

$$\begin{aligned}
\mathbf{g}_1 \rightarrow \mathbf{g}_1 + \\
\hbar \left( \frac{19}{12} \mathbf{g}_1^3 - \frac{1}{6} \sum_{\mathbf{p}} \mathbf{g}_1^3 \mathbf{L} F_{2,0} [\mathbf{m}_{\tilde{\mathbf{d}}}^{\mathbf{p}}] + \frac{1}{9} \sum_{\mathbf{p}} \mathbf{g}_1^3 \mathbf{L} F_{3,-1} [\mathbf{m}_{\tilde{\mathbf{d}}}^{\mathbf{p}}] - \frac{1}{2} \sum_{\mathbf{p}} \mathbf{g}_1^3 \mathbf{L} F_{2,0} [\mathbf{m}_{\tilde{\mathbf{e}}}^{\mathbf{p}}] + \frac{1}{3} \sum_{\mathbf{p}} \mathbf{g}_1^3 \mathbf{L} F_{3,-1} [\mathbf{m}_{\tilde{\mathbf{e}}}^{\mathbf{p}}] - \right. \\
\frac{1}{4} \sum_{\mathbf{p}} \mathbf{g}_1^3 \mathbf{L} F_{2,0} [\mathbf{m}_{\tilde{\mathbf{l}}}^{\mathbf{p}}] + \frac{1}{6} \sum_{\mathbf{p}} \mathbf{g}_1^3 \mathbf{L} F_{3,-1} [\mathbf{m}_{\tilde{\mathbf{l}}}^{\mathbf{p}}] - \frac{1}{12} \sum_{\mathbf{p}} \mathbf{g}_1^3 \mathbf{L} F_{2,0} [\mathbf{m}_{\tilde{\mathbf{q}}}^{\mathbf{p}}] + \\
\frac{1}{18} \sum_{\mathbf{p}} \mathbf{g}_1^3 \mathbf{L} F_{3,-1} [\mathbf{m}_{\tilde{\mathbf{q}}}^{\mathbf{p}}] - \frac{2}{3} \sum_{\mathbf{p}} \mathbf{g}_1^3 \mathbf{L} F_{2,0} [\mathbf{m}_{\tilde{\mathbf{u}}}^{\mathbf{p}}] + \frac{4}{9} \sum_{\mathbf{p}} \mathbf{g}_1^3 \mathbf{L} F_{3,-1} [\mathbf{m}_{\tilde{\mathbf{u}}}^{\mathbf{p}}] - \\
\left. \frac{1}{4} \mathbf{g}_1^3 \mathbf{L} F_{2,0} [\mathbf{m}_{\oplus}] + \frac{1}{6} \mathbf{g}_1^3 \mathbf{L} F_{3,-1} [\mathbf{m}_{\oplus}] - \frac{1}{3} \mathbf{g}_1^3 \mathbf{L} F_{3,-1} [\tilde{\mu}] \right)
\end{aligned}$$