c_s^4\omega_1^3\omega_2 + 264\omega_3 v_3^2 c_s^2\omega_1^2\omega_2 - 8c_s^2\omega_1^3\omega_2 - 54\omega_3 v_3^2 c_s^2\omega_1^3\omega_2^3 - 22\omega_3 c_s^2\omega_1^3\omega_2^2 - 8\omega_3 c_s^4\omega_1^2\omega_2^2 + 4\omega_3\omega_1^3 - 1068\omega_3 v_3^4\omega_1\omega_2^3)\frac{\rho}{36\omega_3\omega_1^3\omega_2^3}$

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