

$$\begin{aligned}
& C_{uw} i^{1,-1,2} \rightarrow \hbar \left( -\frac{1}{48} g_2 s_\gamma \frac{1}{m_q^2} (\overline{y_d^{pr}} y_d^{i1r} y_u^{pi2} (3 c_\gamma^2 + s_\gamma^2) + c_\gamma^2 \overline{y_u^{pr}} (y_u^{pi2} y_u^{i1r} + 18 y_u^{pr} y_u^{i1i2})) + \right. \\
& \frac{1}{8} g_2 s_\gamma c_\gamma^2 \overline{y_d^{pr}} y_d^{i1r} y_u^{pi2} LF_{1,2} [m_\oplus] + \frac{1}{144} g_2 s_\gamma g_1^2 y_u^{i1i2} LF_{2,1,0} [m_1, m_q^{i1}] - \\
& \frac{1}{72} g_2 s_\gamma g_1^2 y_u^{i1i2} LF_{3,1,-1} [m_1, m_q^{i1}] + \frac{1}{144} g_2 s_\gamma g_1^2 y_u^{i1i2} LF_{4,1,-2} [m_1, m_q^{i1}] - \\
& \frac{1}{16} s_\gamma g_2^3 y_u^{i1i2} LF_{2,1,0} [m_2, m_q^{i1}] - \frac{1}{8} s_\gamma g_2^3 y_u^{i1i2} LF_{3,1,-1} [m_2, m_q^{i1}] + \\
& \frac{3}{16} s_\gamma g_2^3 y_u^{i1i2} LF_{4,1,-2} [m_2, m_q^{i1}] + \frac{1}{3} g_2 s_\gamma g_3^2 y_u^{i1i2} LF_{2,1,0} [m_3, m_q^{i1}] - \\
& \frac{2}{3} g_2 s_\gamma g_3^2 y_u^{i1i2} LF_{3,1,-1} [m_3, m_q^{i1}] + \frac{1}{3} g_2 s_\gamma g_3^2 y_u^{i1i2} LF_{4,1,-2} [m_3, m_q^{i1}] - \\
& \frac{1}{8} g_2 s_\gamma \overline{y_d^{pr}} y_d^{i1r} y_u^{pi2} LF_{3,1,-1} [\tilde{\mu}, m_d^r] + \frac{1}{8} g_2 s_\gamma \overline{y_d^{pr}} y_d^{i1r} y_u^{pi2} LF_{4,1,-2} [\tilde{\mu}, m_d^r] - \\
& \frac{1}{8} g_2 s_\gamma \overline{y_u^{pr}} y_u^{pi2} y_u^{i1r} LF_{3,1,-1} [\tilde{\mu}, m_u^r] + \frac{1}{8} g_2 s_\gamma \overline{y_u^{pr}} y_u^{pi2} y_u^{i1r} LF_{4,1,-2} [\tilde{\mu}, m_u^r] + \\
& \frac{1}{36} g_2 m_1 g_1^2 (-s_\gamma a_u^{i1i2} + \tilde{\mu} c_\gamma y_u^{i1i2}) LF_{2,1,1,0} [m_1, m_q^{i1}, m_u^{i2}] + \\
& \frac{1}{72} g_2 m_1 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}{36} g_2 m_1 g_1^2 (s_\gamma a_u^{i1i2} - \tilde{\mu} c_\gamma y_u^{i1i2}) LF_{3,1,1,-1} [m_1, m_q^{i1}, m_u^{i2}] - \\
& \frac{1}{24} g_2 s_\gamma g_1^2 y_u^{i1i2} LF_{1,1,1,0} [m_1, m_q^{i1}, \tilde{\mu}] + \frac{1}{12} g_2 s_\gamma g_1^2 y_u^{i1i2} LF_{2,1,1,-1} [m_1, m_q^{i1}, \tilde{\mu}] + \\
& \frac{1}{24} g_2 m_1 \tilde{\mu} c_\gamma g_1^2 y_u^{i1i2} LF_{2,1,1,0} [m_1, m_q^{i1}, \tilde{\mu}] - \frac{1}{24} g_2 s_\gamma g_1^2 y_u^{i1i2} LF_{3,1,1,-2} [m_1, m_q^{i1}, \tilde{\mu}] - \\
& \frac{1}{24} g_2 m_1 \tilde{\mu} c_\gamma g_1^2 y_u^{i1i2} LF_{3,1,1,-1} [m_1, m_q^{i1}, \tilde{\mu}] + \frac{1}{72} g_2 m_1 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{1}{48} g_2 s_\gamma g_1^2 y_u^{i1i2} LF_{2,2,1,-2} [m_1, \tilde{\mu}, m_q^{i1}] - \\
& \frac{1}{48} g_2 m_1 \tilde{\mu} c_\gamma g_1^2 y_u^{i1i2} LF_{2,2,1,-1} [m_1, \tilde{\mu}, m_q^{i1}] + \frac{1}{12} g_2 s_\gamma g_1^2 y_u^{i1i2} LF_{2,2,1,-2} [m_1, \tilde{\mu}, m_u^{i2}] + \\
& \frac{1}{12} g_2 m_1 \tilde{\mu} c_\gamma g_1^2 y_u^{i1i2} LF_{2,2,1,-1} [m_1, \tilde{\mu}, m_u^{i2}] - \frac{1}{8} s_\gamma g_2^3 y_u^{i1i2} LF_{1,1,1,0} [m_2, m_q^{i1}, \tilde{\mu}] - \\
& \frac{1}{4} s_\gamma g_2^3 y_u^{i1i2} LF_{2,1,1,-1} [m_2, m_q^{i1}, \tilde{\mu}] + \frac{1}{8} m_2 \tilde{\mu} c_\gamma g_2^3 y_u^{i1i2} LF_{2,1,1,0} [m_2, m_q^{i1}, \tilde{\mu}] + \\
& \frac{3}{8} s_\gamma g_2^3 y_u^{i1i2} LF_{3,1,1,-2} [m_2, m_q^{i1}, \tilde{\mu}] + \frac{3}{8} m_2 \tilde{\mu} c_\gamma g_2^3 y_u^{i1i2} LF_{3,1,1,-1} [m_2, m_q^{i1}, \tilde{\mu}] + \\
& \frac{3}{16} s_\gamma g_2^3 y_u^{i1i2} LF_{2,2,1,-2} [m_2, \tilde{\mu}, m_q^{i1}] + \frac{3}{16} m_2 \tilde{\mu} c_\gamma g_2^3 y_u^{i1i2} LF_{2,2,1,-1} [m_2, \tilde{\mu}, m_q^{i1}] + \\
& \frac{1}{3} g_2 m_3 g_3^2 (-s_\gamma a_u^{i1i2} + \tilde{\mu} c_\gamma y_u^{i1i2}) LF_{2,1,1,0} [m_3, m_q^{i1}, m_u^{i2}] + \\
& \frac{1}{6} g_2 m_3 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{1}{3} g_2 m_3 g_3^2 (s_\gamma a_u^{i1i2} - \tilde{\mu} c_\gamma y_u^{i1i2}) LF_{3,1,1,-1} [m_3, m_q^{i1}, m_u^{i2}] + \\
& \frac{1}{6} g_2 m_3 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}] + \\
& \frac{1}{16} g_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}{16} g_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}{24} g_2 s_\gamma g_1^2 y_u^{i1i2} LF_{2,1,1,-1} [\tilde{\mu}, m_1, m_q^{i1}] + \frac{1}{24} g_2 m_1 \tilde{\mu} c_\gamma g_1^2 y_u^{i1i2} LF_{2,1,1,0} [\tilde{\mu}, m_1, m_q^{i1}] - \\
& \frac{1}{6} g_2 s_\gamma g_1^2 y_u^{i1i2} LF_{2,1,1,-1} [\tilde{\mu}, m_1, m_u^{i2}] + \frac{1}{6} g_2 s_\gamma g_1^2 y_u^{i1i2} LF_{3,1,1,-2} [\tilde{\mu}, m_1, m_u^{i2}] + \\
& \frac{1}{6} g_2 m_1 \tilde{\mu} c_\gamma g_1^2 y_u^{i1i2} LF_{3,1,1,-1} [\tilde{\mu}, m_1, m_u^{i2}] + \\
& \frac{1}{8} s_\gamma g_2^3 y_u^{i1i2} LF_{2,1,1,-1} [\tilde{\mu}, m_2, m_q^{i1}] + \frac{1}{8} m_2 \tilde{\mu} c_\gamma g_2^3 y_u^{i1i2} LF_{2,1,1,0} [\tilde{\mu}, m_2, m_q^{i1}] + \\
& \frac{1}{8} g_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} [\tilde{\mu}, m_d^r, m_q^p] + \\
& \frac{1}{8} g_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} [\tilde{\mu}, m_d^r, m_q^p] \Big)
\end{aligned}$$