

$$\begin{aligned}
& \frac{1}{16\pi^2} \left(\frac{1}{144} s_\gamma \frac{1}{m_\Phi^2} (18 y_u^{pi2} (\overline{y_d^{pr}} y_d^{i1r} (-2 C_{H^2} c_\gamma^2 + m_\Phi^2 (1 + s_\gamma^2)) + 3 m_\Phi^2 \overline{y_u^{pr}} y_u^{i1r} (1 + c_\gamma^2)) + \right. \\
& y_u^{i1i2} (m_\Phi^2 (96 g_3^2 + 27 g_2^2 (1 + 2 c_\gamma^2 + 2 s_\gamma^2) + g_1^2 (17 + 18 c_\gamma^2 + 18 s_\gamma^2)) - \\
& 216 C_{H^2} c_\gamma^2 \overline{y_u^{pr}} y_u^{pr}) + \frac{1}{2} \sum_p s_{2\gamma} c_\gamma g_1^2 \frac{1}{m_\Phi^4} y_u^{i1i2} (-C_{H^2} + m_\Phi^2) LF_{1,0}[m_d^p] + \\
& \frac{3}{2} s_{2\gamma} c_\gamma \frac{1}{m_\Phi^2} \overline{y_d^{pr}} y_d^{pr} y_u^{i1i2} (C_{H^2} - m_\Phi^2) LF_{1,0}[m_d^r] + \frac{1}{2} \sum_p s_{2\gamma} c_\gamma g_1^2 \frac{1}{m_\Phi^4} y_u^{i1i2} \\
& (-C_{H^2} + m_\Phi^2) LF_{1,0}[m_e^p] + \frac{1}{2} s_{2\gamma} c_\gamma \frac{1}{m_\Phi^2} \overline{y_e^{pr}} y_e^{pr} y_u^{i1i2} (C_{H^2} - m_\Phi^2) LF_{1,0}[m_e^r] + \\
& \frac{1}{2} s_{2\gamma} c_\gamma \frac{1}{m_\Phi^4} y_u^{i1i2} (C_{H^2} - m_\Phi^2) (\overline{y_e^{pr}} y_e^{pr} + \sum_p g_1^2) LF_{1,0}[m_l^p] + \\
& \frac{1}{2} s_{2\gamma} c_\gamma \frac{1}{m_\Phi^4} y_u^{i1i2} (-C_{H^2} + m_\Phi^2) (-3 \overline{y_d^{pr}} y_d^{pr} + 3 \overline{y_u^{pr}} y_u^{pr} + \sum_p g_1^2) LF_{1,0}[m_q^p] + \\
& \sum_p s_{2\gamma} c_\gamma g_1^2 \frac{1}{m_\Phi^4} y_u^{i1i2} (C_{H^2} - m_\Phi^2) LF_{1,0}[m_u^p] + \\
& \frac{3}{2} s_{2\gamma} c_\gamma \frac{1}{m_\Phi^2} \overline{y_u^{pr}} y_u^{pr} y_u^{i1i2} (-C_{H^2} + m_\Phi^2) LF_{1,0}[m_u^r] + \\
& \frac{3}{8} s_{4\gamma} c_\gamma \frac{1}{m_\Phi^2} y_u^{i1i2} (g_1^2 + g_2^2) (-C_{H^2} + m_\Phi^2) LF_{1,0}[m_\Phi] - \\
& \frac{1}{4} s_\gamma y_u^{pi2} (\overline{y_d^{pr}} y_d^{i1r} (4 c_\gamma^2 + s_\gamma^2) + 3 c_\gamma^2 \overline{y_u^{pr}} y_u^{i1r}) LF_{1,1}[m_\Phi] - \\
& \frac{1}{2} s_\gamma C_{H^2} c_\gamma^2 \overline{y_d^{pr}} y_d^{i1r} y_u^{pi2} LF_{1,2}[m_\Phi] - \frac{1}{36} s_\gamma g_1^2 y_u^{i1i2} LF_{1,1,0}[m_1, m_q^{i1}] + \\
& \frac{1}{72} s_\gamma g_1^2 y_u^{i1i2} LF_{2,1,-1}[m_1, m_q^{i1}] - \frac{4}{9} s_\gamma g_1^2 y_u^{i1i2} LF_{1,1,0}[m_1, m_u^{i2}] + \\
& \frac{72}{9} s_\gamma g_1^2 y_u^{i1i2} LF_{2,1,-1}[m_1, m_u^{i2}] + m_1 \tilde{\mu} c_\gamma g_1^2 \frac{1}{m_\Phi^4} y_u^{i1i2} (C_{H^2} - m_\Phi^2) (c_\gamma^2 - s_\gamma^2) LF_{1,1,0}[m_1, \tilde{\mu}] - \\
& \frac{3}{4} s_\gamma g_2^2 y_u^{i1i2} LF_{1,1,0}[m_2, m_q^{i1}] + \frac{3}{8} s_\gamma g_2^2 y_u^{i1i2} LF_{2,1,-1}[m_2, m_q^{i1}] + \\
& 3 m_2 \tilde{\mu} c_\gamma g_2^2 \frac{1}{m_\Phi^4} y_u^{i1i2} (C_{H^2} - m_\Phi^2) (c_\gamma^2 - s_\gamma^2) LF_{1,1,0}[m_2, \tilde{\mu}] - \\
& \frac{4}{3} s_\gamma g_3^2 y_u^{i1i2} LF_{1,1,0}[m_3, m_q^{i1}] + \frac{2}{3} s_\gamma g_3^2 y_u^{i1i2} LF_{2,1,-1}[m_3, m_q^{i1}] - \\
& \frac{4}{3} s_\gamma g_3^2 y_u^{i1i2} LF_{1,1,0}[m_3, m_u^{i2}] + \frac{2}{3} s_\gamma g_3^2 y_u^{i1i2} LF_{2,1,-1}[m_3, m_u^{i2}] + \\
& 3 c_\gamma \frac{1}{m_\Phi^4} y_u^{i1i2} (C_{H^2} - m_\Phi^2) (c_\gamma \overline{a_d^{pr}} - s_\gamma \tilde{\mu} \overline{y_d^{pr}}) (s_\gamma a_d^{pr} + \tilde{\mu} c_\gamma y_d^{pr}) LF_{1,1,0}[m_d^r, m_q^p] - \\
& \frac{1}{2} s_\gamma \overline{y_d^{pr}} y_d^{i1r} y_u^{pi2} LF_{1,1,0}[m_d^r, \tilde{\mu}] + \\
& c_\gamma \frac{1}{m_\Phi^2} y_u^{i1i2} (C_{H^2} - m_\Phi^2) (c_\gamma \overline{a_e^{pr}} - s_\gamma \tilde{\mu} \overline{y_e^{pr}}) (s_\gamma a_e^{pr} + \tilde{\mu} c_\gamma y_e^{pr}) LF_{1,1,0}[m_e^r, m_l^p] - \\
& \frac{1}{2} \frac{1}{m_\Phi^2} y_u^{i1i2} (c_\gamma \overline{a_e^{pr}} - s_\gamma \tilde{\mu} \overline{y_e^{pr}}) (s_\gamma c_\gamma a_e^{pr} (2 C_{H^2} - m_\Phi^2) + \tilde{\mu} y_e^{pr} (2 C_{H^2} c_\gamma^2 + m_\Phi^2 s_\gamma^2)) \\
& LF_{2,1,0}[m_l^p, m_e^r] + \frac{1}{2} \frac{1}{m_\Phi^2} y_u^{i1i2} (c_\gamma \overline{a_e^{pr}} - s_\gamma \tilde{\mu} \overline{y_e^{pr}}) \\
& (s_\gamma c_\gamma a_e^{pr} (2 C_{H^2} - m_\Phi^2) + \tilde{\mu} y_e^{pr} (2 C_{H^2} c_\gamma^2 + m_\Phi^2 s_\gamma^2)) LF_{3,1,-1}[m_l^p, m_e^r] + \\
& s_\gamma C_{H^2} y_u^{i1i2} (-c_\gamma \overline{a_e^{pr}} + s_\gamma \tilde{\mu} \overline{y_e^{pr}}) (-c_\gamma a_e^{pr} + s_\gamma \tilde{\mu} y_e^{pr}) LF_{3,1,0}[m_l^p, m_e^r] - \\
& 3 s_\gamma C_{H^2} y_u^{i1i2} (-c_\gamma \overline{a_e^{pr}} + s_\gamma \tilde{\mu} \overline{y_e^{pr}}) (-c_\gamma a_e^{pr} + s_\gamma \tilde{\mu} y_e^{pr}) LF_{4,1,-1}[m_l^p, m_e^r] + \\
& 2 s_\gamma C_{H^2} y_u^{i1i2} (-c_\gamma \overline{a_e^{pr}} + s_\gamma \tilde{\mu} \overline{y_e^{pr}}) (-c_\gamma a_e^{pr} + s_\gamma \tilde{\mu} y_e^{pr}) LF_{5,1,-2}[m_l^p, m_e^r] - \\
& \frac{3}{2} \frac{1}{m_\Phi^2} y_u^{i1i2} (c_\gamma \overline{a_d^{pr}} - s_\gamma \tilde{\mu} \overline{y_d^{pr}}) (s_\gamma c_\gamma a_d^{pr} (2 C_{H^2} - m_\Phi^2) + \tilde{\mu} y_d^{pr} (2 C_{H^2} c_\gamma^2 + m_\Phi^2 s_\gamma^2)) \\
& LF_{2,1,0}[m_q^p, m_d^r] + \frac{3}{2} \frac{1}{m_\Phi^2} y_u^{i1i2} (c_\gamma \overline{a_d^{pr}} - s_\gamma \tilde{\mu} \overline{y_d^{pr}}) \\
& (s_\gamma c_\gamma a_d^{pr} (2 C_{H^2} - m_\Phi^2) + \tilde{\mu} y_d^{pr} (2 C_{H^2} c_\gamma^2 + m_\Phi^2 s_\gamma^2)) LF_{3,1,-1}[m_q^p, m_d^r] + \\
& 3 s_\gamma C_{H^2} y_u^{i1i2} (-c_\gamma \overline{a_d^{pr}} + s_\gamma \tilde{\mu} \overline{y_d^{pr}}) (-c_\gamma a_d^{pr} + s_\gamma \tilde{\mu} y_d^{pr}) LF_{3,1,0}[m_q^p, m_d^r] - \\
& 9 s_\gamma C_{H^2} y_u^{i1i2} (-c_\gamma \overline{a_d^{pr}} + s_\gamma \tilde{\mu} \overline{y_d^{pr}}) (-c_\gamma a_d^{pr} + s_\gamma \tilde{\mu} y_d^{pr}) LF_{4,1,-1}[m_q^p, m_d^r] + \\
& 6 s_\gamma C_{H^2} y_u^{i1i2} (-c_\gamma \overline{a_d^{pr}} + s_\gamma \tilde{\mu} \overline{y_d^{pr}}) (-c_\gamma a_d^{pr} + s_\gamma \tilde{\mu} y_d^{pr}) LF_{5,1,-2}[m_q^p, m_d^r] + \\
& 3 c_\gamma \frac{1}{m_\Phi^4} y_u^{i1i2} (C_{H^2} - m_\Phi^2) (c_\gamma \overline{a_u^{pr}} + s_\gamma \tilde{\mu} \overline{y_u^{pr}}) (-s_\gamma a_u^{pr} + \tilde{\mu} c_\gamma y_u^{pr}) LF_{1,1,0}[m_q^p, m_u^r] - \\
& s_\gamma \overline{y_u^{pr}} y_u^{pi2} y_u^{i1r} LF_{1,1,0}[m_q^p, \tilde{\mu}] + \frac{3}{2} \frac{1}{m_\Phi^2} y_u^{i1i2} \\
& (\overline{a_u^{pr}} (2 C_{H^2} c_\gamma^2 + m_\Phi^2 s_\gamma^2) + s_\gamma \tilde{\mu} c_\gamma \overline{y_u^{pr}} (2 C_{H^2} - m_\Phi^2)) (s_\gamma a_u^{pr} - \tilde{\mu} c_\gamma y_u^{pr}) LF_{2,1,0}[m_u^r, m_q^p] + \\
& \frac{3}{2} \frac{1}{m_\Phi^2} y_u^{i1i2} (\overline{a_u^{pr}} (2 C_{H^2} c_\gamma^2 + m_\Phi^2 s_\gamma^2) + s_\gamma \tilde{\mu} c_\gamma \overline{y_u^{pr}} (2 C_{H^2} - m_\Phi^2)) \\
& (-s_\gamma a_u^{pr} + \tilde{\mu} c_\gamma y_u^{pr}) LF_{3,1,-1}[m_u^r, m_q^p] + \\
& 3 s_\gamma C_{H^2} y_u^{i1i2} (s_\gamma \overline{a_u^{pr}} - \tilde{\mu} c_\gamma \overline{y_u^{pr}}) (s_\gamma a_u^{pr} - \tilde{\mu} c_\gamma y_u^{pr}) LF_{3,1,0}[m_u^r, m_q^p] - \\
& 9 s_\gamma C_{H^2} y_u^{i1i2} (s_\gamma \overline{a_u^{pr}} - \tilde{\mu} c_\gamma \overline{y_u^{pr}}) (s_\gamma a_u^{pr} - \tilde{\mu} c_\gamma y_u^{pr}) LF_{4,1,-1}[m_u^r, m_q^p] + \\
& 6 s_\gamma C_{H^2} y_u^{i1i2} (s_\gamma \overline{a_u^{pr}} - \tilde{\mu} c_\gamma \overline{y_u^{pr}}) (s_\gamma a_u^{pr} - \tilde{\mu} c_\gamma y_u^{pr}) LF_{5,1,-2}[m_u^r, m_q^p] - \\
& \frac{1}{2} s_\gamma \overline{y_u^{pr}} y_u^{pi2} y_u^{i1r} LF_{1,1,0}[m_u^r, \tilde{\mu}] - \frac{3}{4} s_\gamma g_1^2 y_u^{i1i2} LF_{2,1,-1}[\tilde{\mu}, m_1] - m_1 \tilde{\mu} c_\gamma g_1^2 \frac{1}{m_\Phi^2} \\
& y_u^{i1i2} (C_{H^2} c_\gamma^2 + s_\gamma^2 (-C_{H^2} + m_\Phi^2)) LF_{2,1,0}[\tilde{\mu}, m_1] + \frac{1}{2} s_\gamma g_1^2 y_u^{i1i2} LF_{3,1,-2}[\tilde{\mu}, m_1] + \\
& g_1^2 \frac{1}{m_\Phi^2} y_u^{i1i2} (-2 s_\gamma C_{H^2} m_\Phi^2 + m_1 \tilde{\mu} c_\gamma (C_{H^2} c_\gamma^2 + s_\gamma^2 (-C_{H^2} + m_\Phi^2))) LF_{3,1,-1}[\tilde{\mu}, m_1] - \\
& 2 m_1 C_{H^2} \tilde{\mu} c_\gamma g_1^2 s_\gamma^2 y_u^{i1i2} LF_{3,1,0}[\tilde{\mu}, m_1] + 4 s_\gamma C_{H^2} g_1^2 y_u^{i1i2} LF_{4,1,-2}[\tilde{\mu}, m_1] + \\
& 6 m_1 C_{H^2} \tilde{\mu} c_\gamma g_1^2 s_\gamma^2 y_u^{i1i2} LF_{4,1,-1}[\tilde{\mu}, m_1] - 2 s_\gamma C_{H^2} g_1^2 y_u^{i1i2} LF_{5,1,-3}[\tilde{\mu}, m_1] - \\
& 4 m_1 C_{H^2} \tilde{\mu} c_\gamma g_1^2 s_\gamma^2 y_u^{i1i2} LF_{5,1,-2}[\tilde{\mu}, m_1] - \frac{9}{4} s_\gamma g_2^2 y_u^{i1i2} LF_{2,1,-1}[\tilde{\mu}, m_2] - 3 m_2 \tilde{\mu} c_\gamma g_2^2 \\
& \frac{1}{m_\Phi^2} y_u^{i1i2} (C_{H^2} c_\gamma^2 + s_\gamma^2 (-C_{H^2} + m_\Phi^2)) LF_{2,1,0}[\tilde{\mu}, m_2] + \frac{3}{2} s_\gamma g_2^2 y_u^{i1i2} LF_{3,1,-2}[\tilde{\mu}, m_2] + \\
& 3 g_2^2 \frac{1}{m_\Phi^2} y_u^{i1i2} (-2 s_\gamma C_{H^2} m_\Phi^2 + m_2 \tilde{\mu} c_\gamma (C_{H^2} c_\gamma^2 + s_\gamma^2 (-C_{H^2} + m_\Phi^2))) LF_{3,1,-1}[\tilde{\mu}, m_2] - \\
& 6 m_2 C_{H^2} \tilde{\mu} c_\gamma g_2^2 s_\gamma^2 y_u^{i1i2} LF_{3,1,0}[\tilde{\mu}, m_2] + 12 s_\gamma C_{H^2} g_2^2 y_u^{i1i2} LF_{4,1,-2}[\tilde{\mu}, m_2] + \\
& 18 m_2 C_{H^2} \tilde{\mu} c_\gamma g_2^2 s_\gamma^2 y_u^{i1i2} LF_{4,1,-1}[\tilde{\mu}, m_2] - 6 s_\gamma C_{H^2} g_2^2 y_u^{i1i2} LF_{5,1,-3}[\tilde{\mu}, m_2] - \\
& 12 m_2 C_{H^2} \tilde{\mu} c_\gamma g_2^2 s_\gamma^2 y_u^{i1i2} LF_{5,1,-2}[\tilde{\mu}, m_2] + \frac{1}{4} s_\gamma \overline{y_d^{pr}} y_d^{i1r} y_u^{pi2} LF_{2,1,-1}[\tilde{\mu}, m_d^r] + \\
& \frac{1}{2} s_\gamma \overline{y_u^{pr}} y_u^{pi2} y_u^{i1r} LF_{2,1,-1}[\tilde{\mu}, m_q^p] + \frac{1}{4} s_\gamma \overline{y_u^{pr}} y_u^{pi2} y_u^{i1r} LF_{2,1,-1}[\tilde{\mu}, m_u^r] + \\
& \frac{2}{9} m_1 g_1^2 (s_\gamma a_u^{i1i2} - \tilde{\mu} c_\gamma y_u^{i1i2}) LF_{1,1,1,0}[m_1, m_q^{i1}, m_u^{i2}] + \\
& \frac{1}{18} m_1 C_{H^2} g_1^2 (-s_\gamma a_u^{i1i2} + \tilde{\mu} c_\gamma y_u^{i1i2}) LF_{2,2,1,-1}[m_1, m_q^{i1}, m_u^{i2}] - \\
& \frac{1}{6} s_\gamma g_1^2 y_u^{i1i2} LF_{1,1,1,-1}[m_1, m_q^{i1}, \tilde{\mu}] - \frac{1}{6} m_1 \tilde{\mu} c_\gamma g_1^2 y_u^{i1i2} LF_{1,1,1,0}[m_1, m_q^{i1}, \tilde{\mu}] + \\
& \frac{1}{18} m_1 C_{H^2} g_1^2 (-s_\gamma a_u^{i1i2} + \tilde{\mu} c_\gamma y_u^{i1i2}) LF_{2,2,1,-1}[m_1, m_u^{i2}, m_q^{i1}] + \\
& \frac{2}{3} s_\gamma g_1^2 y_u^{i1i2} LF_{1,1,1,-1}[m_1, m_u^{i2}, \tilde{\mu}] + \frac{2}{3} m_1 \tilde{\mu} c_\gamma g_1^2 y_u^{i1i2} LF_{1,1,1,0}[m_1, m_u^{i2}, \tilde{\mu}] - \\
& \frac{1}{12} s_\gamma C_{H^2} g_1^2 y_u^{i1i2} LF_{2,2,1,-2}[m_1, \tilde{\mu}, m_q^{i1}] - \frac{1}{12} m_1 C_{H^2} \tilde{\mu} c_\gamma g_1^2 y_u^{i1i2} LF_{2,2,1,-1}[m_1, \tilde{\mu}, m_q^{i1}] + \\
& \frac{1}{3} s_\gamma C_{H^2} g_1^2 y_u^{i1i2} LF_{2,2,1,-2}[m_1, \tilde{\mu}, m_u^{i2}] + \frac{1}{3} m_1 C_{H^2} \tilde{\mu} c_\gamma g_1^2 y_u^{i1i2} LF_{2,2,1,-1}[m_1, \tilde{\mu}, m_u^{i2}] + \\
& \frac{3}{2} s_\gamma g_2^2 y_u^{i1i2} LF_{1,1,1,-1}[m_2, m_q^{i1}, \tilde{\mu}] + \frac{3}{2} m_2 \tilde{\mu} c_\gamma g_2^2 y_u^{i1i2} LF_{1,1,1,0}[m_2, m_q^{i1}, \tilde{\mu}] + \\
& \frac{3}{4} s_\gamma C_{H^2} g_2^2 y_u^{i1i2} LF_{2,2,1,-2}[m_2, \tilde{\mu}, m_q^{i1}] + \frac{3}{4} m_2 C_{H^2} \tilde{\mu} c_\gamma g_2^2 y_u^{i1i2} LF_{2,2,1,-1}[m_2, \tilde{\mu}, m_q^{i1}] + \\
& \frac{8}{3} m_3 g_3^2 (s_\gamma a_u^{i1i2} - \tilde{\mu} c_\gamma y_u^{i1i2}) LF_{1,1,1,0}[m_3, m_q^{i1}, m_u^{i2}] + \\
& \frac{2}{3} m_3 C_{H^2} g_3^2 (-s_\gamma a_u^{i1i2} + \tilde{\mu} c_\gamma y_u^{i1i2}) LF_{2,2,1,-1}[m_3, m_q^{i1}, m_u^{i2}] + \\
& \frac{2}{3} m_3 C_{H^2} g_3^2 (-s_\gamma a_u^{i1i2} + \tilde{\mu} c_\gamma y_u^{i1i2}) LF_{2,2,1,-1}[m_3, m_u^{i2}, m_q^{i1}] + \\
& \tilde{\mu} y_d^{i1r} y_u^{pi2} (-c_\gamma \overline{a_d^{pr}} + s_\gamma \tilde{\mu} \overline{y_d^{pr}}) LF_{1,1,1,0}[m_d^r, m_q^p, \tilde{\mu}] + \\
& \frac{1}{2} C_{H^2} \tilde{\mu} y_d^{i1r} y_u^{pi2} (-c_\gamma \overline{a_d^{pr}} + s_\gamma \tilde{\mu} \overline{y_d^{pr}}) LF_{2,1,1,0}[m_d^r, m_q^p, \tilde{\mu}] + \\
& \frac{1}{2} C_{H^2} \tilde{\mu} y_d^{i1r} y_u^{pi2} (c_\gamma \overline{a_d^{pr}} - s_\gamma \tilde{\mu} \overline{y_d^{pr}}) LF_{3,1,1,-1}[m_d^r, m_q^p, \tilde{\mu}] + \\
& \frac{1}{4} C_{H^2} \tilde{\mu} y_d^{i1r} y_u^{pi2} (c_\gamma \overline{a_d^{pr}} - s_\gamma \tilde{\mu} \overline{y_d^{pr}}) LF_{2,2,1,-1}[m_d^r, \tilde{\mu}, m_q^p] + \\
& \frac{1}{2} C_{H^2} \tilde{\mu} y_d^{i1r} y_u^{pi2} (-c_\gamma \overline{a_d^{pr}} + s_\gamma \tilde{\mu} \overline{y_d^{pr}}) LF_{2,1,1,0}[m_q^p, m_d^r, \tilde{\mu}] + \\
& \frac{1}{2} C_{H^2} \tilde{\mu} y_d^{i1r} y_u^{pi2} (c_\gamma \overline{a_d^{pr}} - s_\gamma \tilde{\mu} \overline{y_d^{pr}}) LF_{3,1,1,-1}[m_q^p, m_d^r, \tilde{\mu}] + \\
& \frac{1}{4} C_{H^2} \tilde{\mu} y_d^{i1r} y_u^{pi2} (c_\gamma \overline{a_d^{pr}} - s_\gamma \tilde{\mu} \overline{y_d^{pr}}) LF_{2,2,1,-1}[m_q^p, \tilde{\mu}, m_d^r] + \\
& \frac{1}{9} m_1 C_{H^2} g_1^2 (s_\gamma a_u^{i1i2} - \tilde{\mu} c_\gamma y_u^{i1i2}) LF_{2,1,1,0}[m_q^{i1}, m_1, m_u^{i2}] + \\
& \frac{1}{9} m_1 C_{H^2} g_1^2 (-s_\gamma a_u^{i1i2} + \tilde{\mu} c_\gamma y_u^{i1i2}) LF_{3,1,1,-1}[m_q^{i1}, m_1, m_u^{i2}] + \\
& \frac{4}{3} m_3 C_{H^2} g_3^2 (s_\gamma a_u^{i1i2} - \tilde{\mu} c_\gamma y_u^{i1i2}) LF_{2,1,1,0}[m_q^{i1}, m_3, m_u^{i2}] + \\
& \frac{4}{3} m_3 C_{H^2} g_3^2 (-s_\gamma a_u^{i1i2} + \tilde{\mu} c_\gamma y_u^{i1i2}) LF_{3,1,1,-1}[m_q^{i1}, m_3, m_u^{i2}] + \\
& \frac{1}{9} m_1 C_{H^2} g_1^2 (s_\gamma a_u^{i1i2} - \tilde{\mu} c_\gamma y_u^{i1i2}) LF_{2,1,1,0}[m_u^{i2}, m_1, m_q^{i1}] + \\
& \frac{1}{9} m_1 C_{H^2} g_1^2 (-s_\gamma a_u^{i1i2} + \tilde{\mu} c_\gamma y_u^{i1i2}) LF_{3,1,1,-1}[m_u^{i2}, m_1, m_q^{i1}] + \\
& \frac{4}{3} m_3 C_{H^2} g_3^2 (s_\gamma a_u^{i1i2} - \tilde{\mu} c_\gamma y_u^{i1i2}) LF_{2,1,1,0}[m_u^{i2}, m_3, m_q^{i1}] + \\
& \frac{4}{3} m_3 C_{H^2} g_3^2 (-s_\gamma a_u^{i1i2} + \tilde{\mu} c_\gamma y_u^{i1i2}) LF_{3,1,1,-1}[m_u^{i2}, m_3, m_q^{i1}]
\end{aligned}$$