```
C_{\text{H }\square} \rightarrow \hbar \ \left( -\frac{3}{128} \, \frac{1}{m_{\text{B}}^{\, 2}} \, \mathsf{S_{4}}_{\, \gamma}^{\, 2} \, \left( \mathsf{g_{1}}^{\, 2} + \mathsf{g_{2}}^{\, 2} \right)^{\, 2} \, + \, \frac{1}{6} \, \mathsf{g_{2}}^{\, 4} \, \mathsf{LF_{3,0}} \left[ \, \mathsf{m_{2}} \, \right] \, + \, \frac{1}{4} \, \mathsf{g_{2}}^{\, 4} \, \mathsf{LF_{4,-1}} \left[ \, \mathsf{m_{2}} \, \right] \, - \, \frac{4}{15} \, \mathsf{g_{2}}^{\, 4} \, \mathsf{LF_{5,-2}} \left[ \, \mathsf{m_{2}} \, \right] \, + \, \frac{1}{4} \, \mathsf{g_{2}}^{\, 4} \, \mathsf{LF_{4,-1}} \left[ \, \mathsf{m_{2}} \, \right] \, - \, \frac{4}{15} \, \mathsf{g_{2}}^{\, 4} \, \mathsf{LF_{5,-2}} \left[ \, \mathsf{m_{2}} \, \right] \, + \, \frac{1}{4} \, \mathsf{g_{2}}^{\, 4} \, \mathsf{LF_{4,-1}} \left[ \, \mathsf{m_{2}} \, \right] \, - \, \frac{4}{15} \, \mathsf{g_{2}}^{\, 4} \, \mathsf{LF_{5,-2}} \left[ \, \mathsf{m_{2}} \, \right] \, + \, \frac{1}{4} \, \mathsf{g_{2}}^{\, 4} \, \mathsf{LF_{4,-1}} \left[ \, \mathsf{m_{2}} \, \right] \, - \, \frac{4}{15} \, \mathsf{g_{2}}^{\, 4} \, \mathsf{LF_{5,-2}} \left[ \, \mathsf{m_{2}} \, \right] \, + \, \frac{1}{4} \, \mathsf{g_{2}}^{\, 4} \, \mathsf{LF_{4,-1}} \left[ \, \mathsf{m_{2}} \, \right] \, + \, \frac{1}{15} \, \mathsf{g_{2}}^{\, 4} \, \mathsf{LF_{5,-2}} \left[ \, \mathsf{m_{2}} \, \right] \, + \, \frac{1}{15} \, \mathsf{g_{2}}^{\, 4} \, \mathsf{LF_{5,-2}} \left[ \, \mathsf{m_{2}} \, \right] \, + \, \frac{1}{15} \, \mathsf{g_{2}}^{\, 4} \, \mathsf{LF_{5,-2}} \left[ \, \mathsf{m_{2}} \, \right] \, + \, \frac{1}{15} \, \mathsf{g_{2}}^{\, 4} \, \mathsf{LF_{5,-2}} \left[ \, \mathsf{m_{2}} \, \right] \, + \, \frac{1}{15} \, \mathsf{g_{2}}^{\, 4} \, \mathsf{LF_{5,-2}} \left[ \, \mathsf{m_{2}} \, \right] \, + \, \frac{1}{15} \, \mathsf{g_{2}}^{\, 4} \, \mathsf{LF_{5,-2}} \left[ \, \mathsf{m_{2}} \, \right] \, + \, \frac{1}{15} \, \mathsf{g_{2}}^{\, 4} \, \mathsf{LF_{5,-2}} \left[ \, \mathsf{m_{2}} \, \right] \, + \, \frac{1}{15} \, \mathsf{g_{2}}^{\, 4} \, \mathsf{LF_{5,-2}} \left[ \, \mathsf{m_{2}} \, \right] \, + \, \frac{1}{15} \, \mathsf{g_{2}}^{\, 4} \, \mathsf{LF_{5,-2}} \left[ \, \mathsf{m_{2}} \, \right] \, + \, \frac{1}{15} \, \mathsf{g_{2}}^{\, 4} \, \mathsf{LF_{5,-2}} \left[ \, \mathsf{m_{2}} \, \right] \, + \, \frac{1}{15} \, \mathsf{g_{2}}^{\, 4} \, \mathsf{LF_{5,-2}} \left[ \, \mathsf{m_{2}} \, \right] \, + \, \frac{1}{15} \, \mathsf{g_{2}}^{\, 4} \, \mathsf{LF_{5,-2}} \left[ \, \mathsf{m_{2}} \, \right] \, + \, \frac{1}{15} \, \mathsf{g_{2}}^{\, 4} \, \mathsf{LF_{5,-2}} \left[ \, \mathsf{m_{2}} \, \right] \, + \, \frac{1}{15} \, \mathsf{g_{2}}^{\, 4} \, \mathsf{LF_{5,-2}} \left[ \, \mathsf{m_{2}} \, \right] \, + \, \frac{1}{15} \, \mathsf{g_{2}}^{\, 4} \, \mathsf{LF_{5,-2}} \left[ \, \mathsf{m_{2}} \, \right] \, + \, \frac{1}{15} \, \mathsf{g_{2}}^{\, 4} \, \mathsf{LF_{5,-2}} \left[ \, \mathsf{m_{2}} \, \right] \, + \, \frac{1}{15} \, \mathsf{g_{2}}^{\, 4} \, \mathsf{LF_{5,-2}} \left[ \, \mathsf{m_{2}} \, \right] \, + \, \frac{1}{15} \, \mathsf{g_{2}}^{\, 4} \, \mathsf{LF_{5,-2}} \left[ \, \mathsf{m_{2}} \, \right] \, + \, \frac{1}{15} \, \mathsf{m_{2}}^{\, 4} \, \mathsf{LF_{5,-2}} \left[ \, \mathsf{m_{2}} \, \right] \, + \, \frac{1}{15}
                                                                                                           \frac{1}{72} \sum_{p} g_{1}^{4} \left(4+9 c_{2 \gamma}^{2}\right) LF_{3,0} \left[m_{e}^{p}\right] - \frac{1}{48} \sum_{p} g_{1}^{4} \left(5+6 c_{2 \gamma}^{2}\right) LF_{4,-1} \left[m_{e}^{p}\right] + \frac{2}{45} \sum_{p} g_{1}^{4} LF_{5,-2} \left[m_{e}^{p}\right] - \frac{1}{48} \sum_{p} g_{1}^{4} LF_{5,-2} \left[m_{e}^{p}\right] + \frac{1}{48} \sum_{p} g_{1}^{4} LF_{5,-2} \left[m_{e}^{p}\right] - \frac{1}{48} LF_{5,-2} \left[m_{e}^{p}\right] + \frac{1}{48} LF_{5,-2} \left[m_{e
                                                                                                                                         c_{2\,\gamma}\,g_{1}^{\ 2}\,c_{\gamma}^{\ 2}\,\overline{y_{e}}^{pr}\,y_{e}^{\ pr}\,LF_{3,0}\!\left[m_{\tilde{e}}^{\ r}\right] + \frac{1}{2}\,c_{2\,\gamma}\,g_{1}^{\ 2}\,c_{\gamma}^{\ 2}\,\overline{y_{e}}^{pr}\,y_{e}^{\ pr}\,LF_{4,-1}\!\left[m_{\tilde{e}}^{\ r}\right] + \frac{1}{2}\,c_{2\,\gamma}\,g_{1}^{\ 2}\,c_{\gamma}^{\ 2}\,\overline{y_{e}}^{pr}\,y_{e}^{\ pr}\,h_{4,-1}\!\left[m_{\tilde{e}}^{\ r}\right] + \frac{1}{2}\,c_{2\,\gamma}\,g_{1}^{\ 2}\,c_{\gamma}^{\ 2}\,\overline{y_{e}}^{pr}\,y_{e}^{\ pr}\,h_{4,-1}\!\left[m_{\tilde{e}}^{\ r}\right] + \frac{1}{2}\,c_{2\,\gamma}\,g_{1}^{\ 2}\,g_{1}^{\ 2}\,g_{1}
                                                                                                           \frac{1}{144} \, \left(36 \, {c_{2}}_{\text{Y}} \, {c_{\text{Y}}}^2 \, \overline{y_e}^{\text{pr}} \, {y_e}^{\text{pr}} \, \left({g_1}^2 + {g_2}^2\right) \, + \\ \sum_{p} \, \left({g_1}^4 \, \left(4 + 9 \, {c_2}_{\text{Y}}^2\right) + 3 \, {g_2}^4 \, \left(4 - 3 \, {c_2}_{\text{Y}}^2\right)\right) \right) \, LF_{3,0} \left[ \, m_{\tilde{l}}^{\, p} \, \right] \, + \\ \sum_{p} \, \left( \, g_1^{\, 2} \, \left( \, 4 + 9 \, {c_2}_{\text{Y}}^2 \, \right) + 3 \, {g_2}^4 \, \left( \, 4 - 3 \, {c_2}_{\text{Y}}^2 \, \right) \right) \, LF_{3,0} \left[ \, m_{\tilde{l}}^{\, p} \, \right] \, + \\ \sum_{p} \, \left( \, g_1^{\, 2} \, \left( \, 4 + 9 \, {c_2}_{\text{Y}}^2 \, \right) + 3 \, {g_2}^4 \, \left( \, 4 - 3 \, {c_2}_{\text{Y}}^2 \, \right) \right) \, LF_{3,0} \left[ \, m_{\tilde{l}}^{\, p} \, \right] \, + \\ \sum_{p} \, \left( \, g_1^{\, 2} \, \left( \, 4 + 9 \, {c_2}_{\text{Y}}^2 \, \right) + 3 \, {g_2}^4 \, \left( \, 4 - 3 \, {c_2}_{\text{Y}}^2 \, \right) \right) \, LF_{3,0} \left[ \, m_{\tilde{l}}^{\, p} \, \right] \, + \\ \sum_{p} \, \left( \, g_1^{\, 2} \, \left( \, 4 - 3 \, {c_2}_{\text{Y}}^2 \, \right) + 3 \, {g_2}^4 \, \left( \, 4 - 3 \, {c_2}_{\text{Y}}^2 \, \right) \right) \, LF_{3,0} \left[ \, m_{\tilde{l}}^{\, p} \, \right] \, + \\ \sum_{p} \, \left( \, g_1^{\, 2} \, \left( \, 4 - 3 \, {c_2}_{\text{Y}}^2 \, \right) + 3 \, {g_2}^4 \, \left( \, 4 - 3 \, {c_2}_{\text{Y}}^2 \, \right) \right) \, LF_{3,0} \left[ \, m_{\tilde{l}}^{\, p} \, \right] \, + \\ \sum_{p} \, \left( \, g_1^{\, 2} \, \left( \, 4 - 3 \, {c_2}_{\text{Y}}^2 \, \right) + 3 \, {g_2}^4 \, \left( \, 4 - 3 \, {c_2}_{\text{Y}}^2 \, \right) \right) \, LF_{3,0} \left[ \, m_{\tilde{l}}^{\, p} \, \right] \, + \\ \sum_{p} \, \left( \, g_1^{\, 2} \, \left( \, g_1^{\, 2} \, \left( \, g_1^{\, 2} \, \right) + 3 \, {g_2}^2 \, \right) \, + \\ \sum_{p} \, \left( \, g_1^{\, 2} \, \left( \, g_1^{\, 2} \, \right) + 3 \, {g_2}^2 \, \right) \, + \\ \sum_{p} \, \left( \, g_1^{\, 2} \, \left( \, g_1^{\, 2} \, \left( \, g_1^{\, 2} \, \right) + 3 \, {g_2}^2 \, \right) \, + \\ \sum_{p} \, \left( \, g_1^{\, 2} \, \left( \, g_1^{\, 2} \, \right) + 3 \, {g_2}^2 \, \right) \, + \\ \sum_{p} \, \left( \, g_1^{\, 2} \, \left( \, g_1^{\, 2} \, \left( \, g_1^{\, 2} \, \right) + 3 \, {g_2}^2 \, \right) \, + \\ \sum_{p} \, \left( \, g_1^{\, 2} \, \left( \, g_1^{\, 2} \, \left( \, g_1^{\, 2} \, \right) + 3 \, {g_2}^2 \, \right) \, + \\ \sum_{p} \, \left( \, g_1^{\, 2} \, \left( \, g_1^{\, 2} \, \left( \, g_1^{\, 2} \, \right) + 3 \, {g_2}^2 \, \right) \, + \\ \sum_{p} \, \left( \, g_1^{\, 2} \, \left( \, g_1^{\, 2} \, \left( \, g_1^{\, 2} \, \right) + 3 \, {g_2}^2 \, \right) \, + \\ \sum_{p} \, \left( \, g_1^{\, 2} \, \left( \, g_1^{\, 2} \, \left( \, g_1^{\, 2} \, \right) + 3 \, {g_2}^2 \, \right) \, + \\ \sum_{p} \, \left( \, g_1^{\, 2} \, \right) + 3 \, {g_2}^2 \, \right) \right) \, + \\ \sum_{p} \, \left( \, g_1^{\, 2} \, \left(
                                                                                                           \left(-\frac{1}{4}\;c_{2\,\gamma}\;c_{\gamma}^{\;2}\,\overline{y_{e}}^{pr}\;y_{e}^{\;pr}\;\left(g_{1}^{\;2}+g_{2}^{\;2}\right)\;-\frac{1}{96}\;\sum_{p}\;\left(g_{1}^{\;4}\;\left(5+6\;c_{2\,\gamma}^{\;2}\right)+3\;g_{2}^{\;4}\;\left(5-2\;c_{2\,\gamma}^{\;2}\right)\right)\right)\;LF_{4,-1}\left[m_{\tilde{l}}^{\;p}\right]\;+\frac{1}{2}\left(g_{1}^{\;2}+g_{2}^{\;2}\right)\;\left(g_{1}^{\;2}+g_{2}^{\;2}\right)\;\left(g_{1}^{\;4}+g_{2}^{\;2}\right)\;\left(g_{1}^{\;4}+g_{2}^{\;2}\right)\;\left(g_{1}^{\;4}+g_{2}^{\;2}\right)\;\left(g_{1}^{\;4}+g_{2}^{\;2}\right)\;\left(g_{1}^{\;4}+g_{2}^{\;2}\right)\;\left(g_{1}^{\;4}+g_{2}^{\;2}\right)\;\left(g_{1}^{\;4}+g_{2}^{\;2}\right)\;\left(g_{1}^{\;4}+g_{2}^{\;2}\right)\;\left(g_{1}^{\;4}+g_{2}^{\;2}\right)\;\left(g_{1}^{\;4}+g_{2}^{\;2}\right)\;\left(g_{1}^{\;4}+g_{2}^{\;2}\right)\;\left(g_{1}^{\;4}+g_{2}^{\;2}\right)\;\left(g_{1}^{\;4}+g_{2}^{\;2}\right)\;\left(g_{1}^{\;4}+g_{2}^{\;2}\right)\;\left(g_{1}^{\;4}+g_{2}^{\;2}\right)\;\left(g_{1}^{\;4}+g_{2}^{\;2}\right)\;\left(g_{1}^{\;4}+g_{2}^{\;2}\right)\;\left(g_{1}^{\;4}+g_{2}^{\;2}\right)\;\left(g_{1}^{\;4}+g_{2}^{\;2}\right)\;\left(g_{1}^{\;4}+g_{2}^{\;2}\right)\;\left(g_{1}^{\;4}+g_{2}^{\;2}\right)\;\left(g_{1}^{\;4}+g_{2}^{\;2}\right)\;\left(g_{1}^{\;4}+g_{2}^{\;2}\right)\;\left(g_{1}^{\;4}+g_{2}^{\;2}\right)\;\left(g_{1}^{\;4}+g_{2}^{\;2}\right)\;\left(g_{1}^{\;4}+g_{2}^{\;2}\right)\;\left(g_{1}^{\;4}+g_{2}^{\;2}\right)\;\left(g_{1}^{\;4}+g_{2}^{\;2}\right)\;\left(g_{1}^{\;4}+g_{2}^{\;2}\right)\;\left(g_{1}^{\;4}+g_{2}^{\;2}\right)\;\left(g_{1}^{\;4}+g_{2}^{\;2}\right)\;\left(g_{1}^{\;4}+g_{2}^{\;2}\right)\;\left(g_{1}^{\;4}+g_{2}^{\;2}\right)\;\left(g_{1}^{\;4}+g_{2}^{\;2}\right)\;\left(g_{1}^{\;4}+g_{2}^{\;2}\right)\;\left(g_{1}^{\;4}+g_{2}^{\;2}\right)\;\left(g_{1}^{\;4}+g_{2}^{\;2}\right)\;\left(g_{1}^{\;4}+g_{2}^{\;2}\right)\;\left(g_{1}^{\;4}+g_{2}^{\;2}\right)\;\left(g_{1}^{\;4}+g_{2}^{\;2}\right)\;\left(g_{1}^{\;4}+g_{2}^{\;2}\right)\;\left(g_{1}^{\;4}+g_{2}^{\;2}\right)\;\left(g_{1}^{\;4}+g_{2}^{\;2}\right)\;\left(g_{1}^{\;4}+g_{2}^{\;2}\right)\;\left(g_{1}^{\;4}+g_{2}^{\;2}\right)\;\left(g_{1}^{\;4}+g_{2}^{\;2}\right)\;\left(g_{1}^{\;4}+g_{2}^{\;2}\right)\;\left(g_{1}^{\;4}+g_{2}^{\;2}\right)\;\left(g_{1}^{\;4}+g_{2}^{\;2}\right)\;\left(g_{1}^{\;4}+g_{2}^{\;2}\right)\;\left(g_{1}^{\;4}+g_{2}^{\;2}\right)\;\left(g_{1}^{\;4}+g_{2}^{\;2}\right)\;\left(g_{1}^{\;4}+g_{2}^{\;2}\right)\;\left(g_{1}^{\;4}+g_{2}^{\;2}\right)\;\left(g_{1}^{\;4}+g_{2}^{\;2}\right)\;\left(g_{1}^{\;4}+g_{2}^{\;2}\right)\;\left(g_{1}^{\;4}+g_{2}^{\;2}\right)\;\left(g_{1}^{\;4}+g_{2}^{\;2}\right)\;\left(g_{1}^{\;4}+g_{2}^{\;2}\right)\;\left(g_{1}^{\;4}+g_{2}^{\;2}\right)\;\left(g_{1}^{\;4}+g_{2}^{\;2}\right)\;\left(g_{1}^{\;4}+g_{2}^{\;2}\right)\;\left(g_{1}^{\;4}+g_{2}^{\;2}\right)\;\left(g_{1}^{\;4}+g_{2}^{\;2}\right)\;\left(g_{1}^{\;4}+g_{2}^{\;2}\right)\;\left(g_{1}^{\;4}+g_{2}^{\;2}\right)\;\left(g_{1}^{\;4}+g_{2}^{\;2}\right)\;\left(g_{1}^{\;4}+g_{2}^{\;2}\right)\;\left(g_{1}^{\;4}+g_{2}^
                                                                                                           \frac{1}{4} \; c_{2\,\gamma} \; s_{\gamma}^{\; 2} \; \overline{y_{u}}^{pr} \; y_{u}^{\; pr} \; \left( g_{1}^{\; 2} + 3 \; g_{2}^{\; 2} \right) \; + \; \frac{1}{432} \; \sum_{p} \; \left( g_{1}^{\; 4} \; \left( 4 + 9 \; c_{2\,\gamma}^{\; 2} \right) \; + \; 27 \; g_{2}^{\; 4} \; \left( 4 - 3 \; c_{2\,\gamma}^{\; 2} \right) \; \right) \; ds
                                                                                                                                      LF_{3,0}\left[m_{\tilde{q}}^{p}\right] + \left(\frac{1}{4}c_{2\gamma}\left(c_{\gamma}^{2}\overline{y_{d}}^{pr}y_{d}^{pr}\left(g_{1}^{2} - 3g_{2}^{2}\right) + s_{\gamma}^{2}\overline{y_{u}}^{pr}y_{u}^{pr}\left(g_{1}^{2} + 3g_{2}^{2}\right)\right) - \frac{1}{4}c_{2\gamma}\left(c_{\gamma}^{2}\overline{y_{d}}^{pr}y_{d}^{pr}y_{d}^{pr}\right) + \frac{1}{4}c_{2\gamma}\left(c_{\gamma}^{2}\overline{y_{d}}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}\right) + \frac{1}{4}c_{2\gamma}\left(c_{\gamma}^{2}\overline{y_{d}}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}\right) + \frac{1}{4}c_{2\gamma}\left(c_{\gamma}^{2}\overline{y_{d}}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y_{d}^{pr}y
                                                                                                                                                                                                         \frac{1}{288} \sum_{p} \left( g_{1}^{4} \left( 5 + 6 c_{2 \gamma}^{2} \right) + 27 g_{2}^{4} \left( 5 - 2 c_{2 \gamma}^{2} \right) \right) \right) LF_{4,-1} \left[ m_{\tilde{q}}^{-p} \right] +
                                                                                                           \frac{1}{135} \, \sum_{p} \, \left( g_{1}^{\,\,4} + 27 \, g_{2}^{\,\,4} \right) \, \, \text{LF}_{5,\,-2} \left[ \, m_{\tilde{q}}^{\,\,p} \, \right] \, + \, \frac{1}{54} \, \sum_{p} \, g_{1}^{\,\,4} \, \left( 4 + 9 \, c_{2 \,\,\gamma}^{\,\,2} \right) \, \, \text{LF}_{3,\,0} \left[ \, m_{\tilde{u}}^{\,\,p} \, \right] \, - \, \left( \, m_{\tilde{q}}^{\,\,p} \, m_{
                                                                                                           \frac{1}{36} \, \sum_{p} \, {g_{1}}^{4} \, \left(5 + 6 \, {c_{2}}_{\text{y}}^{\, 2}\right) \, LF_{4,-1}\!\left[\, m_{\tilde{u}}^{\, p}\right] \, + \, \frac{8}{135} \, \sum_{p} \, {g_{1}}^{4} \, LF_{5,-2}\!\left[\, m_{\tilde{u}}^{\, p}\right] \, + \, \frac{1}{12} \, \left[\, m_{\tilde{u}}^{\, p}\right] \, + \, \frac{1}{1
                                                                                                        c_{2\,\gamma}\,g_{1}^{\,\,2}\,\,s_{\gamma}^{\,\,2}\,\,\overline{y_{u}}^{pr}\,\,y_{u}^{\,\,pr}\,\,LF_{3,0}\left[\,m_{\tilde{u}}^{\,\,r}\,\right]\,-\,c_{2\,\gamma}\,g_{1}^{\,\,2}\,\,s_{\gamma}^{\,\,2}\,\,\overline{y_{u}}^{pr}\,\,y_{u}^{\,\,pr}\,\,LF_{4,-1}\!\left[\,m_{\tilde{u}}^{\,\,r}\,\right]\,+\,c_{2\,\gamma}\,g_{1}^{\,\,2}\,\,s_{\gamma}^{\,\,2}\,\,\overline{y_{u}}^{pr}\,\,y_{u}^{\,\,pr}\,\,LF_{4,-1}\!\left[\,m_{\tilde{u}}^{\,\,r}\,\right]\,+\,c_{2\,\gamma}\,g_{1}^{\,\,2}\,\,s_{\gamma}^{\,\,2}\,\,\overline{y_{u}}^{pr}\,\,y_{u}^{\,\,pr}\,\,LF_{4,-1}\!\left[\,m_{\tilde{u}}^{\,\,r}\,\right]\,+\,c_{2\,\gamma}\,g_{1}^{\,\,2}\,\,s_{\gamma}^{\,\,2}\,\,\overline{y_{u}}^{pr}\,\,y_{u}^{\,\,pr}\,\,LF_{4,-1}\!\left[\,m_{\tilde{u}}^{\,\,r}\,\right]\,+\,c_{2\,\gamma}\,g_{1}^{\,\,2}\,\,s_{\gamma}^{\,\,2}\,\,\overline{y_{u}}^{pr}\,\,y_{u}^{\,\,pr}\,\,LF_{4,-1}\!\left[\,m_{\tilde{u}}^{\,\,r}\,\right]\,+\,c_{2\,\gamma}\,g_{1}^{\,\,2}\,\,s_{\gamma}^{\,\,2}\,\,\overline{y_{u}}^{pr}\,\,y_{u}^{\,\,pr}\,\,LF_{4,-1}\!\left[\,m_{\tilde{u}}^{\,\,r}\,\right]\,+\,c_{2\,\gamma}\,g_{1}^{\,\,2}\,\,s_{\gamma}^{\,\,2}\,\,\overline{y_{u}}^{pr}\,\,y_{u}^{\,\,pr}\,\,z_{u}^{\,\,pr}\,\,z_{u}^{\,\,pr}\,\,z_{u}^{\,\,pr}\,\,z_{u}^{\,\,pr}\,\,z_{u}^{\,\,pr}\,\,z_{u}^{\,\,pr}\,\,z_{u}^{\,\,pr}\,\,z_{u}^{\,\,pr}\,\,z_{u}^{\,\,pr}\,\,z_{u}^{\,\,pr}\,\,z_{u}^{\,\,pr}\,\,z_{u}^{\,\,pr}\,\,z_{u}^{\,\,pr}\,\,z_{u}^{\,\,pr}\,\,z_{u}^{\,\,pr}\,\,z_{u}^{\,\,pr}\,z_{u}^{\,\,pr}\,z_{u}^{\,\,pr}\,\,z_{u}^{\,\,pr}\,\,z_{u}^{\,\,pr}\,\,z_{u}^{\,\,pr}\,z_{u}^{\,\,pr}\,z_{u}^{\,\,pr}\,z_{u}^{\,\,pr}\,z_{u}^{\,\,pr}\,z_{u}^{\,\,pr}\,z_{u}^{\,\,pr}\,z_{u}^{\,\,pr}\,z_{u}^{\,\,pr}\,z_{u}^{\,\,pr}\,z_{u}^{\,\,pr}\,z_{u}^{\,\,pr}\,z_{u}^{\,\,pr}\,z_{u}^{\,\,pr}\,z_{u}^{\,\,pr}\,z_{u}^{\,\,pr}\,z_{u}^{\,\,pr}\,z_{u}^{\,\,pr}\,z_{u}^{\,\,pr}\,z_{u}^{\,\,pr}\,z_{u}^{\,\,pr}\,z_{u}^{\,\,pr}\,z_{u}^{\,\,pr}\,z_{u}^{\,\,pr}\,z_{u}^{\,\,pr}\,z_{u}^{\,pr}\,z_{u}^{\,\,pr}\,z_{u}^{\,pr}\,z_{u}^{\,pr}\,z_{u}^{\,pr}\,z_{u}^{\,pr}\,z_{u}^{\,pr}\,z_{u}^{\,pr}\,z_{u}^{\,pr}\,z_{u}^{\,pr}\,z_{u}^{\,pr}\,z_{u}^{\,pr}\,z_{u}^{\,pr}\,z_{u}^{\,pr}\,z_{u}^{\,pr}\,z_{u}^{\,pr}\,z_{u}^{\,pr}\,z_{u}^{\,pr}\,z_{u}^{\,pr}\,z_{u}^{\,pr}\,z_{u}^{\,pr}\,z_{u}^{\,pr}\,z_{u}^{\,pr}\,z_{u}^{\,pr}\,z_{u}^{\,pr}\,z_{u}^{\,pr}\,z_{u}^{\,pr}\,z_{u}^{\,pr}\,z_{u}^{\,pr}\,z_{u}^{\,pr}\,z_{u}^{\,pr}\,z_{u}^{\,pr}\,z_{u}^{\,pr}\,z_{u}^{\,pr}\,z_{u}^{\,pr}\,z_{u}^{\,pr}\,z_{u}^{\,pr}\,z_{u}^{\,pr}\,z_{u}^{\,pr}\,z_{u}^{\,pr}\,z_{u}^{\,pr}\,z_{u}^{\,pr}\,z_{u}^{\,pr}\,z_{u}^{\,pr}\,z_{u}^{\,pr}\,z_{u}^{\,pr}\,z_{u}^{\,pr}\,z_{u}^{\,pr}\,z_{u}^{\,pr}\,z_{u}^{\,pr}\,z_{u}^{\,pr}\,z_{u}^{\,pr}\,z_{u}^{\,pr}\,z_{u}^{\,pr}\,z_{u}^{\,pr}\,z_{u}^{\,pr}\,z_{u}^{\,pr}\,z_{u}^{\,pr}\,z_{u}^{\,pr}
                                                                                                           \frac{1}{288} \ \left( g_{1}^{\ 4} \ \left( 8 + 9 \ c_{4\,\gamma} \ \left( 1 + c_{4\,\gamma} \right) \right. \right. \\ \left. - 9 \ s_{2\,\gamma}^{\ 4} \right) \ + 3 \ g_{2}^{\ 4} \ \left( 8 + 3 \ c_{4\,\gamma} \ \left( - 3 + c_{4\,\gamma} \right) \right. \\ \left. - 3 \ s_{2\,\gamma}^{\ 4} \right) \ + 3 \ g_{2}^{\ 4} \ \left( 8 + 3 \ c_{4\,\gamma} \ \left( - 3 + c_{4\,\gamma} \right) \right. \\ \left. - 3 \ s_{2\,\gamma}^{\ 4} \right) \ + 3 \ g_{2}^{\ 4} \ \left( 8 + 3 \ c_{4\,\gamma} \ \left( - 3 + c_{4\,\gamma} \right) \right) \ - 3 \ s_{2\,\gamma}^{\ 4} \right) \ + 3 \ g_{2}^{\ 4} \ \left( 8 + 3 \ c_{4\,\gamma} \ \left( - 3 + c_{4\,\gamma} \right) \right) \ - 3 \ s_{2\,\gamma}^{\ 4} \right) \ + 3 \ g_{2}^{\ 4} \ \left( 8 + 3 \ c_{4\,\gamma} \ \left( - 3 + c_{4\,\gamma} \right) \right) \ - 3 \ s_{2\,\gamma}^{\ 4} \right) \ + 3 \ g_{2}^{\ 4} \ \left( 8 + 3 \ c_{4\,\gamma} \ \left( - 3 + c_{4\,\gamma} \right) \right) \ - 3 \ s_{2\,\gamma}^{\ 4} \right) \ + 3 \ g_{2}^{\ 4} \ \left( 8 + 3 \ c_{4\,\gamma} \ \left( - 3 + c_{4\,\gamma} \right) \right) \ - 3 \ s_{2\,\gamma}^{\ 4} \right) \ + 3 \ g_{2}^{\ 4} \ \left( 8 + 3 \ c_{4\,\gamma} \ \left( - 3 + c_{4\,\gamma} \right) \right) \ - 3 \ s_{2\,\gamma}^{\ 4} \right) \ + 3 \ g_{2}^{\ 4} \ \left( 8 + 3 \ c_{4\,\gamma} \ \left( - 3 + c_{4\,\gamma} \right) \right) \ - 3 \ s_{2\,\gamma}^{\ 4} \right) \ + 3 \ g_{2}^{\ 4} \ \left( 8 + 3 \ c_{4\,\gamma} \ \left( - 3 + c_{4\,\gamma} \right) \right) \ - 3 \ s_{2\,\gamma}^{\ 4} \right) \ + 3 \ g_{2}^{\ 4} \ \left( 8 + 3 \ c_{4\,\gamma} \ \left( - 3 + c_{4\,\gamma} \right) \right) \ - 3 \ s_{2\,\gamma}^{\ 4} \right) \ + 3 \ g_{2}^{\ 4} \ \left( 8 + 3 \ c_{4\,\gamma} \ \left( - 3 + c_{4\,\gamma} \right) \right) \ - 3 \ s_{2\,\gamma}^{\ 4} \ + 3 \ c_{4\,\gamma}^{\ 4} \ \left( 8 + 3 + c_{4\,\gamma} \right) \ + 3 \ g_{2}^{\ 4} \ \left( 8 + 3 + c_{4\,\gamma} \right) \ + 3 \ g_{2}^{\ 4} \ \left( 8 + 3 + c_{4\,\gamma} \right) \ + 3 \ g_{2}^{\ 4} \ \left( 8 + 3 + c_{4\,\gamma} \right) \ + 3 \ g_{2}^{\ 4} \ \left( 8 + 3 + c_{4\,\gamma} \right) \ + 3 \ g_{2}^{\ 4} \ \left( 8 + 3 + c_{4\,\gamma} \right) \ + 3 \ g_{2}^{\ 4} \ \left( 8 + 3 + c_{4\,\gamma} \right) \ + 3 \ g_{2}^{\ 4} \ \left( 8 + 3 + c_{4\,\gamma} \right) \ + 3 \ g_{2}^{\ 4} \ \left( 8 + 3 + c_{4\,\gamma} \right) \ + 3 \ g_{2}^{\ 4} \ \left( 8 + 3 + c_{4\,\gamma} \right) \ + 3 \ g_{2}^{\ 4} \ \left( 8 + 3 + c_{4\,\gamma} \right) \ + 3 \ g_{2}^{\ 4} \ \left( 8 + 3 + c_{4\,\gamma} \right) \ + 3 \ g_{2}^{\ 4} \ \left( 8 + 3 + c_{4\,\gamma} \right) \ + 3 \ g_{2}^{\ 4} \ \left( 8 + 3 + c_{4\,\gamma} \right) \ + 3 \ g_{2}^{\ 4} \ \left( 8 + 3 + c_{4\,\gamma} \right) \ + 3 \ g_{2}^{\ 4} \ \left( 8 + 3 + c_{4\,\gamma} \right) \ + 3 \ g_{2}^{\ 4} \ \left( 8 + 3 + c_{4\,\gamma} \right) \ + 3 \ g_{2}^{\ 4} \ \left( 8 + 3 + c_{4\,\gamma} \right) \ + 3 \ g_{2}^{\ 4} \ \left( 8 + 3 + c_{4\,\gamma} \right) \ + 3 \ g
                                                                                                                                                                                                  18\;g_{1}^{\;2}\;g_{2}^{\;2}\;\left(c_{4\,\gamma}\;\left(-1+c_{4\,\gamma}\right)\;-s_{2\,\gamma}^{\;4}\right)\right)\;LF_{3,0}\left[\,m_{_{\overline{0}}}\,\right]\;+\frac{1}{96}\;\left(-\,g_{1}^{\;4}\;\left(5+3\;c_{4\,\gamma}\;\left(1+c_{4\,\gamma}\right)\;-3\;s_{2\,\gamma}^{\;4}\right)\;+1\right)
                                                                                                                                                                                                  3\;{g_{2}}^{4}\;\left(-\,5\,-\,{c_{4}}_{\curlyvee}\;\left(-\,3\,+\,{c_{4}}_{\curlyvee}\right)\;+\,{s_{2}}_{\curlyvee}^{\;4}\right)\,+\,6\;{g_{1}}^{2}\;{g_{2}}^{2}\;\left(\,{c_{4}}_{\curlyvee}\,-\,{c_{4}}_{\curlyvee}^{\;2}\,+\,{s_{2}}_{\curlyvee}^{\;4}\right)\,\right)\;LF_{4,\,-1}\left[\,{m_{\Phi}}\,\right]\;+\,2\,\left(\,{c_{4}}_{\curlyvee}\,-\,{c_{4}}_{\curlyvee}^{\;2}\,+\,{s_{2}}_{\curlyvee}^{\;4}\right)\,
                                                                                                           \frac{1}{45} \left( \mathsf{g_1}^4 + \mathsf{3} \; \mathsf{g_2}^4 \right) \; \mathsf{LF_{5,-2}} \left[ \mathsf{m}_{\scriptscriptstyle{\overline{\Phi}}} \right] \; + \; \frac{1}{36} \; \left( \mathsf{g_1}^4 + \mathsf{3} \; \mathsf{g_2}^4 \right) \; \mathsf{LF_{3,0}} \left[ \widetilde{\mu} \right] \; + \; \frac{1}{24} \; \left( \mathsf{g_1}^4 + \mathsf{3} \; \mathsf{g_2}^4 \right) \; \mathsf{LF_{4,-1}} \left[ \widetilde{\mu} \right] \; - \; \mathsf{I} \; \mathsf{I
                                                                                                               \frac{2}{45} \left( \mathsf{g_1}^4 + 3 \; \mathsf{g_2}^4 \right) \; \mathsf{LF_{5,-2}} \left[ \tilde{\mu} \right] \; + \; \frac{1}{8} \; \mathsf{g_1}^4 \; \left( 2 \; \mathsf{c_{\gamma}}^4 + 3 \; \mathsf{s_{\gamma}}^2 \; \mathsf{c_{\gamma}}^2 + 2 \; \mathsf{s_{\gamma}}^4 \right) \; \mathsf{LF_{2,2,-1}} \left[ \; \mathsf{m_1} \; , \; \tilde{\mu} \right] \; + \; \mathsf{m_2} \; \mathsf{m_3} \; \mathsf{m_2}^2 \; \mathsf{m_3}^2 \; \mathsf{
                                                                                                                   \frac{1}{8} \, \mathsf{m_1} \, \mathsf{g_1}^4 \, \left( \mathsf{m_1} \, \left( \mathsf{c_{\scriptscriptstyle Y}}^4 + \mathsf{s_{\scriptscriptstyle Y}}^4 \right) + 4 \, \mathsf{s_{\scriptscriptstyle Y}} \, \widetilde{\mu} \, \mathsf{c_{\scriptscriptstyle Y}} \, \left( \mathsf{c_{\scriptscriptstyle Y}}^2 + \mathsf{s_{\scriptscriptstyle Y}}^2 \right) \right) \, \mathsf{LF_{2,2,0}} \left[ \, \mathsf{m_1} \, , \, \, \widetilde{\mu} \, \right] \, - \, \mathsf{m_2} \, \mathsf{m_3} \, \mathsf{m_4} \, \mathsf{m_4} \, \mathsf{m_5} \, \mathsf{m_
                                                                                                           \frac{1}{2} g_1^4 LF_{3,2,-2}[m_1, \tilde{\mu}] (c_{\gamma}^2 + s_{\gamma}^2)^2 +
                                                                                                               \frac{3}{8} \; g_{1}^{\; 4} \; \left( -\, m_{1}^{\; 2} \; \left( \, c_{\gamma}^{\; 2} + \, s_{\gamma}^{\; 2} \, \right)^{\, 2} - 8 \; m_{1} \; s_{\gamma} \; \widetilde{\mu} \; c_{\gamma} \; \left( \, c_{\gamma}^{\; 2} + \, s_{\gamma}^{\; 2} \, \right) \; - 4 \; s_{\gamma}^{\; 2} \; \widetilde{\mu}^{2} \; c_{\gamma}^{\; 2} \right) \; \mathsf{LF}_{3,2,-1} \left[ \, m_{1} \, , \; \widetilde{\mu} \, \right] \; - 2 \; m_{1} \; m_{2} \; \widetilde{\mu}^{2} \; m_{2}^{\; 2} \; \widetilde{\mu}^{2} \; \widetilde{
                                                                                                        g_{1}{}^{4}\;m_{1}{}^{2}\;s_{\gamma}{}^{2}\;\tilde{\mu}^{2}\;c_{\gamma}{}^{2}\;\mathsf{LF}_{3,2,0}\left[\,m_{1}\,,\;\tilde{\mu}\,\right]\;+\;\frac{1}{4}\;g_{1}{}^{4}\;\mathsf{LF}_{3,3,-3}\left[\,m_{1}\,,\;\tilde{\mu}\,\right]\;\left(\,c_{\gamma}{}^{2}\;+\;s_{\gamma}{}^{2}\,\right)^{\,2}\;+\;\frac{1}{4}\;g_{1}{}^{4}\;\mathsf{LF}_{3,3,-3}\left[\,m_{1}\,,\;\tilde{\mu}\,\right]\;\left(\,c_{\gamma}{}^{2}\;+\;s_{\gamma}{}^{2}\,\right)^{\,2}\;+\;\frac{1}{4}\;g_{1}{}^{4}\;\mathsf{LF}_{3,3,-3}\left[\,m_{1}\,,\;\tilde{\mu}\,\right]\;\left(\,c_{\gamma}{}^{2}\;+\;s_{\gamma}{}^{2}\,\right)^{\,2}\;+\;\frac{1}{4}\;g_{1}{}^{4}\;\mathsf{LF}_{3,3,-3}\left[\,m_{1}\,,\;\tilde{\mu}\,\right]\;\left(\,c_{\gamma}{}^{2}\;+\;s_{\gamma}{}^{2}\,\right)^{\,2}\;+\;\frac{1}{4}\;g_{1}{}^{4}\;\mathsf{LF}_{3,3,-3}\left[\,m_{1}\,,\;\tilde{\mu}\,\right]\;\left(\,c_{\gamma}{}^{2}\;+\;s_{\gamma}{}^{2}\,\right)^{\,2}\;+\;\frac{1}{4}\;g_{1}{}^{4}\;\mathsf{LF}_{3,3,-3}\left[\,m_{1}\,,\;\tilde{\mu}\,\right]\;\left(\,c_{\gamma}{}^{2}\;+\;s_{\gamma}{}^{2}\,\right)^{\,2}\;+\;\frac{1}{4}\;g_{1}{}^{4}\;\mathsf{LF}_{3,3,-3}\left[\,m_{1}\,,\;\tilde{\mu}\,\right]\;\left(\,c_{\gamma}{}^{2}\;+\;s_{\gamma}{}^{2}\,\right)^{\,2}\;+\;\frac{1}{4}\;g_{1}{}^{4}\;\mathsf{LF}_{3,3,-3}\left[\,m_{1}\,,\;\tilde{\mu}\,\right]\;\left(\,c_{\gamma}{}^{2}\;+\;s_{\gamma}{}^{2}\,\right)^{\,2}\;+\;\frac{1}{4}\;g_{1}{}^{4}\;\mathsf{LF}_{3,3,-3}\left[\,m_{1}\,,\;\tilde{\mu}\,\right]\;\left(\,c_{\gamma}{}^{2}\;+\;s_{\gamma}{}^{2}\,\right)^{\,2}\;+\;\frac{1}{4}\;g_{1}{}^{4}\;\mathsf{LF}_{3,3,-3}\left[\,m_{1}\,,\;\tilde{\mu}\,\right]\;\left(\,c_{\gamma}{}^{2}\;+\;s_{\gamma}{}^{2}\,\right)^{\,2}\;+\;\frac{1}{4}\;g_{1}{}^{4}\;\mathsf{LF}_{3,3,-3}\left[\,m_{1}\,,\;\tilde{\mu}\,\right]\;\left(\,c_{\gamma}{}^{2}\;+\;s_{\gamma}{}^{2}\,\right)^{\,2}\;+\;\frac{1}{4}\;g_{1}{}^{2}\;\mathsf{LF}_{3,3,-3}\left[\,m_{1}\,,\;\tilde{\mu}\,\right]\;\left(\,c_{\gamma}{}^{2}\;+\;s_{\gamma}{}^{2}\,\right)^{\,2}\;+\;\frac{1}{4}\;g_{1}{}^{2}\;\mathsf{LF}_{3,3,-3}\left[\,m_{1}\,,\;\tilde{\mu}\,\right]\;\left(\,c_{\gamma}{}^{2}\;+\;s_{\gamma}{}^{2}\,\right)^{\,2}\;+\;\frac{1}{4}\;g_{1}{}^{2}\;\mathsf{LF}_{3,3,-3}\left[\,m_{1}\,,\;\tilde{\mu}\,\right]\;\left(\,c_{\gamma}{}^{2}\;+\;s_{\gamma}{}^{2}\,\right)^{\,2}\;+\;\frac{1}{4}\;g_{1}{}^{2}\;+\;s_{\gamma}{}^{2}\;+\;s_{\gamma}{}^{2}\;+\;s_{\gamma}{}^{2}\;+\;s_{\gamma}{}^{2}\;+\;s_{\gamma}{}^{2}\;+\;s_{\gamma}{}^{2}\;+\;s_{\gamma}{}^{2}\;+\;s_{\gamma}{}^{2}\;+\;s_{\gamma}{}^{2}\;+\;s_{\gamma}{}^{2}\;+\;s_{\gamma}{}^{2}\;+\;s_{\gamma}{}^{2}\;+\;s_{\gamma}{}^{2}\;+\;s_{\gamma}{}^{2}\;+\;s_{\gamma}{}^{2}\;+\;s_{\gamma}{}^{2}\;+\;s_{\gamma}{}^{2}\;+\;s_{\gamma}{}^{2}\;+\;s_{\gamma}{}^{2}\;+\;s_{\gamma}{}^{2}\;+\;s_{\gamma}{}^{2}\;+\;s_{\gamma}{}^{2}\;+\;s_{\gamma}{}^{2}\;+\;s_{\gamma}{}^{2}\;+\;s_{\gamma}{}^{2}\;+\;s_{\gamma}{}^{2}\;+\;s_{\gamma}{}^{2}\;+\;s_{\gamma}{}^{2}\;+\;s_{\gamma}{}^{2}\;+\;s_{\gamma}{}^{2}\;+\;s_{\gamma}{}^{2}\;+\;s_{\gamma}{}^{2}\;+\;s_{\gamma}{}^{2}\;+\;s_{\gamma}{}^{2}\;+\;s_{\gamma}{}^{2}\;+\;s_{\gamma}{}^{2}\;+\;s_{\gamma}{}^{2}\;+\;s_{\gamma}{}^{2}\;+\;s_{\gamma}{}^{2}\;+\;s_{\gamma}{}^{2}\;+\;s_{\gamma}{}^{2}\;+\;s_{\gamma}{}^{2}\;+\;s_{\gamma}{}^{2}\;+\;s_{\gamma}{}^{2}\;+\;s_{\gamma}{}^{2}\;+\;s_{\gamma}{}^{2}\;+
                                                                                                           \frac{1}{4} \; {g_{1}}^{4} \; \left( {m_{1}}^{2} \; \left( {c_{\gamma}}^{2} + {s_{\gamma}}^{2} \right)^{2} + 8 \; m_{1} \; s_{\gamma} \; \widetilde{\mu} \; c_{\gamma} \; \left( {c_{\gamma}}^{2} + {s_{\gamma}}^{2} \right) \right. \\ \left. + 4 \; {s_{\gamma}}^{2} \; \widetilde{\mu}^{2} \; {c_{\gamma}}^{2} \right) \; \mathsf{LF}_{3,3,-2} \left[ m_{1} \; , \; \widetilde{\mu} \right] \; + \left. \left( {c_{\gamma}}^{2} + {s_{\gamma}}^{2} \right) \; + \left. {c_{\gamma}}^{2} \; \widetilde{\mu}^{2} \; {c_{\gamma}}^{2} \right) \; \mathsf{LF}_{3,3,-2} \left[ m_{1} \; , \; \widetilde{\mu} \right] \; + \left. \left( {c_{\gamma}}^{2} + {s_{\gamma}}^{2} \right) \; + \left. {c_{\gamma}}^{2} \; \widetilde{\mu}^{2} \; \widetilde{\mu}^{2} \right] \; + \left. {c_{\gamma}}^{2} \; \widetilde{\mu}^{2} \; \widetilde{\mu}^{2} \; \widetilde{\mu}^{2} \right] \; + \left. \left( {c_{\gamma}}^{2} + {c_{\gamma}}^{2} \right) \; + \left. {c_{\gamma}}^{2} \; \widetilde{\mu}^{2} \; \widetilde{\mu}^{2} \; \widetilde{\mu}^{2} \right] \; + \left. {c_{\gamma}}^{2} \; \widetilde{\mu}^{2} \; \widetilde{\mu}^{
                                                                                                        g_{1}{}^{4}\,m_{1}{}^{2}\,s_{\gamma}{}^{2}\,\widetilde{\mu}^{2}\,c_{\gamma}{}^{2}\,\mathsf{LF}_{3,3,-1}[\,m_{1},\,\widetilde{\mu}\,]\,+\,\frac{1}{4}\,g_{1}{}^{4}\,\mathsf{LF}_{4,2,-3}[\,m_{1},\,\widetilde{\mu}\,]\,\left(c_{\gamma}{}^{2}\,+\,s_{\gamma}{}^{2}\right)^{2}\,+\,\frac{1}{4}\,g_{1}{}^{4}\,\mathsf{LF}_{4,2,-3}[\,m_{1},\,\widetilde{\mu}\,]\,\left(c_{\gamma}{}^{2}\,+\,s_{\gamma}{}^{2}\right)^{2}\,+\,\frac{1}{4}\,g_{1}{}^{4}\,\mathsf{LF}_{4,2,-3}[\,m_{1},\,\widetilde{\mu}\,]\,\left(c_{\gamma}{}^{2}\,+\,s_{\gamma}{}^{2}\right)^{2}\,+\,\frac{1}{4}\,g_{1}{}^{4}\,\mathsf{LF}_{4,2,-3}[\,m_{1},\,\widetilde{\mu}\,]\,\left(c_{\gamma}{}^{2}\,+\,s_{\gamma}{}^{2}\right)^{2}\,+\,\frac{1}{4}\,g_{1}{}^{4}\,\mathsf{LF}_{4,2,-3}[\,m_{1},\,\widetilde{\mu}\,]\,\left(c_{\gamma}{}^{2}\,+\,s_{\gamma}{}^{2}\right)^{2}\,+\,\frac{1}{4}\,g_{1}{}^{4}\,\mathsf{LF}_{4,2,-3}[\,m_{1},\,\widetilde{\mu}\,]\,\left(c_{\gamma}{}^{2}\,+\,s_{\gamma}{}^{2}\right)^{2}\,+\,\frac{1}{4}\,g_{1}{}^{4}\,\mathsf{LF}_{4,2,-3}[\,m_{1},\,\widetilde{\mu}\,]\,\left(c_{\gamma}{}^{2}\,+\,s_{\gamma}{}^{2}\right)^{2}\,+\,\frac{1}{4}\,g_{1}{}^{4}\,\mathsf{LF}_{4,2,-3}[\,m_{1},\,\widetilde{\mu}\,]\,\left(c_{\gamma}{}^{2}\,+\,s_{\gamma}{}^{2}\right)^{2}\,+\,\frac{1}{4}\,g_{1}{}^{4}\,\mathsf{LF}_{4,2,-3}[\,m_{1},\,\widetilde{\mu}\,]\,\left(c_{\gamma}{}^{2}\,+\,s_{\gamma}{}^{2}\right)^{2}\,+\,\frac{1}{4}\,g_{1}{}^{2}\,\mathsf{LF}_{4,2,-3}[\,m_{1},\,\widetilde{\mu}\,]\,\left(c_{\gamma}{}^{2}\,+\,s_{\gamma}{}^{2}\right)^{2}\,+\,\frac{1}{4}\,g_{1}{}^{2}\,\mathsf{LF}_{4,2,-3}[\,m_{1},\,\widetilde{\mu}\,]\,\left(c_{\gamma}{}^{2}\,+\,s_{\gamma}{}^{2}\right)^{2}\,+\,\frac{1}{4}\,g_{1}{}^{2}\,\mathsf{LF}_{4,2,-3}[\,m_{1},\,\widetilde{\mu}\,]\,\left(c_{\gamma}{}^{2}\,+\,s_{\gamma}{}^{2}\right)^{2}\,+\,\frac{1}{4}\,g_{1}{}^{2}\,\mathsf{LF}_{4,2,-3}[\,m_{1},\,\widetilde{\mu}\,]\,\left(c_{\gamma}{}^{2}\,+\,s_{\gamma}{}^{2}\right)^{2}\,+\,\frac{1}{4}\,g_{1}{}^{2}\,\mathsf{LF}_{4,2,-3}[\,m_{1},\,\widetilde{\mu}\,]\,\left(c_{\gamma}{}^{2}\,+\,s_{\gamma}{}^{2}\right)^{2}\,+\,\frac{1}{4}\,g_{1}{}^{2}\,\mathsf{LF}_{4,2,-3}[\,m_{1},\,\widetilde{\mu}\,]\,\left(c_{\gamma}{}^{2}\,+\,s_{\gamma}{}^{2}\right)^{2}\,+\,\frac{1}{4}\,g_{1}{}^{2}\,\mathsf{LF}_{4,2,-3}[\,m_{1},\,\widetilde{\mu}\,]\,\left(c_{\gamma}{}^{2}\,+\,s_{\gamma}{}^{2}\right)^{2}\,+\,\frac{1}{4}\,g_{1}{}^{2}\,\mathsf{LF}_{4,2,-3}[\,m_{1},\,\widetilde{\mu}\,]\,\left(c_{\gamma}{}^{2}\,+\,s_{\gamma}{}^{2}\right)^{2}\,+\,\frac{1}{4}\,g_{1}{}^{2}\,\mathsf{LF}_{4,2,-3}[\,m_{1},\,\widetilde{\mu}\,]\,\left(c_{\gamma}{}^{2}\,+\,s_{\gamma}{}^{2}\right)^{2}\,+\,\frac{1}{4}\,g_{1}{}^{2}\,\mathsf{LF}_{4,2,-3}[\,m_{1},\,\widetilde{\mu}\,]\,\left(c_{\gamma}{}^{2}\,+\,s_{\gamma}{}^{2}\right)^{2}\,+\,\frac{1}{4}\,g_{1}{}^{2}\,+\,\frac{1}{4}\,g_{1}{}^{2}\,+\,\frac{1}{4}\,g_{1}{}^{2}\,+\,\frac{1}{4}\,g_{1}{}^{2}\,+\,\frac{1}{4}\,g_{1}{}^{2}\,+\,\frac{1}{4}\,g_{1}{}^{2}\,+\,\frac{1}{4}\,g_{1}{}^{2}\,+\,\frac{1}{4}\,g_{1}{}^{2}\,+\,\frac{1}{4}\,g_{1}{}^{2}\,+\,\frac{1}{4}\,g_{1}{}^{2}\,+\,\frac{1}{4}\,g_{1}{}^{2}\,+\,\frac{1}{4}\,g_{1}{}^{2}\,+\,\frac{1}{4}\,g_{1}{}^{2}\,+\,\frac{1}{4}\,g_{1}{}^{2}\,+\,\frac{1}{4}\,g_{1}
                                                                                                           \frac{1}{4} \; g_{1}^{\; 4} \; \left(m_{1}^{\; 2} \; \left(c_{\gamma}^{\; 2} + s_{\gamma}^{\; 2}\right)^{\; 2} + 8 \; m_{1} \; s_{\gamma} \; \widetilde{\mu} \; c_{\gamma} \; \left(c_{\gamma}^{\; 2} + s_{\gamma}^{\; 2}\right) + 4 \; s_{\gamma}^{\; 2} \; \widetilde{\mu}^{2} \; c_{\gamma}^{\; 2}\right) \; \mathsf{LF}_{4,2,-2} \left[m_{1} \; , \; \widetilde{\mu} \; \right] \; + 2 \; \mathsf{LF}_{4,2,-2} \left[m_{1} \; , \; \widetilde{\mu} \; \right] \; + 2 \; \mathsf{LF}_{4,2,-2} \left[m_{1} \; , \; \widetilde{\mu} \; \right] \; + 2 \; \mathsf{LF}_{4,2,-2} \left[m_{1} \; , \; \widetilde{\mu} \; \right] \; + 2 \; \mathsf{LF}_{4,2,-2} \left[m_{1} \; , \; \widetilde{\mu} \; \right] \; + 2 \; \mathsf{LF}_{4,2,-2} \left[m_{1} \; , \; \widetilde{\mu} \; \right] \; + 2 \; \mathsf{LF}_{4,2,-2} \left[m_{1} \; , \; \widetilde{\mu} \; \right] \; + 2 \; \mathsf{LF}_{4,2,-2} \left[m_{1} \; , \; \widetilde{\mu} \; \right] \; + 2 \; \mathsf{LF}_{4,2,-2} \left[m_{1} \; , \; \widetilde{\mu} \; \right] \; + 2 \; \mathsf{LF}_{4,2,-2} \left[m_{1} \; , \; \widetilde{\mu} \; \right] \; + 2 \; \mathsf{LF}_{4,2,-2} \left[m_{1} \; , \; \widetilde{\mu} \; \right] \; + 2 \; \mathsf{LF}_{4,2,-2} \left[m_{1} \; , \; \widetilde{\mu} \; \right] \; + 2 \; \mathsf{LF}_{4,2,-2} \left[m_{1} \; , \; \widetilde{\mu} \; \right] \; + 2 \; \mathsf{LF}_{4,2,-2} \left[m_{1} \; , \; \widetilde{\mu} \; \right] \; + 2 \; \mathsf{LF}_{4,2,-2} \left[m_{1} \; , \; \widetilde{\mu} \; \right] \; + 2 \; \mathsf{LF}_{4,2,-2} \left[m_{1} \; , \; \widetilde{\mu} \; \right] \; + 2 \; \mathsf{LF}_{4,2,-2} \left[m_{1} \; , \; \widetilde{\mu} \; \right] \; + 2 \; \mathsf{LF}_{4,2,-2} \left[m_{1} \; , \; \widetilde{\mu} \; \right] \; + 2 \; \mathsf{LF}_{4,2,-2} \left[m_{1} \; , \; \widetilde{\mu} \; \right] \; + 2 \; \mathsf{LF}_{4,2,-2} \left[m_{1} \; , \; \widetilde{\mu} \; \right] \; + 2 \; \mathsf{LF}_{4,2,-2} \left[m_{1} \; , \; \widetilde{\mu} \; \right] \; + 2 \; \mathsf{LF}_{4,2,-2} \left[m_{1} \; , \; \widetilde{\mu} \; \right] \; + 2 \; \mathsf{LF}_{4,2,-2} \left[m_{1} \; , \; \widetilde{\mu} \; \right] \; + 2 \; \mathsf{LF}_{4,2,-2} \left[m_{1} \; , \; \widetilde{\mu} \; \right] \; + 2 \; \mathsf{LF}_{4,2,-2} \left[m_{1} \; , \; \widetilde{\mu} \; \right] \; + 2 \; \mathsf{LF}_{4,2,-2} \left[m_{1} \; , \; \widetilde{\mu} \; \right] \; + 2 \; \mathsf{LF}_{4,2,-2} \left[m_{1} \; , \; \widetilde{\mu} \; \right] \; + 2 \; \mathsf{LF}_{4,2,-2} \left[m_{1} \; , \; \widetilde{\mu} \; \right] \; + 2 \; \mathsf{LF}_{4,2,-2} \left[m_{1} \; , \; \widetilde{\mu} \; \right] \; + 2 \; \mathsf{LF}_{4,2,-2} \left[m_{1} \; , \; \widetilde{\mu} \; \right] \; + 2 \; \mathsf{LF}_{4,2,-2} \left[m_{1} \; , \; \widetilde{\mu} \; \right] \; + 2 \; \mathsf{LF}_{4,2,-2} \left[m_{1} \; , \; \widetilde{\mu} \; \right] \; + 2 \; \mathsf{LF}_{4,2,-2} \left[m_{1} \; , \; \widetilde{\mu} \; \right] \; + 2 \; \mathsf{LF}_{4,2,-2} \left[m_{1} \; , \; \widetilde{\mu} \; \right] \; + 2 \; \mathsf{LF}_{4,2,-2} \left[m_{1} \; , \; \widetilde{\mu} \; \right] \; + 2 \; \mathsf{LF}_{4,2,-2} \left[m_{1} \; , \; \widetilde{\mu} \; \right] \; + 2 \; \mathsf{LF}_{4,2,-2} \left[m_{1} \; , \; \widetilde{\mu} \; \right] \; + 2 \; \mathsf{LF}_{4,2,-2} \left[m_{1} \; , \; \widetilde{\mu} \; \right] \; + 2 \; \mathsf{LF}_{4,2,-2} \left[m_{1} \; , \; \widetilde{\mu} \; \right] \; + 2 \; \mathsf{LF}_{4,2,-2} \left[m_{1
                                                                                                        g_1^4 m_1^2 s_\gamma^2 \tilde{\mu}^2 c_\gamma^2 LF_{4,2,-1}[m_1, \tilde{\mu}] - g_2^4 (c_\gamma^2 + s_\gamma^2) LF_{2,1,0}[m_2, \tilde{\mu}] +
                                                                                                           \frac{1}{8}~g_{2}^{~4}~\left(4~c_{\gamma}^{~4}+4~s_{\gamma}^{~2}~\left(-2+s_{\gamma}^{~2}\right)~+c_{\gamma}^{~2}~\left(-8+19~s_{\gamma}^{~2}\right)\right)~\mathsf{LF}_{2,2,-1}\left[\,\mathsf{m}_{2}\,,~\widetilde{\mu}\,\right]~+
                                                                                                                                         \mathsf{m_2} \; \mathsf{g_2}^4 \; \left( \mathsf{m_2} \; \left( \mathsf{c_{\gamma}}^4 - 8 \; \mathsf{s_{\gamma}}^2 \; \mathsf{c_{\gamma}}^2 + \mathsf{s_{\gamma}}^4 \right) \; + \; 4 \; \mathsf{s_{\gamma}} \; \widetilde{\mu} \; \mathsf{c_{\gamma}} \; \left( - \; 4 \; + \; 3 \; \mathsf{c_{\gamma}}^2 \; + \; 3 \; \mathsf{s_{\gamma}}^2 \right) \right) \; \mathsf{LF_{2,2,0}} \left[ \; \mathsf{m_2} \; , \; \widetilde{\mu} \; \right] \; + \; \mathsf{m_2} \; \mathsf{m_2} \; \left( \mathsf{m_2} \; \left( \mathsf{c_{\gamma}}^4 - \mathsf{s_{\gamma}}^4 + \mathsf{s_{\gamma}}^4 \right) + \; \mathsf{s_{\gamma}} \; \widetilde{\mu} \; \mathsf{c_{\gamma}} \; \right) \; \mathsf{c_{\gamma}} \; \left( \mathsf{c_{\gamma}}^4 - \mathsf{s_{\gamma}}^4 + \mathsf{s_{\gamma}}^4 \right) \; + \; \mathsf{s_{\gamma}} \; \widetilde{\mu} \; \mathsf{c_{\gamma}} \; \left( \mathsf{c_{\gamma}}^4 - \mathsf{s_{\gamma}}^4 + \mathsf{s_{\gamma}}^4 \right) \; + \; \mathsf{s_{\gamma}} \; \widetilde{\mu} \; \mathsf{c_{\gamma}} \; \left( \mathsf{c_{\gamma}}^4 - \mathsf{s_{\gamma}}^4 + \mathsf{s_{\gamma}}^4 \right) \; + \; \mathsf{s_{\gamma}} \; \widetilde{\mu} \; \mathsf{c_{\gamma}} \; \mathsf{c_{\gamma}} \; \left( \mathsf{c_{\gamma}}^4 - \mathsf{s_{\gamma}}^4 + \mathsf{s_{\gamma}}^4 \right) \; + \; \mathsf{s_{\gamma}} \; \widetilde{\mu} \; \mathsf{c_{\gamma}} \; \mathsf{c_{\gamma}}
                                                                                                               \frac{1}{2} \; g_{2}^{\; 4} \; \left( c_{\gamma}^{\; 2} + s_{\gamma}^{\; 2} \right) \; \mathsf{LF}_{3,1,-1} \left[ \, \mathsf{m}_{2} \, , \; \widetilde{\mu} \, \right] \; - \; \frac{1}{2} \; g_{2}^{\; 4} \; \left( \, c_{\gamma}^{\; 4} - s_{\gamma}^{\; 2} + s_{\gamma}^{\; 4} + c_{\gamma}^{\; 2} \; \left( - \, 1 + \, \mathsf{10} \; s_{\gamma}^{\; 2} \right) \right) \; \mathsf{LF}_{3,2,-2} \left[ \, \mathsf{m}_{2} \, , \; \widetilde{\mu} \, \right] \; + \; \mathsf{m}_{3}^{\; 2} \; \left( \, c_{\gamma}^{\; 4} - s_{\gamma}^{\; 2} + s_{\gamma}^{\; 4} + c_{\gamma}^{\; 2} \right) \; \mathsf{LF}_{3,2,-2} \left[ \, \mathsf{m}_{2} \, , \; \widetilde{\mu} \, \right] \; + \; \mathsf{LF}_{3,2,-2} \left[ \, \mathsf{m}_{2} \, , \; \widetilde{\mu} \, \right] \; + \; \mathsf{LF}_{3,2,-2} \left[ \, \mathsf{m}_{2} \, , \; \widetilde{\mu} \, \right] \; + \; \mathsf{LF}_{3,2,-2} \left[ \, \mathsf{m}_{2} \, , \; \widetilde{\mu} \, \right] \; + \; \mathsf{LF}_{3,2,-2} \left[ \, \mathsf{m}_{2} \, , \; \widetilde{\mu} \, \right] \; + \; \mathsf{LF}_{3,2,-2} \left[ \, \mathsf{m}_{2} \, , \; \widetilde{\mu} \, \right] \; + \; \mathsf{LF}_{3,2,-2} \left[ \, \mathsf{m}_{2} \, , \; \widetilde{\mu} \, \right] \; + \; \mathsf{LF}_{3,2,-2} \left[ \, \mathsf{m}_{2} \, , \; \widetilde{\mu} \, \right] \; + \; \mathsf{LF}_{3,2,-2} \left[ \, \mathsf{m}_{2} \, , \; \widetilde{\mu} \, \right] \; + \; \mathsf{LF}_{3,2,-2} \left[ \, \mathsf{m}_{2} \, , \; \widetilde{\mu} \, \right] \; + \; \mathsf{LF}_{3,2,-2} \left[ \, \mathsf{m}_{2} \, , \; \widetilde{\mu} \, \right] \; + \; \mathsf{LF}_{3,2,-2} \left[ \, \mathsf{m}_{2} \, , \; \widetilde{\mu} \, \right] \; + \; \mathsf{LF}_{3,2,-2} \left[ \, \mathsf{m}_{2} \, , \; \widetilde{\mu} \, \right] \; + \; \mathsf{LF}_{3,2,-2} \left[ \, \mathsf{m}_{2} \, , \; \widetilde{\mu} \, \right] \; + \; \mathsf{LF}_{3,2,-2} \left[ \, \mathsf{m}_{2} \, , \; \widetilde{\mu} \, \right] \; + \; \mathsf{LF}_{3,2,-2} \left[ \, \mathsf{m}_{2} \, , \; \widetilde{\mu} \, \right] \; + \; \mathsf{LF}_{3,2,-2} \left[ \, \mathsf{m}_{2} \, , \; \widetilde{\mu} \, \right] \; + \; \mathsf{LF}_{3,2,-2} \left[ \, \mathsf{m}_{2} \, , \; \widetilde{\mu} \, \right] \; + \; \mathsf{LF}_{3,2,-2} \left[ \, \mathsf{m}_{2} \, , \; \widetilde{\mu} \, \right] \; + \; \mathsf{LF}_{3,2,-2} \left[ \, \mathsf{m}_{2} \, , \; \widetilde{\mu} \, \right] \; + \; \mathsf{LF}_{3,2,-2} \left[ \, \mathsf{m}_{2} \, , \; \widetilde{\mu} \, \right] \; + \; \mathsf{LF}_{3,2,-2} \left[ \, \mathsf{m}_{2} \, , \; \widetilde{\mu} \, \right] \; + \; \mathsf{LF}_{3,2,-2} \left[ \, \mathsf{m}_{2} \, , \; \widetilde{\mu} \, \right] \; + \; \mathsf{LF}_{3,2,-2} \left[ \, \mathsf{m}_{2} \, , \; \widetilde{\mu} \, \right] \; + \; \mathsf{LF}_{3,2,-2} \left[ \, \mathsf{m}_{2} \, , \; \widetilde{\mu} \, \right] \; + \; \mathsf{LF}_{3,2,-2} \left[ \, \mathsf{m}_{2} \, , \; \widetilde{\mu} \, \right] \; + \; \mathsf{LF}_{3,2,-2} \left[ \, \mathsf{m}_{2} \, , \; \widetilde{\mu} \, \right] \; + \; \mathsf{LF}_{3,2,-2} \left[ \, \mathsf{m}_{2} \, , \; \widetilde{\mu} \, \right] \; + \; \mathsf{LF}_{3,2,-2} \left[ \, \mathsf{m}_{2} \, , \; \widetilde{\mu} \, \right] \; + \; \mathsf{LF}_{3,2,-2} \left[ \, \mathsf{m}_{2} \, , \; \widetilde{\mu} \, \right] \; + \; \mathsf{LF}_{3,2,-2} \left[ \, \mathsf{m}_{2} \, , \; \widetilde{\mu} \, \right] \; + \; \mathsf{LF}_{3,2,-2} \left[ \, \mathsf{m}_{2} \, , \; \widetilde{\mu} \, \right] \; + \; \mathsf{LF}_{3,2,-2} \left[ \, \mathsf{m}_{2} \, , \; \widetilde{\mu} \, \right] 
                                                                                                               \frac{1}{8} \; {g_{2}}^{4} \; \left(-\, 3 \; {m_{2}}^{2} \; \left(5 \; {c_{\gamma}}^{4} + 2 \; {s_{\gamma}}^{2} \; {c_{\gamma}}^{2} + 5 \; {s_{\gamma}}^{4}\right) \; - \; 8 \; {m_{2}} \; {s_{\gamma}} \; \widetilde{\mu} \; {c_{\gamma}} \; \left(-\, 1 + 9 \; {c_{\gamma}}^{2} + 9 \; {s_{\gamma}}^{2}\right) \; - \; 36 \; {s_{\gamma}}^{2} \; \widetilde{\mu}^{2} \; {c_{\gamma}}^{2}\right) \; + \; 36 \; {s_{\gamma}}^{2} \; \widetilde{\mu}^{2} \; {c_{\gamma}}^{2} \; \widetilde{\mu}^{2} 
                                                                                                                                  LF_{3,2,-1}[m_2, \tilde{\mu}] - 3 g_2^4 m_2^2 s_Y^2 \tilde{\mu}^2 c_Y^2 LF_{3,2,0}[m_2, \tilde{\mu}] +
                                                                                                               \frac{1}{4} g_2^4 (c_{\gamma}^4 + 10 s_{\gamma}^2 c_{\gamma}^2 + s_{\gamma}^4) LF_{3,3,-3}[m_2, \tilde{\mu}] +
                                                                                                           \frac{1}{4}~g_{2}^{~4}~\left(m_{2}^{~2}~\left(5~c_{\gamma}^{~4}+2~s_{\gamma}^{~2}~c_{\gamma}^{~2}+5~s_{\gamma}^{~4}\right)\right.\\ \left.+24~m_{2}~s_{\gamma}~\widetilde{\mu}~c_{\gamma}~\left(c_{\gamma}^{~2}+s_{\gamma}^{~2}\right)\right.\\ \left.+12~s_{\gamma}^{~2}~\widetilde{\mu}^{2}~c_{\gamma}^{~2}\right)~LF_{3,3,-2}\left[m_{2}~,~\widetilde{\mu}\right]\right.\\ \left.+24~m_{2}~s_{\gamma}~\widetilde{\mu}~c_{\gamma}~\left(c_{\gamma}^{~2}+s_{\gamma}^{~2}\right)\right.\\ \left.+12~s_{\gamma}^{~2}~\widetilde{\mu}^{2}~c_{\gamma}^{~2}\right)~LF_{3,3,-2}\left[m_{2}~,~\widetilde{\mu}\right]\right.\\ \left.+24~m_{2}~s_{\gamma}~\widetilde{\mu}~c_{\gamma}~\left(c_{\gamma}^{~2}+s_{\gamma}^{~2}\right)\right.\\ \left.+24~m_{2}~s_{\gamma}^{~2}~c_{\gamma}^{~2}\right)
                                                                                                    3\; {g_{2}}^{4}\; {m_{2}}^{2}\; {s_{\gamma}}^{2}\; \tilde{\mu}^{2}\; {c_{\gamma}}^{2}\; \mathsf{LF_{3,3,-1}}[\; {m_{2}}\;,\; \tilde{\mu}\;]\; + \frac{1}{4}\; {g_{2}}^{4}\; \left(\; {c_{\gamma}}^{4}\; + \; 10\; {s_{\gamma}}^{2}\; {c_{\gamma}}^{2}\; + \; {s_{\gamma}}^{4}\;\right)\; \mathsf{LF_{4,2,-3}}[\; {m_{2}}\;,\; \tilde{\mu}\;]\; + \frac{1}{4}\; {g_{2}}^{4}\; \left(\; {c_{\gamma}}^{4}\; + \; 10\; {s_{\gamma}}^{2}\; {c_{\gamma}}^{2}\; + \; {s_{\gamma}}^{4}\;\right)\; \mathsf{LF_{4,2,-3}}[\; {m_{2}}\;,\; \tilde{\mu}\;]\; + \frac{1}{4}\; {g_{2}}^{4}\; \left(\; {c_{\gamma}}^{4}\; + \; 10\; {s_{\gamma}}^{2}\; {c_{\gamma}}^{2}\; + \; {s_{\gamma}}^{4}\;\right)\; \mathsf{LF_{4,2,-3}}[\; {m_{2}}\;,\; \tilde{\mu}\;]\; + \frac{1}{4}\; {g_{2}}^{4}\; \left(\; {c_{\gamma}}^{4}\; + \; 10\; {s_{\gamma}}^{2}\; {c_{\gamma}}^{2}\; + \; {s_{\gamma}}^{4}\;\right)\; \mathsf{LF_{4,2,-3}}[\; {m_{2}}\;,\; \tilde{\mu}\;]\; + \frac{1}{4}\; {g_{2}}^{4}\; \left(\; {c_{\gamma}}^{4}\; + \; 10\; {s_{\gamma}}^{2}\; {c_{\gamma}}^{2}\; + \; {s_{\gamma}}^{4}\;\right)\; \mathsf{LF_{4,2,-3}}[\; {m_{2}}\;,\; \tilde{\mu}\;]\; + \frac{1}{4}\; {g_{2}}^{4}\; \left(\; {c_{\gamma}}^{4}\; + \; 10\; {s_{\gamma}}^{2}\; + \; {s_{\gamma}}^{4}\;\right)\; \mathsf{LF_{4,2,-3}}[\; {m_{2}}\;,\; \tilde{\mu}\;]\; + \frac{1}{4}\; {g_{2}}^{4}\; \left(\; {c_{\gamma}}^{4}\; + \; 10\; {s_{\gamma}}^{2}\; + \; {s_{\gamma}}^{4}\;\right)\; \mathsf{LF_{4,2,-3}}[\; {m_{2}}\;,\; \tilde{\mu}\;]\; + \frac{1}{4}\; {g_{2}}^{4}\; \left(\; {c_{\gamma}}^{4}\; + \; 10\; {s_{\gamma}}^{2}\; + \; {s_{\gamma}}^{4}\;\right)\; \mathsf{LF_{4,2,-3}}[\; {m_{2}}\;,\; \tilde{\mu}\;]\; + \frac{1}{4}\; {g_{2}}^{4}\; \left(\; {c_{\gamma}}^{4}\; + \; 10\; {s_{\gamma}}^{2}\; + \; {s_{\gamma}}^{4}\;\right)\; \mathsf{LF_{4,2,-3}}[\; {m_{2}}\;,\; \tilde{\mu}\;]\; + \frac{1}{4}\; {g_{2}}^{4}\; + \; {s_{\gamma}}^{4}\; + \; {s_{\gamma}
                                                                                                               \frac{1}{4} \; {g_{2}}^{4} \; \left( {m_{2}}^{2} \; \left( 5 \; {c_{\gamma}}^{4} + 2 \; {s_{\gamma}}^{2} \; {c_{\gamma}}^{2} + 5 \; {s_{\gamma}}^{4} \right) \; + \; 24 \; {m_{2}} \; {s_{\gamma}} \; \widetilde{\mu} \; {c_{\gamma}} \; \left( {c_{\gamma}}^{2} + {s_{\gamma}}^{2} \right) \; + \; 12 \; {s_{\gamma}}^{2} \; \widetilde{\mu}^{2} \; {c_{\gamma}}^{2} \right) \; LF_{4,2,-2} \left[ \, {m_{2}} \, , \; \widetilde{\mu} \, \right] \; + \; 12 \; {s_{\gamma}}^{2} \; \widetilde{\mu}^{2} \; {c_{\gamma}}^{2} \; \widetilde{\mu}^{2} \; {c_{\gamma}}^{2} \; \widetilde{\mu}^{2} \;
                                                                                                    3\;{g_{2}}^{4}\;{m_{2}}^{2}\;{s_{\gamma}}^{2}\;\tilde{\mu}^{2}\;{c_{\gamma}}^{2}\;LF_{4,2,-1}[\,m_{2}\,,\,\tilde{\mu}\,]\;+\frac{3}{2}\;{c_{\gamma}}^{4}\;\overline{y_{d}}^{pr}\;\overline{y_{d}}^{st}\;y_{d}^{pt}\;y_{d}^{sr}\;LF_{2,1,0}\big[\,m_{\tilde{d}}^{\,\,r}\,,\,m_{\tilde{d}}^{\,\,t}\,\big]\;-\frac{3}{2}\;{c_{\gamma}}^{4}\;\overline{y_{d}}^{pr}\;\overline{y_{d}}^{st}\;y_{d}^{pt}\;y_{d}^{sr}\;LF_{2,1,0}\big[\,m_{\tilde{d}}^{\,\,r}\,,\,m_{\tilde{d}}^{\,\,r}\,\big]\;-\frac{3}{2}\;{c_{\gamma}}^{4}\;\overline{y_{d}}^{pr}\;\overline{y_{d}}^{sr}\;y_{d}^{pr}\;y_{d}^{sr}\;LF_{2,1,0}\big[\,m_{\tilde{d}}^{\,\,r}\,,\,m_{\tilde{d}}^{\,\,r}\,\big]\;
                                                                                                           \frac{3}{2} c_{\Upsilon}^{4} \overline{y_{d}}^{pr} \overline{y_{d}}^{st} y_{d}^{pt} y_{d}^{sr} LF_{3,1,-1} [m_{\tilde{d}}^{r}, m_{\tilde{d}}^{t}] +
                                                                                                               \frac{1}{6} \ g_{1}^{2} \ \left(c_{\curlyvee} \ \overline{a_{d}}^{pr} - s_{\curlyvee} \ \widetilde{\mu} \ \overline{y_{d}}^{pr}\right) \ \left(c_{\curlyvee} \ a_{d}^{pr} - s_{\curlyvee} \ \widetilde{\mu} \ y_{d}^{pr}\right) \ LF_{2,2,9} \left[m_{\tilde{d}}^{-r}, \ m_{\tilde{q}}^{-p}\right] - \left(c_{\curlyvee} \ a_{d}^{pr} - s_{\curlyvee} \ \widetilde{\mu} \ y_{d}^{pr}\right) \ LF_{2,2,9} \left[m_{\tilde{d}}^{-r}, \ m_{\tilde{q}}^{-p}\right] - \left(c_{\curlyvee} \ a_{d}^{pr} - s_{\curlyvee} \ \widetilde{\mu} \ y_{d}^{pr}\right) \ LF_{2,2,9} \left[m_{\tilde{d}}^{-r}, \ m_{\tilde{q}}^{-p}\right] - \left(c_{\curlyvee} \ a_{d}^{pr} - s_{\curlyvee} \ \widetilde{\mu} \ y_{d}^{pr}\right) \ LF_{2,2,9} \left[m_{\tilde{d}}^{-r}, \ m_{\tilde{q}}^{-p}\right] - \left(c_{\curlyvee} \ a_{d}^{pr} - s_{\curlyvee} \ \widetilde{\mu} \ y_{d}^{pr}\right) \ LF_{2,2,9} \left[m_{\tilde{d}}^{-r}, \ m_{\tilde{q}}^{-p}\right] - \left(c_{\curlyvee} \ a_{d}^{pr} - s_{\curlyvee} \ \widetilde{\mu} \ y_{d}^{pr}\right) \ LF_{2,2,9} \left[m_{\tilde{d}}^{-r}, \ m_{\tilde{q}}^{-p}\right] - \left(c_{\curlyvee} \ a_{d}^{pr} - s_{\curlyvee} \ \widetilde{\mu} \ y_{d}^{pr}\right) \ LF_{2,2,9} \left[m_{\tilde{d}}^{-r}, \ m_{\tilde{q}}^{pr}\right] - \left(c_{\curlyvee} \ a_{d}^{pr} - s_{\curlyvee} \ \widetilde{\mu} \ y_{d}^{pr}\right) \ LF_{2,2,9} \left[m_{\tilde{d}}^{-r}, \ m_{\tilde{q}}^{pr}\right] - \left(c_{\curlyvee} \ a_{d}^{pr} - s_{\curlyvee} \ \widetilde{\mu} \ y_{d}^{pr}\right) \ LF_{2,2,9} \left[m_{\tilde{d}}^{pr} - s_{\r} \ \widetilde{\mu} \ y_{d}^{pr}\right] - \left(c_{\curlyvee} \ a_{d}^{pr} - s_{\r} \ \widetilde{\mu} \ y_{d}^{pr}\right) \ LF_{2,2,9} \left[m_{\tilde{d}}^{pr} - s_{\r} \ \widetilde{\mu} \ y_{d}^{pr}\right] - \left(c_{\curlyvee} \ a_{d}^{pr} - s_{\r} \ \widetilde{\mu} \ y_{d}^{pr}\right) \ LF_{2,2,9} \left[m_{\tilde{d}}^{pr} - s_{\r} \ \widetilde{\mu} \ y_{d}^{pr}\right] - \left(c_{\H} \ a_{d}^{pr} - s_{\r} \ \widetilde{\mu} \ y_{d}^{pr}\right] - \left(c_{\H} \ a_{d}^{pr} - s_{\r} \ \widetilde{\mu} \ y_{d}^{pr}\right) \ LF_{2,2,2,9} \left[m_{\tilde{d}}^{pr} - s_{\r} \ \widetilde{\mu} \ y_{d}^{pr}\right] - \left(c_{\H} \ a_{d}^{pr} - s_{\r} \ \widetilde{\mu} \ y_{d}^{pr}\right) - \left(c_{\H} \ a_{d}^{pr} - s_{\r} \ \widetilde{\mu} \ y_{d}^{pr}\right) \ LF_{2,2,2,9} \left[m_{\tilde{d}}^{pr} - s_{\r} \ \widetilde{\mu} \ y_{d}^{pr}\right] - \left(c_{\H} \ a_{d}^{pr} - s_{\r} \ \widetilde{\mu} \ y_{d}^{pr}\right) - \left(c_{\H} \ a_{d}^{pr} - s_{\r} \ \widetilde{\mu} \ y_{d}^{pr}\right) - \left(c_{\H} \ a_{d}^{pr} - s_{\r} \ \widetilde{\mu} \ y_{d}^{pr}\right) - \left(c_{\H} \ a_{d}^{pr} - s_{\r} \ \widetilde{\mu} \ y_{d}^{pr}\right) - \left(c_{\H} \ a_{d}^{pr} - s_{\r} \ \widetilde{\mu} \ y_{d}^{pr}\right) - \left(c_{\H} \ a_{d}^{pr} - s_{\r} \ \widetilde{\mu} \ y_{d}^{pr}\right) - \left(c_{\H} \ a_{d}^{pr} - s_{\r} \ \widetilde{\mu} \ y_{d}^{pr}\right) - \left(c_{\H} \ a_{d}^{pr} - s_{\r} \ \widetilde{\mu} \ y_{d}^{pr}\right) - \left(c_{\H} \ a_{d}^{pr} - s_{\r} \ \widetilde{\mu} \ y_{d}^{pr}\right) - \left(c_{\H} 
                                                                                                                                                 c_{2\,\gamma}\,g_{1}^{\ 2}\,\left(c_{\gamma}\,\overline{a_{d}}^{pr}-s_{\gamma}\,\widetilde{\mu}\,\overline{y_{d}}^{pr}\right)\,\left(c_{\gamma}\,a_{d}^{pr}-s_{\gamma}\,\widetilde{\mu}\,y_{d}^{pr}\right)\,LF_{3,1,0}\left[m_{\tilde{d}}^{\ r},\,m_{\tilde{q}}^{\ p}\right]\,+\,c_{2\,\gamma}\,g_{1}^{\ 2}\,\left(c_{\gamma}\,\overline{a_{d}}^{pr}-s_{\gamma}\,\widetilde{\mu}\,y_{d}^{pr}\right)\,LF_{3,1,0}\left[m_{\tilde{d}}^{\ r},\,m_{\tilde{q}}^{\ p}\right]\,+\,c_{2\,\gamma}\,g_{1}^{\ 2}\,\left(c_{\gamma}\,\overline{a_{d}}^{pr}-s_{\gamma}\,\widetilde{\mu}\,y_{d}^{pr}\right)\,LF_{3,1,0}\left[m_{\tilde{d}}^{\ r},\,m_{\tilde{q}}^{\ p}\right]\,+\,c_{2\,\gamma}\,g_{1}^{\ 2}\,g_{1}^{\ 2}\,g_{1}^{
                                                                                                                                                                g_1^2 \left(-1 + 3 c_2\right) \left(c_{\gamma} \overline{a_d}^{pr} - s_{\gamma} \widetilde{\mu} \overline{y_d}^{pr}\right) \left(c_{\gamma} a_d^{pr} - s_{\gamma} \widetilde{\mu} y_d^{pr}\right) LF_{3,2,-1}\left[m_{\tilde{d}}^{r}, m_{\tilde{q}}^{p}\right] + c_{\gamma}^2 \left(-1 + 3 c_2\right) \left(c_{\gamma} a_d^{pr} - s_{\gamma} \widetilde{\mu} y_d^{pr}\right) LF_{3,2,-1}\left[m_{\tilde{d}}^{r}, m_{\tilde{q}}^{p}\right] + c_{\gamma}^2 \left(-1 + 3 c_2\right) \left(c_{\gamma} a_d^{pr} - s_{\gamma} \widetilde{\mu} y_d^{pr}\right) LF_{3,2,-1}\left[m_{\tilde{d}}^{r}, m_{\tilde{q}}^{p}\right] + c_{\gamma}^2 \left(-1 + 3 c_2\right) \left(c_{\gamma} a_d^{pr} - s_{\gamma} \widetilde{\mu} y_d^{pr}\right) LF_{3,2,-1}\left[m_{\tilde{d}}^{r}, m_{\tilde{q}}^{p}\right] + c_{\gamma}^2 \left(-1 + 3 c_2\right) \left(c_{\gamma} a_d^{pr} - s_{\gamma} \widetilde{\mu} y_d^{pr}\right) LF_{3,2,-1}\left[m_{\tilde{d}}^{r}, m_{\tilde{q}}^{p}\right] + c_{\gamma}^2 \left(-1 + 3 c_2\right) \left(c_{\gamma} a_d^{pr} - s_{\gamma} \widetilde{\mu} y_d^{pr}\right) LF_{3,2,-1}\left[m_{\tilde{d}}^{r}, m_{\tilde{q}}^{p}\right] + c_{\gamma}^2 \left(-1 + 3 c_2\right) \left(c_{\gamma} a_d^{pr} - s_{\gamma} \widetilde{\mu} y_d^{pr}\right) LF_{3,2,-1}\left[m_{\tilde{d}}^{r}, m_{\tilde{q}}^{p}\right] + c_{\gamma}^2 \left(-1 + 3 c_2\right) \left(c_{\gamma} a_d^{pr} - s_{\gamma} \widetilde{\mu} y_d^{pr}\right) LF_{3,2,-1}\left[m_{\tilde{d}}^{r}, m_{\tilde{q}}^{p}\right] + c_{\gamma}^2 \left(-1 + 3 c_2\right) \left(c_{\gamma} a_d^{pr} - s_{\gamma} \widetilde{\mu} y_d^{pr}\right) LF_{3,2,-1}\left[m_{\tilde{d}}^{r}, m_{\tilde{q}}^{p}\right] + c_{\gamma}^2 \left(-1 + 3 c_2\right) \left(c_{\gamma} a_d^{p}\right) LF_{3,2,-1}\left[m_{\tilde{d}}^{r}, m_{\tilde{q}}^{p}\right] + c_{\gamma}^2 \left(-1 + 3 c_2\right) \left(c_{\gamma} a_d^{p}\right) LF_{3,2,-1}\left[m_{\tilde{d}}^{r}, m_{\tilde{q}}^{p}\right] + c_{\gamma}^2 \left(c_{\gamma} a_d^{p}\right) LF_{3,2,-1}\left[m_{\tilde{d}}^{p}\right] + c_{
                                                                                                                                             c_{2\,\gamma}\,g_{1}^{\,2}\,\left(c_{\gamma}\,\overline{a_{d}}^{pr}-s_{\gamma}\,\widetilde{\mu}\,\overline{y_{d}}^{pr}\right)\,\left(c_{\gamma}\,a_{d}^{\,pr}-s_{\gamma}\,\widetilde{\mu}\,y_{d}^{\,pr}\right)\,LF_{4,1,-1}\!\left[m_{\tilde{d}}^{\,\,r},\,m_{\tilde{q}}^{\,\,p}\right]+c_{1}^{\,\,2}\left(m_{\tilde{d}}^{\,\,r}+m_{\tilde{d}}^{\,\,r}\right)\,\left(m_{\tilde{d}}^{\,\,r}+m_{\tilde{d}}^{\,\,r}\right)\,\left(m_{\tilde{d}}^{\,\,r}+m_{\tilde{d}}^{\,\,r}\right)\,\left(m_{\tilde{d}}^{\,\,r}+m_{\tilde{d}}^{\,\,r}\right)\,\left(m_{\tilde{d}}^{\,\,r}+m_{\tilde{d}}^{\,\,r}\right)\,\left(m_{\tilde{d}}^{\,\,r}+m_{\tilde{d}}^{\,\,r}\right)\,\left(m_{\tilde{d}}^{\,\,r}+m_{\tilde{d}}^{\,\,r}\right)\,\left(m_{\tilde{d}}^{\,\,r}+m_{\tilde{d}}^{\,\,r}\right)\,\left(m_{\tilde{d}}^{\,\,r}+m_{\tilde{d}}^{\,\,r}\right)\,\left(m_{\tilde{d}}^{\,\,r}+m_{\tilde{d}}^{\,\,r}\right)\,\left(m_{\tilde{d}}^{\,\,r}+m_{\tilde{d}}^{\,\,r}\right)\,\left(m_{\tilde{d}}^{\,\,r}+m_{\tilde{d}}^{\,\,r}\right)\,\left(m_{\tilde{d}}^{\,\,r}+m_{\tilde{d}}^{\,\,r}\right)\,\left(m_{\tilde{d}}^{\,\,r}+m_{\tilde{d}}^{\,\,r}\right)\,\left(m_{\tilde{d}}^{\,\,r}+m_{\tilde{d}}^{\,\,r}\right)\,\left(m_{\tilde{d}}^{\,\,r}+m_{\tilde{d}}^{\,\,r}\right)\,\left(m_{\tilde{d}}^{\,\,r}+m_{\tilde{d}}^{\,\,r}\right)\,\left(m_{\tilde{d}}^{\,\,r}+m_{\tilde{d}}^{\,\,r}\right)\,\left(m_{\tilde{d}}^{\,\,r}+m_{\tilde{d}}^{\,\,r}\right)\,\left(m_{\tilde{d}}^{\,\,r}+m_{\tilde{d}}^{\,\,r}\right)\,\left(m_{\tilde{d}}^{\,\,r}+m_{\tilde{d}}^{\,\,r}\right)\,\left(m_{\tilde{d}}^{\,\,r}+m_{\tilde{d}}^{\,\,r}\right)\,\left(m_{\tilde{d}}^{\,\,r}+m_{\tilde{d}}^{\,\,r}\right)\,\left(m_{\tilde{d}}^{\,\,r}+m_{\tilde{d}}^{\,\,r}\right)\,\left(m_{\tilde{d}}^{\,\,r}+m_{\tilde{d}}^{\,\,r}\right)\,\left(m_{\tilde{d}}^{\,\,r}+m_{\tilde{d}}^{\,\,r}\right)\,\left(m_{\tilde{d}}^{\,\,r}+m_{\tilde{d}}^{\,\,r}\right)\,\left(m_{\tilde{d}}^{\,\,r}+m_{\tilde{d}}^{\,\,r}\right)\,\left(m_{\tilde{d}}^{\,\,r}+m_{\tilde{d}}^{\,\,r}\right)\,\left(m_{\tilde{d}}^{\,\,r}+m_{\tilde{d}}^{\,\,r}\right)\,\left(m_{\tilde{d}}^{\,\,r}+m_{\tilde{d}}^{\,\,r}\right)\,\left(m_{\tilde{d}}^{\,\,r}+m_{\tilde{d}}^{\,\,r}\right)\,\left(m_{\tilde{d}}^{\,\,r}+m_{\tilde{d}}^{\,\,r}\right)\,\left(m_{\tilde{d}}^{\,\,r}+m_{\tilde{d}}^{\,\,r}\right)\,\left(m_{\tilde{d}}^{\,\,r}+m_{\tilde{d}}^{\,\,r}\right)\,\left(m_{\tilde{d}}^{\,\,r}+m_{\tilde{d}}^{\,\,r}\right)\,\left(m_{\tilde{d}}^{\,\,r}+m_{\tilde{d}}^{\,\,r}\right)\,\left(m_{\tilde{d}}^{\,\,r}+m_{\tilde{d}}^{\,\,r}\right)\,\left(m_{\tilde{d}}^{\,\,r}+m_{\tilde{d}}^{\,\,r}\right)\,\left(m_{\tilde{d}}^{\,\,r}+m_{\tilde{d}}^{\,\,r}\right)\,\left(m_{\tilde{d}}^{\,\,r}+m_{\tilde{d}}^{\,\,r}\right)\,\left(m_{\tilde{d}}^{\,\,r}+m_{\tilde{d}}^{\,\,r}\right)\,\left(m_{\tilde{d}}^{\,\,r}+m_{\tilde{d}}^{\,\,r}\right)\,\left(m_{\tilde{d}}^{\,\,r}+m_{\tilde{d}}^{\,\,r}\right)\,\left(m_{\tilde{d}}^{\,\,r}+m_{\tilde{d}}^{\,\,r}\right)\,\left(m_{\tilde{d}}^{\,\,r}+m_{\tilde{d}}^{\,\,r}\right)\,\left(m_{\tilde{d}}^{\,\,r}+m_{\tilde{d}}^{\,\,r}\right)\,\left(m_{\tilde{d}}^{\,\,r}+m_{\tilde{d}}^{\,\,r}\right)\,\left(m_{\tilde{d}}^{\,\,r}+m_{\tilde{d}}^{\,\,r}\right)\,\left(m_{\tilde{d}}^{\,\,r}+m_{\tilde{d}}^{\,\,r}\right)\,\left(m_{\tilde{d}}^{\,\,r}+m_{\tilde{d}}^{\,\,r}\right)\,\left(m_{\tilde{d}}^{\,\,r}+m_{\tilde{d}}^{\,\,r}\right)\,\left(m_{\tilde{d}}^{\,\,r}+m_{\tilde{d}}^{\,\,r}\right)\,\left(m_{\tilde{d}}^{\,\,r}+m_{\tilde{d}}^{\,\,r}\right)\,\left(m_{\tilde{d}}^{\,\,r}+m_{\tilde{d}}^{\,\,r}\right)\,\left(m
                                                                                                           \frac{1}{2}\;c_{\gamma}^{\;4}\,\overline{y_{e}}^{pr}\,\overline{y_{e}}^{st}\,y_{e}^{\;pt}\,y_{e}^{\;sr}\,\mathsf{LF}_{2,1,0}\!\left[\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;t}\,\right]\,-\,\frac{1}{2}\;c_{\gamma}^{\;4}\,\overline{y_{e}}^{pr}\,\overline{y_{e}}^{st}\,y_{e}^{\;pt}\,y_{e}^{\;sr}\,\mathsf{LF}_{3,1,-1}\!\left[\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;t}\,\right]\,+\,2\,(1+\varepsilon)^{2}\,\left[\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m}_{\tilde{e}}^{\;r}\,,\,\mathsf{m
                                                                                                           \frac{1}{6}~g_{1}^{2}~\left(c_{\gamma}~\overline{a_{e}}^{pr}-s_{\gamma}~\widetilde{\mu}~\overline{y_{e}}^{pr}\right)~\left(c_{\gamma}~a_{e}^{~pr}-s_{\gamma}~\widetilde{\mu}~y_{e}^{~pr}\right)~\mathsf{LF}_{2,2,0}\left[\mathsf{m_{\tilde{e}}}^{~r},~\mathsf{m_{\tilde{l}}}^{~p}\right]-\mathsf{LF}_{2,2,0}\left[\mathsf{m_{\tilde{e}}}^{~r},~\mathsf{m_{\tilde{l}}}^{~p}\right]
                                                                                                                   \frac{1}{2} c_{2\gamma} g_1^2 \left( c_{\gamma} \overline{a_e}^{pr} - s_{\gamma} \widetilde{\mu} \overline{y_e}^{pr} \right) \left( c_{\gamma} a_e^{pr} - s_{\gamma} \widetilde{\mu} y_e^{pr} \right) LF_{3,1,0} \left[ m_{\tilde{e}}^r, m_{\tilde{1}}^p \right] +
                                                                                                           \frac{1}{12} \ g_{1}{}^{2} \ (-1 + 3 \ c_{2 \, \gamma}) \ \left(c_{\gamma} \ \overline{a_{e}}{}^{pr} - s_{\gamma} \, \widetilde{\mu} \ \overline{y_{e}}{}^{pr}\right) \ \left(c_{\gamma} \ a_{e}{}^{pr} - s_{\gamma} \, \widetilde{\mu} \ y_{e}{}^{pr}\right) \ LF_{3,2,-1} \left[m_{\tilde{e}}{}^{r} \, , \ m_{\tilde{l}}{}^{p}\right] + c_{1} \left(m_{\tilde{e}}{}^{r} \, , \ m_{\tilde{l}}{}^{p}\right) + c_{2} \left(m_{\tilde{e}}{}^{p} \, , \ m_{\tilde{l}}{}^{p}\right) + c_{2} \left(m_{\tilde{l}}{}^{p} \, , \ m_{\tilde{l}}{}^{p}\right) + c_{2} \left(m_{\tilde{l}}{}^{p}\right) + c_{2} \left(m_{\tilde{l}}{}^{p} \, , \ m_{\tilde{l}}{}^{p}\right) + c_{2} \left(m_{\tilde{l}}{}^{p} \, , \ m_{\tilde{l}}{}^{p}\right) + c_{2} \left(m_{\tilde{l}}{}^{p} \, , \ m_{\tilde{l}}{}^{p}\right) + c_{2} \left(m_{\tilde{l}}{}^{p}\right) + c_{2} \left(m_{\tilde{l}}{}^{p}\right) + c_{2} \left(m_{\tilde{
                                                                                                                                         c_{2\gamma} g_1^2 \left( c_{\gamma} \overline{a_e}^{pr} - s_{\gamma} \widetilde{\mu} \overline{y_e}^{pr} \right) \left( c_{\gamma} a_e^{pr} - s_{\gamma} \widetilde{\mu} y_e^{pr} \right) LF_{4,1,-1} \left[ m_{\tilde{e}}^r, m_{\tilde{1}}^p \right] - c_{2\gamma} g_1^2 \left( c_{\gamma} a_e^{pr} - s_{\gamma} \widetilde{\mu} y_e^{pr} \right) LF_{4,1,-1} \left[ m_{\tilde{e}}^r, m_{\tilde{1}}^p \right] - c_{2\gamma} g_1^2 \left( c_{\gamma} a_e^{pr} - s_{\gamma} \widetilde{\mu} y_e^{pr} \right) LF_{4,1,-1} \left[ m_{\tilde{e}}^r, m_{\tilde{1}}^p \right] - c_{2\gamma} g_1^2 \left( c_{\gamma} a_e^{pr} - s_{\gamma} \widetilde{\mu} y_e^{pr} \right) LF_{4,1,-1} \left[ m_{\tilde{e}}^r, m_{\tilde{1}}^p \right] - c_{2\gamma} g_1^2 \left( c_{\gamma} a_e^{pr} - s_{\gamma} \widetilde{\mu} y_e^{pr} \right) LF_{4,1,-1} \left[ m_{\tilde{e}}^r, m_{\tilde{1}}^p \right] - c_{2\gamma} g_1^2 \left( c_{\gamma} a_e^{pr} - s_{\gamma} \widetilde{\mu} y_e^{pr} \right) LF_{4,1,-1} \left[ m_{\tilde{e}}^r, m_{\tilde{1}}^p \right] - c_{2\gamma} g_1^2 \left( c_{\gamma} a_e^{pr} - s_{\gamma} \widetilde{\mu} y_e^{pr} \right) LF_{4,1,-1} \left[ m_{\tilde{e}}^r, m_{\tilde{1}}^p \right] - c_{2\gamma} g_1^2 \left( c_{\gamma} a_e^{pr} - s_{\gamma} \widetilde{\mu} y_e^{pr} \right) LF_{4,1,-1} \left[ m_{\tilde{e}}^r, m_{\tilde{1}}^p \right] - c_{2\gamma} g_1^2 \left( c_{\gamma} a_e^{pr} - s_{\gamma} \widetilde{\mu} y_e^{pr} \right) LF_{4,1,-1} \left[ m_{\tilde{e}}^r, m_{\tilde{e}}^r \right] 
                                                                                                           \frac{1}{6} \; g_1^{\; 2} \; \left( c_\gamma \; \overline{a_e}^{pr} - s_\gamma \; \widetilde{\mu} \; \overline{y_e}^{pr} \right) \; \left( c_\gamma \; a_e^{\; pr} - s_\gamma \; \widetilde{\mu} \; y_e^{\; pr} \right) \; \mathsf{LF}_{3,1,0} \left[ \mathsf{m}_{\widetilde{l}}^{\; p} \, , \; \mathsf{m}_{\widetilde{e}}^{\; r} \right] \; - \; \mathsf{m}_{\widetilde{e}}^{\; p} \; \mathsf{m}_{\widetilde{e}
                                                                                                           \frac{1}{6} \; g_{1}^{\; 2} \; \left( c_{\gamma} \; \overline{a_{e}}^{pr} - s_{\gamma} \; \widetilde{\mu} \; \overline{y_{e}}^{pr} \right) \; \left( c_{\gamma} \; a_{e}^{pr} - s_{\gamma} \; \widetilde{\mu} \; y_{e}^{pr} \right) \; \mathsf{LF}_{3,2,-1} \left[ \mathsf{m}_{\widetilde{l}}^{\; p} \, , \; \mathsf{m}_{\widetilde{e}}^{\; r} \right] \; + \; \mathsf{LF}_{3,2,-1} \left[ \mathsf{m}_{\widetilde{l}}^{\; p} \, , \; \mathsf{m}_{\widetilde{e}}^{\; r} \right] \; + \; \mathsf{LF}_{3,2,-1} \left[ \mathsf{m}_{\widetilde{l}}^{\; p} \, , \; \mathsf{m}_{\widetilde{e}}^{\; r} \right] \; + \; \mathsf{LF}_{3,2,-1} \left[ \mathsf{m}_{\widetilde{l}}^{\; p} \, , \; \mathsf{m}_{\widetilde{e}}^{\; r} \right] \; + \; \mathsf{LF}_{3,2,-1} \left[ \mathsf{m}_{\widetilde{l}}^{\; p} \, , \; \mathsf{m}_{\widetilde{e}}^{\; r} \right] \; + \; \mathsf{LF}_{3,2,-1} \left[ \mathsf{m}_{\widetilde{l}}^{\; p} \, , \; \mathsf{m}_{\widetilde{e}}^{\; r} \right] \; + \; \mathsf{LF}_{3,2,-1} \left[ \mathsf{m}_{\widetilde{l}}^{\; p} \, , \; \mathsf{m}_{\widetilde{e}}^{\; r} \right] \; + \; \mathsf{LF}_{3,2,-1} \left[ \mathsf{m}_{\widetilde{l}}^{\; p} \, , \; \mathsf{m}_{\widetilde{e}}^{\; r} \right] \; + \; \mathsf{LF}_{3,2,-1} \left[ \mathsf{m}_{\widetilde{l}}^{\; p} \, , \; \mathsf{m}_{\widetilde{e}}^{\; r} \right] \; + \; \mathsf{LF}_{3,2,-1} \left[ \mathsf{m}_{\widetilde{l}}^{\; p} \, , \; \mathsf{m}_{\widetilde{e}}^{\; r} \right] \; + \; \mathsf{LF}_{3,2,-1} \left[ \mathsf{m}_{\widetilde{l}}^{\; p} \, , \; \mathsf{m}_{\widetilde{e}}^{\; r} \right] \; + \; \mathsf{LF}_{3,2,-1} \left[ \mathsf{m}_{\widetilde{l}}^{\; p} \, , \; \mathsf{m}_{\widetilde{e}}^{\; p} \, , \; \mathsf{m}_{\widetilde{e}}^{\; r} \right] \; + \; \mathsf{LF}_{3,2,-1} \left[ \mathsf{m}_{\widetilde{l}}^{\; p} \, , \; \mathsf{m}_{\widetilde{e}}^{\; p} \, , \; \mathsf{
                                                                                                                                                 \left(3+c_{2\,\gamma}\right)\;\left(g_{1}{}^{2}+g_{2}{}^{2}\right)\;\left(c_{\gamma}\;\overline{a_{e}}^{pr}-s_{\gamma}\;\widetilde{\mu}\;\overline{y_{e}}^{pr}\right)\;\left(c_{\gamma}\;a_{e}^{pr}-s_{\gamma}\;\widetilde{\mu}\;y_{e}^{pr}\right)\;\mathsf{LF_{4,1,-1}}\!\left[\mathsf{m}_{\tilde{l}}^{\;p}\;,\;\mathsf{m}_{\tilde{e}}^{\;r}\right]-\mathsf{m}_{\tilde{e}}^{\;p}\left(s_{1}^{\;p}+s_{2}^{\;p}\right)\;\left(s_{1}^{\;p}+s_{2}^{\;p}\right)\;\left(s_{2}^{\;p}+s_{2}^{\;p}\right)\;\left(s_{1}^{\;p}+s_{2}^{\;p}\right)\;\left(s_{1}^{\;p}+s_{2}^{\;p}\right)\;\left(s_{1}^{\;p}+s_{2}^{\;p}\right)\;\left(s_{1}^{\;p}+s_{2}^{\;p}\right)\;\left(s_{1}^{\;p}+s_{2}^{\;p}\right)\;\left(s_{1}^{\;p}+s_{2}^{\;p}\right)\;\left(s_{1}^{\;p}+s_{2}^{\;p}\right)\;\left(s_{1}^{\;p}+s_{2}^{\;p}\right)\;\left(s_{1}^{\;p}+s_{2}^{\;p}\right)\;\left(s_{1}^{\;p}+s_{2}^{\;p}\right)\;\left(s_{1}^{\;p}+s_{2}^{\;p}\right)\;\left(s_{1}^{\;p}+s_{2}^{\;p}\right)\;\left(s_{1}^{\;p}+s_{2}^{\;p}\right)\;\left(s_{1}^{\;p}+s_{2}^{\;p}\right)\;\left(s_{1}^{\;p}+s_{2}^{\;p}\right)\;\left(s_{1}^{\;p}+s_{2}^{\;p}\right)\;\left(s_{1}^{\;p}+s_{2}^{\;p}\right)\;\left(s_{1}^{\;p}+s_{2}^{\;p}\right)\;\left(s_{1}^{\;p}+s_{2}^{\;p}\right)\;\left(s_{1}^{\;p}+s_{2}^{\;p}\right)\;\left(s_{1}^{\;p}+s_{2}^{\;p}\right)\;\left(s_{1}^{\;p}+s_{2}^{\;p}\right)\;\left(s_{1}^{\;p}+s_{2}^{\;p}\right)\;\left(s_{1}^{\;p}+s_{2}^{\;p}\right)\;\left(s_{1}^{\;p}+s_{2}^{\;p}\right)\;\left(s_{1}^{\;p}+s_{2}^{\;p}\right)\;\left(s_{1}^{\;p}+s_{2}^{\;p}\right)\;\left(s_{1}^{\;p}+s_{2}^{\;p}\right)\;\left(s_{1}^{\;p}+s_{2}^{\;p}\right)\;\left(s_{1}^{\;p}+s_{2}^{\;p}\right)\;\left(s_{1}^{\;p}+s_{2}^{\;p}\right)\;\left(s_{1}^{\;p}+s_{2}^{\;p}\right)\;\left(s_{1}^{\;p}+s_{2}^{\;p}\right)\;\left(s_{1}^{\;p}+s_{2}^{\;p}\right)\;\left(s_{1}^{\;p}+s_{2}^{\;p}+s_{2}^{\;p}\right)\;\left(s_{1}^{\;p}+s_{2}^{\;p}+s_{2}^{\;p}\right)\;\left(s_{1}^{\;p}+s_{2}^{\;p}+s_{2}^{\;p}\right)\;\left(s_{1}^{\;p}+s_{2}^{\;p}+s_{2}^{\;p}+s_{2}^{\;p}+s_{2}^{\;p}\right)\;\left(s_{1}^{\;p}+s_{2}^{\;p}+s_{2}^{\;p}+s_{2}^{\;p}+s_{2}^{\;p}+s_{2}^{\;p}+s_{2}^{\;p}+s_{2}^{\;p}+s_{2}^{\;p}+s_{2}^{\;p}+s_{2}^{\;p}+s_{2}^{\;p}+s_{2}^{\;p}+s_{2}^{\;p}+s_{2}^{\;p}+s_{2}^{\;p}+s_{2}^{\;p}+s_{2}^{\;p}+s_{2}^{\;p}+s_{2}^{\;p}+s_{2}^{\;p}+s_{2}^{\;p}+s_{2}^{\;p}+s_{2}^{\;p}+s_{2}^{\;p}+s_{2}^{\;p}+s_{2}^{\;p}+s_{2}^{\;p}+s_{2}^{\;p}+s_{2}^{\;p}+s_{2}^{\;p}+s_{2}^{\;p}+s_{2}^{\;p}+s_{2}^{\;p}+s_{2}^{\;p}+s_{2}^{\;p}+s_{2}^{\;p}+s_{2}^{\;p}+s_{2}^{\;p}+s_{2}^{\;p}+s_{2}^{\;p}+s_{2}^{\;p}+s_{2}^{\;p}+s_{2}^{\;p}+s_{2}^{\;p}+s_{2}^{\;p}+s_{2}^{\;p}+s_{2}^{\;p}+s_{2}^{\;p}+s_{2}^{\;p}+s_{2}^{\;p}+s_{2}^{\;p}+s_{2}^{\;p}+s_{2}^{\;p}+s_{2}^{\;p}+s_{2}^{\;p}+s_{2}^{\;p}+s_{2}^{\;p}+s_{2}^{\;p}+s_{2}^{\;p}+s_{2}^{\;p}+s_{2}^{\;p}+s_{2}^{\;p}+s_{2}^{\;p}+s
                                                                                                                                                     \left(g_1^2 + 3 g_2^2\right) \left(c_{\gamma} \overline{a_e}^{pr} - s_{\gamma} \widetilde{\mu} \overline{y_e}^{pr}\right) \left(c_{\gamma} a_e^{pr} - s_{\gamma} \widetilde{\mu} y_e^{pr}\right) LF_{5,1,-2} \left[m_1^{p}, m_e^{r}\right]
                                                                                                               \frac{1}{6}~g_{1}^{2}~\left(c_{\gamma}~\overline{a_{d}}^{pr}-s_{\gamma}~\widetilde{\mu}~\overline{y_{d}}^{pr}\right)~\left(c_{\gamma}~a_{d}^{pr}-s_{\gamma}~\widetilde{\mu}~y_{d}^{pr}\right)~\mathsf{LF}_{3,1,0}\left[\,\mathsf{m}_{\tilde{q}}^{~p}\,,~\mathsf{m}_{\tilde{d}}^{~r}\,\right]~-
                                                                                                               \frac{1}{6} \ g_1^{\ 2} \ \left( c_{_{Y}} \ \overline{a_d}^{pr} - s_{_{Y}} \ \widetilde{\mu} \ \overline{y_d}^{pr} \right) \ \left( c_{_{Y}} \ a_d^{pr} - s_{_{Y}} \ \widetilde{\mu} \ y_d^{pr} \right) \ \mathsf{LF_{3,2,-1}} \left\lceil \mathsf{m_{\tilde{q}}}^p \text{, } \mathsf{m_{\tilde{d}}}^r \right\rceil \ -
                                                                                                                                                     \left(g_{1}^{2} \; \left(-5+c_{2\,\gamma}\right) \; -3 \; g_{2}^{\; 2} \; \left(3+c_{2\,\gamma}\right) \right) \; \left(c_{\gamma} \; \overline{a_{d}}^{pr} \; -s_{\gamma} \; \widetilde{\mu} \; \overline{y_{d}}^{pr}\right) \; \left(c_{\gamma} \; a_{d}^{\; pr} \; -s_{\gamma} \; \widetilde{\mu} \; y_{d}^{\; pr}\right) \; LF_{4,1,-1}\left[m_{\tilde{q}}^{\; p}, \; m_{\tilde{d}}^{\; r}\right] \; -s_{\gamma} \; \widetilde{\mu} \; \overline{y_{d}}^{pr}\right) \; \left(c_{\gamma} \; a_{d}^{\; pr} \; -s_{\gamma} \; \widetilde{\mu} \; y_{d}^{\; pr}\right) \; LF_{4,1,-1}\left[m_{\tilde{q}}^{\; p}, \; m_{\tilde{d}}^{\; r}\right] \; -s_{\gamma} \; \widetilde{\mu} \; \overline{y_{d}}^{pr}\right) \; \left(c_{\gamma} \; a_{d}^{\; pr} \; -s_{\gamma} \; \widetilde{\mu} \; y_{d}^{\; pr}\right) \; LF_{4,1,-1}\left[m_{\tilde{q}}^{\; p}, \; m_{\tilde{d}}^{\; r}\right] \; -s_{\gamma} \; \widetilde{\mu} \; \overline{y_{d}}^{pr}\right) \; \left(c_{\gamma} \; a_{d}^{\; pr} \; -s_{\gamma} \; \widetilde{\mu} \; y_{d}^{\; pr}\right) \; LF_{4,1,-1}\left[m_{\tilde{q}}^{\; p}, \; m_{\tilde{d}}^{\; r}\right] \; -s_{\gamma} \; \widetilde{\mu} \; \overline{y_{d}}^{pr}\right) \; \left(c_{\gamma} \; a_{d}^{\; pr} \; -s_{\gamma} \; \widetilde{\mu} \; y_{d}^{\; pr}\right) \; LF_{4,1,-1}\left[m_{\tilde{q}}^{\; p}, \; m_{\tilde{d}}^{\; r}\right] \; -s_{\gamma} \; \widetilde{\mu} \; \overline{y_{d}}^{pr}\right) \; LF_{4,1,-1}\left[m_{\tilde{q}}^{\; p}, \; m_{\tilde{d}}^{\; r}\right] \; -s_{\gamma} \; \widetilde{\mu} \; \overline{y_{d}}^{pr}\right] \; .
                                                                                                               \frac{1}{2} \left( g_{1}^{2} + 3 g_{2}^{2} \right) \left( c_{Y} \overline{a_{d}}^{pr} - s_{Y} \widetilde{\mu} \overline{y_{d}}^{pr} \right) \left( c_{Y} a_{d}^{pr} - s_{Y} \widetilde{\mu} y_{d}^{pr} \right) LF_{5,1,-2} \left[ m_{\tilde{q}}^{p}, m_{\tilde{d}}^{-r} \right] +
                                                                                                                                         s_{\gamma}^{2} c_{\gamma}^{2} \, \overline{y_{d}}^{\text{pr}} \, y_{d}^{\text{sr}} \, \overline{y_{u}}^{\text{st}} \, y_{u}^{\text{pt}} \, \mathsf{LF}_{2,1,0} \big[ \, \mathsf{m}_{\tilde{q}}^{\, p}, \, \, \mathsf{m}_{\tilde{q}}^{\, s} \, \big] \, - \, \frac{3}{2} \, s_{\gamma}^{\, 2} \, c_{\gamma}^{\, 2} \, \overline{y_{d}}^{\text{pr}} \, y_{d}^{\, \text{sr}} \, \overline{y_{u}}^{\text{st}} \, \mathsf{LF}_{3,1,-1} \big[ \, \mathsf{m}_{\tilde{q}}^{\, p}, \, \, \mathsf{m}_{\tilde{q}}^{\, s} \, \big] \, - \, \frac{3}{2} \, s_{\gamma}^{\, 2} \, c_{\gamma}^{\, 2} \, \overline{y_{d}}^{\, pr} \, y_{d}^{\, sr} \, \overline{y_{u}}^{\, st} \, y_{u}^{\, pt} \, \mathsf{LF}_{3,1,-1} \big[ \, \mathsf{m}_{\tilde{q}}^{\, p}, \, \, \mathsf{m}_{\tilde{q}}^{\, s} \, \big] \, - \, \frac{3}{2} \, s_{\gamma}^{\, 2} \, s_{
                                                                                                                       \frac{1}{12} \left( g_1^2 - 9 g_2^2 \right) \left( s_{\Upsilon} \overline{a_u}^{pr} - \widetilde{\mu} c_{\Upsilon} \overline{y_u}^{pr} \right) \left( s_{\Upsilon} a_u^{pr} - \widetilde{\mu} c_{\Upsilon} y_u^{pr} \right) LF_{2,2,0} \left[ m_{\tilde{q}}^{p}, m_{\tilde{u}}^{r} \right] - \widetilde{\mu} c_{\Upsilon} y_u^{pr} \right)
                                                                                                                                             c_{2\gamma} \left(g_1^2 + 3 g_2^2\right) \left(s_{\gamma} \overline{a_u}^{pr} - \widetilde{\mu} c_{\gamma} \overline{y_u}^{pr}\right) \left(s_{\gamma} a_u^{pr} - \widetilde{\mu} c_{\gamma} y_u^{pr}\right) LF_{3,1,0} \left[m_{\widetilde{u}}^{p}, m_{\widetilde{u}}^{r}\right] +
                                                                                                               \frac{1}{24} \left( g_1^2 \left( 1 + 3 c_{2\gamma} \right) + 9 g_2^2 \left( -1 + c_{2\gamma} \right) \right)
                                                                                                                                             \left(s_{\gamma}\;\overline{a_{u}}^{\text{pr}}-\widetilde{\mu}\;c_{\gamma}\;\overline{y_{u}}^{\text{pr}}\right)\;\left(s_{\gamma}\;a_{u}^{\;\text{pr}}-\widetilde{\mu}\;c_{\gamma}\;y_{u}^{\;\text{pr}}\right)\;\mathsf{LF_{3,2,-1}}\!\left[\mathsf{m}_{\tilde{\mathsf{q}}}^{\;\;\mathsf{p}},\;\mathsf{m}_{\tilde{\mathsf{u}}}^{\;\;\mathsf{r}}\right]\;\mathsf{+}
                                                                                                           \frac{1}{4} \; c_{2\,\gamma} \; \left( g_{1}^{\; 2} + 3 \; g_{2}^{\; 2} \right) \; \left( s_{\gamma} \; \overline{a_{u}}^{pr} - \widetilde{\mu} \; c_{\gamma} \; \overline{y_{u}}^{pr} \right) \; \left( s_{\gamma} \; a_{u}^{\; pr} - \widetilde{\mu} \; c_{\gamma} \; y_{u}^{\; pr} \right) \; \mathsf{LF_{4,1,-1}} \left[ \mathsf{m_{\tilde{q}}}^{\; p} \; , \; \mathsf{m_{\tilde{u}}}^{r} \right] \; + \; \mathsf{LF_{4,1,-1}} \left[ \mathsf{m_{\tilde{q}}}^{\; p} \; , \; \mathsf{m_{\tilde{u}}}^{r} \right] \; + \; \mathsf{LF_{4,1,-1}} \left[ \mathsf{m_{\tilde{q}}}^{\; p} \; , \; \mathsf{m_{\tilde{u}}}^{r} \right] \; + \; \mathsf{LF_{4,1,-1}} \left[ \mathsf{m_{\tilde{q}}}^{\; p} \; , \; \mathsf{m_{\tilde{u}}}^{r} \right] \; + \; \mathsf{LF_{4,1,-1}} \left[ \mathsf{m_{\tilde{q}}}^{\; p} \; , \; \mathsf{m_{\tilde{u}}}^{r} \right] \; + \; \mathsf{LF_{4,1,-1}} \left[ \mathsf{m_{\tilde{q}}}^{\; p} \; , \; \mathsf{m_{\tilde{u}}}^{r} \right] \; + \; \mathsf{LF_{4,1,-1}} \left[ \mathsf{m_{\tilde{q}}}^{\; p} \; , \; \mathsf{m_{\tilde{u}}}^{r} \right] \; + \; \mathsf{LF_{4,1,-1}} \left[ \mathsf{m_{\tilde{q}}}^{\; p} \; , \; \mathsf{m_{\tilde{u}}}^{r} \right] \; + \; \mathsf{LF_{4,1,-1}} \left[ \mathsf{m_{\tilde{q}}}^{\; p} \; , \; \mathsf{m_{\tilde{u}}}^{r} \right] \; + \; \mathsf{LF_{4,1,-1}} \left[ \mathsf{m_{\tilde{q}}}^{\; p} \; , \; \mathsf{m_{\tilde{u}}}^{r} \right] \; + \; \mathsf{LF_{4,1,-1}} \left[ \mathsf{m_{\tilde{q}}}^{\; p} \; , \; \mathsf{m_{\tilde{u}}}^{r} \right] \; + \; \mathsf{LF_{4,1,-1}} \left[ \mathsf{m_{\tilde{q}}}^{\; p} \; , \; \mathsf{m_{\tilde{u}}}^{r} \right] \; + \; \mathsf{LF_{4,1,-1}} \left[ \mathsf{m_{\tilde{q}}}^{\; p} \; , \; \mathsf{m_{\tilde{u}}}^{r} \right] \; + \; \mathsf{LF_{4,1,-1}} \left[ \mathsf{m_{\tilde{q}}}^{\; p} \; , \; \mathsf{m_{\tilde{u}}}^{r} \right] \; + \; \mathsf{LF_{4,1,-1}} \left[ \mathsf{m_{\tilde{q}}}^{\; p} \; , \; \mathsf{m_{\tilde{u}}}^{r} \right] \; + \; \mathsf{LF_{4,1,-1}} \left[ \mathsf{m_{\tilde{q}}}^{\; p} \; , \; \mathsf{m_{\tilde{u}}}^{r} \right] \; + \; \mathsf{LF_{4,1,-1}} \left[ \mathsf{m_{\tilde{q}}}^{\; p} \; , \; \mathsf{m_{\tilde{u}}}^{r} \right] \; + \; \mathsf{LF_{4,1,-1}} \left[ \mathsf{m_{\tilde{q}}}^{\; p} \; , \; \mathsf{m_{\tilde{q}}}^{r} \right] \; + \; \mathsf{LF_{4,1,-1}} \left[ \mathsf{m_{\tilde{q}}}^{\; p} \; , \; \mathsf{m_{\tilde{q}}}^{r} \right] \; + \; \mathsf{LF_{4,1,-1}} \left[ \mathsf{m_{\tilde{q}}}^{\; p} \; , \; \mathsf{m_{\tilde{q}}}^{r} \right] \; + \; \mathsf{LF_{4,1,-1}} \left[ \mathsf{m_{\tilde{q}}}^{\; p} \; , \; \mathsf{m_{\tilde{q}}}^{r} \right] \; + \; \mathsf{LF_{4,1,-1}} \left[ \mathsf{m_{\tilde{q}}}^{\; p} \; , \; \mathsf{m_{\tilde{q}}}^{r} \right] \; + \; \mathsf{LF_{4,1,-1}} \left[ \mathsf{m_{\tilde{q}}}^{\; p} \; , \; \mathsf{m_{\tilde{q}}}^{r} \right] \; + \; \mathsf{LF_{4,1,-1}} \left[ \mathsf{m_{\tilde{q}}}^{\; p} \; , \; \mathsf{m_{\tilde{q}}}^{r} \right] \; + \; \mathsf{LF_{4,1,-1}} \left[ \mathsf{m_{\tilde{q}}}^{\; p} \; , \; \mathsf{m_{\tilde{q}}}^{r} \right] \; + \; \mathsf{LF_{4,1,-1}} \left[ \mathsf{m_{\tilde{q}}}^{\; p} \; , \; \mathsf{m_{\tilde{q}}}^{r} \right] \; + \; \mathsf{LF_{4,1,-1}} \left[ \mathsf{m_{\tilde{q}}}^{\; p} \; , \; \mathsf{m_{\tilde{q}}}^{r} \right] \; + \; \mathsf{LF_{4,1,-1}} \left[ \mathsf{m_{\tilde{q}}}^{\; p} \; , \; \mathsf{m_{\tilde{q}}}^{r}
                                                                                                               \frac{3}{2} \; {s_{\gamma}}^2 \; {c_{\gamma}}^2 \; \overline{y_d}^{pr} \; y_d^{sr} \; \overline{y_u}^{st} \; y_u^{pt} \; \mathsf{LF}_{2,1,0} \left[ \mathsf{m}_{\tilde{q}}^{\; s} \; , \; \mathsf{m}_{\tilde{q}}^{\; p} \right] \\ - \frac{3}{2} \; {s_{\gamma}}^2 \; {c_{\gamma}}^2 \; \overline{y_d}^{pr} \; y_d^{sr} \; \overline{y_u}^{st} \; y_u^{pt} \; \mathsf{LF}_{3,1,-1} \left[ \mathsf{m}_{\tilde{q}}^{\; s} \; , \; \mathsf{m}_{\tilde{q}}^{\; p} \right] \\ + \frac{3}{2} \; {s_{\gamma}}^2 \; {c_{\gamma}}^2 \; \overline{y_d}^{pr} \; y_d^{sr} \; \overline{y_u}^{st} \; y_u^{pt} \; \mathsf{LF}_{3,1,-1} \left[ \mathsf{m}_{\tilde{q}}^{\; s} \; , \; \mathsf{m}_{\tilde{q}}^{\; p} \right] \\ + \frac{3}{2} \; {s_{\gamma}}^2 \; {s_{\gamma}}^2 \; {s_{\gamma}}^2 \; \overline{y_d}^{pr} \; y_d^{sr} \; \overline{y_u}^{st} \; y_u^{pt} \; \mathsf{LF}_{3,1,-1} \left[ \mathsf{m}_{\tilde{q}}^{\; s} \; , \; \mathsf{m}_{\tilde{q}}^{\; p} \right] \\ + \frac{3}{2} \; {s_{\gamma}}^2 \; {s_{\gamma}}^2 \; \overline{y_d}^{pr} \; y_d^{sr} \; \overline{y_u}^{st} \; y_u^{pt} \; \mathsf{LF}_{3,1,-1} \left[ \mathsf{m}_{\tilde{q}}^{\; s} \; , \; \mathsf{m}_{\tilde{q}}^{\; p} \right] \\ + \frac{3}{2} \; {s_{\gamma}}^2 \; {s_{\gamma}}^2 \; \overline{y_d}^{pr} \; y_d^{sr} \; \overline{y_u}^{st} \; y_u^{pt} \; \mathsf{LF}_{3,1,-1} \left[ \mathsf{m}_{\tilde{q}}^{\; s} \; , \; \mathsf{m}_{\tilde{q}}^{\; p} \right] \\ + \frac{3}{2} \; {s_{\gamma}}^2 \; \overline{y_d}^{pr} \; y_d^{sr} \; \overline{y_d}^{sr} \; \overline{y_u}^{st} \; y_u^{pt} \; \mathsf{LF}_{3,1,-1} \left[ \mathsf{m}_{\tilde{q}}^{\; s} \; , \; \mathsf{m}_{\tilde{q}}^{\; p} \right] \\ + \frac{3}{2} \; {s_{\gamma}}^2 \; \overline{y_d}^{sr} \; 
                                                                                                                                                                    \left(g_1^2 - 9 g_2^2\right) \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{g}}^{p}\right] + c_{\gamma} \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{g}}^{p}\right] + c_{\gamma} \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{g}}^{p}\right] + c_{\gamma} \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{g}}^{p}\right] + c_{\gamma} \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{g}}^{p}\right] + c_{\gamma} \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{g}}^{p}\right] + c_{\gamma} \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{g}}^{p}\right] + c_{\gamma} \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{u}}^{p}\right] + c_{\gamma} \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{u}}^{p}\right] + c_{\gamma} \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{u}}^{p}\right] + c_{\gamma} \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{u}}^{p}\right] + c_{\gamma} \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{u}}^{p}\right] + c_{\gamma} \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{u}}^{p}\right] + c_{\gamma} \left(s_{\gamma} a_u^{pr} - \tilde{\mu} c_{\gamma} y_u^{pr}\right) LF_{3,1,0}\left[m_{\tilde{u}}^{p}, m_{\tilde{u}}^{p}\right] + c_{\gamma} \left(s_{\gamma} a_u^{p} - \tilde{\mu} c_{\gamma} y_u^{p}\right) LF_{3,1,0}\left[m_{\tilde{u}}^{p}, m_{\tilde{u}}^{p}\right] + c_{\gamma} \left(s_{\gamma} a_u^{p} - \tilde{\mu} c_{\gamma} y_u^{p}\right) LF_{3,1,0}\left[m_{\tilde{u}}^{p}, m_{\tilde{u}}^{p}\right] + c_{\gamma} \left(s_{\gamma} a_u^{p} - \tilde{\mu} c_{\gamma} y_u^{p}\right) LF_{3,1,0}\left[m_{\tilde{u}}^{p}, m_{\tilde{u}}^{p}\right] + c_{\gamma} \left(s_{\gamma} a_u^{p} - \tilde{\mu} c_{\gamma} y_u^{p}\right) LF_{3,1,0}\left[m_{\tilde{u}}^{p}, m_{\tilde{u}}^{p}\right] + c_{\gamma} \left(s_{\gamma} a_u^{p} - \tilde{\mu} c_{\gamma} y_u^{p}\right) LF_{3,1,0}\left[m_{\tilde{u}}^{p}, m_{\tilde{u}}^{p}\right] + c_{\gamma} \left(s_{\gamma} a_u^{p} - \tilde{\mu} c_{\gamma} y_u^{p}\right) LF_{3,1,0}\left[m_{\tilde{u}}^{p}, m_{\tilde{u}}^{p}\right] + c_{\gamma} \left(s_{\gamma} a_u^{p} - \tilde{\mu} c_{\gamma} y_u^{p}\right) LF_{3,1,0}\left[m_{\tilde{u}}^{p}, m_{\tilde{u}}^{p}\right] + c_{\gamma} \left(s_{\gamma} a_u^{p} - \tilde{\mu} c_{\gamma} y_u^{p}\right) LF_{3,1,0}\left[m_{\tilde{u}}^{p}, m_{\tilde{u}}^{p}\right] + c_{\gamma} \left(s_{\gamma} a_u^{
                                                                                                               \frac{1}{12} \left( g_{1}^{2} - 9 \; g_{2}^{2} \right) \; \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} \big[ m_{\tilde{u}}^{\;\;r} \;, \; m_{\tilde{q}}^{\;\;p} \big] \; + \; c_{\gamma} \; a_{u}^{\;\;pr} + \tilde{\mu} \; c_{\gamma} \; y_{u}^{\;\;pr} + \tilde{\mu
                                                                                                                                                 \left(g_{1}^{2} \left(1+2 c_{2 \gamma}\right)+9 g_{2}^{2}\right) \left(s_{\gamma} \overline{a_{u}}^{pr}-\widetilde{\mu} c_{\gamma} \overline{y_{u}}^{pr}\right) \left(s_{\gamma} a_{u}^{pr}-\widetilde{\mu} c_{\gamma} y_{u}^{pr}\right) LF_{4,1,-1}\left[m_{\widetilde{u}}^{r},m_{\widetilde{q}}^{r}\right]-KC^{2} \left(s_{\gamma} a_{u}^{pr}+\widetilde{\mu} c_{\gamma} y_{u}^{pr}\right) LF_{4,1,-1}\left[m_{\widetilde{u}}^{r},m_{\widetilde{q}}^{r}\right]-KC^{2} \left(s_{\gamma} a_{u}^{pr}+\widetilde{\mu} c_{\gamma} y_{u}^{pr}\right) LF_{4,1,-1}\left[m_{\widetilde{u}}^{r},m_{\widetilde{q}}^{r}\right]-KC^{2} \left(s_{\gamma} a_{u}^{pr}+\widetilde{\mu} c_{\gamma} y_{u}^{pr}\right) LF_{4,1,-1}\left[m_{\widetilde{u}}^{r},m_{\widetilde{q}}^{r}\right]
                                                                                                                                                 \left(g_{1}^{2}+3\;g_{2}^{2}\right)\;\left(s_{\gamma}\;\overline{a_{u}}^{pr}-\widetilde{\mu}\;c_{\gamma}\;\overline{y_{u}}^{pr}\right)\;\left(s_{\gamma}\;a_{u}^{pr}-\widetilde{\mu}\;c_{\gamma}\;y_{u}^{pr}\right)\;LF_{5,1,-2}\left\lceil m_{\widetilde{u}}^{\;r},\;m_{\widetilde{q}}^{\;p}\right\rceil+\frac{1}{2}\left(s_{1}^{2}+s_{2}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_{3}^{2}+s_
                                                                                                               \frac{3}{2} s_{\gamma}^{\phantom{\gamma}4} \overline{y_u}^{pr} \overline{y_u}^{st} y_u^{\phantom{u}pt} y_u^{sr} LF_{2,1,0}[m_{\tilde{u}}^{\phantom{u}r},m_{\tilde{u}}^{\phantom{u}t}] -\frac{3}{2} s_{\gamma}^{\phantom{\gamma}4} \overline{y_u}^{pr} \overline{y_u}^{st} y_u^{pt} y_u^{sr} LF_{3,1,-1}[m_{\tilde{u}}^{\phantom{u}r},m_{\tilde{u}}^{\phantom{u}t}] -\frac{3}{2}
                                                                                                           \frac{1}{8} g_1^4 \left( c_{\gamma}^4 + 4 s_{\gamma}^2 c_{\gamma}^2 + s_{\gamma}^4 \right) LF_{3,2,-2} [\tilde{\mu}, m_1] -
                                                                                                               \frac{1}{8} \; g_{1}^{\; 4} \; \left(m_{1}^{\; 2} \; \left(c_{\gamma}^{\; 4} + s_{\gamma}^{\; 4}\right) \; + \; 6 \; m_{1} \; s_{\gamma} \; \widetilde{\mu} \; c_{\gamma} \; \left(c_{\gamma}^{\; 2} + s_{\gamma}^{\; 2}\right) \; + \; 4 \; s_{\gamma}^{\; 2} \; \widetilde{\mu}^{2} \; c_{\gamma}^{\; 2}\right) \; \mathsf{LF}_{3,2,-1} \left[\, \widetilde{\mu} \, , \; m_{1} \, \right] \; - \; 2 \; \mathrm{LF}_{3,2,-1} \left[\, \widetilde{\mu} \, , \; m_{1} \, \right] \; - \; 2 \; \mathrm{LF}_{3,2,-1} \left[\, \widetilde{\mu} \, , \; m_{1} \, \right] \; - \; 2 \; \mathrm{LF}_{3,2,-1} \left[\, \widetilde{\mu} \, , \; m_{1} \, \right] \; - \; 2 \; \mathrm{LF}_{3,2,-1} \left[\, \widetilde{\mu} \, , \; m_{1} \, \right] \; - \; 2 \; \mathrm{LF}_{3,2,-1} \left[\, \widetilde{\mu} \, , \; m_{1} \, \right] \; - \; 2 \; \mathrm{LF}_{3,2,-1} \left[\, \widetilde{\mu} \, , \; m_{1} \, \right] \; - \; 2 \; \mathrm{LF}_{3,2,-1} \left[\, \widetilde{\mu} \, , \; m_{1} \, \right] \; - \; 2 \; \mathrm{LF}_{3,2,-1} \left[\, \widetilde{\mu} \, , \; m_{1} \, \right] \; - \; 2 \; \mathrm{LF}_{3,2,-1} \left[\, \widetilde{\mu} \, , \; m_{1} \, \right] \; - \; 2 \; \mathrm{LF}_{3,2,-1} \left[\, \widetilde{\mu} \, , \; m_{1} \, \right] \; - \; 2 \; \mathrm{LF}_{3,2,-1} \left[\, \widetilde{\mu} \, , \; m_{1} \, \right] \; - \; 2 \; \mathrm{LF}_{3,2,-1} \left[\, \widetilde{\mu} \, , \; m_{1} \, \right] \; - \; 2 \; \mathrm{LF}_{3,2,-1} \left[\, \widetilde{\mu} \, , \; m_{1} \, \right] \; - \; 2 \; \mathrm{LF}_{3,2,-1} \left[\, \widetilde{\mu} \, , \; m_{1} \, \right] \; - \; 2 \; \mathrm{LF}_{3,2,-1} \left[\, \widetilde{\mu} \, , \; m_{1} \, \right] \; - \; 2 \; \mathrm{LF}_{3,2,-1} \left[\, \widetilde{\mu} \, , \; m_{1} \, \right] \; - \; 2 \; \mathrm{LF}_{3,2,-1} \left[\, \widetilde{\mu} \, , \; m_{1} \, \right] \; - \; 2 \; \mathrm{LF}_{3,2,-1} \left[\, \widetilde{\mu} \, , \; m_{1} \, \right] \; - \; 2 \; \mathrm{LF}_{3,2,-1} \left[\, \widetilde{\mu} \, , \; m_{1} \, \right] \; - \; 2 \; \mathrm{LF}_{3,2,-1} \left[\, \widetilde{\mu} \, , \; m_{1} \, \right] \; - \; 2 \; \mathrm{LF}_{3,2,-1} \left[\, \widetilde{\mu} \, , \; m_{1} \, \right] \; - \; 2 \; \mathrm{LF}_{3,2,-1} \left[\, \widetilde{\mu} \, , \; m_{1} \, \right] \; - \; 2 \; \mathrm{LF}_{3,2,-1} \left[\, \widetilde{\mu} \, , \; m_{1} \, \right] \; - \; 2 \; \mathrm{LF}_{3,2,-1} \left[\, \widetilde{\mu} \, , \; m_{1} \, \right] \; - \; 2 \; \mathrm{LF}_{3,2,-1} \left[\, \widetilde{\mu} \, , \; m_{1} \, \right] \; - \; 2 \; \mathrm{LF}_{3,2,-1} \left[\, \widetilde{\mu} \, , \; m_{1} \, \right] \; - \; 2 \; \mathrm{LF}_{3,2,-1} \left[\, \widetilde{\mu} \, , \; m_{1} \, \right] \; - \; 2 \; \mathrm{LF}_{3,2,-1} \left[\, \widetilde{\mu} \, , \; m_{1} \, \right] \; - \; 2 \; \mathrm{LF}_{3,2,-1} \left[\, \widetilde{\mu} \, , \; m_{1} \, \right] \; - \; 2 \; \mathrm{LF}_{3,2,-1} \left[\, \widetilde{\mu} \, , \; m_{1} \, \right] \; - \; 2 \; \mathrm{LF}_{3,2,-1} \left[\, \widetilde{\mu} \, , \; m_{1} \, \right] \; - \; 2 \; \mathrm{LF}_{3,2,-1} \left[\, \widetilde{\mu} \, , \; m_{1} \, \right] \; - \; 2 \; \mathrm{LF}_{3,2,-1} \left[\, \widetilde{\mu} \, , \; m_{1} \, \right] \; - \; 2 \; \mathrm{LF}_{3,2,-1} \left[\, \widetilde{\mu} \, , \; m_{1} \, \right] \; - \; 2 \; \mathrm{LF}_{3,2,-1} \left[\, \widetilde{\mu} \, , \; m_{1} \, \right] \; - \; 2 \; \mathrm{LF}_{3,2,-1} \left
                                                                                                               \frac{5}{24} g_1^2 \left(g_1^2 + 3 g_2^2\right) \left(c_{\gamma}^2 + s_{\gamma}^2\right) LF_{4,1,-2}[\tilde{\mu}, m_1] -
                                                                                                                                         m_1 s_{\gamma} \tilde{\mu} c_{\gamma} g_1^2 (g_1^2 + 3 g_2^2) LF_{4,1,-1} [\tilde{\mu}, m_1] + \frac{1}{4} g_1^4 s_{\gamma}^2 c_{\gamma}^2 LF_{4,2,-3} [\tilde{\mu}, m_1] + \frac{1}{4} g_1^4 s_{\gamma}^2 c_{\gamma}^2 C_{\gamma}^2 LF_{4,2,-3} [\tilde{\mu}, m_1] + \frac{1}{4} g_1^4 s_{\gamma}^2 c_{\gamma}^2 C_{\gamma}^2
                                                                                                               \frac{1}{8} \; g_{1}^{\; 4} \; \left(m_{1}^{\; 2} \; \left(c_{\gamma}^{\; 4} + s_{\gamma}^{\; 4}\right) \; + \; 4 \; m_{1} \; s_{\gamma} \; \widetilde{\mu} \; c_{\gamma} \; \left(c_{\gamma}^{\; 2} + s_{\gamma}^{\; 2}\right) \; + \; 2 \; s_{\gamma}^{\; 2} \; \widetilde{\mu}^{2} \; c_{\gamma}^{\; 2}\right) \; \mathsf{LF}_{4,2,-2} \left[\,\widetilde{\mu} \, , \; m_{1} \, \right] \; + \; 2 \; s_{\gamma}^{\; 2} \; \widetilde{\mu}^{2} \; c_{\gamma}^{\; 2} \; \widetilde{\mu}^{2} \; c_{\gamma}^{\; 2} \; \widetilde{\mu}^{2} \; c_{\gamma}^{\; 2} \; \widetilde{\mu}^{2} \; \widetilde{\mu}^{2}
                                                                                                           \frac{1}{4} \; g_{1}{}^{4} \; m_{1}{}^{2} \; s_{\gamma}{}^{2} \; \widetilde{\mu}^{2} \; c_{\gamma}{}^{2} \; \mathsf{LF}_{4,2,-1} \left[\, \widetilde{\mu} \,, \; m_{1} \,\right] \; + \\ \frac{1}{6} \; g_{1}{}^{2} \; \left(\, g_{1}{}^{2} \, + \, 3 \; g_{2}{}^{2} \,\right) \; \left(\, c_{\gamma}{}^{2} \, + \, s_{\gamma}{}^{2} \,\right) \; \mathsf{LF}_{5,1,-3} \left[\, \widetilde{\mu} \,, \; m_{1} \,\right] \; + \\ \frac{1}{6} \; g_{1}{}^{2} \; \left(\, g_{1}{}^{2} \, + \, 3 \; g_{2}{}^{2} \,\right) \; \left(\, c_{\gamma}{}^{2} \, + \, s_{\gamma}{}^{2} \,\right) \; \mathsf{LF}_{5,1,-3} \left[\, \widetilde{\mu} \,, \; m_{1} \,\right] \; + \\ \frac{1}{6} \; g_{1}{}^{2} \; \left(\, g_{1}{}^{2} \, + \, 3 \; g_{2}{}^{2} \,\right) \; \left(\, c_{\gamma}{}^{2} \, + \, s_{\gamma}{}^{2} \,\right) \; \mathsf{LF}_{5,1,-3} \left[\, \widetilde{\mu} \,, \; m_{1} \,\right] \; + \\ \frac{1}{6} \; g_{1}{}^{2} \; \left(\, g_{1}{}^{2} \, + \, 3 \; g_{2}{}^{2} \,\right) \; \left(\, c_{\gamma}{}^{2} \, + \, s_{\gamma}{}^{2} \,\right) \; \mathsf{LF}_{5,1,-3} \left[\, \widetilde{\mu} \,, \; m_{1} \,\right] \; + \\ \frac{1}{6} \; g_{1}{}^{2} \; \left(\, g_{1}{}^{2} \, + \, 3 \; g_{2}{}^{2} \,\right) \; \left(\, c_{\gamma}{}^{2} \, + \, s_{\gamma}{}^{2} \,\right) \; \mathsf{LF}_{5,1,-3} \left[\, \widetilde{\mu} \,, \; m_{1} \,\right] \; + \\ \frac{1}{6} \; g_{1}{}^{2} \; \left(\, g_{1}{}^{2} \, + \, 3 \; g_{2}{}^{2} \,\right) \; \left(\, c_{\gamma}{}^{2} \, + \, s_{\gamma}{}^{2} \,\right) \; \mathsf{LF}_{5,1,-3} \left[\, \widetilde{\mu} \,, \; m_{1} \,\right] \; + \\ \frac{1}{6} \; g_{1}{}^{2} \; \left(\, g_{1}{}^{2} \, + \, 3 \; g_{2}{}^{2} \,\right) \; \left(\, c_{\gamma}{}^{2} \, + \, s_{\gamma}{}^{2} \,\right) \; \mathsf{LF}_{5,1,-3} \left[\, \widetilde{\mu} \,, \; m_{1} \,\right] \; + \\ \frac{1}{6} \; g_{1}{}^{2} \; \left(\, g_{1}{}^{2} \, + \, 3 \; g_{2}{}^{2} \,\right) \; \mathsf{LF}_{5,1,-3} \left[\, \widetilde{\mu} \,, \; m_{1} \,\right] \; + \\ \frac{1}{6} \; g_{1}{}^{2} \; \left(\, g_{1}{}^{2} \, + \, 3 \; g_{2}{}^{2} \,\right) \; \mathsf{LF}_{5,1,-3} \left[\, \widetilde{\mu} \,, \; m_{1} \,\right] \; + \\ \frac{1}{6} \; g_{1}{}^{2} \; \left(\, g_{1}{}^{2} \, + \, 3 \; g_{2}{}^{2} \,\right) \; \mathsf{LF}_{5,1,-3} \left[\, \widetilde{\mu} \,, \; m_{1} \,\right] \; + \\ \frac{1}{6} \; g_{1}{}^{2} \; \left(\, g_{1}{}^{2} \, + \, 3 \; g_{2}{}^{2} \,\right) \; \mathsf{LF}_{5,1,-3} \left[\, \widetilde{\mu} \,, \; m_{1} \,\right] \; + \\ \frac{1}{6} \; g_{1}{}^{2} \; \left(\, g_{1}{}^{2} \, + \, 3 \; g_{2}{}^{2} \,\right) \; \mathsf{LF}_{5,1,-3} \left[\, \widetilde{\mu} \,, \; m_{1} \,\right] \; + \\ \frac{1}{6} \; g_{1}{}^{2} \; \left(\, g_{1}{}^{2} \, + \, 3 \; g_{2}{}^{2} \,\right) \; \mathsf{LF}_{5,1,-3} \left[\, \widetilde{\mu} \,, \; m_{1} \,\right] \; + \\ \frac{1}{6} \; g_{1}{}^{2} \; \left(\, g_{1}{}^{2} \, + \, 3 \; g_{2}{}^{2} \,\right) \; \mathsf{LF}_{5,1,-3} \left[\, \widetilde{\mu} \,, \; m_{1} \,\right] \; + \\ \frac{1}{6} \; g_{1}{}^{2} \; \left(\, g_{1}{}^{2} \, + \, 3 \; g_{2}{}^{2
                                                                                                           \frac{1}{3} \; \mathsf{m_1} \; \mathsf{s_{_Y}} \; \widetilde{\boldsymbol{\mu}} \; \mathsf{c_{_Y}} \; \mathsf{g_{_1}}^2 \; \left( \mathsf{g_{_1}}^2 + 3 \; \mathsf{g_{_2}}^2 \right) \; \mathsf{LF_{5,1,-2}} \left[ \, \widetilde{\boldsymbol{\mu}} \, , \; \mathsf{m_1} \, \right] \; + \; 2 \; \mathsf{g_{_2}}^4 \; \left( \mathsf{c_{_Y}}^2 + \mathsf{s_{_Y}}^2 \right) \; \mathsf{LF_{3,1,-1}} \left[ \, \widetilde{\boldsymbol{\mu}} \, , \; \mathsf{m_2} \, \right] \; + \; \mathsf{hop} \; \mathsf
                                                                                                        2\;\mathsf{m}_2\;\mathsf{s}_\gamma\;\widetilde{\mu}\;\mathsf{c}_\gamma\;\mathsf{g_2}^4\;\mathsf{LF_{3,1,0}}\left[\,\widetilde{\mu}\;,\;\mathsf{m}_2\,\right]\;+\;\frac{1}{8}\;\mathsf{g_2}^4\;\left(3\;\mathsf{c}_\gamma^{\;4}+8\;\mathsf{s}_\gamma^{\;2}+3\;\mathsf{s}_\gamma^{\;4}+\mathsf{c}_\gamma^{\;2}\;\left(8-12\;\mathsf{s}_\gamma^{\;2}\right)\right)\;\mathsf{LF_{3,2,-2}}\left[\,\widetilde{\mu}\;,\;\mathsf{m}_2\,\right]\;+\;\frac{1}{8}\;\mathsf{g_2}^4\;\left(3\;\mathsf{c}_\gamma^{\;4}+8\;\mathsf{s}_\gamma^{\;2}+3\;\mathsf{s}_\gamma^{\;4}+\mathsf{c}_\gamma^{\;2}\;\left(8-12\;\mathsf{s}_\gamma^{\;2}\right)\right)\;\mathsf{LF_{3,2,-2}}\left[\,\widetilde{\mu}\;,\;\mathsf{m}_2\,\right]\;+\;\frac{1}{8}\;\mathsf{g_2}^4\;\left(3\;\mathsf{c}_\gamma^{\;4}+8\;\mathsf{s}_\gamma^{\;2}+3\;\mathsf{s}_\gamma^{\;4}+\mathsf{c}_\gamma^{\;2}\;\left(8-12\;\mathsf{s}_\gamma^{\;2}\right)\right)\;\mathsf{LF_{3,2,-2}}\left[\,\widetilde{\mu}\;,\;\mathsf{m}_2\,\right]\;+\;\frac{1}{8}\;\mathsf{g_2}^4\;\left(3\;\mathsf{c}_\gamma^{\;4}+8\;\mathsf{s}_\gamma^{\;2}+3\;\mathsf{s}_\gamma^{\;4}+\mathsf{c}_\gamma^{\;2}\;\left(8-12\;\mathsf{s}_\gamma^{\;2}\right)\right)\;\mathsf{LF_{3,2,-2}}\left[\,\widetilde{\mu}\;,\;\mathsf{m}_2\,\right]\;+\;\frac{1}{8}\;\mathsf{g_2}^4\;\left(3\;\mathsf{c}_\gamma^{\;4}+8\;\mathsf{s}_\gamma^{\;2}+3\;\mathsf{s}_\gamma^{\;4}+\mathsf{c}_\gamma^{\;2}\;\left(8-12\;\mathsf{s}_\gamma^{\;2}\right)\right)\;\mathsf{LF_{3,2,-2}}\left[\,\widetilde{\mu}\;,\;\mathsf{m}_2\,\right]\;+\;\frac{1}{8}\;\mathsf{g_2}^4\;\left(3\;\mathsf{c}_\gamma^{\;4}+8\;\mathsf{s}_\gamma^{\;2}+3\;\mathsf{s}_\gamma^{\;4}+\mathsf{c}_\gamma^{\;2}\right)\;\mathsf{LF_{3,2,-2}}\left[\,\widetilde{\mu}\;,\;\mathsf{m}_2\,\right]\;+\;\frac{1}{8}\;\mathsf{g_2}^4\;\left(3\;\mathsf{c}_\gamma^{\;4}+8\;\mathsf{s}_\gamma^{\;2}+3\;\mathsf{s}_\gamma^{\;4}+\mathsf{c}_\gamma^{\;2}\right)\;\mathsf{LF_{3,2,-2}}\left[\,\widetilde{\mu}\;,\;\mathsf{m}_2\,\right]\;+\;\frac{1}{8}\;\mathsf{g_2}^4\;\left(3\;\mathsf{c}_\gamma^{\;4}+8\;\mathsf{s}_\gamma^{\;2}+3\;\mathsf{s}_\gamma^{\;4}+\mathsf{c}_\gamma^{\;2}\right)\;\mathsf{LF_{3,2,-2}}\left[\,\widetilde{\mu}\;,\;\mathsf{m}_2\,\right]\;+\;\frac{1}{8}\;\mathsf{g_2}^4\;\left(3\;\mathsf{c}_\gamma^{\;4}+8\;\mathsf{s}_\gamma^{\;2}+3\;\mathsf{s}_\gamma^{\;4}+\mathsf{c}_\gamma^{\;2}\right)\;\mathsf{LF_{3,2,-2}}\left[\,\widetilde{\mu}\;,\;\mathsf{m}_2\,\right]\;+\;\frac{1}{8}\;\mathsf{g_2}^4\;\left(3\;\mathsf{c}_\gamma^{\;4}+8\;\mathsf{s}_\gamma^{\;2}+3\;\mathsf{s}_\gamma^{\;4}+\mathsf{c}_\gamma^{\;2}\right)\;\mathsf{LF_{3,2,-2}}\left[\,\widetilde{\mu}\;,\;\mathsf{m}_2\,\right]\;+\;\frac{1}{8}\;\mathsf{g_2}^4\;\left(3\;\mathsf{c}_\gamma^{\;4}+8\;\mathsf{s}_\gamma^{\;2}+3\;\mathsf{s}_\gamma^{\;4}+\mathsf{c}_\gamma^{\;2}\right)\;\mathsf{LF_{3,2,-2}}\left[\,\widetilde{\mu}\;,\;\mathsf{m}_2\,\right]\;+\;\frac{1}{8}\;\mathsf{g_2}^4\;\left(3\;\mathsf{c}_\gamma^{\;4}+8\;\mathsf{s}_\gamma^{\;2}+3\;\mathsf{s}_\gamma^{\;4}+\mathsf{c}_\gamma^{\;2}\right)\;\mathsf{LF_{3,2,-2}}\left[\,\widetilde{\mu}\;,\;\mathsf{m}_2\,\right]\;+\;\frac{1}{8}\;\mathsf{g_2}^4\;\mathsf{LF_{3,2,-2}}\left[\,\widetilde{\mu}\;,\;\mathsf{m}_2\,\right]\;+\;\frac{1}{8}\;\mathsf{LF_{3,2,-2}}\left[\,\widetilde{\mu}\;,\;\mathsf{m}_2\,\right]\;+\;\frac{1}{8}\;\mathsf{LF_{3,2,-2}}\left[\,\widetilde{\mu}\;,\;\mathsf{m}_2\,\right]\;+\;\frac{1}{8}\;\mathsf{LF_{3,2,-2}}\left[\,\widetilde{\mu}\;,\;\mathsf{m}_2\,\right]\;+\;\frac{1}{8}\;\mathsf{LF_{3,2,-2}}\left[\,\widetilde{\mu}\;,\;\mathsf{m}_2\,\right]\;+\;\frac{1}{8}\;\mathsf{LF_{3,2,-2}}\left[\,\widetilde{\mu}\;,\;\mathsf{m}_2\,\right]\;+\;\frac{1}{8}\;\mathsf{LF_{3,2,-2}}\left[\,\widetilde{\mu}\;,\;\mathsf{m}_2\,\right]\;+\;\frac{1}{8}\;\mathsf{LF_{3,2,-2}}\left[\,\widetilde{\mu}\;,\;\mathsf{m}_2\,\right]\;+\;\frac{1}{8}\;\mathsf{LF_{3,2,-2}}\left[\,\widetilde{\mu}\;,\;\mathsf{m}_2\,\right]\;+\;\frac{1}{8}\;\mathsf{LF_{3,2,-2}}\left[\,\widetilde{\mu}\;,\;\mathsf{m}_2\,\right]\;+\;\frac{1}{8}\;\mathsf{LF_{3,2,-2}}\left[\,\widetilde{\mu}\;,\;\mathsf{m}_2\,\right]\;+\;\frac{1}{8}\;\mathsf{LF_{3,2,-2}}\left[\,\widetilde{\mu}\;,\;\mathsf{m}_2\,\right]\;
                                                                                                               \frac{1}{8} \; g_{2}^{\; 4} \; \left(-\, m_{2}^{\; 2} \; \left(\, c_{\gamma}^{\; 4} - 8 \; s_{\gamma}^{\; 2} \; c_{\gamma}^{\; 2} + s_{\gamma}^{\; 4}\,\right) \; - \; 2 \; m_{2} \; s_{\gamma} \; \widetilde{\mu} \; c_{\gamma} \; \left(-\, 8 \, + \; 3 \; c_{\gamma}^{\; 2} \, + \; 3 \; s_{\gamma}^{\; 2}\,\right) \; - \; 12 \; s_{\gamma}^{\; 2} \; \widetilde{\mu}^{2} \; c_{\gamma}^{\; 2}\right) \; .
                                                                                                                                  \mathsf{LF_{3,2,-1}}[\widetilde{\mu},\,\mathsf{m_2}] - \frac{1}{8}\;\mathsf{g_2}^2\;\left(5\;\mathsf{g_1}^2 + 27\;\mathsf{g_2}^2\right)\;\left(\mathsf{c_{\gamma}}^2 + \mathsf{s_{\gamma}}^2\right)\;\mathsf{LF_{4,1,-2}}[\widetilde{\mu},\,\mathsf{m_2}] -
                                                                                                               \frac{3}{4} \, \mathsf{m}_2 \, \mathsf{s}_{\gamma} \, \widetilde{\mu} \, \mathsf{c}_{\gamma} \, \mathsf{g}_2^{\, 2} \, \left( \mathsf{g}_1^{\, 2} + 7 \, \mathsf{g}_2^{\, 2} \right) \, \mathsf{LF}_{4,1,-1} [\, \widetilde{\mu} \,, \, \mathsf{m}_2 \,] \, + \\ \frac{1}{4} \, \mathsf{g}_2^{\, 4} \, \left( -2 \, \mathsf{c}_{\gamma}^{\, 4} + \mathsf{s}_{\gamma}^{\, 2} \, \mathsf{c}_{\gamma}^{\, 2} - 2 \, \mathsf{s}_{\gamma}^{\, 4} \right) \, \mathsf{LF}_{4,2,-3} [\, \widetilde{\mu} \,, \, \mathsf{m}_2 \,] \, + \\ \frac{1}{4} \, \mathsf{g}_2^{\, 4} \, \left( -2 \, \mathsf{c}_{\gamma}^{\, 4} + \mathsf{s}_{\gamma}^{\, 2} \, \mathsf{c}_{\gamma}^{\, 2} - 2 \, \mathsf{s}_{\gamma}^{\, 4} \right) \, \mathsf{LF}_{4,2,-3} [\, \widetilde{\mu} \,, \, \mathsf{m}_2 \,] \, + \\ \frac{1}{4} \, \mathsf{g}_2^{\, 4} \, \left( -2 \, \mathsf{c}_{\gamma}^{\, 4} + \mathsf{s}_{\gamma}^{\, 2} \, \mathsf{c}_{\gamma}^{\, 2} - 2 \, \mathsf{s}_{\gamma}^{\, 4} \right) \, \mathsf{LF}_{4,2,-3} [\, \widetilde{\mu} \,, \, \mathsf{m}_2 \,] \, + \\ \frac{1}{4} \, \mathsf{g}_2^{\, 4} \, \left( -2 \, \mathsf{c}_{\gamma}^{\, 4} + \mathsf{s}_{\gamma}^{\, 2} \, \mathsf{c}_{\gamma}^{\, 2} - 2 \, \mathsf{s}_{\gamma}^{\, 4} \right) \, \mathsf{LF}_{4,2,-3} [\, \widetilde{\mu} \,, \, \mathsf{m}_2 \,] \, + \\ \frac{1}{4} \, \mathsf{g}_2^{\, 4} \, \mathsf{c}_{\gamma}^{\, 4} \, \mathsf{c}_{\gamma}^{\, 4} + \mathsf{c}_{\gamma}^{\, 2} \, \mathsf{c}_{\gamma}^{\, 4} + \mathsf{c}_{\gamma}^{\, 2} \, \mathsf{c}_{\gamma}^{\, 4} + \mathsf{c}_{\gamma}^{\, 4} \mathsf{c}_{\gamma}^{\, 4} \, \mathsf{c}_{\gamma}^{\, 4} + \mathsf{c}_{
                                                                                                               \frac{1}{8} \; g_{2}^{\; 4} \; \left(m_{2}^{\; 2} \; \left(c_{\gamma}^{\; 4} - 8 \; s_{\gamma}^{\; 2} \; c_{\gamma}^{\; 2} + s_{\gamma}^{\; 4}\right) \; - \; 12 \; m_{2} \; s_{\gamma} \; \widetilde{\mu} \; c_{\gamma} \; \left(c_{\gamma}^{\; 2} + s_{\gamma}^{\; 2}\right) \; - \; 6 \; s_{\gamma}^{\; 2} \; \widetilde{\mu}^{2} \; c_{\gamma}^{\; 2}\right) \; \mathsf{LF}_{4,2,-2} \left[\widetilde{\mu} \; , \; m_{2} \; \right] \; - \; 12 \; m_{2} \; s_{\gamma} \; \widetilde{\mu} \; c_{\gamma} \; \left(c_{\gamma}^{\; 2} + s_{\gamma}^{\; 2}\right) \; - \; 6 \; s_{\gamma}^{\; 2} \; \widetilde{\mu}^{2} \; c_{\gamma}^{\; 2}\right) \; \mathsf{LF}_{4,2,-2} \left[\widetilde{\mu} \; , \; m_{2} \; \right] \; - \; 12 \; m_{2} \; s_{\gamma} \; \widetilde{\mu} \; c_{\gamma} \; \left(c_{\gamma}^{\; 2} + s_{\gamma}^{\; 2}\right) \; - \; 6 \; s_{\gamma}^{\; 2} \; \widetilde{\mu}^{2} \; c_{\gamma}^{\; 2}\right) \; \mathsf{LF}_{4,2,-2} \left[\widetilde{\mu} \; , \; m_{2} \; \right] \; - \; 12 \; m_{2} \; s_{\gamma} \; \widetilde{\mu} \; c_{\gamma} \; \left(c_{\gamma}^{\; 2} + s_{\gamma}^{\; 2}\right) \; - \; 6 \; s_{\gamma}^{\; 2} \; \widetilde{\mu}^{2} \; c_{\gamma}^{\; 2}\right) \; \mathsf{LF}_{4,2,-2} \left[\widetilde{\mu} \; , \; m_{2} \; \right] \; - \; 12 \; m_{2} \; s_{\gamma} \; \widetilde{\mu} \; c_{\gamma} \; \left(c_{\gamma}^{\; 2} + s_{\gamma}^{\; 2}\right) \; - \; 6 \; s_{\gamma}^{\; 2} \; \widetilde{\mu}^{2} \; c_{\gamma}^{\; 2}\right) \; \mathsf{LF}_{4,2,-2} \left[\widetilde{\mu} \; , \; m_{2} \; \right] \; - \; 12 \; m_{2} \; s_{\gamma} \; \widetilde{\mu} \; c_{\gamma} \; \widetilde{\mu} \; c_{\gamma} \; \widetilde{\mu} \; c_{\gamma} \; \widetilde{\mu}^{2} \; \widetilde{\mu}
                                                                                                           \frac{3}{4} \; g_{2}^{\; 4} \; m_{2}^{\; 2} \; s_{\gamma}^{\; 2} \; \tilde{\mu}^{2} \; c_{\gamma}^{\; 2} \; \mathsf{LF}_{4, \, 2, \, -1} \left[ \, \tilde{\mu} \, , \; m_{2} \, \right] \; + \\ \frac{1}{2} \; g_{2}^{\; 2} \; \left( \, g_{1}^{\; 2} \, + \, 3 \; g_{2}^{\; 2} \, \right) \; \left( \, c_{\gamma}^{\; 2} \, + \, s_{\gamma}^{\; 2} \, \right) \; \mathsf{LF}_{5, \, 1, \, -3} \left[ \, \tilde{\mu} \, , \; m_{2} \, \right] \; + \\ \frac{1}{2} \; g_{2}^{\; 2} \; \left( \, g_{1}^{\; 2} \, + \, 3 \; g_{2}^{\; 2} \, \right) \; \left( \, c_{\gamma}^{\; 2} \, + \, s_{\gamma}^{\; 2} \, \right) \; \mathsf{LF}_{5, \, 1, \, -3} \left[ \, \tilde{\mu} \, , \; m_{2} \, \right] \; + \\ \frac{1}{2} \; g_{2}^{\; 2} \; \left( \, g_{1}^{\; 2} \, + \, 3 \; g_{2}^{\; 2} \, \right) \; \left( \, c_{\gamma}^{\; 2} \, + \, s_{\gamma}^{\; 2} \, \right) \; \mathsf{LF}_{5, \, 1, \, -3} \left[ \, \tilde{\mu} \, , \; m_{2} \, \right] \; + \\ \frac{1}{2} \; g_{2}^{\; 2} \; \left( \, g_{1}^{\; 2} \, + \, 3 \; g_{2}^{\; 2} \, \right) \; \left( \, c_{\gamma}^{\; 2} \, + \, s_{\gamma}^{\; 2} \, \right) \; \mathsf{LF}_{5, \, 1, \, -3} \left[ \, \tilde{\mu} \, , \; m_{2} \, \right] \; + \\ \frac{1}{2} \; g_{2}^{\; 2} \; \left( \, g_{1}^{\; 2} \, + \, 3 \; g_{2}^{\; 2} \, \right) \; \left( \, c_{\gamma}^{\; 2} \, + \, s_{\gamma}^{\; 2} \, \right) \; \mathsf{LF}_{5, \, 1, \, -3} \left[ \, \tilde{\mu} \, , \; m_{2} \, \right] \; + \\ \frac{1}{2} \; g_{2}^{\; 2} \; \left( \, g_{1}^{\; 2} \, + \, 3 \; g_{2}^{\; 2} \, \right) \; \left( \, c_{\gamma}^{\; 2} \, + \, s_{\gamma}^{\; 2} \, \right) \; \mathsf{LF}_{5, \, 1, \, -3} \left[ \, \tilde{\mu} \, , \; m_{2} \, \right] \; + \\ \frac{1}{2} \; g_{1}^{\; 2} \; \left( \, g_{1}^{\; 2} \, + \, 3 \; g_{2}^{\; 2} \, \right) \; \left( \, c_{\gamma}^{\; 2} \, + \, s_{\gamma}^{\; 2} \, \right) \; \mathsf{LF}_{5, \, 1, \, -3} \left[ \, \tilde{\mu} \, , \; m_{2} \, \right] \; + \\ \frac{1}{2} \; g_{2}^{\; 2} \; \left( \, g_{1}^{\; 2} \, + \, 3 \; g_{2}^{\; 2} \, \right) \; \mathsf{LF}_{5, \, 1, \, -3} \left[ \, \tilde{\mu} \, , \; m_{2} \, \right] \; + \\ \frac{1}{2} \; g_{2}^{\; 2} \; \left( \, g_{1}^{\; 2} \, + \, 3 \; g_{2}^{\; 2} \, \right) \; \mathsf{LF}_{5, \, 1, \, -3} \left[ \, \tilde{\mu} \, , \; m_{2} \, \right] \; + \\ \frac{1}{2} \; g_{2}^{\; 2} \; \left( \, g_{1}^{\; 2} \, + \, 3 \; g_{2}^{\; 2} \, \right) \; \mathsf{LF}_{5, \, 1, \, -3} \left[ \, \tilde{\mu} \, , \; m_{2} \, \right] \; + \\ \frac{1}{2} \; g_{2}^{\; 2} \; \left( \, g_{1}^{\; 2} \, + \, 3 \; g_{2}^{\; 2} \, \right) \; \mathsf{LF}_{5, \, 1, \, -3} \left[ \, \tilde{\mu} \, , \; m_{2} \, \right] \; + \\ \frac{1}{2} \; g_{2}^{\; 2} \; \left( \, g_{1}^{\; 2} \, + \, 3 \; g_{2}^{\; 2} \, \right) \; \mathsf{LF}_{5, \, 1, \, -3} \left[ \, \tilde{\mu} \, , \; m_{2} \, \right] \; + \\ \frac{1}{2} \; g_{2}^{\; 2} \; \left( \, g_{1}^{\; 2} \, + \, 3 \; g_{2}^{\; 2} \, \right) \; \mathsf{LF}_{5, \, 1, \, -3} \left[ \, \tilde{\mu} \, , \; m_{2}^{\; 2} \, \right] \; + \\ \frac
                                                                                                        \mathsf{m}_2 \; \mathsf{s}_{\gamma} \; \tilde{\mu} \; \mathsf{c}_{\gamma} \; \mathsf{g_2}^2 \; \left(\mathsf{g_1}^2 + 3 \; \mathsf{g_2}^2\right) \; \mathsf{LF}_{\mathsf{5},\mathsf{1},\mathsf{-2}} \left[\tilde{\mu} \; , \; \mathsf{m}_2 \right] \; + \; \mathsf{g_1}^2 \; \mathsf{g_2}^2 \; \mathsf{LF}_{\mathsf{2},\mathsf{2},\mathsf{1},\mathsf{-2}} \left[\mathsf{m}_2 \; , \; \tilde{\mu} \; , \; \mathsf{m}_1 \right] \; \left(\mathsf{c}_{\gamma}^{\; \; 2} + \mathsf{s}_{\gamma}^{\; \; 2}\right)^2 \; + \; \frac{1}{4} \; \mathsf{g_1}^2 \; \mathsf{g_2}^2 \; \mathsf{LF}_{\mathsf{2},\mathsf{2},\mathsf{1},\mathsf{-2}} \left[\mathsf{m}_2 \; , \; \tilde{\mu} \; , \; \mathsf{m}_1 \right] \; \left(\mathsf{c}_{\gamma}^{\; \; 2} + \mathsf{s}_{\gamma}^{\; \; 2}\right)^2 \; + \; \frac{1}{4} \; \mathsf{g_1}^2 \; \mathsf{g_2}^2 \; \mathsf{g_2}^2 \; \mathsf{LF}_{\mathsf{2},\mathsf{2},\mathsf{2},\mathsf{1},\mathsf{2}} \left[\mathsf{m}_2 \; , \; \tilde{\mu} \; , \; \mathsf{m}_1 \right] \; \left(\mathsf{c}_{\gamma}^{\; \; 2} + \mathsf{s}_{\gamma}^{\; \; 2}\right)^2 \; + \; \frac{1}{4} \; \mathsf{g_1}^2 \; \mathsf{g_2}^2 \; \mathsf{g_2}^2 \; \mathsf{LF}_{\mathsf{2},\mathsf{2},\mathsf{2},\mathsf{2}} \left[\mathsf{g_2} \; , \; \mathsf{g_2} \; , \; \mathsf{g_2} \; , \; \mathsf{g_2}^2 \; , \; \mathsf{g_2}^2 \; \mathsf{g_2}^2
                                                                                                                                             \left(3\;\mathsf{m}_1\;\mathsf{m}_2\;\left(\mathsf{c_{_Y}}^2+\mathsf{s_{_Y}}^2\right)^2+2\;\mathsf{s_{_Y}}\;\widetilde{\mu}\;\mathsf{c_{_Y}}\;\left(7\;\mathsf{m}_1+5\;\mathsf{m}_2\right)\;\left(\mathsf{c_{_Y}}^2+\mathsf{s_{_Y}}^2\right)\\+12\;\mathsf{s_{_Y}}^2\;\widetilde{\mu}^2\;\mathsf{c_{_Y}}^2\right)\;\mathsf{LF}_{2,2,1,-1}\left[\mathsf{m}_2\;,\;\widetilde{\mu}\;,\;\mathsf{m}_1\right]\;+12\;\mathsf{m}_2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,\;\widetilde{\mu}^2\;,
                                                                                                        2\;\mathsf{m_1}\;\mathsf{m_2}\;\mathsf{g_1}^2\;\mathsf{g_2}^2\;\mathsf{s_\gamma}^2\;\widetilde{\mu}^2\;\mathsf{c_\gamma}^2\;\mathsf{LF_{2,2,1,0}}\;[\;\mathsf{m_2}\;,\;\widetilde{\mu}\;,\;\mathsf{m_1}\;]\;-\;\frac{1}{2}\;\mathsf{g_1}^2\;\mathsf{g_2}^2\;\mathsf{LF_{3,2,1,-3}}\;[\;\mathsf{m_2}\;,\;\widetilde{\mu}\;,\;\mathsf{m_1}\;]\;\left(\mathsf{c_\gamma}^2\;+\;\mathsf{s_\gamma}^2\right)^2\;+\;\mathsf{c_\gamma}^2\;\mathsf{m_1}^2\;\mathsf{m_2}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}^2\;\mathsf{m_3}
                                                                                                               \frac{1}{2} \; g_{1}^{\; 2} \; g_{2}^{\; 2} \; \left( - \, m_{1} \; m_{2} \; \left( \, c_{\gamma}^{\; 2} + \, s_{\gamma}^{\; 2} \, \right)^{\; 2} - 4 \; s_{\gamma} \; \widetilde{\mu} \; c_{\gamma} \; \left( \, m_{1} + \, m_{2} \, \right) \; \left( \, c_{\gamma}^{\; 2} + \, s_{\gamma}^{\; 2} \, \right) \; - 4 \; s_{\gamma}^{\; 2} \; \widetilde{\mu}^{2} \; c_{\gamma}^{\; 2} \right)
                                                                                                                                      \mathsf{LF}_{3,2,1,-2}[\mathsf{m}_2,\,\widetilde{\mu},\,\mathsf{m}_1] - 2 \mathsf{m}_1\,\mathsf{m}_2\,\mathsf{g}_1^{\,2}\,\mathsf{g}_2^{\,2}\,\mathsf{s}_{\gamma}^{\,2}\,\widetilde{\mu}^2\,\mathsf{c}_{\gamma}^{\,2}\,\mathsf{LF}_{3,2,1,-1}[\mathsf{m}_2,\,\widetilde{\mu},\,\mathsf{m}_1] +
                                                                                                               \frac{3}{2} \; c_{\gamma}^{\; 3} \; \overline{y_{d}}^{\text{st}} \; y_{d}^{\; \text{sr}} \; \left( - \, s_{\gamma} \; \widetilde{\mu} \; \overline{y_{d}}^{\text{pr}} \; a_{d}^{\; \text{pt}} + \, \overline{a_{d}}^{\text{pr}} \; \left( \, c_{\gamma} \; a_{d}^{\; \text{pt}} - \, s_{\gamma} \; \widetilde{\mu} \; y_{d}^{\; \text{pt}} \right) \right) \; \mathsf{LF}_{2,1,1,0} \left[ \, \mathsf{m}_{\tilde{d}}^{\; \text{r}} \, , \; \mathsf{m}_{\tilde{d}}^{\; \text{t}} \, , \; \mathsf{m}_{\tilde{q}}^{\; \text{p}} \, \right] \; + \; \overline{a_{d}}^{\; \text{pr}} \; \left( \, c_{\gamma} \; a_{d}^{\; \text{pt}} - \, s_{\gamma} \; \widetilde{\mu} \; y_{d}^{\; \text{pt}} \right) \right) \; \mathsf{LF}_{2,1,1,0} \left[ \, \mathsf{m}_{\tilde{d}}^{\; \text{r}} \, , \; \mathsf{m}_{\tilde{d}}^{\; \text{t}} \, , \; \mathsf{m}_{\tilde{q}}^{\; \text{p}} \, \right] \; + \; \overline{a_{d}}^{\; \text{pr}} \; \left( \, c_{\gamma} \; a_{d}^{\; \text{pt}} - \, s_{\gamma} \; \widetilde{\mu} \; y_{d}^{\; \text{pt}} \, \right) \right] \; \mathsf{LF}_{2,1,1,0} \left[ \, \mathsf{m}_{\tilde{d}}^{\; \text{r}} \, , \; \mathsf{m}_{\tilde{d}}^{\; \text{t}} \, , \; \mathsf{m}_{\tilde{q}}^{\; \text{pr}} \, \right] \; + \; \overline{a_{d}}^{\; \text{pr}} \; \left( \, c_{\gamma} \; a_{d}^{\; \text{pt}} - \, s_{\gamma} \; \widetilde{\mu} \; y_{d}^{\; \text{pt}} \, \right) \; \mathsf{LF}_{2,1,1,0} \left[ \, \mathsf{m}_{\tilde{d}}^{\; \text{r}} \, , \; \mathsf{m}_{\tilde{d}}^{\; \text{t}} \, , \; \mathsf{m}_{\tilde{q}}^{\; \text{pt}} \, \right] \; + \; \overline{a_{d}}^{\; \text{pr}} \; \mathsf{LF}_{2,1,1,0} \left[ \, \mathsf{m}_{\tilde{d}}^{\; \text{r}} \, , \; \mathsf{m}_{\tilde{d}}^{\; \text{t}} \, , \; \mathsf{m}_{\tilde{d}}^{\; \text{r}} \, \right] \; + \; \overline{a_{d}}^{\; \text{pr}} \; \mathsf{LF}_{2,1,1,0} \left[ \, \mathsf{m}_{\tilde{d}}^{\; \text{r}} \, , \; \mathsf{m}_{\tilde{d}}^{\; \text{r}} \, , \; \mathsf{m}_{\tilde{d}}^{\; \text{r}} \, \right] \; + \; \overline{a_{d}}^{\; \text{pr}} \; \mathsf{LF}_{2,1,1,0} \left[ \, \mathsf{m}_{\tilde{d}}^{\; \text{r}} \, , \; \mathsf{m}_{\tilde{d}}^{\; \text{r}} \, , \; \mathsf{m}_{\tilde{d}}^{\; \text{r}} \, \right] \; + \; \overline{a_{d}}^{\; \text{pr}} \; \mathsf{LF}_{2,1,1,1,0} \left[ \, \mathsf{m}_{\tilde{d}}^{\; \text{r}} \, , \; \mathsf{m}_{\tilde{d}}^{\; \text{r}} \, , \; \mathsf{m}_{\tilde{d}}^{\; \text{r}} \, \right] \; + \; \overline{a_{d}}^{\; \text{r}} \; \mathsf{LF}_{2,1,1,1,0} \left[ \, \mathsf{m}_{\tilde{d}}^{\; \text{r}} \, , \; \mathsf{m}_{\tilde{d}}^{\; \text{r}} \, , \; \mathsf{m}_{\tilde{d}}^{\; \text{r}} \, \right] \; + \; \overline{a_{d}}^{\; \text{r}} \, \right] \; + \; \overline{a_{d}}^{\; \text{r}} \; + \; \overline{a_{d}}^{\; \text{r}}
                                                                                                               \frac{3}{2} c_{\gamma}^{3} \overline{y_{d}}^{\text{st}} y_{d}^{\text{sr}} \left( s_{\gamma} \widetilde{\mu} \overline{y_{d}}^{\text{pr}} a_{d}^{\text{pt}} + \overline{a_{d}}^{\text{pr}} \left( -c_{\gamma} a_{d}^{\text{pt}} + s_{\gamma} \widetilde{\mu} y_{d}^{\text{pt}} \right) \right) LF_{3,1,1,-1} \left[ m_{\tilde{d}}^{\text{r}}, m_{\tilde{d}}^{\text{t}}, m_{\tilde{q}}^{\text{p}} \right] + C_{\gamma} a_{\tilde{d}}^{\text{pt}} + C_{\gamma} a_{\tilde{d}}^{\text{pt}} + C_{\gamma} a_{\tilde{d}}^{\text{pt}} + C_{\gamma} a_{\tilde{d}}^{\text{pt}} \right)
                                                                                                           \frac{3}{2}\;\mathsf{S}_{\gamma}^{\,2}\;\tilde{\mu}^{2}\;\mathsf{C}_{\gamma}^{\,2}\;\overline{y_{d}}^{\mathsf{pr}}\;\overline{y_{d}}^{\mathsf{st}}\;\mathsf{y}_{d}^{\,\mathsf{pt}}\;\mathsf{y}_{d}^{\,\mathsf{sr}}\;\mathsf{LF}_{2,1,1,0}\big[\mathsf{m}_{\tilde{d}}^{\,\mathsf{rr}}\,,\,\mathsf{m}_{\tilde{d}}^{\,\mathsf{t}}\,,\,\mathsf{m}_{\tilde{q}}^{\,\mathsf{s}}\big]\;-\;
                                                                                                           \frac{3}{2} \; \mathsf{S_{Y}}^2 \; \tilde{\mu}^2 \; \mathsf{C_{Y}}^2 \; \overline{y_d}^{\mathsf{pr}} \; \overline{y_d}^{\mathsf{st}} \; \mathsf{y_d}^{\mathsf{pt}} \; \mathsf{y_d}^{\mathsf{sr}} \; \mathsf{LF_{3,1,1,-1}} \big[ \, \mathsf{m_{\tilde{d}}}^{\mathsf{r}} \,, \; \mathsf{m_{\tilde{d}}}^{\mathsf{t}} \,, \; \mathsf{m_{\tilde{q}}}^{\mathsf{s}} \, \big] \; + \\
                                                                                                           \frac{3}{4} \; c_{\gamma}^{\; 3} \; \overline{y_{d}}^{\text{st}} \; y_{d}^{\; \text{sr}} \; \left( s_{\gamma} \; \widetilde{\mu} \; \overline{y_{d}}^{\text{pr}} \; a_{d}^{\; \text{pt}} + \overline{a_{d}}^{\text{pr}} \; \left( - c_{\gamma} \; a_{d}^{\; \text{pt}} + s_{\gamma} \; \widetilde{\mu} \; y_{d}^{\; \text{pt}} \right) \right) \; \text{LF}_{2,2,1,-1} \left[ \tilde{m_{\tilde{d}}}^{\; \text{r}} \; , \; \tilde{m_{\tilde{q}}}^{\; \text{p}} \; , \; \tilde{m_{\tilde{d}}}^{\; \text{t}} \right] \; - \left( - c_{\gamma} \; a_{d}^{\; \text{pt}} + s_{\gamma} \; \widetilde{\mu} \; y_{d}^{\; \text{pt}} \right) \right) \; \text{LF}_{2,2,1,-1} \left[ \tilde{m_{\tilde{d}}}^{\; \text{r}} \; , \; \tilde{m_{\tilde{q}}}^{\; \text{p}} \; , \; \tilde{m_{\tilde{d}}}^{\; \text{t}} \right] \; - \left( - c_{\gamma} \; a_{d}^{\; \text{pt}} + s_{\gamma} \; \widetilde{\mu} \; y_{d}^{\; \text{pt}} \right) \right] \; .
                                                                                                               \frac{3}{4} \operatorname{s_{\gamma}}^2 \widetilde{\mu}^2 \operatorname{c_{\gamma}}^2 \overline{\operatorname{y_d}}^{\operatorname{pr}} \overline{\operatorname{y_d}}^{\operatorname{st}} \operatorname{y_d}^{\operatorname{pt}} \operatorname{y_d}^{\operatorname{sr}} \operatorname{LF}_{2,2,1,-1} [\operatorname{m_{\tilde{d}}}^r,\operatorname{m_{\tilde{q}}}^s,\operatorname{m_{\tilde{d}}}^t] +
                                                                                                               \frac{3}{2} \; c_{\gamma}^{\; 3} \; \overline{y_{d}}^{\text{st}} \; y_{d}^{\; \text{sr}} \; \left( - \, s_{\gamma} \; \widetilde{\mu} \; \overline{y_{d}}^{\text{pr}} \; a_{d}^{\; \text{pt}} + \overline{a_{d}}^{\text{pr}} \; \left( \, c_{\gamma} \; a_{d}^{\; \text{pt}} - \, s_{\gamma} \; \widetilde{\mu} \; y_{d}^{\; \text{pt}} \right) \right) \; \mathsf{LF}_{2,1,1,0} \left[ \, \mathsf{m}_{\bar{d}}^{\; \text{t}} \, , \; \mathsf{m}_{\bar{d}}^{\; \text{r}} \, , \; \mathsf{m}_{\bar{q}}^{\; \text{p}} \, \right] \; + \; \mathsf{LF}_{2,1,1,0} \left[ \, \mathsf{m}_{\bar{d}}^{\; \text{t}} \, , \; \mathsf{m}_{\bar{d}}^{\; \text{r}} \, , \; \mathsf{m}_{\bar{q}}^{\; \text{p}} \, \right] \; + \; \mathsf{LF}_{2,1,1,0} \left[ \, \mathsf{m}_{\bar{d}}^{\; \text{t}} \, , \; \mathsf{m}_{\bar{d}}^{\; \text{r}} \, , \; \mathsf{m}_{\bar{d}}^{\; \text{p}} \, \right] \; + \; \mathsf{LF}_{2,1,1,0} \left[ \, \mathsf{m}_{\bar{d}}^{\; \text{t}} \, , \; \mathsf{m}_{\bar{d}}^{\; \text{r}} \, , \; \mathsf{m}_{\bar{d}}^{\; \text{p}} \, \right] \; + \; \mathsf{LF}_{2,1,1,0} \left[ \, \mathsf{m}_{\bar{d}}^{\; \text{t}} \, , \; \mathsf{m}_{\bar{d}}^{\; \text{r}} \, , \; \mathsf{m}_{\bar{d}}^{\; \text{p}} \, \right] \; + \; \mathsf{LF}_{2,1,1,0} \left[ \, \mathsf{m}_{\bar{d}}^{\; \text{t}} \, , \; \mathsf{m}_{\bar{d}}^{\; \text{r}} \, , \; \mathsf{m}_{\bar{d}}^{\; \text{r}} \, , \; \mathsf{m}_{\bar{d}}^{\; \text{r}} \, \right] \; + \; \mathsf{LF}_{2,1,1,0} \left[ \, \mathsf{m}_{\bar{d}}^{\; \text{t}} \, , \; \mathsf{m}_{\bar{d}}^{\; \text{r}} \, , \; \mathsf{m}_{\bar{d}}^{\; \text{r}} \, , \; \mathsf{m}_{\bar{d}}^{\; \text{r}} \, \right] \; + \; \mathsf{LF}_{2,1,1,0} \left[ \, \mathsf{m}_{\bar{d}}^{\; \text{r}} \, , \; \mathsf{m}_{\bar{d}
                                                                                                           \frac{3}{2} \; c_{\gamma}^{\; 3} \; \overline{y_{d}}^{\text{st}} \; y_{d}^{\; \text{sr}} \; \left( s_{\gamma} \; \widetilde{\mu} \; \overline{y_{d}}^{\text{pr}} \; a_{d}^{\; \text{pt}} + \overline{a_{d}}^{\text{pr}} \; \left( - \, c_{\gamma} \; a_{d}^{\; \text{pt}} + \, s_{\gamma} \; \widetilde{\mu} \; y_{d}^{\; \text{pt}} \right) \right) \; \text{LF}_{3,1,1,-1} \left[ \, m_{\bar{d}}^{\; \text{t}} \; , \; m_{\bar{d}}^{\; \text{r}} \; , \; m_{\bar{q}}^{\; \text{p}} \, \right] \; + \; \overline{a_{d}}^{\; \text{pr}} \; \left( - \, c_{\gamma} \; a_{d}^{\; \text{pt}} + \, s_{\gamma} \; \widetilde{\mu} \; y_{d}^{\; \text{pt}} \right) \right) \; \text{LF}_{3,1,1,-1} \left[ \, m_{\bar{d}}^{\; \text{t}} \; , \; m_{\bar{d}}^{\; \text{r}} \; , \; m_{\bar{q}}^{\; \text{p}} \, \right] \; + \; \overline{a_{d}}^{\; \text{pr}} \; \left( - \, c_{\gamma} \; a_{d}^{\; \text{pt}} + \, s_{\gamma} \; \widetilde{\mu} \; y_{d}^{\; \text{pt}} \right) \right) \; \text{LF}_{3,1,1,-1} \left[ \, m_{\bar{d}}^{\; \text{t}} \; , \; m_{\bar{d}}^{\; \text{r}} \; , \; m_{\bar{d}}^{\; \text{pr}} \; \right] \; + \; \overline{a_{d}}^{\; \text{pr}} \; \left( - \, c_{\gamma} \; a_{d}^{\; \text{pt}} + \, s_{\gamma} \; \widetilde{\mu} \; y_{d}^{\; \text{pt}} \right) \right) \; \text{LF}_{3,1,1,-1} \left[ \, m_{\bar{d}}^{\; \text{t}} \; , \; m_{\bar{d}}^{\; \text{r}} \; , \; m_{\bar{d}}^{\; \text{pt}} \; \right] \; + \; \overline{a_{d}}^{\; \text{pt}} \; \left( - \, c_{\gamma} \; a_{d}^{\; \text{pt}} + \, s_{\gamma} \; \widetilde{\mu} \; y_{d}^{\; \text{pt}} \right) \right) \; \text{LF}_{3,1,1,1} \left[ \, m_{\bar{d}}^{\; \text{t}} \; , \; m_{\bar{d}}^{\; \text{r}} \; , \; m_{\bar{d}}^{\; \text{pt}} \; \right] \; + \; \overline{a_{d}}^{\; \text{pt}} \; + \; \overline{a_{d}}^{\; \text{pt}} \; \right] \; + \; \overline{a_{d}}^{\; \text{pt}} \; \left( - \, c_{\gamma} \; a_{d}^{\; \text{pt}} \; , \; m_{\bar{d}}^{\; \text{pt}} \; , \; m_{\bar{d}}^{\; \text{pt}} \; \right) \; + \; \overline{a_{d}}^{\; \text{pt}} \; + \; \overline{a_{d}}^{\; \text{pt}} \; + \; \overline{a_{d}}^{\; \text{pt}} \; , \; \overline{a_{d}}^{\; \text{pt}} \; + \; \overline{a_{d}}^{\; \text{pt}} \; \right] \; + \; \overline{a_{d}}^{\; \text{pt}} \; + \; \overline{a_{d}}^{
                                                                                                                                         \mathsf{s_{\gamma}}^2 \, \tilde{\mu}^2 \, \mathsf{c_{\gamma}}^2 \, \overline{y_d}^{\mathsf{pr}} \, \overline{y_d}^{\mathsf{st}} \, \mathsf{y_d}^{\mathsf{pt}} \, \mathsf{y_d}^{\mathsf{sr}} \, \mathsf{LF_{2,1,1,0}} \big[ \, \mathsf{m_{\tilde{d}}}^{\mathsf{t}} \,, \, \mathsf{m_{\tilde{d}}}^{\mathsf{r}} \,, \, \mathsf{m_{\tilde{q}}}^{\mathsf{s}} \big] \, - \,
                                                                                                               \frac{3}{2} \; \mathsf{S}_{\gamma}^{\; 2} \; \widetilde{\mu}^{2} \; \mathsf{C}_{\gamma}^{\; 2} \; \overline{y_{\mathsf{d}}}^{\mathsf{pr}} \; \overline{y_{\mathsf{d}}}^{\mathsf{st}} \; \mathsf{y}_{\mathsf{d}}^{\; \mathsf{pt}} \; \mathsf{y}_{\mathsf{d}}^{\; \mathsf{sr}} \; \mathsf{LF}_{3,1,1,-1} \big[ \, \mathsf{m}_{\check{\mathsf{d}}}^{\; \mathsf{t}} \; , \; \mathsf{m}_{\check{\mathsf{d}}}^{\; \mathsf{r}} \; , \; \mathsf{m}_{\check{\mathsf{q}}}^{\; \mathsf{s}} \, \big] \; + \\
                                                                                                               \frac{3}{4} \; c_{\gamma}^{\; 3} \; \overline{y_{d}}^{\text{st}} \; y_{d}^{\; \text{sr}} \; \left( s_{\gamma} \, \widetilde{\mu} \; \overline{y_{d}}^{\text{pr}} \; a_{d}^{\; \text{pt}} + \overline{a_{d}}^{\text{pr}} \; \left( - \, c_{\gamma} \; a_{d}^{\; \text{pt}} + \, s_{\gamma} \, \widetilde{\mu} \; y_{d}^{\; \text{pt}} \right) \right) \; \mathsf{LF}_{2,2,1,-1} \left[ \, \mathsf{m}_{\tilde{d}}^{\; \text{t}} \, , \; \mathsf{m}_{\tilde{q}}^{\; \text{p}} \, , \; \mathsf{m}_{\tilde{d}}^{\; \text{r}} \, \right] \; - \; \mathsf{LF}_{2,2,1,-1} \left[ \, \mathsf{m}_{\tilde{d}}^{\; \text{t}} \, , \; \mathsf{m}_{\tilde{d}}^{\; \text{pr}} \, , \; \mathsf{m}_{\tilde{d}}^{\; \text{r}} \, \right] \; - \; \mathsf{LF}_{2,2,1,-1} \left[ \, \mathsf{m}_{\tilde{d}}^{\; \text{t}} \, , \; \mathsf{m}_{\tilde{d}}^{\; \text{pr}} \, , \; \mathsf{m}_{\tilde{d}}^{\; \text{r}} \, \right] \; - \; \mathsf{LF}_{2,2,1,-1} \left[ \, \mathsf{m}_{\tilde{d}}^{\; \text{t}} \, , \; \mathsf{m}_{\tilde{d}}^{\; \text{pr}} \, , \; \mathsf{m}_{\tilde{d}}^{\; \text{r}} \, \right] \; - \; \mathsf{LF}_{2,2,1,-1} \left[ \, \mathsf{m}_{\tilde{d}}^{\; \text{t}} \, , \; \mathsf{m}_{\tilde{d}}^{\; \text{pr}} \, , \; \mathsf{m}_{\tilde{d}}^{\; \text{pr}} \, , \; \mathsf{m}_{\tilde{d}}^{\; \text{pr}} \, \right] \; - \; \mathsf{LF}_{2,2,1,-1} \left[ \, \mathsf{m}_{\tilde{d}}^{\; \text{t}} \, , \; \mathsf{m}_{\tilde{d}}^{\; \text{pr}} \, , \; \mathsf{m}_{\tilde{d}}^{\; \text{pr}} \, \right] \; - \; \mathsf{LF}_{2,2,1,-1} \left[ \, \mathsf{m}_{\tilde{d}}^{\; \text{t}} \, , \; \mathsf{m}_{\tilde{d}}^{\; \text{pr}} \, , \; \mathsf{m}_{\tilde{d}}^{\; \text{pr}} \, \right] \; - \; \mathsf{LF}_{2,2,1,-1} \left[ \, \mathsf{m}_{\tilde{d}}^{\; \text{t}} \, , \; \mathsf{m}_{\tilde{d}}^{\; \text{pr}} \, , \; \mathsf{m}_{\tilde{d}}^{\; \text{pr}} \, \right] \; - \; \mathsf{LF}_{2,2,1,-1} \left[ \, \mathsf{m}_{\tilde{d}}^{\; \text{t}} \, , \; \mathsf{m}_{\tilde{d}}^{\; \text{pr}} \, , \; \mathsf{m}_{\tilde{d}}^{\; \text{pr}} \, \right] \; - \; \mathsf{LF}_{2,2,1,-1} \left[ \, \mathsf{m}_{\tilde{d}}^{\; \text{t}} \, , \; \mathsf{m}_{\tilde{d}}^{\; \text{pr}} \, , \; \mathsf{m}_{\tilde{d}}^{\; \text{pr}} \, \right] \; - \; \mathsf{LF}_{2,2,1,-1} \left[ \, \mathsf{m}_{\tilde{d}}^{\; \text{t}} \, , \; \mathsf{m}_{\tilde{d}}^{\; \text{pr}} \, , \; \mathsf{m}_{\tilde{d}}^{\; \text{pr}} \, , \; \mathsf{m}_{\tilde{d}}^{\; \text{pr}} \, \right] \; - \; \mathsf{LF}_{2,2,1,-1} \left[ \, \mathsf{m}_{\tilde{d}}^{\; \text{t}} \, , \; \mathsf{m}_{\tilde{d}}^{\; \text{pr}} \, \right] \; - \; \mathsf{LF}_{2,2,1,-1} \left[ \, \mathsf{m}_{\tilde{d}}^{\; \text{pr}} \, , \; \mathsf{m}_{\tilde{d}}^{\; \text{pr}} \, , \; \mathsf{m}_{\tilde{d}}^{\; \text{pr}} \, , \; \mathsf{m}_{\tilde{d}}^{\; \text{pr}} \, \right] \; - \; \mathsf{LF}_{2,2,1,-1} \left[ \, \mathsf{m}_{\tilde{d}}^{\; \text{pr}} \, , \; \mathsf{m}_{\tilde{d}}^{\; \text{pr}} \, \right] \; - \; \mathsf{LF}_{2,2,1,-1} \left[ \, \mathsf{m}_{\tilde{d}}^{\; \text{pr}} \, , \; \mathsf{m}_{\tilde{d}}^{\; \text{pr}} \, , \; \mathsf{m}_{\tilde{d}}^{\; \text{pr}} \, 
                                                                                                               \frac{1}{2} \; c_{\gamma}^{\; 3} \; \overline{y_{e}}^{\text{st}} \; y_{e}^{\; \text{sr}} \; \left( s_{\gamma} \, \widetilde{\mu} \; \overline{y_{e}}^{\text{pr}} \; a_{e}^{\; \text{pt}} + \overline{a_{e}}^{\text{pr}} \; \left( - \, c_{\gamma} \; a_{e}^{\; \text{pt}} + s_{\gamma} \, \widetilde{\mu} \; y_{e}^{\; \text{pt}} \right) \right) \; \mathsf{LF}_{3,1,1,-1} \big[ \, \mathsf{m}_{\tilde{e}}^{\; \text{r}} \, , \; \mathsf{m}_{\tilde{e}}^{\; \text{t}} \, , \; \mathsf{m}_{\tilde{e}}^{\; \text{p}} \big] \; + \; \mathsf{L}_{3,1,1,-1} \big[ \, \mathsf{m}_{\tilde{e}}^{\; \text{r}} \, , \; \mathsf{m}_{\tilde{e}}^{\; \text{t}} \, , \; \mathsf{m}_{\tilde{e}}^{\; \text{p}} \big] \; + \; \mathsf{L}_{3,1,1,-1} \big[ \, \mathsf{m}_{\tilde{e}}^{\; \text{r}} \, , \; \mathsf{m}_{\tilde{e}}^{\; \text{t}} \, , \; \mathsf{m}_{\tilde{e}}^{\; \text{p}} \big] \; + \; \mathsf{L}_{3,1,1,-1} \big[ \, \mathsf{m}_{\tilde{e}}^{\; \text{r}} \, , \; \mathsf{m}_{\tilde{e}}^{\; \text{t}} \, , \; \mathsf{m}_{\tilde{e}}^{\; \text{p}} \, , \; \mathsf{m}_{\tilde{e}}^{\; \text{t}} \, , \; \mathsf{m}_{\tilde{e}}^{\; \text{p}} \, , \; \mathsf{m}_{\tilde{e}}^{\; \text{t}} \, , \; \mathsf{m}_{\tilde{e}}^{\; \text{p}} \, , \; \mathsf{m}_{\tilde{e}}^{\; \text{t}} \, , \; \mathsf{m}_{\tilde{e}}^{\; \text{p}} \, , \; \mathsf{m}_{\tilde{e}}^{\; \text{t}} \, , \; \mathsf{m}_{\tilde{e}}^{\; 
                                                                                                                       \frac{1}{2} \; \mathsf{s_{\gamma}}^2 \; \widetilde{\mu}^2 \; \mathsf{c_{\gamma}}^2 \; \overline{\mathsf{y_e}}^\mathsf{pr} \; \overline{\mathsf{y_e}}^\mathsf{st} \; \mathsf{y_e}^\mathsf{pt} \; \mathsf{y_e}^\mathsf{sr} \; \mathsf{LF}_{2,1,1,0} \big[ \mathsf{m_{\tilde{e}}}^\mathsf{r}, \; \mathsf{m_{\tilde{e}}}^\mathsf{t}, \; \mathsf{m_{\tilde{e}}}^\mathsf{s} \big] \; - \;
                                                                                                                                         s_{\gamma}^{2}\,\widetilde{\mu}^{2}\,c_{\gamma}^{2}\,\overline{y_{e}}^{\text{pr}}\,\overline{y_{e}}^{\text{st}}\,y_{e}^{\,\text{pt}}\,y_{e}^{\,\text{sr}}\,LF_{3,1,1,-1}\big[\text{m}_{\tilde{e}}^{\,\text{r}},\,\text{m}_{\tilde{e}}^{\,\text{t}},\,\text{m}_{\tilde{\tilde{e}}}^{\,\text{t}},\,\text{m}_{\tilde{\tilde{e}}}^{\,\text{s}}\big]\,+
                                                                                                                                         c_{\gamma}^{3} \, \overline{y_{e}}^{\text{st}} \, y_{e}^{\text{sr}} \, \left( s_{\gamma} \, \widetilde{\mu} \, \overline{y_{e}}^{\text{pr}} \, a_{e}^{\text{pt}} + \overline{a_{e}}^{\text{pr}} \, \left( - \, c_{\gamma} \, a_{e}^{\text{pt}} + s_{\gamma} \, \widetilde{\mu} \, y_{e}^{\text{pt}} \right) \right) \, \text{LF}_{2,2,1,-1} \big[ \, \textbf{m}_{\tilde{e}}^{\, \, \textbf{r}} \, , \, \, \textbf{m}_{\tilde{l}}^{\, \, p} \, , \, \, \textbf{m}_{\tilde{e}}^{\, \, \textbf{t}} \big]
                                                                                                               \frac{1}{2} c_{\gamma}^{3} \overline{y_{e}}^{st} y_{e}^{sr} \left(-s_{\gamma} \widetilde{\mu} \overline{y_{e}}^{pr} a_{e}^{pt} + \overline{a_{e}}^{pr} \left(c_{\gamma} a_{e}^{pt} - s_{\gamma} \widetilde{\mu} y_{e}^{pt}\right)\right) LF_{2,1,1,0} \left[m_{\tilde{e}}^{t}, m_{\tilde{e}}^{r}, m_{\tilde{l}}^{p}\right] + \frac{1}{2} \left(-s_{\gamma} \widetilde{\mu} y_{e}^{pt} + \overline{a_{e}}^{pt} + \overline{a_{e}}^{pt}\right) + \frac{1}{2} \left(-s_{\gamma} \widetilde{\mu} y_{e}^{pt} + \overline{a_{e}}^{pt} + \overline{a_{e}}^{pt}\right) + \frac{1}{2} \left(-s_{\gamma} \widetilde{\mu} y_{e}^{pt} + \overline{a_{e}}^{pt} + \overline{a_{e}}^{pt}\right) + \frac{1}{2} \left(-s_{\gamma} \widetilde{\mu} y_{e}^{pt} + \overline{a_{e}}^{pt} + \overline{a_{e}}^{pt}\right) + \frac{1}{2} \left(-s_{\gamma} \widetilde{\mu} y_{e}^{pt} + \overline{a_{e}}^{pt} + \overline{a_{e}}^{pt}\right) + \frac{1}{2} \left(-s_{\gamma} \widetilde{\mu} y_{e}^{pt} + \overline{a_{e}}^{pt} + \overline{a_{e}}^{pt}\right) + \frac{1}{2} \left(-s_{\gamma} \widetilde{\mu} y_{e}^{pt} + \overline{a_{e}}^{pt} + \overline{a_{e}}^{pt}\right) + \frac{1}{2} \left(-s_{\gamma} \widetilde{\mu} y_{e}^{pt} + \overline{a_{e}}^{pt} + \overline{a_{e}}^{pt}\right) + \frac{1}{2} \left(-s_{\gamma} \widetilde{\mu} y_{e}^{pt} + \overline{a_{e}}^{pt} + \overline{a_{e}}^{pt}\right) + \frac{1}{2} \left(-s_{\gamma} \widetilde{\mu} y_{e}^{pt} + \overline{a_{e}}^{pt} + \overline{a_{e}}^{pt}\right) + \frac{1}{2} \left(-s_{\gamma} \widetilde{\mu} y_{e}^{pt} + \overline{a_{e}}^{pt}\right) + \frac{1}{2} \left(-s_{\gamma} \widetilde{\mu} y_{e}^{pt}\right) + \frac{1}{2} \left(-s_{\gamma} \widetilde{\mu} y_{e}^{pt} + \overline{a_{e}}^{pt}\right) + \frac{1}{2} \left(-s_{\gamma} \widetilde{\mu} y_{e}^{pt} + \overline{a_{e}}^{pt}\right) + \frac{1}{2} \left(-s_{\gamma} \widetilde{\mu} y_{e}^{pt}\right) + \frac{1}{2} \left(-s_{\gamma} \widetilde{\mu} y_{e}^{pt} + \overline{a_{e}}^{pt}\right) + \frac{1}{2} \left(-s_{\gamma} \widetilde{\mu} y_{e}^{pt} + \overline{a_{e}}^{pt}\right) + \frac{1}{2} \left(-s_{\gamma} \widetilde{\mu} y_{e}^{pt}\right) + \frac{1}{2} \left(-s_{\gamma} \widetilde{\mu} y_{e}^{pt}\right) + \frac{1}{2} \left(-s_{\gamma} \widetilde{\mu} y_{e}^{pt}\right) + \frac{1}{2} \left(
                                                                                                                   \frac{1}{2} c_{\gamma}^{3} \overline{y_{e}}^{st} y_{e}^{sr} \left(s_{\gamma} \widetilde{\mu} \overline{y_{e}}^{pr} a_{e}^{pt} + \overline{a_{e}}^{pr} \left(-c_{\gamma} a_{e}^{pt} + s_{\gamma} \widetilde{\mu} y_{e}^{pt}\right)\right) LF_{3,1,1,-1} \left[m_{\tilde{e}}^{t}, m_{\tilde{e}}^{r}, m_{\tilde{i}}^{p}\right] +
                                                                                                               \frac{1}{2} \; \mathsf{S_{Y}}^{2} \; \tilde{\mu}^{2} \; \mathsf{C_{Y}}^{2} \; \overline{y_{e}}^{\mathsf{pr}} \; \overline{y_{e}}^{\mathsf{st}} \; \mathsf{y_{e}}^{\mathsf{pt}} \; \mathsf{y_{e}}^{\mathsf{sr}} \; \mathsf{LF_{2,1,1,0}} \big[ \, \mathsf{m_{\tilde{e}}}^{\mathsf{t}}, \, \, \mathsf{m_{\tilde{e}}}^{\mathsf{r}}, \, \, \mathsf{m_{\tilde{1}}}^{\mathsf{s}} \, \big] \; - \; \mathsf{m_{\tilde{1}}}^{\mathsf{s}} \; \mathsf{m_{\tilde{1}}}^{\mathsf{s}} \, \mathsf{m_{\tilde{1}}}^
                                                                                                                   \frac{1}{\hat{a}} \, s_{\gamma}^{\, 2} \, \tilde{\mu}^{2} \, c_{\gamma}^{\, 2} \, \overline{y_{e}}^{pr} \, \overline{y_{e}}^{st} \, y_{e}^{\, pt} \, y_{e}^{\, sr} \, LF_{3,1,1,-1} \big[ m_{\tilde{e}}^{\, t}, \, m_{\tilde{e}}^{\, r}, \, m_{\tilde{\tilde{e}}}^{\, r} \big] + 0
                                                                                                                                             c_{\gamma}^{3} \overline{y_{e}}^{st} y_{e}^{sr} \left(s_{\gamma} \widetilde{\mu} \overline{y_{e}}^{pr} a_{e}^{pt} + \overline{a_{e}}^{pr} \left(-c_{\gamma} a_{e}^{pt} + s_{\gamma} \widetilde{\mu} y_{e}^{pt}\right)\right) LF_{2,2,1,-1} \left[m_{\tilde{e}}^{t}, m_{\tilde{1}}^{p}, m_{\tilde{e}}^{r}\right] - c_{\gamma}^{2} a_{e}^{pt} + c_{\gamma}^{2} \widetilde{\mu} y_{e}^{pt}
                                                                                                                                         s_{\gamma}^{2}\,\widetilde{\mu}^{2}\,c_{\gamma}^{2}\,\overline{y_{e}}^{pr}\,\overline{y_{e}}^{st}\,y_{e}^{pt}\,y_{e}^{sr}\,LF_{2,2,1,-1}\big[\boldsymbol{m_{\tilde{e}}}^{t},\,\boldsymbol{m_{\tilde{l}}}^{s},\,\boldsymbol{m_{\tilde{e}}}^{r}\big]+\\
                                                                                                                                                 \frac{\bar{3}}{\bar{2}} \; s_{\gamma} \; c_{\gamma}^{\; 2} \; \overline{y_{d}}^{\text{st}} \; y_{d}^{\; \text{pt}} \; \overline{a_{u}}^{\text{pr}} \; \left( s_{\gamma} \; a_{u}^{\; \text{sr}} - \widetilde{\mu} \; c_{\gamma} \; y_{u}^{\; \text{sr}} \right) \; \text{LF}_{2,1,1,\theta} \left[ m_{\bar{q}}^{\; p}, \; m_{\bar{q}}^{\; s}, \; m_{\bar{u}}^{\; r} \right] \; + \\ \frac{\bar{3}}{\bar{2}} \; s_{\gamma} \; c_{\gamma}^{\; 2} \; \overline{y_{d}}^{\text{st}} \; y_{d}^{\; \text{pt}} \; \overline{a_{u}}^{\text{pr}} \; \left( s_{\gamma} \; a_{u}^{\; \text{sr}} - \widetilde{\mu} \; c_{\gamma} \; y_{u}^{\; \text{sr}} \right) \; \text{LF}_{2,1,1,\theta} \left[ m_{\bar{q}}^{\; p}, \; m_{\bar{q}}^{\; s}, \; m_{\bar{u}}^{\; r} \right] \; + \\ \frac{\bar{3}}{\bar{3}} \; s_{\gamma} \; c_{\gamma}^{\; 2} \; \overline{y_{d}}^{\text{st}} \; y_{d}^{\; pt} \; \overline{a_{u}}^{\text{pt}} \; \overline{a_{u}}^{\text{pr}} \; \overline{a_{u}}^{\text{pt}} \; \overline{a_{u}}^{\text{pt
                                                                                                                                                 s_{\Upsilon}\,c_{\Upsilon}^{\ 2}\,\overline{y_{d}}^{\text{st}}\,y_{d}^{\ pt}\,\overline{a_{u}}^{\text{pr}}\,\left(-\,s_{\Upsilon}\,a_{u}^{\ sr}\,+\,\widetilde{\mu}\,\,c_{\Upsilon}\,y_{u}^{\ sr}\right)\,LF_{3,1,1,-1}\big[\,\boldsymbol{m_{\tilde{q}}}^{\,p},\,\boldsymbol{m_{\tilde{q}}}^{\,s},\,\boldsymbol{m_{\tilde{u}}}^{\,r}\big]\,+\,
                                                                                                                                                 \widetilde{\mu} c_{\gamma}^{3} \overline{y_{d}}^{pr} y_{d}^{sr} \overline{y_{u}}^{st} \left(-s_{\gamma} a_{u}^{pt} + \widetilde{\mu} c_{\gamma} y_{u}^{pt}\right) LF_{2,1,1,0}[m_{\widetilde{a}}^{p}, m_{\widetilde{a}}^{s}, m_{\widetilde{u}}^{t}] +
                                                                                                                                                     \widetilde{\mu} \; \mathbf{c_{\gamma}}^{3} \; \overline{y_{d}}^{\text{pr}} \; \mathbf{y_{d}}^{\text{sr}} \; \overline{y_{u}}^{\text{st}} \; \left( \mathbf{s_{\gamma}} \; \mathbf{a_{u}}^{\text{pt}} - \widetilde{\mu} \; \mathbf{c_{\gamma}} \; \mathbf{y_{u}}^{\text{pt}} \right) \; \mathsf{LF_{3,1,1,-1}} \left[ \mathbf{m_{\tilde{q}}}^{\text{p}}, \; \mathbf{m_{\tilde{q}}}^{\text{s}}, \; \mathbf{m_{\tilde{u}}}^{\text{t}} \right] \; + \; \mathsf{m_{\tilde{q}}}^{\text{s}} \; \mathsf{m_{\tilde{q}}}^{\text{s}} \; \mathsf{m_{\tilde{q}}}^{\text{s}} \; \mathsf{m_{\tilde{q}}}^{\text{s}} \right] \; + \; \mathsf{m_{\tilde{q}}}^{\text{s}} \; \mathsf{m_{\tilde{q
                                                                                                                                                     s_{\gamma}\;c_{\gamma}^{\;2}\;\overline{y_{d}}^{\text{st}}\;y_{d}^{\;\text{pt}}\;\overline{a_{u}}^{\text{pr}}\;\left(-\,s_{\gamma}\;a_{u}^{\;\;\text{sr}}\,+\,\widetilde{\mu}\;c_{\gamma}\;y_{u}^{\;\;\text{sr}}\right)\;\mathsf{LF}_{2,2,1,-1}\big\lceil\mathsf{m}_{\tilde{q}}^{\;\;p},\;\mathsf{m}_{\tilde{u}}^{\;\;r},\;\mathsf{m}_{\tilde{q}}^{\;\;s}\big\rceil\;+
                                                                                                                                                     \widetilde{\mu} \; \mathbf{c_{\gamma}}^{3} \; \overline{y_{d}}^{\mathsf{pr}} \; \mathbf{y_{d}}^{\mathsf{sr}} \; \overline{y_{u}}^{\mathsf{st}} \; \left( \mathbf{s_{\gamma}} \; \mathbf{a_{u}}^{\mathsf{pt}} - \widetilde{\mu} \; \mathbf{c_{\gamma}} \; \mathbf{y_{u}}^{\mathsf{pt}} \right) \; \mathsf{LF_{2,2,1,-1}} \big[ \mathsf{m_{\tilde{q}}}^{\mathsf{p}}, \; \mathsf{m_{\tilde{u}}}^{\mathsf{t}}, \; \mathsf{m_{\tilde{q}}}^{\mathsf{s}} \big] \; + \; \mathsf{m_{\tilde{q}}}^{\mathsf{pr}} \; \mathsf{m_{\tilde{q}}}^{\mathsf{pr}}, \; \mathsf{m_{\tilde{q}}}^{\mathsf{pr}}, \; \mathsf{m_{\tilde{q}}}^{\mathsf{pr}}, \; \mathsf{m_{\tilde{q}}}^{\mathsf{pr}} \big] \; + \; \mathsf{m_{\tilde{q}}}^{\mathsf{pr}} \; \mathsf{m_{\tilde{q}}}^{\mathsf{pr}} \; \mathsf{m_{\tilde{q}}}^{\mathsf{pr}}, \; \mathsf{m_{\tilde{q}}}^{\mathsf{pr}} \; \mathsf{m_{\tilde{q}}}^{\mathsf{pr}} \, \mathsf{m_{\tilde{
                                                                                                                                                        s_{\gamma}\,\,{c_{\gamma}}^{2}\,\overline{y_{d}}^{\text{st}}\,y_{d}^{\,\,\text{pt}}\,\,\overline{a_{u}}^{\text{pr}}\,\left(s_{\gamma}\,\,a_{u}^{\,\,\text{sr}}\,-\,\widetilde{\mu}\,\,c_{\gamma}\,\,y_{u}^{\,\,\text{sr}}\right)\,\,\text{LF}_{2,\text{l,l,0}}\!\left[\,\text{m}_{\tilde{q}}^{\,\,\text{s}}\,,\,\,\text{m}_{\tilde{q}}^{\,\,\text{p}}\,,\,\,\text{m}_{\tilde{u}}^{\,\,\text{r}}\,\right]\,+\,\,\left(s_{\gamma}^{\,\,\text{st}}\,a_{u}^{\,\,\text{sr}}\,-\,\widetilde{\mu}\,\,c_{\gamma}^{\,\,\text{st}}\,y_{u}^{\,\,\text{sr}}\right)\,\,\text{LF}_{2,\text{l,l,0}}\!\left[\,\text{m}_{\tilde{q}}^{\,\,\text{s}}\,,\,\,\text{m}_{\tilde{q}}^{\,\,\text{p}}\,,\,\,\text{m}_{\tilde{u}}^{\,\,\text{r}}\,\right]\,+\,\,\left(s_{\gamma}^{\,\,\text{st}}\,a_{u}^{\,\,\text{st}}\,+\,\,s_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{\,\,\text{st}}\,a_{\alpha}^{
                                                                                                                                                 s_{\gamma}\,c_{\gamma}^{\,\,2}\,\overline{y_{d}}^{\text{st}}\,y_{d}^{\,\,\text{pt}}\,\overline{a_{u}}^{\text{pr}}\,\left(-\,s_{\gamma}\,a_{u}^{\,\,\text{sr}}\,+\,\widetilde{\mu}\,\,c_{\gamma}\,y_{u}^{\,\,\text{sr}}\right)\,\,\text{LF}_{3,1,1,-1}\!\left[\,\text{m}_{\tilde{q}}^{\,\,\text{s}}\,,\,\,\text{m}_{\tilde{q}}^{\,\,\text{p}}\,,\,\,\text{m}_{\tilde{u}}^{\,\,\text{r}}\,\right]\,+\,\left(-\,s_{\gamma}^{\,\,\text{s}}\,a_{u}^{\,\,\text{sr}}\,+\,\widetilde{\mu}\,\,c_{\gamma}^{\,\,\text{s}}\,y_{u}^{\,\,\text{sr}}\right)\,\,\text{LF}_{3,1,1,-1}\!\left[\,\text{m}_{\tilde{q}}^{\,\,\text{s}}\,,\,\,\text{m}_{\tilde{q}}^{\,\,\text{p}}\,,\,\,\text{m}_{\tilde{u}}^{\,\,\text{r}}\,\right]\,+\,\left(-\,s_{\gamma}^{\,\,\text{s}}\,a_{u}^{\,\,\text{sr}}\,+\,\widetilde{\mu}\,\,c_{\gamma}^{\,\,\text{s}}\,y_{u}^{\,\,\text{sr}}\right)\,\,\text{LF}_{3,1,1,-1}\!\left[\,\text{m}_{\tilde{q}}^{\,\,\text{s}}\,,\,\,\text{m}_{\tilde{q}}^{\,\,\text{p}}\,,\,\,\text{m}_{\tilde{u}}^{\,\,\text{r}}\,\right]\,+\,\left(-\,s_{\gamma}^{\,\,\text{s}}\,a_{u}^{\,\,\text{sr}}\,+\,\widetilde{\mu}\,\,c_{\gamma}^{\,\,\text{s}}\,y_{u}^{\,\,\text{sr}}\right)\,\,\text{LF}_{3,1,1,-1}\!\left[\,\text{m}_{\tilde{q}}^{\,\,\text{s}}\,,\,\,\text{m}_{\tilde{q}}^{\,\,\text{p}}\,,\,\,\text{m}_{\tilde{u}}^{\,\,\text{r}}\,\right]\,+\,\left(-\,s_{\gamma}^{\,\,\text{s}}\,a_{u}^{\,\,\text{sr}}\,+\,\widetilde{\mu}\,\,c_{\gamma}^{\,\,\text{s}}\,y_{u}^{\,\,\text{sr}}\right)\,\,\text{LF}_{3,1,1,-1}\!\left[\,\text{m}_{\tilde{q}}^{\,\,\text{s}}\,,\,\,\text{m}_{\tilde{q}}^{\,\,\text{p}}\,,\,\,\text{m}_{\tilde{u}}^{\,\,\text{r}}\,\right]\,+\,\left(-\,s_{\gamma}^{\,\,\text{s}}\,a_{u}^{\,\,\text{sr}}\,+\,\widetilde{\mu}_{u}^{\,\,\text{s}}\,a_{u}^{\,\,\text{sr}}\,+\,\widetilde{\mu}_{u}^{\,\,\text{s}}\,a_{u}^{\,\,\text{sr}}\,+\,\widetilde{\mu}_{u}^{\,\,\text{sr}}\,a_{u}^{\,\,\text{sr}}\,+\,\widetilde{\mu}_{u}^{\,\,\text{sr}}\,a_{u}^{\,\,\text{sr}}\,a_{u}^{\,\,\text{sr}}\,+\,\widetilde{\mu}_{u}^{\,\,\text{sr}}\,a_{u}^{\,\,\text{sr}}\,a_{u}^{\,\,\text{sr}}\,a_{u}^{\,\,\text{sr}}\,a_{u}^{\,\,\text{sr}}\,a_{u}^{\,\,\text{sr}}\,a_{u}^{\,\,\text{sr}}\,a_{u}^{\,\,\text{sr}}\,a_{u}^{\,\,\text{sr}}\,a_{u}^{\,\,\text{sr}}\,a_{u}^{\,\,\text{sr}}\,a_{u}^{\,\,\text{sr}}\,a_{u}^{\,\,\text{sr}}\,a_{u}^{\,\,\text{sr}}\,a_{u}^{\,\,\text{sr}}\,a_{u}^{\,\,\text{sr}}\,a_{u}^{\,\,\text{sr}}\,a_{u}^{\,\,\text{sr}}\,a_{u}^{\,\,\text{sr}}\,a_{u}^{\,\,\text{sr}}\,a_{u}^{\,\,\text{sr}}\,a_{u}^{\,\,\text{sr}}\,a_{u}^{\,\,\text{sr}}\,a_{u}^{\,\,\text{sr}}\,a_{u}^{\,\,\text{sr}}\,a_{u}^{\,\,\text{sr}}\,a_{u}^{\,\,\text{sr}}\,a_{u}^{\,\,\text{sr}}\,a_{u}^{\,\,\text{sr}}\,a_{u}^{\,\,\text{sr}}\,a_{u}^{\,\,\text{sr}}\,a_{u}^{\,\,\text{sr}}\,a_{u}^{\,\,\text{sr}}\,a_{u}^{\,\,\text{sr}}\,a_{u}^{\,\,\text{sr}}\,a_{u}^{\,\,\text{sr}}\,a_{u}^{\,\,\text{sr}}\,a_{u}^{\,\,\text{sr}}\,a_{u}^{\,\,\text{sr}}\,a_{u}^{\,\,\text{sr}}\,a_{u}^{\,\,\text{sr}}\,a_{u}^{\,\,\text{sr}}\,a_{u}^{\,\,\text{sr}}\,a_{u}^{\,\,\text{sr}}\,a_{u}^{\,\,\text{sr}}\,a_{u}^{\,\,\text{sr}}\,a_{u}^{\,\,\text{sr}}\,a_{u}^{\,\,\text{sr}}\,a_{u}^{\,\,\text{sr}}\,a_{u}^{\,\,\text{sr}}\,a_{u}^{\,\,\text{sr}}\,a_{u}^{\,\,\text{sr}}\,a_{u}^{\,\,\text{sr}}\,a_{u}^{\,\,\text{sr}}\,a_{u}^{\,\,\text{sr}}\,a_{u}^{\,\,\text{sr}}\,a_{u}^{\,\,\text{sr}}\,a_{u}^{\,\,\text{sr}}\,a_{u}^{\,\,
                                                                                                               \frac{3}{2}\;\widetilde{\mu}\;c_{\gamma}^{\;3}\;\overline{y_{d}}^{pr}\;y_{d}^{\;sr}\;\overline{y_{u}}^{st}\left(-\,s_{\gamma}\;a_{u}^{\;pt}+\widetilde{\mu}\;c_{\gamma}\;y_{u}^{\;pt}\right)\;\mathsf{LF}_{2,1,1,0}\!\left[\,\mathsf{m}_{\tilde{q}}^{\;s}\,,\;\mathsf{m}_{\tilde{q}}^{\;p}\,,\;\mathsf{m}_{\tilde{u}}^{\;t}\,\right]\;+
                                                                                                                                                 \widetilde{\mu} \; c_{_{Y}}{}^{3} \; \overline{y_{d}}{}^{pr} \; y_{d}{}^{sr} \; \overline{y_{u}}{}^{st} \; \left(s_{_{Y}} \; a_{u}{}^{pt} - \widetilde{\mu} \; c_{_{Y}} \; y_{u}{}^{pt}\right) \; \mathsf{LF_{3,1,1,-1}} \left[\mathsf{m}_{\tilde{\mathsf{q}}}{}^{s} \; , \; \mathsf{m}_{\tilde{\mathsf{q}}}{}^{p} \; , \; \mathsf{m}_{\tilde{\mathsf{u}}}{}^{t}\right] \; + \\
                                                                                                                   \frac{3}{4} \operatorname{s_{\gamma}} \operatorname{c_{\gamma}}^2 \overline{\operatorname{y_d}}^{\operatorname{st}} \operatorname{y_d}^{\operatorname{pt}} \overline{\operatorname{a_u}}^{\operatorname{pr}} \left( -\operatorname{s_{\gamma}} \operatorname{a_u}^{\operatorname{sr}} + \widetilde{\mu} \operatorname{c_{\gamma}} \operatorname{y_u}^{\operatorname{sr}} \right) \operatorname{LF}_{2,2,1,-1} \left[ \operatorname{m_{\tilde{u}}}^{\operatorname{s}}, \operatorname{m_{\tilde{u}}}^{\operatorname{r}}, \operatorname{m_{\tilde{u}}}^{\operatorname{p}} \right] +
                                                                                                                                                 \tilde{\mu}\;c_{\gamma}^{\;3}\;\overline{y_{d}}^{\text{pr}}\;y_{d}^{\;\text{sr}}\;\overline{y_{u}}^{\text{st}}\;\left(s_{\gamma}\;a_{u}^{\;\text{pt}}-\tilde{\mu}\;c_{\gamma}\;y_{u}^{\;\text{pt}}\right)\;\mathsf{LF_{2,2,1,-1}}\!\left[\mathsf{m}_{\tilde{q}}^{\;s},\;\mathsf{m}_{\tilde{u}}^{\;t},\;\mathsf{m}_{\tilde{q}}^{\;r}\right]\;\mathsf{+}\;
                                                                                                               \frac{3}{2} \; \mathbf{S_{\gamma}}^{3} \; \overline{\mathbf{y_{u}}^{\mathsf{st}}} \; \mathbf{y_{u}}^{\mathsf{sr}} \; \left( -\widetilde{\mu} \; \mathbf{c_{\gamma}} \; \overline{\mathbf{y_{u}}^{\mathsf{pr}}} \; \mathbf{a_{u}}^{\mathsf{pt}} + \overline{\mathbf{a_{u}}}^{\mathsf{pr}} \; \left( \mathbf{s_{\gamma}} \; \mathbf{a_{u}}^{\mathsf{pt}} - \widetilde{\mu} \; \mathbf{c_{\gamma}} \; \mathbf{y_{u}}^{\mathsf{pt}} \right) \right) \; \mathsf{LF_{2,2,1,-1}} \left[ \mathsf{m_{\tilde{u}}}^{\mathsf{r}} \; , \; \mathsf{m_{\tilde{u}}}^{\mathsf{t}} \; , \; \mathsf{m_{\tilde{q}}}^{\mathsf{p}} \right] \; + \; \mathsf{m_{\tilde{u}}}^{\mathsf{pr}} \; \mathsf{m_{\tilde{u}}}^{\mathsf{pr}} \; \mathsf{m_{\tilde{u}}}^{\mathsf{pr}} \; \mathsf{m_{\tilde{u}}}^{\mathsf{pr}} \; \mathsf{m_{\tilde{u}}}^{\mathsf{pr}} \; \mathsf{m_{\tilde{u}}}^{\mathsf{pr}} \right] \; + \; \mathsf{m_{\tilde{u}}}^{\mathsf{pr}} \; \mathsf{m_{\tilde{u}}}^{\mathsf{pr}
                                                                                                                                             s_{\scriptscriptstyle Y}^{\ 2}\, \tilde{\mu}^2\, c_{\scriptscriptstyle Y}^{\ 2}\, \overline{y_u}^{\text{pr}}\, \overline{y_u}^{\text{st}}\, y_u^{\,\text{pt}}\, y_u^{\,\text{sr}}\, LF_{2,2,1,-1}\big[\text{m}_{\tilde{u}}^{\,\,\text{r}}\,,\, \text{m}_{\tilde{u}}^{\,\,\text{t}}\,,\, \text{m}_{\tilde{q}}^{\,\,\text{s}}\big]\,\, -
                                                                                                               \frac{1}{4} g_{1}^{2} g_{2}^{2} \left(c_{\gamma}^{4} + 5 s_{\gamma}^{2} c_{\gamma}^{2} + s_{\gamma}^{4}\right) LF_{2,1,1,-1}[\widetilde{\mu}, m_{1}, m_{2}] +
                                                                                                                                                 m_1 g_1^2 g_2^2 \left(m_2 \left(c_{\gamma}^4 - 4 s_{\gamma}^2 c_{\gamma}^2 + s_{\gamma}^4\right) - 4 s_{\gamma} \tilde{\mu} c_{\gamma} \left(c_{\gamma}^2 + s_{\gamma}^2\right)\right) LF_{2,1,1,0} [\tilde{\mu}, m_1, m_2] +
                                                                                                           \frac{3}{4} g_1^2 g_2^2 (c_{\gamma}^4 + s_{\gamma}^4) LF_{3,1,1,-2}[\tilde{\mu}, m_1, m_2] +
                                                                                                                   \frac{1}{4} \; g_{1}^{\; 2} \; g_{2}^{\; 2} \; \left( - \, m_{1} \; m_{2} \; \left( \, c_{\gamma}^{\; 4} - 4 \; s_{\gamma}^{\; 2} \; c_{\gamma}^{\; 2} + s_{\gamma}^{\; 4} \right) \; + \; s_{\gamma} \; \widetilde{\mu} \; c_{\gamma} \; \left( \, 5 \; m_{1} + \, m_{2} \right) \; \left( \, c_{\gamma}^{\; 2} + s_{\gamma}^{\; 2} \right) \; + \; 4 \; s_{\gamma}^{\; 2} \; \widetilde{\mu}^{2} \; c_{\gamma}^{\; 2} \right) \; + \; 4 \; s_{\gamma}^{\; 2} \; \widetilde{\mu}^{2} \; c_{\gamma}^{\; 2} \right) \; + \; 4 \; s_{\gamma}^{\; 2} \; \widetilde{\mu}^{2} \; c_{\gamma}^{\; 2} \; + \; s_{\gamma}^{\; 2} \; \widetilde{\mu}^{2} \; c_{\gamma}^{\; 2} \; \widetilde{\mu}^{2} \; c_{\gamma}^{\; 2} \; \widetilde{\mu}^{2} \; c_{\gamma}^{\; 2} \; \widetilde{\mu}^{2} 
                                                                                                                                      \mathsf{LF}_{3,1,1,-1}[\widetilde{\mu},\,\mathsf{m}_1,\,\mathsf{m}_2] - \frac{1}{2}\;\mathsf{g_1}^2\;\mathsf{g_2}^2\;\left(\mathsf{c_{\gamma}}^4 - \mathsf{s_{\gamma}}^2\;\mathsf{c_{\gamma}}^2 + \mathsf{s_{\gamma}}^4\right)\;\mathsf{LF}_{4,1,1,-3}[\widetilde{\mu},\,\mathsf{m}_1,\,\mathsf{m}_2] +
                                                                                                               \frac{1}{4} \; g_{1}^{\; 2} \; g_{2}^{\; 2} \; \left( \mathsf{m}_{1} \; \mathsf{m}_{2} \; \left( c_{\gamma}^{\; 4} - 4 \; s_{\gamma}^{\; 2} \; c_{\gamma}^{\; 2} + s_{\gamma}^{\; 4} \right) \; - \; 2 \; s_{\gamma} \; \widetilde{\mu} \; c_{\gamma} \; \left( \mathsf{m}_{1} + \mathsf{m}_{2} \right) \; \left( c_{\gamma}^{\; 2} + s_{\gamma}^{\; 2} \right) \; - \; 2 \; s_{\gamma}^{\; 2} \; \widetilde{\mu}^{2} \; c_{\gamma}^{\; 2} \right) \; .
                                                                                                                                      \mathsf{LF_{4,1,1,-2}}\left[\,\widetilde{\mu}\,,\,\,\mathsf{m_{1}}\,,\,\,\mathsf{m_{2}}\,\right]\,-\,\frac{1}{2}\,\,\mathsf{m_{1}}\,\,\mathsf{m_{2}}\,\,\mathsf{g_{1}}^{2}\,\,\mathsf{g_{2}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\widetilde{\mu}^{2}\,\,\mathsf{c_{\gamma}}^{2}\,\,\mathsf{LF_{4,1,1,-1}}\left[\,\widetilde{\mu}\,,\,\,\mathsf{m_{1}}\,,\,\,\mathsf{m_{2}}\,\right]\,-\,\frac{1}{2}\,\,\mathsf{m_{1}}\,\,\mathsf{m_{2}}\,\,\mathsf{g_{1}}^{2}\,\,\mathsf{g_{2}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\widetilde{\mu}^{2}\,\,\mathsf{c_{\gamma}}^{2}\,\,\mathsf{LF_{4,1,1,-1}}\left[\,\widetilde{\mu}\,,\,\,\mathsf{m_{1}}\,,\,\,\mathsf{m_{2}}\,\right]\,-\,\frac{1}{2}\,\,\mathsf{m_{1}}\,\,\mathsf{m_{2}}\,\,\mathsf{g_{1}}^{2}\,\,\mathsf{g_{2}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{m_{2}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{LF_{4,1,1,-1}}\left[\,\widetilde{\mu}\,,\,\,\mathsf{m_{1}}\,,\,\,\mathsf{m_{2}}\,\right]\,-\,\frac{1}{2}\,\,\mathsf{m_{1}}\,\,\mathsf{m_{2}}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{s_{\gamma}}^{2}\,\,\mathsf{
                                                                                                               \frac{1}{2} g_1^2 g_2^2 LF_{3,2,1,-3} [\tilde{\mu}, m_2, m_1] (c_{\gamma}^2 + s_{\gamma}^2)^2 +
                                                                                                           \mathsf{LF}_{3,2,1,-2}[\tilde{\mu},\,\mathsf{m}_2,\,\mathsf{m}_1] - 2 \mathsf{m}_1\,\mathsf{m}_2\,\mathsf{g}_1^2\,\mathsf{g}_2^2\,\mathsf{s}_{\gamma}^2\,\tilde{\mu}^2\,\mathsf{c}_{\gamma}^2\,\mathsf{LF}_{3,2,1,-1}[\tilde{\mu},\,\mathsf{m}_2,\,\mathsf{m}_1] +
                                                                                                               \frac{3}{2}\left(s_{\gamma}^{2}\widetilde{\mu}^{2}\overline{y_{d}}^{pr}\overline{y_{d}}^{st}\left(s_{\gamma}^{2}\widetilde{\mu}^{2}y_{d}^{pt}y_{d}^{sr}+c_{\gamma}a_{d}^{pt}\left(c_{\gamma}a_{d}^{sr}-s_{\gamma}\widetilde{\mu}y_{d}^{sr}\right)\right)+
                                                                                                                                                                                                     c_{_{Y}}\,\overline{a_{d}}^{pr}\,\left(-\,s_{_{Y}}\,\widetilde{\mu}\,\overline{y_{d}}^{st}\,\left(-\,c_{_{Y}}\,a_{d}^{\,pt}+\,s_{_{Y}}\,\widetilde{\mu}\,y_{d}^{\,pt}\right)\,\left(-\,c_{_{Y}}\,a_{d}^{\,sr}+\,s_{_{Y}}\,\widetilde{\mu}\,y_{d}^{\,sr}\right)\,+\,c_{_{Y}}\,\overline{a_{d}}^{st}
                                                                                                                                                                                                                                                                                                                                     \left(\,s_{\gamma}^{\,2}\,\,\tilde{\mu}^{2}\,\,y_{d}^{\,\text{pt}}\,\,y_{d}^{\,\text{sr}}\,+\,c_{\gamma}\,\,a_{d}^{\,\text{pt}}\,\,\left(\,c_{\gamma}\,\,a_{d}^{\,\text{sr}}\,-\,s_{\gamma}\,\,\tilde{\mu}\,\,y_{d}^{\,\text{sr}}\,\right)\,\right)\,\right)\,\,\mathsf{LF}_{2,1,1,1,0}\left[\,\mathsf{m}_{\tilde{d}}^{\,\,\text{r}}\,,\,\,\mathsf{m}_{\tilde{d}}^{\,\,\text{t}}\,,\,\,\mathsf{m}_{\tilde{q}}^{\,\,\text{p}}\,,\,\,\mathsf{m}_{\tilde{q}}^{\,\,\text{s}}\,\right]\,-\,2\,\left(\,s_{\gamma}^{\,\,2}\,\,a_{d}^{\,\,\text{sr}}\,-\,s_{\gamma}\,\,\tilde{\mu}\,\,y_{d}^{\,\,\text{sr}}\,\right)\,\right)\,,
                                                                                                               \frac{3}{2}\left(s_{\gamma}^{2}\widetilde{\mu}^{2}\overline{y_{d}}^{pr}\overline{y_{d}}^{st}\left(s_{\gamma}^{2}\widetilde{\mu}^{2}y_{d}^{pt}y_{d}^{sr}+c_{\gamma}a_{d}^{pt}\left(c_{\gamma}a_{d}^{sr}-s_{\gamma}\widetilde{\mu}y_{d}^{sr}\right)\right)+
                                                                                                                                                                                                     c_{_{Y}}\,\overline{a_{d}}^{pr}\,\left(-\,s_{_{Y}}\,\widetilde{\mu}\,\overline{y_{d}}^{st}\,\left(-\,c_{_{Y}}\,\,a_{d}^{\,pt}+\,s_{_{Y}}\,\widetilde{\mu}\,\,y_{d}^{\,pt}\right)\,\,\left(-\,c_{_{Y}}\,\,a_{d}^{\,sr}+\,s_{_{Y}}\,\widetilde{\mu}\,\,y_{d}^{\,sr}\right)\,+\,c_{_{Y}}\,\overline{a_{d}}^{st}
                                                                                                                                                                                                                                                                                                                                 \frac{3}{4}\left(s_{\gamma}^{2}\widetilde{\mu}^{2}\overline{y_{d}}^{pr}\overline{y_{d}}^{st}\left(s_{\gamma}^{2}\widetilde{\mu}^{2}y_{d}^{pt}y_{d}^{sr}+c_{\gamma}a_{d}^{pt}\left(c_{\gamma}a_{d}^{sr}-s_{\gamma}\widetilde{\mu}y_{d}^{sr}\right)\right)+
                                                                                                                                                                                                     c_{\gamma} \; \overline{a_d}^{pr} \; \left( - \, s_{\gamma} \, \widetilde{\mu} \; \overline{y_d}^{st} \; \left( - \, c_{\gamma} \; a_d^{\, pt} + \, s_{\gamma} \, \widetilde{\mu} \; y_d^{\, pt} \right) \; \left( - \, c_{\gamma} \; a_d^{\, sr} + \, s_{\gamma} \, \widetilde{\mu} \; y_d^{\, sr} \right) \; + \, c_{\gamma} \; \overline{a_d}^{st}
                                                                                                                                                                                                                                                                                                                                        \left(\,{s_{\gamma}}^{2}\,\,\tilde{\mu}^{2}\,\,{y_{d}}^{\text{pt}}\,\,{y_{d}}^{\text{sr}}\,\,+\,\,{c_{\gamma}}\,\,{a_{d}}^{\text{pt}}\,\,\left(\,{c_{\gamma}}\,\,{a_{d}}^{\text{sr}}\,\,-\,\,{s_{\gamma}}\,\,\tilde{\mu}\,\,{y_{d}}^{\text{sr}}\,\right)\,\right)\,\right)\,\,LF_{2,2,1,1,-1}\big[\,{m_{\tilde{d}}}^{\,\,r},\,\,{m_{\tilde{q}}}^{\,\,p},\,\,{m_{\tilde{d}}}^{\,\,t},\,\,{m_{\tilde{q}}}^{\,\,s}\,\big]\,\,-\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{a_{d}}^{\,\,r}\,\,+\,\,{
                                                                                                               \frac{3}{4}\left(s_{\gamma}^{2}\widetilde{\mu}^{2}\overline{y_{d}}^{pr}\overline{y_{d}}^{st}\left(s_{\gamma}^{2}\widetilde{\mu}^{2}y_{d}^{pt}y_{d}^{sr}+c_{\gamma}a_{d}^{pt}\left(c_{\gamma}a_{d}^{sr}-s_{\gamma}\widetilde{\mu}y_{d}^{sr}\right)\right)+
                                                                                                                                                                                                     c_{\gamma} \overline{a_d}^{pr} \left(-s_{\gamma} \widetilde{\mu} \overline{y_d}^{st} \left(-c_{\gamma} a_d^{pt} + s_{\gamma} \widetilde{\mu} y_d^{pt}\right) \left(-c_{\gamma} a_d^{sr} + s_{\gamma} \widetilde{\mu} y_d^{sr}\right) +
                                                                                                                                                                                                                                                                                               c_{\gamma} \overline{a_d}^{st} \left( s_{\gamma}^2 \widetilde{\mu}^2 y_d^{pt} y_d^{sr} + c_{\gamma} a_d^{pt} \left( c_{\gamma} a_d^{sr} - s_{\gamma} \widetilde{\mu} y_d^{sr} \right) \right) \right)
                                                                                                                                      \mathsf{LF_{2,2,1,1,-1}} \big[ \, \mathsf{m_{\tilde{d}}}^{\, \mathsf{r}} \,, \, \, \mathsf{m_{\tilde{q}}}^{\, \mathsf{s}} \,, \, \, \mathsf{m_{\tilde{d}}}^{\, \mathsf{t}} \,, \, \, \mathsf{m_{\tilde{q}}}^{\, \mathsf{p}} \, \big] \, - \, \frac{3}{2} \, \, \mathsf{s_{\gamma}} \, \, \widetilde{\mu} \, \, \mathsf{c_{\gamma}} \, \, \left( \, \mathsf{s_{\gamma}}^{2} \, \, \widetilde{\mu}^{2} \, \, \overline{\mathsf{y_{d}}}^{\mathsf{pr}} \, \, \overline{\mathsf{y_{d}}}^{\mathsf{st}} \, \, \mathsf{y_{d}}^{\mathsf{sr}} \, \, \mathsf{a_{d}}^{\mathsf{pt}} \, + \, \mathsf{y_{d}}^{\mathsf{st}} \, \, \, \mathsf{y_{d}}^{\mathsf{st}} \, \, \, \mathsf{y_{d}}^{\mathsf{s_{
                                                                                                                                                                                                  \overline{a_d}^{pr} \left( c_{\gamma}^2 y_d^{sr} \overline{a_d}^{st} a_d^{pt} + \overline{y_d}^{st} \left( c_{\gamma} a_d^{pt} - s_{\gamma} \widetilde{\mu} y_d^{pt} \right) \left( c_{\gamma} a_d^{sr} - s_{\gamma} \widetilde{\mu} y_d^{sr} \right) \right)
                                                                                                                                      \text{LF}_{2,1,1,1,9}\left[\,{m_{\bar{d}}}^{\,t}\,,\,{m_{\bar{d}}}^{\,r}\,,\,{m_{\bar{q}}}^{\,p}\,,\,{m_{\bar{q}}}^{\,s}\,\right]\,+\,\frac{3}{2}\,\,s_{\gamma}\,\widetilde{\mu}\,\,c_{\gamma}\,\left(\,s_{\gamma}^{\,2}\,\,\widetilde{y_{d}}^{\,2}\,\,\overline{y_{d}}^{\,pr}\,\,\overline{y_{d}}^{\,st}\,\,y_{d}^{\,sr}\,\,a_{d}^{\,pt}\,+\,\frac{3}{2}\,\,s_{\gamma}\,\widetilde{\mu}\,\,c_{\gamma}\,\left(\,s_{\gamma}^{\,2}\,\,\widetilde{\mu}^{\,2}\,\,\overline{y_{d}}^{\,pr}\,\,\overline{y_{d}}^{\,st}\,\,y_{d}^{\,sr}\,\,a_{d}^{\,pt}\,+\,\frac{3}{2}\,\,s_{\gamma}\,\widetilde{\mu}\,\,c_{\gamma}\,\left(\,s_{\gamma}^{\,2}\,\,\widetilde{\mu}^{\,2}\,\,\overline{y_{d}}^{\,pr}\,\,\overline{y_{d}}^{\,st}\,\,y_{d}^{\,sr}\,\,a_{d}^{\,pt}\,+\,\frac{3}{2}\,\,s_{\gamma}\,\widetilde{\mu}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,
                                                                                                                                                                                                  \overline{a_d}^{pr} \left( c_{\gamma}^{2} y_d^{sr} \overline{a_d}^{st} a_d^{pt} + \overline{y_d}^{st} \left( c_{\gamma} a_d^{pt} - s_{\gamma} \widetilde{\mu} y_d^{pt} \right) \left( c_{\gamma} a_d^{sr} - s_{\gamma} \widetilde{\mu} y_d^{sr} \right) \right)
                                                                                                                                      \text{LF}_{3,1,1,1,-1}\big[\text{m}_{\tilde{d}}^{\;t}\,,\,\text{m}_{\tilde{d}}^{\;r}\,,\,\text{m}_{\tilde{q}}^{\;r}\,,\,\text{m}_{\tilde{q}}^{\;s}\big] \,+\, \frac{3}{4}\,\,s_{\gamma}\,\tilde{\mu}\,\,c_{\gamma}\,\,\big(s_{\gamma}^{\;2}\,\tilde{\mu}^{2}\,\,\overline{y_{d}}^{pr}\,\,\overline{y_{d}}^{st}\,\,y_{d}^{\,sr}\,\,a_{d}^{\,pt}\,+\, \frac{3}{4}\,\,s_{\gamma}\,\tilde{\mu}\,\,c_{\gamma}\,\,(s_{\gamma}^{\;2}\,\tilde{\mu}^{2}\,\,\overline{y_{d}}^{pr}\,\,\overline{y_{d}}^{st}\,\,y_{d}^{\,sr}\,\,a_{d}^{\,pt}\,+\, \frac{3}{4}\,\,s_{\gamma}\,\tilde{\mu}\,\,c_{\gamma}\,\,(s_{\gamma}^{\;2}\,\tilde{\mu}^{2}\,\,\overline{y_{d}}^{pr}\,\,\overline{y_{d}}^{st}\,\,y_{d}^{\,sr}\,\,a_{d}^{\,pt}\,+\, \frac{3}{4}\,\,s_{\gamma}\,\tilde{\mu}\,\,c_{\gamma}\,\,(s_{\gamma}^{\;2}\,\,\overline{\mu}^{2}\,\,\overline{y_{d}}^{pr}\,\,\overline{y_{d}}^{st}\,\,y_{d}^{\,sr}\,\,a_{d}^{\,pt}\,+\, \frac{3}{4}\,\,s_{\gamma}\,\tilde{\mu}\,\,c_{\gamma}\,\,(s_{\gamma}^{\;2}\,\,\overline{\mu}^{2}\,\,\overline{y_{d}}^{pr}\,\,\overline{y_{d}}^{st}\,\,y_{d}^{\,sr}\,\,a_{d}^{\,pt}\,+\, \frac{3}{4}\,\,s_{\gamma}\,\tilde{\mu}\,\,c_{\gamma}\,\,(s_{\gamma}^{\;2}\,\,\overline{\mu}^{2}\,\,\overline{y_{d}}^{pr}\,\,\overline{y_{d}}^{st}\,\,y_{d}^{\,sr}\,\,a_{d}^{\,pt}\,+\, \frac{3}{4}\,\,s_{\gamma}\,\,\overline{\mu}\,\,c_{\gamma}\,\,(s_{\gamma}^{\;2}\,\,\overline{\mu}^{2}\,\,\overline{y_{d}}^{pr}\,\,\overline{y_{d}}^{st}\,\,y_{d}^{\,sr}\,\,a_{d}^{\,pt}\,+\, \frac{3}{4}\,\,s_{\gamma}\,\,\overline{\mu}\,\,c_{\gamma}\,\,c_{\gamma}\,\,\overline{\mu}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,\,c_{\gamma}\,
                                                                                                                                                                                                  \overline{a_d}^{pr} \left( c_{\gamma}^{\ 2} \ y_d^{\ sr} \ \overline{a_d}^{\ st} \ a_d^{\ pt} + \overline{y_d}^{\ st} \left( c_{\gamma} \ a_d^{\ pt} - s_{\gamma} \ \widetilde{\mu} \ y_d^{\ pt} \right) \ \left( c_{\gamma} \ a_d^{\ sr} - s_{\gamma} \ \widetilde{\mu} \ y_d^{\ sr} \right) \right) \right)
                                                                                                                                         \overline{a_d}^{\text{pr}} \left( c_{\gamma}^{2} y_d^{\text{sr}} \overline{a_d}^{\text{st}} a_d^{\text{pt}} + \overline{y_d}^{\text{st}} \left( c_{\gamma} a_d^{\text{pt}} - s_{\gamma} \widetilde{\mu} y_d^{\text{pt}} \right) \right. \\ \left. \left( c_{\gamma} a_d^{\text{sr}} - s_{\gamma} \widetilde{\mu} y_d^{\text{sr}} \right) \right) \right) \\ LF_{2,2,1,1,-1} \left[ m_{\widetilde{d}}^{\text{t}}, m_{\widetilde{d}}^{\text{t}} \right] \\ \left. \left( c_{\gamma} a_d^{\text{pt}} - s_{\gamma} \widetilde{\mu} y_d^{\text{pt}} \right) \right] \\ \left. \left( c_{\gamma} a_d^{\text{pt}} - s_{\gamma} \widetilde{\mu} y_d^{\text{pt}} \right) \right] \\ \left. \left( c_{\gamma} a_d^{\text{pt}} - s_{\gamma} \widetilde{\mu} y_d^{\text{pt}} \right) \right] \\ \left. \left( c_{\gamma} a_d^{\text{pt}} - s_{\gamma} \widetilde{\mu} y_d^{\text{pt}} \right) \right] \\ \left. \left( c_{\gamma} a_d^{\text{pt}} - s_{\gamma} \widetilde{\mu} y_d^{\text{pt}} \right) \right] \\ \left. \left( c_{\gamma} a_d^{\text{pt}} - s_{\gamma} \widetilde{\mu} y_d^{\text{pt}} \right) \right] \\ \left. \left( c_{\gamma} a_d^{\text{pt}} - s_{\gamma} \widetilde{\mu} y_d^{\text{pt}} \right) \right] \\ \left. \left( c_{\gamma} a_d^{\text{pt}} - s_{\gamma} \widetilde{\mu} y_d^{\text{pt}} \right) \right] \\ \left. \left( c_{\gamma} a_d^{\text{pt}} - s_{\gamma} \widetilde{\mu} y_d^{\text{pt}} \right) \right] \\ \left. \left( c_{\gamma} a_d^{\text{pt}} - s_{\gamma} \widetilde{\mu} y_d^{\text{pt}} \right) \right] \\ \left. \left( c_{\gamma} a_d^{\text{pt}} - s_{\gamma} \widetilde{\mu} y_d^{\text{pt}} \right) \right] \\ \left. \left( c_{\gamma} a_d^{\text{pt}} - s_{\gamma} \widetilde{\mu} y_d^{\text{pt}} \right) \right] \\ \left. \left( c_{\gamma} a_d^{\text{pt}} - s_{\gamma} \widetilde{\mu} y_d^{\text{pt}} \right) \right] \\ \left. \left( c_{\gamma} a_d^{\text{pt}} - s_{\gamma} \widetilde{\mu} y_d^{\text{pt}} \right) \right] \\ \left. \left( c_{\gamma} a_d^{\text{pt}} - s_{\gamma} \widetilde{\mu} y_d^{\text{pt}} \right) \right] \\ \left. \left( c_{\gamma} a_d^{\text{pt}} - s_{\gamma} \widetilde{\mu} y_d^{\text{pt}} \right) \right] \\ \left. \left( c_{\gamma} a_d^{\text{pt}} - s_{\gamma} \widetilde{\mu} y_d^{\text{pt}} \right) \right] \\ \left. \left( c_{\gamma} a_d^{\text{pt}} - s_{\gamma} \widetilde{\mu} y_d^{\text{pt}} \right) \right] \\ \left. \left( c_{\gamma} a_d^{\text{pt}} - s_{\gamma} \widetilde{\mu} y_d^{\text{pt}} \right) \right] \\ \left. \left( c_{\gamma} a_d^{\text{pt}} - s_{\gamma} \widetilde{\mu} y_d^{\text{pt}} \right) \right] \\ \left. \left( c_{\gamma} a_d^{\text{pt}} - s_{\gamma} \widetilde{\mu} y_d^{\text{pt}} \right) \right] \\ \left. \left( c_{\gamma} a_d^{\text{pt}} - s_{\gamma} \widetilde{\mu} y_d^{\text{pt}} \right) \right] \\ \left. \left( c_{\gamma} a_d^{\text{pt}} - s_{\gamma} \widetilde{\mu} y_d^{\text{pt}} \right) \right] \\ \left. \left( c_{\gamma} a_d^{\text{pt}} - s_{\gamma} \widetilde{\mu} y_d^{\text{pt}} \right) \right] \\ \left. \left( c_{\gamma} a_d^{\text{pt}} - s_{\gamma} \widetilde{\mu} y_d^{\text{pt}} \right) \right] \\ \left. \left( c_{\gamma} a_d^{\text{pt}} - s_{\gamma} \widetilde{\mu} y_d^{\text{pt}} \right) \right] \\ \left. \left( c_{\gamma} a_d^{\text{pt}} - s_{\gamma} \widetilde{\mu} y_d^{\text{pt}} \right) \right] \\ \left. \left( c_{\gamma} a_d^{\text{pt}} - s_{\gamma} \widetilde{\mu} y_d^{\text{pt}} \right) \right] \\ \left. \left( c_{\gamma} a_d^{\text{pt}} - s_{\gamma} \widetilde{\mu} y_d^{\text{pt}} \right) \right] \\ \left. \left( c_{\gamma} a_d^{\text{pt}} - s_{\gamma} \widetilde{\mu} y_d^{\text{pt}} \right) \right] \\ \left. \left( c_{\gamma} a_d^{\text{pt}} - s_{\gamma} \widetilde{\mu} y_d^{\text{pt}} \right) \right] \\ \left. \left( c_{\gamma} a_d^{\text{pt}
                                                                                                                                                                    \mathbf{m_{\tilde{q}}}^{s}\text{, }\mathbf{m_{\tilde{d}}}^{r}\text{, }\mathbf{m_{\tilde{q}}}^{p}\big] \text{ }+\frac{1}{2}\text{ }\left(s_{\gamma}^{2}\,\widetilde{\mu}^{2}\,\overline{y_{e}}^{pr}\,\overline{y_{e}}^{st}\,\left(s_{\gamma}^{2}\,\widetilde{\mu}^{2}\,y_{e}^{pt}\,y_{e}^{sr}+c_{\gamma}\,a_{e}^{pt}\,\left(c_{\gamma}\,a_{e}^{\,sr}-s_{\gamma}\,\widetilde{\mu}\,y_{e}^{\,sr}\right)\right)\text{ }+\frac{1}{2}\left(s_{\gamma}^{2}\,\widetilde{\mu}^{2}\,\overline{y_{e}}^{pr}\,\overline{y_{e}}^{st}\right)^{2}
                                                                                                                                                                                                     c_{\gamma} \; \overline{a_{e}}^{pr} \; \left( - \, s_{\gamma} \; \widetilde{\mu} \; \overline{y_{e}}^{st} \; \left( - \, c_{\gamma} \; a_{e}^{\; pt} + \, s_{\gamma} \; \widetilde{\mu} \; y_{e}^{\; pt} \right) \; \left( - \, c_{\gamma} \; a_{e}^{\; sr} + \, s_{\gamma} \; \widetilde{\mu} \; y_{e}^{\; sr} \right) \; + \; c_{\gamma} \; \overline{a_{e}}^{st} \; + \; c_{\gamma} \; \overline{a_{e}}^{\; st} \; + \; c_{\gamma} \; \overline{a_{e}}^{\; 
                                                                                                                                                                                                                                                                                                                                     \left( \, {s_{_{Y}}}^{2} \,\, {\tilde{\mu}^{2}} \,\, {y_{e}}^{\text{pt}} \,\, {y_{e}}^{\text{sr}} \,\, + \,\, {c_{_{Y}}} \,\, {a_{e}}^{\text{pt}} \,\, \left( \, {c_{_{Y}}} \,\, {a_{e}}^{\text{sr}} \,\, - \,\, {s_{_{Y}}} \,\, {\tilde{\mu}} \,\, {y_{e}}^{\text{sr}} \right) \, \right) \, \right) \,\, \text{LF}_{2,1,1,1,0} \left[ \, {m_{\tilde{e}}}^{\, \text{r}} \,, \,\, {m_{\tilde{e}}}^{\, \text{t}} \,, \,\, {m_{\tilde{i}}}^{\, \text{p}} \,, \,\, {m_{\tilde{i}}}^{\, \text{s}} \, \right] \,\, + \,\, {a_{1}}^{\, \text{sp}} \,\, {a_{2}}^{\, \text{sp}} \,\, + \,\, {a_{2}}^{\, \text{sp}} \,\, {a_{2}}^{\, \text{sp}} \,\, + \,\, {a_{2}}^{\, \text{sp}} \,\, {a_{2}}^{\, \text{sp}} \,\, + \,\, {a_{2}}^{\, \text{sp}} \,\, + \,\, {a_{2}}^{\, \text{sp}} \,\, {a_{2}}^{\, \text{sp}} \,\, + \,\, {a_{2}}^{\, \text{sp}} \,\, + \,\, {a_{2}}^{\, \text{sp}} \,\, + \,\, {a_{2}}^{\, \text{sp}} \,\, {a_{2}}^{\, \text{sp}} \,\, + \,\, {a_{2}}
                                                                                                           \frac{1}{2} \left(-\, s_{\gamma}^{\, 2} \, \widetilde{\mu}^{2} \, \overline{y_{e}}^{pr} \, \overline{y_{e}}^{st} \, \left(s_{\gamma}^{\, 2} \, \widetilde{\mu}^{2} \, y_{e}^{pt} \, y_{e}^{\, sr} + c_{\gamma} \, a_{e}^{\, pt} \, \left(c_{\gamma} \, a_{e}^{\, sr} - s_{\gamma} \, \widetilde{\mu} \, y_{e}^{\, sr}\right)\right) \, + \\
                                                                                                                                                                                                  c_{\gamma} \, \overline{a_{e}}^{pr} \, \left( s_{\gamma} \, \widetilde{\mu} \, \overline{y_{e}}^{st} \, \left( - \, c_{\gamma} \, a_{e}^{\, pt} + \, s_{\gamma} \, \widetilde{\mu} \, y_{e}^{\, pt} \right) \, \left( - \, c_{\gamma} \, a_{e}^{\, sr} + \, s_{\gamma} \, \widetilde{\mu} \, y_{e}^{\, sr} \right) \, - \, c_{\gamma} \, \overline{a_{e}}^{st} \, \left( - \, c_{\gamma} \, a_{e}^{\, sr} + \, s_{\gamma} \, \widetilde{\mu} \, y_{e}^{\, sr} \right) \, - \, c_{\gamma} \, \overline{a_{e}}^{\, st} \, \left( - \, c_{\gamma} \, a_{e}^{\, sr} + \, s_{\gamma} \, \widetilde{\mu} \, y_{e}^{\, sr} \right) \, - \, c_{\gamma} \, \overline{a_{e}}^{\, st} \, \left( - \, c_{\gamma} \, a_{e}^{\, sr} + \, s_{\gamma} \, \widetilde{\mu} \, y_{e}^{\, sr} \right) \, - \, c_{\gamma} \, \overline{a_{e}}^{\, st} \, + \, s_{\gamma} \, \widetilde{\mu} \, y_{e}^{\, sr} \, \right) \, - \, c_{\gamma} \, \overline{a_{e}}^{\, st} \, \left( - \, c_{\gamma} \, a_{e}^{\, sr} + \, s_{\gamma} \, \widetilde{\mu} \, y_{e}^{\, sr} \right) \, - \, c_{\gamma} \, \overline{a_{e}}^{\, st} \, + \, s_{\gamma} \, \widetilde{\mu} \, y_{e}^{\, sr} \, + \, s_{\gamma} \, \widetilde{\mu} \, y_{e}^{\, sr} \, \right) \, - \, c_{\gamma} \, \overline{a_{e}}^{\, st} \, + \, s_{\gamma} \, \widetilde{\mu} \, y_{e}^{\, st} \, + \, s_{\gamma} \, \widetilde{\mu} \, y_{e}^{\, st} \, + \, s_{\gamma} \, \widetilde{\mu} \, y_{e}^{\, st} \, + \, s_{\gamma} \, \widetilde{\mu} \, y_{e}^{\, st} \, + \, s_{\gamma} \, \widetilde{\mu} \, y_{e}^{\, st} \, + \, s_{\gamma} \, \widetilde{\mu} \, y_{e}^{\, st} \, + \, s_{\gamma} \, \widetilde{\mu} \, y_{e}^{\, st} \, + \, s_{\gamma} \, \widetilde{\mu} \, y_{e}^{\, st} \, + \, s_{\gamma} \, \widetilde{\mu} \, y_{e}^{\, st} \, + \, s_{\gamma} \, \widetilde{\mu} \, y_{e}^{\, st} \, + \, s_{\gamma} \, \widetilde{\mu} \, y_{e}^{\, st} \, + \, s_{\gamma} \, \widetilde{\mu} \, y_{e}^{\, st} \, + \, s_{\gamma} \, \widetilde{\mu} \, y_{e}^{\, st} \, + \, s_{\gamma} \, \widetilde{\mu} \, y_{e}^{\, st} \, + \, s_{\gamma} \, \widetilde{\mu} \, y_{e}^{\, st} \, + \, s_{\gamma} \, \widetilde{\mu} \, y_{e}^{\, st} \, + \, s_{\gamma} \, \widetilde{\mu} \, y_{e}^{\, st} \, + \, s_{\gamma} \, \widetilde{\mu} \, y_{e}^{\, st} \, + \, s_{\gamma} \, \widetilde{\mu} \, y_{e}^{\, st} \, + \, s_{\gamma} \, \widetilde{\mu} \, y_{e}^{\, st} \, + \, s_{\gamma} \, \widetilde{\mu} \, y_{e}^{\, st} \, + \, s_{\gamma} \, \widetilde{\mu} \, y_{e}^{\, st} \, + \, s_{\gamma} \, \widetilde{\mu} \, y_{e}^{\, st} \, + \, s_{\gamma} \, \widetilde{\mu} \, y_{e}^{\, st} \, + \, s_{\gamma} \, \widetilde{\mu} \, y_{e}^{\, st} \, + \, s_{\gamma} \, \widetilde{\mu} \, y_{e}^{\, st} \, + \, s_{\gamma} \, \widetilde{\mu} \, y_{e}^{\, st} \, + \, s_{\gamma} \, \widetilde{\mu} \, y_{e}^{\, st} \, + \, s_{\gamma} \, \widetilde{\mu} \, y_{e}^{\, st} \, + \, s_{\gamma} \, \widetilde{\mu} \, y_{e}^{\, st} \, + \, s_{\gamma} \, \widetilde{\mu} \, y_{e}^{\, st} \, + \, s_{\gamma} \, \widetilde{\mu} \, y_{e}^{\, st} \, + \, s_{\gamma} \, \widetilde{\mu} \, y_{e}^{\, st} \, + \, s_{\gamma} \, \widetilde{\mu} \, y_{e}^{\, st} \, + \, s_{\gamma} \, \widetilde{\mu} \, y_{e}^{\, st} \, + \, s_{\gamma} \, \widetilde{\mu} \, y_{e}^{\, st} \, + \, s_{\gamma} \, \widetilde{\mu} \, y_{e}^{\, st} \, + \, s_{\gamma} \, \widetilde{\mu} \,
                                                                                                                                                                                                                                                                                                                                     \frac{1}{4} \left(-\, \mathsf{S}_{\mathsf{Y}}^{\, 2} \, \widetilde{\mu}^{2} \, \overline{\mathsf{y}_{\mathsf{e}}}^{\mathsf{pr}} \, \overline{\mathsf{y}_{\mathsf{e}}}^{\mathsf{st}} \, \left(\mathsf{S}_{\mathsf{Y}}^{\, 2} \, \widetilde{\mu}^{2} \, \mathsf{y}_{\mathsf{e}}^{\mathsf{pt}} \, \mathsf{y}_{\mathsf{e}}^{\mathsf{sr}} + \mathsf{c}_{\mathsf{Y}} \, \mathsf{a}_{\mathsf{e}}^{\mathsf{pt}} \, \left(\mathsf{c}_{\mathsf{Y}} \, \mathsf{a}_{\mathsf{e}}^{\mathsf{sr}} - \mathsf{s}_{\mathsf{Y}} \, \widetilde{\mu} \, \mathsf{y}_{\mathsf{e}}^{\mathsf{sr}}\right)\right) \, + \, \mathcal{A}_{\mathsf{Y}}^{\mathsf{pr}} \, \mathcal{A}_{\mathsf{Y}
                                                                                                                                                                                                  c_{\gamma} \; \overline{a_{e}}^{pr} \; \left( s_{\gamma} \; \widetilde{\mu} \; \overline{y_{e}}^{st} \; \left( - \, c_{\gamma} \; a_{e}^{\; pt} + \, s_{\gamma} \; \widetilde{\mu} \; y_{e}^{\; pt} \right) \; \left( - \, c_{\gamma} \; a_{e}^{\; sr} + \, s_{\gamma} \; \widetilde{\mu} \; y_{e}^{\; sr} \right) \; - \, c_{\gamma} \; \overline{a_{e}}^{st} \; \left( - \, c_{\gamma} \; a_{e}^{\; sr} + \, s_{\gamma} \; \widetilde{\mu} \; y_{e}^{\; sr} \right) \; - \; c_{\gamma} \; \overline{a_{e}}^{st} \; \left( - \, c_{\gamma} \; a_{e}^{\; sr} + \, s_{\gamma} \; \widetilde{\mu} \; y_{e}^{\; sr} \right) \; - \; c_{\gamma} \; \overline{a_{e}}^{st} \; \left( - \, c_{\gamma} \; a_{e}^{\; sr} + \, s_{\gamma} \; \widetilde{\mu} \; y_{e}^{\; sr} \right) \; - \; c_{\gamma} \; \overline{a_{e}}^{st} \; + \; c_{\gamma} \; \overline{\mu} \; y_{e}^{\; sr} \; + \; c_{\gamma} \; \overline{\mu} \; y_{e}^{\; sr} \; + \; c_{\gamma} \; \overline{\mu} \; y_{e}^{\; sr} \; + \; c_{\gamma} \; \overline{\mu} \; y_{e}^{\; sr} \; + \; c_{\gamma} \; \overline{\mu} \; y_{e}^{\; sr} \; + \; c_{\gamma} \; \overline{\mu} \; y_{e}^{\; sr} \; + \; c_{\gamma} \; \overline{\mu} \; y_{e}^{\; sr} \; + \; c_{\gamma} \; \overline{\mu} \; y_{e}^{\; sr} \; + \; c_{\gamma} \; \overline{\mu} \; y_{e}^{\; sr} \; + \; c_{\gamma} \; \overline{\mu} \; y_{e}^{\; sr} \; + \; c_{\gamma} \; \overline{\mu} \; y_{e}^{\; sr} \; + \; c_{\gamma} \; \overline{\mu} \; y_{e}^{\; sr} \; + \; c_{\gamma} \; \overline{\mu} \; y_{e}^{\; sr} \; + \; c_{\gamma} \; \overline{\mu} \; y_{e}^{\; sr} \; + \; c_{\gamma} \; \overline{\mu} \; y_{e}^{\; sr} \; + \; c_{\gamma} \; \overline{\mu} \; y_{e}^{\; sr} \; + \; c_{\gamma} \; \overline{\mu} \; y_{e}^{\; sr} \; + \; c_{\gamma} \; \overline{\mu} \; y_{e}^{\; sr} \; + \; c_{\gamma} \; \overline{\mu} \; y_{e}^{\; sr} \; + \; c_{\gamma} \; \overline{\mu} \; y_{e}^{\; sr} \; + \; c_{\gamma} \; \overline{\mu} \; y_{e}^{\; sr} \; + \; c_{\gamma} \; \overline{\mu} \; y_{e}^{\; sr} \; + \; c_{\gamma} \; \overline{\mu} \; y_{e}^{\; sr} \; + \; c_{\gamma} \; \overline{\mu} \; y_{e}^{\; sr} \; + \; c_{\gamma} \; \overline{\mu} \; y_{e}^{\; sr} \; + \; c_{\gamma} \; \overline{\mu} \; y_{e}^{\; sr} \; + \; c_{\gamma} \; \overline{\mu} \; y_{e}^{\; sr} \; + \; c_{\gamma} \; \overline{\mu} \; y_{e}^{\; sr} \; + \; c_{\gamma} \; \overline{\mu} \; y_{e}^{\; sr} \; + \; c_{\gamma} \; \overline{\mu} \; y_{e}^{\; sr} \; + \; c_{\gamma} \; \overline{\mu} \; y_{e}^{\; sr} \; + \; c_{\gamma} \; \overline{\mu} \; y_{e}^{\; sr} \; + \; c_{\gamma} \; \overline{\mu} \; y_{e}^{\; sr} \; + \; c_{\gamma} \; \overline{\mu} \; y_{e}^{\; sr} \; + \; c_{\gamma} \; \overline{\mu} \; y_{e}^{\; sr} \; + \; c_{\gamma} \; \overline{\mu} \; y_{e}^{\; sr} \; + \; c_{\gamma} \; \overline{\mu} \; y_{e}^{\; sr} \; + \; c_{\gamma} \; \overline{\mu} \; y_{e}^{\; sr} \; + \; c_{\gamma} \; \overline{\mu} \; y_{e}^{\; sr} \; + \; c_{\gamma} \; \overline{\mu} \; y_{e}^{\; sr} \; + \; c_{\gamma} \; \overline{\mu} \; y_{e}^{\; sr} \; + \; c_{\gamma} \; \overline{\mu} \; y_{e}^{\; sr} \; + \; c_{\gamma} \; \overline{\mu} \; y_{e}^{\; sr} \; + \; c_{\gamma} \; \overline{\mu} \; y_{e}^{\; sr} \; + \; c_{\gamma} \; \overline{\mu} \; y_{e}^{\; sr} \; + \; c_{\gamma} \; \overline{\mu} \; 
                                                                                                                                                                                                                                                                                                                                     \left( \, {s_{_{Y}}}^{2} \,\, \tilde{\mu}^{2} \,\, {y_{e}}^{\text{pt}} \,\, {y_{e}}^{\text{sr}} \,\, + \,\, {c_{_{Y}}} \,\, {a_{e}}^{\text{pt}} \,\, \left( \, {c_{_{Y}}} \,\, {a_{e}}^{\text{sr}} \,\, - \,\, {s_{_{Y}}} \,\, \tilde{\mu} \,\, {y_{e}}^{\text{sr}} \right) \, \right) \, \right) \,\, LF_{2,2,1,1,-1} \big[ \, {m_{\tilde{e}}}^{\, r} \,, \,\, {m_{\tilde{e}}}^{\, p} \,, \,\, {m_{\tilde{e}}}^{\, t} \,, \,
                                                                                                           \frac{1}{4} \left(-\, s_{\gamma}^{\, 2} \, \widetilde{\mu}^{2} \, \overline{y_{e}}^{pr} \, \overline{y_{e}}^{st} \, \left(s_{\gamma}^{\, 2} \, \widetilde{\mu}^{2} \, y_{e}^{\, pt} \, y_{e}^{\, sr} + c_{\gamma} \, a_{e}^{\, pt} \, \left(c_{\gamma} \, a_{e}^{\, sr} - s_{\gamma} \, \widetilde{\mu} \, y_{e}^{\, sr}\right)\right) \, + \\
                                                                                                                                                                                                     c_{\gamma} \; \overline{a_{e}}^{pr} \; \left( s_{\gamma} \; \widetilde{\mu} \; \overline{y_{e}}^{st} \; \left( - \, c_{\gamma} \; a_{e}^{\; pt} + s_{\gamma} \; \widetilde{\mu} \; y_{e}^{\; pt} \right) \; \left( - \, c_{\gamma} \; a_{e}^{\; sr} + s_{\gamma} \; \widetilde{\mu} \; y_{e}^{\; sr} \right) \; - \; \left( - \, c_{\gamma} \; a_{e}^{\; sr} + s_{\gamma} \; \widetilde{\mu} \; y_{e}^{\; sr} \right) \; - \; \left( - \, c_{\gamma} \; a_{e}^{\; sr} + s_{\gamma} \; \widetilde{\mu} \; y_{e}^{\; sr} \right) \; - \; \left( - \, c_{\gamma} \; a_{e}^{\; sr} + s_{\gamma} \; \widetilde{\mu} \; y_{e}^{\; sr} \right) \; - \; \left( - \, c_{\gamma} \; a_{e}^{\; sr} + s_{\gamma} \; \widetilde{\mu} \; y_{e}^{\; sr} \right) \; - \; \left( - \, c_{\gamma} \; a_{e}^{\; sr} + s_{\gamma} \; \widetilde{\mu} \; y_{e}^{\; sr} \right) \; - \; \left( - \, c_{\gamma} \; a_{e}^{\; sr} + s_{\gamma} \; \widetilde{\mu} \; y_{e}^{\; sr} \right) \; - \; \left( - \, c_{\gamma} \; a_{e}^{\; sr} + s_{\gamma} \; \widetilde{\mu} \; y_{e}^{\; sr} \right) \; - \; \left( - \, c_{\gamma} \; a_{e}^{\; sr} + s_{\gamma} \; \widetilde{\mu} \; y_{e}^{\; sr} \right) \; - \; \left( - \, c_{\gamma} \; a_{e}^{\; sr} + s_{\gamma} \; \widetilde{\mu} \; y_{e}^{\; sr} \right) \; - \; \left( - \, c_{\gamma} \; a_{e}^{\; sr} + s_{\gamma} \; \widetilde{\mu} \; y_{e}^{\; sr} \right) \; - \; \left( - \, c_{\gamma} \; a_{e}^{\; sr} + s_{\gamma} \; \widetilde{\mu} \; y_{e}^{\; sr} \right) \; - \; \left( - \, c_{\gamma} \; a_{e}^{\; sr} + s_{\gamma} \; \widetilde{\mu} \; y_{e}^{\; sr} \right) \; - \; \left( - \, c_{\gamma} \; a_{e}^{\; sr} + s_{\gamma} \; \widetilde{\mu} \; y_{e}^{\; sr} \right) \; - \; \left( - \, c_{\gamma} \; a_{e}^{\; sr} + s_{\gamma} \; \widetilde{\mu} \; y_{e}^{\; sr} \right) \; - \; \left( - \, c_{\gamma} \; a_{e}^{\; sr} + s_{\gamma} \; \widetilde{\mu} \; y_{e}^{\; sr} \right) \; - \; \left( - \, c_{\gamma} \; a_{e}^{\; sr} + s_{\gamma} \; \widetilde{\mu} \; y_{e}^{\; sr} \right) \; - \; \left( - \, c_{\gamma} \; a_{e}^{\; sr} + s_{\gamma} \; \widetilde{\mu} \; y_{e}^{\; sr} \right) \; - \; \left( - \, c_{\gamma} \; a_{e}^{\; sr} + s_{\gamma} \; \widetilde{\mu} \; y_{e}^{\; sr} \right) \; - \; \left( - \, c_{\gamma} \; a_{e}^{\; sr} + s_{\gamma} \; \widetilde{\mu} \; y_{e}^{\; sr} \right) \; - \; \left( - \, c_{\gamma} \; a_{e}^{\; sr} + s_{\gamma} \; \widetilde{\mu} \; y_{e}^{\; sr} \right) \; - \; \left( - \, c_{\gamma} \; a_{e}^{\; sr} + s_{\gamma} \; \widetilde{\mu} \; y_{e}^{\; sr} \right) \; - \; \left( - \, c_{\gamma} \; a_{e}^{\; sr} + s_{\gamma} \; \widetilde{\mu} \; y_{e}^{\; sr} \right) \; - \; \left( - \, c_{\gamma} \; a_{e}^{\; sr} + s_{\gamma} \; \widetilde{\mu} \; y_{e}^{\; sr} \right) \; - \; \left( - \, c_{\gamma} \; a_{e}^{\; sr} + s_{\gamma} \; \widetilde{\mu} \; y_{e}^{\; sr} \right) \; - \; \left( - \, c_{\gamma} \; a_{e}^{\; sr} + s_{\gamma} \; \widetilde{\mu} \; y_{e}^{\; sr} \right) \; - \; \left( - \, c_{\gamma} \; a_{e}^{\; sr} + s_{\gamma} \; \widetilde{\mu} \; y_{e}^{\; sr} \right) \; - \; \left( - \, c_{\gamma} \; a_{e}^{\; sr} + s_{\gamma} \; \widetilde{\mu} \; y_{e}^{\; sr} \right) \; - \; \left( - \, c_{\gamma} \; a_{e}^{\; sr} + s_{\gamma} \; \widetilde{\mu} \; y_
                                                                                                                                                                                                                                                                                                   c_{\gamma} \overline{a_e}^{st} \left( s_{\gamma}^2 \widetilde{\mu}^2 y_e^{pt} y_e^{sr} + c_{\gamma} a_e^{pt} \left( c_{\gamma} a_e^{sr} - s_{\gamma} \widetilde{\mu} y_e^{sr} \right) \right) \right)
                                                                                                                                      \overline{a_{e}}^{pr} \left( c_{\gamma}^{2} y_{e}^{sr} \, \overline{a_{e}}^{st} \, a_{e}^{pt} + \overline{y_{e}}^{st} \left( c_{\gamma} \, a_{e}^{pt} - s_{\gamma} \, \widetilde{\mu} \, y_{e}^{pt} \right) \, \left( c_{\gamma} \, a_{e}^{sr} - s_{\gamma} \, \widetilde{\mu} \, y_{e}^{sr} \right) \right) \right)
                                                                                                                                      \overline{a_e}^{pr} \left( c_{\gamma}^{2} y_e^{sr} \overline{a_e}^{st} a_e^{pt} + \overline{y_e}^{st} \left( c_{\gamma} a_e^{pt} - s_{\gamma} \widetilde{\mu} y_e^{pt} \right) \left( c_{\gamma} a_e^{sr} - s_{\gamma} \widetilde{\mu} y_e^{sr} \right) \right)
                                                                                                                                      \mathsf{LF_{3,1,1,1,-1}}\big[\mathsf{m_{\tilde{e}}}^\mathsf{t},\,\mathsf{m_{\tilde{e}}}^\mathsf{r},\,\mathsf{m_{\tilde{i}}}^\mathsf{p},\,\mathsf{m_{\tilde{i}}}^\mathsf{p},\,\mathsf{m_{\tilde{i}}}^\mathsf{s}\big] \,+\, \tfrac{1}{4}\,\,\mathsf{s_{\gamma}}\,\tilde{\mu}\,\,\mathsf{c_{\gamma}}\,\,\big(\mathsf{s_{\gamma}}^2\,\tilde{\mu}^2\,\,\overline{\mathsf{y_{e}}}^\mathsf{pr}\,\,\overline{\mathsf{y_{e}}}^\mathsf{st}\,\,\mathsf{y_{e}}^\mathsf{sr}\,\,\mathsf{a_{e}}^\mathsf{pt}\,+\, \mathsf{v_{e}}^\mathsf{st}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{a_{e}}^\mathsf{pt}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{a_{e}}^\mathsf{pt}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{a_{e}}^\mathsf{pt}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{a_{e}}^\mathsf{pt}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{a_{e}}^\mathsf{pt}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{a_{e}}^\mathsf{pt}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{a_{e}}^\mathsf{pt}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{a_{e}}^\mathsf{pt}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{a_{e}}^\mathsf{pt}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{a_{e}}^\mathsf{pt}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{a_{e}}^\mathsf{pt}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{a_{e}}^\mathsf{pt}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{a_{e}}^\mathsf{pt}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{a_{e}}^\mathsf{pt}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{v_{e}}^\mathsf{sr}\,\,\mathsf{v_{e}}^\mathsf
                                                                                                                                                                                                  \overline{a_e}^{pr} \left( c_{\gamma}^{2} y_e^{sr} \overline{a_e}^{st} a_e^{pt} + \overline{y_e}^{st} \left( c_{\gamma} a_e^{pt} - s_{\gamma} \widetilde{\mu} y_e^{pt} \right) \left( c_{\gamma} a_e^{sr} - s_{\gamma} \widetilde{\mu} y_e^{sr} \right) \right) \right)
                                                                                                                                      \mathsf{LF_{2,2,1,1,-1}}\big[\mathsf{m_{\tilde{e}}}^\mathsf{t},\,\mathsf{m_{\tilde{l}}}^\mathsf{p},\,\mathsf{m_{\tilde{e}}}^\mathsf{r},\,\mathsf{m_{\tilde{l}}}^\mathsf{s}\big] \,+\, \tfrac{1}{4}\,\,\mathsf{s_{\gamma}}\,\widetilde{\mu}\,\,\mathsf{c_{\gamma}}\,\,\big(\mathsf{s_{\gamma}}^2\,\,\widetilde{\mu}^2\,\,\overline{\mathsf{y_e}}^\mathsf{pr}\,\,\overline{\mathsf{y_e}}^\mathsf{st}\,\,\mathsf{y_e}^\mathsf{sr}\,\,\mathsf{a_e}^\mathsf{pt} \,+\, \mathsf{a_e}^\mathsf{pt}\,\,\mathsf{v_e}^\mathsf{sr}\,\,\mathsf{a_e}^\mathsf{pt} \,+\, \mathsf{a_e}^\mathsf{pt}\,\,\mathsf{v_e}^\mathsf{sr}\,\,\mathsf{a_e}^\mathsf{pt} \,+\, \mathsf{a_e}^\mathsf{pt}\,\,\mathsf{v_e}^\mathsf{sr}\,\,\mathsf{a_e}^\mathsf{pt} \,+\, \mathsf{a_e}^\mathsf{pt}\,\,\mathsf{v_e}^\mathsf{sr}\,\,\mathsf{a_e}^\mathsf{pt} \,+\, \mathsf{a_e}^\mathsf{pt}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf{pr}\,\,\mathsf{v_e}^\mathsf
                                                                                                                                                                                                  \overline{a_e}^{pr} \left( c_{\gamma}^{\ 2} \ y_e^{\ sr} \ \overline{a_e}^{st} \ a_e^{pt} + \overline{y_e}^{st} \ \left( c_{\gamma} \ a_e^{pt} - s_{\gamma} \ \widetilde{\mu} \ y_e^{pt} \right) \ \left( c_{\gamma} \ a_e^{\ sr} - s_{\gamma} \ \widetilde{\mu} \ y_e^{\ sr} \right) \right) \right)
                                                                                                                                         \left(s_{\gamma}\;\widetilde{\mu}^{2}\;\overline{y_{d}}^{\text{pr}}\;\overline{y_{u}}^{\text{st}}+\overline{a_{d}}^{\text{pr}}\left(s_{\gamma}\;\overline{a_{u}}^{\text{st}}-\widetilde{\mu}\;c_{\gamma}\;\overline{y_{u}}^{\text{st}}\right)\right)\;\mathsf{LF_{2,2,1,1,-1}}\!\left[\mathfrak{m}_{\tilde{q}}^{\;p},\;\mathfrak{m}_{\tilde{q}}^{\;s},\;\mathfrak{m}_{\tilde{d}}^{\;r},\;\mathfrak{m}_{\tilde{u}}^{\;t}\right]+
                                                                                                                                         \widetilde{\mu} \; \mathbf{s_{\text{Y}}}^{2} \; \overline{\mathbf{y_{\text{d}}}}^{\text{st}} \; \overline{\mathbf{a_{\text{u}}}}^{\text{pr}} \; \left( - \, \mathbf{c_{\text{Y}}} \; \mathbf{a_{\text{d}}}^{\text{pt}} + \, \mathbf{s_{\text{Y}}} \; \widetilde{\mu} \; \mathbf{y_{\text{d}}}^{\text{pt}} \right) \; \left( \, \mathbf{s_{\text{Y}}} \; \mathbf{a_{\text{u}}}^{\text{sr}} - \, \widetilde{\mu} \; \mathbf{c_{\text{Y}}} \; \mathbf{y_{\text{u}}}^{\text{sr}} \right) \; \mathsf{LF_{2,2,1,1,-1}} \left[ \, \mathbf{m_{\tilde{q}}}^{\text{p}} \,, \; \mathbf{m_{\tilde{q}}}^{\text{s}} \,, \; \mathbf{m_{\tilde{u}}}^{\text{t}} \,, \; \mathbf{m_{\tilde{u}}}^{\text{r}} \, \right] \; + \; \mathbf{a_{\text{W}}}^{\text{pt}} \; \mathbf{a_{\text{W}}}^{\text{pt}} \; \mathbf{a_{\text{W}}}^{\text{pt}} \,, \; \mathbf{a_{\text{W}}}^{\text{sr}} \,, \; \mathbf{a_{\text{W}}}^{\text{pt}} \,, \; \mathbf{a_{\text{W}}}^{\text{pt}}
                                                                                                                                                     \left(\widetilde{\mu}^2 \; c_{\gamma}^{\; 2} \; \overline{y_u}^{\text{pr}} \; \overline{y_u}^{\text{st}} \; \left(\widetilde{\mu}^2 \; c_{\gamma}^{\; 2} \; y_u^{\; \text{pt}} \; y_u^{\; \text{sr}} + s_{\gamma} \; a_u^{\; \text{pt}} \; \left(s_{\gamma} \; a_u^{\; \text{sr}} - 2 \; \widetilde{\mu} \; c_{\gamma} \; y_u^{\; \text{sr}}\right)\right) \; + \\
                                                                                                                                                                                                     s_{\gamma} \; \overline{a_{u}}^{pr} \; \left( - \, 2 \; \widetilde{\mu} \; c_{\gamma} \; \overline{y_{u}}^{st} \; \left( - \, s_{\gamma} \; a_{u}^{\; pt} + \, \widetilde{\mu} \; c_{\gamma} \; y_{u}^{\; pt} \right) \; \left( - \, s_{\gamma} \; a_{u}^{\; sr} + \, \widetilde{\mu} \; c_{\gamma} \; y_{u}^{\; sr} \right) \; + \; s_{\gamma} \; \overline{a_{u}}^{st} + \, 
                                                                                                                                                                                                                                                                                                                                     \left(\tilde{\mu}^2\; \mathbf{C_{\gamma}}^2\; \mathbf{y_u}^{\mathsf{pt}}\; \mathbf{y_u}^{\mathsf{sr}}\; +\; \mathbf{s_{\gamma}}\; \mathbf{a_u}^{\mathsf{pt}}\; \left(\mathbf{s_{\gamma}}\; \mathbf{a_u}^{\mathsf{sr}}\; -\; 2\; \tilde{\mu}\; \mathbf{c_{\gamma}}\; \mathbf{y_u}^{\mathsf{sr}}\right)\right)\right) \; \mathsf{LF_{2,2,1,1,-1}} \left[\mathsf{m_{\tilde{u}}}^{\mathsf{r}}\; ,\; \mathsf{m_{\tilde{u}}}^{\mathsf{t}}\; ,\; \mathsf{m_{\tilde{a}}}^{\mathsf{p}}\; ,\; \mathsf{m_{\tilde{a}}}^{\mathsf{s}}\right]\right)
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