$$\begin{array}{c|c} \mathcal{D}_3' & 0 \\ \hline 0 & J_3\mathcal{D}_3'J_3 \end{array} = \begin{array}{c|c} \mathcal{D}_3 & 0 \\ \hline 0 & \widetilde{\mathcal{D}}_3 \end{array} + \begin{array}{c|c} \omega_3 & 0 \\ \hline 0 & \widetilde{\omega}_3 \end{array} - \begin{array}{c|c} 0 & J_3 \\ \hline -\varkappa J_3 & 0 \end{array} \begin{array}{c|c} \omega_3 & 0 \\ \hline 0 & \widetilde{\omega}_3 \end{array} \begin{array}{c|c} 0 & J_3 \\ \hline -\varkappa J_3 & 0 \end{array}^{-1}$$

$$-\begin{array}{c|c} 0 & J_3 \\ \hline -\varkappa J_3 & 0 \end{array} \begin{array}{c|c} \omega_3 & 0 \\ \hline 0 & \widetilde{\omega}_3 \end{array} \begin{array}{c|c} 0 & J_3 \\ \hline -\varkappa J_3 & 0 \end{array}^{-1} = \begin{array}{c|c} 0 & J_3 \\ \hline -\varkappa J_3 & 0 \end{array} \begin{array}{c|c} \omega_3 & 0 \\ \hline 0 & \widetilde{\omega}_3 \end{array}$$

$$\begin{array}{c|c} 0 & -\varkappa J_3 \\ \hline J_3 & 0 \end{array} = \begin{array}{c|c} J_3\widetilde{\omega}_3 J_3 & 0 \\ \hline 0 & J_3\omega_3 J_3 \end{array} \Longrightarrow \mathcal{D}_3' = \mathcal{D}_3 + \omega_3 + J_3\,\widetilde{\omega}_3\,J_3$$

$$J_3\,\mathcal{D}_3'\,J_3 = \widetilde{\mathcal{D}}_3 + \widetilde{\omega}_3 + J_3\,\omega_3\,J_3$$

$$\begin{array}{c|c} 0 & J_3 \\ \hline -\varkappa J_3 & 0 \end{array} \begin{array}{c|c} \mathcal{D}_3' & 0 \\ \hline 0 & J_3\mathcal{D}_3'J_3 \end{array} + \begin{array}{c|c} \mathcal{D}_3' & 0 \\ \hline 0 & J_3\mathcal{D}_3'J_3 \end{array} \begin{array}{c|c} 0 & J_3 \\ \hline -\varkappa J_3 & 0 \end{array} =$$

$$\begin{array}{c|c} 0 & J_3^2\mathcal{D}_3'J_3 + \mathcal{D}_3'J_3 \\ \hline -\varkappa J_3\mathcal{D}_3' - \varkappa J_3\mathcal{D}_3'J_3^2 & 0 \end{array} = \begin{array}{c|c} 0 & 0 \\ \hline 0 & 0 \end{array}$$

$$\mathcal{D}_3' = \pitchfork \boxtimes 1 + 1 \boxtimes \pitchfork' + \Gamma \boxtimes \mathcal{M}'$$

$$\omega' = \begin{array}{c|c|c} \omega_a \boxtimes \begin{array}{c|c} a & 0 \\ \hline 0 & 0 \end{array} + \omega \boxtimes \begin{array}{c|c} 2/3 & 0 \\ \hline 0 & 2 \end{array} & 0 & 0 \\ \hline 0 & \omega_a \boxtimes a - \omega \boxtimes 4/3 & 0 \\ \hline 0 & 0 & \Omega \boxtimes \begin{array}{c|c} 1 & 0 \\ \hline 0 & 1 \end{array} + \omega_a \boxtimes \begin{array}{c|c} a & 0 \\ \hline 0 & 0 \end{array} - \omega \boxtimes \begin{array}{c|c} 1/3 & 0 \\ \hline 0 & -1 \end{array} \end{array}$$

$$\mathcal{M}' = \begin{array}{c|c|c} 0 & 0 & \varkappa(\varphi+\varepsilon)^* \boxtimes \begin{array}{c|c} d^* & 0 \\ \hline 0 & e^* \end{array} \\ \hline 0 & 0 & \varkappa(\varphi+\varepsilon)^* \boxtimes \begin{bmatrix} u^* & 0 \end{bmatrix} \\ \hline (\varphi+\varepsilon) \boxtimes \begin{array}{c|c} d & 0 \\ \hline 0 & e \end{array} & (\varphi+\varepsilon) \boxtimes \begin{bmatrix} u \\ 0 \end{bmatrix} & 0 \end{array}$$

$$J_3\,\widetilde{\omega}_3\,J_3 = \begin{array}{c|c|c} \omega_a \boxtimes \begin{array}{c|c} a & 0 \\ \hline 0 & 0 \end{array} - \omega \boxtimes \begin{array}{c|c} 1/3 & 0 \\ \hline 0 & -1 \end{array} & 0 & 0 \\ \hline 0 & \omega_a \boxtimes a - \omega \boxtimes 1/3 & 0 \\ \hline 0 & 0 & \omega_a \boxtimes \begin{array}{c|c} a & 0 \\ \hline 0 & 0 \end{array} - \omega \boxtimes \begin{array}{c|c} 1/3 & 0 \\ \hline 0 & -1 \end{array} \end{array}$$

$$J_3\,\widetilde{\omega}_3\,J_3 + \omega_3 = \begin{array}{c|c|c} \omega_a \boxtimes \begin{array}{c|c} a & 0 \\ \hline 0 & 0 \end{array} + \omega \boxtimes \begin{array}{c|c} 2/3 & 0 \\ \hline 0 & 2 \end{array} & 0 & \varkappa\Gamma\varphi^* \boxtimes \begin{array}{c|c} d^* & 0 \\ \hline 0 & e^* \end{array} \\ \hline 0 & \omega_a \boxtimes a - \omega \boxtimes 4/3 & \varkappa\Gamma\varphi^* \boxtimes \begin{bmatrix} u^* & 0 \end{bmatrix} \\ \hline \varphi\Gamma \boxtimes \begin{array}{c|c} d & 0 \\ \hline 0 & e \end{array} & \varphi\Gamma \boxtimes \begin{bmatrix} u \\ 0 \end{bmatrix} & \Omega \boxtimes \begin{array}{c|c} 1 & 0 \\ \hline 0 & 1 \end{array} + \omega_a \boxtimes \begin{array}{c|c} a & 0 \\ \hline 0 & 0 \end{array} - \omega \boxtimes \begin{array}{c|c} 1/3 & 0 \\ \hline 0 & -1 \end{array} \end{array}$$

$$
J_3\,\omega_3\,J_3 + \widetilde{\omega}_3 =
\begin{array}{c|c|c}
\bar{\omega}_a \text{⧗} \begin{array}{c|c} \bar{a} & 0 \\ \hline 0 & 0 \end{array} - \omega \text{⧗} \begin{array}{c|c} 2/3 & 0 \\ \hline 0 & 2 \end{array} & 0 & -\varkappa \Gamma \varphi^t \text{⧗} \begin{array}{c|c} d^t & 0 \\ \hline 0 & e^t \end{array} \\ \hline
0 & \bar{\omega}_a \text{⧗} \bar{a} + \omega \text{⧗} 4/3 & -\varkappa \Gamma \varphi^t \text{⧗} \begin{bmatrix} u^t & 0 \end{bmatrix} \\ \hline
-\bar{\varphi} \Gamma \text{⧗} \begin{array}{c|c} d & 0 \\ \hline 0 & e \end{array} & -\bar{\varphi} \Gamma \text{⧗} \begin{bmatrix} u \\ 0 \end{bmatrix} & \bar{\Omega} \text{⧗} \begin{array}{c|c} 1 & 0 \\ \hline 0 & 1 \end{array} + \bar{\omega}_a \text{⧗} \begin{array}{c|c} \bar{a} & 0 \\ \hline 0 & 0 \end{array} + \omega \text{⧗} \begin{array}{c|c} 1/3 & 0 \\ \hline 0 & -1 \end{array}
\end{array}
$$

$$
\mathcal{D}_3 =
\begin{array}{c|c|c}
\begin{array}{c} \text{ɦ} \text{⧗} \begin{array}{c|c} 1 & 0 \\ \hline 0 & 1 \end{array} + \\ \omega_a \text{⧗} \begin{array}{c|c} a & 0 \\ \hline 0 & 0 \end{array} + \\ \omega \text{⧗} \begin{array}{c|c} 2/3 & 0 \\ \hline 0 & 2 \end{array} \end{array} & 0 & \varkappa \Gamma (\varphi + \varepsilon)^* \text{⧗} \begin{array}{c|c} d^* & 0 \\ \hline 0 & e^* \end{array} \\ \hline
0 & \begin{array}{c} \text{ɦ} \text{⧗} 1 + \\ \omega_a \text{⧗} a - \\ \omega \text{⧗} 4/3 \end{array} & \varkappa \Gamma (\varphi + \varepsilon)^* \text{⧗} \begin{bmatrix} u^* & 0 \end{bmatrix} \\ \hline
(\varphi + \varepsilon)\,\Gamma \text{⧗} \begin{array}{c|c} d & 0 \\ \hline 0 & e \end{array} & (\varphi + \varepsilon)\,\Gamma \text{⧗} \begin{bmatrix} u \\ 0 \end{bmatrix} & \begin{array}{c} (\text{ɦ} + \Omega)\, \text{⧗} \begin{array}{c|c} 1 & 0 \\ \hline 0 & 1 \end{array} + \\ \omega_a \text{⧗} \begin{array}{c|c} a & 0 \\ \hline 0 & 0 \end{array} - \\ \omega \text{⧗} \begin{array}{c|c} 1/3 & 0 \\ \hline 0 & -1 \end{array} \end{array}
\end{array}
$$

$$
J_3\,\mathcal{D}_3\,J_3 =
\begin{array}{c|c|c}
\begin{array}{c} \text{ɦ} \text{⧗} \begin{array}{c|c} 1 & 0 \\ \hline 0 & 1 \end{array} + \\ \bar{\omega}_a \text{⧗} \begin{array}{c|c} \bar{a} & 0 \\ \hline 0 & 0 \end{array} - \\ \bar{\omega} \text{⧗} \begin{array}{c|c} 2/3 & 0 \\ \hline 0 & 2 \end{array} \end{array} & 0 & -\varkappa \Gamma (\varphi + \varepsilon)^t \text{⧗} \begin{array}{c|c} d^t & 0 \\ \hline 0 & e^t \end{array} \\ \hline
0 & \begin{array}{c} \text{ɦ} \text{⧗} 1 + \\ \bar{\omega}_a \text{⧗} \bar{a} - \\ \bar{\omega} \text{⧗} 4/3 \end{array} & -\varkappa \Gamma (\varphi + \varepsilon)^t \text{⧗} \begin{bmatrix} u^t & 0 \end{bmatrix} \\ \hline
-\left(\bar{\varphi} + \varepsilon\right) \Gamma \text{⧗} \begin{array}{c|c} d & 0 \\ \hline 0 & e \end{array} & -\left(\bar{\varphi} + \varepsilon\right) \Gamma \text{⧗} \begin{bmatrix} u \\ 0 \end{bmatrix} & \begin{array}{c} \left(\text{ɦ} + \bar{\Omega}\right) \text{⧗} \begin{array}{c|c} 1 & 0 \\ \hline 0 & 1 \end{array} + \\ \bar{\omega}_a \text{⧗} \begin{array}{c|c} \bar{a} & 0 \\ \hline 0 & 0 \end{array} + \\ \omega \text{⧗} \begin{array}{c|c} \frac{1}{3} & 0 \\ \hline 0 & -1 \end{array} \end{array}
\end{array}
$$

$$
\text{unbekannt } = \begin{array}{c|c|c}
\begin{array}{c} \bar{\omega}_a \boxtimes \begin{array}{c|c} \bar{a} & 0 \\ \hline 0 & 0 \end{array} + \\ \omega \boxtimes \begin{array}{c|c} 1/3 & 0 \\ \hline 0 & -1 \end{array} \end{array} & 0 & 0 \\
\hline
0 & \begin{array}{c} \bar{\omega}_a \boxtimes \bar{a} + \\ \omega \boxtimes 1/3 \end{array} & 0 \\
\hline
0 & 0 & \begin{array}{c} \bar{\omega}_a \boxtimes \begin{array}{c|c} \bar{a} & 0 \\ \hline 0 & 0 \end{array} + \\ \bar{\omega} \boxtimes \begin{array}{c|c} 1/3 & 0 \\ \hline 0 & -1 \end{array} \end{array}
\end{array}
$$

$$
\begin{array}{c} \psi_3 \\ \hline \widetilde{\psi}_3 \end{array} \overline{\times} \begin{array}{c|c} \mathcal{D}'_3 & 0 \\ \hline 0 & J_3 \mathcal{D}'_3 J_3 \end{array} \begin{array}{c} \psi_3 \\ \hline \widetilde{\psi}_3 \end{array} - \begin{array}{c|c} \mathcal{D}'_3 & 0 \\ \hline 0 & J_3 \mathcal{D}'_3 J_3 \end{array}
$$

$$
\begin{array}{c} \psi_3 \\ \hline \widetilde{\psi}_3 \end{array} \overline{\times} \begin{array}{c} \psi_3 \\ \hline \widetilde{\psi}_3 \end{array}
$$

$$
= \psi_3 \overline{\times} \mathcal{D}'_3 \, \psi_3 + \widetilde{\psi}_3 \overline{\times} J_3 \, \mathcal{D}'_3 \, J_3 \, \widetilde{\psi}_3 - \mathcal{D}'_3 \, \psi_3 \overline{\times} \psi_3 - J_3 \, \mathcal{D}'_3 \, J_3 \, \widetilde{\psi}_3 \overline{\times} \widetilde{\psi}_3
$$

$$
= \psi_3 \overline{\times} \mathcal{D}'_3 \, \psi_3 - \mathcal{D}'_3 \, \psi_3 \overline{\times} \psi_3 + \widetilde{\psi}_3 \overline{\times} J_3 \, \mathcal{D}'_3 \, J_3 \, \widetilde{\psi}_3 - J_3 \, \mathcal{D}'_3 \, J_3 \, \widetilde{\psi}_3 \overline{\times} \widetilde{\psi}_3
$$

$$
\psi_3^{\mathbb{R}} \overline{\times} \left(\mathcal{D}_3^{\mathbb{R}} + \omega_3^{\mathbb{R}} - J_3^{\mathbb{R}} \omega_3^{\mathbb{R}} \left(J_3^{\mathbb{R}} \right)^{-1} \right) \psi_3^{\mathbb{R}} = \Re \psi_3^{\mathbb{R}} \overline{\times} \left(\mathcal{D}_3^{\mathbb{R}} + \omega_3^{\mathbb{R}} - J_3^{\mathbb{R}} \omega_3^{\mathbb{R}} \left(J_3^{\mathbb{R}} \right)^{-1} \right) \psi_3^{\mathbb{R}} = 2 \Re \psi_3 \overline{\times} \left(\mathcal{D}_3 + \omega_3 \right) \psi_3
$$

$$
\left[\psi_{d_R} \; \psi_{e_R} \; \psi_{u_R} \; \psi_{d_L} \; \psi_{e_L} \; \psi_{u_L} \; \psi_{\nu_L} \right] \overline{\times}
$$

$$
\begin{array}{c|c|c}
\begin{array}{c} \daleth \boxtimes \begin{array}{c|c} 1 & 0 \\ \hline 0 & 1 \end{array} + \\ \omega_a \boxtimes \begin{array}{c|c} a & 0 \\ \hline 0 & 0 \end{array} + \\ \omega \boxtimes \begin{array}{c|c} 2/3 & 0 \\ \hline 0 & 2 \end{array} \end{array} & 0 & \varkappa \Gamma (\varphi + \varepsilon)^* \boxtimes \begin{array}{c|c} d^* & 0 \\ \hline 0 & e^* \end{array} \\
\hline
0 & \begin{array}{c} \daleth \boxtimes 1 + \\ \omega_a \boxtimes a - \\ \omega \boxtimes 4/3 \end{array} & \varkappa \Gamma (\varphi + \varepsilon)^* \boxtimes \left[u^* \quad 0 \right] \\
\hline
(\varphi + \varepsilon) \, \Gamma \boxtimes \begin{array}{c|c} d & 0 \\ \hline 0 & e \end{array} & (\varphi + \varepsilon) \, \Gamma \boxtimes \begin{bmatrix} u \\ 0 \end{bmatrix} & \begin{array}{c} (\daleth + \Omega) \boxtimes \begin{array}{c|c} 1 & 0 \\ \hline 0 & 1 \end{array} + \\ \omega_a \boxtimes \begin{array}{c|c} a & 0 \\ \hline 0 & 0 \end{array} - \\ \omega \boxtimes \begin{array}{c|c} 1/3 & 0 \\ \hline 0 & -1 \end{array} \end{array}
\end{array}
$$

$$
\begin{bmatrix} \psi_{d_R} \\ \psi_{e_R} \\ \psi_{u_R} \\ \psi_{d_L} \\ \psi_{e_L} \\ \psi_{u_L} \\ \psi_{\nu_L} \end{bmatrix} =
$$

$$
\psi_{d_R} \bar{\times} \left(\not{\partial} \boxtimes 1 + \omega_a \boxtimes a + \frac{2}{3}\omega \boxtimes 1 \right) \psi_{d_R} + \psi_{e_R} \bar{\times} (\not{\partial} \boxtimes 1 + 2\omega \boxtimes 1)\, \psi_{e_R} + \psi_{u_R} \bar{\times} \left(\not{\partial} \boxtimes 1 + \omega_a \boxtimes a - \frac{4}{3}\omega \boxtimes 1 \right) \psi_{u_R}
$$

$$
+ \frac{\psi_{d_L}}{\psi_{u_L}} \bar{\times} \left((\not{\partial} + \Omega) \boxtimes 1 + \omega_a \boxtimes a - \frac{1}{3}\omega \boxtimes 1 \right) \frac{\psi_{d_L}}{\psi_{u_L}} + \frac{\psi_{e_L}}{\psi_{\nu_L}} \bar{\times} ((\not{\partial} + \Omega) \boxtimes 1 + \omega \boxtimes 1) \frac{\psi_{e_L}}{\psi_{\nu_L}}
$$

$$
+ \frac{\psi_{d_L}}{\psi_{u_L}} \bar{\times} ((\varphi + \varepsilon)\, \Gamma \boxtimes d)\, \psi_{d_R} + \frac{\psi_{d_L}}{\psi_{u_L}} \bar{\times} ((\varphi + \varepsilon)\, \Gamma \boxtimes u)\, \psi_{u_R} + \frac{\psi_{e_L}}{\psi_{\nu_L}} \bar{\times} ((\varphi + \varepsilon)\, \Gamma \boxtimes e)\, \psi_{e_R}
$$

$$
+ \varkappa \psi_{e_R} \bar{\times} \left(\Gamma (\varphi + \varepsilon)^* \boxtimes e^* \right) \frac{\psi_{e_L}}{\psi_{\nu_L}} + \varkappa \psi_{d_R} \bar{\times} \left(\Gamma (\varphi + \varepsilon)^* \boxtimes d^* \right) \frac{\psi_{d_L}}{\psi_{u_L}} + \varkappa \psi_{u_R} \bar{\times} \left(\Gamma (\varphi + \varepsilon)^* \boxtimes u^* \right) \frac{\psi_{d_L}}{\psi_{u_L}}
$$

$$
\mathcal{D}' \begin{bmatrix} \psi_d \boxtimes \frac{d_R}{e_R} \\ \psi_u \boxtimes u_R \\ \Psi \boxtimes \frac{q_L}{\ell_L} \end{bmatrix} =
$$

$$
\begin{bmatrix}
\not{\partial} \psi_d \boxtimes \frac{d_R}{e_R} + \omega_a \psi_d \boxtimes\ a \mid d_R\ 0 + \omega \psi_d \boxtimes \frac{\frac{2}{3} \mid d_R}{2 \mid e_R} + \varkappa \Gamma (\varphi + \varepsilon)^* \Psi \boxtimes \frac{d^* \mid q_L}{e^* \mid \ell_L} \\
\not{\partial} \psi_u \boxtimes u_R + \omega_a \psi_u \boxtimes a u_R - \omega \psi_u \boxtimes \frac{4}{3} u_R + \varkappa \Gamma (\varphi + \varepsilon)^* \Psi \boxtimes u^* q_L \\
(\varphi + \varepsilon)\, \Gamma \psi_d \boxtimes \frac{d \mid d_R}{e \mid e_R} + (\varphi + \varepsilon)\, \Gamma \psi_u \boxtimes\ u \mid u_R\ 0 + (\not{\partial} + \Omega)\, \Psi \boxtimes \frac{q_L}{\ell_L} + \omega_a \Psi \boxtimes\ a \mid q_L\ 0 - \omega \Psi \boxtimes \frac{\frac{1}{3} \mid q_L}{- \mid \ell_L}
\end{bmatrix}
$$

$$
\Re i \begin{bmatrix} \psi_d \boxtimes \frac{d_R}{e_R} \\ \psi_u \boxtimes u_R \\ \Psi \boxtimes \frac{q_L}{\ell_L} \end{bmatrix} \bar{\times} \mathcal{D}' \begin{bmatrix} \psi_d \boxtimes \frac{d_R}{e_R} \\ \psi_u \boxtimes u_R \\ \Psi \boxtimes \frac{q_L}{\ell_L} \end{bmatrix}
$$

$$\psi_d \rtimes \daleth\, \psi_d \left(d_R^* d_R + e_R^* e_R\right) + \psi_u \rtimes \daleth\, \psi_u\, u_R^*\, u_R + \Psi \rtimes (\daleth + \Omega)\, \Psi \left(q_L^* q_L + \ell_L^* \ell_L\right) + \psi_d \rtimes \omega\, \psi_d \left(\frac{2}{3} d_R^* d_R + 2 e_R^* e_R\right)$$

$$+\omega\, \psi_u \rtimes \psi_u \frac{4}{3} u_R^*\, u_R + \Psi \rtimes \omega \Psi \rtimes \Psi \left(\frac{1}{3} q_L^* q_L - \ell_L^* \ell_L\right)$$

$$+\psi_d \rtimes \omega_a\, \psi_d\, d_R^* a\, d_R + \psi_u \rtimes \omega_a\, \psi_u\, u_R^* a\, u_R + \Psi \rtimes \omega_a \Psi\, q_L^*\, a\, q_L$$

$$+2\Re i \Psi \rtimes (\varphi + \varepsilon)\, \Gamma\, \psi_d \left(q_L^* d d_R + \ell_L^* e e_R\right) + 2\Re i \Psi \rtimes (\varphi + \varepsilon)\, \Gamma\, \psi_u\, q_L^*\, u\, u_R$$

$$\text{LHS} = \Re i \begin{bmatrix} \psi_d \bowtie \frac{d_R}{e_R} \\ \psi_u \bowtie u_R \\ \Psi \bowtie \frac{q_L}{\ell_L} \end{bmatrix} \rtimes \begin{bmatrix} \daleth \psi_d \bowtie \frac{d_R}{e_R} + \omega_a \psi_d \bowtie\ a \mid d_R\ 0 + \omega \psi_d \bowtie \frac{\frac{2}{3} \mid d_R}{2 \mid e_R} + \varkappa \Gamma (\varphi + \varepsilon)^* \Psi \bowtie \frac{d^* \mid q_L}{e^* \mid \ell_L} \\ \daleth \psi_u \bowtie u_R + \omega_a \psi_u \bowtie a u_R - \omega \psi_u \bowtie \frac{4}{3} u_R + \varkappa \Gamma (\varphi + \varepsilon)^* \Psi \bowtie u^* q_L \\ (\varphi + \varepsilon)\, \Gamma \psi_d \bowtie \frac{d \mid d_R}{e \mid e_R} + (\varphi + \varepsilon)\, \Gamma \psi_u \bowtie\ u \mid u_R\ 0 + (\daleth + \Omega)\, \Psi \bowtie \frac{q_L}{\ell_L} + \omega_a \Psi \bowtie\ a \mid q_L\ 0 - \omega \Psi \end{bmatrix}$$

$$= \Re i\, \psi_d \rtimes \daleth\, \psi_d \left(d_R^* d_R + e_R^* e_R\right) + \psi_d \rtimes \omega_a\, \psi_d\, d_R^* a\, d_R + \psi_d \rtimes \omega\, \psi_d \left(\frac{2}{3} d_R^* d_R + 2 e_R^* e_R\right)$$

$$+\varkappa\, \psi_d \rtimes \Gamma\, (\varphi + \varepsilon)^* \Psi \left(d_R^* d^* q_L + e_R^* e^* \ell_L\right) + \psi_u \rtimes \daleth\, \psi_u\, u_R^*\, u_R + \psi_u \rtimes \omega_a\, \psi_u\, u_R^* a\, u_R - \psi_u \rtimes \omega\, \psi_u \frac{4}{3} u_R^*\, u_R$$

$$+\varkappa\, \psi_u \rtimes \Gamma\, (\varphi + \varepsilon)^* \Psi\, u_R^*\, u^*\, q_L + \Psi \rtimes (\varphi + \varepsilon)\, \Gamma\, \psi_d \left(q_L^* d d_R + \ell_L^* e e_R\right) + \Psi \rtimes (\varphi + \varepsilon)\, \Gamma\, \psi_u\, q_L^*\, u\, u_R +$$

$$\Psi \rtimes (\daleth + \Omega)\, \Psi \left(q_L^* q_L + \ell_L^* \ell_L\right) + \Psi \rtimes \omega_a \Psi\, q_L^*\, a\, q_L - \Psi \rtimes \omega \Psi \left(\frac{1}{3} q_L^* q_L - \ell_L^* \ell_L\right) = \text{RHS}$$

$$\daleth^* = -\daleth: \quad \Omega^* = \Omega^* = -\Omega: \quad \omega^* = \bar{\omega} = -\omega: \quad \Gamma^* = -\varkappa \Gamma$$

$$(\omega_a \bowtie a)^* = \omega_a^* \bowtie a^* = \bar{\omega}_a \bowtie a^* = -\omega_a \bowtie a$$