$$C_{Hl}^{(3)\,i1\_i2\_} \to \hbar \Big(-\frac{1}{144}\,\frac{1}{m_\Phi^2}\, s_\gamma^2\, \overline{y_e}^{i2p} \left(g_2^2\, y_e^{i1p} + 12\, c_\gamma^2\, \overline{y_e}^{rs}\, y_e^{rp}\, y_e^{i1s}\right) + \frac{1}{9}\, g_2^4\, LF_{3,0}[m_2]\, \delta_{i1i2} +$$
$$\frac{1}{6}\, g_2^4\, LF_{4,-1}[m_2]\, \delta_{i1i2} - \frac{8}{45}\, g_2^4\, LF_{5,-2}[m_2]\, \delta_{i1i2} + \frac{1}{18} \sum_p g_2^4\, LF_{3,0}\left[m_{\tilde{l}}^p\right] \delta_{i1i2} -$$
$$\frac{5}{48} \sum_p g_2^4\, LF_{4,-1}\left[m_{\tilde{l}}^p\right] \delta_{i1i2} + \frac{2}{45} \sum_p g_2^4\, LF_{5,-2}\left[m_{\tilde{l}}^p\right] \delta_{i1i2} + \frac{1}{6} \sum_p g_2^4\, LF_{3,0}\left[m_{\tilde{q}}^p\right] \delta_{i1i2} -$$
$$\frac{5}{16} \sum_p g_2^4\, LF_{4,-1}\left[m_{\tilde{q}}^p\right] \delta_{i1i2} + \frac{2}{15} \sum_p g_2^4\, LF_{5,-2}\left[m_{\tilde{q}}^p\right] \delta_{i1i2} - \frac{1}{24}\, g_2^2\, s_\gamma^2\, \overline{y_e}^{i2p}\, y_e^{i1p}\, LF_{2,1}[m_\Phi] +$$
$$\frac{1}{72} \left(3\, g_2^2\, s_\gamma^2\, \overline{y_e}^{i2p}\, y_e^{i1p} + 4\, g_2^4\, \delta_{i1i2}\right) LF_{3,0}[m_\Phi] - \frac{5}{48}\, g_2^4\, LF_{4,-1}[m_\Phi]\, \delta_{i1i2} +$$
$$\frac{2}{45}\, g_2^4\, LF_{5,-2}[m_\Phi]\, \delta_{i1i2} + \frac{1}{18}\, g_2^4\, LF_{3,0}[\tilde{\mu}]\, \delta_{i1i2} + \frac{1}{12}\, g_2^4\, LF_{4,-1}[\tilde{\mu}]\, \delta_{i1i2} - \frac{4}{45}\, g_2^4\, LF_{5,-2}[\tilde{\mu}]\, \delta_{i1i2} +$$
$$\frac{1}{2}\, g_1^2\, c_\gamma^2\, \overline{y_e}^{i2p}\, y_e^{i1p}\, LF_{2,1,0}\left[m_1, m_{\tilde{e}}^p\right] - g_1^2\, c_\gamma^2\, \overline{y_e}^{i2p}\, y_e^{i1p}\, LF_{3,1,-1}\left[m_1, m_{\tilde{e}}^p\right] +$$
$$\frac{1}{2}\, g_1^2\, c_\gamma^2\, \overline{y_e}^{i2p}\, y_e^{i1p}\, LF_{4,1,-2}\left[m_1, m_{\tilde{e}}^p\right] + \frac{1}{48}\, g_1^2\, g_2^2\, LF_{2,1,0}\left[m_1, m_{\tilde{l}}^{i2}\right] \delta_{i1i2} +$$
$$\frac{1}{48}\, g_1^2\, g_2^2\, LF_{2,2,-1}\left[m_1, m_{\tilde{l}}^{i2}\right] \delta_{i1i2} - \frac{1}{24}\, g_1^2\, g_2^2\, LF_{3,1,-1}\left[m_1, m_{\tilde{l}}^{i2}\right] \delta_{i1i2} +$$
$$\frac{1}{48}\, g_1^2\, g_2^2\, LF_{4,1,-2}\left[m_1, m_{\tilde{l}}^{i2}\right] \delta_{i1i2} - \frac{1}{48}\, g_2^4\, LF_{2,1,0}\left[m_2, m_{\tilde{l}}^{i2}\right] \delta_{i1i2} -$$
$$\frac{1}{48}\, g_2^4\, LF_{2,2,-1}\left[m_2, m_{\tilde{l}}^{i2}\right] \delta_{i1i2} - \frac{5}{24}\, g_2^4\, LF_{3,1,-1}\left[m_2, m_{\tilde{l}}^{i2}\right] \delta_{i1i2} + \frac{1}{16}\, g_2^4\, LF_{4,1,-2}\left[m_2, m_{\tilde{l}}^{i2}\right] \delta_{i1i2} -$$
$$\frac{1}{3}\, g_2^4\, LF_{2,1,0}[m_2, \tilde{\mu}]\, \delta_{i1i2} - \frac{1}{3}\, g_2^4\, LF_{2,2,-1}[m_2, \tilde{\mu}]\, \delta_{i1i2} - \frac{2}{3}\, m_2\, s_\gamma\, \tilde{\mu}\, c_\gamma\, g_2^4\, LF_{2,2,0}[m_2, \tilde{\mu}]\, \delta_{i1i2} +$$
$$\frac{1}{6}\, g_2^4\, LF_{3,1,-1}[m_2, \tilde{\mu}]\, \delta_{i1i2} + \frac{1}{6}\, g_2^4\, LF_{3,2,-2}[m_2, \tilde{\mu}]\, \delta_{i1i2} + \frac{1}{3}\, m_2\, s_\gamma\, \tilde{\mu}\, c_\gamma\, g_2^4\, LF_{3,2,-1}[m_2, \tilde{\mu}]\, \delta_{i1i2} +$$
$$\frac{1}{8}\, g_2^2 \left(c_\gamma\, \overline{a_e}^{pr} - s_\gamma\, \tilde{\mu}\, \overline{y_e}^{pr}\right) \left(c_\gamma\, a_e^{pr} - s_\gamma\, \tilde{\mu}\, y_e^{pr}\right) LF_{4,1,-1}\left[m_{\tilde{l}}^p, m_{\tilde{e}}^r\right] \delta_{i1i2} -$$
$$\frac{1}{6}\, g_2^2 \left(c_\gamma\, \overline{a_e}^{pr} - s_\gamma\, \tilde{\mu}\, \overline{y_e}^{pr}\right) \left(c_\gamma\, a_e^{pr} - s_\gamma\, \tilde{\mu}\, y_e^{pr}\right) LF_{5,1,-2}\left[m_{\tilde{l}}^p, m_{\tilde{e}}^r\right] \delta_{i1i2} -$$
$$\frac{1}{24}\, g_1^2\, g_2^2\, LF_{2,1,0}\left[m_{\tilde{l}}^{i2}, m_1\right] \delta_{i1i2} + \frac{1}{48}\, g_1^2\, g_2^2\, LF_{3,1,-1}\left[m_{\tilde{l}}^{i2}, m_1\right] \delta_{i1i2} +$$
$$\frac{1}{24}\, g_2^4\, LF_{2,1,0}\left[m_{\tilde{l}}^{i2}, m_2\right] \delta_{i1i2} - \frac{1}{48}\, g_2^4\, LF_{3,1,-1}\left[m_{\tilde{l}}^{i2}, m_2\right] \delta_{i1i2} +$$
$$\frac{3}{8}\, g_2^2 \left(c_\gamma\, \overline{a_d}^{pr} - s_\gamma\, \tilde{\mu}\, \overline{y_d}^{pr}\right) \left(c_\gamma\, a_d^{pr} - s_\gamma\, \tilde{\mu}\, y_d^{pr}\right) LF_{4,1,-1}\left[m_{\tilde{q}}^p, m_{\tilde{d}}^r\right] \delta_{i1i2} -$$
$$\frac{1}{2}\, g_2^2 \left(c_\gamma\, \overline{a_d}^{pr} - s_\gamma\, \tilde{\mu}\, \overline{y_d}^{pr}\right) \left(c_\gamma\, a_d^{pr} - s_\gamma\, \tilde{\mu}\, y_d^{pr}\right) LF_{5,1,-2}\left[m_{\tilde{q}}^p, m_{\tilde{d}}^r\right] \delta_{i1i2} +$$
$$\frac{1}{4}\, g_2^2 \left(s_\gamma\, \overline{a_u}^{pr} - \tilde{\mu}\, c_\gamma\, \overline{y_u}^{pr}\right) \left(s_\gamma\, a_u^{pr} - \tilde{\mu}\, c_\gamma\, y_u^{pr}\right) LF_{2,2,0}\left[m_{\tilde{q}}^p, m_{\tilde{u}}^r\right] \delta_{i1i2} -$$
$$\frac{1}{8}\, g_2^2 \left(s_\gamma\, \overline{a_u}^{pr} - \tilde{\mu}\, c_\gamma\, \overline{y_u}^{pr}\right) \left(s_\gamma\, a_u^{pr} - \tilde{\mu}\, c_\gamma\, y_u^{pr}\right) LF_{3,2,-1}\left[m_{\tilde{q}}^p, m_{\tilde{u}}^r\right] \delta_{i1i2} -$$
$$\frac{1}{4}\, g_2^2 \left(s_\gamma\, \overline{a_u}^{pr} - \tilde{\mu}\, c_\gamma\, \overline{y_u}^{pr}\right) \left(s_\gamma\, a_u^{pr} - \tilde{\mu}\, c_\gamma\, y_u^{pr}\right) LF_{3,1,0}\left[m_{\tilde{u}}^r, m_{\tilde{q}}^p\right] \delta_{i1i2} -$$
$$\frac{1}{4}\, g_2^2 \left(s_\gamma\, \overline{a_u}^{pr} - \tilde{\mu}\, c_\gamma\, \overline{y_u}^{pr}\right) \left(s_\gamma\, a_u^{pr} - \tilde{\mu}\, c_\gamma\, y_u^{pr}\right) LF_{3,2,-1}\left[m_{\tilde{u}}^r, m_{\tilde{q}}^p\right] \delta_{i1i2} +$$
$$\frac{3}{4}\, g_2^2 \left(s_\gamma\, \overline{a_u}^{pr} - \tilde{\mu}\, c_\gamma\, \overline{y_u}^{pr}\right) \left(s_\gamma\, a_u^{pr} - \tilde{\mu}\, c_\gamma\, y_u^{pr}\right) LF_{4,1,-1}\left[m_{\tilde{u}}^r, m_{\tilde{q}}^p\right] \delta_{i1i2} -$$
$$\frac{1}{2}\, g_2^2 \left(s_\gamma\, \overline{a_u}^{pr} - \tilde{\mu}\, c_\gamma\, \overline{y_u}^{pr}\right) \left(s_\gamma\, a_u^{pr} - \tilde{\mu}\, c_\gamma\, y_u^{pr}\right) LF_{5,1,-2}\left[m_{\tilde{u}}^r, m_{\tilde{q}}^p\right] \delta_{i1i2} -$$
$$\frac{5}{24}\, g_1^2\, g_2^2\, LF_{4,1,-2}[\tilde{\mu}, m_1]\, \delta_{i1i2} - \frac{1}{4}\, m_1\, s_\gamma\, \tilde{\mu}\, c_\gamma\, g_1^2\, g_2^2\, LF_{4,1,-1}[\tilde{\mu}, m_1]\, \delta_{i1i2} +$$
$$\frac{1}{6}\, g_1^2\, g_2^2\, LF_{5,1,-3}[\tilde{\mu}, m_1]\, \delta_{i1i2} + \frac{1}{3}\, m_1\, s_\gamma\, \tilde{\mu}\, c_\gamma\, g_1^2\, g_2^2\, LF_{5,1,-2}[\tilde{\mu}, m_1]\, \delta_{i1i2} +$$
$$\frac{2}{3}\, g_2^4\, LF_{3,1,-1}[\tilde{\mu}, m_2]\, \delta_{i1i2} + \frac{2}{3}\, m_2\, s_\gamma\, \tilde{\mu}\, c_\gamma\, g_2^4\, LF_{3,1,0}[\tilde{\mu}, m_2]\, \delta_{i1i2} + \frac{1}{3}\, g_2^4\, LF_{3,2,-2}[\tilde{\mu}, m_2]\, \delta_{i1i2} +$$
$$\frac{2}{3}\, m_2\, s_\gamma\, \tilde{\mu}\, c_\gamma\, g_2^4\, LF_{3,2,-1}[\tilde{\mu}, m_2]\, \delta_{i1i2} - \frac{9}{8}\, g_2^4\, LF_{4,1,-2}[\tilde{\mu}, m_2]\, \delta_{i1i2} -$$
$$\frac{7}{4}\, m_2\, s_\gamma\, \tilde{\mu}\, c_\gamma\, g_2^4\, LF_{4,1,-1}[\tilde{\mu}, m_2]\, \delta_{i1i2} + \frac{1}{2}\, g_2^4\, LF_{5,1,-3}[\tilde{\mu}, m_2]\, \delta_{i1i2} +$$
$$m_2\, s_\gamma\, \tilde{\mu}\, c_\gamma\, g_2^4\, LF_{5,1,-2}[\tilde{\mu}, m_2]\, \delta_{i1i2} - \frac{1}{8}\, g_2^2\, \overline{y_e}^{i2p}\, y_e^{i1p}\, LF_{3,1,-1}\left[\tilde{\mu}, m_{\tilde{e}}^p\right] +$$
$$\frac{1}{24}\, g_2^2\, \overline{y_e}^{i2p}\, y_e^{i1p}\, LF_{4,1,-2}\left[\tilde{\mu}, m_{\tilde{e}}^p\right] + \frac{1}{2}\, c_\gamma^2\, \overline{y_e}^{rs}\, \overline{y_e}^{i2p}\, y_e^{rp}\, y_e^{i1s}\, LF_{2,1,0}\left[\tilde{\mu}, m_{\tilde{l}}^r\right] -$$
$$c_\gamma^2\, \overline{y_e}^{rs}\, \overline{y_e}^{i2p}\, y_e^{rp}\, y_e^{i1s}\, LF_{3,1,-1}\left[\tilde{\mu}, m_{\tilde{l}}^r\right] + \frac{1}{2}\, c_\gamma^2\, \overline{y_e}^{rs}\, \overline{y_e}^{i2p}\, y_e^{rp}\, y_e^{i1s}\, LF_{4,1,-2}\left[\tilde{\mu}, m_{\tilde{l}}^r\right] +$$
$$\frac{1}{8}\, m_1\, c_\gamma\, g_1^2\, \overline{y_e}^{i2p} \left(-c_\gamma\, a_e^{i1p} + s_\gamma\, \tilde{\mu}\, y_e^{i1p}\right) LF_{2,1,1,0}\left[m_1, m_{\tilde{e}}^p, m_{\tilde{l}}^{i1}\right] +$$
$$\frac{1}{16}\, m_1\, c_\gamma\, g_1^2\, \overline{y_e}^{i2p} \left(-c_\gamma\, a_e^{i1p} + s_\gamma\, \tilde{\mu}\, y_e^{i1p}\right) LF_{2,2,1,-1}\left[m_1, m_{\tilde{e}}^p, m_{\tilde{l}}^{i1}\right] +$$
$$\frac{1}{8}\, m_1\, c_\gamma\, g_1^2\, \overline{y_e}^{i2p} \left(c_\gamma\, a_e^{i1p} - s_\gamma\, \tilde{\mu}\, y_e^{i1p}\right) LF_{3,1,1,-1}\left[m_1, m_{\tilde{e}}^p, m_{\tilde{l}}^{i1}\right] +$$
$$\frac{1}{8}\, m_1\, c_\gamma\, g_1^2\, y_e^{i1p} \left(-c_\gamma\, \overline{a_e}^{i2p} + s_\gamma\, \tilde{\mu}\, \overline{y_e}^{i2p}\right) LF_{2,1,1,0}\left[m_1, m_{\tilde{e}}^p, m_{\tilde{l}}^{i2}\right] +$$
$$\frac{1}{16}\, m_1\, c_\gamma\, g_1^2\, y_e^{i1p} \left(-c_\gamma\, \overline{a_e}^{i2p} + s_\gamma\, \tilde{\mu}\, \overline{y_e}^{i2p}\right) LF_{2,2,1,-1}\left[m_1, m_{\tilde{e}}^p, m_{\tilde{l}}^{i2}\right] +$$
$$\frac{1}{8}\, m_1\, c_\gamma\, g_1^2\, y_e^{i1p} \left(c_\gamma\, \overline{a_e}^{i2p} - s_\gamma\, \tilde{\mu}\, \overline{y_e}^{i2p}\right) LF_{3,1,1,-1}\left[m_1, m_{\tilde{e}}^p, m_{\tilde{l}}^{i2}\right] -$$
$$\frac{3}{4}\, g_1^2\, c_\gamma^2\, \overline{y_e}^{i2p}\, y_e^{i1p}\, LF_{2,1,1,-1}\left[m_1, m_{\tilde{e}}^p, \tilde{\mu}\right] - \frac{1}{2}\, m_1\, s_\gamma\, \tilde{\mu}\, c_\gamma\, g_1^2\, \overline{y_e}^{i2p}\, y_e^{i1p}\, LF_{2,1,1,0}\left[m_1, m_{\tilde{e}}^p, \tilde{\mu}\right] +$$
$$\frac{1}{2}\, g_1^2\, c_\gamma^2\, \overline{y_e}^{i2p}\, y_e^{i1p}\, LF_{3,1,1,-2}\left[m_1, m_{\tilde{e}}^p, \tilde{\mu}\right] + \frac{1}{2}\, m_1\, s_\gamma\, \tilde{\mu}\, c_\gamma\, g_1^2\, \overline{y_e}^{i2p}\, y_e^{i1p}\, LF_{3,1,1,-1}\left[m_1, m_{\tilde{e}}^p, \tilde{\mu}\right] +$$
$$\frac{1}{16}\, m_1\, c_\gamma\, g_1^2\, \overline{y_e}^{i2p} \left(c_\gamma\, a_e^{i1p} - s_\gamma\, \tilde{\mu}\, y_e^{i1p}\right) LF_{2,2,1,-1}\left[m_1, m_{\tilde{l}}^{i1}, m_{\tilde{e}}^p\right] +$$
$$\frac{1}{16}\, m_1\, c_\gamma\, g_1^2\, y_e^{i1p} \left(c_\gamma\, \overline{a_e}^{i2p} - s_\gamma\, \tilde{\mu}\, \overline{y_e}^{i2p}\right) LF_{2,2,1,-1}\left[m_1, m_{\tilde{l}}^{i2}, m_{\tilde{e}}^p\right] +$$
$$\frac{5}{16}\, g_1^2\, c_\gamma^2\, \overline{y_e}^{i2p}\, y_e^{i1p}\, LF_{2,2,1,-2}\left[m_1, \tilde{\mu}, m_{\tilde{e}}^p\right] +$$
$$\frac{1}{16}\, s_\gamma\, \tilde{\mu}\, g_1^2\, \overline{y_e}^{i2p}\, y_e^{i1p}\, (6\, m_1\, c_\gamma + s_\gamma\, \tilde{\mu})\, LF_{2,2,1,-1}\left[m_1, \tilde{\mu}, m_{\tilde{e}}^p\right] -$$
$$\frac{1}{16}\, g_1^2\, c_\gamma^2\, \overline{y_e}^{i2p}\, y_e^{i1p}\, LF_{2,2,1,-2}\left[m_1, \tilde{\mu}, m_{\tilde{l}}^{i1}\right] - \frac{1}{16}\, m_1\, s_\gamma\, \tilde{\mu}\, c_\gamma\, g_1^2\, \overline{y_e}^{i2p}\, y_e^{i1p}$$
$$LF_{2,2,1,-1}\left[m_1, \tilde{\mu}, m_{\tilde{l}}^{i1}\right] - \frac{1}{16}\, g_1^2\, c_\gamma^2\, \overline{y_e}^{i2p}\, y_e^{i1p}\, LF_{2,2,1,-2}\left[m_1, \tilde{\mu}, m_{\tilde{l}}^{i2}\right] -$$
$$\frac{1}{16}\, m_1\, s_\gamma\, \tilde{\mu}\, c_\gamma\, g_1^2\, \overline{y_e}^{i2p}\, y_e^{i1p}\, LF_{2,2,1,-1}\left[m_1, \tilde{\mu}, m_{\tilde{l}}^{i2}\right] + \frac{1}{8}\, g_2^4\, LF_{2,1,1,-1}\left[m_2, m_{\tilde{l}}^{i2}, \tilde{\mu}\right] \delta_{i1i2} -$$
$$\frac{1}{4}\, g_2^4\, m_2^2\, LF_{2,1,1,0}\left[m_2, m_{\tilde{l}}^{i2}, \tilde{\mu}\right] \delta_{i1i2} - \frac{1}{16}\, g_2^2\, c_\gamma^2\, \overline{y_e}^{i2p}\, y_e^{i1p}\, LF_{2,2,1,-2}\left[m_2, \tilde{\mu}, m_{\tilde{e}}^p\right] -$$
$$\frac{1}{16}\, s_\gamma\, \tilde{\mu}\, g_2^2\, \overline{y_e}^{i2p}\, y_e^{i1p}\, (2\, m_2\, c_\gamma + s_\gamma\, \tilde{\mu})\, LF_{2,2,1,-1}\left[m_2, \tilde{\mu}, m_{\tilde{e}}^p\right] +$$
$$\frac{3}{16}\, g_2^2\, c_\gamma^2\, \overline{y_e}^{i2p}\, y_e^{i1p}\, LF_{2,2,1,-2}\left[m_2, \tilde{\mu}, m_{\tilde{l}}^{i1}\right] + \frac{3}{16}\, m_2\, s_\gamma\, \tilde{\mu}\, c_\gamma\, g_2^2\, \overline{y_e}^{i2p}\, y_e^{i1p}$$
$$LF_{2,2,1,-1}\left[m_2, \tilde{\mu}, m_{\tilde{l}}^{i1}\right] + \frac{1}{16} \left(3\, g_2^2\, c_\gamma^2\, \overline{y_e}^{i2p}\, y_e^{i1p} + 2\, g_2^4\, \delta_{i1i2}\right) LF_{2,2,1,-2}\left[m_2, \tilde{\mu}, m_{\tilde{l}}^{i2}\right] +$$
$$\frac{1}{16}\, m_2\, g_2^2 \left(3\, s_\gamma\, \tilde{\mu}\, c_\gamma\, \overline{y_e}^{i2p}\, y_e^{i1p} + 2\, g_2^2\, (m_2 + 4\, s_\gamma\, \tilde{\mu}\, c_\gamma)\, \delta_{i1i2}\right) LF_{2,2,1,-1}\left[m_2, \tilde{\mu}, m_{\tilde{l}}^{i2}\right] +$$
$$\frac{1}{16}\, g_1^2\, c_\gamma^2\, \overline{y_e}^{i2p}\, y_e^{i1p}\, LF_{2,1,1,-1}\left[\tilde{\mu}, m_1, m_{\tilde{e}}^p\right] - \frac{1}{8}\, g_1^2\, s_\gamma^2\, \tilde{\mu}^2\, \overline{y_e}^{i2p}\, y_e^{i1p}\, LF_{2,1,1,0}\left[\tilde{\mu}, m_1, m_{\tilde{e}}^p\right] +$$
$$\frac{3}{16}\, g_1^2\, c_\gamma^2\, \overline{y_e}^{i2p}\, y_e^{i1p}\, LF_{2,1,1,-1}\left[\tilde{\mu}, m_1, m_{\tilde{l}}^{i1}\right] + \frac{1}{8}\, m_1\, s_\gamma\, \tilde{\mu}\, c_\gamma\, g_1^2\, \overline{y_e}^{i2p}\, y_e^{i1p}\, LF_{2,1,1,0}\left[\tilde{\mu}, m_1, m_{\tilde{l}}^{i1}\right] -$$
$$\frac{1}{8}\, g_1^2\, c_\gamma^2\, \overline{y_e}^{i2p}\, y_e^{i1p}\, LF_{3,1,1,-2}\left[\tilde{\mu}, m_1, m_{\tilde{l}}^{i1}\right] - \frac{1}{8}\, m_1\, s_\gamma\, \tilde{\mu}\, c_\gamma\, g_1^2\, \overline{y_e}^{i2p}\, y_e^{i1p}\, LF_{3,1,1,-1}\left[\tilde{\mu}, m_1, m_{\tilde{l}}^{i1}\right] +$$
$$\frac{3}{16}\, g_1^2\, c_\gamma^2\, \overline{y_e}^{i2p}\, y_e^{i1p}\, LF_{2,1,1,-1}\left[\tilde{\mu}, m_1, m_{\tilde{l}}^{i2}\right] + \frac{1}{8}\, m_1\, s_\gamma\, \tilde{\mu}\, c_\gamma\, g_1^2\, \overline{y_e}^{i2p}\, y_e^{i1p}\, LF_{2,1,1,0}\left[\tilde{\mu}, m_1, m_{\tilde{l}}^{i2}\right] -$$
$$\frac{1}{8}\, g_1^2\, c_\gamma^2\, \overline{y_e}^{i2p}\, y_e^{i1p}\, LF_{3,1,1,-2}\left[\tilde{\mu}, m_1, m_{\tilde{l}}^{i2}\right] - \frac{1}{8}\, m_1\, s_\gamma\, \tilde{\mu}\, c_\gamma\, g_1^2\, \overline{y_e}^{i2p}\, y_e^{i1p}\, LF_{3,1,1,-1}\left[\tilde{\mu}, m_1, m_{\tilde{l}}^{i2}\right] -$$
$$\frac{1}{16}\, g_2^2\, c_\gamma^2\, \overline{y_e}^{i2p}\, y_e^{i1p}\, LF_{2,1,1,-1}\left[\tilde{\mu}, m_2, m_{\tilde{e}}^p\right] + \frac{1}{8}\, g_2^2\, s_\gamma^2\, \tilde{\mu}^2\, \overline{y_e}^{i2p}\, y_e^{i1p}\, LF_{2,1,1,0}\left[\tilde{\mu}, m_2, m_{\tilde{e}}^p\right] -$$
$$\frac{9}{16}\, g_2^2\, c_\gamma^2\, \overline{y_e}^{i2p}\, y_e^{i1p}\, LF_{2,1,1,-1}\left[\tilde{\mu}, m_2, m_{\tilde{l}}^{i1}\right] - \frac{3}{8}\, m_2\, s_\gamma\, \tilde{\mu}\, c_\gamma\, g_2^2\, \overline{y_e}^{i2p}\, y_e^{i1p}\, LF_{2,1,1,0}\left[\tilde{\mu}, m_2, m_{\tilde{l}}^{i1}\right] +$$
$$\frac{3}{8}\, g_2^2\, c_\gamma^2\, \overline{y_e}^{i2p}\, y_e^{i1p}\, LF_{3,1,1,-2}\left[\tilde{\mu}, m_2, m_{\tilde{l}}^{i1}\right] + \frac{3}{8}\, m_2\, s_\gamma\, \tilde{\mu}\, c_\gamma\, g_2^2\, \overline{y_e}^{i2p}\, y_e^{i1p}\, LF_{3,1,1,-1}\left[\tilde{\mu}, m_2, m_{\tilde{l}}^{i1}\right] -$$
$$\frac{9}{16}\, g_2^2\, c_\gamma^2\, \overline{y_e}^{i2p}\, y_e^{i1p}\, LF_{2,1,1,-1}\left[\tilde{\mu}, m_2, m_{\tilde{l}}^{i2}\right] - \frac{3}{8}\, m_2\, s_\gamma\, \tilde{\mu}\, c_\gamma\, g_2^2\, \overline{y_e}^{i2p}\, y_e^{i1p}\, LF_{2,1,1,0}\left[\tilde{\mu}, m_2, m_{\tilde{l}}^{i2}\right] +$$
$$\frac{3}{8}\, g_2^2\, c_\gamma^2\, \overline{y_e}^{i2p}\, y_e^{i1p}\, LF_{3,1,1,-2}\left[\tilde{\mu}, m_2, m_{\tilde{l}}^{i2}\right] + \frac{3}{8}\, m_2\, s_\gamma\, \tilde{\mu}\, c_\gamma\, g_2^2\, \overline{y_e}^{i2p}\, y_e^{i1p}\, LF_{3,1,1,-1}\left[\tilde{\mu}, m_2, m_{\tilde{l}}^{i2}\right] +$$
$$\frac{1}{8}\, g_1^2\, g_2^2 \left(-c_\gamma^2 + s_\gamma^2\right) LF_{1,1,1,1,-1}\left[m_1, m_2, m_{\tilde{l}}^{i2}, \tilde{\mu}\right] \delta_{i1i2} +$$
$$\frac{1}{4}\, m_1\, m_2\, g_1^2\, g_2^2 \left(-c_\gamma^2 + s_\gamma^2\right) LF_{1,1,1,1,0}\left[m_1, m_2, m_{\tilde{l}}^{i2}, \tilde{\mu}\right] \delta_{i1i2} +$$
$$\frac{1}{16}\, g_1^2\, \overline{y_e}^{i2p}\, (m_1\, c_\gamma - s_\gamma\, \tilde{\mu}) \left(c_\gamma\, a_e^{i1p} - s_\gamma\, \tilde{\mu}\, y_e^{i1p}\right) LF_{1,1,1,1,0}\left[m_1, m_{\tilde{e}}^p, m_{\tilde{l}}^{i1}, \tilde{\mu}\right] +$$
$$\frac{1}{32}\, g_1^2\, \overline{y_e}^{i2p}\, (m_1\, c_\gamma + s_\gamma\, \tilde{\mu}) \left(c_\gamma\, a_e^{i1p} - s_\gamma\, \tilde{\mu}\, y_e^{i1p}\right) LF_{2,1,1,1,-1}\left[m_1, m_{\tilde{e}}^p, m_{\tilde{l}}^{i1}, \tilde{\mu}\right] +$$
$$\frac{1}{16}\, g_1^2\, y_e^{i1p}\, (m_1\, c_\gamma - s_\gamma\, \tilde{\mu}) \left(c_\gamma\, \overline{a_e}^{i2p} - s_\gamma\, \tilde{\mu}\, \overline{y_e}^{i2p}\right) LF_{1,1,1,1,0}\left[m_1, m_{\tilde{e}}^p, m_{\tilde{l}}^{i2}, \tilde{\mu}\right] +$$
$$\frac{1}{32}\, g_1^2\, y_e^{i1p}\, (m_1\, c_\gamma + s_\gamma\, \tilde{\mu}) \left(c_\gamma\, \overline{a_e}^{i2p} - s_\gamma\, \tilde{\mu}\, \overline{y_e}^{i2p}\right) LF_{2,1,1,1,-1}\left[m_1, m_{\tilde{e}}^p, m_{\tilde{l}}^{i2}, \tilde{\mu}\right] +$$
$$\frac{1}{16}\, g_2^2\, \overline{y_e}^{i2p}\, (m_2\, c_\gamma - s_\gamma\, \tilde{\mu}) \left(c_\gamma\, a_e^{i1p} - s_\gamma\, \tilde{\mu}\, y_e^{i1p}\right) LF_{1,1,1,1,0}\left[m_2, m_{\tilde{e}}^p, m_{\tilde{l}}^{i1}, \tilde{\mu}\right] +$$
$$\frac{1}{32}\, g_2^2\, \overline{y_e}^{i2p}\, (m_2\, c_\gamma + s_\gamma\, \tilde{\mu}) \left(c_\gamma\, a_e^{i1p} - s_\gamma\, \tilde{\mu}\, y_e^{i1p}\right) LF_{2,1,1,1,-1}\left[m_2, m_{\tilde{e}}^p, m_{\tilde{l}}^{i1}, \tilde{\mu}\right] +$$
$$\frac{1}{16}\, g_2^2\, y_e^{i1p}\, (m_2\, c_\gamma - s_\gamma\, \tilde{\mu}) \left(c_\gamma\, \overline{a_e}^{i2p} - s_\gamma\, \tilde{\mu}\, \overline{y_e}^{i2p}\right) LF_{1,1,1,1,0}\left[m_2, m_{\tilde{e}}^p, m_{\tilde{l}}^{i2}, \tilde{\mu}\right] +$$
$$\frac{1}{32}\, g_2^2\, y_e^{i1p}\, (m_2\, c_\gamma + s_\gamma\, \tilde{\mu}) \left(c_\gamma\, \overline{a_e}^{i2p} - s_\gamma\, \tilde{\mu}\, \overline{y_e}^{i2p}\right) LF_{2,1,1,1,-1}\left[m_2, m_{\tilde{e}}^p, m_{\tilde{l}}^{i2}, \tilde{\mu}\right] -$$
$$\frac{1}{32}\, g_1^2\, \overline{y_e}^{i2p}\, (m_1\, c_\gamma + s_\gamma\, \tilde{\mu}) \left(c_\gamma\, a_e^{i1p} - s_\gamma\, \tilde{\mu}\, y_e^{i1p}\right) LF_{2,1,1,1,-1}\left[m_{\tilde{e}}^p, m_1, m_{\tilde{l}}^{i1}, \tilde{\mu}\right] -$$
$$\frac{1}{16}\, g_1^2 \left(c_\gamma\, \overline{a_e}^{i2p} - s_\gamma\, \tilde{\mu}\, \overline{y_e}^{i2p}\right) \left(c_\gamma\, a_e^{i1p} - s_\gamma\, \tilde{\mu}\, y_e^{i1p}\right) LF_{2,1,1,1,-1}\left[m_{\tilde{e}}^p, m_1, m_{\tilde{l}}^{i2}, m_{\tilde{l}}^{i1}\right] -$$
$$\frac{1}{32}\, g_1^2\, y_e^{i1p}\, (m_1\, c_\gamma + s_\gamma\, \tilde{\mu}) \left(c_\gamma\, \overline{a_e}^{i2p} - s_\gamma\, \tilde{\mu}\, \overline{y_e}^{i2p}\right) LF_{2,1,1,1,-1}\left[m_{\tilde{e}}^p, m_1, m_{\tilde{l}}^{i2}, \tilde{\mu}\right] -$$
$$\frac{1}{32}\, g_2^2\, \overline{y_e}^{i2p}\, (m_2\, c_\gamma + s_\gamma\, \tilde{\mu}) \left(c_\gamma\, a_e^{i1p} - s_\gamma\, \tilde{\mu}\, y_e^{i1p}\right) LF_{2,1,1,1,-1}\left[m_{\tilde{e}}^p, m_2, m_{\tilde{l}}^{i1}, \tilde{\mu}\right] +$$
$$\frac{1}{16}\, g_2^2 \left(c_\gamma\, \overline{a_e}^{i2p} - s_\gamma\, \tilde{\mu}\, \overline{y_e}^{i2p}\right) \left(c_\gamma\, a_e^{i1p} - s_\gamma\, \tilde{\mu}\, y_e^{i1p}\right) LF_{2,1,1,1,-1}\left[m_{\tilde{e}}^p, m_2, m_{\tilde{l}}^{i2}, m_{\tilde{l}}^{i1}\right] -$$
$$\frac{1}{32}\, g_2^2\, y_e^{i1p}\, (m_2\, c_\gamma + s_\gamma\, \tilde{\mu}) \left(c_\gamma\, \overline{a_e}^{i2p} - s_\gamma\, \tilde{\mu}\, \overline{y_e}^{i2p}\right) LF_{2,1,1,1,-1}\left[m_{\tilde{e}}^p, m_2, m_{\tilde{l}}^{i2}, \tilde{\mu}\right] +$$
$$\frac{1}{32}\, g_1^2\, \overline{y_e}^{i2p}\, (m_1\, c_\gamma + s_\gamma\, \tilde{\mu}) \left(c_\gamma\, a_e^{i1p} - s_\gamma\, \tilde{\mu}\, y_e^{i1p}\right) LF_{2,1,1,1,-1}\left[m_{\tilde{l}}^{i1}, m_1, m_{\tilde{e}}^p, \tilde{\mu}\right] +$$
$$\frac{1}{32}\, g_2^2\, \overline{y_e}^{i2p}\, (m_2\, c_\gamma + s_\gamma\, \tilde{\mu}) \left(c_\gamma\, a_e^{i1p} - s_\gamma\, \tilde{\mu}\, y_e^{i1p}\right) LF_{2,1,1,1,-1}\left[m_{\tilde{l}}^{i1}, m_2, m_{\tilde{e}}^p, \tilde{\mu}\right] +$$
$$\frac{1}{32}\, g_1^2\, y_e^{i1p}\, (m_1\, c_\gamma + s_\gamma\, \tilde{\mu}) \left(c_\gamma\, \overline{a_e}^{i2p} - s_\gamma\, \tilde{\mu}\, \overline{y_e}^{i2p}\right) LF_{2,1,1,1,-1}\left[m_{\tilde{l}}^{i2}, m_1, m_{\tilde{e}}^p, \tilde{\mu}\right] +$$
$$\frac{1}{32}\, g_2^2\, y_e^{i1p}\, (m_2\, c_\gamma + s_\gamma\, \tilde{\mu}) \left(c_\gamma\, \overline{a_e}^{i2p} - s_\gamma\, \tilde{\mu}\, \overline{y_e}^{i2p}\right) LF_{2,1,1,1,-1}\left[m_{\tilde{l}}^{i2}, m_2, m_{\tilde{e}}^p, \tilde{\mu}\right] +$$
$$\frac{1}{8}\, g_1^2\, g_2^2 \left(-c_\gamma^2 + s_\gamma^2\right) LF_{2,1,1,1,-2}\left[\tilde{\mu}, m_1, m_2, m_{\tilde{l}}^{i2}\right] \delta_{i1i2} +$$
$$\frac{1}{8}\, m_1\, m_2\, g_1^2\, g_2^2 \left(c_\gamma^2 - s_\gamma^2\right) LF_{2,1,1,1,-1}\left[\tilde{\mu}, m_1, m_2, m_{\tilde{l}}^{i2}\right] \delta_{i1i2} -$$
$$\frac{1}{32}\, g_1^2\, \overline{y_e}^{i2p}\, (m_1\, c_\gamma + s_\gamma\, \tilde{\mu}) \left(c_\gamma\, a_e^{i1p} - s_\gamma\, \tilde{\mu}\, y_e^{i1p}\right) LF_{2,1,1,1,-1}\left[\tilde{\mu}, m_1, m_{\tilde{e}}^p, m_{\tilde{l}}^{i1}\right] -$$
$$\frac{1}{32}\, g_1^2\, y_e^{i1p}\, (m_1\, c_\gamma + s_\gamma\, \tilde{\mu}) \left(c_\gamma\, \overline{a_e}^{i2p} - s_\gamma\, \tilde{\mu}\, \overline{y_e}^{i2p}\right) LF_{2,1,1,1,-1}\left[\tilde{\mu}, m_1, m_{\tilde{e}}^p, m_{\tilde{l}}^{i2}\right] -$$
$$\frac{1}{32}\, g_2^2\, \overline{y_e}^{i2p}\, (m_2\, c_\gamma + s_\gamma\, \tilde{\mu}) \left(c_\gamma\, a_e^{i1p} - s_\gamma\, \tilde{\mu}\, y_e^{i1p}\right) LF_{2,1,1,1,-1}\left[\tilde{\mu}, m_2, m_{\tilde{e}}^p, m_{\tilde{l}}^{i1}\right] -$$
$$\frac{1}{32}\, g_2^2\, y_e^{i1p}\, (m_2\, c_\gamma + s_\gamma\, \tilde{\mu}) \left(c_\gamma\, \overline{a_e}^{i2p} - s_\gamma\, \tilde{\mu}\, \overline{y_e}^{i2p}\right) LF_{2,1,1,1,-1}\left[\tilde{\mu}, m_2, m_{\tilde{e}}^p, m_{\tilde{l}}^{i2}\right]\Big)$$