$$
\begin{aligned}
C_{\mathrm{He}}^{i1\_i2-} \to{}& \hbar \left(\frac{1}{72} \frac{1}{m_e^2} s_\gamma^2 \overline{y_e}^{pi1} \left(5\, g_1^2\, y_e^{pi2} + 6\, c_\gamma^2\, \overline{y_e}^{rs}\, y_e^{ps}\, y_e^{ri2} \right) - \right. \\
&- \frac{2}{27} \sum_p g_1^4\, LF_{3,0}\!\left[m_d^{\ p}\right] \delta_{i1i2} + \frac{5}{36} \sum_p g_1^4\, LF_{4,-1}\!\left[m_d^{\ p}\right] \delta_{i1i2} - \frac{8}{135} \sum_p g_1^4\, LF_{5,-2}\!\left[m_d^{\ p}\right] \delta_{i1i2} - \\
&- \frac{2}{9} \sum_p g_1^4\, LF_{3,0}\!\left[m_e^{\ p}\right] \delta_{i1i2} + \frac{5}{12} \sum_p g_1^4\, LF_{4,-1}\!\left[m_e^{\ p}\right] \delta_{i1i2} - \frac{8}{45} \sum_p g_1^4\, LF_{5,-2}\!\left[m_e^{\ p}\right] \delta_{i1i2} - \\
&- \frac{1}{9} \sum_p g_1^4\, LF_{3,0}\!\left[m_l^{\ p}\right] \delta_{i1i2} + \frac{5}{24} \sum_p g_1^4\, LF_{4,-1}\!\left[m_l^{\ p}\right] \delta_{i1i2} - \frac{4}{45} \sum_p g_1^4\, LF_{5,-2}\!\left[m_l^{\ p}\right] \delta_{i1i2} - \\
&- \frac{1}{27} \sum_p g_1^4\, LF_{3,0}\!\left[m_q^{\ p}\right] \delta_{i1i2} + \frac{5}{72} \sum_p g_1^4\, LF_{4,-1}\!\left[m_q^{\ p}\right] \delta_{i1i2} - \frac{4}{135} \sum_p g_1^4\, LF_{5,-2}\!\left[m_q^{\ p}\right] \delta_{i1i2} - \\
&- \frac{8}{27} \sum_p g_1^4\, LF_{3,0}\!\left[m_u^{\ p}\right] \delta_{i1i2} + \frac{8}{9} \sum_p g_1^4\, LF_{4,-1}\!\left[m_u^{\ p}\right] \delta_{i1i2} - \frac{32}{135} \sum_p g_1^4\, LF_{5,-2}\!\left[m_u^{\ p}\right] \delta_{i1i2} + \\
&+ \frac{1}{6} s_\gamma^2\, \overline{y_e}^{pi1} \left(g_1^2\, y_e^{pi2} + 3\, c_\gamma^2\, \overline{y_e}^{rs}\, y_e^{ps}\, y_e^{ri2} \right) LF_{1,2}\!\left[m_\Phi\right] + \frac{1}{12} g_1^2\, s_\gamma^2\, \overline{y_e}^{pi1}\, y_e^{pi2}\, LF_{2,1}\!\left[m_\Phi\right] - \\
&- \frac{1}{36} g_1^2 \left(3\, s_\gamma^2\, \overline{y_e}^{pi1}\, y_e^{pi2} + 4\, g_1^2\, \delta_{i1i2} \right) LF_{3,0}\!\left[m_\Phi\right] + \frac{5}{24} g_1^4\, LF_{4,-1}\!\left[m_\Phi\right] \delta_{i1i2} - \\
&- \frac{4}{45} g_1^4\, LF_{5,-2}\!\left[m_\Phi\right] \delta_{i1i2} - \frac{1}{9} g_1^4\, LF_{3,0}\!\left[\tilde{\mu}\right] \delta_{i1i2} - \frac{1}{6} g_1^4\, LF_{4,-1}\!\left[\tilde{\mu}\right] \delta_{i1i2} + \\
&+ \frac{8}{45} g_1^4\, LF_{5,-2}\!\left[\tilde{\mu}\right] \delta_{i1i2} - \frac{1}{6} g_1^4\, LF_{2,1,0}\!\left[m_1, m_e^{\ i2}\right] \delta_{i1i2} - \frac{1}{6} g_1^4\, LF_{2,2,-1}\!\left[m_1, m_e^{\ i2}\right] \delta_{i1i2} + \\
&+ \frac{1}{3} g_1^4\, LF_{3,1,-1}\!\left[m_1, m_e^{\ i2}\right] \delta_{i1i2} - \frac{1}{6} g_1^4\, LF_{4,1,-2}\!\left[m_1, m_e^{\ i2}\right] \delta_{i1i2} - \\
&- \frac{1}{4} g_1^2\, c_\gamma^2\, \overline{y_e}^{pi1}\, y_e^{pi2}\, LF_{2,1,0}\!\left[m_1, m_l^{\ p}\right] + \frac{1}{2} g_1^2\, c_\gamma^2\, \overline{y_e}^{pi1}\, y_e^{pi2}\, LF_{3,1,-1}\!\left[m_1, m_l^{\ p}\right] - \\
&- \frac{1}{4} g_1^2\, c_\gamma^2\, \overline{y_e}^{pi1}\, y_e^{pi2}\, LF_{4,1,-2}\!\left[m_1, m_l^{\ p}\right] - \frac{3}{4} g_2^2\, c_\gamma^2\, \overline{y_e}^{pi1}\, y_e^{pi2}\, LF_{2,1,0}\!\left[m_2, m_l^{\ p}\right] + \\
&+ \frac{3}{2} g_2^2\, c_\gamma^2\, \overline{y_e}^{pi1}\, y_e^{pi2}\, LF_{3,1,-1}\!\left[m_2, m_l^{\ p}\right] - \frac{3}{4} g_2^2\, c_\gamma^2\, \overline{y_e}^{pi1}\, y_e^{pi2}\, LF_{4,1,-2}\!\left[m_2, m_l^{\ p}\right] - \\
&- \frac{1}{3} g_1^2 \left(c_\gamma\, \overline{a_d}^{pr} - s_\gamma\, \tilde{\mu}\, \overline{y_d}^{pr} \right) \left(c_\gamma\, a_d^{pr} - s_\gamma\, \tilde{\mu}\, y_d^{pr} \right) LF_{2,2,0}\!\left[m_d^{\ r}, m_d^{\ p}\right] \delta_{i1i2} + \\
&+ \frac{1}{6} g_1^2 \left(c_\gamma\, \overline{a_d}^{pr} - s_\gamma\, \tilde{\mu}\, \overline{y_d}^{pr} \right) \left(c_\gamma\, a_d^{pr} - s_\gamma\, \tilde{\mu}\, y_d^{pr} \right) LF_{3,2,-1}\!\left[m_d^{\ r}, m_d^{\ p}\right] \delta_{i1i2} - \\
&- \frac{1}{3} g_1^2 \left(c_\gamma\, \overline{a_e}^{pr} - s_\gamma\, \tilde{\mu}\, \overline{y_e}^{pr} \right) \left(c_\gamma\, a_e^{pr} - s_\gamma\, \tilde{\mu}\, y_e^{pr} \right) LF_{2,2,0}\!\left[m_e^{\ r}, m_l^{\ p}\right] \delta_{i1i2} + \\
&+ \frac{1}{6} g_1^2 \left(c_\gamma\, \overline{a_e}^{pr} - s_\gamma\, \tilde{\mu}\, \overline{y_e}^{pr} \right) \left(c_\gamma\, a_e^{pr} - s_\gamma\, \tilde{\mu}\, y_e^{pr} \right) LF_{3,2,-1}\!\left[m_e^{\ r}, m_l^{\ p}\right] \delta_{i1i2} + \\
&+ \frac{1}{3} g_1^4\, LF_{2,1,0}\!\left[m_e^{\ i2}, m_1\right] \delta_{i1i2} - \frac{1}{6} g_1^4\, LF_{3,1,-1}\!\left[m_e^{\ i2}, m_1\right] \delta_{i1i2} + \\
&+ \frac{1}{3} g_1^2 \left(c_\gamma\, \overline{a_e}^{pr} - s_\gamma\, \tilde{\mu}\, \overline{y_e}^{pr} \right) \left(c_\gamma\, a_e^{pr} - s_\gamma\, \tilde{\mu}\, y_e^{pr} \right) LF_{3,1,0}\!\left[m_l^{\ p}, m_e^{\ r}\right] \delta_{i1i2} + \\
&+ \frac{1}{3} g_1^2 \left(c_\gamma\, \overline{a_e}^{pr} - s_\gamma\, \tilde{\mu}\, \overline{y_e}^{pr} \right) \left(c_\gamma\, a_e^{pr} - s_\gamma\, \tilde{\mu}\, y_e^{pr} \right) LF_{3,2,-1}\!\left[m_l^{\ p}, m_e^{\ r}\right] \delta_{i1i2} - \\
&- \frac{3}{2} g_1^2 \left(c_\gamma\, \overline{a_e}^{pr} - s_\gamma\, \tilde{\mu}\, \overline{y_e}^{pr} \right) \left(c_\gamma\, a_e^{pr} - s_\gamma\, \tilde{\mu}\, y_e^{pr} \right) LF_{4,1,-1}\!\left[m_l^{\ p}, m_e^{\ r}\right] \delta_{i1i2} + \\
&+ \frac{1}{3} g_1^2 \left(c_\gamma\, \overline{a_e}^{pr} - s_\gamma\, \tilde{\mu}\, \overline{y_e}^{pr} \right) \left(c_\gamma\, a_e^{pr} - s_\gamma\, \tilde{\mu}\, y_e^{pr} \right) LF_{5,1,-2}\!\left[m_l^{\ p}, m_e^{\ r}\right] \delta_{i1i2} + \\
&+ \frac{1}{6} g_1^2\, \overline{y_e}^{pi1}\, y_e^{pi2}\, LF_{2,1,0}\!\left[m_l^{\ p}, \tilde{\mu}\right] - \frac{1}{12} g_1^2\, \overline{y_e}^{pi1}\, y_e^{pi2}\, LF_{2,2,-1}\!\left[m_l^{\ p}, \tilde{\mu}\right] - \frac{1}{12} g_1^2\, \overline{y_e}^{pi1}\, y_e^{pi2} \\
&\quad LF_{3,1,-1}\!\left[m_l^{\ p}, \tilde{\mu}\right] + \frac{1}{3} g_1^2 \left(c_\gamma\, \overline{a_d}^{pr} - s_\gamma\, \tilde{\mu}\, \overline{y_d}^{pr} \right) \left(c_\gamma\, a_d^{pr} - s_\gamma\, \tilde{\mu}\, y_d^{pr} \right) LF_{3,1,0}\!\left[m_q^{\ p}, m_d^{\ r}\right] \delta_{i1i2} + \\
&+ \frac{1}{3} g_1^2 \left(c_\gamma\, \overline{a_d}^{pr} - s_\gamma\, \tilde{\mu}\, \overline{y_d}^{pr} \right) \left(c_\gamma\, a_d^{pr} - s_\gamma\, \tilde{\mu}\, y_d^{pr} \right) LF_{3,2,-1}\!\left[m_q^{\ p}, m_d^{\ r}\right] \delta_{i1i2} - \\
&- \frac{5}{4} g_1^2 \left(c_\gamma\, \overline{a_d}^{pr} - s_\gamma\, \tilde{\mu}\, \overline{y_d}^{pr} \right) \left(c_\gamma\, a_d^{pr} - s_\gamma\, \tilde{\mu}\, y_d^{pr} \right) LF_{4,1,-1}\!\left[m_q^{\ p}, m_d^{\ r}\right] \delta_{i1i2} + \\
&+ g_1^2 \left(c_\gamma\, \overline{a_d}^{pr} - s_\gamma\, \tilde{\mu}\, \overline{y_d}^{pr} \right) \left(c_\gamma\, a_d^{pr} - s_\gamma\, \tilde{\mu}\, y_d^{pr} \right) LF_{5,1,-2}\!\left[m_q^{\ p}, m_d^{\ r}\right] \delta_{i1i2} + \\
&+ \frac{1}{6} g_1^2 \left(s_\gamma\, \overline{a_u}^{pr} - \tilde{\mu}\, c_\gamma\, \overline{y_u}^{pr} \right) \left(s_\gamma\, a_u^{pr} - \tilde{\mu}\, c_\gamma\, y_u^{pr} \right) LF_{2,2,0}\!\left[m_q^{\ p}, m_u^{\ r}\right] \delta_{i1i2} - \\
&- \frac{1}{12} g_1^2 \left(s_\gamma\, \overline{a_u}^{pr} - \tilde{\mu}\, c_\gamma\, \overline{y_u}^{pr} \right) \left(s_\gamma\, a_u^{pr} - \tilde{\mu}\, c_\gamma\, y_u^{pr} \right) LF_{3,2,-1}\!\left[m_q^{\ p}, m_u^{\ r}\right] \delta_{i1i2} - \\
&- \frac{1}{6} g_1^2 \left(s_\gamma\, \overline{a_u}^{pr} - \tilde{\mu}\, c_\gamma\, \overline{y_u}^{pr} \right) \left(s_\gamma\, a_u^{pr} - \tilde{\mu}\, c_\gamma\, y_u^{pr} \right) LF_{3,1,0}\!\left[m_u^{\ r}, m_q^{\ p}\right] \delta_{i1i2} - \\
&- \frac{1}{6} g_1^2 \left(s_\gamma\, \overline{a_u}^{pr} - \tilde{\mu}\, c_\gamma\, \overline{y_u}^{pr} \right) \left(s_\gamma\, a_u^{pr} - \tilde{\mu}\, c_\gamma\, y_u^{pr} \right) LF_{3,2,-1}\!\left[m_u^{\ r}, m_q^{\ p}\right] \delta_{i1i2} - \\
&- \frac{1}{2} g_1^2 \left(s_\gamma\, \overline{a_u}^{pr} - \tilde{\mu}\, c_\gamma\, \overline{y_u}^{pr} \right) \left(s_\gamma\, a_u^{pr} - \tilde{\mu}\, c_\gamma\, y_u^{pr} \right) LF_{4,1,-1}\!\left[m_u^{\ r}, m_q^{\ p}\right] \delta_{i1i2} + \\
&+ g_1^2 \left(s_\gamma\, \overline{a_u}^{pr} - \tilde{\mu}\, c_\gamma\, \overline{y_u}^{pr} \right) \left(s_\gamma\, a_u^{pr} - \tilde{\mu}\, c_\gamma\, y_u^{pr} \right) LF_{5,1,-2}\!\left[m_u^{\ r}, m_q^{\ p}\right] \delta_{i1i2} + \\
&+ \frac{5}{12} g_1^4 \left(c_\gamma^2 + s_\gamma^2 \right) LF_{4,1,-2}\!\left[\tilde{\mu}, m_1\right] \delta_{i1i2} + \frac{1}{2} m_1\, s_\gamma\, \tilde{\mu}\, c_\gamma\, g_1^4\, LF_{4,1,-1}\!\left[\tilde{\mu}, m_1\right] \delta_{i1i2} - \\
&- \frac{1}{3} g_1^4 \left(c_\gamma^2 + s_\gamma^2 \right) LF_{5,1,-3}\!\left[\tilde{\mu}, m_1\right] \delta_{i1i2} - \frac{2}{3} m_1\, s_\gamma\, \tilde{\mu}\, c_\gamma\, g_1^4\, LF_{5,1,-2}\!\left[\tilde{\mu}, m_1\right] \delta_{i1i2} + \\
&+ \frac{5}{4} g_1^2\, g_2^2 \left(c_\gamma^2 + s_\gamma^2 \right) LF_{4,1,-2}\!\left[\tilde{\mu}, m_2\right] \delta_{i1i2} + \frac{3}{2} m_2\, s_\gamma\, \tilde{\mu}\, c_\gamma\, g_1^2\, g_2^2\, LF_{4,1,-1}\!\left[\tilde{\mu}, m_2\right] \delta_{i1i2} - \\
&- g_1^2\, g_2^2 \left(c_\gamma^2 + s_\gamma^2 \right) LF_{5,1,-3}\!\left[\tilde{\mu}, m_2\right] \delta_{i1i2} - 2\, m_2\, s_\gamma\, \tilde{\mu}\, c_\gamma\, g_1^2\, g_2^2\, LF_{5,1,-2}\!\left[\tilde{\mu}, m_2\right] \delta_{i1i2} - \\
&- \frac{1}{2} c_\gamma^2\, \overline{y_e}^{pi1}\, \overline{y_e}^{rs}\, y_e^{ps}\, y_e^{ri2}\, LF_{2,1,0}\!\left[\tilde{\mu}, m_e^{\ s}\right] + c_\gamma^2\, \overline{y_e}^{pi1}\, \overline{y_e}^{rs}\, y_e^{ps}\, y_e^{ri2}\, LF_{3,1,-1}\!\left[\tilde{\mu}, m_e^{\ s}\right] - \\
&- \frac{1}{2} c_\gamma^2\, \overline{y_e}^{pi1}\, \overline{y_e}^{rs}\, y_e^{ps}\, y_e^{ri2}\, LF_{4,1,-2}\!\left[\tilde{\mu}, m_e^{\ s}\right] - \frac{1}{12} g_1^2\, \overline{y_e}^{pi1}\, y_e^{pi2}\, LF_{2,1,0}\!\left[\tilde{\mu}, m_l^{\ p}\right] + \\
&+ \frac{5}{12} g_1^2\, \overline{y_e}^{pi1}\, y_e^{pi2}\, LF_{3,1,-1}\!\left[\tilde{\mu}, m_l^{\ p}\right] - \frac{1}{6} g_1^2\, \overline{y_e}^{pi1}\, y_e^{pi2}\, LF_{4,1,-2}\!\left[\tilde{\mu}, m_l^{\ p}\right] + \\
&+ \frac{1}{4} m_1\, c_\gamma\, g_1^2\, y_e^{pi2} \left(c_\gamma\, \overline{a_e}^{pi1} - s_\gamma\, \tilde{\mu}\, \overline{y_e}^{pi1} \right) LF_{2,1,1,0}\!\left[m_1, m_e^{\ i1}, m_l^{\ p}\right] + \\
&+ \frac{1}{8} m_1\, c_\gamma\, g_1^2\, y_e^{pi2} \left(-c_\gamma\, \overline{a_e}^{pi1} + s_\gamma\, \tilde{\mu}\, \overline{y_e}^{pi1} \right) LF_{2,2,1,-1}\!\left[m_1, m_e^{\ i1}, m_l^{\ p}\right] + \\
&+ \frac{1}{4} m_1\, c_\gamma\, g_1^2\, y_e^{pi2} \left(-c_\gamma\, \overline{a_e}^{pi1} + s_\gamma\, \tilde{\mu}\, \overline{y_e}^{pi1} \right) LF_{3,1,1,-1}\!\left[m_1, m_e^{\ i1}, m_l^{\ p}\right] + \\
&+ \frac{1}{4} m_1\, c_\gamma\, g_1^2\, \overline{y_e}^{pi1} \left(c_\gamma\, a_e^{pi2} - s_\gamma\, \tilde{\mu}\, y_e^{pi2} \right) LF_{2,1,1,0}\!\left[m_1, m_e^{\ i2}, m_l^{\ p}\right] + \\
&+ \frac{1}{8} m_1\, c_\gamma\, g_1^2\, \overline{y_e}^{pi1} \left(-c_\gamma\, a_e^{pi2} + s_\gamma\, \tilde{\mu}\, y_e^{pi2} \right) LF_{2,2,1,-1}\!\left[m_1, m_e^{\ i2}, m_l^{\ p}\right] + \\
&+ \frac{1}{4} m_1\, c_\gamma\, g_1^2\, \overline{y_e}^{pi1} \left(-c_\gamma\, a_e^{pi2} + s_\gamma\, \tilde{\mu}\, y_e^{pi2} \right) LF_{3,1,1,-1}\!\left[m_1, m_e^{\ i2}, m_l^{\ p}\right] + \\
&+ \frac{1}{4} g_1^4 \left(-c_\gamma^2 + s_\gamma^2 \right) LF_{2,1,1,-1}\!\left[m_1, m_e^{\ i2}, \tilde{\mu}\right] \delta_{i1i2} + \frac{1}{2} g_1^4\, m_1^2 \left(-c_\gamma^2 + s_\gamma^2 \right) LF_{2,1,1,0}\!\left[m_1, m_e^{\ i2}, \tilde{\mu}\right] \\
&\quad \delta_{i1i2} + \frac{1}{8} m_1\, c_\gamma\, g_1^2\, y_e^{pi2} \left(c_\gamma\, \overline{a_e}^{pi1} - s_\gamma\, \tilde{\mu}\, \overline{y_e}^{pi1} \right) LF_{2,2,1,-1}\!\left[m_1, m_l^{\ p}, m_e^{\ i1}\right] + \\
&+ \frac{1}{8} m_1\, c_\gamma\, g_1^2\, \overline{y_e}^{pi1} \left(c_\gamma\, a_e^{pi2} - s_\gamma\, \tilde{\mu}\, y_e^{pi2} \right) LF_{2,2,1,-1}\!\left[m_1, m_l^{\ p}, m_e^{\ i2}\right] - \\
&- \frac{3}{2} g_1^2\, c_\gamma^2\, \overline{y_e}^{pi1}\, y_e^{pi2}\, LF_{2,1,1,-1}\!\left[m_1, m_l^{\ p}, \tilde{\mu}\right] - \frac{1}{2} m_1\, s_\gamma\, \tilde{\mu}\, c_\gamma\, g_1^2\, \overline{y_e}^{pi1}\, y_e^{pi2}\, LF_{2,1,1,0}\!\left[m_1, m_l^{\ p}, \tilde{\mu}\right] + \\
&+ \frac{1}{2} g_1^2\, c_\gamma^2\, \overline{y_e}^{pi1}\, y_e^{pi2}\, LF_{3,1,1,-2}\!\left[m_1, m_l^{\ p}, \tilde{\mu}\right] + \frac{1}{2} m_1\, s_\gamma\, \tilde{\mu}\, c_\gamma\, g_1^2\, \overline{y_e}^{pi1}\, y_e^{pi2}\, LF_{3,1,1,-1}\!\left[m_1, m_l^{\ p}, \tilde{\mu}\right] - \\
&- \frac{1}{4} g_1^2\, c_\gamma^2\, \overline{y_e}^{pi1}\, y_e^{pi2}\, LF_{2,2,1,-2}\!\left[m_1, \tilde{\mu}, m_e^{\ i1}\right] - \frac{1}{4} m_1\, s_\gamma\, \tilde{\mu}\, c_\gamma\, g_1^2\, \overline{y_e}^{pi1}\, y_e^{pi2}\, LF_{2,2,1,-1}\!\left[m_1, \tilde{\mu}, m_e^{\ i1}\right] + \\
&+ \frac{1}{4} \left(-g_1^2\, c_\gamma^2\, \overline{y_e}^{pi1}\, y_e^{pi2} + g_1^4 \left(-c_\gamma^2 + s_\gamma^2 \right) \delta_{i1i2} \right) LF_{2,2,1,-2}\!\left[m_1, \tilde{\mu}, m_e^{\ i2}\right] + \\
&+ \frac{1}{4} m_1\, g_1^2 \left(-s_\gamma\, \tilde{\mu}\, c_\gamma\, \overline{y_e}^{pi1}\, y_e^{pi2} + m_1\, g_1^2 \left(c_\gamma^2 - s_\gamma^2 \right) \delta_{i1i2} \right) LF_{2,2,1,-1}\!\left[m_1, \tilde{\mu}, m_e^{\ i2}\right] + \\
&+ \frac{1}{8} g_1^2\, c_\gamma^2\, \overline{y_e}^{pi1}\, y_e^{pi2}\, LF_{2,2,1,-2}\!\left[m_1, \tilde{\mu}, m_l^{\ p}\right] - \\
&- \frac{1}{8} g_1^2\, s_\gamma^2\, \tilde{\mu}^2\, \overline{y_e}^{pi1}\, y_e^{pi2}\, LF_{2,2,1,-1}\!\left[m_1, \tilde{\mu}, m_l^{\ p}\right] + \frac{9}{4} g_2^2\, c_\gamma^2\, \overline{y_e}^{pi1}\, y_e^{pi2}\, LF_{2,1,1,-1}\!\left[m_2, m_l^{\ p}, \tilde{\mu}\right] + \\
&+ \frac{3}{2} m_2\, s_\gamma\, \tilde{\mu}\, c_\gamma\, g_2^2\, \overline{y_e}^{pi1}\, y_e^{pi2}\, LF_{2,1,1,0}\!\left[m_2, m_l^{\ p}, \tilde{\mu}\right] - \frac{3}{2} g_2^2\, c_\gamma^2\, \overline{y_e}^{pi1}\, y_e^{pi2}\, LF_{3,1,1,-2}\!\left[m_2, m_l^{\ p}, \tilde{\mu}\right] - \\
&- \frac{3}{2} m_2\, s_\gamma\, \tilde{\mu}\, c_\gamma\, g_2^2\, \overline{y_e}^{pi1}\, y_e^{pi2}\, LF_{3,1,1,-1}\!\left[m_2, m_l^{\ p}, \tilde{\mu}\right] - \frac{9}{8} g_2^2\, c_\gamma^2\, \overline{y_e}^{pi1}\, y_e^{pi2}\, LF_{2,2,1,-2}\!\left[m_2, \tilde{\mu}, m_l^{\ p}\right] - \\
&- \frac{3}{8} s_\gamma\, \tilde{\mu}\, g_2^2\, \overline{y_e}^{pi1}\, y_e^{pi2} \left(4\, m_2\, c_\gamma + s_\gamma\, \tilde{\mu} \right) LF_{2,2,1,-1}\!\left[m_2, \tilde{\mu}, m_l^{\ p}\right] + \\
&+ \frac{3}{4} g_1^2\, c_\gamma^2\, \overline{y_e}^{pi1}\, y_e^{pi2}\, LF_{2,1,1,-1}\!\left[\tilde{\mu}, m_1, m_e^{\ i1}\right] + \frac{1}{2} m_1\, s_\gamma\, \tilde{\mu}\, c_\gamma\, g_1^2\, \overline{y_e}^{pi1}\, y_e^{pi2}\, LF_{2,1,1,0}\!\left[\tilde{\mu}, m_1, m_e^{\ i1}\right] - \\
&- \frac{1}{2} g_1^2\, c_\gamma^2\, \overline{y_e}^{pi1}\, y_e^{pi2}\, LF_{3,1,1,-2}\!\left[\tilde{\mu}, m_1, m_e^{\ i1}\right] - \frac{1}{2} m_1\, s_\gamma\, \tilde{\mu}\, c_\gamma\, g_1^2\, \overline{y_e}^{pi1}\, y_e^{pi2}\, LF_{3,1,1,-1}\!\left[\tilde{\mu}, m_1, m_e^{\ i1}\right] + \\
&+ \frac{3}{4} g_1^2\, c_\gamma^2\, \overline{y_e}^{pi1}\, y_e^{pi2}\, LF_{2,1,1,-1}\!\left[\tilde{\mu}, m_1, m_e^{\ i2}\right] + \frac{1}{2} m_1\, s_\gamma\, \tilde{\mu}\, c_\gamma\, g_1^2\, \overline{y_e}^{pi1}\, y_e^{pi2}\, LF_{2,1,1,0}\!\left[\tilde{\mu}, m_1, m_e^{\ i2}\right] - \\
&- \frac{1}{2} g_1^2\, c_\gamma^2\, \overline{y_e}^{pi1}\, y_e^{pi2}\, LF_{3,1,1,-2}\!\left[\tilde{\mu}, m_1, m_e^{\ i2}\right] - \frac{1}{2} m_1\, s_\gamma\, \tilde{\mu}\, c_\gamma\, g_1^2\, \overline{y_e}^{pi1}\, y_e^{pi2}\, LF_{3,1,1,-1}\!\left[\tilde{\mu}, m_1, m_e^{\ i2}\right] - \\
&- \frac{1}{8} g_1^2\, c_\gamma^2\, \overline{y_e}^{pi1}\, y_e^{pi2}\, LF_{2,1,1,-1}\!\left[\tilde{\mu}, m_1, m_l^{\ p}\right] + \frac{1}{4} g_1^2\, s_\gamma^2\, \tilde{\mu}^2\, \overline{y_e}^{pi1}\, y_e^{pi2}\, LF_{2,1,1,0}\!\left[\tilde{\mu}, m_1, m_l^{\ p}\right] - \\
&- \frac{3}{8} g_2^2\, c_\gamma^2\, \overline{y_e}^{pi1}\, y_e^{pi2}\, LF_{2,1,1,-1}\!\left[\tilde{\mu}, m_2, m_l^{\ p}\right] + \frac{3}{4} g_2^2\, s_\gamma^2\, \tilde{\mu}^2\, \overline{y_e}^{pi1}\, y_e^{pi2}\, LF_{2,1,1,0}\!\left[\tilde{\mu}, m_2, m_l^{\ p}\right] + \\
&+ \frac{1}{4} g_1^2\, y_e^{pi2} \left(m_1\, c_\gamma - s_\gamma\, \tilde{\mu} \right) \left(c_\gamma\, \overline{a_e}^{pi1} - s_\gamma\, \tilde{\mu}\, \overline{y_e}^{pi1} \right) LF_{1,1,1,1,0}\!\left[m_1, m_e^{\ i1}, m_l^{\ p}, \tilde{\mu}\right] + \\
&+ \frac{1}{8} g_1^2\, y_e^{pi2} \left(m_1\, c_\gamma + s_\gamma\, \tilde{\mu} \right) \left(c_\gamma\, \overline{a_e}^{pi1} - s_\gamma\, \tilde{\mu}\, \overline{y_e}^{pi1} \right) LF_{2,1,1,1,-1}\!\left[m_1, m_e^{\ i1}, m_l^{\ p}, \tilde{\mu}\right] + \\
&+ \frac{1}{4} g_1^2\, \overline{y_e}^{pi1} \left(m_1\, c_\gamma - s_\gamma\, \tilde{\mu} \right) \left(c_\gamma\, a_e^{pi2} - s_\gamma\, \tilde{\mu}\, y_e^{pi2} \right) LF_{1,1,1,1,0}\!\left[m_1, m_e^{\ i2}, m_l^{\ p}, \tilde{\mu}\right] + \\
&+ \frac{1}{8} g_1^2\, \overline{y_e}^{pi1} \left(m_1\, c_\gamma + s_\gamma\, \tilde{\mu} \right) \left(c_\gamma\, a_e^{pi2} - s_\gamma\, \tilde{\mu}\, y_e^{pi2} \right) LF_{2,1,1,1,-1}\!\left[m_1, m_e^{\ i2}, m_l^{\ p}, \tilde{\mu}\right] + \\
&+ \frac{1}{4} c_\gamma\, \overline{y_e}^{si1}\, y_e^{pi2}\, \overline{a_e}^{pr} \left(-c_\gamma\, a_e^{sr} + s_\gamma\, \tilde{\mu}\, y_e^{sr} \right) LF_{2,1,1,1,-1}\!\left[m_e^{\ r}, m_l^{\ p}, m_l^{\ s}, \tilde{\mu}\right] + \\
&+ \frac{1}{4} s_\gamma\, \tilde{\mu}\, \overline{y_e}^{pi1}\, \overline{y_e}^{rs}\, y_e^{ri2} \left(c_\gamma\, a_e^{ps} - s_\gamma\, \tilde{\mu}\, y_e^{ps} \right) LF_{2,1,1,1,-1}\!\left[m_e^{\ s}, m_l^{\ p}, m_l^{\ r}, \tilde{\mu}\right] + \\
&+ \frac{1}{8} g_1^2\, y_e^{pi2} \left(m_1\, c_\gamma + s_\gamma\, \tilde{\mu} \right) \left(c_\gamma\, \overline{a_e}^{pi1} - s_\gamma\, \tilde{\mu}\, \overline{y_e}^{pi1} \right) LF_{2,1,1,1,-1}\!\left[m_e^{\ i1}, m_1, m_l^{\ p}, \tilde{\mu}\right] + \\
&+ \frac{1}{8} g_1^2\, \overline{y_e}^{pi1} \left(m_1\, c_\gamma + s_\gamma\, \tilde{\mu} \right) \left(c_\gamma\, a_e^{pi2} - s_\gamma\, \tilde{\mu}\, y_e^{pi2} \right) LF_{2,1,1,1,-1}\!\left[m_e^{\ i2}, m_1, m_l^{\ p}, \tilde{\mu}\right] + \\
&+ \frac{1}{8} g_1^2\, y_e^{pi2} \left(m_1\, c_\gamma + s_\gamma\, \tilde{\mu} \right) \left(c_\gamma\, \overline{a_e}^{pi1} - s_\gamma\, \tilde{\mu}\, \overline{y_e}^{pi1} \right) LF_{2,1,1,1,-1}\!\left[m_l^{\ p}, m_1, m_e^{\ i1}, \tilde{\mu}\right] + \\
&+ \frac{1}{2} g_1^2 \left(c_\gamma\, \overline{a_e}^{pi1} - s_\gamma\, \tilde{\mu}\, \overline{y_e}^{pi1} \right) \left(c_\gamma\, a_e^{pi2} - s_\gamma\, \tilde{\mu}\, y_e^{pi2} \right) LF_{2,1,1,1,-1}\!\left[m_l^{\ p}, m_1, m_e^{\ i2}, m_e^{\ i1}\right] - \\
&- \frac{1}{2} g_1^2\, \overline{y_e}^{pi1} \left(m_1\, c_\gamma + s_\gamma\, \tilde{\mu} \right) \left(c_\gamma\, a_e^{pi2} - s_\gamma\, \tilde{\mu}\, y_e^{pi2} \right) LF_{2,1,1,1,-1}\!\left[m_l^{\ p}, m_1, m_e^{\ i2}, \tilde{\mu}\right] - \\
&- \frac{1}{2} g_1^2\, y_e^{pi2} \left(m_1\, c_\gamma + s_\gamma\, \tilde{\mu} \right) \left(c_\gamma\, \overline{a_e}^{pi1} - s_\gamma\, \tilde{\mu}\, \overline{y_e}^{pi1} \right) LF_{2,1,1,1,-1}\!\left[\tilde{\mu}, m_1, m_e^{\ i1}, m_l^{\ p}\right] - \\
&\left. - \frac{1}{8} g_1^2\, \overline{y_e}^{pi1} \left(m_1\, c_\gamma + s_\gamma\, \tilde{\mu} \right) \left(c_\gamma\, a_e^{pi2} - s_\gamma\, \tilde{\mu}\, y_e^{pi2} \right) LF_{2,1,1,1,-1}\!\left[\tilde{\mu}, m_1, m_e^{\ i2}, m_l^{\ p}\right] \right)
\end{aligned}
$$