```
\lambda \rightarrow
        \frac{1}{4} \left. c_{2\,\gamma}^{\ 2} \left. \left( g_{1}^{\ 2} + g_{2}^{\ 2} \right) \right. \\ \left. + \, \tilde{h} \left. \left( \frac{1}{16} \, \frac{1}{m_{\text{g}}^{\ 2}} \, \left( g_{1}^{\ 2} + g_{2}^{\ 2} \right) \right. \right. \\ \left. \left( - \, m_{H}^{2} \, s_{4\,\gamma}^{\ 2} \, \left( g_{1}^{\ 2} + g_{2}^{\ 2} \right) \right. \\ \left. + \, 2 \, m_{\tilde{\Phi}}^{\ 2} \, c_{2\,\gamma}^{\ 2} \, \left( g_{1}^{\ 2} + 3 \, g_{2}^{\ 2} \right) \, \left( c_{\gamma}^{\ 2} + s_{\gamma}^{\ 2} \right) \right) \right. \\ \left. \left. \left( - \, m_{H}^{2} \, s_{4\,\gamma}^{\ 2} \, \left( g_{1}^{\ 2} + g_{2}^{\ 2} \right) \right. \\ \left. \left( - \, m_{H}^{2} \, s_{4\,\gamma}^{\ 2} \, \left( g_{1}^{\ 2} + g_{2}^{\ 2} \right) \right. \\ \left. \left( - \, m_{H}^{2} \, s_{4\,\gamma}^{\ 2} \, \left( g_{1}^{\ 2} + g_{2}^{\ 2} \right) \right. \\ \left. \left( - \, m_{H}^{2} \, s_{4\,\gamma}^{\ 2} \, \left( g_{1}^{\ 2} + g_{2}^{\ 2} \right) \right. \\ \left. \left( - \, m_{H}^{2} \, s_{4\,\gamma}^{\ 2} \, \left( g_{1}^{\ 2} + g_{2}^{\ 2} \right) \right. \\ \left. \left( - \, m_{H}^{2} \, s_{4\,\gamma}^{\ 2} \, \left( g_{1}^{\ 2} + g_{2}^{\ 2} \right) \right. \\ \left. \left( - \, m_{H}^{2} \, s_{4\,\gamma}^{\ 2} \, \left( g_{1}^{\ 2} + g_{2}^{\ 2} \right) \right. \\ \left. \left( - \, m_{H}^{2} \, s_{4\,\gamma}^{\ 2} \, \left( g_{1}^{\ 2} + g_{2}^{\ 2} \right) \right. \\ \left. \left( - \, m_{H}^{2} \, s_{4\,\gamma}^{\ 2} \, \left( g_{1}^{\ 2} + g_{2}^{\ 2} \right) \right. \\ \left. \left( - \, m_{H}^{2} \, s_{4\,\gamma}^{\ 2} \, \left( - \, m_{H}^{2} \, s_{4\,\gamma}^{\ 2} \, \left( - \, m_{H}^{2} \, s_{4\,\gamma}^{\ 2} \right) \right. \\ \left. \left( - \, m_{H}^{2} \, s_{4\,\gamma}^{\ 2} \, \left( - \, m_{H}^{2} \, s_{4\,\gamma}^{\ 2} \, \left( - \, m_{H}^{2} \, s_{4\,\gamma}^{\ 2} \right) \right) \right. \\ \left. \left( - \, m_{H}^{2} \, s_{4\,\gamma}^{\ 2} \, \left( - \, m_{H}^{2} \, s_{4\,\gamma}^{\ 2} \, \left( - \, m_{H}^{2} \, s_{4\,\gamma}^{\ 2} \right) \right. \\ \left. \left( - \, m_{H}^{2} \, s_{4\,\gamma}^{\ 2} \, \left( - \, m_{H}^{2} \, s_{4\,\gamma}^{\ 2} \,
                                                                                                                                \frac{4}{9}\ \mathsf{m_{H}^{2}}\ \mathsf{g_{2}}^{4}\ \mathsf{LF_{3,0}}\ [\,\mathsf{m_{2}}\,]\ -\ \frac{2}{3}\ \mathsf{m_{H}^{2}}\ \mathsf{g_{2}}^{4}\ \mathsf{LF_{4,-1}}\ [\,\mathsf{m_{2}}\,]\ +\ \frac{32}{45}\ \mathsf{m_{H}^{2}}\ \mathsf{g_{2}}^{4}\ \mathsf{LF_{5,-2}}\ [\,\mathsf{m_{2}}\,]\ -\ \frac{32}{45}\ \mathsf{m_{2}}^{2}\ \mathsf{g_{2}}\ \mathsf{LF_{5,-2}}\ [\,\mathsf{m_{2}}\,]\ -\ \frac{32}{45}\ \mathsf{m_{2}}^{2}\ \mathsf{m_{2}}\ \mathsf{m_{2}}^{2}\ \mathsf{m_{2}}\ \mathsf{m_{2}}\ \mathsf{m_{2}}^{2}\ \mathsf{m_{2}}\ 
                                                                                                                                \frac{1}{4} \, \sum_{p} \, s_{2\, \text{Y}} \, s_{4\, \text{Y}} \, g_{1}^{\, 2} \, \frac{1}{m_{\text{D}}^{\, 4}} \, \left(g_{1}^{\, 2} + g_{2}^{\, 2}\right) \, \left(m_{\text{H}}^{2} + m_{\text{D}}^{\, 2}\right) \, \mathsf{LF}_{1,0} \left[m_{d}^{\, p}\right] \, - \, \frac{1}{12} \, \sum_{p} \, g_{1}^{\, 4} \, c_{2\, \text{Y}}^{\, 2} \, \, \mathsf{LF}_{2,0} \left[m_{d}^{\, p}\right] \, + \, \frac{1}{12} \, \sum_{p} \, g_{1}^{\, 4} \, c_{2\, \text{Y}}^{\, 2} \, \, \mathsf{LF}_{2,0} \left[m_{d}^{\, p}\right] \, + \, \frac{1}{12} \, \sum_{p} \, g_{1}^{\, 4} \, c_{2\, \text{Y}}^{\, 2} \, \, \mathsf{LF}_{2,0} \left[m_{d}^{\, p}\right] \, + \, \frac{1}{12} \, \sum_{p} \, g_{1}^{\, 4} \, c_{2\, \text{Y}}^{\, 2} \, \, \mathsf{LF}_{2,0} \left[m_{d}^{\, p}\right] \, + \, \frac{1}{12} \, \sum_{p} \, g_{1}^{\, 4} \, c_{2\, \text{Y}}^{\, 2} \, \, \mathsf{LF}_{2,0} \left[m_{d}^{\, p}\right] \, + \, \frac{1}{12} \, \sum_{p} \, g_{1}^{\, 4} \, c_{2\, \text{Y}}^{\, 2} \, \, \mathsf{LF}_{2,0} \left[m_{d}^{\, p}\right] \, + \, \frac{1}{12} \, \sum_{p} \, g_{1}^{\, 4} \, c_{2\, \text{Y}}^{\, 2} \, \, \mathsf{LF}_{2,0} \left[m_{d}^{\, p}\right] \, + \, \frac{1}{12} \, \sum_{p} \, g_{1}^{\, 4} \, c_{2\, \text{Y}}^{\, 2} \, \mathsf{LF}_{2,0} \left[m_{d}^{\, p}\right] \, + \, \frac{1}{12} \, \sum_{p} \, g_{1}^{\, 4} \, c_{2\, \text{Y}}^{\, 2} \, \mathsf{LF}_{2,0} \left[m_{d}^{\, p}\right] \, + \, \frac{1}{12} \, \sum_{p} \, g_{1}^{\, 4} \, c_{2\, \text{Y}}^{\, 2} \, \mathsf{LF}_{2,0} \left[m_{d}^{\, p}\right] \, + \, \frac{1}{12} \, \sum_{p} \, g_{1}^{\, 4} \, c_{2\, \text{Y}}^{\, 2} \, \mathsf{LF}_{2,0} \left[m_{d}^{\, p}\right] \, + \, \frac{1}{12} \, \sum_{p} \, g_{1}^{\, 4} \, c_{2\, \text{Y}}^{\, 2} \, \mathsf{LF}_{2,0} \left[m_{d}^{\, p}\right] \, + \, \frac{1}{12} \, \sum_{p} \, g_{1}^{\, 4} \, c_{2\, \text{Y}}^{\, 2} \, \mathsf{LF}_{2,0} \left[m_{d}^{\, p}\right] \, + \, \frac{1}{12} \, \sum_{p} \, g_{1}^{\, 2} \, c_{2\, \text{Y}}^{\, 2} \, \mathsf{LF}_{2,0} \left[m_{d}^{\, p}\right] \, + \, \frac{1}{12} \, \sum_{p} \, g_{1}^{\, 2} \, c_{2\, \text{Y}}^{\, 2} \, \mathsf{LF}_{2,0} \left[m_{d}^{\, p}\right] \, + \, \frac{1}{12} \, \sum_{p} \, g_{1}^{\, 2} \, c_{2\, \text{Y}}^{\, 2} \, \mathsf{LF}_{2,0} \left[m_{d}^{\, p}\right] \, + \, \frac{1}{12} \, \sum_{p} \, g_{1}^{\, 2} \, c_{2\, \text{Y}}^{\, 2} \, \mathsf{LF}_{2,0} \left[m_{d}^{\, p}\right] \, + \, \frac{1}{12} \, \sum_{p} \, g_{1}^{\, 2} \, c_{2\, \text{Y}}^{\, 2} \, \mathsf{LF}_{2,0} \left[m_{d}^{\, p}\right] \, + \, \frac{1}{12} \, \sum_{p} \, g_{1}^{\, 2} \, \mathsf{LF}_{2,0} \left[m_{d}^{\, p}\right] \, + \, \frac{1}{12} \, \sum_{p} \, g_{1}^{\, 2} \, \mathsf{LF}_{2,0} \left[m_{d}^{\, p}\right] \, + \, \frac{1}{12} \, \sum_{p} \, g_{1}^{\, 2} \, \mathsf{LF}_{2,0} \left[m_{d}^{\, p}\right] \, + \, \frac{1}{12} \, \sum_{p} \, g_{1}^{\, 2} \, \mathsf{LF}_{2,0} \left[m_{d}^{\, p}\right] \, + \, \frac{1}{12} \, 
                                                                                                                                \frac{3}{4} \; s_{2\,\gamma} \; s_{4\,\gamma} \; \frac{1}{{m_0}^4} \; \overline{y_d}^{pr} \; y_d^{\,pr} \; \left(g_1{}^2 + g_2{}^2\right) \; \left(m_H^2 + m_{\scriptscriptstyle \oplus}{}^2\right) \; LF_{1,0} \left[\, m_{\check{d}}^{\,\,r} \,\right] \; + \; c_{2\,\gamma} \; g_1{}^2 \; c_{\gamma}{}^2 \; \overline{y_d}^{pr} \; y_d^{\,pr} \; LF_{2,0} \left[\, m_{\check{d}}^{\,\,r} \,\right] \; - \; c_{2\,\gamma} \; g_1{}^2 \; c_{\gamma}{}^2 \; \overline{y_d}^{pr} \; y_d^{\,pr} \; LF_{2,0} \left[\, m_{\check{d}}^{\,\,r} \,\right] \; - \; c_{2\,\gamma} \; g_1{}^2 \; c_{\gamma}{}^2 \; \overline{y_d}^{pr} \; y_d^{\,pr} \; LF_{2,0} \left[\, m_{\check{d}}^{\,\,r} \,\right] \; - \; c_{2\,\gamma} \; g_1{}^2 \; c_{\gamma}{}^2 \; \overline{y_d}^{pr} \; y_d^{\,pr} \; LF_{2,0} \left[\, m_{\check{d}}^{\,\,r} \,\right] \; - \; c_{2\,\gamma} \; g_1{}^2 \; c_{\gamma}{}^2 \; \overline{y_d}^{pr} \; y_d^{\,pr} \; LF_{2,0} \left[\, m_{\check{d}}^{\,\,r} \,\right] \; - \; c_{2\,\gamma} \; g_1{}^2 \; c_{\gamma}{}^2 \; \overline{y_d}^{pr} \; y_d^{\,pr} \; LF_{2,0} \left[\, m_{\check{d}}^{\,\,r} \,\right] \; - \; c_{2\,\gamma} \; g_1{}^2 \; c_{\gamma}{}^2 \; \overline{y_d}^{pr} \; y_d^{\,pr} \; LF_{2,0} \left[\, m_{\check{d}}^{\,\,r} \,\right] \; - \; c_{2\,\gamma} \; g_1{}^2 \; c_{\gamma}{}^2 \; \overline{y_d}^{pr} \; y_d^{\,pr} \; LF_{2,0} \left[\, m_{\check{d}}^{\,\,r} \,\right] \; - \; c_{2\,\gamma} \; g_1{}^2 \; c_{\gamma}{}^2 \; \overline{y_d}^{\,pr} \; y_d^{\,pr} \; LF_{2,0} \left[\, m_{\check{d}}^{\,\,r} \,\right] \; - \; c_{2\,\gamma} \; g_1{}^2 \; c_{\gamma}{}^2 \; \overline{y_d}^{\,pr} \; y_d^{\,pr} \; LF_{2,0} \left[\, m_{\check{d}}^{\,\,r} \,\right] \; - \; c_{2\,\gamma} \; g_1{}^2 \; c_{\gamma}{}^2 \; \overline{y_d}^{\,pr} \; y_d^{\,pr} \; LF_{2,0} \left[\, m_{\check{d}}^{\,\,r} \,\right] \; - \; c_{2\,\gamma} \; g_1{}^2 \; c_{\gamma}{}^2 \; \overline{y_d}^{\,pr} \; y_d^{\,pr} \; CF_{2,0} \left[\, m_{\check{d}}^{\,\,r} \,\right] \; - \; c_{2\,\gamma} \; g_1{}^2 \; c_{\gamma}{}^2 \; \overline{y_d}^{\,pr} \; y_d^{\,pr} \; CF_{2,0} \left[\, m_{\check{d}}^{\,\,r} \,\right] \; - \; c_{2\,\gamma} \; g_1{}^2 \; c_{\gamma}{}^2 \; \overline{y_d}^{\,pr} \; y_d^{\,pr} \; CF_{2,0} \left[\, m_{\check{d}}^{\,\,r} \,\right] \; - \; c_{2\,\gamma} \; g_1{}^2 \; c_{\gamma}{}^2 \; \overline{y_d}^{\,pr} \; y_d^{\,pr} \; CF_{2,0} \left[\, m_{\check{d}}^{\,\,r} \,\right] \; - \; c_{2\,\gamma} \; g_1{}^2 \; c_{\gamma}{}^2 \; \overline{y_d}^{\,pr} \; F_{2,0} \left[\, m_{\check{d}}^{\,\,r} \,\right] \; - \; c_{2\,\gamma} \; g_1{}^2 \; \overline{y_d}^{\,pr} \; \overline{y
                                                                                                                             \frac{1}{4} \, \sum_{p} \, s_{2\,\gamma} \, \, s_{4\,\gamma} \, \, g_{1}^{\,2} \, \, \frac{1}{m_{_{0}}^{\,4}} \, \left(g_{1}^{\,2} + g_{2}^{\,2}\right) \, \left(m_{H}^{2} + m_{_{\overline{0}}}^{\,2}\right) \, \, LF_{1,\,0} \left[\, m_{\tilde{e}}^{\,p}\, \right] \, - \, \frac{1}{4} \, \sum_{p} \, g_{1}^{\,4} \, \, c_{2\,\gamma}^{\,2} \, \, LF_{2,\,0} \left[\, m_{\tilde{e}}^{\,p}\, \right] \, + \, \left(m_{\tilde{e}}^{\,2} + m_{_{\overline{0}}}^{\,2}\right) \, \, LF_{2,\,0} \left[\, m_{\tilde{e}}^{\,p} + m_{_{\overline{0}}}^{\,2} + m_{_{\overline{0}}
                                                                                                                             \frac{1}{4} \; s_{2\,\gamma} \; s_{4\,\gamma} \; \frac{1}{m_{_{0}}{}^{4}} \; \overline{y_{e}}^{pr} \; y_{e}{}^{pr} \; \left(g_{1}{}^{2} + g_{2}{}^{2}\right) \; \left(m_{H}^{2} + m_{_{\overline{0}}}{}^{2}\right) \; LF_{1,0} \left[\, m_{\bar{e}}^{\,\, r}\, \right] \; + c_{2\,\gamma} \; g_{1}{}^{2} \; c_{\gamma}^{\,\, 2} \; \overline{y_{e}}^{pr} \; y_{e}{}^{pr} \; LF_{2,0} \left[\, m_{\bar{e}}^{\,\, r}\, \right] \; + c_{2\,\gamma} \; g_{1}{}^{2} \; c_{\gamma}^{\,\, 2} \; \overline{y_{e}}^{pr} \; y_{e}{}^{pr} \; LF_{2,0} \left[\, m_{\bar{e}}^{\,\, r}\, \right] \; + c_{2\,\gamma} \; g_{1}{}^{2} \; c_{\gamma}^{\,\, 2} \; \overline{y_{e}}^{pr} \; y_{e}{}^{pr} \; LF_{2,0} \left[\, m_{\bar{e}}^{\,\, r}\, \right] \; + c_{2\,\gamma} \; g_{1}{}^{2} \; c_{\gamma}^{\,\, 2} \; \overline{y_{e}}^{pr} \; y_{e}{}^{pr} \; LF_{2,0} \left[\, m_{\bar{e}}^{\,\, r}\, \right] \; + c_{2\,\gamma} \; g_{1}{}^{2} \; c_{\gamma}^{\,\, 2} \; \overline{y_{e}}^{pr} \; y_{e}{}^{pr} \; LF_{2,0} \left[\, m_{\bar{e}}^{\,\, r}\, \right] \; + c_{2\,\gamma} \; g_{1}{}^{2} \; c_{\gamma}^{\,\, 2} \; \overline{y_{e}}^{pr} \; y_{e}{}^{pr} \; LF_{2,0} \left[\, m_{\bar{e}}^{\,\, r}\, \right] \; + c_{2\,\gamma} \; g_{1}{}^{2} \; c_{\gamma}^{\,\, 2} \; \overline{y_{e}}^{pr} \; y_{e}{}^{pr} \; F_{2,0} \left[\, m_{\bar{e}}^{\,\, r}\, \right] \; + c_{2\,\gamma} \; g_{1}{}^{2} \; c_{\gamma}^{\,\, 2} \; \overline{y_{e}}^{pr} \; y_{e}{}^{pr} \; F_{2,0} \left[\, m_{\bar{e}}^{\,\, r}\, \right] \; + c_{2\,\gamma} \; g_{1}{}^{2} \; c_{\gamma}^{\,\, 2} \; \overline{y_{e}}^{pr} \; y_{e}{}^{pr} \; F_{2,0} \left[\, m_{\bar{e}}^{\,\, r}\, \right] \; + c_{2\,\gamma} \; g_{1}{}^{2} \; c_{\gamma}^{\,\, 2} \; \overline{y_{e}}^{pr} \; y_{e}{}^{pr} \; F_{2,0} \left[\, m_{\bar{e}}^{\,\, r}\, \right] \; + c_{2\,\gamma} \; g_{1}{}^{2} \; c_{\gamma}^{\,\, 2} \; \overline{y_{e}}^{pr} \; y_{e}{}^{pr} \; F_{2,0} \left[\, m_{\bar{e}}^{\,\, r}\, \right] \; + c_{2\,\gamma} \; g_{1}{}^{2} \; c_{\gamma}^{\,\, 2} \; \overline{y_{e}}^{pr} \; y_{e}{}^{pr} 
                                                                                                                                \frac{1}{4} \; \mathsf{S_{2}}_{\,\, \Upsilon} \; \mathsf{S_{4}}_{\,\, \Upsilon} \; \frac{1}{\mathsf{m_0}^4} \; \left( \, \mathsf{g_1}^2 \, + \, \mathsf{g_2}^2 \right) \; \left( \mathsf{m_H}^2 \, + \, \mathsf{m_{\scriptscriptstyle \oplus}}^2 \right) \; \left( \, \overline{\mathsf{y_e}}^{pr} \; \mathsf{y_e}^{pr} \, + \, \sum_{p} \, \mathsf{g_1}^2 \right) \; \mathsf{LF_{1,0}} \left[ \, \mathsf{m_{\tilde{1}}}^{p} \, \right] \; - \; \mathsf{m_{\tilde{1}}}^2 \; \mathsf{m_{\tilde{1}}}^2 \; + \; \mathsf{m_{\tilde{1}}}^2 \; \mathsf{m_{\tilde{1}
                                                                                                                                \frac{1}{8} \; c_{2\, \text{\upbelowderight}} \; \left(4 \; c_{\text{\upbelowderight}}^{\; 2} \; \overline{y_e}^{\text{pr}} \; y_e^{\, \text{pr}} \; \left(g_1^{\; 2} - g_2^{\; 2}\right) \; + \sum_{p} \; c_{2\, \text{\upbelowderight}} \; \left(g_1^{\; 4} + g_2^{\; 4}\right) \right) \; \text{LF}_{2,0} \left[\, m_{\tilde{l}}^{\, -p}\, \,\right] \; + \left[\, m_{\tilde{l}}^{\, -p}\, \, m_{\tilde{l}}^{\,
                                                                                                                             \frac{1}{18} \ m_{H}^{2} \ g_{2}^{\ 2} \ \left(-\,36 \ c_{2\,\gamma} \ c_{\gamma}^{\ 2} \ \overline{y_{e}}^{pr} \ y_{e}^{\,pr} \ + \sum_{p} g_{2}^{\ 2} \ \left(-\,4 \ + \ 9 \ c_{2\,\gamma}^{\ 2}\right) \right) \ LF_{3\,,0} \left[\,m_{\tilde{l}}^{\,\,p}\,\right] \ + \left. \left(-\,4 \ + \ 9 \ c_{2\,\gamma}^{\,\,2}\right) \right) \ LF_{3\,,0} \left[\,m_{\tilde{l}}^{\,\,p}\,\right] \ + \left. \left(-\,4 \ + \ 9 \ c_{2\,\gamma}^{\,\,2}\right) \right) \ LF_{3\,,0} \left[\,m_{\tilde{l}}^{\,\,p}\,\right] \ + \left. \left(-\,4 \ + \ 9 \ c_{2\,\gamma}^{\,\,2}\right) \right) \ LF_{3\,,0} \left[\,m_{\tilde{l}}^{\,\,p}\,\right] \ + \left. \left(-\,4 \ + \ 9 \ c_{2\,\gamma}^{\,\,2}\right) \right] \ LF_{3\,,0} \left[\,m_{\tilde{l}}^{\,\,p}\,\right] \ + \left. \left(-\,4 \ + \ 9 \ c_{2\,\gamma}^{\,\,2}\right) \right] \ LF_{3\,,0} \left[\,m_{\tilde{l}}^{\,\,p}\,\right] \ + \left. \left(-\,4 \ + \ 9 \ c_{2\,\gamma}^{\,\,2}\right) \right] \ LF_{3\,,0} \left[\,m_{\tilde{l}}^{\,\,p}\,\right] \ + \left. \left(-\,4 \ + \ 9 \ c_{2\,\gamma}^{\,\,2}\right) \right] \ LF_{3\,,0} \left[\,m_{\tilde{l}}^{\,\,p}\,\right] \ + \left. \left(-\,4 \ + \ 9 \ c_{2\,\gamma}^{\,\,2}\right) \right] \ LF_{3\,,0} \left[\,m_{\tilde{l}}^{\,\,p}\,\right] \ + \left. \left(-\,4 \ + \ 9 \ c_{2\,\gamma}^{\,\,2}\right) \right] \ LF_{3\,,0} \left[\,m_{\tilde{l}}^{\,\,p}\,\right] \ + \left. \left(-\,4 \ + \ 9 \ c_{2\,\gamma}^{\,\,2}\right) \right] \ LF_{3\,,0} \left[\,m_{\tilde{l}}^{\,\,p}\,\right] \ + \left. \left(-\,4 \ + \ 9 \ c_{2\,\gamma}^{\,\,2}\right) \right] \ LF_{3\,,0} \left[\,m_{\tilde{l}}^{\,\,p}\,\right] \ + \left. \left(-\,4 \ + \ 9 \ c_{2\,\gamma}^{\,\,2}\right) \right] \ LF_{3\,,0} \left[\,m_{\tilde{l}}^{\,\,p}\,\right] \ + \left. \left(-\,4 \ + \ 9 \ c_{2\,\gamma}^{\,\,2}\right) \right] \ LF_{3\,,0} \left[\,m_{\tilde{l}}^{\,\,p}\,\right] \ + \left. \left(-\,4 \ + \ 9 \ c_{2\,\gamma}^{\,\,2}\right) \right] \ LF_{3\,,0} \left[\,m_{\tilde{l}}^{\,\,p}\,\right] \ + \left. \left(-\,4 \ + \ 9 \ c_{2\,\gamma}^{\,\,2}\right) \ LF_{3\,,0} \left[\,m_{\tilde{l}}^{\,\,p}\,\right] \ + \left. \left(-\,4 \ + \ 9 \ c_{2\,\gamma}^{\,\,2}\right) \right] \ LF_{3\,,0} \left[\,m_{\tilde{l}}^{\,\,p}\,\right] \ + \left. \left(-\,4 \ + \ 9 \ c_{2\,\gamma}^{\,\,2}\right) \ LF_{3\,,0} \left[\,m_{\tilde{l}}^{\,\,p}\,\right] \ + \left. \left(-\,4 \ + \ 9 \ c_{2\,\gamma}^{\,\,2}\right) \ LF_{3\,,0} \left[\,m_{\tilde{l}}^{\,\,p}\,\right] \ + \left. \left(-\,4 \ + \ 9 \ c_{2\,\gamma}^{\,\,2}\right) \ LF_{3\,,0} \left[\,m_{\tilde{l}}^{\,\,p}\,\right] \ + \left. \left(-\,4 \ + \ 9 \ c_{2\,\gamma}^{\,\,p}\,\right) \ LF_{3\,,0} \left[\,m_{\tilde{l}}^{\,\,p}\,\right] \ + \left. \left(-\,4 \ + \ 9 \ c_{2\,\gamma}^{\,\,p}\,\right) \ LF_{3\,,0} \left[\,m_{\tilde{l}}^{\,\,p}\,\right] \ + \left. \left(-\,4 \ + \ 9 \ c_{2\,\gamma}^{\,\,p}\,\right) \ LF_{3\,,0} \left[\,m_{\tilde{l}}^{\,\,p}\,\right] \ + \left. \left(-\,4 \ + \ 9 \ c_{2\,\gamma}^{\,\,p}\,\right) \ LF_{3\,,0} \left[\,m_{\tilde{l}}^{\,\,p}\,\right] \ + \left. \left(-\,4 \ + \ 9 \ c_{2\,\gamma}^{\,\,p}\,\right) \ LF_{3\,,0} \left[\,m_{\tilde{l}}^{\,\,p}\,\right] \ + \left. \left(-\,4 \ + \ 9 \ c_{2\,\gamma}^{\,\,p}\,\right) \ LF_{3\,,0} \left[\,m_{\tilde{l}}^{\,\,p}\,\right] \ +
                                                                                                                                \frac{1}{12} \ \text{m}_{\text{H}}^2 \ \text{g}_2^{\ 2} \ \left(24 \ \text{c}_{2 \ \text{\upbelowderighta}} \ \text{c}_{\gamma}^{\ 2} \ \overline{\text{y}_e}^{\text{pr}} \ \text{y}_e^{\, \text{pr}} \ + \sum_{p} \ \text{g}_2^{\ 2} \ \left(5 - 6 \ \text{c}_{2 \ \gamma}^{\ 2}\right) \right) \ \text{LF}_{4,-1} \left[\text{m}_{\tilde{l}}^{\ p}\right] \ - \frac{8}{45} \ \sum_{p} \ \text{m}_{\text{H}}^2 \ \text{g}_2^{\ 4} \ \text{LF}_{5,-2} \left[\text{m}_{\tilde{l}}^{\ p}\right] \ - \frac{8}{45} \ \text{LF}_{5,-2} \left[\text{m}_{\tilde{l}}^{\ p}\right] \ + \frac{8}{45} \ \text{LF}_{
                                                                                                                                                        s_{2\,\gamma}\,\,s_{4\,\gamma}\,\frac{1}{m_{_{0}}{^{4}}}\,\left(g_{1}{^{2}}+g_{2}{^{2}}\right)\,\,\left(m_{H}^{2}+m_{_{\overline{0}}}{^{2}}\right)\,\,\left(-3\,\,\overline{y_{d}}^{pr}\,\,y_{d}{^{pr}}+3\,\,\overline{y_{u}}^{pr}\,\,y_{u}{^{pr}}+\sum_{p}g_{1}{^{2}}\right)\,\,LF_{1,0}\left[\,m_{_{\overline{0}}}^{-p}\,\right]\,+\frac{1}{2}\left(m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,m_{_{\overline{0}}}^{-p}\,
                                                                                                                                \frac{1}{24} \; c_{2\,\gamma} \; \left(12 \; c_{\gamma}^{\; 2} \; \overline{y_{d}}^{pr} \; y_{d}^{\; pr} \; \left(g_{1}^{\; 2} + 3 \; g_{2}^{\; 2}\right) \; + \; 12 \; s_{\gamma}^{\; 2} \; \overline{y_{u}}^{pr} \; y_{u}^{\; pr} \; \left(g_{1}^{\; 2} - 3 \; g_{2}^{\; 2}\right) \; - \sum_{p} c_{2\,\gamma} \; \left(g_{1}^{\; 4} + 9 \; g_{2}^{\; 4}\right) \right) \; d^{pr} \; \left(g_{1}^{\; 2} + 3 \; g_{2}^{\; 2}\right) \; + \; 12 \; s_{\gamma}^{\; 2} \; \overline{y_{u}}^{pr} \; y_{u}^{\; pr} \; \left(g_{1}^{\; 2} - 3 \; g_{2}^{\; 2}\right) \; - \; \sum_{p} c_{2\,\gamma} \; \left(g_{1}^{\; 4} + 9 \; g_{2}^{\; 4}\right) \; d^{pr} \; \left(g_{1}^{\; 2} + 3 \; g_{2}^{\; 2}\right) \; d^{pr} \; d^{pr} \; \left(g_{1}^{\; 2} + 3 \; g_{2}^{\; 2}\right) \; d^{pr} \; d^{p
                                                                                                                                                     \text{LF}_{2,0}\left[\,m_{\tilde{q}}^{\,\,p}\,\right] \,+\, \frac{1}{6}\,\,m_{H}^{2}\,g_{2}^{\,\,2}\,\left(36\,\,c_{2\,\gamma}\,\left(-\,c_{\gamma}^{\,\,2}\,\,\overline{y_{d}}^{pr}\,\,y_{d}^{\,\,pr}\,\,+\,s_{\gamma}^{\,\,2}\,\,\overline{y_{u}}^{pr}\,\,y_{u}^{\,\,pr}\,\right) \,+\, \sum_{p}\,g_{2}^{\,\,2}\,\left(-\,4\,+\,9\,\,c_{2\,\gamma}^{\,\,2}\right)\,\right)
                                                                                                                                                  LF_{3,0}\left[\,m_{\tilde{q}}^{\,\,p}\,\right] \,+\, \frac{1}{4}\,\,m_H^2\,\,g_2^{\,\,2}\,\,\left(24\,\,c_{2\,\gamma}\,\,\left(\,c_{\gamma}^{\,\,2}\,\,\overline{y_d}^{pr}\,\,y_d^{\,\,pr}\,\,-\,s_{\gamma}^{\,\,2}\,\,\overline{y_u}^{pr}\,\,y_u^{\,\,pr}\,\right) \,+\, \sum_{p}\,g_2^{\,\,2}\,\,\left(5\,-\,6\,\,c_{2\,\gamma}^{\,\,2}\,\right)\,\right)\,\,LF_{4,-1}\left[\,m_{\tilde{q}}^{\,\,p}\,\right] \,-\, \frac{1}{4}\,\,m_H^2\,\,g_2^{\,\,2}\,\,\left(24\,\,c_{2\,\gamma}\,\,\left(\,c_{\gamma}^{\,\,2}\,\,\overline{y_d}^{pr}\,\,y_d^{\,\,pr}\,-\,s_{\gamma}^{\,\,2}\,\,\overline{y_u}^{pr}\,\,y_u^{\,\,pr}\,\right) \,+\, \sum_{p}\,g_2^{\,\,2}\,\,\left(5\,-\,6\,\,c_{2\,\gamma}^{\,\,2}\,\right)\,\right)\,\,LF_{4,-1}\left[\,m_{\tilde{q}}^{\,\,p}\,\,\right] \,-\, \frac{1}{4}\,\,m_H^2\,\,g_2^{\,\,2}\,\,\left(24\,\,c_{2\,\gamma}\,\,\left(\,c_{\gamma}^{\,\,2}\,\,\overline{y_d}^{pr}\,\,y_d^{\,\,pr}\,-\,s_{\gamma}^{\,\,2}\,\,\overline{y_u}^{pr}\,\,y_u^{\,\,pr}\,\right) \,+\, \sum_{p}\,g_2^{\,\,2}\,\,\left(5\,-\,6\,\,c_{2\,\gamma}^{\,\,2}\,\right)\,\right)\,\,LF_{4,-1}\left[\,m_{\tilde{q}}^{\,\,p}\,\,\right] \,-\, \frac{1}{4}\,\,m_H^2\,\,g_2^{\,\,2}\,\,\left(24\,\,c_{2\,\gamma}\,\,\left(\,c_{\gamma}^{\,\,2}\,\,\overline{y_d}^{pr}\,\,y_d^{\,\,pr}\,-\,s_{\gamma}^{\,\,2}\,\,\overline{y_u}^{pr}\,\,y_u^{\,\,pr}\,\right) \,+\, \sum_{p}\,g_2^{\,\,2}\,\,\left(5\,-\,6\,\,c_{2\,\gamma}^{\,\,2}\,\right)\,\right)\,\,LF_{4,-1}\left[\,m_{\tilde{q}}^{\,\,p}\,\,y_d^{\,\,pr}\,-\,s_{\gamma}^{\,\,p}\,\,y_d^{\,\,pr}\,-\,s_{\gamma}^{\,\,p}\,\,y_u^{\,\,pr}\,-\,s_{\gamma}^{\,\,p}\,\,y_u^{\,\,pr}\,-\,s_{\gamma}^{\,\,p}\,\,y_u^{\,\,pr}\,-\,s_{\gamma}^{\,\,p}\,\,y_u^{\,\,pr}\,-\,s_{\gamma}^{\,\,p}\,\,y_u^{\,\,pr}\,-\,s_{\gamma}^{\,\,p}\,\,y_u^{\,\,pr}\,-\,s_{\gamma}^{\,\,p}\,\,y_u^{\,\,pr}\,-\,s_{\gamma}^{\,\,p}\,\,y_u^{\,\,pr}\,-\,s_{\gamma}^{\,\,p}\,\,y_u^{\,\,pr}\,-\,s_{\gamma}^{\,\,p}\,\,y_u^{\,\,pr}\,-\,s_{\gamma}^{\,\,p}\,\,y_u^{\,\,pr}\,-\,s_{\gamma}^{\,\,p}\,\,y_u^{\,\,pr}\,-\,s_{\gamma}^{\,\,p}\,\,y_u^{\,\,pr}\,-\,s_{\gamma}^{\,\,p}\,\,y_u^{\,\,pr}\,-\,s_{\gamma}^{\,\,p}\,\,y_u^{\,\,pr}\,-\,s_{\gamma}^{\,\,p}\,\,y_u^{\,\,pr}\,-\,s_{\gamma}^{\,\,p}\,\,y_u^{\,\,pr}\,-\,s_{\gamma}^{\,\,p}\,\,y_u^{\,\,pr}\,-\,s_{\gamma}^{\,\,p}\,\,y_u^{\,\,pr}\,-\,s_{\gamma}^{\,\,p}\,\,y_u^{\,\,pr}\,-\,s_{\gamma}^{\,\,p}\,\,y_u^{\,\,pr}\,-\,s_{\gamma}^{\,\,p}\,\,y_u^{\,\,pr}\,-\,s_{\gamma}^{\,\,p}\,\,y_u^{\,\,pr}\,-\,s_{\gamma}^{\,\,p}\,\,y_u^{\,\,pr}\,-\,s_{\gamma}^{\,\,p}\,\,y_u^{\,\,p}\,-\,s_{\gamma}^{\,\,p}\,\,y_u^{\,\,p}\,-\,s_{\gamma}^{\,\,p}\,\,y_u^{\,\,p}\,-\,s_{\gamma}^{\,\,p}\,\,y_u^{\,\,p}\,-\,s_{\gamma}^{\,\,p}\,\,y_u^{\,\,p}\,-\,s_{\gamma}^{\,\,p}\,\,y_u^{\,\,p}\,-\,s_{\gamma}^{\,\,p}\,\,y_u^{\,\,p}\,-\,s_{\gamma}^{\,\,p}\,\,y_u^{\,\,p}\,-\,s_{\gamma}^{\,\,p}\,\,y_u^{\,\,p}\,-\,s_{\gamma}^{\,\,p}\,\,y_u^{\,\,p}\,-\,s_{\gamma}^{\,p}\,\,y_u^{\,\,p}\,-\,s_{\gamma}^{\,\,p}\,\,y_u^{\,\,p}\,-\,s_{\gamma}^{\,\,p}\,\,y_u^{\,\,p}\,-\,s_{\gamma}^{\,\,p}\,\,y_u^{\,\,p}\,-\,s_{\gamma}^{\,\,p}\,\,y_u^{\,\,p}\,-\,s_{\gamma}^{\,p}\,\,y_u^{\,\,p}\,-\,s_{\gamma}^{\,p}\,\,y_u^{\,\,p}\,-\,s_{\gamma}^{\,\,p}\,\,y_u^{\,\,p}\,-\,s_{\gamma}^{\,p}\,\,y_u^{\,\,p}\,-\,s_{\gamma}^{\,p}\,\,y_u^{\,\,p}\,-\,s_{\gamma}^{\,p}\,\,y_u^{\,\,p
                                                                                                                                \frac{1}{3}\, \sum_{p}\, {g_{1}}^{4}\, {c_{2}}_{\text{Y}}^{2}\, \, \text{LF}_{2,0}\left[\, m_{\tilde{u}}^{\,\,p}\, \right] \, - \, \frac{3}{4}\, \, s_{2\,\text{Y}}\, \, s_{4\,\text{Y}}\, \, \frac{1}{m_{\text{S}}^{\,\,4}}\, \, \overline{y_{u}}^{pr}\, \, y_{u}^{\,\,pr}\, \, \left(\, g_{1}^{\,\,2} + g_{2}^{\,\,2}\right) \, \, \left(m_{H}^{2} + m_{\Phi}^{\,\,2}\right) \, \, \text{LF}_{1,0}\left[\, m_{\tilde{u}}^{\,\,r}\, \right] \, - \, \frac{3}{4}\, \, s_{2\,\text{Y}}\, \, s_{4\,\text{Y}}\, \, \frac{1}{m_{\text{S}}^{\,\,4}}\, \, \overline{y_{u}}^{pr}\, \, y_{u}^{\,\,pr}\, \, \left(\, g_{1}^{\,\,2} + g_{2}^{\,\,2}\right) \, \, \left(\, m_{H}^{2} + m_{\Phi}^{\,\,2}\right) \, \, \, \text{LF}_{1,0}\left[\, m_{\tilde{u}}^{\,\,r}\, \right] \, - \, \frac{3}{4}\, \, s_{2\,\text{Y}}\, \, s_{4\,\text{Y}}\, \, \frac{1}{m_{\text{S}}^{\,\,4}}\, \, \overline{y_{u}}^{pr}\, \, y_{u}^{\,\,pr}\, \, \left(\, g_{1}^{\,\,2} + g_{2}^{\,\,2}\right) \, \, \left(\, m_{H}^{2} + m_{\Phi}^{\,\,2}\right) \, \, \, \, \text{LF}_{1,0}\left[\, m_{\tilde{u}}^{\,\,r}\, \right] \, - \, \frac{3}{4}\, \, s_{2\,\text{Y}}\, \, s_{4\,\text{Y}}\, \, \frac{1}{m_{\text{S}}^{\,\,4}}\, \, \overline{y_{u}}^{pr}\, \, y_{u}^{\,\,pr}\, \, \left(\, g_{1}^{\,\,2} + g_{2}^{\,\,2}\right) \, \, \left(\, m_{H}^{2} + m_{\Phi}^{\,\,2}\right) \, \, \, \, \, \, \text{LF}_{1,0}\left[\, m_{\tilde{u}}^{\,\,r}\, \, \right] \, - \, \frac{3}{4}\, \, s_{2\,\text{Y}}\, 
                                                                                                                         2\;c_{2\,\gamma}\;g_{1}^{\;2}\;s_{\gamma}^{\;2}\;\overline{y_{u}}^{pr}\;y_{u}^{\;pr}\;\mathsf{LF}_{2\,,0}\left[\,m_{\tilde{u}}^{\;r}\,\right]\;-\;\frac{3}{16}\;\frac{1}{m_{_{D}}^{\,4}}\;s_{4\,\gamma}^{\;2}\;\left(\,m_{H}^{2}\,+\,m_{_{\overline{u}}}^{\,2}\,\right)\;\mathsf{LF}_{1\,,0}\left[\,m_{_{\overline{u}}}\,\right]\;\left(\,g_{1}^{\;2}\,+\,g_{2}^{\;2}\,\right)^{\,2}\;-\;2\,\left(\,m_{H}^{2}\,+\,m_{_{\overline{u}}}^{\,2}\,\right)\;\mathsf{LF}_{1\,,0}\left[\,m_{_{\overline{u}}}\,\right]\;\left(\,g_{1}^{\;2}\,+\,g_{2}^{\;2}\,\right)^{\,2}\;-\;2\,\left(\,m_{_{\overline{u}}}^{\,2}\,+\,g_{2}^{\,2}\,\right)^{\,2}\;+\;2\,\left(\,m_{_{\overline{u}}}^{\,2}\,+\,g_{2}^{\,2}\,\right)^{\,2}\;+\;2\,\left(\,m_{_{\overline{u}}}^{\,2}\,+\,g_{2}^{\,2}\,\right)^{\,2}\;+\;2\,\left(\,m_{_{\overline{u}}}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,\right)^{\,2}\;+\;2\,\left(\,m_{_{\overline{u}}}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}^{\,2}\,+\,g_{2}
                                                                                                                                \frac{3}{16} \; {S_4}_{\textrm{Y}}{}^2 \; \mathsf{LF_{1,1}} \left[ \, {m_{\textrm{\tiny \oplus}}} \, \right] \; \left( \, {g_{1}}^2 \, + \, {g_{2}}^2 \, \right)^{\, 2} \, - \, \frac{3}{16} \; \, {m_{\textrm{\tiny H}}}^2 \; {S_4}_{\textrm{Y}}{}^2 \; \, \mathsf{LF_{1,2}} \left[ \, {m_{\textrm{\tiny \oplus}}} \, \right] \; \left( \, {g_{1}}^2 \, + \, {g_{2}}^2 \, \right)^{\, 2} \, + \, \frac{3}{16} \; \, {m_{\textrm{\tiny H}}}^2 \; \, {g_{1}}^2 \; + \, {g_{2}}^2 \, \right)^{\, 2} \, + \, \frac{3}{16} \; \, {m_{\textrm{\tiny H}}}^2 \; \, {g_{1}}^2 \; + \, {g_{2}}^2 \, \right)^{\, 2} \, + \, \frac{3}{16} \; \, {m_{\textrm{\tiny H}}}^2 \; \, {g_{1}}^2 \; + \, {g_{2}}^2 \, \left( \, {g_{1}}^2 \, + \, {g_{2}}^2 \, \right)^{\, 2} \, + \, \frac{3}{16} \; \, {g_{1}}^2 \; + \, {g_{2}}^2 \, \left( \, {g_{1}}^2 \, + \, {g_{2}}^2 \, \right)^{\, 2} \, + \, \frac{3}{16} \; \, {g_{1}}^2 \; + \, {g_{2}}^2 \, \right)^{\, 2} \, + \, \frac{3}{16} \; \, {g_{1}}^2 \; + \, \frac{3}{16} \; + \,
                                                                                                                                    \frac{1}{64} \left(2 \; {g_{1}}^{2} \; {g_{2}}^{2} \; \left(3 + {c_{4}}_{\text{Y}} \; \left(2 - 5 \; {c_{4}}_{\text{Y}}\right) \right. \\ \left. - 4 \; {s_{2}}_{\text{Y}}^{4}\right) - {g_{2}}^{4} \; \left(9 + {c_{4}}_{\text{Y}} \; \left(-6 + 5 \; {c_{4}}_{\text{Y}}\right) \right. \\ \left. + 4 \; {s_{2}}_{\text{Y}}^{4}\right) - {g_{2}}^{4} \left(9 + {c_{4}}_{\text{Y}} \; \left(-6 + 5 \; {c_{4}}_{\text{Y}}\right) \right) \right] + {g_{2}}^{4} \left(9 + {c_{4}}_{\text{Y}} \; \left(-6 + 5 \; {c_{4}}_{\text{Y}}\right) \right) \\ \left. + 4 \; {s_{2}}_{\text{Y}}^{4}\right) - {g_{2}}^{4} \left(9 + {c_{4}}_{\text{Y}} \; \left(-6 + 5 \; {c_{4}}_{\text{Y}}\right) \right) \right] + {g_{2}}^{4} \left(9 + {c_{4}}_{\text{Y}} \; \left(-6 + 5 \; {c_{4}}_{\text{Y}}\right) \right) \\ \left. + 4 \; {s_{2}}_{\text{Y}}^{4}\right) - {g_{2}}^{4} \left(9 + {c_{4}}_{\text{Y}} \; \left(-6 + 5 \; {c_{4}}_{\text{Y}}\right) \right) \right] + {g_{2}}^{4} \left(9 + {c_{4}}_{\text{Y}} \; \left(-6 + 5 \; {c_{4}}_{\text{Y}}\right) \right) \\ \left. + 4 \; {s_{2}}_{\text{Y}}^{4}\right) - {g_{2}}^{4} \left(9 + {c_{4}}_{\text{Y}} \; \left(-6 + 5 \; {c_{4}}_{\text{Y}}\right) \right) \right] + {g_{2}}^{4} \left(-6 + 5 \; {c_{4}}_{\text{Y}}\right) \\ \left. + 4 \; {s_{2}}_{\text{Y}}^{4}\right) - {g_{2}}^{4} \left(-6 + 5 \; {c_{4}}_{\text{Y}}\right) \right] + {g_{2}}^{4} \left(-6 + 5 \; {c_{4}}_{\text{Y}}\right) \\ \left. + 4 \; {s_{2}}_{\text{Y}}^{4}\right) - {g_{2}}^{4} \left(-6 + 5 \; {c_{4}}_{\text{Y}}\right) \right] + {g_{2}}^{4} \left(-6 + 5 \; {c_{4}}_{\text{Y}}\right) \\ \left. + 4 \; {s_{2}}_{\text{Y}}^{4}\right) - {g_{2}}^{4} \left(-6 + 5 \; {c_{4}}_{\text{Y}}\right) \\ \left. + 4 \; {s_{2}}_{\text{Y}}^{4}\right) - {g_{2}}^{4} \left(-6 + 5 \; {c_{4}}_{\text{Y}}\right) \right] + {g_{2}}^{4} \left(-6 + 5 \; {c_{4}}_{\text{Y}}\right) \\ \left. + 4 \; {s_{2}}_{\text{Y}}^{4}\right) - {g_{2}}^{4} \left(-6 + 5 \; {c_{4}}_{\text{Y}}\right) \\ \left. + 4 \; {s_{2}}_{\text{Y}}^{4}\right) - {g_{2}}^{4} \left(-6 + 5 \; {c_{4}}_{\text{Y}}\right) \right] + {g_{2}}^{4} \left(-6 + 5 \; {c_{4}}_{\text{Y}}\right) \\ \left. + 4 \; {s_{2}}_{\text{Y}}^{4}\right) - {g_{2}}^{4} \left(-6 + 5 \; {c_{4}}_{\text{Y}}\right) \\ \left. + 4 \; {s_{2}}_{\text{Y}}^{4}\right) + {g_{2}}^{4} \left(-6 + 5 \; {c_{4}}_{\text{Y}}\right) \\ \left. + 4 \; {s_{2}}_{\text{Y}}^{4}\right) - {g_{2}}^{4} \left(-6 + 5 \; {c_{4}}_{\text{Y}}\right) \\ \left. + 4 \; {s_{2}}_{\text{Y}}^{4}\right) + {g_{2}}^{4} \left(-6 + 5 \; {c_{4}}_{\text{Y}}\right) \\ \left. + 4 \; {s_{2}}_{\text{Y}}^{4}\right) + {g_{2}}^{4} \left(-6 + 5 \; {c_{4}}_{\text{Y}}\right) \\ \left. + 4 \; {s_{2}}_{\text{Y}}^{4}\right) + {g_{2}}^{4} \left(-6 + 5 \; {c_{4}}_{\text{Y}}\right) \\ \left. + 4 \; {s_{2}}_{\text{Y}}^{4}\right) + {g_{2}}^{4} \left(-6 + 5 \; {c_{4}}_{\text{Y}}\right) \\ \left. + 4 \; {s_{2}}_{\text{Y}}^{4}\right) + {g_{2}}^{4} 
                                                                                                                                                                                                               g_{1}^{\ 4} \ \left(1 + c_{4\,\gamma} \ \left(2 + 5 \ c_{4\,\gamma}\right) \ + 4 \ s_{2\,\gamma}^{\ 4}\right) \right) \ \mathsf{LF}_{2,0} \left[\, m_{_{\! \! \oplus}} \,\right] \ + \frac{1}{288} \ m_H^2 \ \left(9 \ g_{1}^{\ 4} \ \left(\ (-1 + c_{4\,\gamma})^{\ 2} + 4 \ s_{2\,\gamma}^{\ 4}\right) \ + 2 \left(1 + c_{4\,\gamma}\right)^{2} + 4 \left(1 + c_{4\,
                                                                                                                                                                                                               18\;{g_{1}}^{2}\;{g_{2}}^{2}\;\left(-\,3\,+\,{c_{4\,\curlyvee}}\;\left(\,2\,+\,{c_{4\,\curlyvee}}\right)\,\,+\,4\;{s_{2\,\curlyvee}}^{4}\right)\,+\,{g_{2}}^{4}\;\left(\,17\,+\,9\;{c_{4\,\curlyvee}}\;\left(\,6\,+\,{c_{4\,\curlyvee}}\right)\,\,+\,36\;{s_{2\,\curlyvee}}^{4}\right)\,\right)\;LF_{3,0}\left[\,m_{_{\!\!D}}\,\right]\,\,+\,36\,{s_{2\,\curlyvee}}^{4}\right)
                                                                                                                                \frac{1}{96} \ m_H^2 \ \left(-3 \ g_1^4 \ \left( \ (-1 + c_4_{\,\Upsilon})^{\, 2} + 4 \ s_2_{\,\Upsilon}^{\, 4} \right) \ - 6 \ g_1^{\, 2} \ g_2^{\, 2} \ \left(-3 + c_4_{\,\Upsilon} \ (2 + c_4_{\,\Upsilon}) \ + 4 \ s_2_{\,\Upsilon}^{\, 4} \right) \ - 6 \ g_1^{\, 2} \ g_2^{\, 2} \ \left(-3 + c_4_{\,\Upsilon} \ (2 + c_4_{\,\Upsilon}) \ + 4 \ s_2_{\,\Upsilon}^{\, 4} \right) \ - 6 \ g_1^{\, 2} \ g_2^{\, 2} \ \left(-3 + c_4_{\,\Upsilon} \ (2 + c_4_{\,\Upsilon}) \ + 4 \ s_2_{\,\Upsilon}^{\, 4} \right) \ - 6 \ g_1^{\, 2} \ g_2^{\, 2} \ \left(-3 + c_4_{\,\Upsilon} \ (2 + c_4_{\,\Upsilon}) \ + 4 \ s_2_{\,\Upsilon}^{\, 4} \right) \ - 6 \ g_1^{\, 2} \ g_2^{\, 2} \ \left(-3 + c_4_{\,\Upsilon} \ (2 + c_4_{\,\Upsilon}) \ + 4 \ s_2_{\,\Upsilon}^{\, 4} \right) \ - 6 \ g_1^{\, 2} \ g_2^{\, 2} \ \left(-3 + c_4_{\,\Upsilon} \ (2 + c_4_{\,\Upsilon}) \ + 4 \ s_2_{\,\Upsilon}^{\, 4} \right) \ - 6 \ g_1^{\, 2} \ g_2^{\, 2} \ \left(-3 + c_4_{\,\Upsilon} \ (2 + c_4_{\,\Upsilon}) \ + 4 \ s_2_{\,\Upsilon}^{\, 4} \right) \ - 6 \ g_1^{\, 2} \ g_2^{\, 2} \ \left(-3 + c_4_{\,\Upsilon} \ (2 + c_4_{\,\Upsilon}) \ + 4 \ s_2_{\,\Upsilon}^{\, 4} \right) \ - 6 \ g_1^{\, 2} \ g_2^{\, 2} \ \left(-3 + c_4_{\,\Upsilon} \ (2 + c_4_{\,\Upsilon}) \ + 4 \ s_2_{\,\Upsilon}^{\, 4} \right) \ - 6 \ g_1^{\, 2} \ g_2^{\, 2} \ \left(-3 + c_4_{\,\Upsilon} \ (2 + c_4_{\,\Upsilon}) \ + 4 \ s_2_{\,\Upsilon}^{\, 4} \right) \ - 6 \ g_1^{\, 2} \ g_2^{\, 2} \ \left(-3 + c_4_{\,\Upsilon} \ (2 + c_4_{\,\Upsilon}) \ + 4 \ s_2_{\,\Upsilon}^{\, 4} \right) \ - 6 \ g_1^{\, 2} \ g_2^{\, 2} \ \left(-3 + c_4_{\,\Upsilon} \ (2 + c_4_{\,\Upsilon}) \ + 4 \ s_2_{\,\Upsilon}^{\, 4} \right) \ - 6 \ g_1^{\, 2} \ g_2^{\, 2} \ \left(-3 + c_4_{\,\Upsilon} \ (2 + c_4_{\,\Upsilon}) \ + 4 \ s_2_{\,\Upsilon}^{\, 4} \right) \ - 6 \ g_1^{\, 2} \ g_2^{\, 2} \ \left(-3 + c_4_{\,\Upsilon} \ (2 + c_4_{\,\Upsilon}) \ + 4 \ s_2_{\,\Upsilon}^{\, 4} \right) \ - 6 \ g_1^{\, 2} \ g_2^{\, 2} \ \left(-3 + c_4_{\,\Upsilon} \ (2 + c_4_{\,\Upsilon}) \ + 4 \ s_2_{\,\Upsilon}^{\, 4} \right) \ - 6 \ g_1^{\, 2} \ g_2^{\, 2} \ \left(-3 + c_4_{\,\Upsilon} \ (2 + c_4_{\,\Upsilon}) \ + 4 \ s_2_{\,\Upsilon}^{\, 4} \right) \ - 6 \ g_1^{\, 2} \ g_2^{\, 2} \ \left(-3 + c_4_{\,\Upsilon} \ (2 + c_4_{\,\Upsilon}) \ + 4 \ s_2_{\,\Upsilon}^{\, 4} \right) \ - 6 \ g_1^{\, 2} \ g_2^{\, 2} \ \left(-3 + c_4_{\,\Upsilon} \ (2 + c_4_{\,\Upsilon}) \ + 4 \ s_2_{\,\Upsilon}^{\, 4} \right) \ - 6 \ g_1^{\, 2} \ g_2^{\, 2} \ \left(-3 + c_4_{\,\Upsilon} \ (2 + c_4_{\,\Upsilon}) \ + 4 \ s_2_{\,\Upsilon}^{\, 4} \right) \ - 6 \ g_1^{\, 2} \ g_2^{\, 2} \ \left(-3 + c_4_{\,\Upsilon} \ (2 + c_4_{\,\Upsilon}) \ + 4 \ s_2_{\,\Upsilon}^{\, 4} \right) \ - 6 \ g_1^{\, 2} \ g_2^{\, 2} \ \left(-3 + c_4_{\,\Upsilon} \ (2 + c_4_{\,\Upsilon}) \ + 4 \ s_2_{\,\Upsilon}^{\, 4} \right) \ - 6 \ g_1^{\, 2} \ g_2^{\, 2} \ \left(-3 + c_4_{\,\Upsilon} 
                                                                                                                                                                                                               {g_{2}}^{4} \; \left(-\, 13 \, + \, 3 \; {c_{4}}_{\, \Upsilon} \; \left(\, 6 \, + \, {c_{4}}_{\, \Upsilon}\right) \; + \; 12 \; {s_{2}}_{\, \Upsilon}^{\; 4}\right) \, \right) \; LF_{4, -1} \left[\, m_{_{\! \! \oplus}} \,\right] \; - \; \frac{8}{45} \; m_{H}^{2} \; {g_{2}}^{4} \; LF_{5, -2} \left[\, m_{_{\! \! \oplus}} \,\right] \; - \; \frac{1}{45} \; m_{H}^{2} \; {g_{2}}^{4} \; LF_{5, -2} \left[\, m_{_{\! \! \oplus}} \,\right] \; - \; \frac{1}{45} \; m_{H}^{2} \; {g_{2}}^{4} \; LF_{5, -2} \left[\, m_{_{\! \! \oplus}} \,\right] \; - \; \frac{1}{45} \; m_{H}^{2} \; {g_{2}}^{4} \; LF_{5, -2} \left[\, m_{_{\! \! \oplus}} \,\right] \; - \; \frac{1}{45} \; m_{H}^{2} \; {g_{2}}^{4} \; LF_{5, -2} \left[\, m_{_{\! \! \oplus}} \,\right] \; - \; \frac{1}{45} \; m_{H}^{2} \; {g_{2}}^{4} \; LF_{5, -2} \left[\, m_{_{\! \! \oplus}} \,\right] \; - \; \frac{1}{45} \; m_{H}^{2} \; {g_{2}}^{4} \; LF_{5, -2} \left[\, m_{_{\! \! \oplus}} \,\right] \; - \; \frac{1}{45} \; m_{H}^{2} \; {g_{2}}^{4} \; LF_{5, -2} \left[\, m_{_{\! \! \oplus}} \,\right] \; - \; \frac{1}{45} \; m_{_{\! \! \oplus}} \; m_{_
                                                                                                                                \left(\,g_{1}^{\,2}\,+\,g_{2}^{\,2}\,\right)\,\,\left(\,m_{H}^{2}\,+\,m_{\Phi}^{\,2}\,\right)\,\,\left(\,c_{\gamma}^{\,2}\,-\,s_{\gamma}^{\,2}\,\right)\,\,\mathsf{LF}_{1,1,0}\left[\,m_{1}\,,\,\,\widetilde{\mu}\,\right]\,\,+\,\frac{1}{2}\,\,g_{1}^{\,4}\,\,\mathsf{LF}_{2,2,-2}\left[\,m_{1}\,,\,\,\widetilde{\mu}\,\right]\,\,\left(\,c_{\gamma}^{\,2}\,+\,s_{\gamma}^{\,2}\,\right)^{\,2}\,+\,3\,\,\mathrm{LF}_{2,2,2,2}\left[\,m_{1}^{\,2}\,,\,\,\widetilde{\mu}\,\right]\,\,\left(\,c_{\gamma}^{\,2}\,+\,s_{\gamma}^{\,2}\,\right)^{\,2}\,+\,3\,\,\mathrm{LF}_{2,2,2,2}\left[\,m_{1}^{\,2}\,,\,\,\widetilde{\mu}\,\right]\,\,\left(\,c_{\gamma}^{\,2}\,+\,s_{\gamma}^{\,2}\,\right)^{\,2}\,+\,3\,\,\mathrm{LF}_{2,2,2,2}\left[\,m_{1}^{\,2}\,,\,\,\widetilde{\mu}\,\right]\,\,\left(\,c_{\gamma}^{\,2}\,+\,s_{\gamma}^{\,2}\,\right)^{\,2}\,+\,3\,\,\mathrm{LF}_{2,2,2,2}\left[\,m_{1}^{\,2}\,,\,\,\widetilde{\mu}\,\right]\,\,\left(\,c_{\gamma}^{\,2}\,+\,s_{\gamma}^{\,2}\,\right)^{\,2}\,+\,3\,\,\mathrm{LF}_{2,2,2,2}\left[\,m_{1}^{\,2}\,,\,\,\widetilde{\mu}\,\right]\,\,\left(\,c_{\gamma}^{\,2}\,+\,s_{\gamma}^{\,2}\,\right)^{\,2}\,+\,3\,\,\mathrm{LF}_{2,2,2,2}\left[\,m_{1}^{\,2}\,,\,\,\widetilde{\mu}\,\right]\,\,\left(\,c_{\gamma}^{\,2}\,+\,s_{\gamma}^{\,2}\,\right)^{\,2}\,+\,3\,\,\mathrm{LF}_{2,2,2,2}\left[\,m_{1}^{\,2}\,,\,\,\widetilde{\mu}\,\right]\,\,\left(\,c_{\gamma}^{\,2}\,+\,s_{\gamma}^{\,2}\,\right)^{\,2}\,+\,3\,\,\mathrm{LF}_{2,2,2,2}\left[\,m_{1}^{\,2}\,,\,\,\widetilde{\mu}\,\right]\,\,\left(\,c_{\gamma}^{\,2}\,+\,s_{\gamma}^{\,2}\,\right)^{\,2}\,+\,3\,\,\mathrm{LF}_{2,2,2,2}\left[\,m_{1}^{\,2}\,,\,\,\widetilde{\mu}\,\right]\,\,\left(\,c_{\gamma}^{\,2}\,+\,s_{\gamma}^{\,2}\,\right)^{\,2}\,+\,3\,\,\mathrm{LF}_{2,2,2,2}\left[\,m_{1}^{\,2}\,,\,\,\widetilde{\mu}\,\right]\,\,\left(\,c_{\gamma}^{\,2}\,+\,s_{\gamma}^{\,2}\,\right)^{\,2}\,+\,3\,\,\mathrm{LF}_{2,2,2,2}\left[\,m_{1}^{\,2}\,,\,\,\widetilde{\mu}\,\right]\,\,\left(\,c_{\gamma}^{\,2}\,+\,s_{\gamma}^{\,2}\,\right)^{\,2}\,+\,3\,\,\mathrm{LF}_{2,2,2}\left[\,m_{1}^{\,2}\,,\,\,\widetilde{\mu}\,\right]\,\,\left(\,c_{\gamma}^{\,2}\,+\,s_{\gamma}^{\,2}\,\right)^{\,2}\,+\,3\,\,\mathrm{LF}_{2,2,2}\left[\,m_{1}^{\,2}\,,\,\,\widetilde{\mu}\,\right]\,\,\left(\,c_{\gamma}^{\,2}\,+\,s_{\gamma}^{\,2}\,\right)^{\,2}\,+\,3\,\,\mathrm{LF}_{2,2,2}\left[\,m_{1}^{\,2}\,,\,\,\widetilde{\mu}\,\right]\,\,\left(\,c_{\gamma}^{\,2}\,+\,s_{\gamma}^{\,2}\,\right)^{\,2}\,+\,3\,\,\mathrm{LF}_{2,2,2}\left[\,m_{1}^{\,2}\,,\,\,\widetilde{\mu}\,\right]\,\,\left(\,c_{\gamma}^{\,2}\,+\,s_{\gamma}^{\,2}\,\right)^{\,2}\,+\,3\,\,\mathrm{LF}_{2,2,2}\left[\,m_{1}^{\,2}\,,\,\,\widetilde{\mu}\,\right]\,\,\left(\,c_{\gamma}^{\,2}\,+\,s_{\gamma}^{\,2}\,,\,\,\widetilde{\mu}\,\right)^{\,2}\,+\,3\,\,\mathrm{LF}_{2,2,2}\left[\,m_{1}^{\,2}\,,\,\,\widetilde{\mu}\,\right]\,\,\left(\,c_{\gamma}^{\,2}\,+\,s_{\gamma}^{\,2}\,,\,\,\widetilde{\mu}\,\right)^{\,2}\,+\,3\,\,\mathrm{LF}_{2,2,2}\left[\,m_{1}^{\,2}\,,\,\,\widetilde{\mu}\,\right]\,\,\left(\,c_{\gamma}^{\,2}\,+\,s_{\gamma}^{\,2}\,,\,\,\widetilde{\mu}\,\right)^{\,2}\,+\,3\,\,\mathrm{LF}_{2,2,2}\left[\,m_{1}^{\,2}\,,\,\,\widetilde{\mu}\,\right]\,\,\left(\,c_{\gamma}^{\,2}\,+\,s_{\gamma}^{\,2}\,,\,\,\widetilde{\mu}\,\right)^{\,2}\,+\,3\,\,\mathrm{LF}_{2,2,2}\left[\,m_{1}^{\,2}\,,\,\,\widetilde{\mu}\,\right]\,\,\left(\,c_{\gamma}^{\,2}\,+\,s_{\gamma}^{\,2}\,,\,\,\widetilde{\mu}\,\right)^{\,2}\,+\,3\,\,\mathrm{LF}_{2,2,2}\left[\,m_{1}^{\,2}\,,\,\,\widetilde{\mu}\,\right]\,\,\left(\,c_{\gamma}^{\,2}\,+\,s_{\gamma}^{\,2}\,,\,\,\widetilde{\mu}\,\right)^{\,2}\,+\,3\,\,\mathrm{LF}_{2,2,2}\left[\,m_{1}^{\,2}\,,\,\,\widetilde{\mu}\,\right]\,\,\left(\,c_{\gamma}^{\,2}\,+\,s_{\gamma}^{\,2}\,,\,\,\widetilde{\mu}\,\right)^{\,2}\,+\,3\,\,\mathrm{LF
                                                                                                                                \frac{1}{2} \; {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}_{2,2,-1} \left[ \, m_{1} \, , \; \widetilde{\mu} \, \right] \; + 2 \; \mathsf{LF}_{2,2,-1} \left[ \, m_{1} \, , \; \widetilde{\mu} \, \right] \; + 2 \; \mathsf{LF}_{2,2,-1} \left[ \, m_{1} \, , \; \widetilde{\mu} \, \right] \; + 2 \; \mathsf{LF}_{2,2,-1} \left[ \, m_{1} \, , \; \widetilde{\mu} \, \right] \; + 2 \; \mathsf{LF}_{2,2,-1} \left[ \, m_{1} \, , \; \widetilde{\mu} \, \right] \; + 2 \; \mathsf{LF}_{2,2,-1} \left[ \, m_{1} \, , \; \widetilde{\mu} \, \right] \; + 2 \; \mathsf{LF}_{2,2,-1} \left[ \, m_{1} \, , \; \widetilde{\mu} \, \right] \; + 2 \; \mathsf{LF}_{2,2,-1} \left[ \, m_{1} \, , \; \widetilde{\mu} \, \right] \; + 2 \; \mathsf{LF}_{2,2,-1} \left[ \, m_{1} \, , \; \widetilde{\mu} \, \right] \; + 2 \; \mathsf{LF}_{2,2,-1} \left[ \, m_{1} \, , \; \widetilde{\mu} \, \right] \; + 2 \; \mathsf{LF}_{2,2,-1} \left[ \, m_{1} \, , \; \widetilde{\mu} \, \right] \; + 2 \; \mathsf{LF}_{2,2,-1} \left[ \, m_{1} \, , \; \widetilde{\mu} \, \right] \; + 2 \; \mathsf{LF}_{2,2,-1} \left[ \, m_{1} \, , \; \widetilde{\mu} \, \right] \; + 2 \; \mathsf{LF}_{2,2,-1} \left[ \, m_{1} \, , \; \widetilde{\mu} \, \right] \; + 2 \; \mathsf{LF}_{2,2,-1} \left[ \, m_{1} \, , \; \widetilde{\mu} \, \right] \; + 2 \; \mathsf{LF}_{2,2,-1} \left[ \, m_{1} \, , \; \widetilde{\mu} \, \right] \; + 2 \; \mathsf{LF}_{2,2,-1} \left[ \, m_{1} \, , \; \widetilde{\mu} \, \right] \; + 2 \; \mathsf{LF}_{2,2,-1} \left[ \, m_{1} \, , \; \widetilde{\mu} \, \right] \; + 2 \; \mathsf{LF}_{2,2,-1} \left[ \, m_{1} \, , \; \widetilde{\mu} \, \right] \; + 2 \; \mathsf{LF}_{2,2,-1} \left[ \, m_{1} \, , \; \widetilde{\mu} \, \right] \; + 2 \; \mathsf{LF}_{2,2,-1} \left[ \, m_{1} \, , \; \widetilde{\mu} \, \right] \; + 2 \; \mathsf{LF}_{2,2,-1} \left[ \, m_{1} \, , \; \widetilde{\mu} \, \right] \; + 2 \; \mathsf{LF}_{2,2,-1} \left[ \, m_{1} \, , \; \widetilde{\mu} \, \right] \; + 2 \; \mathsf{LF}_{2,2,-1} \left[ \, m_{1} \, , \; \widetilde{\mu} \, \right] \; + 2 \; \mathsf{LF}_{2,2,-1} \left[ \, m_{1} \, , \; \widetilde{\mu} \, \right] \; + 2 \; \mathsf{LF}_{2,2,-1} \left[ \, m_{1} \, , \; \widetilde{\mu} \, \right] \; + 2 \; \mathsf{LF}_{2,2,-1} \left[ \, m_{1} \, , \; \widetilde{\mu} \, \right] \; + 2 \; \mathsf{LF}_{2,2,-1} \left[ \, m_{1} \, , \; \widetilde{\mu} \, \right] \; + 2 \; \mathsf{LF}_{2,2,-1} \left[ \, m_{1} \, , \; \widetilde{\mu} \, \right] \; + 2 \; \mathsf{LF}_{2,2,-1} \left[ \, m_{1} \, , \; \widetilde{\mu} \, \right] \; + 2 \; \mathsf{LF}_{2,2,-1} \left[ \, m_{1} \, , \; \widetilde{\mu} \, \right] \; + 2 \; \mathsf{LF}_{2,2,-1} \left[ \, m_{1} \, , \; \widetilde{\mu} \, \right] \; + 2 \; \mathsf{LF}_{2,2,-1} \left[ \, m_{1} \, , \; \widetilde{\mu} \, \right] \; + 2 \; \mathsf{LF}_{2,2,-1} \left[ \, m_{1} \, , \; \widetilde{\mu} \, \right] \; + 2 \; \mathsf{LF}_{2,2,-1} \left[ \, m_{1} \, , \; \widetilde{\mu} \, \right] \; + 2 \; \mathsf{LF}_{2,2,-1} \left[ \, m_{1} \, , \; \widetilde{\mu} \, \right] \; + 2 \; \mathsf{LF}_{2,2,-1} \left[ \, m_{1} \, , \; \widetilde{\mu} \, \right] \; + 2 \; 
                                                                                                                         2 g_1^4 m_1^2 s_\gamma^2 \widetilde{\mu}^2 c_\gamma^2 LF_{2,2,0}[m_1, \widetilde{\mu}] +
                                                                                                                                \frac{3}{2} \; m_2 \; s_{4 \, \gamma} \; \widetilde{\mu} \; g_2^2 \; \frac{1}{{m_0}^4} \; \left( g_1^2 + g_2^2 \right) \; \left( m_H^2 + m_{\scriptscriptstyle \oplus}^2 \right) \; \left( c_{\gamma}^{\; 2} - s_{\gamma}^{\; 2} \right) \; \mathsf{LF}_{1,1,0} \left[ \, m_2 \, , \; \widetilde{\mu} \, \right] \; + \; \mathsf{LF}_{1,1,0} \left[ \, m_2 \, , \; \widetilde{\mu} \, \right] \; + \; \mathsf{LF}_{1,1,0} \left[ \, m_2 \, , \; \widetilde{\mu} \, \right] \; + \; \mathsf{LF}_{1,1,0} \left[ \, m_2 \, , \; \widetilde{\mu} \, \right] \; + \; \mathsf{LF}_{1,1,0} \left[ \, m_2 \, , \; \widetilde{\mu} \, \right] \; + \; \mathsf{LF}_{1,1,0} \left[ \, m_2 \, , \; \widetilde{\mu} \, \right] \; + \; \mathsf{LF}_{1,1,0} \left[ \, m_2 \, , \; \widetilde{\mu} \, \right] \; + \; \mathsf{LF}_{1,1,0} \left[ \, m_2 \, , \; \widetilde{\mu} \, \right] \; + \; \mathsf{LF}_{1,1,0} \left[ \, m_2 \, , \; \widetilde{\mu} \, \right] \; + \; \mathsf{LF}_{1,1,0} \left[ \, m_2 \, , \; \widetilde{\mu} \, \right] \; + \; \mathsf{LF}_{1,1,0} \left[ \, m_2 \, , \; \widetilde{\mu} \, \right] \; + \; \mathsf{LF}_{1,1,0} \left[ \, m_2 \, , \; \widetilde{\mu} \, \right] \; + \; \mathsf{LF}_{1,1,0} \left[ \, m_2 \, , \; \widetilde{\mu} \, \right] \; + \; \mathsf{LF}_{1,1,0} \left[ \, m_2 \, , \; \widetilde{\mu} \, \right] \; + \; \mathsf{LF}_{1,1,0} \left[ \, m_2 \, , \; \widetilde{\mu} \, \right] \; + \; \mathsf{LF}_{1,1,0} \left[ \, m_2 \, , \; \widetilde{\mu} \, \right] \; + \; \mathsf{LF}_{1,1,0} \left[ \, m_2 \, , \; \widetilde{\mu} \, \right] \; + \; \mathsf{LF}_{1,1,0} \left[ \, m_2 \, , \; \widetilde{\mu} \, \right] \; + \; \mathsf{LF}_{1,1,0} \left[ \, m_2 \, , \; \widetilde{\mu} \, \right] \; + \; \mathsf{LF}_{1,1,0} \left[ \, m_2 \, , \; \widetilde{\mu} \, \right] \; + \; \mathsf{LF}_{1,1,0} \left[ \, m_2 \, , \; \widetilde{\mu} \, \right] \; + \; \mathsf{LF}_{1,1,0} \left[ \, m_2 \, , \; \widetilde{\mu} \, \right] \; + \; \mathsf{LF}_{1,1,0} \left[ \, m_2 \, , \; \widetilde{\mu} \, \right] \; + \; \mathsf{LF}_{1,1,0} \left[ \, m_2 \, , \; \widetilde{\mu} \, \right] \; + \; \mathsf{LF}_{1,1,0} \left[ \, m_2 \, , \; \widetilde{\mu} \, \right] \; + \; \mathsf{LF}_{1,1,0} \left[ \, m_2 \, , \; \widetilde{\mu} \, \right] \; + \; \mathsf{LF}_{1,1,0} \left[ \, m_2 \, , \; \widetilde{\mu} \, \right] \; + \; \mathsf{LF}_{1,1,0} \left[ \, m_2 \, , \; \widetilde{\mu} \, \right] \; + \; \mathsf{LF}_{1,1,0} \left[ \, m_2 \, , \; \widetilde{\mu} \, \right] \; + \; \mathsf{LF}_{1,1,0} \left[ \, m_2 \, , \; \widetilde{\mu} \, \right] \; + \; \mathsf{LF}_{1,1,0} \left[ \, m_2 \, , \; \widetilde{\mu} \, \right] \; + \; \mathsf{LF}_{1,1,0} \left[ \, m_2 \, , \; \widetilde{\mu} \, \right] \; + \; \mathsf{LF}_{1,1,0} \left[ \, m_2 \, , \; \widetilde{\mu} \, \right] \; + \; \mathsf{LF}_{1,1,0} \left[ \, m_2 \, , \; \widetilde{\mu} \, \right] \; + \; \mathsf{LF}_{1,1,0} \left[ \, m_2 \, , \; \widetilde{\mu} \, \right] \; + \; \mathsf{LF}_{1,1,0} \left[ \, m_2 \, , \; \widetilde{\mu} \, \right] \; + \; \mathsf{LF}_{1,1,0} \left[ \, m_2 \, , \; \widetilde{\mu} \, \right] \; + \; \mathsf{LF}_{1,1,0} \left[ \, m_2 \, , \; \widetilde{\mu} \, \right] \; + \; \mathsf{LF}_{1,1,0} \left[ \, m_2 \, , \; \widetilde{\mu} \, \right] \; + \; \mathsf{LF}_{1,1,0} \left[ \, m_2 \, , \; \widetilde{\mu} \, \right] \; + \; \mathsf{LF}_{1,1,0} \left[ \, m_2 \, , \; \widetilde{\mu} \, \right] \; + \; \mathsf{LF}_{1,1,0} \left[ \, m_2 \, , \; \widetilde{\mu} \, \right] \; + \; \mathsf{LF}_{1,1,0}
                                                                                                                                \frac{8}{3}\;\mathsf{m_{H}^{2}}\;\mathsf{g_{2}}^{4}\;\left(\mathsf{c_{\gamma}}^{2}+\mathsf{s_{\gamma}}^{2}\right)\;\mathsf{LF_{2,1,0}}\left[\mathsf{m_{2}},\;\widetilde{\mu}\right]\;+\;\frac{1}{2}\;\mathsf{g_{2}}^{4}\;\left(\mathsf{5}\;\mathsf{c_{\gamma}}^{4}+\mathsf{2}\;\mathsf{s_{\gamma}}^{2}\;\mathsf{c_{\gamma}}^{2}+\mathsf{5}\;\mathsf{s_{\gamma}}^{4}\right)\;\mathsf{LF_{2,2,-2}}\left[\mathsf{m_{2}},\;\widetilde{\mu}\right]\;+\;\frac{1}{2}\;\mathsf{g_{2}}^{4}\;\left(\mathsf{5}\;\mathsf{c_{\gamma}}^{4}+\mathsf{2}\;\mathsf{s_{\gamma}}^{2}\;\mathsf{c_{\gamma}}^{2}+\mathsf{5}\;\mathsf{s_{\gamma}}^{4}\right)\;\mathsf{LF_{2,2,-2}}\left[\mathsf{m_{2}},\;\widetilde{\mu}\right]\;+\;\frac{1}{2}\;\mathsf{g_{2}}^{4}\;\left(\mathsf{5}\;\mathsf{c_{\gamma}}^{4}+\mathsf{2}\;\mathsf{s_{\gamma}}^{2}\;\mathsf{c_{\gamma}}^{2}\right)\;\mathsf{LF_{2,2,-2}}\left[\mathsf{m_{2}},\;\widetilde{\mu}\right]\;+\;\frac{1}{2}\;\mathsf{g_{2}}^{4}\;\left(\mathsf{5}\;\mathsf{c_{\gamma}}^{4}+\mathsf{2}\;\mathsf{s_{\gamma}}^{2}\;\mathsf{c_{\gamma}}^{2}\right)\;\mathsf{LF_{2,2,-2}}\left[\mathsf{m_{2}},\;\widetilde{\mu}\right]\;+\;\frac{1}{2}\;\mathsf{g_{2}}^{4}\;\mathsf{c_{\gamma}}^{2}\;\mathsf{c_{\gamma}}^{2}\;\mathsf{c_{\gamma}}^{2}\;\mathsf{c_{\gamma}}^{2}\;\mathsf{c_{\gamma}}^{2}\;\mathsf{c_{\gamma}}^{2}\right]\;
                                                                                                                                                               g_{2}^{\ 4} \ \left(3 \ c_{\gamma}^{\ 4} \ \left(m_{2}^{\ 2} + 6 \ m_{H}^{2}\right) \right. + 16 \ m_{H}^{2} \ s_{\gamma}^{\ 2} + 3 \ s_{\gamma}^{\ 4} \ \left(m_{2}^{\ 2} + 6 \ m_{H}^{2}\right) \\ + \ 72 \ m_{2} \ s_{\gamma} \ \widetilde{\mu} \ c_{\gamma}^{\ 3} + 3 \ s_{\gamma}^{\ 4} \ \left(m_{2}^{\ 2} + 6 \ m_{H}^{2}\right) \\ + \ 72 \ m_{2} \ s_{\gamma} \ \widetilde{\mu} \ c_{\gamma}^{\ 3} + 3 \ s_{\gamma}^{\ 4} \ \left(m_{2}^{\ 2} + 6 \ m_{H}^{2}\right) \\ + \ 72 \ m_{2} \ s_{\gamma} \ \widetilde{\mu} \ c_{\gamma}^{\ 3} + 3 \ s_{\gamma}^{\ 4} \ \left(m_{2}^{\ 2} + 6 \ m_{H}^{2}\right) \\ + \ 72 \ m_{2} \ s_{\gamma} \ \widetilde{\mu} \ c_{\gamma}^{\ 3} + 3 \ s_{\gamma}^{\ 4} \ \left(m_{2}^{\ 2} + 6 \ m_{H}^{2}\right) \\ + \ 72 \ m_{2} \ s_{\gamma} \ \widetilde{\mu} \ c_{\gamma}^{\ 3} + 3 \ s_{\gamma}^{\ 4} \ \left(m_{2}^{\ 2} + 6 \ m_{H}^{2}\right) \\ + \ 72 \ m_{2} \ s_{\gamma} \ \widetilde{\mu} \ c_{\gamma}^{\ 3} + 3 \ s_{\gamma}^{\ 4} \ \left(m_{2}^{\ 2} + 6 \ m_{H}^{2}\right) \\ + \ 72 \ m_{2} \ s_{\gamma}^{\ 4} \ \left(m_{2}^{\ 2} + 6 \ m_{H}^{2}\right) \\ + \ 72 \ m_{2} \ s_{\gamma}^{\ 4} \ \left(m_{2}^{\ 2} + 6 \ m_{H}^{2}\right) \\ + \ 72 \ m_{2} \ s_{\gamma}^{\ 4} \ \left(m_{2}^{\ 2} + 6 \ m_{H}^{2}\right) \\ + \ 72 \ m_{2}^{\ 4} \ \left(m_{2}^{\ 2} + 6 \ m_{H}^{2}\right) \\ + \ 72 \ m_{2}^{\ 4} \ \left(m_{2}^{\ 2} + 6 \ m_{H}^{2}\right) \\ + \ 72 \ m_{2}^{\ 4} \ \left(m_{2}^{\ 2} + 6 \ m_{H}^{2}\right) \\ + \ 72 \ m_{2}^{\ 4} \ \left(m_{2}^{\ 2} + 6 \ m_{H}^{2}\right) \\ + \ 72 \ m_{2}^{\ 4} \ \left(m_{2}^{\ 4} + 6 \ m_{H}^{2}\right) \\ + \ 72 \ m_{2}^{\ 4} \ \left(m_{2}^{\ 4} + 6 \ m_{H}^{2}\right) \\ + \ 72 \ m_{2}^{\ 4} \ \left(m_{2}^{\ 4} + 6 \ m_{H}^{2}\right) \\ + \ 72 \ m_{2}^{\ 4} \ \left(m_{2}^{\ 4} + 6 \ m_{H}^{2}\right) \\ + \ 72 \ m_{2}^{\ 4} \ \left(m_{2}^{\ 4} + 6 \ m_{H}^{2}\right) \\ + \ 72 \ m_{2}^{\ 4} \ \left(m_{2}^{\ 4} + 6 \ m_{H}^{2}\right) \\ + \ 72 \ m_{2}^{\ 4} \ \left(m_{2}^{\ 4} + 6 \ m_{H}^{2}\right) \\ + \ 72 \ m_{2}^{\ 4} \ \left(m_{2}^{\ 4} + 6 \ m_{H}^{2}\right) \\ + \ 72 \ m_{2}^{\ 4} \ \left(m_{2}^{\ 4} + 6 \ m_{H}^{2}\right) \\ + \ 72 \ m_{2}^{\ 4} \ \left(m_{2}^{\ 4} + 6 \ m_{H}^{2}\right) \\ + \ 72 \ m_{2}^{\ 4} \ \left(m_{2}^{\ 4} + 6 \ m_{H}^{2}\right) \\ + \ 72 \ m_{2}^{\ 4} \ \left(m_{2}^{\ 4} + 6 \ m_{H}^{2}\right) \\ + \ 72 \ m_{2}^{\ 4} \ \left(m_{2}^{\ 4} + 6 \ m_{H}^{2}\right) \\ + \ 72 \ m_{2}^{\ 4} \ \left(m_{2}^{\ 4} + 6 \ m_{H}^{2}\right) \\ + \ 72 \ m_{2}^{\ 4} \ \left(m_{2}^{\ 4} + 6 \ m_{H}^{2}\right) \\ + \ 72 \ m_{2}^{\ 4} \ \left
                                                                                                                                                                                                               72\; m_{2}\; \tilde{\mu}\; c_{\gamma}\; s_{\gamma}^{\; 3}\; +\; c_{\gamma}^{\; 2}\; \left(m_{H}^{2}\; \left(16\; -\; 48\; s_{\gamma}^{\; 2}\right)\; +\; 6\; s_{\gamma}^{\; 2}\; \left(5\; m_{2}^{\; 2}\; +\; 6\; \tilde{\mu}^{2}\right)\right)\right)\; LF_{2,2,-1}\left[\, m_{2}\; ,\; \tilde{\mu}\, \right]\; +\; 32\; m_{2}^{\; 2}\; \left(16\; m_{2}^{\; 2}\; +\; 6\; \tilde{\mu}^{2}\right)
                                                                                                                                \frac{2}{3}\;\mathsf{m}_{2}\;\mathsf{s}_{\gamma}\;\mathsf{c}_{\gamma}\;\mathsf{g_{2}}^{4}\;\left(8\;\mathsf{m}_{\mathsf{H}}^{2}\;\tilde{\mu}+3\;\mathsf{m}_{2}\;\mathsf{s}_{\gamma}\;\mathsf{c}_{\gamma}\;\left(2\;\mathsf{m}_{\mathsf{H}}^{2}+3\;\tilde{\mu}^{2}\right)\right)\;\mathsf{LF}_{\mathsf{2,2,0}}\left[\,\mathsf{m}_{\mathsf{2}}\,,\;\tilde{\mu}\,\right]\;-\;\frac{4}{3}\;\mathsf{m}_{\mathsf{H}}^{2}\;\mathsf{g_{2}}^{4}\;\left(\;\mathsf{c}_{\gamma}^{\;\;2}+\mathsf{s}_{\gamma}^{\;\;2}\right)
                                                                                                                                                  \mathsf{LF_{3,1,-1}[m_2,\,\widetilde{\mu}]} \, - \, \frac{4}{3} \, \, \mathsf{m_H^2 \, g_2}^4 \, \left( 6 \, \, \mathsf{c_{\gamma}}^4 + \, \mathsf{s_{\gamma}}^2 + 6 \, \, \mathsf{s_{\gamma}}^4 + \, \mathsf{c_{\gamma}}^2 \, \, \left( 1 - 12 \, \, \mathsf{s_{\gamma}}^2 \right) \, \right) \, \mathsf{LF_{3,2,-2}[m_2,\,\widetilde{\mu}]} \, + \, \mathsf{LF_{3,1,-1}[m_2,\,\widetilde{\mu}]} \, + \, \mathsf{LF_{3,2,-2}[m_2,\,\widetilde{\mu}]} \, + \, \mathsf{LF_{3,2,-2}[m_2
                                                                                                                             \frac{2}{3}~\text{m}_2~\text{m}_\text{H}^2~\text{g}_2^{~4}~\left(9~\text{m}_2~\left(c_\gamma^{~2}-s_\gamma^{~2}\right)^{~2}-4~\text{s}_\gamma~\widetilde{\mu}~c_\gamma\right)~\text{LF}_{3,2,-1}\left[\text{m}_2,~\widetilde{\mu}\right]~+
                                                                                                                         4\; m_{H}^{2}\; g_{2}^{\; 4}\; LF_{3,3,-3}\left[\,m_{2}\;,\; \widetilde{\mu}\,\right] \; \left(\,c_{\gamma}^{\; 2} - s_{\gamma}^{\; 2}\,\right)^{\, 2} \; - \; 4\; m_{H}^{2}\; g_{2}^{\; 4}\; m_{2}^{\; 2}\; LF_{3,3,-2}\left[\,m_{2}\;,\; \widetilde{\mu}\,\right] \; \left(\,c_{\gamma}^{\; 2} - s_{\gamma}^{\; 2}\,\right)^{\, 2} \; + \; 3 \; m_{H}^{\; 2}\; g_{2}^{\; 4}\; m_{2}^{\; 2}\; LF_{3,3,-2}\left[\,m_{2}\;,\; \widetilde{\mu}\,\right] \; \left(\,c_{\gamma}^{\; 2} - s_{\gamma}^{\; 2}\,\right)^{\, 2} \; + \; 3 \; m_{H}^{\; 2}\; g_{2}^{\; 4}\; m_{2}^{\; 2}\; LF_{3,3,-2}\left[\,m_{2}\;,\; \widetilde{\mu}\,\right] \; \left(\,c_{\gamma}^{\; 2} - s_{\gamma}^{\; 2}\,\right)^{\, 2} \; + \; 3 \; m_{H}^{\; 2}\; g_{2}^{\; 4}\; m_{2}^{\; 2}\; LF_{3,3,-2}\left[\,m_{2}\;,\; \widetilde{\mu}\,\right] \; \left(\,c_{\gamma}^{\; 2} - s_{\gamma}^{\; 2}\,\right)^{\, 2} \; + \; 3 \; m_{H}^{\; 2}\; g_{2}^{\; 4}\; m_{2}^{\; 2}\; LF_{3,3,-2}\left[\,m_{2}\;,\; \widetilde{\mu}\,\right] \; \left(\,c_{\gamma}^{\; 2} - s_{\gamma}^{\; 2}\,\right)^{\, 2} \; + \; 3 \; m_{H}^{\; 2}\; g_{2}^{\; 4}\; m_{2}^{\; 2}\; LF_{3,3,-2}\left[\,m_{2}\;,\; \widetilde{\mu}\,\right] \; \left(\,c_{\gamma}^{\; 2} - s_{\gamma}^{\; 2}\,\right)^{\, 2} \; + \; 3 \; m_{H}^{\; 2}\; g_{2}^{\; 4}\; m_{2}^{\; 2}\; LF_{3,3,-2}\left[\,m_{2}\;,\; \widetilde{\mu}\,\right] \; \left(\,c_{\gamma}^{\; 2} - s_{\gamma}^{\; 2}\,\right)^{\, 2} \; + \; 3 \; m_{H}^{\; 2}\; g_{2}^{\; 4}\; m_{2}^{\; 2}\; LF_{3,3,-2}\left[\,m_{2}\;,\; \widetilde{\mu}\,\right] \; \left(\,c_{\gamma}^{\; 2} - s_{\gamma}^{\; 2}\,\right)^{\, 2} \; + \; 3 \; m_{H}^{\; 2}\; g_{2}^{\; 4}\; m_{2}^{\; 2}\; LF_{3,3,-2}\left[\,m_{2}\;,\; \widetilde{\mu}\,\right] \; \left(\,c_{\gamma}^{\; 2} - s_{\gamma}^{\; 2}\,\right)^{\, 2} \; + \; 3 \; m_{H}^{\; 2}\; g_{2}^{\; 4}\; m_{2}^{\; 2}\; LF_{3,3,-2}\left[\,m_{2}\;,\; \widetilde{\mu}\,\right] \; \left(\,c_{\gamma}^{\; 2} - s_{\gamma}^{\; 2}\,\right)^{\, 2} \; + \; 3 \; m_{H}^{\; 2}\; g_{2}^{\; 4}\; m_{2}^{\; 2}\; LF_{3,3,-2}\left[\,m_{2}\;,\; \widetilde{\mu}\,\right] \; \left(\,c_{\gamma}^{\; 2} - s_{\gamma}^{\; 2}\,\right)^{\, 2} \; + \; 3 \; m_{H}^{\; 2}\; g_{2}^{\; 4}\; m_{2}^{\; 2}\; LF_{3,3,-2}\left[\,m_{2}\;,\; \widetilde{\mu}\,\right] \; \left(\,c_{\gamma}^{\; 2} - s_{\gamma}^{\; 2}\,\right)^{\, 2} \; + \; 3 \; m_{H}^{\; 2}\; g_{2}^{\; 4}\; m_{2}^{\; 4}\; m_{2}
                                                                                                                         4\; m_{H}^{2}\; g_{2}^{\; 4}\; LF_{4,2,-3}\left[\,m_{2}\;,\; \widetilde{\mu}\,\right] \; \left(\,c_{\gamma}^{\; 2} - s_{\gamma}^{\; 2}\,\right)^{\, 2} - 4\; m_{H}^{2}\; g_{2}^{\; 4}\; m_{2}^{\; 2}\; LF_{4,2,-2}\left[\,m_{2}\;,\; \widetilde{\mu}\,\right] \; \left(\,c_{\gamma}^{\; 2} - s_{\gamma}^{\; 2}\,\right)^{\, 2} - 2 \; m_{2}^{\; 2} \; \left(\,c_{\gamma}^{\; 2} - s_{\gamma}^{\; 2}\,\right)^{\, 2} - 2 \; m_{2}^{\; 2} \; m_{2}^{\; 2}\; LF_{4,2,-2}\left[\,m_{2}\;,\; \widetilde{\mu}\,\right] \; \left(\,c_{\gamma}^{\; 2} - s_{\gamma}^{\; 2}\,\right)^{\, 2} - 2 \; m_{2}^{\; 2} \; m_{2}^{\; 2}\; LF_{4,2,-2}\left[\,m_{2}\;,\; \widetilde{\mu}\,\right] \; \left(\,c_{\gamma}^{\; 2} - s_{\gamma}^{\; 2}\,\right)^{\, 2} - 2 \; m_{2}^{\; 2} \; m_{2}^{\; 2}\; LF_{4,2,-2}\left[\,m_{2}\;,\; \widetilde{\mu}\,\right] \; \left(\,c_{\gamma}^{\; 2} - s_{\gamma}^{\; 2}\,\right)^{\, 2} - 2 \; m_{2}^{\; 2} \; m_{2}^{\; 2}\; LF_{4,2,-2}\left[\,m_{2}\;,\; \widetilde{\mu}\,\right] \; \left(\,c_{\gamma}^{\; 2} - s_{\gamma}^{\; 2}\,\right)^{\, 2} - 2 \; m_{2}^{\; 2} \; m_{2}^{\; 2}\; LF_{4,2,-2}\left[\,m_{2}\;,\; \widetilde{\mu}\,\right] \; \left(\,c_{\gamma}^{\; 2} - s_{\gamma}^{\; 2}\,\right)^{\, 2} - 2 \; m_{2}^{\; 2}\; m_{2}^{\; 2}\; LF_{4,2,-2}\left[\,m_{2}\;,\; \widetilde{\mu}\,\right] \; \left(\,c_{\gamma}^{\; 2} - s_{\gamma}^{\; 2}\,\right)^{\, 2} - 2 \; m_{2}^{\; 2}\; m_{2}^{\; 2}\; LF_{4,2,-2}\left[\,m_{2}\;,\; \widetilde{\mu}\,\right] \; \left(\,c_{\gamma}^{\; 2} - s_{\gamma}^{\; 2}\,\right)^{\, 2} - 2 \; m_{2}^{\; 2}\; m_{
                                                                                                                         3~c_{\gamma}^{~4}~\overline{y_{d}}^{pr}~\overline{y_{d}}^{st}~y_{d}^{~pt}~y_{d}^{~sr}~LF_{1,1,0}\left[\,m_{\bar{d}}^{~-}\,,~m_{\bar{d}}^{~-}\,\right] ~+~\frac{3}{4}~s_{4\,\gamma}~\frac{1}{m_{\text{D}}^{~4}}~\left(\,g_{1}^{~2}\,+~g_{2}^{~2}\,\right)~\left(\,m_{H}^{2}\,+~m_{\bar{d}}^{~2}\,\right)
                                                                                                                                                            \left(\widetilde{\mu}\;\overline{y_d}^{pr}\;\left(a_d^{\;pr}\;\left(c_{\gamma}^{\;2}-s_{\gamma}^{\;2}\right)\,-\,2\;s_{\gamma}\;\widetilde{\mu}\;c_{\gamma}\;y_d^{\;pr}\right)\,+\,\overline{a_d}^{pr}\;\left(2\;s_{\gamma}\;c_{\gamma}\;a_d^{\;pr}\,+\,\widetilde{\mu}\;y_d^{\;pr}\;\left(c_{\gamma}^{\;2}-s_{\gamma}^{\;2}\right)\right)\right)
                                                                                                                                                     \mathsf{LF_{1,1,0}}\left[\mathsf{m}_{\bar{\mathsf{d}}}^{\mathsf{r}}\,,\,\mathsf{m}_{\bar{\mathsf{q}}}^{\mathsf{p}}\right]\,+\,c_{2\,\gamma}\,g_{1}^{\,2}\,\left(c_{\gamma}\,\,\overline{a_{\mathsf{d}}}^{\mathsf{pr}}\,-\,s_{\gamma}\,\widetilde{\mu}\,\,\overline{y_{\mathsf{d}}}^{\mathsf{pr}}\right)\,\left(c_{\gamma}\,\,a_{\mathsf{d}}^{\mathsf{pr}}\,-\,s_{\gamma}\,\widetilde{\mu}\,\,y_{\mathsf{d}}^{\mathsf{pr}}\right)\,\,\mathsf{LF_{2,1,0}}\left[\mathsf{m}_{\bar{\mathsf{d}}}^{\mathsf{r}}\,,\,\,\mathsf{m}_{\bar{\mathsf{q}}}^{\mathsf{p}}\right]\,-\,s_{\gamma}\,\widetilde{\mu}\,\,y_{\mathsf{d}}^{\mathsf{pr}}\right]\,\mathsf{LF_{2,1,0}}\left[\mathsf{m}_{\bar{\mathsf{d}}}^{\mathsf{r}}\,,\,\,\mathsf{m}_{\bar{\mathsf{q}}}^{\mathsf{p}}\right]\,-\,s_{\gamma}\,\widetilde{\mu}\,\,y_{\mathsf{d}}^{\mathsf{pr}}\right]\,\mathsf{LF_{2,1,0}}\left[\mathsf{m}_{\bar{\mathsf{d}}}^{\mathsf{r}}\,,\,\,\mathsf{m}_{\bar{\mathsf{q}}}^{\mathsf{p}}\right]\,-\,s_{\gamma}\,\widetilde{\mu}\,\,y_{\mathsf{d}}^{\mathsf{pr}}\right]\,\mathsf{LF_{2,1,0}}\left[\mathsf{m}_{\bar{\mathsf{d}}}^{\mathsf{r}}\,,\,\,\mathsf{m}_{\bar{\mathsf{q}}}^{\mathsf{p}}\right]\,-\,s_{\gamma}\,\widetilde{\mu}\,\,y_{\mathsf{d}}^{\mathsf{pr}}\right]\,\mathsf{LF_{2,1,0}}\left[\mathsf{m}_{\bar{\mathsf{d}}}^{\mathsf{r}}\,,\,\,\mathsf{m}_{\bar{\mathsf{q}}}^{\mathsf{p}}\right]\,+\,s_{\gamma}\,\widetilde{\mu}\,\,y_{\mathsf{d}}^{\mathsf{pr}}\right]\,\mathsf{LF_{2,1,0}}\left[\mathsf{m}_{\bar{\mathsf{d}}}^{\mathsf{p}}\,,\,\,\mathsf{m}_{\bar{\mathsf{q}}}^{\mathsf{p}}\right]\,+\,s_{\gamma}\,\widetilde{\mu}\,\,y_{\mathsf{d}}^{\mathsf{pr}}\right]\,\mathsf{LF_{2,1,0}}\left[\mathsf{m}_{\bar{\mathsf{d}}}^{\mathsf{p}}\,,\,\,\mathsf{m}_{\bar{\mathsf{q}}}^{\mathsf{p}}\right]\,+\,s_{\gamma}\,\widetilde{\mu}_{\mathsf{d}}^{\mathsf{p}}\right]\,\mathsf{LF_{2,1,0}}\left[\mathsf{m}_{\bar{\mathsf{d}}}^{\mathsf{p}}\,,\,\,\mathsf{m}_{\bar{\mathsf{q}}}^{\mathsf{p}}\right]\,\mathsf{LF_{2,1,0}}\left[\mathsf{m}_{\bar{\mathsf{d}}}^{\mathsf{p}}\,,\,\,\mathsf{m}_{\bar{\mathsf{q}}}^{\mathsf{p}}\right]\,\mathsf{LF_{2,1,0}}\left[\mathsf{m}_{\bar{\mathsf{d}}}^{\mathsf{p}}\,,\,\,\mathsf{m}_{\bar{\mathsf{q}}}^{\mathsf{p}}\right]\,\mathsf{LF_{2,1,0}}\left[\mathsf{m}_{\bar{\mathsf{d}}}^{\mathsf{p}}\,,\,\,\mathsf{m}_{\bar{\mathsf{q}}}^{\mathsf{p}}\right]\,\mathsf{LF_{2,1,0}}\left[\mathsf{m}_{\bar{\mathsf{d}}}^{\mathsf{p}}\,,\,\,\mathsf{m}_{\bar{\mathsf{d}}}^{\mathsf{p}}\right]\,\mathsf{LF_{2,1,0}}\left[\mathsf{m}_{\bar{\mathsf{d}}}^{\mathsf{p}}\,,\,\,\mathsf{m}_{\bar{\mathsf{d}}}^{\mathsf{p}}\right]\,\mathsf{LF_{2,1,0}}\left[\mathsf{m}_{\bar{\mathsf{d}}}^{\mathsf{p}}\,,\,\,\mathsf{m}_{\bar{\mathsf{d}}}^{\mathsf{p}}\right]\,\mathsf{LF_{2,1,0}}\left[\mathsf{m}_{\bar{\mathsf{d}}}^{\mathsf{p}}\,,\,\,\mathsf{m}_{\bar{\mathsf{d}}}^{\mathsf{p}}\right]\,\mathsf{LF_{2,1,0}}\left[\mathsf{m}_{\bar{\mathsf{d}}}^{\mathsf{p}}\,,\,\,\mathsf{m}_{\bar{\mathsf{d}}}^{\mathsf{p}}\right]\,\mathsf{LF_{2,1,0}}\left[\mathsf{m}_{\bar{\mathsf{d}}}^{\mathsf{p}}\,,\,\,\mathsf{m}_{\bar{\mathsf{d}}}^{\mathsf{p}}\right]\,\mathsf{LF_{2,1,0}}\left[\mathsf{m}_{\bar{\mathsf{d}}}^{\mathsf{p}}\,,\,\,\mathsf{m}_{\bar{\mathsf{d}}}^{\mathsf{p}}\right]\,\mathsf{LF_{2,1,0}}\left[\mathsf{m}_{\bar{\mathsf{d}}}^{\mathsf{p}}\,,\,\,\mathsf{m}_{\bar{\mathsf{d}}}^{\mathsf{p}}\right]\,\mathsf{LF_{2,1,0}}\left[\mathsf{m}_{\bar{\mathsf{d}}}^{\mathsf{p}}\,,\,\,\mathsf{m}_{\bar{\mathsf{d}}}^{\mathsf{p}}\right]\,\mathsf{LF_{2,1,0}}\left[\mathsf{m}_{\bar{\mathsf{d}}}^{\mathsf{p}}\,,\,\,\mathsf{m}_{\bar{\mathsf{d}}}^{\mathsf{p}}\right]\,\mathsf{LF_{2,1,0}}\left[\mathsf{m}_{\bar{\mathsf{d}}}^{\mathsf{p}}\,,\,\,\mathsf{m}_{\bar{\mathsf{d}}}^{\mathsf{p}}\right]\,\mathsf{LF_{2,1,0}}\left[\mathsf{m}_{\bar{\mathsf{d}}}^{\mathsf{p}}\,,\,\,\mathsf{m}_{\bar{\mathsf{d}}}^{\mathsf{p}}\right]\,\mathsf{LF_{2,1,0}}\left[\mathsf{m}_{\bar{\mathsf{d}}}^{\mathsf{p}}\,,\,\,\mathsf{m}_{\bar{\mathsf{d}}}^{\mathsf{p}}\right]\,\mathsf{LF_{2,1,0}}\left[\mathsf{m}_{\bar{\mathsf{d}}}^{\mathsf{p}}\,,\,\,\mathsf{m}_{\bar{\mathsf{d}}}^{\mathsf{p}}\right]\,\mathsf{LF_{2,
                                                                                                                      m_{H}^{2}\;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_{2,2,\theta}\left[\,m_{\bar{d}}^{\;r}\;,\;m_{\bar{q}}^{\;p}\,\right]\;-\;c_{\gamma}^{\;p}\;a_{d}^{\;pr}\;
                                                                                                                         {c_{\text{y}}}^{4} \; \overline{y_{e}}^{\text{pr}} \; \overline{y_{e}}^{\text{st}} \; y_{e}^{\text{pt}} \; y_{e}^{\text{sr}} \; \mathsf{LF}_{1,1,0} \left[ \, m_{\tilde{e}}^{\; r} \, , \; m_{\tilde{e}}^{\; t} \, \right] \; + \; \frac{1}{4} \; s_{4 \, \text{y}} \; \frac{1}{m_{\text{g}}^{\; 4}} \; \left( \, g_{1}^{\; 2} \, + \, g_{2}^{\; 2} \, \right) \; \left( m_{\text{H}}^{2} \, + \, m_{\text{D}}^{\; 2} \, \right) \; \left( m_{\text{H}}^{2} \, + \, m_{\text{D}}^{\; 2} \, \right) \; \left( m_{\text{H}}^{2} \, + \, m_{\text{D}}^{\; 2} \, \right) \; \left( m_{\text{H}}^{2} \, + \, m_{\text{D}}^{\; 2} \, \right) \; \left( m_{\text{H}}^{2} \, + \, m_{\text{D}}^{\; 2} \, \right) \; \left( m_{\text{H}}^{2} \, + \, m_{\text{D}}^{\; 2} \, \right) \; \left( m_{\text{H}}^{2} \, + \, m_{\text{D}}^{\; 2} \, \right) \; \left( m_{\text{H}}^{2} \, + \, m_{\text{D}}^{\; 2} \, \right) \; \left( m_{\text{H}}^{2} \, + \, m_{\text{D}}^{\; 2} \, \right) \; \left( m_{\text{H}}^{2} \, + \, m_{\text{D}}^{\; 2} \, \right) \; \left( m_{\text{H}}^{2} \, + \, m_{\text{D}}^{\; 2} \, \right) \; \left( m_{\text{H}}^{2} \, + \, m_{\text{D}}^{\; 2} \, \right) \; \left( m_{\text{H}}^{2} \, + \, m_{\text{D}}^{\; 2} \, \right) \; \left( m_{\text{H}}^{2} \, + \, m_{\text{D}}^{\; 2} \, \right) \; \left( m_{\text{H}}^{2} \, + \, m_{\text{D}}^{\; 2} \, \right) \; \left( m_{\text{H}}^{2} \, + \, m_{\text{D}}^{\; 2} \, \right) \; \left( m_{\text{H}}^{2} \, + \, m_{\text{D}}^{\; 2} \, \right) \; \left( m_{\text{H}}^{2} \, + \, m_{\text{D}}^{\; 2} \, \right) \; \left( m_{\text{H}}^{2} \, + \, m_{\text{D}}^{\; 2} \, \right) \; \left( m_{\text{H}}^{2} \, + \, m_{\text{D}}^{\; 2} \, \right) \; \left( m_{\text{H}}^{2} \, + \, m_{\text{D}}^{\; 2} \, \right) \; \left( m_{\text{H}}^{2} \, + \, m_{\text{D}}^{\; 2} \, \right) \; \left( m_{\text{H}}^{2} \, + \, m_{\text{D}}^{\; 2} \, \right) \; \left( m_{\text{H}}^{2} \, + \, m_{\text{D}}^{\; 2} \, \right) \; \left( m_{\text{H}}^{2} \, + \, m_{\text{D}}^{\; 2} \, \right) \; \left( m_{\text{H}}^{2} \, + \, m_{\text{D}}^{\; 2} \, \right) \; \left( m_{\text{H}}^{2} \, + \, m_{\text{D}}^{\; 2} \, \right) \; \left( m_{\text{H}}^{2} \, + \, m_{\text{D}}^{\; 2} \, \right) \; \left( m_{\text{H}}^{2} \, + \, m_{\text{D}}^{\; 2} \, \right) \; \left( m_{\text{H}}^{2} \, + \, m_{\text{D}}^{\; 2} \, \right) \; \left( m_{\text{H}}^{2} \, + \, m_{\text{D}}^{\; 2} \, \right) \; \left( m_{\text{H}}^{2} \, + \, m_{\text{D}}^{\; 2} \, \right) \; \left( m_{\text{H}}^{2} \, + \, m_{\text{D}}^{\; 2} \, \right) \; \left( m_{\text{H}}^{2} \, + \, m_{\text{D}}^{\; 2} \, \right) \; \left( m_{\text{H}}^{2} \, + \, m_{\text{D}}^{\; 2} \, \right) \; \left( m_{\text{H}}^{2} \, + \, m_{\text{D}}^{\; 2} \, \right) \; \left( m_{\text{H}}^{2} \, + \, m_{\text{D}}^{\; 2} \, \right) \; \left( m_{\text{H}}^{2} \, + \, m_{\text{D}}^{\; 2} \, \right) \; \left( m_{\text{H}}^{2} \, + \, m_{\text{D}}^{\; 2} \, \right) \; \left( m_{\text{H}}^{2} \, + \, m_{\text{D}}^{\; 2} \, \right) \; \left( m_{\text{H}}^{2} \, + \, m_{\text{D}}^{\; 2} \, \right)
                                                                                                                                                            \left(\widetilde{\mu}\;\overline{y_e}^{pr}\;\left(a_e^{\;pr}\;\left(c_{\gamma}^{\;2}-s_{\gamma}^{\;2}\right)\;-2\;s_{\gamma}\;\widetilde{\mu}\;c_{\gamma}\;y_e^{\;pr}\right)\;+\;\overline{a_e}^{pr}\;\left(2\;s_{\gamma}\;c_{\gamma}\;a_e^{\;pr}\;+\;\widetilde{\mu}\;y_e^{\;pr}\;\left(c_{\gamma}^{\;2}-s_{\gamma}^{\;2}\right)\right)\right)
                                                                                                                                                     \mathsf{LF_{1,1,0}}\left[\mathsf{m}_{\tilde{\mathsf{e}}}^{\mathsf{r}}\,,\,\mathsf{m}_{\tilde{\mathsf{l}}}^{\mathsf{p}}\right]\,+\,c_{2\,\gamma}\,g_{1}^{\;\;2}\,\left(c_{\gamma}\,\,\overline{a_{e}}^{\mathsf{pr}}\,-\,s_{\gamma}\,\widetilde{\mu}\,\,\overline{y_{e}}^{\mathsf{pr}}\right)\,\left(c_{\gamma}\,\,a_{e}^{\;\mathsf{pr}}\,-\,s_{\gamma}\,\widetilde{\mu}\,\,y_{e}^{\;\mathsf{pr}}\right)\,\,\mathsf{LF_{2,1,0}}\left[\mathsf{m}_{\tilde{\mathsf{e}}}^{\;\mathsf{r}}\,,\,\mathsf{m}_{\tilde{\mathsf{l}}}^{\;\mathsf{p}}\right]\,-\,s_{\gamma}\,\widetilde{\mu}\,\,\overline{y_{e}}^{\mathsf{pr}}\right]\,\left(c_{\gamma}\,\,a_{e}^{\;\mathsf{pr}}\,-\,s_{\gamma}\,\widetilde{\mu}\,\,y_{e}^{\;\mathsf{pr}}\right)\,\,\mathsf{LF_{2,1,0}}\left[\mathsf{m}_{\tilde{\mathsf{e}}}^{\;\mathsf{r}}\,,\,\mathsf{m}_{\tilde{\mathsf{l}}}^{\;\mathsf{p}}\right]\,-\,s_{\gamma}\,\widetilde{\mu}\,\,\overline{y_{e}}^{\mathsf{pr}}\right]
                                                                                                                      m_{H}^{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_{2,2,0}\left[\,m_{\tilde{e}}^{\;\;r}\,,\;m_{\tilde{l}}^{\;\;p}\,\right]\;+
                                                                                                                                2\; s_{\gamma}\; c_{2\;\gamma}\; c_{\gamma}\; m_{\scriptscriptstyle \oplus}^{\;\;2}\; \left(\,g_{1}^{\;\;2}\; \left(\,-\,1\,+\,c_{2\;\gamma}\,\right) \;+\, g_{2}^{\;\;2}\; \left(\,1\,+\,c_{2\;\gamma}\,\right) \;\right) \;+\, m_{H}^{2}\; s_{4\;\gamma}\; s_{\gamma}^{\;\;2}\; \left(\,g_{1}^{\;\;2}\,+\,g_{2}^{\;\;2}\,\right) \,\right) \;+\, m_{H}^{2}\; s_{4\;\gamma}\; s_{\gamma}^{\;\;2}\; \left(\,g_{1}^{\;\;2}\,+\,g_{2}^{\;\;2}\,+\,g_{2}^{\;\;2}\,\right) \,\right) \;+\, m_{H}^{2}\; s_{4\;\gamma}\; s_{\gamma}^{\;\;2}\; \left(\,g_{1}^{\;\;2}\,+\,g_{2}^{\;\;2}\,+\,g_{2}^{\;\;2}\,+\,g_{2}^{\;\;2}\,+\,g_{2}^{\;\;2}\,+\,g_{2}^{\;\;2}\,+\,g_{2}^{\;\;2}\,+\,g_{2}^{\;\;2}\,+\,g_{2}^{\;\;2}\,+\,g_{2}^{\;\;2}\;+\,g_{2}^{\;\;2}\;+\,g_{2}^{\;\;2}\;+\,g_{2}^{\;\;2}\;+\,g_{2}^{\;\;2}\,+\,g_{2}^{\;\;2}\;+\,g_{2}^{\;\;2}\;+\,g_{2}^{\;\;2}\;+\,g_{2}^{\;\;2}\;+\,g_{2}^{\;\;2}\;+\,g_{2}^{\;\;2}\;+\,g_{2}^{\;\;2}\;+\,g_{2}^{\;\;2}\;+\,g_{2}^{\;\;2}\;+\,g_{2}^{\;\;2}\;+\,g_{2}^{\;\;2}\;+\,g_{2}^{\;\;2}\;+\,g_{2}^{\;\;2}\;+\,g_{2}^{\;\;2}\;+\,g_{2}^{\;\;2}\;+\,g_{2}^{\;\;2}\;+\,g_{2}^{\;\;2}\;+\,g_{2}^{\;\;2}\;+\,g_{2}^{\;\;2}\;+\,g_{2}^{\;\;2}\;+\,g_{2}^{\;\;2}\;+\,g_{2}^{\;\;2}\;+\,g_{2}^{\;\;2}\;+\,g_{2}^{\;\;2}\;+\,g_{2}^{\;\;2}\;+\,g_{2}^{\;\;2}\;+\,g_{2}^{\;\;2}\;+\,g_{2}^{\;\;2}\;+\,g_{2}^{\;\;2}\;+\,g_{2}^{\;\;2}\;+\,g_{2}^{\;\;2}\;+\,g_{2}^{\;\;2}\;+\,g_{2}^{\;\;2}\;+\,g_{2}^{\;\;2}\;+\,g_{2}^{\;\;2}\;+\,g_{2}^{\;\;2}\;+\,g_{2}^{\;\;2}\;+\,g_{2}^{\;\;2}\;+\,g_{2}^{\;\;2}\;+\,g_{2}^{\;\;2}\;+\,g_{2}^{\;\;2}\;+\,g_{2}^{\;\;2}\;+\,g_{2}^{\;\;2}\;+\,g_{2}^{\;\;2}\;+\,g_{2}^{\;\;2}\;+\,g_{2}^{\;\;2}\;+\,g_{2}^{\;\;2}\;+\,g_{2}^{\;\;2}\;+\,g_{2}^{\;\;2}\;+\,g_{2}^{\;\;2}\;+\,g_{2}^{\;\;2}\;+\,g_{2}^{\;\;2}\;+\,g_{2}^{\;\;2}\;+\,g_{2}^{\;\;2}\;+\,g_{2}^{\;\;2}\;+\,g_{2}^{\;\;2}\;+\,g_{2}^{\;\;2}\;+\,g_{2}^{\;\;2}\;+\,g_{2}^{\;\;2}\;+\,g_{2}^{\;\;2}\;+\,g_{2}^{\;\;2}\;+\,g_{2}^{\;\;2}\;+\,g_{2}^{
                                                                                                                                                                                                                                                                                                  \overline{a_{e}}^{\text{pr}} \left( 2 \; c_{\gamma} \; a_{e}^{\text{pr}} \; \left( c_{2 \; \gamma} \; c_{\gamma} \; \text{m}_{\bar{\Phi}}^{\; 2} \; \left( g_{1}^{\; 2} \; \left( -1 + c_{2 \; \gamma} \right) \; + \; g_{2}^{\; 2} \; \left( 1 + c_{2 \; \gamma} \right) \; \right) \; - \; \text{m}_{\text{H}}^{2} \; s_{4 \; \gamma} \; s_{\gamma} \; \left( g_{1}^{\; 2} + g_{2}^{\; 2} \right) \right) \; - \; \left( c_{2 \; \gamma} \; c_{\gamma} \; m_{\bar{\Phi}}^{\; 2} \; \left( c_{2 \; \gamma} \; c_{\gamma} \; m_{\bar{\Phi}}^{\; 2} \; c_{\gamma} \; c
                                                                                                                                                                                                                                                                                                  \widetilde{\mu} \ y_{e}^{\ pr} \ \left( \text{m}_{\text{H}}^{2} \ \text{s}_{4 \, \text{Y}} \ \text{c}_{\text{Y}}^{\ 2} \ \left( \text{g}_{1}^{\ 2} + \text{g}_{2}^{\ 2} \right) \ + \ 2 \ \text{s}_{\text{Y}} \ \text{c}_{2 \, \text{Y}} \ \text{c}_{\text{Y}} \ \text{m}_{\scriptscriptstyle{\bar{\Phi}}}^{\ 2} \ \left( \text{g}_{1}^{\ 2} \ \left( -1 + \text{c}_{2 \, \text{Y}} \right) \ + \ \text{g}_{2}^{\ 2} \ \left( 1 + \text{c}_{2 \, \text{Y}} \right) \right) \ - \ \text{m}_{\scriptscriptstyle{\bar{\Phi}}}^{\ 2} \ \left( \text{g}_{1}^{\ 2} \ \text{c}_{1} + \text{c}_{2 \, \text{Y}} \right) \ + \ \text{g}_{2}^{\ 2} \ \left( 1 + \text{c}_{2 \, \text{Y}} \right) \ \right) \ - \ \text{g}_{2}^{\ 2} \ \left( \text{g}_{1}^{\ 2} \ \text{c}_{1} + \text{c}_{2 \, \text{Y}} \right) \ + \ \text{g}_{2}^{\ 2} \ \left( 1 + \text{c}_{2 \, \text{Y}} \right) \ \right) \ - \ \text{g}_{2}^{\ 2} \ \left( \text{g}_{1}^{\ 2} \ \text{c}_{1} + \text{c}_{2} \ \text{Y} \right) \ + \ \text{g}_{2}^{\ 2} \ \left( 1 + \text{c}_{2} \ \text{Y} \right) \ \right) \ - \ \text{g}_{2}^{\ 2} \ \left( \text{g}_{1}^{\ 2} \ \text{c}_{1} + \text{c}_{2} \ \text{Y} \right) \ + \ \text{g}_{2}^{\ 2} \ \left( 1 + \text{c}_{2} \ \text{Y} \right) \ \right) \ - \ \text{g}_{2}^{\ 2} \ \left( \text{g}_{1}^{\ 2} \ \text{c}_{1} + \text{c}_{2} \ \text{Y} \right) \ + \ \text{g}_{2}^{\ 2} \ \left( 1 + \text{c}_{2} \ \text{Y} \right) \ \right) \ - \ \text{g}_{2}^{\ 2} \ \left( \text{g}_{1}^{\ 2} \ \text{c}_{1} + \text{c}_{2} \ \text{Y} \right) \ + \ \text{g}_{2}^{\ 2} \ \left( 1 + \text{c}_{2} \ \text{Y} \right) \ \right) \ - \ \text{g}_{2}^{\ 2} \ \left( \text{g}_{1}^{\ 2} \ \text{c}_{1} + \text{c}_{2} \ \text{Y} \right) \ + \ \text{g}_{2}^{\ 2} \ \left( 1 + \text{c}_{2} \ \text{Y} \right) \ \right) \ - \ \text{g}_{2}^{\ 2} \ \left( 1 + \text{c}_{2} \ \text{Y} \right) \ + \ \text{g}_{2}^{\ 2} \ \left( 1 + \text{c}_{2} \ \text{Y} \right) \ + \ \text{g}_{2}^{\ 2} \ \left( 1 + \text{c}_{2} \ \text{Y} \right) \ \right) \ - \ \text{g}_{2}^{\ 2} \ \left( 1 + \text{c}_{2} \ \text{Y} \right) \ + \ \text{g}_{2}^{\ 2} \ \left( 1 + \text{c}_{2} \ \text{Y} \right) \ + \ \text{g}_{2}^{\ 2} \ \left( 1 + \text{c}_{2} \ \text{Y} \right) \ + \ \text{g}_{2}^{\ 2} \ \left( 1 + \text{c}_{2} \ \text{Y} \right) \ + \ \text{g}_{2}^{\ 2} \ \left( 1 + \text{c}_{2} \ \text{Y} \right) \ + \ \text{g}_{2}^{\ 2} \ \left( 1 + \text{c}_{2} \ \text{Y} \right) \ + \ \text{g}_{2}^{\ 2} \ \left( 1 + \text{c}_{2} \ \text{Y} \right) \ + \ \text{g}_{2}^{\ 2} \ \left( 1 + \text{c}_{2} \ \text{Y} \right) \ + \ \text{g}_{2}^{\ 2} \ \left( 1 + \text{c}_{2} \ \text{Y} \right) \ + \ \text{g}_{2}^{\ 2} \ \left( 1 + \text{c}_{2} \ \text{Y} \right) \ + \ \text{g}_{2}^{\ 2} \ \left( 1 + \text{c}_{2} \ \text{Y} \right) \ + \ \text{g}_{2}^{\ 2} \ \left( 1 + \text{c}_{2} \ \text{Y} \right) \ + \ \text{g}_{2}^{\ 2} \ \left( 1 + \text{c}_{2} \ \text{Y} \right) \ + \ \text{g}_{2}^{\ 2} \ \left( 1 + \text{c}_{2} \ \text{Y} \right) \ + \ \text{g}_{2}
                                                                                                                                                                                                                                                                                                                                                                                    \left(2\;c_{_{Y}}\;\overline{a_{e}}^{pr}\;a_{e}^{\;pr}\;\left(-\,c_{_{Y}}\;m_{_{\!\varpi}}^{\;2}\;c_{_{2\,_{Y}}}^{\;2}\,+\,m_{H}^{2}\;s_{_{\!4\,_{Y}}}\;s_{_{\!Y}}\right)\right.\\ \left.+\;\widetilde{\mu}\;\left(m_{H}^{2}\;s_{_{\!4\,_{Y}}}\;c_{_{\!Y}}^{\;2}\,+\,2\;s_{_{\!Y}}\;c_{_{\!Y}}\;m_{_{\!\varpi}}^{\;2}\;c_{_{\!2\,_{Y}}}^{\;2}\,-\,m_{H}^{2}\;s_{_{\!4\,_{Y}}}\;s_{_{\!Y}}^{\;2}\right)\right)
                                                                                                                                                                                                                                                  (\overline{y_{e}}^{pr}\ a_{e}^{\ pr}\ +\ y_{e}^{\ pr}\ \overline{a_{e}}^{pr})\ -\ 2\ s_{\gamma}\ \widetilde{\mu}^{2}\ \overline{y_{e}}^{pr}\ y_{e}^{\ pr}\ \left(m_{H}^{2}\ s_{4\,\gamma}\ c_{\gamma}\ +\ s_{\gamma}\ m_{\Phi}^{\ 2}\ c_{2\,\gamma}^{\ 2}\right)\left)\ LF_{3,1,-1}\left[m_{\tilde{l}}^{\ p},\ m_{\tilde{e}}^{\ r}\right]\ -\ m_{\tilde{e}}^{\ r}\right]
                                                                                                                         m_{H}^{2}\;c_{2\;\gamma}\;\left(g_{1}^{\;2}\;\left(-1+c_{2\;\gamma}\right)\;+g_{2}^{\;2}\;\left(1+c_{2\;\gamma}\right)\;\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_{3,1,0}}\left[\mathsf{m}_{\tilde{l}}^{\mathsf{p}},\,\mathsf{m}_{\tilde{e}}^{\mathsf{r}}\right] + \mathsf{m}_{\mathsf{H}}^{2}\,\mathsf{c}_{2\,\gamma}\,\mathsf{g}_{1}^{2}\,\left(\mathsf{c}_{\gamma}\,\overline{\mathsf{a}_{\mathsf{e}}}^{\mathsf{pr}} - \mathsf{s}_{\gamma}\,\widetilde{\mu}\,\overline{\mathsf{y}_{\mathsf{e}}}^{\mathsf{pr}}\right)\,\left(\mathsf{c}_{\gamma}\,\mathsf{a}_{\mathsf{e}}^{\,\mathsf{pr}} - \mathsf{s}_{\gamma}\,\widetilde{\mu}\,\mathsf{y}_{\mathsf{e}}^{\,\mathsf{pr}}\right)\,\mathsf{LF_{3,2,-1}}\left[\mathsf{m}_{\tilde{l}}^{\,\mathsf{p}},\,\mathsf{m}_{\tilde{e}}^{\,\mathsf{r}}\right] + \mathsf{m}_{\tilde{e}}^{\mathsf{pr}}\,\mathsf{m}_{\tilde{e}}^{\,\mathsf{pr}}\right] + \mathsf{m}_{\tilde{e}}^{\mathsf{pr}}\,\mathsf{m}_{\tilde{e}}^{\mathsf{pr}}\,\mathsf{m}_{\tilde{e}}^{\,\mathsf{pr}}\,\mathsf{m}_{\tilde{e}}^{\,\mathsf{pr}}\,\mathsf{m}_{\tilde{e}}^{\,\mathsf{pr}}\,\mathsf{m}_{\tilde{e}}^{\,\mathsf{pr}}\,\mathsf{m}_{\tilde{e}}^{\,\mathsf{pr}}\,\mathsf{m}_{\tilde{e}}^{\,\mathsf{pr}}\,\mathsf{m}_{\tilde{e}}^{\,\mathsf{pr}}\,\mathsf{m}_{\tilde{e}}^{\,\mathsf{pr}}\,\mathsf{m}_{\tilde{e}}^{\,\mathsf{pr}}\,\mathsf{m}_{\tilde{e}}^{\,\mathsf{pr}}\,\mathsf{m}_{\tilde{e}}^{\,\mathsf{pr}}\,\mathsf{m}_{\tilde{e}}^{\,\mathsf{pr}}\,\mathsf{m}_{\tilde{e}}^{\,\mathsf{pr}}\,\mathsf{m}_{\tilde{e}}^{\,\mathsf{pr}}\,\mathsf{m}_{\tilde{e}}^{\,\mathsf{pr}}\,\mathsf{m}_{\tilde{e}}^{\,\mathsf{pr}}\,\mathsf{m}_{\tilde{e}}^{\,\mathsf{pr}}\,\mathsf{m}_{\tilde{e}}^{\,\mathsf{pr}}\,\mathsf{m}_{\tilde{e}}^{\,\mathsf{pr}}\,\mathsf{m}_{\tilde{e}}^{\,\mathsf{pr}}\,\mathsf{m}_{\tilde{e}}^{\,\mathsf{pr}}\,\mathsf{m}_{\tilde{e}}^{\,\mathsf{pr}}\,\mathsf{m}_{\tilde{e}}^{\,\mathsf{pr}}\,\mathsf{m}_{\tilde{e}}^{\,\mathsf{pr}}\,\mathsf{m}_{\tilde{e}}^{\,\mathsf{pr}}\,\mathsf{m}_{\tilde{e}}^{\,\mathsf{pr}}\,\mathsf{m}_{\tilde{e}}^{\,\mathsf{pr}}\,\mathsf{m}_{\tilde{e}}^{\,\mathsf{pr}}\,\mathsf{m}_{\tilde{e}}^{\,\mathsf{pr}}\,\mathsf{m}_{\tilde{e}}^{\,\mathsf{pr}}\,\mathsf{m}_{\tilde{e}}^{\,\mathsf{pr}}\,\mathsf{m}_{\tilde{e}}^{\,\mathsf{pr}}\,\mathsf{m}_{\tilde{e}}^{\,\mathsf{pr}}\,\mathsf{m}_{\tilde{e}}^{\,\mathsf{pr}}\,\mathsf{m}_{\tilde{e}}^{\,\mathsf{pr}}\,\mathsf{m}_{\tilde{e}}^{\,\mathsf{pr}}\,\mathsf{m}_{\tilde{e}}^{\,\mathsf{pr}}\,\mathsf{m}_{\tilde{e}}^{\,\mathsf{pr}}\,\mathsf{m}_{\tilde{e}}^{\,\mathsf{pr}}\,\mathsf{m}_{\tilde{e}}^{\,\mathsf{pr}}\,\mathsf{m}_{\tilde{e}}^{\,\mathsf{pr}}\,\mathsf{m}_{\tilde{e}}^{\,\mathsf{pr}}\,\mathsf{m}_{\tilde{e}}^{\,\mathsf{pr}}\,\mathsf{m}_{\tilde{e}}^{\,\mathsf{pr}}\,\mathsf{m}_{\tilde{e}}^{\,\mathsf{pr}}\,\mathsf{m}_{\tilde{e}}^{\,\mathsf{pr}}\,\mathsf{m}_{\tilde{e}}^{\,\mathsf{pr}}\,\mathsf{m}_{\tilde{e}}^{\,\mathsf{pr}}\,\mathsf{m}_{\tilde{e}}^{\,\mathsf{pr}}\,\mathsf{m}_{\tilde{e}}^{\,\mathsf{pr}}\,\mathsf{m}_{\tilde{e}}^{\,\mathsf{pr}}\,\mathsf{m}_{\tilde{e}}^{\,\mathsf{pr}}\,\mathsf{m}_{\tilde{e}}^{\,\mathsf{pr}}\,\mathsf{m}_{\tilde{e}}^{\,\mathsf{pr}}\,\mathsf{m}_{\tilde{e}}^{\,\mathsf{pr}}\,\mathsf{m}_{\tilde{e}}^{\,\mathsf{pr}}\,\mathsf{m}_{\tilde{e}}^{\,\mathsf{pr}}\,\mathsf{m}_{\tilde{e}}^{\,\mathsf{pr}}\,\mathsf{m}_{\tilde{e}}^{\,\mathsf{pr}}\,\mathsf{m}_{\tilde{e}}^{\,\mathsf{pr}}\,\mathsf{m}_{\tilde{e}}^{\,\mathsf{pr}}\,\mathsf{m}_{\tilde{e}}^{\,\mathsf{pr}}\,\mathsf{m}_{\tilde{e}}^{\,\mathsf{pr}}\,\mathsf{m}_{\tilde{e}}^{\,\mathsf{pr}}\,\mathsf{m}_{\tilde{e}}^{\,\mathsf{pr}}\,\mathsf{m}_{\tilde{e}}^{\,\mathsf{pr}}\,\mathsf{m}_{\tilde{e}}^{\,\mathsf{pr}}\,\mathsf{m}_{\tilde{e}}^{\,\mathsf{pr}}\,\mathsf{m}_{\tilde{e}}^{\,\mathsf{pr}}\,\mathsf{m}_{\tilde{e}}^{\,\mathsf{pr}}\,\mathsf{m}_{\tilde{e}}^{\,\mathsf{pr}}\,\mathsf{m}_{\tilde{e}}^{\,\mathsf{pr}}\,\mathsf{m}_{\tilde{e}}^{\,\mathsf{pr}}\,\mathsf{m}_{\tilde{e}}^{\,\mathsf{pr}}\,\mathsf{m}_{\tilde{e}}^{\,\mathsf{pr}}\,\mathsf{m}_{\tilde{e}}^{\,\mathsf{pr}}\,\mathsf{m}_{\tilde{e}}^{\,\mathsf{pr}}\,\mathsf{m}_{\tilde{e}}^{\,\mathsf{pr}}\,\mathsf{m}_{\tilde{e}}^{\,\mathsf{
                                                                                                                                \frac{1}{2}\ m_{H}^{2}\ \left(-1+2\ c_{2\,\gamma}\right)\ \left(2\ g_{2}^{\ 2}+3\ c_{2\,\gamma}\ \left(g_{1}^{\ 2}+g_{2}^{\ 2}\right)\right)\ \left(c_{\gamma}\ \overline{a_{e}}^{pr}-s_{\gamma}\ \widetilde{\mu}\ \overline{y_{e}}^{pr}\right)
                                                                                                                                                        \left(\mathbf{c}_{\mathrm{Y}}\;\mathbf{a_{\mathrm{e}}}^{\mathrm{pr}}-\mathbf{s}_{\mathrm{Y}}\;\widetilde{\mu}\;\mathbf{y_{\mathrm{e}}}^{\mathrm{pr}}\right)\;\mathsf{LF_{4,1,-1}}\!\left[\mathbf{m_{\bar{l}}}^{\mathrm{p}},\;\mathbf{m_{\bar{\mathrm{e}}}}^{\mathrm{r}}\right]\;-
                                                                                                                                \frac{2}{3} \; m_{H}^{2} \; \left(-2 \; g_{2}^{\; 2} + 3 \; c_{2 \; \gamma}^{\; 2} \; \left(g_{1}^{\; 2} + g_{2}^{\; 2}\right)\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_{\widetilde{l}}^{\; p} \; , \; m_{\widetilde{e}}^{\; r}\right] \; - \left(m_{\widetilde{l}}^{\; p} \; , \; m_{\widetilde{e}}^{\; r}\right) \; LF_{5,1,-2}\left[m_{\widetilde{l}}^{\; p} \; , \; m_{\widetilde{e}}^{\; r}\right] \; - \left(m_{\widetilde{l}}^{\; p} \; , \; m_{\widetilde{e}}^{\; r}\right) \; LF_{5,1,-2}\left[m_{\widetilde{l}}^{\; p} \; , \; m_{\widetilde{e}}^{\; r}\right] \; - \left(m_{\widetilde{l}}^{\; p} \; , \; m_{\widetilde{e}}^{\; r}\right) \; LF_{5,1,-2}\left[m_{\widetilde{l}}^{\; p} \; , \; m_{\widetilde{e}}^{\; r}\right] \; - \left(m_{\widetilde{l}}^{\; p} \; , \; m_{\widetilde{e}}^{\; r}\right) \; LF_{5,1,-2}\left[m_{\widetilde{l}}^{\; p} \; , \; m_{\widetilde{e}}^{\; r}\right] \; - \left(m_{\widetilde{l}}^{\; p} \; , \; m_{\widetilde{e}}^{\; r}\right) \; LF_{5,1,-2}\left[m_{\widetilde{l}}^{\; p} \; , \; m_{\widetilde{e}}^{\; r}\right] \; - \left(m_{\widetilde{l}}^{\; p} \; , \; m_{\widetilde{e}}^{\; r}\right) \; LF_{5,1,-2}\left[m_{\widetilde{l}}^{\; p} \; , \; m_{\widetilde{e}}^{\; r}\right] \; - \left(m_{\widetilde{l}}^{\; p} \; , \; m_{\widetilde{e}}^{\; r}\right) \; LF_{5,1,-2}\left[m_{\widetilde{l}}^{\; p} \; , \; m_{\widetilde{e}}^{\; r}\right] \; - \left(m_{\widetilde{l}}^{\; p} \; , \; m_{\widetilde{e}}^{\; r}\right) \; LF_{5,1,-2}\left[m_{\widetilde{l}}^{\; p} \; , \; m_{\widetilde{e}}^{\; r}\right] \; - \left(m_{\widetilde{l}}^{\; p} \; , \; m_{\widetilde{e}}^{\; r}\right) \; LF_{5,1,-2}\left[m_{\widetilde{l}}^{\; p} \; , \; m_{\widetilde{e}}^{\; r}\right] \; - \left(m_{\widetilde{l}}^{\; p} \; , \; m_{\widetilde{e}}^{\; r}\right) \; LF_{5,1,-2}\left[m_{\widetilde{l}}^{\; p} \; , \; m_{\widetilde{e}}^{\; r}\right] \; - \left(m_{\widetilde{l}}^{\; p} \; , \; m_{\widetilde{e}}^{\; r}\right) \; LF_{5,1,-2}\left[m_{\widetilde{l}}^{\; p} \; , \; m_{\widetilde{e}}^{\; r}\right] \; - \left(m_{\widetilde{l}}^{\; p} \; , \; m_{\widetilde{e}}^{\; p}\right) \; LF_{5,1,-2}\left[m_{\widetilde{l}}^{\; p} \; , \; m_{\widetilde{e}}^{\; p}\right] \; - \left(m_{\widetilde{l}}^{\; p} \; , \; m_{\widetilde{e}}^{\; p}\right) \; LF_{5,1,-2}\left[m_{\widetilde{l}}^{\; p} \; , \; m_{\widetilde{e}}^{\; p}\right] \; LF_{5,1,-2}\left[m_{\widetilde{l}}^{\; p} \; , \; m_{\widetilde
                                                                                                                         c_{\gamma}^{\phantom{\gamma}4}\,\overline{y_{e}}^{\text{pr}}\,\overline{y_{e}}^{\text{st}}\,y_{e}^{\phantom{e}\text{pt}}\,y_{e}^{\phantom{e}\text{sr}}\,LF_{1,1,0}\left[\,m_{\tilde{l}}^{\phantom{l}\,p}\,,\,m_{\tilde{l}}^{\phantom{e}\,s}\,\right]\,+\,2\,m_{H}^{2}\,c_{\gamma}^{\phantom{e}4}\,\overline{y_{e}}^{\text{pr}}\,\overline{y_{e}}^{\text{st}}\,y_{e}^{\phantom{e}\text{pt}}\,y_{e}^{\phantom{e}\text{sr}}\,LF_{2,1,0}\left[\,m_{\tilde{l}}^{\phantom{l}\,p}\,,\,m_{\tilde{l}}^{\phantom{e}\,s}\,\right]\,-\,2\,m_{H}^{2}\,c_{\gamma}^{\phantom{e}4}\,\overline{y_{e}}^{\text{pr}}\,\overline{y_{e}}^{\text{st}}\,y_{e}^{\phantom{e}\text{pt}}\,y_{e}^{\phantom{e}\text{sr}}\,LF_{2,1,0}\left[\,m_{\tilde{l}}^{\phantom{e}\,p}\,,\,m_{\tilde{l}}^{\phantom{e}\,s}\,\right]\,-\,2\,m_{H}^{2}\,c_{\gamma}^{\phantom{e}\,q}\,y_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p}\,x_{e}^{\phantom{e}\,p
                                                                                                                         2\; m_{H}^{2}\; c_{\gamma}^{\; 4}\; \overline{y_{e}}^{\text{pr}}\; \overline{y_{e}}^{\text{st}}\; y_{e}^{\; \text{pt}}\; y_{e}^{\; \text{sr}}\; LF_{3,1,-1}\left[m_{\tilde{l}}^{\; p}\, ,\; m_{\tilde{l}}^{\; s}\right] \; + \; \frac{1}{4}\; \frac{1}{m_{a}^{\; 2}}\; \left(\widetilde{\mu}\; \overline{y_{d}}^{\text{pr}}\; \left(a_{d}^{\; \text{pr}}\; \left(-3\; m_{H}^{2}\; s_{4\; \gamma}\; c_{\gamma}^{\; 2}\; \left(g_{1}^{\; 2}\; + \; g_{2}^{\; 2}\right)\; - \right) \right) \; + \; \frac{1}{4}\; \frac{1}{m_{a}^{\; 2}}\; \left(\widetilde{\mu}\; \overline{y_{d}}^{\text{pr}}\; \left(a_{d}^{\; \text{pr}}\; \left(-3\; m_{H}^{2}\; s_{4\; \gamma}\; c_{\gamma}^{\; 2}\; \left(g_{1}^{\; 2}\; + \; g_{2}^{\; 2}\right)\; - \right) \right) \; + \; \frac{1}{4}\; \frac{1}{m_{a}^{\; 2}}\; \left(\widetilde{\mu}\; \overline{y_{d}}^{\text{pr}}\; \left(a_{d}^{\; \text{pr}}\; \left(-3\; m_{H}^{2}\; s_{4\; \gamma}\; c_{\gamma}^{\; 2}\; \left(g_{1}^{\; 2}\; + \; g_{2}^{\; 2}\right)\; - \right) \right) \; + \; \frac{1}{4}\; \frac{1}{m_{a}^{\; 2}}\; \left(\widetilde{\mu}\; \overline{y_{d}}^{\text{pr}}\; \left(-3\; m_{H}^{2}\; s_{4\; \gamma}\; c_{\gamma}^{\; 2}\; \left(g_{1}^{\; 2}\; + \; g_{2}^{\; 2}\right)\; - \right) \; + \; \frac{1}{4}\; \frac{1}{m_{a}^{\; 2}}\; \left(\widetilde{\mu}\; \overline{y_{d}}\; \overline{y_{d}}\; - \; g_{1}^{\; 2}\; + \; g_{2}^{\; 2}\; \right) \; + \; \frac{1}{4}\; \frac{1}{m_{a}^{\; 2}}\; \left(\widetilde{\mu}\; \overline{y_{d}}\; \overline{y_{d}}\; - \; g_{1}^{\; 2}\; + \; g_{2}^{\; 2}\; \right) \; + \; \frac{1}{4}\; \frac{1}{m_{a}^{\; 2}}\; \left(\widetilde{\mu}\; \overline{y_{d}}\; \overline{y_{d}}\; - \; g_{1}^{\; 2}\; + \; g_{2}^{\; 
                                                                                                                                                                                                                                                                                                                                                                                        2\; s_{\gamma}\; c_{2\;\gamma}\; c_{\gamma}\; m_{_{\! I \!\! D}}^{} \; \left( \; g_{1}^{\; 2} \; \; (\; 1\; +\; 3\; c_{2\;\gamma}\; ) \; \; +\; 3\; g_{2}^{\; 2} \; \; (\; 1\; +\; c_{2\;\gamma}\; ) \; \right) \; +\; 3\; m_{H}^{2}\; s_{4\;\gamma}\; s_{\gamma}^{\; \; 2} \; \left( \; g_{1}^{\; 2}\; +\; g_{2}^{\; 2}\; \right) \; \right) \; +\; 3\; m_{H}^{2}\; s_{4\;\gamma}\; s_{\gamma}^{\; \; 2} \; \left( \; g_{1}^{\; 2}\; +\; g_{2}^{\; 2}\; \right) \; \right) \; +\; 3\; m_{H}^{2}\; s_{4\;\gamma}\; s_{\gamma}^{\; \; 2} \; \left( \; g_{1}^{\; 2}\; +\; g_{2}^{\; 2}\; \right) \; \right) \; +\; 3\; m_{H}^{2}\; s_{4\;\gamma}\; s_{\gamma}^{\; \; 2} \; \left( \; g_{1}^{\; 2}\; +\; g_{2}^{\; 2}\; \right) \; \right) \; +\; 3\; m_{H}^{2}\; s_{4\;\gamma}\; s_{\gamma}^{\; \; 2} \; \left( \; g_{1}^{\; 2}\; +\; g_{2}^{\; 2}\; \right) \; \right) \; +\; 3\; m_{H}^{2}\; s_{4\;\gamma}\; s_{\gamma}^{\; \; 2} \; \left( \; g_{1}^{\; 2}\; +\; g_{2}^{\; 2}\; \right) \; \right) \; +\; 3\; m_{H}^{2}\; s_{4\;\gamma}\; s_{\gamma}^{\; \; 2} \; \left( \; g_{1}^{\; 2}\; +\; g_{2}^{\; 2}\; \right) \; \right) \; +\; 3\; m_{H}^{2}\; s_{4\;\gamma}\; s_{\gamma}^{\; \; 2} \; \left( \; g_{1}^{\; 2}\; +\; g_{2}^{\; 2}\; \right) \; \right) \; +\; 3\; m_{H}^{2}\; s_{4\;\gamma}\; s_{\gamma}^{\; \; 2} \; \left( \; g_{1}^{\; 2}\; +\; g_{2}^{\; 2}\; \right) \; \right) \; +\; 3\; m_{H}^{2}\; s_{4\;\gamma}\; s_{\gamma}^{\; \; 2} \; \left( \; g_{1}^{\; 2}\; +\; g_{2}^{\; 2}\; \right) \; \right) \; +\; 3\; m_{H}^{2}\; s_{4\;\gamma}\; s_{\gamma}^{\; \; 2} \; \left( \; g_{1}^{\; 2}\; +\; g_{2}^{\; 2}\; \right) \; \right) \; +\; 3\; m_{H}^{2}\; s_{4\;\gamma}\; s_{\gamma}^{\; \; 2} \; \left( \; g_{1}^{\; 2}\; +\; g_{2}^{\; 2}\; +\; g_{2}^{\; 2}\; \right) \; \right) \; +\; 3\; m_{H}^{2}\; s_{4\;\gamma}\; s_{\gamma}^{\; 2} \; \left( \; g_{1}^{\; 2}\; +\; g_{2}^{\; 2}\; +\; g_{2}^{\; 2}\; \right) \; \right) \; +\; 3\; m_{H}^{2}\; s_{4\;\gamma}\; s_{\gamma}^{\; 2} \; \left( \; g_{1}^{\; 2}\; +\; g_{2}^{\; 2}\; +\; g_{
                                                                                                                                                                                                                                                                                                     2\; s_{\gamma}\; \widetilde{\mu}\; y_{d}^{\;pr}\; \left(3\; m_{H}^{2}\; s_{4\;\gamma}\; c_{\gamma}\; \left(g_{1}^{\;2}+g_{2}^{\;2}\right)\; +\; s_{\gamma}\; c_{2\;\gamma}\; m_{\bar{\Phi}}^{\;2}\; \left(g_{1}^{\;2}\; \left(1+3\; c_{2\;\gamma}\right)\; +\; 3\; g_{2}^{\;2}\; \left(1+c_{2\;\gamma}\right)\;\right)\;\right)\; +\; c_{3\;\gamma}^{\;2}\; \left(1+c_{3\;\gamma}^{\;2}\right)\; +\; c_{3\;\gamma}^{\;2}\; +\; c_{3\;\gamma}^
                                                                                                                                                                                                               \overline{a_d}^{\text{pr}} \, \left( 2 \,\, c_{\gamma} \,\, a_d^{\,\, \text{pr}} \, \left( c_{2 \,\gamma} \,\, c_{\gamma} \,\, m_{\!_{\Phi}}^{\,\, 2} \, \left( g_1^{\,\, 2} \, \left( 1 + 3 \,\, c_{2 \,\gamma} \right) \,\, + 3 \,\, g_2^{\,\, 2} \, \left( 1 + c_{2 \,\gamma} \right) \, \right) \,\, - \, 3 \,\, m_H^2 \,\, s_{4 \,\gamma} \,\, s_{\gamma} \, \left( g_1^{\,\, 2} + g_2^{\,\, 2} \right) \, \right) \,\, - \, 3 \,\, m_H^2 \,\, s_{4 \,\gamma} \,\, s_{\gamma} \, \left( g_1^{\,\, 2} + g_2^{\,\, 2} \right) \, + \, 3 \,\, g_2^{\,\, 2} \,\, \left( 1 + c_{2 \,\gamma} \right) \, \right) \,\, - \,\, 3 \,\, m_H^2 \,\, s_{4 \,\gamma} \,\, s_{\gamma} \,\, \left( g_1^{\,\, 2} + g_2^{\,\, 2} \right) \, + \, 3 \,\, g_2^{\,\, 2} \,\, \left( 1 + c_{2 \,\gamma} \right) \, \right) \,\, - \,\, 3 \,\, m_H^2 \,\, s_{4 \,\gamma} \,\, s_{\gamma} \,\, \left( g_1^{\,\, 2} + g_2^{\,\, 2} \right) \,\, + \,\, 3 \,\, g_2^{\,\, 2} \,\, \left( 1 + c_{2 \,\gamma} \right) \,\, \right) \,\, - \,\, 3 \,\, m_H^2 \,\, s_{4 \,\gamma} \,\, s_{\gamma} \,\, \left( g_1^{\,\, 2} + g_2^{\,\, 2} \right) \,\, + \,\, 3 \,\, g_2^{\,\, 2} \,\, \left( 1 + c_{2 \,\gamma} \right) \,\, \right) \,\, - \,\, 3 \,\, m_H^2 \,\, s_{4 \,\gamma} \,\, s_{\gamma} \,\, \left( g_1^{\,\, 2} + g_2^{\,\, 2} \right) \,\, + \,\, 3 \,\, g_2^{\,\, 2} \,\, \left( 1 + c_{2 \,\gamma} \right) \,\, \right) \,\, - \,\, 3 \,\, m_H^2 \,\, s_{4 \,\gamma} \,\, s_{\gamma} \,\, \left( g_1^{\,\, 2} + g_2^{\,\, 2} \right) \,\, + \,\, 3 \,\, g_2^{\,\, 2} \,\, \left( 1 + c_{2 \,\gamma} \right) \,\, \right) \,\, - \,\, 3 \,\, m_H^2 \,\, s_{3 \,\gamma} \,\, \left( g_1^{\,\, 2} + g_2^{\,\, 2} \right) \,\, + \,\, 3 \,\, g_2^{\,\, 2} \,\, \left( 1 + c_{2 \,\gamma} \right) \,\, \right) \,\, - \,\, 3 \,\, m_H^2 \,\, s_{3 \,\gamma} \,\, \left( g_1^{\,\, 2} + g_2^{\,\, 2} \right) \,\, + \,\, 3 \,\, g_2^{\,\, 2} \,\, \left( 1 + c_{2 \,\gamma} \right) \,\, \right) \,\, - \,\, 3 \,\, m_H^2 \,\, s_{3 \,\gamma} \,\, \left( g_1^{\,\, 2} + g_2^{\,\, 2} \right) \,\, + \,\, 3 \,\, g_2^{\,\, 2} \,\, \left( 1 + c_{2 \,\gamma} \right) \,\, + \,\, 3 \,\, g_2^{\,\, 2} \,\, \left( 1 + c_{2 \,\gamma} \right) \,\, \right) \,\, - \,\, 3 \,\, m_H^2 \,\, s_{3 \,\gamma} \,\, \left( g_1^{\,\, 2} + g_2^{\,\, 2} \right) \,\, + \,\, 3 \,\, g_2^{\,\, 2} \,\, \left( 1 + c_{2 \,\gamma} \right) \,\, + \,\, 3 \,\, g_2^{\,\, 2} \,\, \left( 1 + c_{2 \,\gamma} \right) \,\, \right) \,\, - \,\, 3 \,\, m_H^2 \,\, s_{3 \,\gamma} \,\, \left( g_1^{\,\, 2} + g_2^{\,\, 2} \right) \,\, + \,\, 3 \,\, g_2^{\,\, 2} \,\, \left( 1 + c_{2 \,\gamma} \right) \,\, + \,\, 3 \,\, g_2^{\,\, 2} \,\, \left( 1 + c_{2 \,\gamma} \right) \,\, + \,\, 3 \,\, g_2^{\,\, 2} \,\, \left( 1 + c_{2 \,\gamma} \right) \,\, + \,\, 3 \,\, g_2^{\,\, 2} \,\, \left( 1 + c_{2 \,\gamma} \right) \,\, + \,\, 3 \,\, g_2^{\,\, 2} \,\, \left( 1 + c_{2 \,\gamma} \right) \,\, + \,\, 3 \,\, g_2^{\,\, 2} \,\, \left( 1 + c_{2 \,\gamma} \right) \,\, + \,\, 3 \,\, g_2^{\,\, 2} \,\, \left( 1 + c_{2 \,\gamma} \right) \,\, + \,\, 3 \,\, g_2^{\,\, 2} \,\, \left( 1 + c_{2 \,\gamma} \right) \,\, + \,\, 3 \,\, g_2^{\,\, 2} \,\, \left( 1 + c_{2 \,\gamma} \right) \,\, + \,\, 3 \,
                                                                                                                                                                                                                                                                                                  \widetilde{\mu} \ y_{d}^{\ pr} \ \left( \ 3 \ m_{H}^{2} \ s_{4 \ \gamma} \ c_{\gamma}^{\ 2} \ \left( \ g_{1}^{\ 2} + g_{2}^{\ 2} \right) \ + \ 2 \ s_{\gamma} \ c_{2 \ \gamma} \ c_{\gamma} \ m_{\Phi}^{\ 2} \ \left( \ g_{1}^{\ 2} \ (1 + \ 3 \ c_{2 \ \gamma}) \right) \ + \ 3 \ g_{2}^{\ 2} \ \left( 1 + c_{2 \ \gamma} \right) \right) \ - \ c_{2 \ \gamma} \ c_{2
                                                                                                                                                                                                                                                                                                                                                                                        3 \; m_H^2 \; s_{4 \; \Upsilon} \; s_{\Upsilon}^{\; 2} \; \left( g_1^{\; 2} + g_2^{\; 2} \right) \, \right) \, \right) \; LF_{2,1,0} \left[ \, m_{\tilde{q}}^{\; p} \, , \; m_{\tilde{d}}^{\; r} \, \right] \; + \; \frac{3}{4} \; \frac{1}{m_{\text{p}}^{\; 2}} \; \left( g_1^{\; 2} + g_2^{\; 2} \right) \; .
                                                                                                                                                            \left(2\;c_{\gamma}\;\overline{a_{d}}^{pr}\;a_{d}^{\;pr}\;\left(-\;c_{\gamma}\;m_{\Phi}^{\;2}\;c_{2\;\gamma}^{\;2}+\;m_{H}^{2}\;s_{4\;\gamma}\;s_{\gamma}\right)\right.\\ \left.+\;\widetilde{\mu}\;\left(m_{H}^{2}\;s_{4\;\gamma}\;c_{\gamma}^{\;2}+\;2\;s_{\gamma}\;c_{\gamma}\;m_{\Phi}^{\;2}\;c_{2\;\gamma}^{\;2}-\;m_{H}^{2}\;s_{4\;\gamma}\;s_{\gamma}^{\;2}\right)\right.
                                                                                                                                                                                                                                                  (\overline{y_{d}}^{pr}\ a_{d}^{\ pr}\ +\ y_{d}^{\ pr}\ \overline{a_{d}}^{pr})\ -\ 2\ s_{_{Y}}\ \widetilde{\mu}^{2}\ \overline{y_{d}}^{pr}\ y_{d}^{\ pr}\ \left(m_{H}^{2}\ s_{_{^{4}\,Y}}\ c_{_{^{Y}}}\ +\ s_{_{^{Y}}}\ m_{_{^{\oplus}}}^{2}\ c_{_{^{2}\,Y}}^{\ 2}\right)\left)\ LF_{3,1,^{-1}}\left[m_{_{\bar{q}}}^{\ p},\ m_{_{\bar{d}}}^{\ r}\right]\ -\ m_{_{\bar{d}}}^{\ r}\right]
                                                                                                                      m_{H}^{2}\;c_{2\;\gamma}\;\left(g_{1}^{\;2}\;\left(1+3\;c_{2\;\gamma}\right)\;+3\;g_{2}^{\;2}\;\left(1+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)
                                                                                                                                                     \frac{3}{2}\ m_{H}^{2}\ \left(-2\ g_{2}^{\ 2}+c_{2\,\gamma}\ \left(1+6\ c_{2\,\gamma}\right)\ \left(g_{1}^{\ 2}+g_{2}^{\ 2}\right)\right)\ \left(c_{\gamma}\ \overline{a_{d}}^{pr}-s_{\gamma}\ \widetilde{\mu}\ \overline{y_{d}}^{pr}\right)
                                                                                                                                                            \left( \boldsymbol{c}_{\boldsymbol{Y}} \; \boldsymbol{a_d}^{\text{pr}} - \boldsymbol{s}_{\boldsymbol{Y}} \; \widetilde{\boldsymbol{\mu}} \; \boldsymbol{y_d}^{\text{pr}} \right) \; \boldsymbol{LF_{4,1,-1}} \left[ \boldsymbol{m_{\tilde{q}}^{-p}}, \; \boldsymbol{m_{\tilde{d}}^{-r}} \right] \; - \\
                                                                                                                         2\; m_{H}^{2}\; \left(-2\; {g_{2}}^{2}\; +\; 3\; {c_{2\;\gamma}}^{2}\; \left({g_{1}}^{2}\; +\; {g_{2}}^{2}\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_{5,1,-2}\left[\, m_{\tilde{q}}^{\;\; p}\; ,\; m_{\tilde{d}}^{\;\; r}\; \right] \; -\; \left(\, m_{\tilde{q}}^{\;\; p}\; ,\; m_{\tilde{d}}^{\;\; r}\; \right) \; \left(\, m_{\tilde{q}}^{\;\; p}\; ,\; m_{\tilde{q}}^{\;\; r}\; ,\; m_{\tilde{q}}^{\;\; r}\; \right) \; \left(\, m_{\tilde{q}}^{\;\; p}\; ,\; m_{\tilde{q}}^{\;\; r}\; ,\; m_{\tilde{q}}^{\;\; r}
                                                                                                                             3\left(c_{\gamma}^{\phantom{\gamma}4}\,\overline{y_{d}}^{pr}\,\overline{y_{d}}^{st}\,y_{d}^{\phantom{d}pt}\,y_{d}^{\phantom{d}sr}+s_{\gamma}^{\phantom{\gamma}4}\,\overline{y_{u}}^{pr}\,\overline{y_{u}}^{st}\,y_{u}^{\phantom{u}pt}\,y_{u}^{\phantom{u}sr}\right)\,LF_{1,1,0}\big[\,m_{\tilde{q}}^{\phantom{q}p}\,,\,m_{\tilde{q}}^{\phantom{q}s}\,\big]\,+\,C_{1,1,0}^{\phantom{q}p}\,(m_{\tilde{q}}^{\phantom{q}p}\,,\,m_{\tilde{q}}^{\phantom{q}s})\,+\,C_{1,1,0}^{\phantom{q}p}\,(m_{\tilde{q}}^{\phantom{q}p}\,,\,m_{\tilde{q}}^{\phantom{q}s})\,+\,C_{1,1,0}^{\phantom{q}p}\,(m_{\tilde{q}}^{\phantom{q}p}\,,\,m_{\tilde{q}}^{\phantom{q}s})\,+\,C_{1,1,0}^{\phantom{q}p}\,(m_{\tilde{q}}^{\phantom{q}p}\,,\,m_{\tilde{q}}^{\phantom{q}s})\,+\,C_{1,1,0}^{\phantom{q}p}\,(m_{\tilde{q}}^{\phantom{q}p}\,,\,m_{\tilde{q}}^{\phantom{q}s})\,+\,C_{1,1,0}^{\phantom{q}p}\,(m_{\tilde{q}}^{\phantom{q}p}\,,\,m_{\tilde{q}}^{\phantom{q}s})\,+\,C_{1,1,0}^{\phantom{q}p}\,(m_{\tilde{q}}^{\phantom{q}p}\,,\,m_{\tilde{q}}^{\phantom{q}s})\,+\,C_{1,1,0}^{\phantom{q}p}\,(m_{\tilde{q}}^{\phantom{q}p}\,,\,m_{\tilde{q}}^{\phantom{q}s})\,+\,C_{1,1,0}^{\phantom{q}p}\,(m_{\tilde{q}}^{\phantom{q}p}\,,\,m_{\tilde{q}}^{\phantom{q}s})\,+\,C_{1,1,0}^{\phantom{q}p}\,(m_{\tilde{q}}^{\phantom{q}p}\,,\,m_{\tilde{q}}^{\phantom{q}p}\,,\,m_{\tilde{q}}^{\phantom{q}p}\,,\,m_{\tilde{q}}^{\phantom{q}p}\,,\,m_{\tilde{q}}^{\phantom{q}p}\,,\,m_{\tilde{q}}^{\phantom{q}p}\,,\,m_{\tilde{q}}^{\phantom{q}p}\,,\,m_{\tilde{q}}^{\phantom{q}p}\,,\,m_{\tilde{q}}^{\phantom{q}p}\,,\,m_{\tilde{q}}^{\phantom{q}p}\,,\,m_{\tilde{q}}^{\phantom{q}p}\,,\,m_{\tilde{q}}^{\phantom{q}p}\,,\,m_{\tilde{q}}^{\phantom{q}p}\,,\,m_{\tilde{q}}^{\phantom{q}p}\,,\,m_{\tilde{q}}^{\phantom{q}p}\,,\,m_{\tilde{q}}^{\phantom{q}p}\,,\,m_{\tilde{q}}^{\phantom{q}p}\,,\,m_{\tilde{q}}^{\phantom{q}p}\,,\,m_{\tilde{q}}^{\phantom{q}p}\,,\,m_{\tilde{q}}^{\phantom{q}p}\,,\,m_{\tilde{q}}^{\phantom{q}p}\,,\,m_{\tilde{q}}^{\phantom{q}p}\,,\,m_{\tilde{q}}^{\phantom{q}p}\,,\,m_{\tilde{q}}^{\phantom{q}p}\,,\,m_{\tilde{q}}^{\phantom{q}p}\,,\,m_{\tilde{q}}^{\phantom{q}p}\,,\,m_{\tilde{q}}^{\phantom{q}p}\,,\,m_{\tilde{q}}^{\phantom{q}p}\,,\,m_{\tilde{q}}^{\phantom{q}p}\,,\,m_{\tilde{q}}^{\phantom{q}p}\,,\,m_{\tilde{q}}^{\phantom{q}p}\,,\,m_{\tilde{q}}^{\phantom{q}p}\,,\,m_{\tilde{q}}^{\phantom{q}p}\,,\,m_{\tilde{q}}^{\phantom{q}p}\,,\,m_{\tilde{q}}^{\phantom{q}p}\,,\,m_{\tilde{q}}^{\phantom{q}p}\,,\,m_{\tilde{q}}^{\phantom{q}p}\,,\,m_{\tilde{q}}^{\phantom{q}p}\,,\,m_{\tilde{q}}^{\phantom{q}p}\,,\,m_{\tilde{q}}^{\phantom{q}p}\,,\,m_{\tilde{q}}^{\phantom{q}p}\,,\,m_{\tilde{q}}^{\phantom{q}p}\,,\,m_{\tilde{q}}^{\phantom{q}p}\,,\,m_{\tilde{q}}^{\phantom{q}p}\,,\,m_{\tilde{q}}^{\phantom{q}p}\,,\,m_{\tilde{q}}^{\phantom{q}p}\,,\,m_{\tilde{q}}^{\phantom{q}p}\,,\,m_{\tilde{q}}^{\phantom{q}p}\,,\,m_{\tilde{q}}^{\phantom{q}p}\,,\,m_{\tilde{q}}^{\phantom{q}p}\,,\,m_{\tilde{q}}^{\phantom{q}p}\,,\,m_{\tilde{q}}^{\phantom{q}p}\,,\,m_{\tilde{q}}^{\phantom{q}p}\,,\,m_{\tilde{q}}^{\phantom{q}p}\,,\,m_{\tilde{q}}^{\phantom{q}p}\,,\,m_{\tilde{q}}^{\phantom{q}p}\,,\,m_{\tilde{q}}^{\phantom{q}p}\,,\,m_{\tilde{q}}^{\phantom{q}p}\,,\,m_{\tilde{q}}^{\phantom{q}p}\,,\,m_{\tilde{q}}^{\phantom{q}p}\,,\,m_{\tilde{q}}^{\phantom{q}p}\,,\,m_{\tilde{q}}^{\phantom{q}p}\,,\,m_{\tilde{q}}^{\phantom{q}p}\,,\,m_{\tilde{q}}^{\phantom{q}p}\,,\,m_{\tilde{q}}^{\phantom{q}p}\,,\,m_{\tilde{q}}^{\phantom{q}p}\,,\,m_{\tilde{q}}^{\phantom{q}p}\,,\,m_{\tilde{q}}^{\phantom{q}p}\,,\,m_{\tilde{q}}
                                                                                                                         6\; m_H^2\; \left(\, c_{\gamma}^{\;2}\; \overline{y_d}^{\text{pr}}\; y_d^{\,\text{sr}}\; \left(\, c_{\gamma}^{\;2}\; \overline{y_d}^{\text{st}}\; y_d^{\,\text{pt}} - s_{\gamma}^{\;2}\; \overline{y_u}^{\text{st}}\; y_u^{\,\text{pt}}\right) \; + \; s_{\gamma}^{\;4}\; \overline{y_u}^{\text{pr}}\; \overline{y_u}^{\text{st}}\; y_u^{\,\text{pt}}\; y_u^{\,\text{sr}}\right) \; \text{LF}_{2,1,0}\left[\, m_{\tilde{q}}^{\,\,p}\,,\; m_{\tilde{q}}^{\,\,s}\,\right] \; - \; m_{\tilde{q}}^{\,\,p} \; \left(\, c_{\gamma}^{\,\,2}\; \overline{y_d}^{\,\,\text{st}}\; y_d^{\,\,\text{pt}} - s_{\gamma}^{\,\,2}\; \overline{y_u}^{\,\,\text{st}}\; y_u^{\,\,\text{pt}}\right) \; + \; s_{\gamma}^{\,\,4}\; \overline{y_u}^{\,\,\text{pr}}\; \overline{y_u}^{\,\,\text{st}}\; y_u^{\,\,\text{pt}}\; y_u^{\,\,\text{sr}}\right) \; \text{LF}_{2,1,0}\left[\, m_{\tilde{q}}^{\,\,p}\,,\; m_{\tilde{q}}^{\,\,s}\,\right] \; - \; m_{\tilde{q}}^{\,\,p} \; \left(\, c_{\gamma}^{\,\,2}\; \overline{y_d}^{\,\,\text{st}}\; y_u^{\,\,\text{pt}}\; y_u^{\,\,\text{st}}\; y_u^{\,\,\text{pt}}\right) \; + \; m_{\tilde{q}}^{\,\,p} \; \left(\, c_{\gamma}^{\,\,2}\; \overline{y_d}^{\,\,\text{st}}\; y_u^{\,\,\text{pt}}\; y_u^{\,\,\text{pt}}\; y_u^{\,\,\text{st}}\right) \; + \; m_{\tilde{q}}^{\,\,p} \; \left(\, c_{\gamma}^{\,\,p}\; \overline{y_u}^{\,\,\text{st}}\; y_u^{\,\,\text{pt}}\; y_u^{\,\,\text{st}}\; y_u^{\,\,\text{pt}}\; y_u^{\,\,\text{st}}\right) \; + \; m_{\tilde{q}}^{\,\,p} \; \left(\, c_{\gamma}^{\,\,p}\; \overline{y_u}^{\,\,\text{st}}\; y_u^{\,\,\text{pt}}\; y_u^{\,\,\text{st}}\; y_u^{\,\,\text{st}}\right) \; + \; m_{\tilde{q}}^{\,\,p} \; \left(\, c_{\gamma}^{\,\,p}\; \overline{y_u}^{\,\,\text{st}}\; y_u^{\,\,\text{pt}}\; y_u^{\,\,\text{st}}\; y_u^{\,\,\text{st}}\; y_u^{\,\,\text{st}}\; y_u^{\,\,\text{st}}\right) \; + \; m_{\tilde{q}}^{\,\,p} \; \left(\, c_{\gamma}^{\,\,p}\; \overline{y_u}^{\,\,\text{st}}\; y_u^{\,\,\text{st}}\; y_u^{\,\,\text{st}}\; y_u^{\,\,\text{st}}\; y_u^{\,\,\text{st}}\right) \; + \; m_{\tilde{q}}^{\,\,p} \; \left(\, c_{\gamma}^{\,\,p}\; \overline{y_u}^{\,\,\text{st}}\; y_u^{\,\,\text{st}}\; y_u^{\,\,\text{s
                                                                                                                         6\; m_H^2\; \left(c_{\gamma}^{\;2}\; \overline{y_d}^{\text{pr}}\; y_d^{\,\text{sr}}\; \left(c_{\gamma}^{\;2}\; \overline{y_d}^{\text{st}}\; y_d^{\,\text{pt}} - s_{\gamma}^{\;2}\; \overline{y_u}^{\text{st}}\; y_u^{\,\text{pt}}\right) \; + \; s_{\gamma}^{\;4}\; \overline{y_u}^{\text{pr}}\; \overline{y_u}^{\text{st}}\; y_u^{\,\text{pt}}\; y_u^{\,\text{sr}}\right) \; \text{LF}_{3,1,-1}\left[\, m_{\bar{q}}^{\,\bar{p}}\,,\; m_{\bar{q}}^{\,\bar{s}}\,^{\,\bar{s}}\,\right] \; + \; s_{\gamma}^{\;4}\; \overline{y_u}^{\,\text{pr}}\; \overline{y_u}^{\,\text{st}}\; y_u^{\,\text{pt}}\; y_u^{\,\text{sr}}\right) \; \text{LF}_{3,1,-1}\left[\, m_{\bar{q}}^{\,\bar{p}}\,,\; m_{\bar{q}}^{\,\bar{s}}\,^{\,\bar{s}}\,\right] \; + \; s_{\gamma}^{\;4}\; \overline{y_u}^{\,\text{pr}}\; \overline{y_u}^{\,\text{st}}\; y_u^{\,\text{pt}}\; y_u^{\,\text{sr}} \; \left(\, c_{\gamma}^{\,2}\; \overline{y_d}^{\,\text{st}}\, y_u^{\,\text{pt}}\,,\; m_{\bar{q}}^{\,\bar{s}}\,^{\,\bar{s}}\, y_u^{\,\text{pt}}\, y_u^{\,\text{st}}\, y_u^{\,\text{pt}}\, y_u^{\,\text{st}}\, y_u^{\,\text{pt}}\, y_u^{\,\text{st}}\, y_u^{\,\text{pt}}\, y_u^{
                                                                                                                                \frac{3}{4} \; s_{4 \; \gamma} \; \frac{1}{m_{\text{b}}^{\; 4}} \; \left( g_{1}^{\; 2} + g_{2}^{\; 2} \right) \; \left( m_{H}^{2} + m_{\Phi}^{\; 2} \right) \; \left( \widetilde{\mu} \; \overline{y_{u}}^{pr} \; \left( a_{u}^{\; pr} \; \left( c_{\gamma}^{\; 2} - s_{\gamma}^{\; 2} \right) \; + \; 2 \; s_{\gamma} \; \widetilde{\mu} \; c_{\gamma} \; y_{u}^{pr} \right) \; + \; 2 \; s_{\gamma} \; \widetilde{\mu} \; c_{\gamma} \; y_{u}^{pr} \right) \; + \; 2 \; s_{\gamma} \; \widetilde{\mu} \; c_{\gamma} \; y_{u}^{pr} \; \left( a_{u}^{\; pr} \; \left( a_{u
                                                                                                                                                                                                               \overline{a_u}^{\text{pr}} \left( -2 \, s_{\gamma} \, c_{\gamma} \, a_u^{\text{pr}} + \widetilde{\mu} \, y_u^{\text{pr}} \, \left( c_{\gamma}^{\, 2} - s_{\gamma}^{\, 2} \right) \right) \right) \, \text{LF}_{1,1,0} \left[ \, m_{\tilde{q}}^{\, p}, \, m_{\tilde{u}}^{\, r} \, \right] \, + \, \left[ \, m_{\tilde{q}}^{\, p}, \, m_{\tilde{u}}^{\, r} \, \right] \, + \, \left[ \, m_{\tilde{q}}^{\, p}, \, m_{\tilde{u}}^{\, r} \, \right] \, + \, \left[ \, m_{\tilde{q}}^{\, p}, \, m_{\tilde{u}}^{\, r} \, \right] \, + \, \left[ \, m_{\tilde{q}}^{\, p}, \, m_{\tilde{u}}^{\, r} \, \right] \, + \, \left[ \, m_{\tilde{q}}^{\, p}, \, m_{\tilde{u}}^{\, r} \, \right] \, + \, \left[ \, m_{\tilde{q}}^{\, p}, \, m_{\tilde{u}}^{\, r} \, \right] \, + \, \left[ \, m_{\tilde{q}}^{\, p}, \, m_{\tilde{u}}^{\, r} \, \right] \, + \, \left[ \, m_{\tilde{q}}^{\, p}, \, m_{\tilde{u}}^{\, r} \, \right] \, + \, \left[ \, m_{\tilde{q}}^{\, p}, \, m_{\tilde{u}}^{\, r} \, \right] \, + \, \left[ \, m_{\tilde{q}}^{\, p}, \, m_{\tilde{u}}^{\, r} \, \right] \, + \, \left[ \, m_{\tilde{q}}^{\, p}, \, m_{\tilde{u}}^{\, r} \, \right] \, + \, \left[ \, m_{\tilde{q}}^{\, p}, \, m_{\tilde{u}}^{\, r} \, \right] \, + \, \left[ \, m_{\tilde{q}}^{\, p}, \, m_{\tilde{u}}^{\, r} \, \right] \, + \, \left[ \, m_{\tilde{q}}^{\, p}, \, m_{\tilde{u}}^{\, r} \, \right] \, + \, \left[ \, m_{\tilde{q}}^{\, p}, \, m_{\tilde{u}}^{\, r} \, \right] \, + \, \left[ \, m_{\tilde{q}}^{\, p}, \, m_{\tilde{u}}^{\, r} \, \right] \, + \, \left[ \, m_{\tilde{q}}^{\, p}, \, m_{\tilde{u}}^{\, r} \, \right] \, + \, \left[ \, m_{\tilde{q}}^{\, p}, \, m_{\tilde{u}}^{\, r} \, \right] \, + \, \left[ \, m_{\tilde{q}}^{\, p}, \, m_{\tilde{u}}^{\, r} \, \right] \, + \, \left[ \, m_{\tilde{q}}^{\, p}, \, m_{\tilde{u}}^{\, r} \, \right] \, + \, \left[ \, m_{\tilde{q}}^{\, p}, \, m_{\tilde{u}}^{\, r} \, \right] \, + \, \left[ \, m_{\tilde{q}}^{\, p}, \, m_{\tilde{u}}^{\, r} \, \right] \, + \, \left[ \, m_{\tilde{q}}^{\, p}, \, m_{\tilde{u}}^{\, r} \, \right] \, + \, \left[ \, m_{\tilde{q}}^{\, p}, \, m_{\tilde{u}}^{\, r} \, \right] \, + \, \left[ \, m_{\tilde{q}}^{\, p}, \, m_{\tilde{u}}^{\, r} \, \right] \, + \, \left[ \, m_{\tilde{q}}^{\, p}, \, m_{\tilde{u}}^{\, r} \, \right] \, + \, \left[ \, m_{\tilde{q}}^{\, p}, \, m_{\tilde{u}}^{\, r} \, \right] \, + \, \left[ \, m_{\tilde{q}}^{\, p}, \, m_{\tilde{u}}^{\, r} \, \right] \, + \, \left[ \, m_{\tilde{q}}^{\, p}, \, m_{\tilde{u}}^{\, r} \, \right] \, + \, \left[ \, m_{\tilde{q}}^{\, p}, \, m_{\tilde{u}}^{\, r} \, \right] \, + \, \left[ \, m_{\tilde{q}}^{\, p}, \, m_{\tilde{q}}^{\, r} \, \right] \, + \, \left[ \, m_{\tilde{q}}^{\, p}, \, m_{\tilde{q}}^{\, r} \, \right] \, + \, \left[ \, m_{\tilde{q}}^{\, p}, \, m_{\tilde{q}}^{\, r} \, \right] \, + \, \left[ \, m_{\tilde{q}}^{\, p}, \, m_{\tilde{q}}^{\, r} \, \right] \, + \, \left[ \, m_{\tilde{q}}^{\, p}, \, m_{\tilde{q}}^{\, r} \, \right] \, + \, \left[ \, m_{\tilde{q}}^{\, p}, \, m_{\tilde{q}}^{\, r} \, \right] \, + \, \left[ \, m_{\tilde{q}}^{\, p}, \, m_{\tilde{q}}^{\, r} \, \right] \, + \, \left[ \, m_{\tilde{q}}^{\, p}, \, m_{\tilde{q}}^{\, r} \, \right] \, + \, \left[ \, 
                                                                                                                                                        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}_{2,1,0}\left[\mathsf{m}_{\tilde{q}}{}^{p},\,\mathsf{m}_{\tilde{u}}{}^{r}\right]-c_{2\,\gamma}\,\left(s_{\gamma}\,a_{u}{}^{pr}-\widetilde{\mu}\,\,c_{\gamma}\,y_{u}{}^{pr}\right)\,\mathsf{LF}_{2,1,0}\left[\mathsf{m}_{\tilde{q}}{}^{p},\,\mathsf{m}_{\tilde{u}}{}^{r}\right]-c_{2\,\gamma}\,\left(s_{\gamma}\,a_{u}{}^{pr}-\widetilde{\mu}\,\,c_{\gamma}\,y_{u}{}^{pr}\right)\,\mathsf{LF}_{2,1,0}\left[\mathsf{m}_{\tilde{q}}{}^{p},\,\mathsf{m}_{\tilde{u}}{}^{r}\right]-c_{2\,\gamma}\,\left(s_{\gamma}\,a_{u}{}^{p}+\widetilde{\mu}\,\,c_{\gamma}\,y_{u}{}^{p}\right)\,\mathsf{LF}_{2,1,0}\left[\mathsf{m}_{\tilde{q}}{}^{p},\,\mathsf{m}_{\tilde{u}}{}^{r}\right]-c_{2\,\gamma}\,\left(s_{\gamma}\,a_{u}{}^{p}+\widetilde{\mu}\,\,c_{\gamma}\,y_{u}{}^{p}\right)\,\mathsf{LF}_{2,1,0}\left[\mathsf{m}_{\tilde{q}}{}^{p},\,\mathsf{m}_{\tilde{u}}{}^{r}\right]-c_{2\,\gamma}\,\left(s_{\gamma}\,a_{u}{}^{p}+\widetilde{\mu}\,\,c_{\gamma}\,y_{u}{}^{p}\right)\,\mathsf{LF}_{2,1,0}\left[\mathsf{m}_{\tilde{q}}{}^{p},\,\mathsf{m}_{\tilde{u}}{}^{p}\right]-c_{2\,\gamma}\,\left(s_{\gamma}\,a_{u}{}^{p}+\widetilde{\mu}\,\,c_{\gamma}\,y_{u}{}^{p}\right)\,\mathsf{LF}_{2,1,0}\left[\mathsf{m}_{\tilde{q}}{}^{p},\,\mathsf{m}_{\tilde{u}}{}^{p}\right]-c_{2\,\gamma}\,\left(s_{\gamma}\,a_{u}{}^{p}+\widetilde{\mu}\,\,c_{\gamma}\,y_{u}{}^{p}\right)\,\mathsf{LF}_{2,1,0}\left[\mathsf{m}_{\tilde{q}}{}^{p},\,\mathsf{m}_{\tilde{u}}{}^{p}\right]-c_{2\,\gamma}\,\left(s_{\gamma}\,a_{u}{}^{p}+\widetilde{\mu}\,\,c_{\gamma}\,y_{u}{}^{p}\right)\,\mathsf{LF}_{2,1,0}\left[\mathsf{m}_{\tilde{q}}{}^{p},\,\mathsf{m}_{\tilde{u}}{}^{p}\right]-c_{2\,\gamma}\,\mathsf{LF}_{2,1,0}\left[\mathsf{m}_{\tilde{q}}{}^{p},\,\mathsf{m}_{\tilde{u}}{}^{p}\right]-c_{2\,\gamma}\,\mathsf{LF}_{2,1,0}\left[\mathsf{m}_{\tilde{q}}\,a_{u}{}^{p}\right]-c_{2\,\gamma}\,\mathsf{LF}_{2,1,0}\left[\mathsf{m}_{\tilde{q}}\,a_{u}{}^{p}\right]-c_{2\,\gamma}\,\mathsf{LF}_{2,1,0}\left[\mathsf{m}_{\tilde{q}}\,a_{u}{}^{p}\right]-c_{2\,\gamma}\,\mathsf{LF}_{2,1,0}\left[\mathsf{m}_{\tilde{q}}\,a_{u}{}^{p}\right]-c_{2\,\gamma}\,\mathsf{LF}_{2,1,0}\left[\mathsf{m}_{\tilde{q}}\,a_{u}{}^{p}\right]-c_{2\,\gamma}\,\mathsf{LF}_{2,1,0}\left[\mathsf{m}_{\tilde{q}}\,a_{u}{}^{p}\right]-c_{2\,\gamma}\,\mathsf{LF}_{2,1,0}\left[\mathsf{m}_{\tilde{q}}\,a_{u}{}^{p}\right]-c_{2\,\gamma}\,\mathsf{LF}_{2,1,0}\left[\mathsf{m}_{\tilde{q}}\,a_{u}{}^{p}\right]-c_{2\,\gamma}\,\mathsf{LF}_{2,1,0}\left[\mathsf{m}_{\tilde{q}}\,a_{u}{}^{p}\right]-c_{2\,\gamma}\,\mathsf{LF}_{2,1,0}\left[\mathsf{m}_{\tilde{q}}\,a_{u}{}^{p}\right]-c_{2\,\gamma}\,\mathsf{LF}_{2,1,0}\left[\mathsf{m}_{\tilde{q}}\,a_{u}{}^{p}\right]-c_{2\,\gamma}\,\mathsf{LF}_{2,1,0}\left[\mathsf{m}_{\tilde{q}}\,a_{u}{}^{p}\right]-c_{2\,\gamma}\,\mathsf{LF}_{2,1,0}\left[\mathsf{m}_{\tilde{q}}\,a_{u}{}^{p}\right]-c_{2\,\gamma}\,\mathsf{LF}_{2,1,0}\left[\mathsf{m}_{\tilde{q}}\,a_{u}{}^{p}\right]-c_{2\,\gamma}\,\mathsf{LF}_{2,1,0}\left[\mathsf{m}_{\tilde{q}}\,a_{u}{}^{p}\right]-c_{2\,\gamma}\,\mathsf{LF}_{2,1,0}\left[\mathsf{m}_{\tilde{q}}\,a_{u}{}^{p}\right]-c_{2\,\gamma}\,\mathsf{LF}_{2,1,0}\left[\mathsf{m}_{\tilde{q}}\,a_{u}{}^{p}\right]-c_{2\,\gamma}\,\mathsf{LF}_{2,1,0}\left[\mathsf{m}_{\tilde{q}}\,a_{u}{}^{p}\right]-c_{2\,\gamma}\,\mathsf{LF}_{2,1,0}\left[\mathsf{m}_{\tilde{q}}\,a_{u}{}
                                                                                                                                \frac{1}{2} \; m_{H}^{2} \; \left(c_{2\,\Upsilon} \; g_{1}^{\; 2} + g_{2}^{\; 2} \; \left(4 - 3 \; c_{2\,\Upsilon}\right) \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) \; \mathsf{LF}_{2,2,0} \left[m_{\widetilde{q}}^{\; p} \; , \; m_{\widetilde{u}}^{\; r}\right] \; + \; c_{2\,\Upsilon} \; y_{u}^{\; pr} \; \left(s_{\Upsilon} \; a_{u}^{\; pr} - \widetilde{\mu} \; c_{\Upsilon} \; y_{u}^{\; pr}\right) \; \mathsf{LF}_{2,2,0} \left[m_{\widetilde{q}}^{\; p} \; , \; m_{\widetilde{u}}^{\; r}\right] \; + \; c_{2\,\Upsilon} \; y_{u}^{\; pr} \; \left(s_{\Upsilon} \; a_{u}^{\; pr} - \widetilde{\mu} \; c_{\Upsilon} \; y_{u}^{\; pr}\right) \; \mathsf{LF}_{2,2,0} \left[m_{\widetilde{q}}^{\; p} \; , \; m_{\widetilde{u}}^{\; r}\right] \; + \; c_{2\,\Upsilon} \; y_{u}^{\; pr} \; \left(s_{\Upsilon} \; a_{u}^{\; pr} - \widetilde{\mu} \; c_{\Upsilon} \; y_{u}^{\; pr}\right) \; \mathsf{LF}_{2,2,0} \left[m_{\widetilde{q}}^{\; p} \; , \; m_{\widetilde{u}}^{\; r}\right] \; + \; c_{2\,\Upsilon} \; y_{u}^{\; pr} \; \left(s_{\Upsilon} \; a_{u}^{\; pr} - \widetilde{\mu} \; c_{\Upsilon} \; y_{u}^{\; pr}\right) \; \mathsf{LF}_{2,2,0} \left[m_{\widetilde{q}}^{\; p} \; , \; m_{\widetilde{u}}^{\; r}\right] \; + \; c_{2\,\Upsilon} \; y_{u}^{\; pr} \; \mathsf{LF}_{2,2,0} \left[m_{\widetilde{q}}^{\; p} \; , \; m_{\widetilde{u}}^{\; pr}\right] \; + \; c_{2\,\Upsilon} \; \mathsf{LF}_{2,2,0} \left[m_{\widetilde{q}}^{\; p} \; , \; m_{\widetilde{u}}^{\; pr}\right] \; + \; c_{2\,\Upsilon} \; \mathsf{LF}_{2,2,0} \left[m_{\widetilde{q}}^{\; p} \; , \; m_{\widetilde{u}}^{\; pr}\right] \; + \; c_{2\,\Upsilon} \; \mathsf{LF}_{2,2,0} \left[m_{\widetilde{q}}^{\; p} \; , \; m_{\widetilde{u}}^{\; p}\right] \; + \; c_{2\,\Upsilon} \; \mathsf{LF}_{2,2,0} \left[m_{\widetilde{q}}^{\; p} \; , \; m_{\widetilde{u}}^{\; p}\right] \; + \; c_{2\,\Upsilon} \; \mathsf{LF}_{2,2,0} \left[m_{\widetilde{q}}^{\; p} \; , \; m_{\widetilde{u}}^{\; p}\right] \; + \; c_{2\,\Upsilon} \; \mathsf{LF}_{2,2,0} \left[m_{\widetilde{q}} \; , \; m_{\widetilde{u}}^{\; p}\right] \; + \; c_{2\,\Upsilon} \; \mathsf{LF}_{2,2,0} \left[m_{\widetilde{q}} \; , \; m_{\widetilde{u}}^{\; p}\right] \; + \; c_{2\,\Upsilon} \; \mathsf{LF}_{2,2,0} \left[m_{\widetilde{q}} \; , \; m_{\widetilde{u}}^{\; p}\right] \; + \; c_{2\,\Upsilon} \; \mathsf{LF}_{2,2,0} \left[m_{\widetilde{q}} \; , \; m_{\widetilde{u}}^{\; p}\right] \; + \; c_{2\,\Upsilon} \; \mathsf{LF}_{2,2,0} \left[m_{\widetilde{q}} \; , \; m_{\widetilde{u}}^{\; p}\right] \; + \; c_{2\,\Upsilon} \; \mathsf{LF}_{2,2,0} \left[m_{\widetilde{q}} \; , \; m_{\widetilde{u}}^{\; p}\right] \; + \; c_{2\,\Upsilon} \; \mathsf{LF}_{2,2,0} \left[m_{\widetilde{q}} \; , \; m_{\widetilde{u}}^{\; p}\right] \; + \; c_{2\,\Upsilon} \; \mathsf{LF}_{2,2,0} \left[m_{\widetilde{q}} \; , \; m_{\widetilde{u}}^{\; p}\right] \; + \; c_{2\,\Upsilon} \; \mathsf{LF}_{2,2,0} \left[m_{\widetilde{q}} \; , \; m_{\widetilde{u}}^{\; p}\right] \; + \; c_{2\,\Upsilon} \; \mathsf{LF}_{2,2,0} \left[m_{\widetilde{q}} \; , \; m_{\widetilde{u}}^{\; p}\right] \; + \; c_{2\,\Upsilon} \; \mathsf{LF}_{2,2,0} \left[m_{\widetilde{q}} \; , \; m_{\widetilde{u}}^{\; p}\right] \; + \; c_{2\,\Upsilon} \; \mathsf{LF}_{2,2,0} \left[m_{\widetilde{u}}^{\; p}\right] \; + \; c_{2\,\Upsilon} \; \mathsf{LF}_{2,2,0
                                                                                                                         6\ \mathsf{m}_{\mathsf{H}}^{2}\ \mathsf{c}_{2\,\gamma}\ \mathsf{g}_{2}^{\ 2}\ \left(\mathsf{s}_{\gamma}\ \overline{\mathsf{a}_{\mathsf{u}}}^{\mathsf{pr}}-\widetilde{\mu}\ \mathsf{c}_{\gamma}\ \overline{\mathsf{y}_{\mathsf{u}}}^{\mathsf{pr}}\right)\ \left(\mathsf{s}_{\gamma}\ \mathsf{a}_{\mathsf{u}}^{\ \mathsf{pr}}-\widetilde{\mu}\ \mathsf{c}_{\gamma}\ \mathsf{y}_{\mathsf{u}}^{\mathsf{pr}}\right)\ \mathsf{LF}_{3,1,0}\left[\mathsf{m}_{\tilde{\mathsf{q}}}^{\ \mathsf{p}},\ \mathsf{m}_{\tilde{\mathsf{u}}}^{\ \mathsf{r}}\right]-\mathsf{m}_{\tilde{\mathsf{u}}}^{\mathsf{pr}}\right]
                                                                                                                         m_{H}^{2} \; g_{2}^{\; 2} \; \left( -1 + 3 \; c_{2 \; \gamma} \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_{3,2,-1} \left[ m_{\widetilde{q}}^{\; p} \; , \; m_{\widetilde{u}}^{\; r} \right] \; - \left[ m_{\widetilde{q}}^{\; p} \; , \; m_{\widetilde{u}}^{\; r} \right] \; - \left[ m_{\widetilde{q}}^{\; p} \; , \; m_{\widetilde{u}}^{\; r} \right] \; - \left[ m_{\widetilde{q}}^{\; p} \; , \; m_{\widetilde{u}}^{\; r} \right] \; - \left[ m_{\widetilde{q}}^{\; p} \; , \; m_{\widetilde{u}}^{\; r} \right] \; - \left[ m_{\widetilde{q}}^{\; p} \; , \; m_{\widetilde{u}}^{\; r} \right] \; - \left[ m_{\widetilde{q}}^{\; p} \; , \; m_{\widetilde{u}}^{\; r} \right] \; - \left[ m_{\widetilde{q}}^{\; p} \; , \; m_{\widetilde{u}}^{\; r} \right] \; - \left[ m_{\widetilde{q}}^{\; p} \; , \; m_{\widetilde{u}}^{\; r} \right] \; - \left[ m_{\widetilde{q}}^{\; p} \; , \; m_{\widetilde{u}}^{\; r} \right] \; - \left[ m_{\widetilde{q}}^{\; p} \; , \; m_{\widetilde{u}}^{\; r} \right] \; - \left[ m_{\widetilde{q}}^{\; p} \; , \; m_{\widetilde{u}}^{\; r} \right] \; - \left[ m_{\widetilde{q}}^{\; p} \; , \; m_{\widetilde{u}}^{\; r} \right] \; - \left[ m_{\widetilde{q}}^{\; p} \; , \; m_{\widetilde{u}}^{\; r} \right] \; - \left[ m_{\widetilde{q}}^{\; p} \; , \; m_{\widetilde{u}}^{\; r} \right] \; - \left[ m_{\widetilde{q}}^{\; p} \; , \; m_{\widetilde{u}}^{\; r} \right] \; - \left[ m_{\widetilde{q}}^{\; p} \; , \; m_{\widetilde{u}}^{\; r} \right] \; - \left[ m_{\widetilde{q}}^{\; p} \; , \; m_{\widetilde{u}}^{\; r} \right] \; - \left[ m_{\widetilde{q}}^{\; p} \; , \; m_{\widetilde{u}}^{\; r} \right] \; - \left[ m_{\widetilde{q}}^{\; p} \; , \; m_{\widetilde{u}}^{\; r} \right] \; - \left[ m_{\widetilde{q}}^{\; p} \; , \; m_{\widetilde{u}}^{\; r} \right] \; - \left[ m_{\widetilde{q}}^{\; p} \; , \; m_{\widetilde{u}}^{\; r} \right] \; - \left[ m_{\widetilde{q}}^{\; p} \; , \; m_{\widetilde{u}}^{\; r} \right] \; - \left[ m_{\widetilde{q}}^{\; p} \; , \; m_{\widetilde{u}}^{\; r} \right] \; - \left[ m_{\widetilde{q}}^{\; p} \; , \; m_{\widetilde{u}}^{\; r} \right] \; - \left[ m_{\widetilde{q}}^{\; p} \; , \; m_{\widetilde{u}}^{\; r} \right] \; - \left[ m_{\widetilde{q}}^{\; p} \; , \; m_{\widetilde{u}}^{\; r} \right] \; - \left[ m_{\widetilde{q}}^{\; p} \; , \; m_{\widetilde{u}}^{\; r} \right] \; - \left[ m_{\widetilde{q}}^{\; p} \; , \; m_{\widetilde{u}}^{\; r} \right] \; - \left[ m_{\widetilde{q}}^{\; p} \; , \; m_{\widetilde{u}}^{\; r} \right] \; - \left[ m_{\widetilde{q}}^{\; p} \; , \; m_{\widetilde{u}}^{\; r} \right] \; - \left[ m_{\widetilde{q}}^{\; p} \; , \; m_{\widetilde{u}}^{\; r} \right] \; - \left[ m_{\widetilde{q}}^{\; p} \; , \; m_{\widetilde{u}}^{\; r} \right] \; - \left[ m_{\widetilde{q}}^{\; p} \; , \; m_{\widetilde{u}}^{\; r} \right] \; - \left[ m_{\widetilde{q}}^{\; p} \; , \; m_{\widetilde{u}}^{\; r} \right] \; - \left[ m_{\widetilde{q}}^{\; p} \; , \; m_{\widetilde{u}}^{\; r} \right] \; - \left[ m_{\widetilde{q}}^{\; p} \; , \; m_{\widetilde{u}}^{\; r} \right] \; - \left[ m_{\widetilde{q}}^{\; p} \; , \; m_{\widetilde{u}}^{\; r} \right] \; - \left[ m_{\widetilde{q}}^{\; p} \; , \; m_{\widetilde{u}}^{\; r} \right] \; - \left[ m_{\widetilde{q}}^{\; p} \; , \; m_{\widetilde{u}}^{\; r} \right] \; - \left[ m_{\widetilde{q}}^{\; p} \;
                                                                                                                         6\ \mathsf{m_H^2}\ c_{2\,\gamma}\ \mathsf{g_2}^2\ \left(\mathsf{s_\gamma}\ \overline{\mathsf{a_u}}^{\mathsf{pr}} - \widetilde{\mu}\ c_{\gamma}\ \overline{\mathsf{y_u}}^{\mathsf{pr}}\right)\ \left(\mathsf{s_\gamma}\ \mathsf{a_u}^{\mathsf{pr}} - \widetilde{\mu}\ c_{\gamma}\ \mathsf{y_u}^{\mathsf{pr}}\right)\ \mathsf{LF_{4,1,-1}}\big[\mathsf{m_{\tilde{q}}}^{\mathsf{p}},\ \mathsf{m_{\tilde{u}}}^{\mathsf{r}}\big] - \widetilde{\mathsf{m_{\tilde{q}}}}^{\mathsf{p}},\ \mathsf{m_{\tilde{u}}}^{\mathsf{r}}\big] - \widetilde{\mathsf{m_{\tilde{q}}}}^{\mathsf{p}} + \widetilde{\mathsf{m_{\tilde{q}}}^{\mathsf{p}}} + \widetilde{\mathsf{m_{\tilde{q}}}}^{\mathsf{p}} + \widetilde{\mathsf{m_{\tilde{q}}}^{\mathsf{p}}} + \widetilde{\mathsf{m_{\tilde{q}}}}^{\mathsf{p}} + \widetilde{\mathsf{m_{\tilde{q}}}^{\mathsf{p}}} + \widetilde{\mathsf{m_{\tilde{q}}}^{\mathsf{p}}} + \widetilde{\mathsf{m_{\tilde{q}}}^{\mathsf{p}}}^{\mathsf{p}} + \widetilde{\mathsf{m_{\tilde{q}}}}^{\mathsf{p}} + 
                                                                                                                         6\; m_H^2\; {s_{_{\rm Y}}}^2\; {c_{_{\rm Y}}}^2\; \overline{y_d}^{pr}\; y_d^{\,sr}\; \overline{y_u}^{st}\; y_u^{\,pt}\; LF_{2,1,0}\big\lceil m_{\tilde{q}}^{\,s}\,,\; m_{\tilde{q}}^{\,p}\big\rceil\; +
                                                                                                                         6\; m_H^2\; s_\gamma^{\;2}\; c_\gamma^{\;2}\; \overline{y_d}^{pr}\; y_d^{\;sr}\; \overline{y_u}^{st}\; y_u^{\;pt}\; LF_{3,1,-1}\left[\,m_{\bar{q}}^{\;s}\,,\; m_{\bar{q}}^{\;p}\,\right]\; +
                                                                                                                                2\; s_{\gamma}\; c_{2\;\gamma}\; c_{\gamma}\; m_{_{\! I \!\! D}}^{} \; \left(\; g_{1}^{\; 2} \; \left(\; -\; 4\; +\; 3\; c_{2\;\gamma}\; \right) \; +\; 3\; c_{2\;\gamma}\; g_{2}^{\; 2}\; \right) \; +\; 3\; m_{H}^{2}\; s_{4\;\gamma}\; s_{\gamma}^{\; 2} \; \left(\; g_{1}^{\; 2}\; +\; g_{2}^{\; 2}\; \right) \; \right) \; +\; 3\; m_{H}^{2}\; s_{4\;\gamma}\; s_{\gamma}^{\; 2} \; \left(\; g_{1}^{\; 2}\; +\; g_{2}^{\; 2}\; \right) \; +\; 3\; m_{H}^{2}\; s_{4\;\gamma}\; s_{\gamma}^{\; 2} \; \left(\; g_{1}^{\; 2}\; +\; g_{2}^{\; 2}\; \right) \; \right) \; +\; 3\; m_{H}^{2}\; s_{4\;\gamma}\; s_{\gamma}^{\; 2} \; \left(\; g_{1}^{\; 2}\; +\; g_{2}^{\; 2}\; \right) \; +\; 3\; m_{H}^{2}\; s_{4\;\gamma}\; s_{\gamma}^{\; 2} \; \left(\; g_{1}^{\; 2}\; +\; g_{2}^{\; 2}\; \right) \; +\; 3\; m_{H}^{2}\; s_{4\;\gamma}\; s_{\gamma}^{\; 2} \; \left(\; g_{1}^{\; 2}\; +\; g_{2}^{\; 2}\; \right) \; +\; 3\; m_{H}^{2}\; s_{4\;\gamma}\; s_{\gamma}^{\; 2} \; \left(\; g_{1}^{\; 2}\; +\; g_{2}^{\; 2}\; \right) \; +\; 3\; m_{H}^{2}\; s_{4\;\gamma}\; s_{\gamma}^{\; 2} \; \left(\; g_{1}^{\; 2}\; +\; g_{2}^{\; 2}\; \right) \; +\; 3\; m_{H}^{2}\; s_{4\;\gamma}\; s_{\gamma}^{\; 2} \; \left(\; g_{1}^{\; 2}\; +\; g_{2}^{\; 2}\; \right) \; +\; 3\; m_{H}^{2}\; s_{4\;\gamma}\; s_{\gamma}^{\; 2} \; \left(\; g_{1}^{\; 2}\; +\; g_{2}^{\; 2}\; \right) \; +\; 3\; m_{H}^{2}\; s_{4\;\gamma}\; s_{\gamma}^{\; 2} \; \left(\; g_{1}^{\; 2}\; +\; g_{2}^{\; 2}\; \right) \; +\; 3\; m_{H}^{2}\; s_{4\;\gamma}\; s_{\gamma}^{\; 2} \; \left(\; g_{1}^{\; 2}\; +\; g_{2}^{\; 2}\; \right) \; +\; 3\; m_{H}^{2}\; s_{4\;\gamma}\; s_{\gamma}^{\; 2} \; \left(\; g_{1}^{\; 2}\; +\; g_{2}^{\; 2}\; \right) \; +\; 3\; m_{H}^{2}\; s_{4\;\gamma}\; s_{\gamma}^{\; 2} \; \left(\; g_{1}^{\; 2}\; +\; g_{2}^{\; 2}\; \right) \; +\; 3\; m_{H}^{2}\; s_{4\;\gamma}\; s_{\gamma}^{\; 2} \; \left(\; g_{1}^{\; 2}\; +\; g_{2}^{\; 2}\; \right) \; +\; 3\; m_{H}^{2}\; s_{4\;\gamma}\; s_{\gamma}^{\; 2} \; \left(\; g_{1}^{\; 2}\; +\; g_{2}^{\; 2}\; +\; g_{2}^{\; 2}\; \right) \; +\; 3\; m_{H}^{2}\; s_{4\;\gamma}\; s_{\gamma}^{\; 2} \; \left(\; g_{1}^{\; 2}\; +\; g_{2}^{\; 2}\; +\; g_{2}^
                                                                                                                                                                                                                                                                                                  2\;\tilde{\mu}\;c_{\gamma}\;y_{u}^{\;pr}\;\left(c_{2\;\gamma}\;c_{\gamma}\;m_{_{\!\!\!\!/}}^{\;2}\;\left(g_{1}^{\;2}\;\left(-\,4\,+\,3\;c_{2\;\gamma}\right)\,+\,3\;c_{2\;\gamma}\;g_{2}^{\;2}\right)\,-\,3\;m_{H}^{2}\;s_{4\;\gamma}\;s_{\gamma}\;\left(g_{1}^{\;2}\,+\,g_{2}^{\;2}\right)\right)\right)\,+\,3\;c_{2\;\gamma}^{\;2}\;g_{2}^{\;2}
                                                                                                                                                                                                               \overline{a_{u}}^{\text{pr}} \left(2 \; \text{S}_{\text{Y}} \; a_{u}^{\; \text{pr}} \; \left(3 \; \text{m}_{\text{H}}^{2} \; \text{S}_{\text{4} \; \text{Y}} \; c_{\text{Y}} \; \left(g_{1}^{\; 2} \; + \; g_{2}^{\; 2}\right) \; + \; \text{S}_{\text{Y}} \; c_{2 \; \text{Y}} \; \text{m}_{\Phi}^{\; 2} \; \left(g_{1}^{\; 2} \; \left(-4 \; + \; 3 \; c_{2 \; \text{Y}}\right) \; + \; 3 \; c_{2 \; \text{Y}} \; g_{2}^{\; 2}\right)\right) \; + \; \left(3 \; \text{m}_{\text{H}}^{2} \; \text{S}_{\text{4}} \; \text{Y} \; c_{\text{Y}} \; \left(g_{1}^{\; 2} \; + \; g_{2}^{\; 2}\right) \; + \; 3 \; c_{2 \; \text{Y}} \; g_{2}^{\; 2}\right)\right) \; + \; \left(3 \; \text{m}_{\text{H}}^{2} \; \text{S}_{\text{4}} \; \text{Y} \; c_{\text{Y}} \; \left(g_{1}^{\; 2} \; + \; g_{2}^{\; 2}\right) \; + \; 3 \; c_{2 \; \text{Y}} \; g_{2}^{\; 2}\right)\right) \; + \; \left(3 \; \text{m}_{\text{H}}^{2} \; \text{S}_{\text{4}} \; \text{Y} \; c_{\text{Y}} \; \left(g_{1}^{\; 2} \; + \; g_{2}^{\; 2}\right) \; + \; 3 \; c_{2 \; \text{Y}} \; g_{2}^{\; 2}\right) \; + \; \left(3 \; \text{m}_{\text{H}}^{2} \; + \; g_{2}^{\; 2}\right) \; + \; \left(3 \; \text{m}_{\text{H}}^{2} \; + \; g_{2}^{\; 2}\right) \; + \; \left(3 \; \text{m}_{\text{H}}^{2} \; + \; g_{2}^{\; 2}\right) \; + \; \left(3 \; \text{m}_{\text{H}}^{2} \; + \; g_{2}^{\; 2}\right) \; + \; \left(3 \; \text{m}_{\text{H}}^{2} \; + \; g_{2}^{\; 2}\right) \; + \; \left(3 \; \text{m}_{\text{H}}^{2} \; + \; g_{2}^{\; 2}\right) \; + \; \left(3 \; \text{m}_{\text{H}}^{2} \; + \; g_{2}^{\; 2}\right) \; + \; \left(3 \; \text{m}_{\text{H}}^{2} \; + \; g_{2}^{\; 2}\right) \; + \; \left(3 \; \text{m}_{\text{H}}^{2} \; + \; g_{2}^{\; 2}\right) \; + \; \left(3 \; \text{m}_{\text{H}}^{2} \; + \; g_{2}^{\; 2}\right) \; + \; \left(3 \; \text{m}_{\text{H}}^{2} \; + \; g_{2}^{\; 2}\right) \; + \; \left(3 \; \text{m}_{\text{H}}^{2} \; + \; g_{2}^{\; 2}\right) \; + \; \left(3 \; \text{m}_{\text{H}}^{2} \; + \; g_{2}^{\; 2}\right) \; + \; \left(3 \; \text{m}_{\text{H}}^{2} \; + \; g_{2}^{\; 2}\right) \; + \; \left(3 \; \text{m}_{\text{H}}^{2} \; + \; g_{2}^{\; 2}\right) \; + \; \left(3 \; \text{m}_{\text{H}}^{2} \; + \; g_{2}^{\; 2}\right) \; + \; \left(3 \; \text{m}_{\text{H}}^{2} \; + \; g_{2}^{\; 2}\right) \; + \; \left(3 \; \text{m}_{\text{H}}^{2} \; + \; g_{2}^{\; 2}\right) \; + \; \left(3 \; \text{m}_{\text{H}}^{2} \; + \; g_{2}^{\; 2}\right) \; + \; \left(3 \; \text{m}_{\text{H}}^{2} \; + \; g_{2}^{\; 2}\right) \; + \; \left(3 \; \text{m}_{\text{H}}^{2} \; + \; g_{2}^{\; 2}\right) \; + \; \left(3 \; \text{m}_{\text{H}}^{2} \; + \; g_{2}^{\; 2}\right) \; + \; \left(3 \; \text{m}_{\text{H}}^{2} \; + \; g_{2}^{\; 2}\right) \; + \; \left(3 \; \text{m}_{\text{H}}^{2} \; + \; g_{2}^{\; 2}\right) \; + \; \left(3 \; \text{m}_{\text{H}}^{2} \; + \; g_{2}^{\; 2}\right) \; + \; \left(3 \; \text{m}_{\text{H}}^{2} \; + \; g_{2}^{\; 2}\right) \; + \; \left(3 \; \text{m}_{\text{H}}^{2} \; + \; g_{2}^{\; 2}\right) \; + \; \left(3 \; \text{m}_{\text{H}}^{2} \; + \; g_{2}^{\; 2}\right) \; + \; \left
                                                                                                                                                                                                                                                                                                  \widetilde{\mu} \ y_u^{\ pr} \ \left( - \ 3 \ m_H^2 \ s_{4 \ \gamma} \ c_{\gamma}^{\ 2} \ \left( g_1^{\ 2} + g_2^{\ 2} \right) \ - \ 2 \ s_{\gamma} \ c_{2 \ \gamma} \ c_{\gamma} \ m_{\Phi}^{\ 2} \ \left( g_1^{\ 2} \ \left( - \ 4 + \ 3 \ c_{2 \ \gamma} \right) \right) \ + \ 3 \ c_{2 \ \gamma} \ g_2^{\ 2} \right) \ + \ 3 \ c_{2 \ \gamma} \ g_2^{\ 2} \right) \ + \ 3 \ c_{2 \ \gamma} \ g_2^{\ 2} \right) \ + \ 3 \ c_{2 \ \gamma} \ g_2^{\ 2} \right) \ + \ 3 \ c_{2 \ \gamma} \ g_2^{\ 2} \ + \ 3 \ c_{2 \ \gamma} \ g_2^{\ 2} \ + \ 3 \ c_{2 \ \gamma} \ g_2^{\ 2} \ + \ 3 \ c_{2 \ \gamma} \ g_2^{\ 2} \ + \ 3 \ c_{2 \ \gamma} \ g_2^{\ 2} \ + \ 3 \ c_{2 \ \gamma} \ g_2^{\ 2} \ + \ 3 \ c_{2 \ \gamma} \ g_2^{\ 2} \ + \ 3 \ c_{2 \ \gamma} \ g_2^{\ 2} \ + \ 3 \ c_{2 \ \gamma} \ g_2^{\ 2} \ + \ 3 \ c_{2 \ \gamma} \ g_2^{\ 2} \ + \ 3 \ c_{2 \ \gamma} \ g_2^{\ 2} \ + \ 3 \ c_{2 \ \gamma} \ g_2^{\ 2} \ + \ 3 \ c_{2 \ \gamma} \ g_2^{\ 2} \ + \ 3 \ c_{2 \ \gamma} \ g_2^{\ 2} \ + \ 3 \ c_{2 \ \gamma} \ g_2^{\ 2} \ + \ 3 \ c_{2 \ \gamma} \ g_2^{\ 2} \ + \ 3 \ c_{2 \ \gamma} \ g_2^{\ 2} \ + \ 3 \ c_{2 \ \gamma} \ g_2^{\ 2} \ + \ 3 \ c_{2 \ \gamma} \ g_2^{\ 2} \ + \ 3 \ c_{2 \ \gamma} \ g_2^{\ 2} \ + \ 3 \ c_{2 \ \gamma} \ g_2^{\ 2} \ + \ 3 \ c_{2 \ \gamma} \ g_2^{\ 2} \ + \ 3 \ c_{2 \ \gamma} \ g_2^{\ 2} \ + \ 3 \ c_{2 \ \gamma} \ g_2^{\ 2} \ + \ 3 \ c_{2 \ \gamma} \ g_2^{\ 2} \ + \ 3 \ c_{2 \ \gamma} \ g_2^{\ 2} \ + \ 3 \ c_{2 \ \gamma} \ g_2^{\ 2} \ + \ 3 \ c_{2 \ \gamma} \ g_2^{\ 2} \ + \ 3 \ c_{2 \ \gamma} \ g_2^{\ 2} \ + \ 3 \ c_{2 \ \gamma} \ g_2^{\ 2} \ + \ 3 \ c_{2 \ \gamma} \ g_2^{\ 2} \ + \ 3 \ c_{2 \ \gamma} \ g_2^{\ 2} \ + \ 3 \ c_{2 \ \gamma} \ g_2^{\ 2} \ g_2^{\ 2} \ + \ 3 \ c_{2 \ \gamma} \ g_2^{\ 2} \ g_2^{\ 2} \ + \ 3 \ c_{2 \ \gamma} \ g_2^{\ 2} \ g
                                                                                                                                                                                                                                                                                                                                                                                        3 \; m_{H}^{2} \; s_{4 \; \text{Y}} \; s_{\text{Y}}^{\; 2} \; \left( g_{1}^{\; 2} + g_{2}^{\; 2} \right) \big) \, \right) \; \mathsf{LF}_{2,1,0} \left[ m_{\tilde{u}}^{\; r} \, , \; m_{\tilde{q}}^{\; p} \right] \; + \; \frac{3}{4} \; \frac{1}{m_{\text{D}}^{\; 2}} \; \left( g_{1}^{\; 2} + g_{2}^{\; 2} \right) \; . \label{eq:eq:superstandard}
                                                                                                                                                               \left(-2\; s_{\gamma}\; \overline{a_{u}}^{pr}\; a_{u}^{\;\;pr}\; \left(m_{H}^{2}\; s_{4\;\gamma}\; c_{\gamma}\; +\; s_{\gamma}\; m_{\Phi}^{\;2}\; c_{2\;\gamma}^{\;\;2}\right) \; +\; \widetilde{\mu}\; \left(m_{H}^{2}\; s_{4\;\gamma}\; c_{\gamma}^{\;\;2}\; +\; 2\; s_{\gamma}\; c_{\gamma}\; m_{\Phi}^{\;2}\; c_{2\;\gamma}^{\;\;2}\; -\; m_{H}^{2}\; s_{4\;\gamma}\; s_{\gamma}^{\;\;2}\right) \; +\; \widetilde{\mu}\; \left(m_{H}^{2}\; s_{4\;\gamma}\; c_{\gamma}^{\;\;2}\; +\; 2\; s_{\gamma}\; c_{\gamma}\; m_{\Phi}^{\;2}\; c_{2\;\gamma}^{\;\;2}\; -\; m_{H}^{2}\; s_{4\;\gamma}\; s_{\gamma}^{\;\;2}\right) \; +\; \widetilde{\mu}\; \left(m_{H}^{2}\; s_{4\;\gamma}\; c_{\gamma}^{\;\;2}\; +\; 2\; s_{\gamma}\; c_{\gamma}\; m_{\Phi}^{\;2}\; c_{2\;\gamma}^{\;\;2}\; -\; m_{H}^{2}\; s_{4\;\gamma}\; s_{\gamma}^{\;\;2}\right) \; +\; \widetilde{\mu}\; \left(m_{H}^{2}\; s_{4\;\gamma}\; c_{\gamma}\; +\; s_{\gamma}\; m_{\Phi}^{\;2}\; c_{2\;\gamma}^{\;\;2}\; -\; m_{H}^{2}\; s_{4\;\gamma}\; s_{\gamma}^{\;\;2}\right) \; +\; \widetilde{\mu}\; \left(m_{H}^{2}\; s_{4\;\gamma}\; c_{\gamma}\; +\; s_{\gamma}\; m_{\Phi}^{2}\; c_{2\;\gamma}^{\;\;2}\; -\; m_{H}^{2}\; s_{4\;\gamma}\; s_{\gamma}^{\;\;2}\right) \; +\; \widetilde{\mu}\; \left(m_{H}^{2}\; s_{4\;\gamma}\; c_{\gamma}\; +\; s_{\gamma}\; m_{\Phi}^{2}\; c_{2\;\gamma}^{\;\;2}\; -\; m_{H}^{2}\; s_{4\;\gamma}\; s_{\gamma}^{\;\;2}\right) \; +\; \widetilde{\mu}\; \left(m_{H}^{2}\; s_{4\;\gamma}\; c_{\gamma}\; +\; s_{\gamma}\; m_{\Phi}^{2}\; c_{2\;\gamma}^{\;\;2}\; -\; m_{H}^{2}\; s_{4\;\gamma}\; s_{\gamma}^{\;\;2}\right) \; +\; \widetilde{\mu}\; \left(m_{H}^{2}\; s_{4\;\gamma}\; c_{\gamma}\; +\; s_{\gamma}\; m_{\Phi}^{2}\; c_{2\;\gamma}\; +\; s_{\gamma}\; m_{\Phi}^{2}\; c_{2\;\gamma}^{\;\;2}\right) \; +\; \widetilde{\mu}\; \left(m_{H}^{2}\; s_{4\;\gamma}\; c_{\gamma}\; +\; s_{\gamma}\; m_{\Phi}^{2}\; c_{2\;\gamma}\; +\; s_{\gamma}\; m_{\Phi}
                                                                                                                                                                                                                                                  (\overline{y_u}^{pr} \ a_u^{pr} + y_u^{pr} \ \overline{a_u}^{pr}) \ + 2 \ c_{\curlyvee} \ \widetilde{\mu}^2 \ \overline{y_u}^{pr} \ y_u^{pr} \ \left( - \ c_{\curlyvee} \ m_{\bar{\Phi}}^2 \ c_{2 \, \curlyvee}^2 + m_H^2 \ s_{4 \, \curlyvee} \ s_{\curlyvee} \right) \left) \ LF_{3,1,-1} \left[ m_{\tilde{u}}{}^r \ , \ m_{\tilde{q}}{}^p \right] - m_{\tilde{u}}^2 \ c_{2 \, \curlyvee}^2 + m_{\tilde{u}}^2 \ c_{2 \, \curlyvee}^2 + m_{\tilde{u}}^2 \ s_{\tilde{u}}^2 \right] \ LF_{3,1,-1} \left[ m_{\tilde{u}}{}^r \ , \ m_{\tilde{q}}{}^p \right] - m_{\tilde{u}}^2 \ c_{2 \, \Upsilon}^2 + m_{\tilde{u}}^2 \ s_{\tilde{u}}^2 + m_{\tilde{u}}^2 \ s_{\tilde{u}}^2 \right] \ LF_{3,1,-1} \left[ m_{\tilde{u}}{}^r \ , \ m_{\tilde{q}}{}^p \right] - m_{\tilde{u}}^2 \ s_{\tilde{u}}^2 + m_{\tilde{u}}^2 \ s_{\tilde{u}}^2 + m_{\tilde{u}}^2 \ s_{\tilde{u}}^2 + m_{\tilde{u}}^2 \ s_{\tilde{u}}^2 \right] \ c_{\tilde{u}}^2 \ c_{\tilde{u}}^2 + m_{\tilde{u}}^2 \ s_{\tilde{u}}^2 + m_{\tilde{u}}^2 + m_{\tilde{u}}^2
                                                                                                                         m_{H}^{2} \, \left( \, c_{2 \, \gamma} \, g_{1}^{\, 2} \, \left( \, -\, 4 \, +\, 3 \, \, c_{2 \, \gamma} \, \right) \, + \, g_{2}^{\, 2} \, \left( \, -\, 2 \, +\, 3 \, \, c_{2 \, \gamma}^{\, 2} \, \right) \, \right) \, \left( \, s_{\gamma} \, \, \overline{a_{u}}^{pr} \, - \, \widetilde{\mu} \, \, c_{\gamma} \, \, \overline{y_{u}}^{pr} \, \right)
                                                                                                                                                            \left(\,\mathsf{s}_{\scriptscriptstyle Y}\;\mathsf{a}_{\mathsf{u}}{}^{\mathsf{pr}}\,-\,\widetilde{\mu}\;\mathsf{c}_{\scriptscriptstyle Y}\;\mathsf{y}_{\mathsf{u}}{}^{\mathsf{pr}}\right)\;\mathsf{LF}_{\mathsf{3,1,0}}\left[\,\mathsf{m}_{\tilde{\mathsf{u}}}{}^{\mathsf{r}}\,\mathsf{,}\;\mathsf{m}_{\tilde{\mathsf{q}}}{}^{\mathsf{p}}\,\right]\;\mathsf{+}
                                                                                                                                \frac{1}{2} \; m_{H}^{2} \; \left( c_{2 \, \gamma} \; g_{1}^{\; 2} + g_{2}^{\; 2} \; \left( 4 - 3 \; c_{2 \, \gamma} \right) \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_{3,2,-1} \left[ m_{\widetilde{u}}^{\; r} \, , \; m_{\widetilde{q}}^{\; p} \right] \; + \; C_{3,2,-1} \left[ m_{\widetilde{u}}^{\; r} \, , \; m_{\widetilde{q}}^{\; p} \right] \; + \; C_{3,2,-1} \left[ m_{\widetilde{u}}^{\; r} \, , \; m_{\widetilde{q}}^{\; p} \right] \; + \; C_{3,2,-1} \left[ m_{\widetilde{u}}^{\; r} \, , \; m_{\widetilde{q}}^{\; p} \right] \; + \; C_{3,2,-1} \left[ m_{\widetilde{u}}^{\; r} \, , \; m_{\widetilde{q}}^{\; p} \right] \; + \; C_{3,2,-1} \left[ m_{\widetilde{u}}^{\; r} \, , \; m_{\widetilde{q}}^{\; p} \right] \; + \; C_{3,2,-1} \left[ m_{\widetilde{u}}^{\; r} \, , \; m_{\widetilde{q}}^{\; p} \right] \; + \; C_{3,2,-1} \left[ m_{\widetilde{u}}^{\; r} \, , \; m_{\widetilde{q}}^{\; p} \right] \; + \; C_{3,2,-1} \left[ m_{\widetilde{u}}^{\; r} \, , \; m_{\widetilde{q}}^{\; p} \right] \; + \; C_{3,2,-1} \left[ m_{\widetilde{u}}^{\; r} \, , \; m_{\widetilde{q}}^{\; p} \right] \; + \; C_{3,2,-1} \left[ m_{\widetilde{u}}^{\; r} \, , \; m_{\widetilde{q}}^{\; p} \right] \; + \; C_{3,2,-1} \left[ m_{\widetilde{u}}^{\; r} \, , \; m_{\widetilde{q}}^{\; p} \right] \; + \; C_{3,2,-1} \left[ m_{\widetilde{u}}^{\; r} \, , \; m_{\widetilde{q}}^{\; p} \right] \; + \; C_{3,2,-1} \left[ m_{\widetilde{u}}^{\; r} \, , \; m_{\widetilde{q}}^{\; p} \right] \; + \; C_{3,2,-1} \left[ m_{\widetilde{u}}^{\; r} \, , \; m_{\widetilde{q}}^{\; p} \, , \; m_{\widetilde{q}}^{\; p} \, \right] \; + \; C_{3,2,-1} \left[ m_{\widetilde{u}}^{\; r} \, , \; m_{\widetilde{q}}^{\; p} \, , \; m_{\widetilde
                                                                                                                             3\ m_H^2\ \left(\,c_{2\,\gamma}\ g_{1}^{\ 2}\ \left(\,-\,2\,+\,3\ c_{2\,\gamma}^{\ }\,\right)\right.\,+\,g_{2}^{\ 2}\ \left(\,-\,2\,+\,3\ c_{2\,\gamma}^{\ 2}\,\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_{4,1,-1}}\!\left[\,\mathsf{m}_{\tilde{u}}^{\;\;r}\,,\;\mathsf{m}_{\tilde{q}}^{\;\;p}\,\right]\;-
                                                                                                                         2\; m_{H}^{2}\; \left(-2\; {g_{2}}^{2}\; +\; 3\; {c_{2\;\gamma}}^{2}\; \left({g_{1}}^{2}\; +\; {g_{2}}^{2}\right)\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[m_{\widetilde{u}}^{\;\;r}\; ,\; m_{\widetilde{q}}^{\;p}\right]\; -\; \widetilde{\mu}\; c_{\gamma}\; \overline{y_{u}}^{pr}
                                                                                                                         3 s_{\gamma}^{4} \overline{y_{u}}^{pr} \overline{y_{u}}^{st} y_{u}^{pt} y_{u}^{sr} LF_{1,1,0}[m_{\tilde{u}}^{r}, m_{\tilde{u}}^{t}] -
                                                                                                                                \frac{3}{4} g_1^2 c_2_{\gamma}^2 (g_1^2 + g_2^2) (c_{\gamma}^2 + s_{\gamma}^2) LF_{2,1,-1}[\tilde{\mu}, m_1] -
                                                                                                                                \frac{1}{2} \; m_{1} \; \widetilde{\mu} \; g_{1}^{2} \; \frac{1}{m_{0}^{2}} \; \left(g_{1}^{2} + g_{2}^{\; 2}\right) \; \left(m_{H}^{2} \; s_{4 \; \gamma} \; c_{\gamma}^{\; 2} + 2 \; s_{\gamma} \; c_{\gamma} \; m_{\Phi}^{\; 2} \; c_{2 \; \gamma}^{\; 2} - m_{H}^{2} \; s_{4 \; \gamma} \; s_{\gamma}^{\; 2}\right) \; LF_{2,1,0} \left[\widetilde{\mu} \; , \; m_{1} \right] \; + \left(m_{1}^{2} \; s_{4 \; \gamma} \; s_{\gamma}^{\; 2}\right) \; K_{1} \; \left(m_{1}^{2} \; s_{4 \; \gamma} \; s_{\gamma}^{\; 2}\right) \; K_{2,1,0} \left[\widetilde{\mu} \; , \; m_{1} \right] \; + \left(m_{1}^{2} \; s_{4 \; \gamma} \; s_{\gamma}^{\; 2}\right) \; K_{1} \; \left(m_{1}^{2} \; s_{4 \; \gamma} \; s_{\gamma}^{\; 2}\right) \; K_{2,1,0} \left[\widetilde{\mu} \; , \; m_{1} \; s_{4 \; \gamma} \; s_{\gamma}^{\; 2}\right] \; K_{2,1,0} \left[\widetilde{\mu} \; , \; m_{1} \; s_{4 \; \gamma} \; s_{\gamma}^{\; 2}\right] \; K_{2,1,0} \left[\widetilde{\mu} \; , \; m_{1} \; s_{4 \; \gamma} \; s_{\gamma}^{\; 2}\right] \; K_{2,1,0} \left[\widetilde{\mu} \; , \; m_{1} \; s_{4 \; \gamma} \; s_{\gamma}^{\; 2}\right] \; K_{2,1,0} \left[\widetilde{\mu} \; , \; m_{1} \; s_{4 \; \gamma} \; s_{\gamma}^{\; 2}\right] \; K_{2,1,0} \left[\widetilde{\mu} \; , \; m_{1} \; s_{4 \; \gamma} \; s_{\gamma}^{\; 2}\right] \; K_{2,1,0} \left[\widetilde{\mu} \; , \; m_{1} \; s_{4 \; \gamma} \; s_{\gamma}^{\; 2}\right] \; K_{2,1,0} \left[\widetilde{\mu} \; , \; m_{1} \; s_{4 \; \gamma} \; s_{\gamma}^{\; 2}\right] \; K_{2,1,0} \left[\widetilde{\mu} \; , \; m_{1} \; s_{4 \; \gamma} \; s_{\gamma}^{\; 2}\right] \; K_{2,1,0} \left[\widetilde{\mu} \; , \; m_{1} \; s_{4 \; \gamma} \; s_{\gamma}^{\; 2}\right] \; K_{2,1,0} \left[\widetilde{\mu} \; , \; m_{1} \; s_{4 \; \gamma} \; s_{\gamma}^{\; 2}\right] \; K_{2,1,0} \left[\widetilde{\mu} \; , \; m_{1} \; s_{4 \; \gamma} \; s_{\gamma}^{\; 2}\right] \; K_{2,1,0} \left[\widetilde{\mu} \; , \; m_{1} \; s_{4 \; \gamma} \; s_{\gamma}^{\; 2}\right] \; K_{2,1,0} \left[\widetilde{\mu} \; , \; m_{1} \; s_{4 \; \gamma} \; s_{\gamma}^{\; 2}\right] \; K_{2,1,0} \left[\widetilde{\mu} \; , \; m_{1} \; s_{4 \; \gamma} \; s_{\gamma}^{\; 2}\right] \; K_{2,1,0} \left[\widetilde{\mu} \; , \; m_{1} \; s_{4 \; \gamma} \; s_{\gamma}^{\; 2}\right] \; K_{2,1,0} \left[\widetilde{\mu} \; , \; m_{1} \; s_{4 \; \gamma} \; s_{\gamma}^{\; 2}\right] \; K_{2,1,0} \left[\widetilde{\mu} \; , \; m_{1} \; s_{4 \; \gamma} \; s_{\gamma}^{\; 2}\right] \; K_{2,1,0} \left[\widetilde{\mu} \; , \; m_{1} \; s_{4 \; \gamma} \; s_{\gamma}^{\; 2}\right] \; K_{2,1,0} \left[\widetilde{\mu} \; , \; m_{1} \; s_{4 \; \gamma} \; s_{\gamma}^{\; 2}\right] \; K_{2,1,0} \left[\widetilde{\mu} \; , \; m_{1} \; s_{\gamma}^{\; 2}\right] \; K_{2,1,0} \left[\widetilde{\mu} \; , \; m_{1} \; s_{\gamma}^{\; 2}\right] \; K_{2,1,0} \left[\widetilde{\mu} \; , \; m_{1} \; s_{\gamma}^{\; 2}\right] \; K_{2,1,0} \left[\widetilde{\mu} \; , \; m_{1} \; s_{\gamma}^{\; 2}\right] \; K_{2,1,0} \left[\widetilde{\mu} \; , \; m_{1} \; s_{\gamma}^{\; 2}\right] \; K_{2,1,0} \left[\widetilde{\mu} \; , \; m_{1} \; s_{\gamma}^{\; 2}\right] \; K_{2,1,0} \left[\widetilde{\mu} \; , \; m_{1} \; s_{\gamma}^{\; 2}\right] \; K_{2,1,0} \left[\widetilde{\mu} \; , \; m_{1} \; s_{\gamma}^{\; 2}\right] \; K_{2,1,0} \left[\widetilde{
                                                                                                                                \frac{1}{2} \ g_{1}{}^{2} \ c_{2 \, \gamma}{}^{2} \ \left(g_{1}{}^{2} + g_{2}{}^{2}\right) \ \left(c_{\gamma}{}^{2} + s_{\gamma}{}^{2}\right) \ LF_{3,1,-2} \left[\,\widetilde{\mu} \, , \, m_{1} \, \right] \ + \frac{1}{2} \ g_{1}{}^{2} \ \frac{1}{m_{\text{B}}{}^{2}} \ \left(g_{1}{}^{2} + g_{2}{}^{2}\right)
                                                                                                                                                            \left(\mathsf{m_{1}}\;\mathsf{m_{H}^{2}}\;\mathsf{s_{4}}_{\gamma}\;\widetilde{\mu}\;\left(\mathsf{c_{\gamma}}^{2}-\mathsf{s_{\gamma}}^{2}\right)\;+\;2\;\mathsf{m_{\Phi}}^{2}\;\mathsf{c_{2}}_{\gamma}^{\;\;2}\;\left(2\;\mathsf{m_{H}^{2}}\;\left(\mathsf{c_{\gamma}}^{2}+\mathsf{s_{\gamma}}^{2}\right)\;+\;\mathsf{m_{1}}\;\mathsf{s_{\gamma}}\;\widetilde{\mu}\;\mathsf{c_{\gamma}}\right)\;\right)\;\mathsf{LF_{3,1,-1}}\left[\;\widetilde{\mu}\;,\;\mathsf{m_{1}}\right]\;+\;2\;\mathsf{m_{2}}^{2}\;\mathsf{c_{2}}_{\gamma}^{\;\;2}\;\left(2\;\mathsf{m_{2}^{2}}\;\left(\mathsf{c_{\gamma}}^{2}+\mathsf{s_{\gamma}}^{2}\right)\;+\;\mathsf{m_{1}}\;\mathsf{s_{\gamma}}\;\widetilde{\mu}\;\mathsf{c_{\gamma}}\right)\;\right)\;\mathsf{LF_{3,1,-1}}\left[\;\widetilde{\mu}\;,\;\mathsf{m_{1}}\right]\;+\;2\;\mathsf{m_{2}}^{2}\;\mathsf{c_{2}}_{\gamma}^{\;\;2}\;\left(\mathsf{c_{1}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;\mathsf{c_{2}}\;
                                                                                                                             2\; m_1\; m_H^2\; s_\gamma\; \widetilde{\mu}\; c_\gamma\; g_1^{\;2}\; c_{2\;\gamma}^{\;2}\; \left(g_1^{\;2}+g_2^{\;2}\right)\; \mathsf{LF}_{3,1,0}\left[\,\widetilde{\mu}\,,\; m_1\,\right] \; -\frac{3}{2}\; m_H^2\; g_1^{\;4}\; \mathsf{LF}_{3,2,-2}\left[\,\widetilde{\mu}\,,\; m_1\,\right] \; \left(\,c_\gamma^{\;2}+s_\gamma^{\;2}\right)^{\;2}\; d_{1}^{\;2} \; d_{2}^{\;2} \; d_{2}^{\;2}
                                                                                                                                \frac{1}{2}\; m_{H}^{2}\; g_{1}^{\;\;4}\; \left(-\,3\; m_{1}^{\;\;2}\; \left(\,c_{\gamma}^{\;\;2}\,+\,s_{\gamma}^{\;\;2}\,\right)^{\,2}\,-\,20\; m_{1}\; s_{\gamma}\; \widetilde{\mu}\; c_{\gamma}\; \left(\,c_{\gamma}^{\;\;2}\,+\,s_{\gamma}^{\;\;2}\,\right) \;-\,8\; s_{\gamma}^{\;\;2}\; \widetilde{\mu}^{2}\; c_{\gamma}^{\;\;2}\right)\; \text{LF}_{3,2,-1}\left[\,\widetilde{\mu}\,,\,\,m_{1}\,\right] \;-\,20\; m_{1}^{\;\;2}\; c_{\gamma}^{\;\;2}\; \left(\,c_{\gamma}^{\;\;2}\,+\,s_{\gamma}^{\;\;2}\,\right) \;-\,8\; s_{\gamma}^{\;\;2}\; \widetilde{\mu}^{2}\; c_{\gamma}^{\;\;2}\right)\; \text{LF}_{3,2,-1}\left[\,\widetilde{\mu}\,,\,\,m_{1}\,\right] \;-\,20\; m_{1}^{\;\;2}\; c_{\gamma}^{\;\;2}\; \left(\,c_{\gamma}^{\;\;2}\,+\,s_{\gamma}^{\;\;2}\,\right) \;-\,8\; s_{\gamma}^{\;\;2}\; \widetilde{\mu}^{2}\; c_{\gamma}^{\;\;2}\right)\; \text{LF}_{3,2,-1}\left[\,\widetilde{\mu}\,,\,\,m_{1}\,\right] \;-\,20\; m_{1}^{\;\;2}\; c_{\gamma}^{\;\;2}\; c_{\gamma}^{\;\;2
                                                                                                                         4 \, m_H^2 \, g_1^4 \, m_1^2 \, s_{\gamma}^2 \, \tilde{\mu}^2 \, c_{\gamma}^2 \, LF_{3,2,0} [\, \tilde{\mu} \,, \, m_1 \,] -
                                                                                                                                2\; m_{1}\; m_{H}^{2}\; s_{\gamma}\; \widetilde{\mu}\; c_{\gamma}\; g_{1}^{\;2}\; \left(g_{2}^{\;2} - 3\; c_{2\;\gamma}^{\;2}\; \left(g_{1}^{\;2} + g_{2}^{\;2}\right)\right)\; \mathsf{LF_{4,1,-1}}\left[\,\widetilde{\mu}\,,\; m_{1}\,\right]\; + \\
                                                                                                                         m_{H}^{2} g_{1}^{4} LF_{4,2,-3} [\tilde{\mu}, m_{1}] (c_{Y}^{2} + s_{Y}^{2})^{2} +
                                                                                                                      \mathsf{m_{H}^{2}\,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}}\,[\,\widetilde{\mu}\,,\,\,m_{1}\,]\,\,+\,\,c_{\gamma}^{\,2}\,\left(c_{\gamma}^{\,2}+s_{\gamma}^{\,2}\right)^{\,2}+8\,\,m_{1}\,\,s_{\gamma}\,\widetilde{\mu}\,\,c_{\gamma}^{\,2}\left(c_{\gamma}^{\,2}+s_{\gamma}^{\,2}\right)+4\,\,s_{\gamma}^{\,2}\,\widetilde{\mu}^{2}\,\,c_{\gamma}^{\,2}\right)\,\,\mathsf{LF_{4,2,-2}}\,[\,\widetilde{\mu}\,,\,\,m_{1}\,]\,\,+\,\,c_{\gamma}^{\,2}\,\left(c_{\gamma}^{\,2}+s_{\gamma}^{\,2}\right)^{\,2}+8\,\,m_{1}\,\,s_{\gamma}\,\widetilde{\mu}\,\,c_{\gamma}^{\,2}\left(c_{\gamma}^{\,2}+s_{\gamma}^{\,2}\right)+4\,\,s_{\gamma}^{\,2}\,\widetilde{\mu}^{2}\,\,c_{\gamma}^{\,2}\right)\,\,\mathsf{LF_{4,2,-2}}\,[\,\widetilde{\mu}\,,\,\,m_{1}\,]\,\,+\,\,c_{\gamma}^{\,2}\,\left(c_{\gamma}^{\,2}+s_{\gamma}^{\,2}\right)^{\,2}+8\,\,m_{1}\,\,s_{\gamma}\,\widetilde{\mu}\,\,c_{\gamma}^{\,2}\left(c_{\gamma}^{\,2}+s_{\gamma}^{\,2}\right)^{\,2}+8\,\,m_{1}\,\,s_{\gamma}\,\widetilde{\mu}\,\,c_{\gamma}^{\,2}\left(c_{\gamma}^{\,2}+s_{\gamma}^{\,2}\right)^{\,2}+8\,\,m_{1}\,\,s_{\gamma}\,\widetilde{\mu}\,\,c_{\gamma}^{\,2}\left(c_{\gamma}^{\,2}+s_{\gamma}^{\,2}\right)^{\,2}+8\,\,m_{1}\,\,s_{\gamma}\,\widetilde{\mu}\,\,c_{\gamma}^{\,2}\left(c_{\gamma}^{\,2}+s_{\gamma}^{\,2}\right)^{\,2}+8\,\,m_{1}\,\,s_{\gamma}\,\widetilde{\mu}\,\,c_{\gamma}^{\,2}\left(c_{\gamma}^{\,2}+s_{\gamma}^{\,2}\right)^{\,2}+8\,\,m_{1}\,\,s_{\gamma}\,\widetilde{\mu}\,\,c_{\gamma}^{\,2}\left(c_{\gamma}^{\,2}+s_{\gamma}^{\,2}\right)^{\,2}+8\,\,m_{1}\,\,s_{\gamma}\,\widetilde{\mu}\,\,c_{\gamma}^{\,2}\left(c_{\gamma}^{\,2}+s_{\gamma}^{\,2}\right)^{\,2}+8\,\,m_{1}\,\,s_{\gamma}\,\widetilde{\mu}\,\,c_{\gamma}^{\,2}\left(c_{\gamma}^{\,2}+s_{\gamma}^{\,2}\right)^{\,2}+8\,\,m_{1}\,\,s_{\gamma}\,\widetilde{\mu}\,\,c_{\gamma}^{\,2}\left(c_{\gamma}^{\,2}+s_{\gamma}^{\,2}\right)^{\,2}+8\,\,m_{1}\,\,s_{\gamma}\,\widetilde{\mu}\,\,c_{\gamma}^{\,2}\left(c_{\gamma}^{\,2}+s_{\gamma}^{\,2}\right)^{\,2}+8\,\,m_{1}\,\,s_{\gamma}\,\widetilde{\mu}\,\,c_{\gamma}^{\,2}\left(c_{\gamma}^{\,2}+s_{\gamma}^{\,2}\right)^{\,2}+8\,\,m_{1}\,\,s_{\gamma}\,\widetilde{\mu}\,\,c_{\gamma}^{\,2}\left(c_{\gamma}^{\,2}+s_{\gamma}^{\,2}\right)^{\,2}+8\,\,m_{1}\,\,s_{\gamma}\,\widetilde{\mu}\,\,c_{\gamma}^{\,2}\left(c_{\gamma}^{\,2}+s_{\gamma}^{\,2}\right)^{\,2}+8\,\,m_{1}\,\,s_{\gamma}\,\widetilde{\mu}\,\,c_{\gamma}^{\,2}\left(c_{\gamma}^{\,2}+s_{\gamma}^{\,2}\right)^{\,2}+8\,\,m_{1}\,\,s_{\gamma}\,\widetilde{\mu}\,\,c_{\gamma}^{\,2}\left(c_{\gamma}^{\,2}+s_{\gamma}^{\,2}\right)^{\,2}+8\,\,m_{1}\,\,s_{\gamma}\,\widetilde{\mu}\,\,c_{\gamma}^{\,2}\left(c_{\gamma}^{\,2}+s_{\gamma}^{\,2}\right)^{\,2}+8\,\,m_{1}\,\,c_{\gamma}\,\widetilde{\mu}\,\,c_{\gamma}^{\,2}\left(c_{\gamma}^{\,2}+s_{\gamma}^{\,2}\right)^{\,2}+8\,\,m_{1}\,\,c_{\gamma}\,\widetilde{\mu}\,\,c_{\gamma}^{\,2}\left(c_{\gamma}^{\,2}+s_{\gamma}^{\,2}\right)^{\,2}+8\,\,m_{1}\,\,c_{\gamma}\,\widetilde{\mu}\,\,c_{\gamma}^{\,2}\left(c_{\gamma}^{\,2}+s_{\gamma}^{\,2}\right)^{\,2}+8\,\,m_{1}\,\,c_{\gamma}\,\widetilde{\mu}\,\,c_{\gamma}^{\,2}\left(c_{\gamma}^{\,2}+s_{\gamma}^{\,2}\right)^{\,2}+8\,\,m_{1}\,\,c_{\gamma}\,\widetilde{\mu}\,\,c_{\gamma}^{\,2}\left(c_{\gamma}^{\,2}+s_{\gamma}^{\,2}\right)^{\,2}+8\,\,m_{1}\,\,c_{\gamma}\,\widetilde{\mu}\,\,c_{\gamma}^{\,2}\left(c_{\gamma}^{\,2}+s_{\gamma}^{\,2}\right)^{\,2}+8\,\,m_{1}\,\,c_{\gamma}^{\,2}\left(c_{\gamma}^{\,2}+s_{\gamma}^{\,2}\right)^{\,2}+8\,\,m_{1}\,\,c_{\gamma}^{\,2}\left
                                                                                                                         4 m_H^2 g_1^4 m_1^2 s_{\gamma}^2 \widetilde{\mu}^2 c_{\gamma}^2 LF_{4,2,-1}[\widetilde{\mu}, m_1] +
                                                                                                                                \frac{2}{3}\; m_{H}^{2}\; g_{1}^{\;2}\; \left(-\,2\; g_{2}^{\;2}\,+\,3\; c_{2\,\gamma}^{\;\;2}\; \left(g_{1}^{\;2}\,+\,g_{2}^{\;2}\right)\,\right)\; \left(c_{\gamma}^{\;2}\,+\,s_{\gamma}^{\;2}\right)\; \text{LF}_{5,1,-3}\left[\,\widetilde{\mu}\,,\,m_{1}\,\right]\; +\, \left(-\,2\, g_{2}^{\;2}\,+\,3\, c_{2\,\gamma}^{\;2}\, \left(g_{1}^{\;2}\,+\,g_{2}^{\;2}\right)\,\right)\; \left(c_{\gamma}^{\;2}\,+\,s_{\gamma}^{\;2}\right)\; \text{LF}_{5,1,-3}\left[\,\widetilde{\mu}\,,\,m_{1}\,\right]\; +\, \left(-\,2\, g_{2}^{\;2}\,+\,3\, c_{2\,\gamma}^{\;2}\,+\,3\, c_{2\,\gamma}^{\;2}\,\right)\; \left(g_{1}^{\;2}\,+\,g_{2}^{\;2}\right)\; \left(c_{\gamma}^{\;2}\,+\,s_{\gamma}^{\;2}\right)\; \text{LF}_{5,1,-3}\left[\,\widetilde{\mu}\,,\,m_{1}\,\right]\; +\, \left(-\,2\, g_{2}^{\;2}\,+\,3\, c_{2\,\gamma}^{\;2}\,+\,3\, c_{2\,\gamma}^{\;2}\,+\,3\,
                                                                                                                                \frac{4}{3} \; \mathsf{m_1} \; \mathsf{m_H^2} \; \mathsf{s_{\scriptscriptstyle Y}} \; \widetilde{\mu} \; \mathsf{c_{\scriptscriptstyle Y}} \; \mathsf{g_1}^2 \; \left( - \; 2 \; \mathsf{g_2}^2 \; + \; 3 \; \mathsf{c_{2_{\scriptscriptstyle Y}}}^2 \; \left( \mathsf{g_1}^2 \; + \; \mathsf{g_2}^2 \right) \right) \; \mathsf{LF_{5,1,-2}} \left[ \, \widetilde{\mu} \, , \; \mathsf{m_1} \, \right] \; - \; \mathsf{hop} \; \mathsf{m_1} \; \mathsf{m_2} \; \mathsf{m_3} \; \mathsf{m_4} \; \mathsf{m_4} \; \mathsf{m_5} \; \mathsf{m_5} \; \mathsf{m_6} \; \mathsf{m_6} \; \mathsf{m_7} \; \mathsf{m_7} \; \mathsf{m_8} \; \mathsf
                                                                                                                                \frac{9}{4} g_2^2 c_{2\gamma}^2 (g_{1}^2 + g_{2}^2) (c_{\gamma}^2 + s_{\gamma}^2) LF_{2,1,-1}[\tilde{\mu}, m_2] -
                                                                                                                                \frac{3}{2} \; m_{2} \; \widetilde{\mu} \; g_{2}^{2} \; \frac{1}{m_{0}^{2}} \; \left( g_{1}^{2} + g_{2}^{2} \right) \; \left( m_{H}^{2} \; s_{4 \; \gamma} \; c_{\gamma}^{\; 2} + 2 \; s_{\gamma} \; c_{\gamma} \; m_{\Phi}^{\; 2} \; c_{2 \; \gamma}^{\; 2} - m_{H}^{2} \; s_{4 \; \gamma} \; s_{\gamma}^{\; 2} \right) \; LF_{2,1,0} \left[ \widetilde{\mu} \; , \; m_{2} \right] \; + \left[ m_{2}^{2} \; m_{2}^{2
                                                                                                                                \frac{3}{2} g_2^2 c_{2\gamma}^2 (g_1^2 + g_2^2) (c_{\gamma}^2 + s_{\gamma}^2) LF_{3,1,-2} [\tilde{\mu}, m_2] +
                                                                                                                                    \frac{1}{6} \ g_{2}^{2} \ \frac{1}{m_{_{\mathbb{D}}}^{2}} \ \left( 4 \ m_{H}^{2} \ m_{_{\mathbb{D}}}^{\ 2} \ \left( -8 \ g_{2}^{\ 2} + 9 \ c_{2 \,_{\text{\scriptsize Y}}}^{\ 2} \ \left( g_{1}^{\ 2} + g_{2}^{\ 2} \right) \right) \ \left( c_{_{\text{\scriptsize Y}}}^{\ 2} + s_{_{\text{\scriptsize Y}}}^{\ 2} \right) \ +
                                                                                                                                                                                                               9 \; \mathsf{m_2} \; \widetilde{\mu} \; \left( \mathsf{g_1}^2 + \mathsf{g_2}^2 \right) \; \left( \mathsf{m_H^2} \; \mathsf{s_4}_{\, \Upsilon} \; \mathsf{c_{\gamma}}^2 + 2 \; \mathsf{s_{\gamma}} \; \mathsf{c_{\gamma}} \; \mathsf{m_{\Phi}}^2 \; \mathsf{c_{2\, \gamma}}^2 - \mathsf{m_H^2} \; \mathsf{s_4}_{\, \Upsilon} \; \mathsf{s_{\gamma}}^2 \right) \right) \; \mathsf{LF_{3,1,-1}} \left[ \widetilde{\mu} \; , \; \mathsf{m_2} \right] \; + \; \mathsf{m_2} \; \mathsf{m_2} \; \mathsf{m_3} \; 
                                                                                                                                \frac{2}{3} m<sub>2</sub> m<sub>H</sub><sup>2</sup> s<sub>Y</sub> \tilde{\mu} c<sub>Y</sub> g<sub>2</sub><sup>2</sup> \left(-8 g<sub>2</sub><sup>2</sup> + 9 c<sub>2 Y</sub><sup>2</sup> \left(g_1^2 + g_2^2\right)\right) LF<sub>3,1,0</sub> [\tilde{\mu}, m<sub>2</sub>] -
                                                                                                                                \frac{1}{6}\;{\rm m_{H}^{2}\;g_{2}}^{4}\;\left(69\;{c_{\gamma}}^{4}+16\;{s_{\gamma}}^{2}+69\;{s_{\gamma}}^{4}+{c_{\gamma}}^{2}\;\left(16-6\;{s_{\gamma}}^{2}\right)\right)\;{\rm LF_{3,2,-2}}\left[\,\widetilde{\mu}\,,\,{\rm m_{2}}\,\right]\;+
                                                                                                                                    \frac{1}{6} \, \, \mathsf{m_H^2 \, g_2}^4 \, \left( -\, 3 \, \, \mathsf{m_2}^2 \, \, \left( 3 \, \, \mathsf{c_{\gamma}}^4 \, + \, 38 \, \, \mathsf{s_{\gamma}}^2 \, \, \mathsf{c_{\gamma}}^2 \, + \, 3 \, \, \mathsf{s_{\gamma}}^4 \right) \, - \, 4 \, \, \mathsf{m_2 \, s_{\gamma}} \, \, \widetilde{\mu} \, \, \, \mathsf{c_{\gamma}} \, \left( 8 \, + \, 51 \, \, \mathsf{c_{\gamma}}^2 \, + \, 51 \, \, \mathsf{s_{\gamma}}^2 \right) \, - \, 72 \, \, \mathsf{s_{\gamma}}^2 \, \, \widetilde{\mu}^2 \, \, \mathsf{c_{\gamma}}^2 \right) \, \, .
                                                                                                                                                     \mathsf{LF_{3,2,-1}}[\,\widetilde{\mu}\,,\,\mathsf{m}_2\,]\,\,-\,\mathsf{12}\;\mathsf{m}_\mathsf{H}^2\;\mathsf{g_2}^4\;\mathsf{m}_2^{\,2}\;\mathsf{s}_{\scriptscriptstyle Y}^{\,2}\;\widetilde{\mu}^2\;\mathsf{c}_{\scriptscriptstyle Y}^{\,2}\;\mathsf{LF_{3,2,0}}[\,\widetilde{\mu}\,,\,\mathsf{m}_2\,]\,\,-\,
                                                                                                                         3 m_H^2 g_2^2 \left(-3 g_2^2+4 c_2^2 \left(g_1^2+g_2^2\right)\right) \left(c_{\gamma}^2+s_{\gamma}^2\right) LF_{4,1,-2}[\tilde{\mu}, m_2] -
                                                                                                                         2\; m_{2}\; m_{H}^{2}\; s_{\gamma}\; \widetilde{\mu}\; c_{\gamma}\; g_{2}^{\;2}\; \left(-7\; g_{2}^{\;2} + 9\; c_{2\;\gamma}^{\;2}\; \left(g_{1}^{\;2} + g_{2}^{\;2}\right)\right)\; \text{LF}_{4,1,-1}\left[\,\widetilde{\mu}\,,\; m_{2}\,\right]\; + \left(-7\; g_{2}^{\;2} + 9\; c_{2\;\gamma}^{\;2}\; \left(g_{1}^{\;2} + g_{2}^{\;2}\right)\right)\; \text{LF}_{4,1,-1}\left[\,\widetilde{\mu}\,,\; m_{2}\,\right]\; + \left(-7\; g_{2}^{\;2} + 9\; c_{2\;\gamma}^{\;2}\; \left(g_{1}^{\;2} + g_{2}^{\;2}\right)\right)\; \text{LF}_{4,1,-1}\left[\,\widetilde{\mu}\,,\; m_{2}\,\right]\; + \left(-7\; g_{2}^{\;2} + 9\; c_{2\;\gamma}^{\;2}\; \left(g_{1}^{\;2} + g_{2}^{\;2}\right)\right)\; \text{LF}_{4,1,-1}\left[\,\widetilde{\mu}\,,\; m_{2}\,\right]\; + \left(-7\; g_{2}^{\;2} + 9\; c_{2\;\gamma}^{\;2}\; \left(g_{1}^{\;2} + g_{2}^{\;2}\right)\right)\; \text{LF}_{4,1,-1}\left[\,\widetilde{\mu}\,,\; m_{2}\,\right]\; + \left(-7\; g_{2}^{\;2} + 9\; c_{2\;\gamma}^{\;2}\; \left(g_{1}^{\;2} + g_{2}^{\;2}\right)\right)\; \text{LF}_{4,1,-1}\left[\,\widetilde{\mu}\,,\; m_{2}\,\right]\; + \left(-7\; g_{2}^{\;2} + 9\; c_{2\;\gamma}^{\;2}\; \left(g_{1}^{\;2} + g_{2}^{\;2}\right)\right)\; \text{LF}_{4,1,-1}\left[\,\widetilde{\mu}\,,\; m_{2}^{\;2} + g_{2}^{\;2}\right]\; + \left(-7\; g_{2}^{\;2} + 9\; c_{2\;\gamma}^{\;2}\; \left(g_{1}^{\;2} + g_{2}^{\;2}\right)\right)\; \text{LF}_{4,1,-1}\left[\,\widetilde{\mu}\,,\; m_{2}^{\;2} + g_{2}^{\;2}\right]\; + \left(-7\; g_{2}^{\;2} + g_{2}^{\;2}\right)\; + \left(-7\;
                                                                                                                         m_{H}^{2} g_{2}^{4} \left(7 c_{Y}^{4} + 2 s_{Y}^{2} c_{Y}^{2} + 7 s_{Y}^{4}\right) LF_{4,2,-3} [\tilde{\mu}, m_{2}] +
                                                                                                                         m_{H}^{2} g_{2}^{4} \left(m_{2}^{2} \left(c_{\gamma}^{4}+14 s_{\gamma}^{2} c_{\gamma}^{2}+s_{\gamma}^{4}\right)+32 m_{2} s_{\gamma} \tilde{\mu} c_{\gamma} \left(c_{\gamma}^{2}+s_{\gamma}^{2}\right)+16 s_{\gamma}^{2} \tilde{\mu}^{2} c_{\gamma}^{2}\right) LF_{4,2,-2}[\tilde{\mu}, m_{2}]+10 c_{\gamma}^{2} c_{
                                                                                                                         16 m_H^2 g_2^4 m_2^2 s_{\gamma}^2 \tilde{\mu}^2 c_{\gamma}^2 LF_{4,2,-1} [\tilde{\mu}, m_2] +
                                                                                                                         2 m_H^2 g_2^2 \left(-2 g_2^2 + 3 c_2^2 \left(g_1^2 + g_2^2\right)\right) \left(c_{\gamma}^2 + s_{\gamma}^2\right) LF_{5,1,-3}[\tilde{\mu}, m_2] +
                                                                                                                         4 \; m_{2} \; m_{H}^{2} \; s_{\gamma} \; \widetilde{\mu} \; c_{\gamma} \; g_{2}^{\; 2} \; \left( -2 \; g_{2}^{\; 2} + 3 \; c_{2 \; \gamma}^{\; 2} \; \left( g_{1}^{\; 2} + g_{2}^{\; 2} \right) \right) \; \mathsf{LF}_{5,1,-2} \left[ \, \widetilde{\mu} \, , \; m_{2} \, \right] \; - \; \left[ \, \widetilde{\mu} \, , \; m_{2} \, \right] \; - \; \left[ \, \widetilde{\mu} \, , \; m_{2} \, \right] \; - \; \left[ \, \widetilde{\mu} \, , \; m_{2} \, \right] \; - \; \left[ \, \widetilde{\mu} \, , \; m_{2} \, \right] \; - \; \left[ \, \widetilde{\mu} \, , \; m_{2} \, \right] \; - \; \left[ \, \widetilde{\mu} \, , \; m_{2} \, \right] \; - \; \left[ \, \widetilde{\mu} \, , \; m_{2} \, \right] \; - \; \left[ \, \widetilde{\mu} \, , \; m_{2} \, \right] \; - \; \left[ \, \widetilde{\mu} \, , \; m_{2} \, \right] \; - \; \left[ \, \widetilde{\mu} \, , \; m_{2} \, \right] \; - \; \left[ \, \widetilde{\mu} \, , \; m_{2} \, \right] \; - \; \left[ \, \widetilde{\mu} \, , \; m_{2} \, \right] \; - \; \left[ \, \widetilde{\mu} \, , \; m_{2} \, \right] \; - \; \left[ \, \widetilde{\mu} \, , \; m_{2} \, \right] \; - \; \left[ \, \widetilde{\mu} \, , \; m_{2} \, \right] \; - \; \left[ \, \widetilde{\mu} \, , \; m_{2} \, \right] \; - \; \left[ \, \widetilde{\mu} \, , \; m_{2} \, \right] \; - \; \left[ \, \widetilde{\mu} \, , \; m_{2} \, \right] \; - \; \left[ \, \widetilde{\mu} \, , \; m_{2} \, \right] \; - \; \left[ \, \widetilde{\mu} \, , \; m_{2} \, \right] \; - \; \left[ \, \widetilde{\mu} \, , \; m_{2} \, \right] \; - \; \left[ \, \widetilde{\mu} \, , \; m_{2} \, \right] \; - \; \left[ \, \widetilde{\mu} \, , \; m_{2} \, \right] \; - \; \left[ \, \widetilde{\mu} \, , \; m_{2} \, \right] \; - \; \left[ \, \widetilde{\mu} \, , \; m_{2} \, \right] \; - \; \left[ \, \widetilde{\mu} \, , \; m_{2} \, \right] \; - \; \left[ \, \widetilde{\mu} \, , \; m_{2} \, \right] \; - \; \left[ \, \widetilde{\mu} \, , \; m_{2} \, \right] \; - \; \left[ \, \widetilde{\mu} \, , \; m_{2} \, \right] \; - \; \left[ \, \widetilde{\mu} \, , \; m_{2} \, \right] \; - \; \left[ \, \widetilde{\mu} \, , \; m_{2} \, \right] \; - \; \left[ \, \widetilde{\mu} \, , \; m_{2} \, \right] \; - \; \left[ \, \widetilde{\mu} \, , \; m_{2} \, \right] \; - \; \left[ \, \widetilde{\mu} \, , \; m_{2} \, \right] \; - \; \left[ \, \widetilde{\mu} \, , \; m_{2} \, \right] \; - \; \left[ \, \widetilde{\mu} \, , \; m_{2} \, \right] \; - \; \left[ \, \widetilde{\mu} \, , \; m_{2} \, \right] \; - \; \left[ \, \widetilde{\mu} \, , \; m_{2} \, \right] \; - \; \left[ \, \widetilde{\mu} \, , \; m_{2} \, \right] \; - \; \left[ \, \widetilde{\mu} \, , \; m_{2} \, \right] \; - \; \left[ \, \widetilde{\mu} \, , \; m_{2} \, \right] \; - \; \left[ \, \widetilde{\mu} \, , \; m_{2} \, \right] \; - \; \left[ \, \widetilde{\mu} \, , \; m_{2} \, \right] \; - \; \left[ \, \widetilde{\mu} \, , \; m_{2} \, \right] \; - \; \left[ \, \widetilde{\mu} \, , \; m_{2} \, \right] \; - \; \left[ \, \widetilde{\mu} \, , \; m_{2} \, \right] \; - \; \left[ \, \widetilde{\mu} \, , \; m_{2} \, \right] \; - \; \left[ \, \widetilde{\mu} \, , \; m_{2} \, \right] \; - \; \left[ \, \widetilde{\mu} \, , \; m_{2} \, \right] \; - \; \left[ \, \widetilde{\mu} \, , \; m_{2} \, \right] \; - \; \left[ \, \widetilde{\mu} \, , \; m_{2} \, \right] \; - \; \left[ \, \widetilde{\mu} \, , \; m_{2} \, \right] \; - \; \left[ \, \widetilde{\mu} \, , \; m_{2} \, \right] \; - \; \left[ \, \widetilde{\mu} \, , \; m_{2} \, \right] \; - \; \left[ \, \widetilde{\mu} \, , \; m_{2} \, \right] \; - \; \left[ \, \widetilde{\mu} \, , \; m_{2} \, \right] \; - \; \left[ \, \widetilde
                                                                                                                         8 \, m_H^2 \, g_1^2 \, g_2^2 \, LF_{2,2,1,-2} [m_2, \tilde{\mu}, m_1] \, (c_{\chi}^2 + s_{\chi}^2)^2 +
                                                                                                                         2\; m_{H}^{2}\; g_{1}^{\;2}\; g_{2}^{\;2}\; \left(-\,3\; m_{1}\; m_{2}\; \left(c_{\gamma}^{\;2}\, +\, s_{\gamma}^{\;2}\right)^{\,2}\, -\, 2\; s_{\gamma}\; \widetilde{\mu}\; c_{\gamma}\; \left(7\; m_{1}\, +\, 5\; m_{2}\right)\; \left(c_{\gamma}^{\;2}\, +\, s_{\gamma}^{\;2}\right)\, -\, 12\; s_{\gamma}^{\;2}\; \widetilde{\mu}^{2}\; c_{\gamma}^{\;2}\right)
                                                                                                                                                     \mathsf{LF}_{2,2,1,-1}[\mathsf{m}_2,\,\widetilde{\mu},\,\mathsf{m}_1] - 16 \mathsf{m}_1\,\mathsf{m}_2\,\mathsf{m}_H^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] +
                                                                                                                         4 m_H^2 g_1^2 g_2^2 LF_{3,2,1,-3}[m_2, \tilde{\mu}, m_1] (c_{\gamma}^2 + s_{\gamma}^2)^2 +
                                                                                                                         4 \, m_H^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\,]\,+\,16\,\,\mathsf{m}_1\,\,\mathsf{m}_2\,\,\mathsf{m}_H^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\,]\,+\,16\,\,\mathsf{m}_1\,\,\mathsf{m}_2\,\,\mathsf{m}_2^2\,\,\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\,]\,+\,16\,\,\mathsf{m}_1\,\,\mathsf{m}_2\,\,\mathsf{m}_2^2\,\,\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\,]\,+\,16\,\,\mathsf{m}_1\,\,\mathsf{m}_2\,\,\mathsf{m}_2^2\,\,\mathsf{g_2}^2\,\,\mathsf{s_\gamma}^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,\mathsf{m}_2^2\,\,
                                                                                                                         6\;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}_{1,1,1,0}\left[\mathsf{m}_{\bar{d}}^{\;\text{r}}\;,\;\mathsf{m}_{\bar{d}}^{\;\text{t}}\;,\;\mathsf{m}_{\bar{d}}^{\;\text{r}}\right]\;-
                                                                                                                         6\;\mathsf{S_{\gamma}}^2\;\tilde{\mu}^2\;\mathsf{c_{\gamma}}^2\;\overline{\mathsf{y_d}}^{\mathsf{pr}}\;\overline{\mathsf{y_d}}^{\mathsf{st}}\;\mathsf{y_d}^{\mathsf{pt}}\;\mathsf{y_d}^{\mathsf{sr}}\;\mathsf{LF_{1,1,1,0}}\big[\mathsf{m_{\bar{d}}}^{\mathsf{r}},\;\mathsf{m_{\bar{d}}}^{\mathsf{t}},\;\mathsf{m_{\bar{q}}}^{\mathsf{s}}\big]\;-
                                                                                                                         6\;c_{\gamma}^{\;2}\;\overline{y_{d}}^{\text{st}}\;y_{d}^{\;\text{pt}}\;\left(s_{\gamma}^{\;2}\;\widetilde{\mu}^{2}\;\overline{y_{d}}^{\text{pr}}\;y_{d}^{\;\text{sr}}+c_{\gamma}\;\overline{a_{d}}^{\text{pr}}\;\left(c_{\gamma}\;a_{d}^{\;\text{sr}}-s_{\gamma}\;\widetilde{\mu}\;y_{d}^{\;\text{sr}}\right)\right)\;\mathsf{LF}_{1,1,1,0}\!\left[m_{\bar{d}}^{\;\text{r}},\;m_{\bar{q}}^{\;\text{p}},\;m_{\bar{q}}^{\;\text{s}}\right]\;+
                                                                                                                         6 \; \mathsf{S}_{\scriptscriptstyle Y} \; \widetilde{\mu} \; \mathsf{c}_{\scriptscriptstyle Y} {}^3 \; \overline{y_d}^{\mathsf{pr}} \; \overline{y_d}^{\mathsf{st}} \; \mathsf{y_d}^{\mathsf{sr}} \; \mathsf{a_d}^{\mathsf{pt}} \; \mathsf{LF}_{\mathsf{1},\mathsf{1},\mathsf{1},\mathsf{0}} \big[ \, \mathsf{m_{\bar{d}}}^{\mathsf{t}} \,, \; \mathsf{m_{\bar{q}}}^{\mathsf{p}} \,, \; \mathsf{m_{\bar{q}}}^{\mathsf{s}} \big] \; + \\
                                                                                                                         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}_{1,1,1,0}\left[\mathsf{m}_{\check{e}}^{\;\text{r}}\;,\;\mathsf{m}_{\check{e}}^{\;\text{t}}\;,\;\mathsf{m}_{\check{e}}^{\;\text{p}}\right]\;-2\,\mathsf{m}_{\check{e}}^{\;\text{pt}}\;\left(-\,\mathsf{m}_{\check{e}}^{\;\text{pt}}\;,\;\mathsf{m}_{\check{e}}^{\;\text{pt}}\;,\;\mathsf{m}_{\check{e}}^{\;\text{pt}}\;,\;\mathsf{m}_{\check{e}}^{\;\text{pt}}\;,\;\mathsf{m}_{\check{e}}^{\;\text{pt}}\;,\;\mathsf{m}_{\check{e}}^{\;\text{pt}}\;,\;\mathsf{m}_{\check{e}}^{\;\text{pt}}\;,\;\mathsf{m}_{\check{e}}^{\;\text{pt}}\;,\;\mathsf{m}_{\check{e}}^{\;\text{pt}}\;,\;\mathsf{m}_{\check{e}}^{\;\text{pt}}\;,\;\mathsf{m}_{\check{e}}^{\;\text{pt}}\;,\;\mathsf{m}_{\check{e}}^{\;\text{pt}}\;,\;\mathsf{m}_{\check{e}}^{\;\text{pt}}\;,\;\mathsf{m}_{\check{e}}^{\;\text{pt}}\;,\;\mathsf{m}_{\check{e}}^{\;\text{pt}}\;,\;\mathsf{m}_{\check{e}}^{\;\text{pt}}\;,\;\mathsf{m}_{\check{e}}^{\;\text{pt}}\;,\;\mathsf{m}_{\check{e}}^{\;\text{pt}}\;,\;\mathsf{m}_{\check{e}}^{\;\text{pt}}\;,\;\mathsf{m}_{\check{e}}^{\;\text{pt}}\;,\;\mathsf{m}_{\check{e}}^{\;\text{pt}}\;,\;\mathsf{m}_{\check{e}}^{\;\text{pt}}\;,\;\mathsf{m}_{\check{e}}^{\;\text{pt}}\;,\;\mathsf{m}_{\check{e}}^{\;\text{pt}}\;,\;\mathsf{m}_{\check{e}}^{\;\text{pt}}\;,\;\mathsf{m}_{\check{e}}^{\;\text{pt}}\;,\;\mathsf{m}_{\check{e}}^{\;\text{pt}}\;,\;\mathsf{m}_{\check{e}}^{\;\text{pt}}\;,\;\mathsf{m}_{\check{e}}^{\;\text{pt}}\;,\;\mathsf{m}_{\check{e}}^{\;\text{pt}}\;,\;\mathsf{m}_{\check{e}}^{\;\text{pt}}\;,\;\mathsf{m}_{\check{e}}^{\;\text{pt}}\;,\;\mathsf{m}_{\check{e}}^{\;\text{pt}}\;,\;\mathsf{m}_{\check{e}}^{\;\text{pt}}\;,\;\mathsf{m}_{\check{e}}^{\;\text{pt}}\;,\;\mathsf{m}_{\check{e}}^{\;\text{pt}}\;,\;\mathsf{m}_{\check{e}}^{\;\text{pt}}\;,\;\mathsf{m}_{\check{e}}^{\;\text{pt}}\;,\;\mathsf{m}_{\check{e}}^{\;\text{pt}}\;,\;\mathsf{m}_{\check{e}}^{\;\text{pt}}\;,\;\mathsf{m}_{\check{e}}^{\;\text{pt}}\;,\;\mathsf{m}_{\check{e}}^{\;\text{pt}}\;,\;\mathsf{m}_{\check{e}}^{\;\text{pt}}\;,\;\mathsf{m}_{\check{e}}^{\;\text{pt}}\;,\;\mathsf{m}_{\check{e}}^{\;\text{pt}}\;,\;\mathsf{m}_{\check{e}}^{\;\text{pt}}\;,\;\mathsf{m}_{\check{e}}^{\;\text{pt}}\;,\;\mathsf{m}_{\check{e}}^{\;\text{pt}}\;,\;\mathsf{m}_{\check{e}}^{\;\text{pt}}\;,\;\mathsf{m}_{\check{e}}^{\;\text{pt}}\;,\;\mathsf{m}_{\check{e}}^{\;\text{pt}}\;,\;\mathsf{m}_{\check{e}}^{\;\text{pt}}\;,\;\mathsf{m}_{\check{e}}^{\;\text{pt}}\;,\;\mathsf{m}_{\check{e}}^{\;\text{pt}}\;,\;\mathsf{m}_{\check{e}}^{\;\text{pt}}\;,\;\mathsf{m}_{\check{e}}^{\;\text{pt}}\;,\;\mathsf{m}_{\check{e}}^{\;\text{pt}}\;,\;\mathsf{m}_{\check{e}}^{\;\text{pt}}\;,\;\mathsf{m}_{\check{e}}^{\;\text{pt}}\;,\;\mathsf{m}_{\check{e}}^{\;\text{pt}}\;,\;\mathsf{m}_{\check{e}}^{\;\text{pt}}\;,\;\mathsf{m}_{\check{e}}^{\;\text{pt}}\;,\;\mathsf{m}_{\check{e}}^{\;\text{pt}}\;,\;\mathsf{m}_{\check{e}}^{\;\text{pt}}\;,\;\mathsf{m}_{\check{e}}^{\;\text{pt}}\;,\;\mathsf{m}_{\check{e}}^{\;\text{pt}}\;,\;\mathsf{m}_{\check{e}}^{\;\text{pt}}\;,\;\mathsf{m}_{\check{e}}^{\;\text{pt}}\;,\;\mathsf{m}_{\check{e}}^{\;\text{pt}}\;,\;\mathsf{m}_{\check{e}}^{\;\text{pt}}\;,\;\mathsf{m}_{\check{e}}^{\;\text{pt}}\;,\;\mathsf{m}_{\check{e}}^{\;\text{pt}}\;,\;\mathsf{m}_{\check{e}}^{\;\text{pt}}\;,\;\mathsf{m}_{\check{e}}^{\;\text{pt}}\;,\;\mathsf{m}_{\check{e}}^{\;\text{pt}}\;,\;\mathsf{m}_{\check{e}}^{\;\text{pt}}\;,\;\mathsf{m}_{\check{e}}^{\;\text{pt}}\;,\;
                                                                                                                         2\;\mathsf{S_{\gamma}}^2\;\tilde{\mu}^2\;\mathsf{c_{\gamma}}^2\;\overline{y_e}^{\mathsf{pr}}\;\overline{y_e}^{\mathsf{st}}\;\mathsf{y_e}^{\mathsf{pt}}\;\mathsf{y_e}^{\mathsf{sr}}\;\mathsf{LF_{1,1,1,0}}\big[\mathsf{m_{\tilde{e}}}^{\mathsf{r}},\;\mathsf{m_{\tilde{e}}}^{\mathsf{t}},\;\mathsf{m_{\tilde{l}}}^{\mathsf{s}}\big]\;-
                                                                                                                         2\;c_{\gamma}^{\;2}\;\overline{y_{e}}^{\text{st}}\;y_{e}^{\;\text{pt}}\;\left(s_{\gamma}^{\;2}\;\widetilde{\mu}^{2}\;\overline{y_{e}}^{\text{pr}}\;y_{e}^{\;\text{sr}}+c_{\gamma}\;\overline{a_{e}}^{\text{pr}}\;\left(c_{\gamma}\;a_{e}^{\;\text{sr}}-s_{\gamma}\;\widetilde{\mu}\;y_{e}^{\;\text{sr}}\right)\right)\;\mathsf{LF}_{1,1,1,0}\!\left[\mathsf{m}_{\tilde{e}}^{\;\text{r}}\,,\;\mathsf{m}_{\tilde{l}}^{\;\text{p}}\,,\;\mathsf{m}_{\tilde{l}}^{\;\text{s}}\right]\;+\;\mathsf{LF}_{1,1,1,0}\left[\mathsf{m}_{\tilde{e}}^{\;\text{r}}\,,\;\mathsf{m}_{\tilde{l}}^{\;\text{p}}\,,\;\mathsf{m}_{\tilde{l}}^{\;\text{s}}\right]\;+\;\mathsf{LF}_{1,1,1,0}\left[\mathsf{m}_{\tilde{e}}^{\;\text{r}}\,,\;\mathsf{m}_{\tilde{l}}^{\;\text{p}}\,,\;\mathsf{m}_{\tilde{l}}^{\;\text{s}}\right]\;+\;\mathsf{LF}_{1,1,1,0}\left[\mathsf{m}_{\tilde{e}}^{\;\text{r}}\,,\;\mathsf{m}_{\tilde{l}}^{\;\text{s}}\,,\;\mathsf{m}_{\tilde{l}}^{\;\text{s}}\,,\;\mathsf{m}_{\tilde{l}}^{\;\text{s}}\,,\;\mathsf{m}_{\tilde{l}}^{\;\text{s}}\,,\;\mathsf{m}_{\tilde{l}}^{\;\text{s}}\,,\;\mathsf{m}_{\tilde{l}}^{\;\text{s}}\,,\;\mathsf{m}_{\tilde{l}}^{\;\text{s}}\,,\;\mathsf{m}_{\tilde{l}}^{\;\text{s}}\,,\;\mathsf{m}_{\tilde{l}}^{\;\text{s}}\,,\;\mathsf{m}_{\tilde{l}}^{\;\text{s}}\,,\;\mathsf{m}_{\tilde{l}}^{\;\text{s}}\,,\;\mathsf{m}_{\tilde{l}}^{\;\text{s}}\,,\;\mathsf{m}_{\tilde{l}}^{\;\text{s}}\,,\;\mathsf{m}_{\tilde{l}}^{\;\text{s}}\,,\;\mathsf{m}_{\tilde{l}}^{\;\text{s}}\,,\;\mathsf{m}_{\tilde{l}}^{\;\text{s}}\,,\;\mathsf{m}_{\tilde{l}}^{\;\text{s}}\,,\;\mathsf{m}_{\tilde{l}}^{\;\text{s}}\,,\;\mathsf{m}_{\tilde{l}}^{\;\text{s}}\,,\;\mathsf{m}_{\tilde{l}}^{\;\text{s}}\,,\;\mathsf{m}_{\tilde{l}}^{\;\text{s}}\,,\;\mathsf{m}_{\tilde{l}}^{\;\text{s}}\,,\;\mathsf{m}_{\tilde{l}}^{\;\text{s}}\,,\;\mathsf{m}_{\tilde{l}}^{\;\text{s}}\,,\;\mathsf{m}_{\tilde{l}}^{\;\text{s}}\,,\;\mathsf{m}_{\tilde{l}}^{\;\text{s}}\,,\;\mathsf{m}_{\tilde{l}}^{\;\text{s}}\,,\;\mathsf{m}_{\tilde{l}}^{\;\text{s}}\,,\;\mathsf{m}_{\tilde{l}}^{\;\text{s}}\,,\;\mathsf{m}_{\tilde{l}}^{\;\text{s}}\,,\;\mathsf{m}_{\tilde{l}}^{\;\text{s}}\,,\;\mathsf{m}_{\tilde{l}}^{\;\text{s}}\,,\;\mathsf{m}_{\tilde{l}}^{\;\text{s}}\,,\;\mathsf{m}_{\tilde{l}}^{\;\text{s}}\,,\;\mathsf{m}_{\tilde{l}}^{\;\text{s}}\,,\;\mathsf{m}_{\tilde{l}}^{\;\text{s}}\,,\;\mathsf{m}_{\tilde{l}}^{\;\text{s}}\,,\;\mathsf{m}_{\tilde{l}}^{\;\text{s}}\,,\;\mathsf{m}_{\tilde{l}}^{\;\text{s}}\,,\;\mathsf{m}_{\tilde{l}}^{\;\text{s}}\,,\;\mathsf{m}_{\tilde{l}}^{\;\text{s}}\,,\;\mathsf{m}_{\tilde{l}}^{\;\text{s}}\,,\;\mathsf{m}_{\tilde{l}}^{\;\text{s}}\,,\;\mathsf{m}_{\tilde{l}}^{\;\text{s}}\,,\;\mathsf{m}_{\tilde{l}}^{\;\text{s}}\,,\;\mathsf{m}_{\tilde{l}}^{\;\text{s}}\,,\;\mathsf{m}_{\tilde{l}}^{\;\text{s}}\,,\;\mathsf{m}_{\tilde{l}}^{\;\text{s}}\,,\;\mathsf{m}_{\tilde{l}}^{\;\text{s}}\,,\;\mathsf{m}_{\tilde{l}}^{\;\text{s}}\,,\;\mathsf{m}_{\tilde{l}}^{\;\text{s}}\,,\;\mathsf{m}_{\tilde{l}}^{\;\text{s}}\,,\;\mathsf{m}_{\tilde{l}}^{\;\text{s}}\,,\;\mathsf{m}_{\tilde{l}}^{\;\text{s}}\,,\;\mathsf{m}_{\tilde{l}}^{\;\text{s}}\,,\;\mathsf{m}_{\tilde{l}}^{\;\text{s}}\,,\;\mathsf{m}_{\tilde{l}}^{\;\text{s}}\,,\;\mathsf{m}_{\tilde{l}}^{\;\text{s}}\,,\;\mathsf{m}_{\tilde{l}}^{\;\text{s}}\,,\;\mathsf{m}_{\tilde{l}}^{\;\text{s}}\,,\;\mathsf{m}_{\tilde{l}}^{\;\text{s}}\,,\;\mathsf{m}_{\tilde{l}}^{\;\text{s}}\,,\;\mathsf{m}_{\tilde{l}}^{\;\text{s}}\,,\;\mathsf{m}_{\tilde{l}}^{\;\text{s}}\,,\;\mathsf{m}_{\tilde{l}}^{\;\text{s}}\,,\;\mathsf{m}_{\tilde{l}}^{\;\text{s}}\,,\;\mathsf{m}_{\tilde{l}}^{\;\text{s}}\,,\;\mathsf{m}_{\tilde{l}}^{\;\text{s}}\,,\;\mathsf{m}_{\tilde{l}}^{\;\text{s}}\,,\;\mathsf{m}_{\tilde{l}}^{\;\text{s}}\,,\;\mathsf{m}_{\tilde{l}}^{\;\text{s}}\,,\;\mathsf{m}_{\tilde{l}}^
                                                                                                                         2\;\mathsf{s_{\scriptscriptstyle \gamma}}\;\widetilde{\mu}\;\mathsf{c_{\scriptscriptstyle \gamma}}^3\;\overline{\mathsf{y_e}}^\mathsf{pr}\;\overline{\mathsf{y_e}}^\mathsf{st}\;\mathsf{y_e}^\mathsf{sr}\;\mathsf{a_e}^\mathsf{pt}\;\mathsf{LF_{1,1,1,0}}\big[\,\mathsf{m_{\tilde{e}}}^\mathsf{t}\,,\;\mathsf{m_{\tilde{l}}}^\mathsf{p}\,,\;\mathsf{m_{\tilde{l}}}^\mathsf{s}\big]\;\mathsf{+}\\
                                                                                                                         2\; m_{H}^{2}\; C_{\text{Y}}^{3}\; \overline{y_{\text{e}}}^{\text{st}}\; y_{\text{e}}^{\text{ sr}}\; \left(-\, s_{\text{Y}}\; \widetilde{\mu}\; \overline{y_{\text{e}}}^{\text{pr}}\; a_{\text{e}}^{\text{ pt}} + \overline{a_{\text{e}}}^{\text{pr}}\; \left(c_{\text{Y}}\; a_{\text{e}}^{\text{ pt}} - s_{\text{Y}}\; \widetilde{\mu}\; y_{\text{e}}^{\text{ pt}}\right)\right) \; \mathsf{LF}_{2,1,1,0}\left[\, \mathsf{m}_{\tilde{\mathsf{L}}}^{\,\,\,\mathsf{p}}\,,\; \mathsf{m}_{\tilde{\mathsf{e}}}^{\,\,\,\mathsf{r}}\,,\; \mathsf{m}_{\tilde{\mathsf{e}}}^{\,\,\,\mathsf{t}}\,\right] \; + \; \mathsf{LF}_{2,1,1,0}\left[\, \mathsf{m}_{\tilde{\mathsf{L}}}^{\,\,\,\mathsf{p}}\,,\; \mathsf{m}_{\tilde{\mathsf{e}}}^{\,\,\,\mathsf{r}}\,,\; \mathsf{m}_{\tilde{\mathsf{e}}
                                                                                                                         2\; m_{H}^{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) \; \text{LF}_{3,1,1,-1} \left[\,m_{\tilde{l}}^{\;\;p}\,,\; m_{\tilde{e}}^{\;\;r}\,,\; m_{\tilde{e}}^{\;\;t}\,\right] \; + \left(-\,m_{\tilde{l}}^{\;\;p}\,,\; m_{\tilde{e}}^{\;\;p}\,,\; m_{\tilde{e}
                                                                                                                         2\; m_H^2\; c_\gamma^2\; \overline{y_e}^{\text{st}}\; y_e^{\;\text{pt}}\; \left(s_\gamma^{\;2}\; \widetilde{\mu}^2\; \overline{y_e}^{\text{pr}}\; y_e^{\;\text{sr}}\; +\; c_\gamma\; \overline{a_e}^{\text{pr}}\; \left(c_\gamma\; a_e^{\;\text{sr}}\; -\; s_\gamma\; \widetilde{\mu}\; y_e^{\;\text{sr}}\right)\; \right) \; \mathsf{LF_{2,1,1,0}}\left[\, \mathsf{m}_{\tilde{l}}^{\;p}\, ,\; \mathsf{m}_{\tilde{e}}^{\;\text{r}}\, ,\; \mathsf{m}_{\tilde{l}}^{\;\tilde{s}}\, \right] \; -\; \mathsf{m}_{\tilde{l}}^{\;\tilde{s}}\; +\; \mathsf{m}_{\tilde{l}}^{\;\tilde{s}}\; +
                                                                                                                         2\; m_{H}^{2}\; c_{\gamma}^{2}\; \overline{y_{e}}^{\text{st}}\; y_{e}^{\;\text{pt}}\; \left(s_{\gamma}^{\;2}\; \widetilde{\mu}^{2}\; \overline{y_{e}}^{\text{pr}}\; y_{e}^{\;\text{sr}}\; +\; c_{\gamma}\; \overline{a_{e}}^{\text{pr}}\; \left(c_{\gamma}\; a_{e}^{\;\text{sr}}\; -\; s_{\gamma}\; \widetilde{\mu}\; y_{e}^{\;\text{sr}}\right)\right) \; \text{LF}_{3,1,1,-1}\left[\, \textbf{m}_{\widetilde{1}}^{\;\;p}\, ,\; \textbf{m}_{\widetilde{e}}^{\;\;r}\, ,\; \textbf{m}_{\widetilde{e}}^{\;\;s}\, \right]\; +\; c_{\gamma}\; \overline{a_{e}}^{\;\;pr}\; \left(c_{\gamma}\; a_{e}^{\;\;\text{sr}}\; -\; s_{\gamma}\; \widetilde{\mu}\; y_{e}^{\;\;\text{sr}}\right)\right) \; \text{LF}_{3,1,1,-1}\left[\, \textbf{m}_{\widetilde{1}}^{\;\;p}\, ,\; \textbf{m}_{\widetilde{e}}^{\;\;r}\, ,\; \textbf{m}_{\widetilde{e}}^{\;\;s}\, \right]\; +\; c_{\gamma}\; \overline{a_{e}}^{\;\;pr}\; \left(c_{\gamma}\; a_{e}^{\;\;\text{sr}}\; -\; s_{\gamma}\; \widetilde{\mu}\; y_{e}^{\;\;\text{sr}}\right)\right) \; \text{LF}_{3,1,1,-1}\left[\, \textbf{m}_{\widetilde{1}}^{\;\;p}\, ,\; \textbf{m}_{\widetilde{e}}^{\;\;r}\, ,\; \textbf{m}_{\widetilde{e}}^{\;\;s}\, \right]\; +\; c_{\gamma}\; \overline{a_{e}}^{\;\;pr}\; \left(c_{\gamma}\; a_{e}^{\;\;\text{sr}}\; -\; s_{\gamma}\; \widetilde{\mu}\; y_{e}^{\;\;\text{sr}}\right) \; \right) \; \text{LF}_{3,1,1,-1}\left[\, \textbf{m}_{\widetilde{1}}^{\;\;p}\, ,\; \textbf{m}_{\widetilde{e}}^{\;\;r}\, ,\; \textbf{m}_{\widetilde{e}}^{\;\;s}\, \right] \; +\; c_{\gamma}\; \overline{a_{e}}^{\;\;pr}\; \left(c_{\gamma}\; a_{e}^{\;\;pr}\; -\; s_{\gamma}\; \widetilde{\mu}\; y_{e}^{\;\;sr}\right) \; \right) \; \text{LF}_{3,1,1,-1}\left[\, \textbf{m}_{\widetilde{1}}^{\;\;p}\, ,\; \textbf{m}_{\widetilde{e}}^{\;\;r}\, ,\; \textbf{m}_{\widetilde{e}}^{\;\;s}\, \right] \; +\; c_{\gamma}\; \overline{a_{e}}^{\;\;pr}\; \left(c_{\gamma}\; a_{e}^{\;\;pr}\; -\; s_{\gamma}\; \widetilde{\mu}\; y_{e}^{\;\;sr}\right) \; \right) \; \text{LF}_{3,1,1,1,-1}\left[\, \textbf{m}_{\widetilde{e}}^{\;\;pr}\, ,\; \textbf{m}_{\widetilde{e}}^{\;\;r}\, ,\; \textbf{m}_{\widetilde{e}}^{\;\;pr}\, \right] \; +\; c_{\gamma}\; \overline{a_{e}}^{\;\;pr}\; \left(c_{\gamma}\; a_{e}^{\;\;pr}\; -\; s_{\gamma}\; \widetilde{\mu}\; x_{e}^{\;\;pr}\, \right) \; \right] \; +\; c_{\gamma}\; \overline{a_{e}}^{\;\;pr}\; \left(c_{\gamma}\; a_{e}^{\;\;pr}\; -\; s_{\gamma}\; \widetilde{\mu}\; x_{e}^{\;\;pr}\, \right) \; +\; c_{\gamma}\; \overline{a_{e}}^{\;\;pr}\; \left(c_{\gamma}\; a_{e}^{\;\;pr}\; -\; s_{\gamma}\; \widetilde{\mu}\; x_{e}^{\;\;pr}\, \right) \; \right] \; +\; c_{\gamma}\; \overline{a_{e}}^{\;\;pr}\; \left(c_{\gamma}\; a_{e}^{\;\;pr}\; -\; s_{\gamma}\; \widetilde{\mu}\; x_{e}^{\;\;pr}\, \right) \; +\; c_{\gamma}\; \overline{a_{e}}^{\;\;pr}\; \left(c_{\gamma}\; a_{e}^{\;\;pr}\; -\; s_{\gamma}\; \widetilde{\mu}\; x_{e}^{\;\;pr}\, \right) \; +\; c_{\gamma}\; \overline{a_{e}}^{\;\;pr}\; \left(c_{\gamma}\; a_{e}^{\;\;pr}\; -\; s_{\gamma}\; \widetilde{\mu}\; x_{e}^{\;\;pr}\, \right) \; +\; c_{\gamma}\; \overline{a_{e}}^{\;\;pr}\; \left(c_{\gamma}\; a_{e}^{\;\;pr}\; -\; s_{\gamma}\; \widetilde{\mu}\; x_{e}^{\;\;pr}\, \right) \; +\; c_{\gamma}\; \overline{a_{e}}^{\;\;pr}\; \left(c_{\gamma}\; a_{e}^{\;\;pr}\; -\; s_{\gamma}\; \widetilde{\mu}\; x_{e}^{\;\;pr}\; \right) \; +\; c_{\gamma}\; \overline{a_{e}}^{\;\;pr}\; \left(c_{\gamma}\; a_{e}^{\;\;pr}\; -\; s_{\gamma}\; a_{e}^{\;\;pr}\; \right) \; +\; c_{\gamma}\; \overline{a_{e}}^{\;\;pr}\; +\; c_{\gamma}\; \overline{a_{e}}^{\;\;pr}\; \right) \; +\; c_{\gamma}\; \overline{a_{e}}^{\;\;pr}\; +
                                                                                                                         2\; m_H^2\; s_\gamma\; \widetilde{\mu}\; c_\gamma^2\; \overline{y_e}^{pr}\; \overline{y_e}^{st}\; y_e^{\;sr}\; \left(-\, c_\gamma\; a_e^{\;pt}\, +\, s_\gamma\; \widetilde{\mu}\; y_e^{\;pt}\right)\; LF_{2,1,1,0}\left[\, m_{\widetilde{1}}^{\;\;p}\, ,\; m_{\widetilde{e}}^{\;\;t}\, ,\; m_{\widetilde{1}}^{\;\;s}\, \right]\; +\\
                                                                                                                         2\; m_H^2\; s_\gamma\; \widetilde{\mu}\; c_\gamma^2\; \overline{y_e}^{\text{pr}}\; \overline{y_e}^{\text{st}}\; y_e^{\text{sr}}\; \left(c_\gamma\; a_e^{\text{pt}} - s_\gamma\; \widetilde{\mu}\; y_e^{\text{pt}}\right)\; \text{LF}_{3,1,1,-1}\big[\text{m}_{\tilde{1}}^{\text{-p}},\; \text{m}_{\tilde{e}}^{\text{-t}},\; \text{m}_{\tilde{1}}^{\text{-s}}\big] \; + \; \text{Tr} \left(c_\gamma\; a_e^{\text{pt}} - s_\gamma\; \widetilde{\mu}\; y_e^{\text{pt}}\right) \; \text{LF}_{3,1,1,-1}\big[\text{m}_{\tilde{1}}^{\text{-p}},\; \text{m}_{\tilde{e}}^{\text{-t}},\; \text{m}_{\tilde{e}}^{\text{-s}}\big] \; + \; \text{Tr} \left(c_\gamma\; a_e^{\text{-pt}} - s_\gamma\; \widetilde{\mu}\; y_e^{\text{-pt}}\right) \; \text{LF}_{3,1,1,-1}\big[\text{m}_{\tilde{1}}^{\text{-p}},\; \text{m}_{\tilde{e}}^{\text{-t}},\; \text{m}_{\tilde{e}}^{\text{-t}},\; \text{m}_{\tilde{e}}^{\text{-t}}\big] \; + \; \text{Tr} \left(c_\gamma\; a_e^{\text{-pt}} - s_\gamma\; \widetilde{\mu}\; y_e^{\text{-pt}}\right) \; \text{LF}_{3,1,1,-1}\big[\text{m}_{\tilde{e}}^{\text{-pt}},\; \text{m}_{\tilde{e}}^{\text{-t}},\; \text{m}_{\tilde{e}}^{\text{-t}},\; \text{m}_{\tilde{e}}^{\text{-t}}\big] \; + \; \text{Tr} \left(c_\gamma\; a_e^{\text{-pt}} - s_\gamma\; \widetilde{\mu}\; y_e^{\text{-pt}}\right) \; \text{LF}_{3,1,1,-1}\big[\text{m}_{\tilde{e}}^{\text{-pt}},\; \text{m}_{\tilde{e}}^{\text{-t}},\; \text{m}_{\tilde{e}}^{\text{-t}},\; \text{m}_{\tilde{e}}^{\text{-t}}\big] \; + \; \text{Tr} \left(c_\gamma\; a_e^{\text{-t}} - s_\gamma\; \widetilde{\mu}\; y_e^{\text{-t}}\right) \; \text{LF}_{3,1,1,-1}\big[\text{m}_{\tilde{e}}^{\text{-t}},\; \text{m}_{\tilde{e}}^{\text{-t}},\; \text{m}_{\tilde{e}}^
                                                                                                                         2\; m_H^2\; {s_{_Y}}^2\; \widetilde{\mu}^2\; c_{_Y}^{\;2}\; \overline{y_e}^{pr}\; \overline{y_e}^{st}\; y_e^{\;pt}\; y_e^{\;sr}\; LF_{2,1,1,0}\left[\,m_{\tilde{l}}^{\;s}\,,\; m_{\tilde{e}}^{\;r}\,,\; m_{\tilde{e}}^{\;t}\,\right]\; -
                                                                                                                         2\; m_H^2\; 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[m_{\tilde{l}}^{\;\text{s}}\;,\; m_{\tilde{e}}^{\;\text{r}}\;,\; m_{\tilde{e}}^{\;\text{t}}\big] \; + \; c_\gamma^2 \; \widetilde{y_e}^\text{pt}\; \widetilde{y_e}^\text{st}\; \widetilde{y_e}^\text{pt}\; \widetilde{y_e}^\text{st}\; LF_{3,1,1,-1}\big[m_{\tilde{l}}^{\;\text{s}}\;,\; m_{\tilde{e}}^{\;\text{r}}\;,\; m_{\tilde{e}}^{\;\text{r}}\;
                                                                                                                         2\ \mathsf{m_H^2}\ \mathsf{c_\gamma^3}\ \overline{\mathsf{y_e}^{\mathsf{st}}}\ \mathsf{y_e}^{\mathsf{pt}}\ \overline{\mathsf{a_e}^{\mathsf{pr}}}\ \left(\mathsf{c_\gamma}\ \mathsf{a_e}^{\mathsf{sr}}-\mathsf{s_\gamma}\ \widetilde{\mu}\ \mathsf{y_e}^{\mathsf{sr}}\right)\ \mathsf{LF_{2,1,1,0}}\big[\mathsf{m_{\tilde{1}}}^{\mathsf{s}},\ \mathsf{m_{\tilde{e}}}^{\mathsf{r}},\ \mathsf{m_{\tilde{1}}}^{\mathsf{p}}\big]\ +
                                                                                                                         2\; m_{H}^{2}\; c_{\gamma}^{\;3}\; \overline{y_{e}}^{\text{st}}\; y_{e}^{\;\text{pt}}\; \overline{a_{e}}^{\text{pr}}\; \left(-\, c_{\gamma}\; a_{e}^{\;\text{sr}} + \, s_{\gamma}\; \widetilde{\mu}\; y_{e}^{\;\text{sr}}\right)\; \text{LF}_{3,1,1,-1}\big[\, m_{\tilde{l}}^{\;\text{s}}\,,\; m_{\tilde{e}}^{\;\text{r}}\,,\; m_{\tilde{e}}^{\;\text{r}}\,,\; m_{\tilde{e}}^{\;\text{p}}\big] \; - \; (-\, c_{\gamma}\; a_{e}^{\;\text{sr}}\,,\; a_{e}^{\;\text{r}}\,,\; a_
                                                                                                                         2\; {\rm m_H^2}\; {\rm s_Y}\; \widetilde{\mu}\; {\rm c_Y}^3\; \overline{{\rm y_e}}^{\rm pr}\; \overline{{\rm y_e}}^{\rm st}\; {\rm y_e}^{\rm sr}\; {\rm a_e}^{\rm pt}\; {\rm LF_{2,1,1,0}}\left[\,{\rm m_{\tilde{l}}}^{\rm s}\,,\; {\rm m_{\tilde{e}}}^{\rm t}\,,\; {\rm m_{\tilde{e}}}^{\rm p}\,\right]\; + \\
                                                                                                                         2\; m_H^2\; s_\gamma\; \widetilde{\mu}\; c_\gamma^{\;3}\; \overline{y_e}^{pr}\; \overline{y_e}^{st}\; y_e^{\;sr}\; a_e^{\;pt}\; LF_{3,1,1,-1}\big[m_{\tilde{l}}^{\;s}\;,\; m_{\tilde{e}}^{\;t}\;,\; m_{\tilde{l}}^{\;p}\big]\; + \\
                                                                                                                         6\; m_{H}^{2}\; C_{\text{Y}}^{3}\; \overline{y_{d}}^{\text{st}}\; y_{d}^{\text{sr}}\; \left(-\, s_{\text{Y}}\; \widetilde{\mu}\; \overline{y_{d}}^{\text{pr}}\; a_{d}^{\text{pt}} + \overline{a_{d}}^{\text{pr}}\; \left(\, c_{\text{Y}}\; a_{d}^{\text{pt}} - \, s_{\text{Y}}\; \widetilde{\mu}\; y_{d}^{\text{pt}}\right)\, \right) \; \mathsf{LF}_{2,1,1,0}\left[\, \mathsf{m}_{\bar{q}}^{\;\; \mathsf{p}}\; ,\; \mathsf{m}_{\bar{d}}^{\;\; \mathsf{r}}\; ,\; \mathsf{m}_{\bar{d}}^{\;\; \mathsf{t}}\, \right] \; + \; \mathsf{LF}_{2,1,1,0}\left[\, \mathsf{m}_{\bar{q}}^{\;\; \mathsf{p}}\; ,\; \mathsf{m}_{\bar{d}}^{\;\; \mathsf{r}}\; ,\; \mathsf{m}_{\bar{d}}^{\;\; \mathsf{t}}\, \right] \; + \; \mathsf{LF}_{2,1,1,0}\left[\, \mathsf{m}_{\bar{q}}^{\;\; \mathsf{p}}\; ,\; \mathsf{m}_{\bar{d}}^{\;\; \mathsf{r}}\; ,\; \mathsf{m}_{\bar{d}}^{\;\; \mathsf{t}}\, \right] \; + \; \mathsf{LF}_{2,1,1,0}\left[\, \mathsf{m}_{\bar{q}}^{\;\; \mathsf{p}}\; ,\; \mathsf{m}_{\bar{d}}^{\;\; \mathsf{r}}\; ,\; \mathsf{m}_{\bar{d}}^{\;\; \mathsf{r}}\; \right] \; + \; \mathsf{LF}_{2,1,1,0}\left[\, \mathsf{m}_{\bar{q}}^{\;\; \mathsf{p}}\; ,\; \mathsf{m}_{\bar{d}}^{\;\; \mathsf{r}}\; ,\; \mathsf{m}_{\bar{d}}^{\;\; \mathsf{r}}\; ,\; \mathsf{m}_{\bar{d}}^{\;\; \mathsf{r}}\; \right] \; + \; \mathsf{LF}_{2,1,1,0}\left[\, \mathsf{m}_{\bar{q}}^{\;\; \mathsf{p}}\; ,\; \mathsf{m}_{\bar{d}}^{\;\; \mathsf{r}}\; ,\; \mathsf{m}_{\bar{d}}^{\;\; \mathsf{r}}\; ,\; \mathsf{m}_{\bar{d}}^{\;\; \mathsf{r}}\; \right] \; + \; \mathsf{LF}_{2,1,1,0}\left[\, \mathsf{m}_{\bar{q}}^{\;\; \mathsf{p}}\; ,\; \mathsf{m}_{\bar{d}}^{\;\; \mathsf{r}}\; ,\; \mathsf{m}_{\bar
                                                                                                                         6\; m_{H}^{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_{3,1,1,-1}} \left[m_{\tilde{q}}^{\;\;p}\; ,\; m_{\tilde{d}}^{\;\;r}\; ,\; m_{\tilde{d}}^{\;\;t}\right] \; +\; m_{\tilde{d}}^{\;\;p} \; +\; m_{\tilde{d}}^
                                                                                                                         6\; m_H^2\; c_\chi^2\; \overline{y_d}^{\text{st}}\; y_d^{\;\text{pt}}\; \left(s_\chi^{\;2}\; \widetilde{\mu}^2\; \overline{y_d}^{\text{pr}}\; y_d^{\;\text{sr}}\; +\; c_\chi\; \overline{a_d}^{\text{pr}}\; \left(c_\chi\; a_d^{\;\text{sr}}\; -\; s_\chi\; \widetilde{\mu}\; y_d^{\;\text{sr}}\right) \right) \; \text{LF}_{2,1,1,0}\left[\, m_{\widetilde{q}}^{\;\;p}\; ,\; m_{\widetilde{d}}^{\;\;r}\; ,\; m_{\widetilde{q}}^{\;\;s}\, \right] \; -\; \left(s_\chi^{\;2}\; \overline{y_d}^{\;\text{pt}}\; s_\chi^{\;2}\; \overline{y_d}^{\;2}\; \overline{y_d}^{\;2
                                                                                                                         6\ \mathsf{m_H^2}\ \mathsf{c_Y}^2\ \overline{\mathsf{y_d}}^{\mathsf{st}}\ \mathsf{y_d}^{\mathsf{pt}}\ \left(\mathsf{s_Y}^2\ \widetilde{\mu}^2\ \overline{\mathsf{y_d}}^{\mathsf{pr}}\ \mathsf{y_d}^{\mathsf{sr}} + \mathsf{c_Y}\ \overline{\mathsf{a_d}}^{\mathsf{pr}}\ \left(\mathsf{c_Y}\ \mathsf{a_d}^{\mathsf{sr}} - \mathsf{s_Y}\ \widetilde{\mu}\ \mathsf{y_d}^{\mathsf{sr}}\right)\right)\ \mathsf{LF_{3,1,1,-1}}\big[\mathsf{m_{\tilde{\mathsf{a}}}}^{\mathsf{p}},\ \mathsf{m_{\tilde{\mathsf{a}}}}^{\mathsf{r}},\ \mathsf{m_{\tilde{\mathsf{a}}}}^{\mathsf{s}}\big] + \\
                                                                                                                         6\; m_H^2\; s_\gamma\; \widetilde{\mu}\; c_\gamma^2\; \overline{y_d}^{pr}\; \overline{y_d}^{st}\; y_d^{sr}\; \left(-\, c_\gamma\; a_d^{pt}\, +\, s_\gamma\; \widetilde{\mu}\; y_d^{pt}\right)\; \mathsf{LF_{2,1,1,0}}\left[\, \mathsf{m}_{\widetilde{\mathsf{q}}}^{\;\; p}\, ,\; \mathsf{m}_{\widetilde{\mathsf{d}}}^{\;\; t}\, ,\; \mathsf{m}_{\widetilde{\mathsf{q}}}^{\;\; s}\, \right]\; +\\
                                                                                                                         6\; m_H^2\; s_\gamma\; \widetilde{\mu}\; c_\gamma^2\; \overline{y_d}^{\text{pr}}\; \overline{y_d}^{\text{st}}\; y_d^{\text{sr}}\; \left(c_\gamma\; a_d^{\text{pt}} - s_\gamma\; \widetilde{\mu}\; y_d^{\text{pt}}\right)\; \text{LF}_{3,1,1,-1}\left[m_{\tilde{q}}^{\text{-p}},\; m_{\tilde{d}}^{\text{-t}},\; m_{\tilde{q}}^{\text{-s}}\right] \; - \; \left(c_\gamma\; a_d^{\text{-pt}},\; a_d^{\text{-pt}},\; a_d^{\text{-pt}}\right) \; \text{LF}_{3,1,1,-1}\left[m_{\tilde{q}}^{\text{-p}},\; m_{\tilde{q}}^{\text{-t}},\; m_{\tilde{q}}^{\text{-pt}}\right] \; - \; \left(c_\gamma\; a_d^{\text{-pt}},\; a_d^{\text{-pt}},\; a_d^{\text{-pt}}\right) \; \text{LF}_{3,1,1,-1}\left[m_{\tilde{q}}^{\text{-p}},\; m_{\tilde{q}}^{\text{-t}},\; m_{\tilde{q}}^{\text{-pt}}\right] \; - \; \left(c_\gamma\; a_d^{\text{-pt}},\; a_d^{\text{-pt}},\; a_d^{\text{-pt}}\right) \; + \; \left(c_\gamma
                                                                                                                         6\; m_H^2\; s_\gamma^2\; \overline{y_u}^{\text{st}}\; y_u^{\;\text{pt}}\; \left(-\; c_\gamma\; \overline{a_d}^{\;\text{pr}}\; +\; s_\gamma\; \widetilde{\mu}\; \overline{y_d}^{\;\text{pr}}\right) \; \left(-\; c_\gamma\; a_d^{\;\text{sr}}\; +\; s_\gamma\; \widetilde{\mu}\; y_d^{\;\text{sr}}\right) \; \text{LF}_{2,2,1,-1}\left[\; m_{\tilde{q}}^{\;\;p}\; ,\; m_{\tilde{q}}^{\;\;s}\; ,\; m_{\tilde{d}}^{\;\;r}\; \right] \; -\; \left(-\; c_\gamma\; a_d^{\;\;\text{sr}}\; +\; s_\gamma\; \widetilde{\mu}\; y_d^{\;\;\text{sr}}\right) \; \text{LF}_{2,2,1,-1}\left[\; m_{\tilde{q}}^{\;\;p}\; ,\; m_{\tilde{q}}^{\;\;s}\; ,\; m_{\tilde{d}}^{\;\;r}\; \right] \; -\; \left(-\; c_\gamma\; a_d^{\;\;\text{sr}}\; +\; s_\gamma\; \widetilde{\mu}\; y_d^{\;\;\text{sr}}\right) \; \text{LF}_{2,2,1,-1}\left[\; m_{\tilde{q}}^{\;\;p}\; ,\; m_{\tilde{q}}^{\;\;s}\; ,\; m_{\tilde{d}}^{\;\;r}\; \right] \; -\; \left(-\; c_\gamma\; a_d^{\;\;\text{sr}}\; +\; s_\gamma\; \widetilde{\mu}\; y_d^{\;\;\text{sr}}\right) \; +\; \left(-\; c_\gamma\; a_d^{\;\;\text{sr}}\; +\; s_\gamma\; \widetilde{\mu}\; y_d^{\;\;\text{sr}}\right) \; +\; \left(-\; c_\gamma\; a_d^{\;\;\text{sr}}\; +\; s_\gamma\; \widetilde{\mu}\; y_d^{\;\;\text{sr}}\right) \; +\; \left(-\; c_\gamma\; a_d^{\;\;\text{sr}}\; +\; s_\gamma\; \widetilde{\mu}\; y_d^{\;\;\text{sr}}\right) \; +\; \left(-\; c_\gamma\; a_d^{\;\;\text{sr}}\; +\; s_\gamma\; \widetilde{\mu}\; y_d^{\;\;\text{sr}}\right) \; +\; \left(-\; c_\gamma\; a_d^{\;\;\text{sr}}\; +\; s_\gamma\; \widetilde{\mu}\; y_d^{\;\;\text{sr}}\right) \; +\; \left(-\; c_\gamma\; a_d^{\;\;\text{sr}}\; +\; s_\gamma\; \widetilde{\mu}\; y_d^{\;\;\text{sr}}\right) \; +\; \left(-\; c_\gamma\; a_d^{\;\;\text{sr}}\; +\; s_\gamma\; \widetilde{\mu}\; y_d^{\;\;\text{sr}}\right) \; +\; \left(-\; c_\gamma\; a_d^{\;\;\text{sr}}\; +\; s_\gamma\; \widetilde{\mu}\; y_d^{\;\;\text{sr}}\right) \; +\; \left(-\; c_\gamma\; a_d^{\;\;\text{sr}}\; +\; s_\gamma\; \widetilde{\mu}\; y_d^{\;\;\text{sr}}\right) \; +\; \left(-\; c_\gamma\; a_d^{\;\;\text{sr}}\; +\; s_\gamma\; \widetilde{\mu}\; y_d^{\;\;\text{sr}}\right) \; +\; \left(-\; c_\gamma\; a_d^{\;\;\text{sr}}\; +\; s_\gamma\; \widetilde{\mu}\; y_d^{\;\;\text{sr}}\right) \; +\; \left(-\; c_\gamma\; a_d^{\;\;\text{sr}}\; +\; s_\gamma\; \widetilde{\mu}\; y_d^{\;\;\text{sr}}\right) \; +\; \left(-\; c_\gamma\; a_d^{\;\;\text{sr}}\; +\; s_\gamma\; \widetilde{\mu}\; y_d^{\;\;\text{sr}}\right) \; +\; \left(-\; c_\gamma\; a_d^{\;\;\text{sr}}\; +\; s_\gamma\; \widetilde{\mu}\; y_d^{\;\;\text{sr}}\right) \; +\; \left(-\; c_\gamma\; a_d^{\;\;\text{sr}}\; +\; s_\gamma\; \widetilde{\mu}\; y_d^{\;\;\text{sr}}\right) \; +\; \left(-\; c_\gamma\; a_d^{\;\;\text{sr}}\; +\; s_\gamma\; \widetilde{\mu}\; y_d^{\;\;\text{sr}}\right) \; +\; \left(-\; c_\gamma\; a_d^{\;\;\text{sr}}\; +\; s_\gamma\; \widetilde{\mu}\; y_d^{\;\;\text{sr}}\right) \; +\; \left(-\; c_\gamma\; a_d^{\;\;\text{sr}}\; +\; s_\gamma\; \widetilde{\mu}\; y_d^{\;\;\text{sr}}\right) \; +\; \left(-\; c_\gamma\; a_d^{\;\;\text{sr}}\; +\; s_\gamma\; \widetilde{\mu}\; y_d^{\;\;\text{sr}}\right) \; +\; \left(-\; c_\gamma\; a_d^{\;\;\text{sr}}\; +\; s_\gamma\; \widetilde{\mu}\; y_d^{\;\;\text{sr}}\right) \; +\; \left(-\; c_\gamma\; a_d^{\;\;\text{sr}}\; +\; s_\gamma\; \widetilde{\mu}\; y_d^{\;\;\text{sr}}\right) \; +\; \left(-\; c_\gamma\; a_d^{\;\;\text{sr}}\; +\; s_\gamma\; \alpha_d^{\;\;\text{sr}}\right) \; +\; \left(-\; c_\gamma\; a_d^{\;\;\text{sr}}\; +\; s_\gamma\; \alpha_d^{\;\;\text{sr}}\right) \; +\; \left(-\; c_\gamma\; a_d^{\;\;\text{sr}}\; +\; s_\gamma\; \alpha_d^{\;\;\text{sr}}\right) \; +\; \left(-\; c_\gamma\; a_d^{\;\;\text{sr}}\; +\; s_\gamma\; \alpha_d^{\;
                                                                                                                         6\; s_{_{Y}}{^{2}}\; \overline{y_{u}}^{\text{st}}\; y_{u}{^{\text{pt}}}\; \left(\widetilde{\mu}^{2}\; c_{_{Y}}{^{2}}\; \overline{y_{u}}^{\text{pr}}\; y_{u}{^{\text{sr}}}\; +\; s_{_{Y}}\; \overline{a_{u}}^{\text{pr}}\; \left(s_{_{Y}}\; a_{u}{^{\text{sr}}}\; -\; \widetilde{\mu}\; c_{_{Y}}\; y_{u}{^{\text{sr}}}\right)\; \right)\; LF_{1,1,1,0}\left[\, m_{\tilde{q}}^{\;\;p}\; ,\; m_{\tilde{q}}^{\;\;s}\; ,\; m_{\tilde{u}}^{\;\;r}\, \right]\; +\; c_{_{Y}}^{\;\;p}\; \left(s_{_{Y}}\; a_{u}{^{\text{sr}}}\; -\; \widetilde{\mu}\; c_{_{Y}}\; y_{u}{^{\text{sr}}}\right)\; \right)\; LF_{1,1,1,0}\left[\, m_{\tilde{q}}^{\;\;p}\; ,\; m_{\tilde{q}}^{\;\;s}\; ,\; m_{\tilde{u}}^{\;\;r}\, \right]\; +\; c_{_{Y}}^{\;\;p}\; \left(s_{_{Y}}\; a_{u}{^{\text{sr}}}\; -\; \widetilde{\mu}\; c_{_{Y}}\; y_{u}{^{\text{sr}}}\right)\; \right)\; LF_{1,1,1,0}\left[\, m_{\tilde{q}}^{\;\;p}\; ,\; m_{\tilde{q}}^{\;\;s}\; ,\; m_{\tilde{u}}^{\;\;r}\, \right]\; +\; c_{_{Y}}^{\;\;p}\; \left(s_{_{Y}}\; a_{u}{^{\text{sr}}}\; -\; \widetilde{\mu}\; c_{_{Y}}\; y_{u}{^{\text{sr}}}\right)\; \right)\; LF_{1,1,1,0}\left[\, m_{\tilde{q}}^{\;\;p}\; ,\; m_{\tilde{q}}^{\;\;s}\; ,\; m_{\tilde{u}}^{\;\;r}\, \right]\; +\; c_{_{Y}}^{\;\;p}\; \left(s_{_{Y}}\; a_{u}{^{\text{sr}}}\; -\; \widetilde{\mu}\; c_{_{Y}}\; y_{u}{^{\text{sr}}}\right)\; \right)\; LF_{1,1,1,0}\left[\, m_{\tilde{q}}^{\;\;p}\; ,\; m_{\tilde{q}}^{\;\;s}\; ,\; m_{\tilde{u}}^{\;\;r}\, \right]\; +\; c_{_{Y}}^{\;\;p}\; \left(s_{_{Y}}\; a_{u}{^{\text{sr}}}\; -\; \widetilde{\mu}\; c_{_{Y}}\; y_{u}{^{\text{sr}}}\right)\; \right)\; LF_{1,1,1,0}\left[\, m_{\tilde{q}}\; a_{u}{^{\text{sr}}}\; ,\; m_{\tilde{q}}^{\;\;s}\; ,\; m_{\tilde{q}}^
                                                                                                                         6\ m_H^2\ s_\gamma\ \left(s_\gamma\ \widetilde{\mu}^2\ c_\gamma^2\ \overline{y_u}^{\text{pr}}\ \overline{y_u}^{\text{st}}\ y_u^{\text{pt}}\ y_u^{\text{sr}} + \overline{a_u}^{\text{pr}}\ \left(c_\gamma^2\ \overline{y_d}^{\text{st}}\ y_d^{\text{pt}} - s_\gamma^2\ \overline{y_u}^{\text{st}}\ y_u^{\text{pt}}\right)\ \left(-s_\gamma\ a_u^{\text{sr}} + \widetilde{\mu}\ c_\gamma\ y_u^{\text{sr}}\right)\right)
                                                                                                                                                     LF_{2,1,1,0}[m_{\tilde{q}}^{p},m_{\tilde{q}}^{s},m_{\tilde{u}}^{r}] -
                                                                                                                         6\ m_H^2\ s_\gamma\ \left(s_\gamma\ \widetilde{\mu}^2\ c_{\gamma}^2\ \overline{y_u}^{\text{pt}}\ \overline{y_u}^{\text{st}}\ y_u^{\text{pt}}\ y_u^{\text{sr}} + \overline{a_u}^{\text{pr}}\ \left(c_{\gamma}^2\ \overline{y_d}^{\text{st}}\ y_d^{\text{pt}} - s_{\gamma}^2\ \overline{y_u}^{\text{st}}\ y_u^{\text{pt}}\right)\ \left(-s_\gamma\ a_u^{\text{sr}} + \widetilde{\mu}\ c_\gamma\ y_u^{\text{sr}}\right)\right)
                                                                                                                                                     \mathsf{LF_{3,1,1,-1}}\big[\mathsf{m}_{\bar{q}}^{\;p},\;\mathsf{m}_{\bar{q}}^{\;s},\;\mathsf{m}_{\bar{u}}^{\;r}\big]\;+\;6\;\widetilde{\mu}\;c_{\gamma}\;s_{\gamma}^{\;3}\;\overline{y_{u}}^{pr}\;\overline{y_{u}}^{st}\;y_{u}^{\;sr}\;a_{u}^{\;pt}\;\mathsf{LF_{1,1,1,0}}\big[\mathsf{m}_{\bar{q}}^{\;p},\;\mathsf{m}_{\bar{q}}^{\;s},\;\mathsf{m}_{\bar{u}}^{\;t}\big]\;+\;
                                                                                                                         6\ \mathsf{m}_{\mathsf{H}}^{2}\ \tilde{\mu}\ \mathsf{c}_{\gamma}\ \overline{\mathsf{y}_{\mathsf{u}}}^{\mathsf{st}}\ \left(\mathsf{c}_{\gamma}^{2}\ \overline{\mathsf{y}_{\mathsf{d}}}^{\mathsf{pr}}\ \mathsf{y}_{\mathsf{d}}^{\mathsf{sr}}-\mathsf{s}_{\gamma}^{2}\ \overline{\mathsf{y}_{\mathsf{u}}}^{\mathsf{pr}}\ \mathsf{y}_{\mathsf{u}}^{\mathsf{sr}}\right)\ \left(\mathsf{s}_{\gamma}\ \mathsf{a}_{\mathsf{u}}^{\mathsf{pt}}-\tilde{\mu}\ \mathsf{c}_{\gamma}\ \mathsf{y}_{\mathsf{u}}^{\mathsf{pt}}\right)\ \mathsf{LF}_{2,1,1,0}\left[\mathsf{m}_{\bar{\mathsf{q}}}^{\mathsf{p}},\ \mathsf{m}_{\bar{\mathsf{q}}}^{\mathsf{s}},\ \mathsf{m}_{\bar{\mathsf{u}}}^{\mathsf{t}}\right]+
                                                                                                                         6\; m_H^2\; \widetilde{\mu}\; \mathbf{c}_{\scriptscriptstyle Y}\; \overline{y_u}^{\text{st}} \; \left(\mathbf{c}_{\scriptscriptstyle Y}^{\; 2}\; \overline{y_d}^{\text{pr}}\; y_d^{\; \text{sr}} - \mathbf{s}_{\scriptscriptstyle Y}^{\; 2}\; \overline{y_u}^{\text{pr}}\; y_u^{\; \text{sr}}\right) \; \left(-\, \mathbf{s}_{\scriptscriptstyle Y}\; a_u^{\; \text{pt}} + \widetilde{\mu}\; \mathbf{c}_{\scriptscriptstyle Y}\; y_u^{\; \text{pt}}\right) \; \mathsf{LF_{3,1,1,-1}}\left[\, m_{\tilde{\mathsf{q}}}^{\; \mathsf{p}} \,,\; m_{\tilde{\mathsf{q}}}^{\; \mathsf{s}} \,,\; m_{\tilde{\mathsf{u}}}^{\; \mathsf{t}}\, \right] \; - \; \mathsf{LF_{3,1,1,-1}}\left[\, m_{\tilde{\mathsf{q}}}^{\; \mathsf{p}} \,,\; m_{\tilde{\mathsf{q}}}^{\; \mathsf{s}} \,,\; m_{\tilde{\mathsf{u}}}^{\; \mathsf{t}}\, \right] \; - \; \mathsf{LF_{3,1,1,-1}}\left[\, m_{\tilde{\mathsf{q}}}^{\; \mathsf{p}} \,,\; m_{\tilde{\mathsf{q}}}^{\; \mathsf{s}} \,,\; m_{\tilde{\mathsf{u}}}^{\; \mathsf{t}}\, \right] \; - \; \mathsf{LF_{3,1,1,-1}}\left[\, m_{\tilde{\mathsf{q}}}^{\; \mathsf{p}} \,,\; m_{\tilde{\mathsf{q}}}^{\; \mathsf{s}} \,,\; m_{\tilde{\mathsf{u}}}^{\; \mathsf{s}}\, \right] \; - \; \mathsf{LF_{3,1,1,-1}}\left[\, m_{\tilde{\mathsf{q}}}^{\; \mathsf{p}} \,,\; m_{\tilde{\mathsf{q}}}^{\; \mathsf{s}} \,,\; m_{\tilde{\mathsf{u}}}^{\; \mathsf{s}}\, \right] \; - \; \mathsf{LF_{3,1,1,-1}}\left[\, m_{\tilde{\mathsf{q}}}^{\; \mathsf{p}} \,,\; m_{\tilde{\mathsf{q}}}^{\; \mathsf{s}} \,,\; m_{\tilde{\mathsf{u}}}^{\; \mathsf{s}}\, \right] \; - \; \mathsf{LF_{3,1,1,-1}}\left[\, m_{\tilde{\mathsf{q}}}^{\; \mathsf{p}} \,,\; m_{\tilde{\mathsf{q}}}^{\; \mathsf{s}} \,,\; m_{\tilde{\mathsf{u}}}^{\; \mathsf{s}}\, \right] \; - \; \mathsf{LF_{3,1,1,-1}}\left[\, m_{\tilde{\mathsf{q}}}^{\; \mathsf{p}} \,,\; m_{\tilde{\mathsf{q}}}^{\; \mathsf{s}} \,,\; m_{\tilde{\mathsf{q}}}^{\; \mathsf{s}}\, \right] \; - \; \mathsf{LF_{3,1,1,-1}}\left[\, m_{\tilde{\mathsf{q}}}^{\; \mathsf{p}} \,,\; m_{\tilde{\mathsf{q}}}^{\; \mathsf{s}} \,,\; m_{\tilde{\mathsf{q}}}^{\; \mathsf{s}}\, \right] \; - \; \mathsf{LF_{3,1,1,-1}}\left[\, m_{\tilde{\mathsf{q}}}^{\; \mathsf{p}} \,,\; m_{\tilde{\mathsf{q}}}^{\; \mathsf{s}} \,,\; m_{\tilde{\mathsf{q}}}^{\; \mathsf{s}}\, \right] \; - \; \mathsf{LF_{3,1,1,-1}}\left[\, m_{\tilde{\mathsf{q}}}^{\; \mathsf{p}} \,,\; m_{\tilde{\mathsf{q}}}^{\; \mathsf{s}}\, ,\; m_{\tilde{\mathsf{q}}}^{\; \mathsf{s}}\, \right] \; - \; \mathsf{LF_{3,1,1,-1}}\left[\, m_{\tilde{\mathsf{q}}}^{\; \mathsf{p}} \,,\; m_{\tilde{\mathsf{q}}}^{\; \mathsf{s}}\, ,\; m_{\tilde{\mathsf{q}}}^{\; \mathsf{s}}\, \right] \; - \; \mathsf{LF_{3,1,1,-1}}\left[\, m_{\tilde{\mathsf{q}}}^{\; \mathsf{p}} \,,\; m_{\tilde{\mathsf{q}}}^{\; \mathsf{s}}\, ,\; m_{\tilde{\mathsf{q}}}^{\; \mathsf{s}}\, \right] \; - \; \mathsf{LF_{3,1,1,-1}}\left[\, m_{\tilde{\mathsf{q}}}^{\; \mathsf{p}} \,,\; m_{\tilde{\mathsf{q}}}^{\; \mathsf{s}}\, ,\; m_{\tilde{\mathsf{q}}}^{\; \mathsf{s}}\, ,\; m_{\tilde{\mathsf{q}}}^{\; \mathsf{s}}\, \right] \; - \; \mathsf{LF_{3,1,1,-1}}\left[\, m_{\tilde{\mathsf{q}}}^{\; \mathsf{p}} \,,\; m_{\tilde{\mathsf{q}}}^{\; \mathsf{p}}\, ,\; m_{\tilde{\mathsf{q}}}^{\; \mathsf{
                                                                                                                         3\;m_{H}^{2}\;s_{Y}\;\left(s_{Y}\;\widetilde{\mu}^{2}\;c_{Y}^{2}\;\overline{y_{u}}^{pr}\;\overline{y_{u}}^{st}\;y_{u}^{pt}\;y_{u}^{sr}\;+\;\overline{a_{u}}^{pr}\;\left(c_{Y}^{2}\;\overline{y_{d}}^{st}\;y_{d}^{pt}\;-\;s_{Y}^{2}\;\overline{y_{u}}^{st}\;y_{u}^{pt}\right)\;\left(-\,s_{Y}\;a_{u}^{sr}\;+\;\widetilde{\mu}\;c_{Y}\;y_{u}^{sr}\right)\right)
                                                                                                                                                     LF_{2,2,1,-1}[m_{\tilde{q}}^p, m_{\tilde{u}}^r, m_{\tilde{q}}^s] +
                                                                                                                         6\; s_{\gamma}^{\;3}\; \overline{y_{u}}^{\text{st}}\; y_{u}^{\;\;\text{sr}}\; \left(\widetilde{\mu}\; c_{\gamma}\; \overline{y_{u}}^{\text{pr}}\; a_{u}^{\;\;\text{pt}}\; +\; \overline{a_{u}}^{\text{pr}}\; \left(-\, s_{\gamma}\; a_{u}^{\;\;\text{pt}}\; +\; \widetilde{\mu}\; c_{\gamma}\; y_{u}^{\;\;\text{pt}}\right)\; \right) \; \mathsf{LF}_{1,1,1,0}\left[\,\mathsf{m}_{\bar{q}}^{\;\;p}\; ,\; \mathsf{m}_{\bar{u}}^{\;\;r}\; ,\; \mathsf{m}_{\bar{u}}^{\;\;\text{t}}\; \right] \; +\; \widetilde{\mu}\; c_{\gamma}\; y_{u}^{\;\;\text{pt}}\; \right) \; \mathsf{LF}_{1,1,1,0}\left[\,\mathsf{m}_{\bar{q}}^{\;\;p}\; ,\; \mathsf{m}_{\bar{u}}^{\;\;r}\; ,\; \mathsf{m}_{\bar{u}}^{\;\;\text{t}}\; \right] \; +\; \widetilde{\mu}\; c_{\gamma}\; y_{u}^{\;\;\text{pt}}\; \right] \; +\; \widetilde{\mu}\; c_{\gamma}\; y_{u}^{\;\;\text{pt}}\; \left(-\, s_{\gamma}\; a_{u}^{\;\;\text{pt}}\; +\; \widetilde{\mu}\; c_{\gamma}\; y_{u}^{\;\;\text{pt}}\; \right) \; \mathsf{LF}_{1,1,1,0}\left[\,\mathsf{m}_{\bar{q}}^{\;\;p}\; ,\; \mathsf{m}_{\bar{u}}^{\;\;\text{r}}\; ,\; \mathsf{m}_{\bar{u}}^{\;\;\text{t}}\; \right] \; +\; \widetilde{\mu}\; c_{\gamma}\; y_{u}^{\;\;\text{pt}}\; \right] \; +\; \widetilde{\mu}\; c_{\gamma}\; y_{u}^{\;\;\text{pt}}\; \left(-\, s_{\gamma}\; a_{u}^{\;\;\text{pt}}\; +\; \widetilde{\mu}\; c_{\gamma}\; y_{u}^{\;\;\text{pt}}\; \right) \; \mathsf{LF}_{1,1,1,0}\left[\,\mathsf{m}_{\bar{q}}^{\;\;p}\; ,\; \mathsf{m}_{\bar{u}}^{\;\;\text{r}}\; ,\; \mathsf{m}_{\bar{u}}^{\;\;\text{t}}\; \right] \; +\; \widetilde{\mu}\; c_{\gamma}\; y_{u}^{\;\;\text{pt}}\; +\; \widetilde{\mu}\; c_{\gamma}\; y_{u}^{\;\;\text{pt}}\; \right) \; \mathsf{LF}_{1,1,1,0}\left[\,\mathsf{m}_{\bar{q}}^{\;\;p}\; ,\; \mathsf{m}_{\bar{u}}^{\;\;\text{r}}\; ,\; \mathsf{m}_{\bar{u}}^{\;\;\text{r}}\; \right] \; +\; \widetilde{\mu}\; c_{\gamma}\; y_{u}^{\;\;\text{pt}}\; +\; \widetilde{\mu}\; c_{\gamma}\; y_{u}^{\;\;
                                                                                                                         3\; m_H^2\; \widetilde{\mu}\; c_\gamma \; \overline{y_u}^{\text{st}} \; \left(c_\gamma^2 \; \overline{y_d}^{\text{pr}} \; y_d^{\text{sr}} - s_\gamma^2 \; \overline{y_u}^{\text{pr}} \; y_u^{\text{sr}}\right) \; \left(-s_\gamma \; a_u^{\text{pt}} + \widetilde{\mu}\; c_\gamma \; y_u^{\text{pt}}\right) \; \text{LF}_{2,2,1,-1} \left[m_{\widetilde{q}}^{\;p},\; m_{\widetilde{u}}^{\;t},\; m_{\widetilde{q}}^{\;s}\right] \; + \; \left(-s_\gamma \; a_u^{\text{pt}} + \widetilde{\mu}\; c_\gamma \; y_u^{\text{pt}}\right) \; \text{LF}_{2,2,1,-1} \left[m_{\widetilde{q}}^{\;p},\; m_{\widetilde{u}}^{\;t},\; m_{\widetilde{q}}^{\;s}\right] \; + \; \left(-s_\gamma \; a_u^{\text{pt}} + \widetilde{\mu}\; c_\gamma \; y_u^{\text{pt}}\right) \; \text{LF}_{2,2,1,-1} \left[m_{\widetilde{q}}^{\;p},\; m_{\widetilde{u}}^{\;t},\; m_{\widetilde{q}}^{\;s}\right] \; + \; \left(-s_\gamma \; a_u^{\text{pt}} + \widetilde{\mu}\; c_\gamma \; y_u^{\text{pt}}\right) \; \text{LF}_{2,2,1,-1} \left[m_{\widetilde{q}}^{\;p},\; m_{\widetilde{u}}^{\;t},\; m_{\widetilde{q}}^{\;s}\right] \; + \; \left(-s_\gamma \; a_u^{\text{pt}} + \widetilde{\mu}\; c_\gamma \; y_u^{\text{pt}}\right) \; \text{LF}_{2,2,1,-1} \left[m_{\widetilde{q}}^{\;p},\; m_{\widetilde{u}}^{\;t},\; m_{\widetilde{q}}^{\;s}\right] \; + \; \left(-s_\gamma \; a_u^{\text{pt}} + \widetilde{\mu}\; c_\gamma \; y_u^{\text{pt}}\right) \; \text{LF}_{2,2,1,-1} \left[m_{\widetilde{q}}^{\;p},\; m_{\widetilde{u}}^{\;t},\; m_{\widetilde{q}}^{\;s}\right] \; + \; \left(-s_\gamma \; a_u^{\text{pt}} + \widetilde{\mu}\; c_\gamma \; y_u^{\text{pt}}\right) \; \text{LF}_{2,2,1,-1} \left[m_{\widetilde{q}}^{\;p},\; m_{\widetilde{u}}^{\;t},\; m_{\widetilde{q}}^{\;s}\right] \; + \; \left(-s_\gamma \; a_u^{\text{pt}} + \widetilde{\mu}\; c_\gamma \; y_u^{\text{pt}}\right) \; \text{LF}_{2,2,1,-1} \left[m_{\widetilde{q}}^{\;p},\; m_{\widetilde{u}}^{\;t},\; m_{\widetilde{q}}^{\;s}\right] \; + \; \left(-s_\gamma \; a_u^{\text{pt}} + \widetilde{\mu}\; c_\gamma \; y_u^{\text{pt}}\right) \; + \; \left(-s_\gamma \; a_u^{\text{pt}} + \widetilde{\mu}\; c_\gamma \; y_u^{\text{pt}}\right) \; + \; \left(-s_\gamma \; a_u^{\text{pt}} + \widetilde{\mu}\; c_\gamma \; y_u^{\text{pt}}\right) \; + \; \left(-s_\gamma \; a_u^{\text{pt}} + \widetilde{\mu}\; c_\gamma \; y_u^{\text{pt}}\right) \; + \; \left(-s_\gamma \; a_u^{\text{pt}} + \widetilde{\mu}\; c_\gamma \; y_u^{\text{pt}}\right) \; + \; \left(-s_\gamma \; a_u^{\text{pt}} + \widetilde{\mu}\; c_\gamma \; y_u^{\text{pt}}\right) \; + \; \left(-s_\gamma \; a_u^{\text{pt}} + \widetilde{\mu}\; c_\gamma \; y_u^{\text{pt}}\right) \; + \; \left(-s_\gamma \; a_u^{\text{pt}} + \widetilde{\mu}\; c_\gamma \; y_u^{\text{pt}}\right) \; + \; \left(-s_\gamma \; a_u^{\text{pt}} + \widetilde{\mu}\; c_\gamma \; y_u^{\text{pt}}\right) \; + \; \left(-s_\gamma \; a_u^{\text{pt}} + \widetilde{\mu}\; c_\gamma \; y_u^{\text{pt}}\right) \; + \; \left(-s_\gamma \; a_u^{\text{pt}} + \widetilde{\mu}\; c_\gamma \; y_u^{\text{pt}}\right) \; + \; \left(-s_\gamma \; a_u^{\text{pt}} + \widetilde{\mu}\; c_\gamma \; y_u^{\text{pt}}\right) \; + \; \left(-s_\gamma \; a_u^{\text{pt}} + \widetilde{\mu}\; c_\gamma \; y_u^{\text{pt}}\right) \; + \; \left(-s_\gamma \; a_u^{\text{pt}} + \widetilde{\mu}\; c_\gamma \; y_u^{\text{pt}}\right) \; + \; \left(-s_\gamma \; a_u^{\text{pt}} + \widetilde{\mu}\; c_\gamma \; y_u^{\text{pt}}\right) \; + \; \left(-s_\gamma \; a_u^{\text{pt}} + \widetilde{\mu}\; c_\gamma \; y_u^{\text{pt}}\right) \; + \; \left(-s_\gamma \; a_u^{\text{pt}} + \widetilde{\mu}\; c_\gamma \; y_u^{\text{pt}}\right) \; 
                                                                                                                         6\; m_H^2\; s_\gamma^2\; \widetilde{\mu}^2\; c_\gamma^2\; \overline{y_d}^\text{pr}\; \overline{y_d}^\text{st}\; y_d^\text{pt}\; y_d^\text{sr}\; LF_{2,1,1,0}\left[\,m_{\tilde{q}}^{\;\;s}\,,\; m_{\tilde{d}}^{\;\;r}\,,\; m_{\tilde{d}}^{\;\;t}\,\right]\; -
                                                                                                                         6\; m_H^2\; {s_{\scriptscriptstyle Y}}^2\; \tilde{\mu}^2\; c_{\scriptscriptstyle Y}{}^2\; \overline{y_d}^{\text{pr}}\; \overline{y_d}^{\text{st}}\; y_d{}^{\text{pt}}\; y_d{}^{\text{sr}}\; \mathsf{LF_{3,1,1,-1}}\big[m_{\tilde{q}}{}^{\text{s}}\;,\; m_{\tilde{d}}{}^{\text{r}}\;,\; m_{\tilde{d}}{}^{\text{t}}\big]\; + \\
                                                                                                                         6\; m_H^2\; c_{\gamma}^{\;3}\; \overline{y_d}^{\text{st}}\; y_d^{\;\text{pt}}\; \overline{a_d}^{\text{pr}}\; \left(c_{\gamma}\; a_d^{\;\text{sr}} - s_{\gamma}\; \widetilde{\mu}\; y_d^{\;\text{sr}}\right) \; \text{LF}_{2,1,1,\theta}\left[\, m_{\tilde{q}}^{\;\;\text{s}}\;,\; m_{\tilde{d}}^{\;\;\text{r}}\;,\; m_{\tilde{q}}^{\;\;\text{p}}\,\right] \; + \; \left(\, c_{\gamma}^{\;\;\text{st}}\; a_d^{\;\;\text{st}} - s_{\gamma}^{\;\;\text{st}}\; \widetilde{\mu}\; y_d^{\;\;\text{st}}\right) \; \text{LF}_{2,1,1,\theta}\left[\, m_{\tilde{q}}^{\;\;\text{st}}\;,\; m_{\tilde{q}}^{\;\;\text{r}}\;,\; m_{\tilde{q}}^{\;\;\text{r}}\;\right] \; + \; \left(\, c_{\gamma}^{\;\;\text{st}}\; a_d^{\;\;\text{st}} - s_{\gamma}^{\;\;\text{st}}\; \widetilde{\mu}\; a_d^{\;\;\text{st}}\;\right) \; \text{LF}_{2,1,1,\theta}\left[\, m_{\tilde{q}}^{\;\;\text{st}}\;,\; m_{\tilde{q}}^{\;\;\text{r}}\;,\; m_{\tilde{q}}^{\;\;\text{r}}\;\right] \; + \; \left(\, c_{\gamma}^{\;\;\text{st}}\; a_d^{\;\;\text{st}} - s_{\gamma}^{\;\;\text{st}}\; \widetilde{\mu}\; a_d^{\;\;\text{st}}\;\right) \; \text{LF}_{2,1,1,\theta}\left[\, m_{\tilde{q}}^{\;\;\text{st}}\;,\; m_{\tilde{q}}^{\;\;\text{r}}\;,\; m_{\tilde{q}}^{\;\;\text{r}}\;\right] \; + \; \left(\, c_{\gamma}^{\;\;\text{st}}\; a_d^{\;\;\text{st}}\;,\; m_{\tilde{q}}^{\;\;\text{st}}\;,\; m_{\tilde{q}}^{\;\;\text{st}
                                                                                                                         6\; m_{H}^{2}\; c_{\gamma}^{3}\; \overline{y_{d}}^{\text{st}}\; y_{d}^{\;\text{pt}}\; \overline{a_{d}}^{\text{pr}}\; \left(-\, c_{\gamma}\; a_{d}^{\;\text{sr}}\, +\, s_{\gamma}\; \widetilde{\mu}\; y_{d}^{\;\text{sr}}\right)\; \mathsf{LF_{3,1,1,-1}} \left\lceil \mathsf{m_{\tilde{q}}}^{\;\text{s}}\; ,\; \mathsf{m_{\tilde{d}}}^{\;\text{r}}\; ,\; \mathsf{m_{\tilde{q}}}^{\;\text{p}}\right\rceil\; -\, \left(-\, c_{\gamma}\; a_{d}^{\;\text{sr}}\, +\, s_{\gamma}\; \widetilde{\mu}\; y_{d}^{\;\text{sr}}\right)\; \mathsf{LF_{3,1,1,-1}} \left\lceil \mathsf{m_{\tilde{q}}}^{\;\text{s}}\; ,\; \mathsf{m_{\tilde{q}}}^{\;\text{r}}\; ,\; \mathsf{m_{\tilde{q}}}^{\;\text{p}}\right\rceil\; -\, \left(-\, c_{\gamma}\; a_{d}^{\;\text{sr}}\, +\, s_{\gamma}\; \widetilde{\mu}\; y_{d}^{\;\text{sr}}\right)\; \mathsf{LF_{3,1,1,-1}} \left\lceil \mathsf{m_{\tilde{q}}}^{\;\text{s}}\; ,\; \mathsf{m_{\tilde{q}}}^{\;\text{r}}\; ,\; \mathsf{m_{\tilde{q}}}^{\;\text{r}}\right\rceil\; -\, \left(-\, c_{\gamma}\; a_{d}^{\;\text{sr}}\, +\, s_{\gamma}\; \widetilde{\mu}\; y_{d}^{\;\text{sr}}\right)\; \mathsf{LF_{3,1,1,-1}} \left\lceil \mathsf{m_{\tilde{q}}}^{\;\text{s}}\; ,\; \mathsf{m_{\tilde{q}}}^{\;\text{r}}\; ,\; \mathsf{m_{\tilde{q}}}^{\;\text{r}}\right\rangle\; -\, \left(-\, c_{\gamma}\; a_{d}^{\;\text{sr}}\, +\, s_{\gamma}\; \widetilde{\mu}\; y_{d}^{\;\text{sr}}\right)\; \mathsf{LF_{3,1,1,-1}} \left\lceil \mathsf{m_{\tilde{q}}}^{\;\text{s}}\; ,\; \mathsf{m_{\tilde{q}}}^{\;\text{r}}\; ,\; \mathsf{m_{\tilde{q}}}^{\;\text{r}}\right\rangle\; -\, \left(-\, c_{\gamma}\; a_{d}^{\;\text{sr}}\, +\, s_{\gamma}\; \widetilde{\mu}\; y_{d}^{\;\text{sr}}\right)\; \mathsf{LF_{3,1,1,-1}} \left\lceil \mathsf{m_{\tilde{q}}}^{\;\text{s}}\; ,\; \mathsf{m_{\tilde{q}}}^{\;\text{r}}\; ,\; \mathsf{m_{\tilde{q}}}^{\;\text{r}}\right\rangle\; -\, \left(-\, c_{\gamma}\; a_{d}^{\;\text{sr}}\, +\, s_{\gamma}\; \widetilde{\mu}\; y_{d}^{\;\text{sr}}\right)\; \mathsf{LF_{3,1,1,-1}} \left\lceil \mathsf{m_{\tilde{q}}}^{\;\text{sr}}\; ,\; \mathsf{m_{\tilde{q}}}^{\;\text{r}}\; ,\; \mathsf{m_{\tilde{q}}}^{\;\text{r}}\right)\; -\, \left(-\, c_{\gamma}\; a_{d}^{\;\text{sr}}\; +\, s_{\gamma}\; \widetilde{\mu}\; y_{d}^{\;\text{sr}}\right)\; +\, \left(-\, c_{\gamma}\; a_{d}^{\;\text{sr}}\; +\, s_{\gamma}\; a_{d}^{\;\text{sr}}\right)\; +\, \left(-\, c_{\gamma}\; a_{d}^{\;\text{sr}}\; +\, s_{\gamma
                                                                                                                         6\; m_H^2\; s_{\scriptscriptstyle Y}\; \widetilde{\mu}\; c_{\scriptscriptstyle Y}{}^3\; \overline{y_d}^{pr}\; \overline{y_d}^{st}\; y_d{}^{sr}\; a_d{}^{pt}\; \mathsf{LF}_{2,1,1,0}\left[\,m_{\tilde{q}}{}^s\,,\; m_{\tilde{d}}{}^t\,,\; m_{\tilde{q}}{}^p\,\right]\; +
                                                                                                                         6\; m_H^2\; s_\gamma\; \widetilde{\mu}\; c_\gamma{}^3\; \overline{y_d}^{pr}\; \overline{y_d}^{st}\; y_d{}^{sr}\; a_d{}^{pt}\; \mathsf{LF}_{3,1,1,-1}\big[m_{\tilde{q}}{}^s\;,\; m_{\tilde{d}}{}^t\;,\; m_{\tilde{q}}{}^p\big]\; +
                                                                                                                         6\; m_H^2\; s_{\scriptscriptstyle Y}\; \overline{a_u}^{pr} \; \left(-\, c_{\scriptscriptstyle Y}^{\; 2}\; \overline{y_d}^{\text{st}}\; y_d^{\; pt} + s_{\scriptscriptstyle Y}^{\; 2}\; \overline{y_u}^{\text{st}}\; y_u^{\; pt}\right) \; \left(s_{\scriptscriptstyle Y}\; a_u^{\; sr} - \widetilde{\mu}\; c_{\scriptscriptstyle Y}\; y_u^{\; sr}\right) \; \mathsf{LF}_{2,1,1,0} \left[\, \mathsf{m}_{\tilde{\mathsf{q}}}^{\; s} \, , \; \mathsf{m}_{\tilde{\mathsf{q}}}^{\; p} \, , \; \mathsf{m}_{\tilde{\mathsf{u}}}^{\; r}\, \right] \; + \; \mathsf{LF}_{2,1,1,0} \left[\, \mathsf{m}_{\tilde{\mathsf{q}}}^{\; s} \, , \; \mathsf{m}_{\tilde{\mathsf{q}}}^{\; p} \, , \; \mathsf{m}_{\tilde{\mathsf{u}}}^{\; r}\, \right] \; + \; \mathsf{LF}_{2,1,1,0} \left[\, \mathsf{m}_{\tilde{\mathsf{q}}}^{\; s} \, , \; \mathsf{m}_{\tilde{\mathsf{q}}}^{\; p} \, , \; \mathsf{m}_{\tilde{\mathsf{u}}}^{\; r}\, \right] \; + \; \mathsf{LF}_{2,1,1,0} \left[\, \mathsf{m}_{\tilde{\mathsf{q}}}^{\; s} \, , \; \mathsf{m}_{\tilde{\mathsf{q}}}^{\; p} \, , \; \mathsf{m}_{\tilde{\mathsf{u}}}^{\; r}\, \right] \; + \; \mathsf{LF}_{2,1,1,0} \left[\, \mathsf{m}_{\tilde{\mathsf{q}}}^{\; s} \, , \; \mathsf{m}_{\tilde{\mathsf{q}}}^{\; p} \, , \; \mathsf{m}_{\tilde{\mathsf{u}}}^{\; r}\, \right] \; + \; \mathsf{LF}_{2,1,1,0} \left[\, \mathsf{m}_{\tilde{\mathsf{q}}}^{\; s} \, , \; \mathsf{m}_{\tilde{\mathsf{q}}}^{\; p} 
                                                                                                                         6\; m_H^2\; s_{\scriptscriptstyle Y}\; \overline{a_u}^{pr}\; \left(\; c_{\scriptscriptstyle Y}^{\;2}\; \overline{y_d}^{st}\; y_d^{\;pt} - s_{\scriptscriptstyle Y}^{\;2}\; \overline{y_u}^{st}\; y_u^{\;pt}\; \right) \; \left(\; s_{\scriptscriptstyle Y}\; a_u^{\;sr} - \widetilde{\mu}\; c_{\scriptscriptstyle Y}\; y_u^{\;sr}\; \right) \; \mathsf{LF_{3,1,1,-1}} \left[\; \mathsf{m}_{\bar{q}}^{\;\;s}\; ,\; \mathsf{m}_{\bar{q}}^{\;\;p}\; ,\; \mathsf{m}_{\bar{u}}^{\;\;r}\; \right] \; - \; \mathsf{m_{1}^{r}} \; \mathsf{m_{2}^{r}} \; \mathsf{m_{3}^{r}} \; \mathsf{m_{3}
                                                                                                                         6\; m_{H}^{2}\; \widetilde{\mu}\; \mathbf{c_{\scriptscriptstyle Y}}\; \overline{y_{u}}^{\text{st}}\; \left(\mathbf{s_{\scriptscriptstyle Y}}^{3}\; \overline{y_{u}}^{\text{pr}}\; \mathbf{y_{u}}^{\text{sr}}\; \mathbf{a_{u}}^{\text{pt}} + \mathbf{c_{\scriptscriptstyle Y}}^{2}\; \overline{y_{d}}^{\text{pr}}\; \mathbf{y_{d}}^{\text{sr}}\; \left(-\,\mathbf{s_{\scriptscriptstyle Y}}\; \mathbf{a_{u}}^{\text{pt}} + \, \widetilde{\mu}\; \mathbf{c_{\scriptscriptstyle Y}}\; \mathbf{y_{u}}^{\text{pt}}\right)\, \right) \; \mathsf{LF_{2,1,1,0}}\left[\,\mathbf{m_{\tilde{q}}}^{\,\,\text{s}}\;,\; \mathbf{m_{\tilde{q}}}^{\,\,\text{p}}\;,\; \mathbf{m_{\tilde{u}}}^{\,\,\text{t}}\,\right] \; + \; \mathsf{T}^{\,\,\text{sp}}\; \mathbf{a_{u}}^{\,\,\text{pt}} + \, \mathsf{T}^{\,\,\text{sp}}\; 
                                                                                                                         6 \, m_H^2 \, \widetilde{\mu} \, c_Y \, \overline{y_u}^{\text{st}} \, \left( s_Y^3 \, \overline{y_u}^{\text{pr}} \, y_u^{\text{sr}} \, a_u^{\text{pt}} + c_Y^2 \, \overline{y_d}^{\text{pr}} \, y_d^{\text{sr}} \, \left( - \, s_Y \, a_u^{\text{pt}} + \widetilde{\mu} \, c_Y \, y_u^{\text{pt}} \right) \right)
                                                                                                                                                     LF_{3,1,1,-1}[m_{\tilde{q}}^{s}, m_{\tilde{q}}^{p}, m_{\tilde{u}}^{t}] +
                                                                                                                         3\; \mathsf{m_H^2}\; \mathsf{s_{\scriptscriptstyle Y}}\; \overline{a_u}^{\mathsf{pr}}\; \left(\; \mathsf{c_{\scriptscriptstyle Y}}^2\; \overline{y_d}^{\mathsf{st}}\; \mathsf{y_d}^{\mathsf{pt}} - \; \mathsf{s_{\scriptscriptstyle Y}}^2\; \overline{y_u}^{\mathsf{st}}\; \mathsf{y_u}^{\mathsf{pt}}\right) \\ \left(\; \mathsf{s_{\scriptscriptstyle Y}}\; a_u^{\;\mathsf{sr}} - \widetilde{\mu}\; \mathsf{c_{\scriptscriptstyle Y}}\; \mathsf{y_u}^{\mathsf{sr}}\right) \; \mathsf{LF_{2,2,1,-1}}\left[\; \mathsf{m_{\tilde{q}}}^{\;\mathsf{s}}\; ,\; \mathsf{m_{\tilde{u}}}^{\;\mathsf{r}}\; ,\; \mathsf{m_{\tilde{q}}}^{\;\mathsf{p}}\; \right] \; - \; \mathsf{m_{\tilde{q}}}^{\;\mathsf{pr}} \; \mathsf{m_{\tilde{q}}
                                                                                                                         6~\text{S}_{\text{Y}}^{2}~\tilde{\mu}^{2}~\text{C}_{\text{Y}}^{2}~\overline{y_{\text{u}}}^{\text{pr}}~\overline{y_{\text{u}}}^{\text{st}}~\text{y}_{\text{u}}^{\text{pt}}~\text{y}_{\text{u}}^{\text{sr}}~\text{LF}_{1,1,1,0}\left[\,\text{m}_{\tilde{\text{q}}}^{\text{s}},~\text{m}_{\tilde{\text{u}}}^{\text{r}},~\text{m}_{\tilde{\text{u}}}^{\text{t}}\,\right]~+~3~\text{m}_{\text{H}}^{2}~\tilde{\mu}~\text{c}_{\text{Y}}~\overline{y_{\text{u}}}^{\text{st}}
                                                                                                                                                            \left(s_{\gamma}^{3} \overline{y_{u}}^{pr} y_{u}^{sr} a_{u}^{pt} + c_{\gamma}^{2} \overline{y_{d}}^{pr} y_{d}^{sr} \left(-s_{\gamma} a_{u}^{pt} + \widetilde{\mu} c_{\gamma} y_{u}^{pt}\right)\right) LF_{2,2,1,-1}\left[m_{\widetilde{a}}^{s}, m_{\widetilde{u}}^{t}, m_{\widetilde{a}}^{p}\right] + C_{\gamma}^{2} \overline{y_{u}}^{pr} + C_{\gamma}^{2} \overline{y_{u}}^{pr} + C_{\gamma}^{2} \overline{y_{u}}^{pr} + C_{\gamma}^{2} \overline{y_{u}}^{pr}\right] + C_{\gamma}^{2} \overline{y_{u}}^{pr} + C_{\gamma}^{2} \overline{y_{u}}^{pr}\right] + C_{\gamma}^{2} \overline{y_{u}}^{pr} + C
                                                                                                                         6\; \mathsf{m_H^2}\; \mathsf{S_\gamma^2}\; \overline{y_u}^{\mathsf{st}}\; \mathsf{y_u^{pt}}\; \left(\widetilde{\mu}^2\; \mathsf{c_\gamma^2}\; \overline{y_u}^{\mathsf{pr}}\; \mathsf{y_u^{\mathsf{sr}}} + \mathsf{s_\gamma}\; \overline{a_u}^{\mathsf{pr}}\; \left(\mathsf{s_\gamma}\; a_u^{\mathsf{sr}} - \widetilde{\mu}\; \mathsf{c_\gamma}\; \mathsf{y_u^{\mathsf{sr}}}\right)\right) \; \mathsf{LF_{2,1,1,0}}\left[\mathsf{m_{\tilde{u}}^{\,r}}\;,\; \mathsf{m_{\tilde{q}}^{\,p}}\;,\; \mathsf{m_{\tilde{q}}^{\,s}}\right] \; - \; \mathsf{m_{\tilde{q}}^{\,s}}\; \mathsf{m_{\tilde{q}}^{\,s}} + \; \mathsf{m_{\tilde{q}}^{\,s}}\; \mathsf{m_{\tilde{q}}^{\,s}}\right] \; - \; \mathsf{m_{\tilde{q}}^{\,s}} \; \mathsf{m_{\tilde{q}^{\,s}}} \; \mathsf{m_{\tilde{q}}^{\,s}} \; \mathsf
                                                                                                                         6\; m_H^2\; s_\gamma^2\; \overline{y_u}^{\text{st}}\; y_u^{\;\text{pt}}\; \left(\widetilde{\mu}^2\; c_\gamma^2\; \overline{y_u}^{\text{pr}}\; y_u^{\;\text{sr}}\; +\; s_\gamma\; \overline{a_u}^{\text{pr}}\; \left(s_\gamma\; a_u^{\;\text{sr}}\; -\; \widetilde{\mu}\; c_\gamma\; y_u^{\;\text{sr}}\right)\right) \; LF_{3,1,1,-1}\left\lceil m_{\widetilde{u}}^{\;\text{r}}\; ,\; m_{\widetilde{q}}^{\;\text{p}}\; ,\; m_{\widetilde{q}}^{\;\text{s}}\right\rceil\; +\; a_\gamma^2\; \overline{a_u}^{\text{pr}}\; \left(s_\gamma\; a_u^{\;\text{sr}}\; -\; \widetilde{\mu}\; c_\gamma\; y_u^{\;\text{sr}}\right)\right) \; LF_{3,1,1,-1}\left\lceil m_{\widetilde{u}}^{\;\text{r}}\; ,\; m_{\widetilde{q}}^{\;\text{p}}\; ,\; m_{\widetilde{q}}^{\;\text{s}}\right\rceil\; +\; a_\gamma^2\; \overline{a_u}^{\text{pr}}\; \left(s_\gamma\; a_u^{\;\text{sr}}\; -\; \widetilde{\mu}\; c_\gamma\; y_u^{\;\text{sr}}\right)\right) \; LF_{3,1,1,-1}\left\lceil m_{\widetilde{u}}^{\;\text{r}}\; ,\; m_{\widetilde{q}}^{\;\text{p}}\; ,\; m_{\widetilde{q}}^{\;\text{s}}\right\rangle\; +\; a_\gamma^2\; \overline{a_u}^{\text{pr}}\; \left(s_\gamma\; a_u^{\;\text{sr}}\; -\; \widetilde{\mu}\; c_\gamma\; y_u^{\;\text{sr}}\right) \; +\; a_\gamma^2\; \overline{a_u}^{\text{pr}}\; +\; a_\gamma^2\; -\; a_\gamma^2\; \overline{a_u}^{\text{pr}}\; +\; a_\gamma^2\; -\; a_\gamma^2\; 
                                                                                                                         6\; m_{H}^{2}\; s_{y}^{3}\; \overline{y_{u}}^{\text{st}}\; y_{u}^{\text{ sr }} \left(-\widetilde{\mu}\; c_{y}\; \overline{y_{u}}^{\text{pr}}\; a_{u}^{\text{ pt}} + \overline{a_{u}}^{\text{pr}}\; \left(s_{y}\; a_{u}^{\text{ pt}} - \widetilde{\mu}\; c_{y}\; y_{u}^{\text{ pt}}\right)\right) \; \mathsf{LF}_{2,1,1,0} \left[\mathsf{m}_{\bar{u}}^{\text{ r}}\; ,\; \mathsf{m}_{\bar{q}}^{\text{ p}}\; ,\; \mathsf{m}_{\bar{u}}^{\text{ t}}\right] \; + \; \overline{a_{u}}^{\text{pr}} \left(s_{y}\; a_{u}^{\text{ pt}} - \widetilde{\mu}\; c_{y}\; y_{u}^{\text{ pt}}\right)\right) \; \mathsf{LF}_{2,1,1,0} \left[\mathsf{m}_{\bar{u}}^{\text{ r}}\; ,\; \mathsf{m}_{\bar{q}}^{\text{ p}}\; ,\; \mathsf{m}_{\bar{u}}^{\text{ t}}\right] \; + \; \overline{a_{u}}^{\text{ pr}} \left(s_{y}\; a_{u}^{\text{ pt}} - \widetilde{\mu}\; c_{y}\; y_{u}^{\text{ pt}}\right)\right) \; \mathsf{LF}_{2,1,1,0} \left[\mathsf{m}_{\bar{u}}^{\text{ r}}\; ,\; \mathsf{m}_{\bar{q}}^{\text{ pr}}\; ,\; \mathsf{m}_{\bar{u}}^{\text{ t}}\right] \; + \; \overline{a_{u}}^{\text{ pr}} \left(s_{y}\; a_{u}^{\text{ pt}} - \widetilde{\mu}\; c_{y}\; y_{u}^{\text{ pt}}\right)\right) \; \mathsf{LF}_{2,1,1,0} \left[\mathsf{m}_{\bar{u}}^{\text{ r}}\; ,\; \mathsf{m}_{\bar{u}}^{\text{ pr}}\; ,\; \mathsf{m}_{\bar{u}}^{\text{ pt}}\right] \; + \; \overline{a_{u}}^{\text{ pr}} \left(s_{y}\; a_{u}^{\text{ pt}} - \widetilde{\mu}\; c_{y}\; y_{u}^{\text{ pt}}\right)\right] \; \mathsf{LF}_{2,1,1,0} \left[\mathsf{m}_{\bar{u}}^{\text{ r}}\; ,\; \mathsf{m}_{\bar{u}}^{\text{ pt}} - \widetilde{\mu}\; c_{y}^{\text{ pt}}\right] \; + \; \overline{a_{u}}^{\text{ pt}} \left(s_{y}\; a_{u}^{\text{ pt}} - \widetilde{\mu}\; c_{y}^{\text{ pt}}\right)\right] \; + \; \overline{a_{u}}^{\text{ pt}} \left(s_{y}\; a_{u}^{\text{ pt}} - \widetilde{\mu}\; c_{y}^{\text{ pt}}\right) \; + \; \overline{a_{u}}^{\text{ pt}} \left(s_{y}\; a_{u}^{\text{ pt}} - \widetilde{\mu}\; c_{y}^{\text{ pt}}\right) \; + \; \overline{a_{u}}^{\text{ pt}} \left(s_{y}\; a_{u}^{\text{ pt}} - \widetilde{\mu}\; c_{y}^{\text{ pt}}\right) \; + \; \overline{a_{u}}^{\text{ pt}} \left(s_{y}\; a_{u}^{\text{ pt}} - \widetilde{\mu}\; c_{y}^{\text{ pt}}\right) \; + \; \overline{a_{u}}^{\text{ pt}} \left(s_{y}\; a_{u}^{\text{ pt}} - \widetilde{\mu}\; c_{y}^{\text{ pt}}\right) \; + \; \overline{a_{u}}^{\text{ pt}} \left(s_{y}\; a_{u}^{\text{ pt}} - \widetilde{\mu}\; c_{y}^{\text{ pt}}\right) \; + \; \overline{a_{u}}^{\text{ pt}} \left(s_{y}\; a_{u}^{\text{ pt}} - \widetilde{\mu}\; c_{y}^{\text{ pt}}\right) \; + \; \overline{a_{u}}^{\text{ pt}} \left(s_{y}\; a_{u}^{\text{ pt}} - \widetilde{\mu}\; c_{y}^{\text{ pt}}\right) \; + \; \overline{a_{u}}^{\text{ pt}} \left(s_{y}\; a_{u}^{\text{ pt}} - \widetilde{\mu}\; c_{y}^{\text{ pt}}\right) \; + \; \overline{a_{u}}^{\text{ pt}} \left(s_{y}\; a_{u}^{\text{ pt}} - \widetilde{\mu}\; c_{y}^{\text{ pt}}\right) \; + \; \overline{a_{u}}^{\text{ pt}} \left(s_{y}\; a_{u}^{\text{ pt}} - \widetilde{\mu}\; c_{y}^{\text{ pt}}\right) \; + \; \overline{a_{u}}^{\text{ pt}} \left(s_{y}\; a_{u}^{\text{ pt}} - \widetilde{\mu}\; c_{y}^{\text{ pt}}\right) \; + \; \overline{a_{u}}^{\text{ pt}} \left(s_{y}\; a_{u}^{\text{ pt}} - \widetilde{\mu}\; c_{y}^{\text{ pt}}\right) \; + \; \overline{a_{u}}^{\text{ pt}} \left(s_{u}\; a_{u}^{\text{ pt}}\right) \; + 
                                                                                                                         6\; \mathsf{m_H^2}\; \mathsf{s_\gamma^3}\; \overline{y_u}^{\mathsf{st}}\; \mathsf{y_u}^{\mathsf{sr}}\; \left(\widetilde{\mu}\; \mathbf{c_\gamma}\; \overline{y_u}^{\mathsf{pr}}\; \mathbf{a_u}^{\mathsf{pt}} + \overline{\mathbf{a_u}}^{\mathsf{pr}}\; \left(-\, \mathsf{s_\gamma}\; \mathbf{a_u}^{\mathsf{pt}} + \widetilde{\mu}\; \mathbf{c_\gamma}\; \mathsf{y_u}^{\mathsf{pt}}\right)\right) \; \mathsf{LF_{3,1,1,-1}}\!\left[\mathsf{m_{\tilde{u}}}^{\mathsf{r}}\;,\; \mathsf{m_{\tilde{q}}}^{\mathsf{p}}\;,\; \mathsf{m_{\tilde{u}}}^{\mathsf{t}}\right] \; + \; \mathsf{m_{\tilde{u}}^{\mathsf{pt}}}\; \mathsf{m_{\tilde{u}}^{\mathsf{pt}}}\right] \; + \; \mathsf{LF_{3,1,1,-1}}\left[\mathsf{m_{\tilde{u}}}^{\mathsf{r}}\;,\; \mathsf{m_{\tilde{q}}}^{\mathsf{p}}\;,\; \mathsf{m_{\tilde{u}}}^{\mathsf{t}}\right] \; + \; \mathsf{LF_{3,1,1,-1}}\left[\mathsf{m_{\tilde{u}}}^{\mathsf{pr}}\;,\; \mathsf{m_{\tilde{u}}}^{\mathsf{pt}}\right] \; + \; \mathsf{LF_{3,1,1,-1}}\left[\mathsf{m_{\tilde{u}}}^{\mathsf{pr}}\;,\; \mathsf{m_{\tilde{u}}}^{\mathsf{pr}}\right] \; + \; \mathsf{LF_{3,1,1,-1}}\left[\mathsf{m_{\tilde{u}}}^{\mathsf{pr}}\;,\; 
                                                                                                                         6\; m_H^2\; {s_{\gamma}}^2\; \widetilde{\mu}^2\; c_{\gamma}^2\; \overline{y_u}^{pr}\; \overline{y_u}^{st}\; y_u^{\;pt}\; y_u^{\;sr}\; LF_{2,1,1,0}\left[m_{\tilde{u}}^{\;r}\text{, }m_{\tilde{q}}^{\;s}\text{, }m_{\tilde{u}}^{\;t}\right]\; -
                                                                                                                         6\; m_H^2\; s_\gamma^2\; \widetilde{\mu}^2\; c_\gamma^2\; \overline{y_u}^{\text{pr}}\; \overline{y_u}^{\text{st}}\; y_u^{\;\text{pt}}\; y_u^{\;\text{sr}}\; LF_{3,1,1,-1}\big[m_{\tilde{u}}^{\;\text{r}}\;,\; m_{\tilde{q}}^{\;\text{s}}\;,\; m_{\tilde{u}}^{\;\text{t}}\big]\; + \\
                                                                                                                         6\ \mathsf{m_H^2}\ \mathsf{s_y^3}\ \overline{y_u}^{\mathsf{st}}\ \mathsf{y_u^{\mathsf{sr}}}\ \left(\widetilde{\mu}\ \mathsf{c_y}\ \overline{y_u^{\mathsf{pr}}}\ \mathsf{a_u^{\mathsf{pt}}} + \overline{\mathsf{a_u^{\mathsf{pr}}}}\ \left(-\,\mathsf{s_y}\ \mathsf{a_u^{\mathsf{pt}}} + \widetilde{\mu}\ \mathsf{c_y}\ \mathsf{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{u}}^{\mathsf{q}}}\right] - \\
                                                                                                                         6\; m_H^2\; {s_{_Y}}^2\; \tilde{\mu}^2\; c_{_Y}^{\;2}\; \overline{y_u}^{pr}\; \overline{y_u}^{st}\; y_u^{\;pt}\; y_u^{\;sr}\; LF_{2,2,1,-1}\big[m_{\tilde{u}}^{\;r}\,,\; m_{\tilde{u}}^{\;t}\,,\; m_{\tilde{q}}^{\;s}\big]\; -
                                                                                                                         6 \, m_H^2 \, \tilde{\mu} \, c_{\Upsilon} \, s_{\Upsilon}^3 \, \overline{y_u}^{pr} \, \overline{y_u}^{st} \, y_u^{sr} \, a_u^{pt} \, LF_{2,1,1,0} [m_{\tilde{u}}^{t}, m_{\tilde{q}}^{p}, m_{\tilde{q}}^{s}] +
                                                                                                                         6\ \mathsf{m_H^2}\ \tilde{\mu}\ \mathsf{c_{\scriptscriptstyle Y}}\ \mathsf{s_{\scriptscriptstyle Y}}^3\ \overline{\mathsf{y_u}}^{\mathsf{pr}}\ \overline{\mathsf{y_u}}^{\mathsf{st}}\ \mathsf{y_u}^{\mathsf{sr}}\ \mathsf{a_u}^{\mathsf{pt}}\ \mathsf{LF_{3,1,1,-1}}\big[\mathsf{m_{\tilde{u}}}^{\mathsf{t}},\ \mathsf{m_{\tilde{q}}}^{\mathsf{p}},\ \mathsf{m_{\tilde{q}}}^{\mathsf{p}},\ \mathsf{m_{\tilde{q}}}^{\mathsf{s}}\big]\ +\\
                                                                                                                         6\; \mathsf{m_H^2}\; \mathsf{S_{\gamma}^3}\; \overline{y_u}^{\mathtt{st}}\; \mathsf{y_u}^{\mathtt{sr}}\; \left(-\,\widetilde{\mu}\; \mathbf{c_{\gamma}}\; \overline{y_u}^{\mathtt{pr}}\; \mathbf{a_u}^{\mathtt{pt}} + \overline{\mathbf{a_u}}^{\mathtt{pr}}\; \left(\mathbf{s_{\gamma}}\; \mathbf{a_u}^{\mathtt{pt}} - \widetilde{\mu}\; \mathbf{c_{\gamma}}\; \mathbf{y_u}^{\mathtt{pt}}\right)\right) \; \mathsf{LF_{2,1,1,0}}\left[\mathsf{m_{\tilde{u}}^{\mathtt{t}}}\; ,\; \mathsf{m_{\tilde{q}}^{\mathtt{p}}}\; ,\; \mathsf{m_{\tilde{u}}^{\mathtt{r}}}\right] \; + \; \mathsf{m_{\tilde{u}}^{\mathtt{pr}}} \; \mathsf{m_{\tilde{u}}^{\mathtt{pr}}} \right] \; \mathsf{LF_{2,1,1,0}}\left[\mathsf{m_{\tilde{u}}^{\mathtt{t}}}\; ,\; \mathsf{m_{\tilde{q}}^{\mathtt{p}}}\; ,\; \mathsf{m_{\tilde{u}}^{\mathtt{r}}}\right] \; + \; \mathsf{LF_{2,1,1,0}}\left[\mathsf{m_{\tilde{u}}^{\mathtt{pt}}}\; ,\; \mathsf{m_{\tilde{u}}^{\mathtt{pr}}}\; ,\; \mathsf{m_{\tilde{u}}^{\mathtt{pr}}}\; \right] \; + \; \mathsf{LF_{2,1,1,0}}\left[\mathsf{m_{\tilde{u}}^{\mathtt{pt}}}\; ,\; \mathsf{m_{\tilde{u}}^{\mathtt{pr}}}\; ,\; \mathsf{m_{\tilde{u}}^{\mathtt{pr}}}\; \right] \; + \; \mathsf{LF_{2,1,1,0}}\left[\mathsf{m_{\tilde{u}}^{\mathtt{pt}}}\; ,\; \mathsf{m_{\tilde{u}}^{\mathtt{pr}}}\; ,\; \mathsf{m_{\tilde{u}}^{\mathtt{pr}}}\; \right] \; + \; \mathsf{LF_{2,1,1,0}}\left[\mathsf{m_{\tilde{u}}^{\mathtt{pt}}}\; ,\; \mathsf{m_{\tilde{u}}^{\mathtt{pr}}}\; ,\; \mathsf{m_{\tilde{u}}^{\mathtt{pr}}}\; \right] \; + \; \mathsf{LF_{2,1,1,0}}\left[\mathsf{m_{\tilde{u}}^{\mathtt{pt}}}\; ,\; \mathsf{m_{\tilde{u}}^{\mathtt{pr}}}\; ,\; \mathsf{m_{\tilde{u}}^{\mathtt{pr}}}\; \right] \; + \; \mathsf{LF_{2,1,1,0}}\left[\mathsf{m_{\tilde{u}}^{\mathtt{pt}}}\; ,\; \mathsf{m_{\tilde{u}}^{\mathtt{pr}}}\; ,\; \mathsf{m_{\tilde{u}}^{\mathtt{pr}}}\; \right] \; + \; \mathsf{LF_{2,1,1,0}}\left[\mathsf{m_{\tilde{u}}^{\mathtt{pr}}}\; ,\; \mathsf{m_{\tilde{u}}^{\mathtt{pr}}}\; ,\; \mathsf{m_{\tilde{u}}^{\mathtt{pr}}}\; \right] \; + \; \mathsf{LF_{2,1,1,0}}\left[\mathsf{m_{\tilde{u}}^{\mathtt{pr}}}\; ,\; \mathsf{m_{\tilde{u}}^{\mathtt{pr}}}\; ,\; \mathsf{m_{\tilde{u}}^{\mathtt{pr}}}\; \right] \; + \; \mathsf{LF_{2,1,1,0}}\left[\mathsf{m_{\tilde{u}}^{\mathtt{pr}}}\; ,\; \mathsf{m_{\tilde{u}}^{\mathtt{pr}}}\; ,\; \mathsf{m_{\tilde{u}}^{\mathtt{pr}}}\; \right] \; + \; \mathsf{LF_{2,1,1,0}}\left[\mathsf{m_{\tilde{u}}^{\mathtt{pr}}}\; ,\; \mathsf{m_{\tilde{u}}^{\mathtt{pr}}}\; ,\; \mathsf{m_{\tilde{u}}^{\mathtt{pr}}}\; \right] \; + \; \mathsf{LF_{2,1,1,0}}\left[\mathsf{m_{\tilde{u}}^{\mathtt{pr}}}\; ,\; \mathsf{m_{\tilde{u}}^{\mathtt{pr}}}\; ,\; \mathsf{m_{\tilde{u}}^{\mathtt{pr}}}\; \right] \; + \; \mathsf{LF_{2,1,1,0}}\left[\mathsf{m_{\tilde{u}}^{\mathtt{pr}}}\; ,\; \mathsf{m_{\tilde{u}}^{\mathtt{pr}}}\; ,\; \mathsf{m_{\tilde{u}}^{\mathtt{pr}}}\; ,\; \mathsf{m_{\tilde{u}}^{\mathtt{pr}}}\; \right] \; + \; \mathsf{LF_{2,1,1,0}}\left[\mathsf{m_{\tilde{u}}^{\mathtt{pr}}}\; ,\; \mathsf{m_{\tilde{u}}^{\mathtt{pr}}}\; ,\; \mathsf{m_{\tilde{u}}^{\mathtt{pr}}}\; ,\; \mathsf{m_{\tilde{u}}^{\mathtt{pr}}}\; \right] \; + \; \mathsf{LF_{2,1,1,0}}\left[\mathsf{m_{\tilde{u}}^{\mathtt{pr}}}\; ,\; \mathsf{m_{\tilde{u}}^{\mathtt{pr}}}\; ,\; \mathsf{m_{\tilde{u}}^{\mathtt{pr}}\; ,\; \mathsf{m_{\tilde{u}}^{\mathtt{pr}}}\; ,\; \mathsf{m_{\tilde{u}}^{\mathtt{pr}}}\; \right] \; + \; \mathsf{LF_{2,1,1,0}}\left[\mathsf{m_{\tilde{u}}^{\mathtt{pr}}}\; ,\; \mathsf{m_{\tilde{u}}^{\mathtt{pr}}}\; ,\; \mathsf{m_{\tilde{u}}^{\mathtt{pr}}}\; ,\; \mathsf{m_{\tilde{u}}^{\mathtt{pr}}}\; \right] \; + \; \mathsf{LF_{2,1,1,1,0}}\left[\mathsf{m_{\tilde{u}}^{\mathtt{pr}}}\; ,\; \mathsf{m_{\tilde{u}}^{\mathtt{pr}}}\; ,\; \mathsf{m_{\tilde{u}}^
                                                                                                                         6\; \mathsf{m_H^2}\; \mathsf{S_y^3}\; \overline{y_u}^{\text{st}}\; \mathsf{y_u^{sr}}\; \left(\widetilde{\mu}\; \mathsf{c_y}\; \overline{y_u^{\text{pr}}}\; \mathsf{a_u^{\text{pt}}} + \overline{\mathsf{a_u^{\text{pr}}}}\; \left(-\, \mathsf{s_y}\; \mathsf{a_u^{\text{pt}}} + \widetilde{\mu}\; \mathsf{c_y}\; \mathsf{y_u^{\text{pt}}}\right)\; \right) \; \mathsf{LF_{3,1,1,-1}} \left[\,\mathsf{m_{\tilde{u}}^{\,\text{t}}}\;,\; \mathsf{m_{\tilde{q}}^{\,\text{p}}}\;,\; \mathsf{m_{\tilde{u}}^{\,\text{r}}}\,\right] \; + \; \mathsf{m_{\tilde{u}}^{\,\text{pr}}}\; \mathsf{m_{\tilde{u}}^{\,\text{pr}}}\; \mathsf{m_{\tilde{u}}^{\,\text{pr}}}\; \right] \; + \; \mathsf{m_{\tilde{u}}^{\,\text{pr}}}\; \mathsf{m_{\tilde{u}}^{\,\text{
                                                                                                                         6\; m_H^2\; s_{_{Y}}^2\; \widetilde{\mu}^2\; c_{_{Y}}^2\; \overline{y_u}^{pr}\; \overline{y_u}^{st}\; y_u^{pt}\; y_u^{sr}\; LF_{2,1,1,0}\big[\, m_{\tilde{u}}^{\;t}\,,\; m_{\tilde{q}}^{\;s}\,,\; m_{\tilde{u}}^{\;r}\,\big] \; - \;
                                                                                                                         6\; m_H^2\; s_\gamma^2\; \widetilde{\mu}^2\; c_\gamma^2\; \overline{y_u}^{\text{pr}}\; \overline{y_u}^{\text{st}}\; y_u^{\,\text{pt}}\; y_u^{\,\text{sr}}\; LF_{3,1,1,-1}\big[m_{\tilde{u}}^{\,\text{t}},\; m_{\tilde{q}}^{\,\text{s}},\; m_{\tilde{u}}^{\,\text{r}}\big]\; + \\
                                                                                                                             g_1^2 g_2^2 LF_{2,1,1,-2} [\widetilde{\mu}, m_1, m_2] (c_{\gamma}^2 + s_{\gamma}^2)^2 +
                                                                                                                             g_{1}^{2}\;g_{2}^{2}\;\left(\,c_{\gamma}^{\phantom{\gamma}4}\;\left(\,m_{1}\;m_{2}\,+\,3\;m_{H}^{2}\,\right)\;+\,s_{\gamma}^{\phantom{\gamma}4}\;\left(\,m_{1}\;m_{2}\,+\,3\;m_{H}^{2}\,\right)\;+\,4\;s_{\gamma}\;\widetilde{\mu}\;c_{\gamma}^{\phantom{\gamma}3}\;\left(\,m_{1}\,+\,m_{2}\,\right)\;+\,3\,m_{H}^{2}\,\right)\;
                                                                                                                                                                                                               4 \tilde{\mu} c_{\gamma} s_{\gamma}^{3} (m_{1} + m_{2}) + 2 s_{\gamma}^{2} c_{\gamma}^{2} (m_{1} m_{2} + 4 m_{H}^{2} + 2 \tilde{\mu}^{2})) LF_{2,1,1,-1}[\tilde{\mu}, m_{1}, m_{2}] +
                                                                                                                         4 \, m_1 \, s_{\gamma} \, c_{\gamma} \, g_{1}^{\, 2} \, g_{2}^{\, 2} \, \left( 2 \, m_{H}^{2} \, \widetilde{\mu} \, c_{\gamma}^{\, 2} + 2 \, m_{H}^{2} \, \widetilde{\mu} \, s_{\gamma}^{\, 2} + m_{2} \, s_{\gamma} \, c_{\gamma} \, \left( m_{H}^{2} + \widetilde{\mu}^{\, 2} \right) \right) \, \mathsf{LF}_{2,1,1,0} \left[ \widetilde{\mu} \, , \, m_{1} \, , \, m_{2} \right] \, - \, \mathsf{LF}_{2,1,1,0} \left[ \widetilde{\mu} \, , \, m_{1} \, , \, m_{2} \right] \, + \, \mathsf{LF}_{2,1,1,0} \left[ \widetilde{\mu} \, , \, m_{1} \, , \, m_{2} \right] \, + \, \mathsf{LF}_{2,1,1,0} \left[ \widetilde{\mu} \, , \, m_{1} \, , \, m_{2} \right] \, + \, \mathsf{LF}_{2,1,1,0} \left[ \widetilde{\mu} \, , \, m_{1} \, , \, m_{2} \right] \, + \, \mathsf{LF}_{2,1,1,0} \left[ \widetilde{\mu} \, , \, m_{1} \, , \, m_{2} \right] \, + \, \mathsf{LF}_{2,1,1,0} \left[ \widetilde{\mu} \, , \, m_{1} \, , \, m_{2} \right] \, + \, \mathsf{LF}_{2,1,1,0} \left[ \widetilde{\mu} \, , \, m_{1} \, , \, m_{2} \right] \, + \, \mathsf{LF}_{2,1,1,0} \left[ \widetilde{\mu} \, , \, m_{1} \, , \, m_{2} \right] \, + \, \mathsf{LF}_{2,1,1,0} \left[ \widetilde{\mu} \, , \, m_{1} \, , \, m_{2} \right] \, + \, \mathsf{LF}_{2,1,1,0} \left[ \widetilde{\mu} \, , \, m_{1} \, , \, m_{2} \right] \, + \, \mathsf{LF}_{2,1,1,0} \left[ \widetilde{\mu} \, , \, m_{1} \, , \, m_{2} \right] \, + \, \mathsf{LF}_{2,1,1,0} \left[ \widetilde{\mu} \, , \, m_{1} \, , \, m_{2} \right] \, + \, \mathsf{LF}_{2,1,1,0} \left[ \widetilde{\mu} \, , \, m_{1} \, , \, m_{2} \right] \, + \, \mathsf{LF}_{2,1,1,0} \left[ \widetilde{\mu} \, , \, m_{2} \,
                                                                                                                         m_{H}^{2} g_{1}^{2} g_{2}^{2} (7 c_{\gamma}^{4} + 10 s_{\gamma}^{2} c_{\gamma}^{2} + 7 s_{\gamma}^{4}) LF_{3,1,1,-2} [\tilde{\mu}, m_{1}, m_{2}] -
                                                                                                                         m_{H}^{2} g_{1}^{2} g_{2}^{2} \left(m_{1} m_{2} \left(3 c_{\gamma}^{2} + s_{\gamma}^{2}\right) \left(c_{\gamma}^{2} + 3 s_{\gamma}^{2}\right) + 4 s_{\gamma} \tilde{\mu} c_{\gamma} \left(5 m_{1} + 3 m_{2}\right) \left(c_{\gamma}^{2} + s_{\gamma}^{2}\right) + 16 s_{\gamma}^{2} \tilde{\mu}^{2} c_{\gamma}^{2}\right)
                                                                                                                                                     \mathsf{LF}_{3,1,1,-1}[\tilde{\mu},\,\mathsf{m}_1,\,\mathsf{m}_2] - 8 \mathsf{m}_1\,\mathsf{m}_2\,\mathsf{m}_H^2\,\mathsf{g}_1^2\,\mathsf{g}_2^2\,\mathsf{s}_\gamma^2\,\tilde{\mu}^2\,\mathsf{c}_\gamma^2\,\mathsf{LF}_{3,1,1,0}[\tilde{\mu},\,\mathsf{m}_1,\,\mathsf{m}_2] +
                                                                                                                         4 m_{H}^{2} g_{1}^{2} g_{2}^{2} (c_{\gamma}^{4} + s_{\gamma}^{2} c_{\gamma}^{2} + s_{\gamma}^{4}) LF_{4,1,1,-3} [\tilde{\mu}, m_{1}, m_{2}] +
                                                                                                                             2\ m_{H}^{2}\ 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)+6\ s_{\gamma}\ \widetilde{\mu}\ c_{\gamma}\ \left(m_{1}+m_{2}\right)\ \left(c_{\gamma}^{\ 2}+s_{\gamma}^{\ 2}\right)+6\ s_{\gamma}^{\ 2}\ \widetilde{\mu}^{2}\ c_{\gamma}^{\ 2}\right)
                                                                                                                                                                                                                                                                                                                                                                                                                                           \label{eq:m1} \textit{m}_{1}\,,\;\textit{m}_{2}\,\textit{|}\,+\,12\;\textit{m}_{1}\;\textit{m}_{2}\;\textit{m}_{H}^{2}\;\textit{g}_{1}^{\;2}\;\textit{g}_{2}^{\;2}\;\textit{s}_{\gamma}^{\;2}\;\tilde{\mu}^{2}\;\textit{c}_{\gamma}^{\;2}\;\textit{LF}_{4,1,1,-1}\,\textit{[}\,\tilde{\mu}\,,
                                                                                                                         4 m_H^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 +
                                                                                                                         4\; m_{H}^{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}[\tilde{\mu}\,,\,\mathsf{m}_{2}\,,\,\mathsf{m}_{1}]\,+\,16\,\,\mathsf{m}_{1}\,\,\mathsf{m}_{2}\,\,\mathsf{m}_{H}^{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}]\,\,-\,\,\mathsf{m}_{1}^{\,2}\,\,\mathsf{m}_{2}^{\,2}\,\,\mathsf{m}_{2}^{\,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}^{
                                                                                                                         3\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}-2\,s_{\gamma}\,\widetilde{\mu}\,y_{d}^{sr}\right)\right)+
                                                                                                                                                                                                                   c_{\gamma} \, \overline{a_d}^{\text{pr}} \, \left( -2 \, s_{\gamma} \, \widetilde{\mu} \, \overline{y_d}^{\text{st}} \, \left( -c_{\gamma} \, a_d^{\, \text{pt}} + s_{\gamma} \, \widetilde{\mu} \, y_d^{\, \text{pt}} \right) \, \left( -c_{\gamma} \, a_d^{\, \text{sr}} + s_{\gamma} \, \widetilde{\mu} \, y_d^{\, \text{sr}} \right) \, + c_{\gamma} \, \overline{a_d}^{\, \text{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}}\,-\,2\,\,s_{\gamma}\,\tilde{\mu}\,\,y_{d}^{\,\text{sr}}\right)\,\right)\,\right)\,\,\text{LF}_{1,1,1,1,0}\left[\,m_{\tilde{d}}^{\,\,\text{r}}\,,\,\,m_{\tilde{d}}^{\,\,\text{t}}\,,\,\,m_{\tilde{q}}^{\,\,\text{p}}\,,\,\,m_{\tilde{q}}^{\,\,\text{s}}\,\right]\,+\,\,c_{\gamma}\,\,a_{d}^{\,\,\text{pt}}\,\left(c_{\gamma}\,\,a_{d}^{\,\,\text{sr}}\,-\,2\,\,s_{\gamma}\,\tilde{\mu}\,\,y_{d}^{\,\,\text{sr}}\,\right)\,\right)\,\right)\,\,\text{LF}_{1,1,1,1,0}\left[\,m_{\tilde{d}}^{\,\,\text{r}}\,,\,\,m_{\tilde{d}}^{\,\,\text{t}}\,,\,\,m_{\tilde{q}}^{\,\,\text{p}}\,,\,\,m_{\tilde{q}}^{\,\,\text{s}}\,\right]\,+\,\,c_{\gamma}\,\,a_{d}^{\,\,\text{pt}}\,\left(\,c_{\gamma}\,\,a_{d}^{\,\,\text{sr}}\,-\,2\,\,s_{\gamma}\,\tilde{\mu}\,\,y_{d}^{\,\,\text{sr}}\,\right)\,\right)\,\,
                                                                                                                                    \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} - 2 s_{\gamma} \widetilde{\mu} y_{e}^{sr}\right)\right) + c_{\gamma}^{2} \widetilde{\mu}^{2} \overline{y_{e}}^{sr} + c_{\gamma}^{2} a_{e}^{pt} \left(c_{\gamma}^{2} a_{e}^{sr} - 2 s_{\gamma} \widetilde{\mu} y_{e}^{sr}\right)\right) + c_{\gamma}^{2} \widetilde{\mu}^{2} \overline{y_{e}}^{sr}
                                                                                                                                                                                                               c_{\gamma} \; \overline{a_{e}}^{pr} \; \left( 2 \; s_{\gamma} \; \widetilde{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}^{\; 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}^{\; pt} + s_{\gamma} \; \widetilde{\mu} \; y_{e}^{\; sr} \right) \; - \; c_{\gamma} \; \overline{a_{e}}^{\; st} \; \left( - \, c_{\gamma} \; a_{e}^{\; pt} + s_{\gamma} \; \widetilde{\mu} \; y_{e}^{\; sr} \right) \; - \; c_{\gamma} \; \overline{a_{e}}^{\; st} \; \left( - \, c_{\gamma} \; a_{e}^{\; pt} + s_{\gamma} \; \widetilde{\mu} \; y_{e}^{\; st} \right) \; - \; c_{\gamma} \; \overline{a_{e}}^{\; st} \; \left( - \, c_{\gamma} \; a_{e}^{\; pt} + s_{\gamma} \; \widetilde{\mu} \; y_{e}^{\; st} \right) \; - \; c_{\gamma} \; \overline{a_{e}}^{\; st} \; + \; c_{\gamma} \; \overline{\mu} \; y_{e}^{\; st} \; - \; c_{\gamma} \; \overline{a_{e}}^{\; st} \; + \; c_{\gamma} \; \overline{\mu} \; y_{e}^{\; st} \; - \; c_{\gamma} \; \overline{a_{e}}^{\; st} \; - \; c_{\gamma}
                                                                                                                                                                                                                                                                                                                                    \left(s_{\gamma}^{2} \tilde{\mu}^{2} y_{e}^{\text{pt}} y_{e}^{\text{sr}} + c_{\gamma} a_{e}^{\text{pt}} \left(c_{\gamma} a_{e}^{\text{sr}} - 2 s_{\gamma} \tilde{\mu} y_{e}^{\text{sr}}\right)\right)\right) LF_{1,1,1,1,0}\left[m_{\tilde{e}}^{\text{r}}, m_{\tilde{e}}^{\text{t}}, m_{\tilde{1}}^{\text{p}}, m_{\tilde{1}}^{\text{s}}\right] + c_{\gamma} a_{e}^{\text{pt}}
                                                                                                                         2\;m_H^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}^{\;2}\;a_e^{\,pt}\;\left(\,s_{\gamma}^{\;2}\;\widetilde{\mu}^2\,\overline{y_e}^{pr}\,\overline{y_e}^{sr}\,\right)\,+\,c_{\gamma}^{\;2}\;a_e^{\,pt}\;\left(\,s_{\gamma}^{\;2}\;\widetilde{\mu}^2\,\overline{y_e}^{pr}\,\overline{y_e}^{sr}\,\right)\,+\,c_{\gamma}^{\;2}\;a_e^{\,pt}\,\left(\,s_{\gamma}^{\;2}\;\widetilde{\mu}^2\,\overline{y_e}^{pr}\,\overline{y_e}^{sr}\,\right)\,+\,c_{\gamma}^{\;2}\;a_e^{\,pt}\,\left(\,s_{\gamma}^{\;2}\;\widetilde{\mu}^2\,\overline{y_e}^{pr}\,\overline{y_e}^{sr}\,\right)\,+\,c_{\gamma}^{\;2}\;a_e^{\,pt}\,\left(\,s_{\gamma}^{\;2}\;\widetilde{\mu}^2\,\overline{y_e}^{pr}\,\overline{y_e}^{sr}\,\right)\,+\,c_{\gamma}^{\;2}\;a_e^{\,pt}\,\overline{y_e}^{sr}\,\right)\,
                                                                                                                                                                                                               c_{\gamma} \, \overline{a_{e}}^{\text{pr}} \, \left( - \, s_{\gamma} \, \widetilde{\mu} \, \overline{y_{e}}^{\text{st}} \, \left( - \, c_{\gamma} \, a_{e}^{\, \text{pt}} + \, s_{\gamma} \, \widetilde{\mu} \, y_{e}^{\, \text{pt}} \right) \, \left( - \, c_{\gamma} \, a_{e}^{\, \, \text{sr}} + \, s_{\gamma} \, \widetilde{\mu} \, y_{e}^{\, \, \text{sr}} \right) \, + \, c_{\gamma} \, \overline{a_{e}}^{\, \, \text{st}}
                                                                                                                                                                                                                                                                                                                                    2\; m_H^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( 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)
                                                                                                                                                     \mathsf{LF_{3,1,1,1,-1}}\big[\mathsf{m_{\tilde{l}}}^\mathsf{p},\,\mathsf{m_{\tilde{e}}}^\mathsf{r},\,\mathsf{m_{\tilde{e}}}^\mathsf{t},\,\mathsf{m_{\tilde{e}}}^\mathsf{t},\,\mathsf{m_{\tilde{e}}}^\mathsf{t}\big] \,-\, 2\,\,\mathsf{m_H}^2\,\mathsf{s_{\gamma}}\,\widetilde{\mu}\,\,\mathsf{c_{\gamma}}\,\left(\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}\big] \,+\, \mathsf{v_{\mathsf{e}}}^\mathsf{p}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{e}}}^\mathsf{pr}\,\,\mathsf{v_{\mathsf{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} \tilde{\mu} y_e^{pt} \right) \left( c_{\gamma} a_e^{sr} - s_{\gamma} \tilde{\mu} y_e^{sr} \right) \right)
                                                                                                                                                     \mathbf{m}_{\tilde{\mathbf{e}}}^{\mathbf{r}}, \mathbf{m}_{\tilde{\mathbf{e}}}^{\mathbf{t}}, \mathbf{m}_{\tilde{\mathbf{i}}}^{\mathbf{p}}] + 6 \mathbf{m}_{H}^{2} \left(\mathbf{s}_{\gamma}^{2} \ \widetilde{\mu}^{2} \ \overline{\mathbf{y}_{d}}^{\mathbf{pr}} \ \overline{\mathbf{y}_{d}}^{\mathbf{st}} \left(\mathbf{s}_{\gamma}^{2} \ \widetilde{\mu}^{2} \ \mathbf{y}_{d}^{\mathbf{pt}} \ \mathbf{y}_{d}^{\mathbf{sr}} + \mathbf{c}_{\gamma} \ \mathbf{a}_{d}^{\mathbf{pt}} \left(\mathbf{c}_{\gamma} \ \mathbf{a}_{d}^{\mathbf{sr}} - \mathbf{s}_{\gamma} \ \widetilde{\mu} \ \mathbf{y}_{d}^{\mathbf{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)\,\mathsf{LF}_{2,1,1,1,0}\!\left[\mathsf{m}_{\tilde{q}}^{\,\,p},\,\mathsf{m}_{\tilde{d}}^{\,\,r},\,\mathsf{m}_{\tilde{d}}^{\,\,t},\,\mathsf{m}_{\tilde{q}}^{\,\,s}\right]-\left(s_{\gamma}^{\,\,2}\,\tilde{\mu}^{2}\,y_{d}^{\,\,\text{sr}}\right)\left(s_{\gamma}^{\,\,2}\,\tilde{\mu}^{2}\,y_{d}^{\,\,\text{sr}}\right)\right)
                                                                                                                             6 \; m_H^2 \; \left( \; {s_{_Y}}^2 \; \widetilde{\mu}^2 \; \overline{y_d}^{pr} \; \overline{y_d}^{st} \; \left( \; {s_{_Y}}^2 \; \widetilde{\mu}^2 \; y_d^{pt} \; y_d^{sr} \; + \; c_{_Y} \; a_d^{pt} \; \left( \; c_{_Y} \; a_d^{sr} \; - \; s_{_Y} \; \widetilde{\mu} \; y_d^{sr} \right) \; \right) \; + \; (s_{_Y}^2 \; \widetilde{\mu}^2 \; \overline{y_d}^{pr} \; \overline{y_d}^{st} \; (s_{_Y}^2 \; \widetilde{\mu}^2 \; y_d^{pt} \; y_d^{sr} \; + \; c_{_Y} \; a_d^{pt} \; \left( \; c_{_Y} \; a_d^{sr} \; - \; s_{_Y} \; \widetilde{\mu} \; y_d^{sr} \right) \; ) \; + \; (s_{_Y}^2 \; \widetilde{\mu}^2 \; \overline{y_d}^{pr} \; \overline{y_d}^{sr} \; + \; c_{_Y} \; a_d^{pt} \; \overline{y_d}^{sr} \; + \; c_{_Y} \; a_d^{pt} \; \overline{y_d}^{sr} \; - \; c_{_Y} \; \widetilde{\mu} \; y_d^{sr} \; + \; c_{_Y} \; \overline{y_d}^{sr} \; - \; c_{_Y} \; \overline{\mu} \; y_d^{sr} \; + \; c_{_Y} \; \overline{y_d}^{sr} \; + \; c_{_
                                                                                                                                                                                                               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)
                                                                                                                                                     \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]\;+
                                                                                                                         6\ \mathsf{m_H^2}\ \tilde{\mu}\ \mathsf{s_Y}^2\ \overline{\mathsf{y_d}^{\mathsf{st}}}\ \overline{\mathsf{a_u}}^{\mathsf{pr}}\ \left(\mathsf{c_Y}\ \mathsf{a_d}^{\mathsf{pt}} - \mathsf{s_Y}\ \tilde{\mu}\ \mathsf{y_d}^{\mathsf{pt}}\right)\ \left(\mathsf{s_Y}\ \mathsf{a_u}^{\mathsf{sr}} - \tilde{\mu}\ \mathsf{c_Y}\ \mathsf{y_u}^{\mathsf{sr}}\right)\ \mathsf{LF_{2,2,1,1,-1}}\big[\mathsf{m_{\tilde{q}}}^{\mathsf{p}},\ \mathsf{m_{\tilde{q}}}^{\mathsf{s}},\ \mathsf{m_{\tilde{d}}}^{\mathsf{t}},\ \mathsf{m_{\tilde{u}}}^{\mathsf{r}}\big] - \mathsf{m_{\tilde{q}}}^{\mathsf{p}},\ \mathsf{m_{\tilde{q}}}^{\mathsf{s}},\ \mathsf{m_{\tilde{q}}
                                                                                                                             3 \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) + C_{\gamma} \left( \widetilde{\mu}^2 c_{\gamma}^2 y_u^{\text{pt}} \right) + C_{\gamma} \left( \widetilde{\mu}^2 y_u^{\text{pt}} \right) + C_{\gamma
                                                                                                                                                                                                                   s_{\gamma} \; \overline{a_{u}}^{\text{pr}} \; \left( -2 \; \widetilde{\mu} \; c_{\gamma} \; \overline{y_{u}}^{\text{st}} \; \left( -s_{\gamma} \; a_{u}^{\; \text{pt}} + \widetilde{\mu} \; c_{\gamma} \; y_{u}^{\; \text{pt}} \right) \; \left( -s_{\gamma} \; a_{u}^{\; \text{sr}} + \widetilde{\mu} \; c_{\gamma} \; y_{u}^{\; \text{sr}} \right) \; + \; s_{\gamma} \; \overline{a_{u}}^{\; \text{st}} \; + \; \overline{a_{u
                                                                                                                                                                                                                                                                                                                                    \left(\tilde{\mu}^{2}\;c_{\gamma}^{\;2}\;y_{u}^{\;pt}\;y_{u}^{\;sr}+s_{\gamma}\;a_{u}^{\;pt}\;\left(s_{\gamma}\;a_{u}^{\;sr}-2\;\tilde{\mu}\;c_{\gamma}\;y_{u}^{\;sr}\right)\right)\right)\;LF_{1,1,1,1,0}\left[m_{\tilde{q}}^{\;p},\;m_{\tilde{q}}^{\;s},\;m_{\tilde{u}}^{\;r},\;m_{\tilde{u}}^{\;t}\right]+C_{\gamma}^{\;p}\left(s_{\gamma}^{\;p},\;s_{\gamma}^{\;pt}\right)
                                                                                                                         6 \; m_H^2 \; \left( \tilde{\mu}^2 \; c_{_Y}^{\; 2} \; \overline{y_u}^{\text{pr}} \; \overline{y_u}^{\text{st}} \; \left( \tilde{\mu}^2 \; c_{_Y}^{\; 2} \; y_u^{\; \text{pt}} \; y_u^{\; \text{sr}} + s_{_Y} \; a_u^{\; \text{pt}} \; \left( s_{_Y} \; a_u^{\; \text{sr}} - \tilde{\mu} \; c_{_Y} \; y_u^{\; \text{sr}} \right) \right) \; + \\
                                                                                                                                                                                                                   \left(\widetilde{\mu}^{2}\;c_{\gamma}^{\;2}\;y_{u}^{\;pt}\;y_{u}^{\;sr}+s_{\gamma}\;a_{u}^{\;pt}\;\left(s_{\gamma}\;a_{u}^{\;sr}-\widetilde{\mu}\;c_{\gamma}\;y_{u}^{\;sr}\right)\right)\right)\;\mathsf{LF}_{2,1,1,1,0}\left[\mathsf{m}_{\tilde{q}}^{\;p}\;,\;\mathsf{m}_{\tilde{q}}^{\;s}\;,\;\mathsf{m}_{\tilde{u}}^{\;r}\;,\;\mathsf{m}_{\tilde{u}}^{\;t}\right]\;-
                                                                                                                         6 \; m_H^2 \; \left( \tilde{\mu}^2 \; c_{_Y}^{\; 2} \; \overline{y_u}^{pr} \; \overline{y_u}^{st} \; \left( \tilde{\mu}^2 \; c_{_Y}^{\; 2} \; y_u^{\; pt} \; y_u^{\; sr} \; + \; s_{_Y} \; a_u^{\; pt} \; \left( s_{_Y} \; a_u^{\; sr} \; - \; \tilde{\mu} \; c_{_Y} \; y_u^{\; sr} \right) \right) \; + \; c_{_Y} \; a_u^{\; pt} \; \left( \tilde{\mu}^2 \; c_{_Y}^{\; 2} \; y_u^{\; pt} \; y_u^{\; pt} \; y_u^{\; pt} \; y_u^{\; pt} \; \right) \; + \; c_{_Y} \; a_u^{\; pt} \; \left( \tilde{\mu}^2 \; c_{_Y}^{\; 2} \; y_u^{\; pt} \; y_u^{\; 
                                                                                                                                                                                                               s_{\gamma} \, \overline{a_{u}}^{pr} \, \left( - \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} \, + \, \overline{a_{u}}^{\,\,st} \, \, \overline{a_{u}}^{\,\,st} \, + \, \overline{a_{u}}^{\,\,st} \, + \, \overline{a_{u}}^{\,\,st} \, \overline{a_{u}}^{\,\,st} \, + \, \overline{a_{u}}^{\,\,st} \, \overline{a_{u}}^{\,\,st} \, + \, \overline{a_{u}}^{\,\,st} \, + \, \overline{a_{u}}^{\,\,st} \, \overline{a_{u}}^{\,\,st} \, + \, \overline{a_{u}}^{\,\,st} \, \overline{a_{u}}^{\,\,st} \, + \, 
                                                                                                                                                                                                                                                                                                                                    \left(\widetilde{\mu}^2\;c_{\gamma}^{\;2}\;y_{u}^{\;pt}\;y_{u}^{\;sr}+s_{\gamma}\;a_{u}^{\;pt}\;\left(s_{\gamma}\;a_{u}^{\;sr}-\widetilde{\mu}\;c_{\gamma}\;y_{u}^{\;sr}\right)\right)\right)\;LF_{3,1,1,1,-1}\!\left[m_{\tilde{q}}^{\;p},\;m_{\tilde{q}}^{\;s},\;m_{\tilde{u}}^{\;r},\;m_{\tilde{u}}^{\;t}\right]-C_{\gamma}^{\;p}
                                                                                                                         3 \,\, m_H^2 \,\, \left(\widetilde{\mu}^2 \,\, c_{\gamma}^{\,\, 2} \,\, \overline{y_u}^{pr} \,\, \overline{y_u}^{st} \,\, \left(\widetilde{\mu}^2 \,\, c_{\gamma}^{\,\, 2} \,\, y_u^{\,\, pt} \,\, y_u^{\,\, sr} \,+\, s_{\gamma} \,\, a_u^{\,\, pt} \,\, \left(s_{\gamma} \,\, a_u^{\,\, sr} \,-\, \widetilde{\mu} \,\, c_{\gamma} \,\, y_u^{\,\, sr} \,\right) \,\, \right) \,\, + \,\, \left(s_{\gamma} \,\, a_u^{\,\, sr} \,\, -\, \widetilde{\mu} \,\, c_{\gamma} \,\, y_u^{\,\, sr} \,\, \right) \,\, + \,\, \left(s_{\gamma} \,\, a_u^{\,\, sr} \,\, -\, \widetilde{\mu} \,\, c_{\gamma} \,\, y_u^{\,\, sr} \,\, \right) \,\, + \,\, \left(s_{\gamma} \,\, a_u^{\,\, sr} \,\, -\, \widetilde{\mu} \,\, c_{\gamma} \,\, y_u^{\,\, sr} \,\, \right) \,\, + \,\, \left(s_{\gamma} \,\, a_u^{\,\, sr} \,\, -\, \widetilde{\mu} \,\, c_{\gamma} \,\, y_u^{\,\, sr} \,\, \right) \,\, + \,\, \left(s_{\gamma} \,\, a_u^{\,\, sr} \,\, -\, \widetilde{\mu} \,\, c_{\gamma} \,\, y_u^{\,\, sr} \,\, \right) \,\, + \,\, \left(s_{\gamma} \,\, a_u^{\,\, sr} \,\, -\, \widetilde{\mu} \,\, c_{\gamma} \,\, y_u^{\,\, sr} \,\, \right) \,\, + \,\, \left(s_{\gamma} \,\, a_u^{\,\, sr} \,\, -\, \widetilde{\mu} \,\, c_{\gamma} \,\, y_u^{\,\, sr} \,\, \right) \,\, + \,\, \left(s_{\gamma} \,\, a_u^{\,\, sr} \,\, -\, \widetilde{\mu} \,\, c_{\gamma} \,\, y_u^{\,\, sr} \,\, \right) \,\, + \,\, \left(s_{\gamma} \,\, a_u^{\,\, sr} \,\, -\, \widetilde{\mu} \,\, c_{\gamma} \,\, y_u^{\,\, sr} \,\, \right) \,\, + \,\, \left(s_{\gamma} \,\, a_u^{\,\, sr} \,\, -\, \widetilde{\mu} \,\, c_{\gamma} \,\, y_u^{\,\, sr} \,\, \right) \,\, + \,\, \left(s_{\gamma} \,\, a_u^{\,\, sr} \,\, -\, \widetilde{\mu} \,\, c_{\gamma} \,\, y_u^{\,\, sr} \,\, \right) \,\, + \,\, \left(s_{\gamma} \,\, a_u^{\,\, sr} \,\, -\, \widetilde{\mu} \,\, c_{\gamma} \,\, y_u^{\,\, sr} \,\, \right) \,\, + \,\, \left(s_{\gamma} \,\, a_u^{\,\, sr} \,\, -\, \widetilde{\mu} \,\, c_{\gamma} \,\, y_u^{\,\, sr} \,\, +\, \, \left(s_{\gamma} \,\, a_u^{\,\, sr} \,\, -\, \widetilde{\mu} \,\, c_{\gamma} \,\, y_u^{\,\, sr} \,\, \right) \,\, + \,\, \left(s_{\gamma} \,\, a_u^{\,\, sr} \,\, -\, \widetilde{\mu} \,\, c_{\gamma} \,\, y_u^{\,\, sr} \,\, +\, \, \left(s_{\gamma} \,\, a_u^{\,\, sr} \,\, -\, \widetilde{\mu} \,\, c_{\gamma} \,\, y_u^{\,\, sr} \,\, +\, \, \left(s_{\gamma} \,\, a_u^{\,\, sr} \,\, -\, \widetilde{\mu} \,\, c_{\gamma} \,\, y_u^{\,\, sr} \,\, +\, \, \left(s_{\gamma} \,\, a_u^{\,\, sr} \,\, -\, \widetilde{\mu} \,\, c_{\gamma} \,\, y_u^{\,\, sr} \,\, +\, \, \left(s_{\gamma} \,\, a_u^{\,\, sr} \,\, -\, \widetilde{\mu} \,\, a_u^{\,\, sr} \,\, -\, \widetilde{\mu} \,\, c_{\gamma} \,\, y_u^{\,\, sr} \,\, +\, \, \left(s_{\gamma} \,\, a_u^{\,\, sr} \,\, -\, \widetilde{\mu} \,\, a_u^{\,\, sr} \,\, -\, \widetilde{\mu} \,\, a_u^{\,\, sr} \,\, +\, \, \left(s_{\gamma} \,\, a_u^{\,\, sr} \,\, -\, \widetilde{\mu} \,\, a_u^{\,\, sr} \,\, -\, \widetilde{\mu} \,\, a_u^{\,\, sr} \,\, +\, \, \left(s_{\gamma} \,\, a_u^{\,\, sr} \,\, -\, \widetilde{\mu} \,\, a_u^{\,\, sr} \,\, +\, \, \left(s_{\gamma} \,\, a_u^{\,\, sr} \,\, -\, \widetilde{\mu} \,\, a_u^{\,\, sr} \,\, -\, \widetilde{\mu} \,\, a_u^{\,\, sr} \,\, +\, \, \left(s_{\gamma} \,\, a_u^{\,\, sr} \,\, -\, \widetilde{\mu} \,\, a_u^{\,\, sr
                                                                                                                                                                                                               s_{\gamma} \; \overline{a_{u}}^{pr} \; \left( -\,\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( \widetilde{\mu}^{2} \; c_{\gamma}^{\; 2} \; y_{u}^{\; pt} \; y_{u}^{\; sr} + s_{\gamma} \; a_{u}^{\; pt} \; \left( s_{\gamma} \; a_{u}^{\; sr} - \widetilde{\mu} \; c_{\gamma} \; y_{u}^{\; sr} \right) \right) \right) \; LF_{2,2,1,1,-1} \big[ \, m_{\tilde{q}}^{\; p} \, , \; m_{\tilde{u}}^{\; r} \, , \; m_{\tilde{q}}^{\; s} \, , \; m_{\tilde{u}}^{\; t} \big] \; - \, C_{\gamma} \; y_{u}^{\; sr} + s_{\gamma} \; a_{u}^{\; pt} \, a_{u}^{\; sr} + s_{\gamma} \; a_{u}^{\; pt} \, a_{u}^{\; sr} + s_{\gamma} \; a_{u
                                                                                                                         3\ \mathsf{m}_{H}^{2}\ \left(\widetilde{\mu}^{2}\ \mathsf{c}_{\gamma}^{\ 2}\ \overline{\mathsf{y}_{\mathsf{u}}}^{\mathsf{pr}}\ \overline{\mathsf{y}_{\mathsf{u}}}^{\mathsf{st}}\ \left(\widetilde{\mu}^{2}\ \mathsf{c}_{\gamma}^{\ 2}\ \mathsf{y}_{\mathsf{u}}^{\ \mathsf{pt}}\ \mathsf{y}_{\mathsf{u}}^{\ \mathsf{sr}}\ +\ \mathsf{s}_{\gamma}\ \mathsf{a}_{\mathsf{u}}^{\ \mathsf{pt}}\ \left(\mathsf{s}_{\gamma}\ \mathsf{a}_{\mathsf{u}}^{\ \mathsf{sr}}\ -\ \widetilde{\mu}\ \mathsf{c}_{\gamma}\ \mathsf{y}_{\mathsf{u}}^{\ \mathsf{sr}}\right)\right)\ +\ \mathsf{a}_{\mathsf{u}}^{\mathsf{pt}}\ \left(\widetilde{\mathsf{u}}^{2}\ \mathsf{c}_{\gamma}^{\ 2}\ \mathsf{y}_{\mathsf{u}}^{\ \mathsf{sr}}\right)
                                                                                                                                                                                                               s_{\gamma} \; \overline{a_{u}}^{pr} \; \left( -\,\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( \widetilde{\mu}^{2} c_{\gamma}^{2} y_{u}^{pt} y_{u}^{sr} + s_{\gamma} a_{u}^{pt} \left( s_{\gamma} a_{u}^{sr} - \widetilde{\mu} c_{\gamma} y_{u}^{sr} \right) \right) \right)
                                                                                                                                                        \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)
                                                                                                                                                     \text{LF}_{2,1,1,1,9} \left[ \, \boldsymbol{m_{\tilde{q}}}^{\text{s}} \, , \, \, \boldsymbol{m_{\tilde{d}}}^{\text{r}} \, , \, \, \boldsymbol{m_{\tilde{d}}}^{\text{t}} \, , \, \, \boldsymbol{m_{\tilde{q}}}^{\text{p}} \, \right] \, + \, 6 \, \, \boldsymbol{m_{H}}^{2} \, \, \boldsymbol{s_{\scriptscriptstyle Y}} \, \, \widetilde{\boldsymbol{\mu}} \, \, \boldsymbol{c_{\scriptscriptstyle Y}} \, \, \left( \, \boldsymbol{s_{\scriptscriptstyle Y}}^{2} \, \, \widetilde{\boldsymbol{y_{\scriptscriptstyle d}}}^{\text{pr}} \, \, \overline{\boldsymbol{y_{\scriptscriptstyle d}}}^{\text{st}} \, \, \boldsymbol{y_{\scriptscriptstyle d}}^{\text{sr}} \, \, \boldsymbol{a_{\scriptscriptstyle d}}^{\text{pt}} \, + \, \boldsymbol{a_{\scriptscriptstyle d}}^{\text{pt}} \, \, \boldsymbol{a_{\scriptscriptstyle d}}^{\text{pt}} \, \right) \, + \, \boldsymbol{a_{\scriptscriptstyle d}}^{\text{pt}} \, \, \, \boldsymbol{a_{\scriptscriptstyle d}}^{\text{pt}} \, \, \, \boldsymbol{a_{\scriptscriptstyle d}}^{\text{pt}} \, \, \boldsymbol{a_{\scriptscriptstyle d
                                                                                                                                                                                                               \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)
                                                                                                                                                     \text{LF}_{3,1,1,1,-1}\big[\text{m}_{\tilde{q}}{}^{\text{s}}\,,\,\text{m}_{\tilde{d}}{}^{\text{r}}\,,\,\text{m}_{\tilde{d}}{}^{\text{t}}\,,\,\text{m}_{\tilde{q}}{}^{\text{p}}\big]\,-\,6\,\,\text{m}_{\text{H}}^2\,\,\text{s}_{_{Y}}\,\tilde{\mu}\,\,\text{c}_{_{Y}}\,\left(\tilde{\mu}^2\,\,\text{c}_{_{Y}}^{\,\,2}\,\,\overline{\text{y}_{\text{u}}}^{\text{pr}}\,\,\overline{\text{y}_{\text{u}}}^{\text{st}}\,\,\text{y}_{\text{u}}^{\text{sr}}\,\,\text{a}_{\text{u}}^{\text{pt}}\,+\,
                                                                                                                                                                                                               \overline{a_{u}}^{pr} \left( s_{\gamma}^{2} y_{u}^{sr} \overline{a_{u}}^{st} a_{u}^{pt} + \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) \right) \right)
                                                                                                                                                     \overline{a_{u}}^{\text{pr}}\left(s_{\gamma}^{2} y_{u}^{\text{sr}} \overline{a_{u}}^{\text{st}} a_{u}^{\text{pt}} + \overline{y_{u}}^{\text{st}} \left(s_{\gamma} a_{u}^{\text{pt}} - \widetilde{\mu} c_{\gamma} y_{u}^{\text{pt}}\right) \left(s_{\gamma} a_{u}^{\text{sr}} - \widetilde{\mu} c_{\gamma} y_{u}^{\text{sr}}\right)\right)\right)
                                                                                                                                                     \mathsf{LF_{3,1,1,1,-1}}\big[\mathsf{m}_{\bar{\mathsf{q}}}{}^{\mathsf{s}}\,,\,\mathsf{m}_{\bar{\mathsf{q}}}{}^{\mathsf{p}}\,,\,\mathsf{m}_{\bar{\mathsf{u}}}{}^{\mathsf{r}}\,,\,\mathsf{m}_{\bar{\mathsf{u}}}{}^{\mathsf{t}}\big]\,+\,3\,\,\mathsf{m}_{\mathsf{H}}^2\,\,\mathsf{s}_{\scriptscriptstyle{\mathsf{Y}}}\,\,\widetilde{\mu}\,\,\mathsf{c}_{\scriptscriptstyle{\mathsf{Y}}}\,\,\big(\widetilde{\mu}^2\,\,\mathsf{c}_{\scriptscriptstyle{\mathsf{Y}}}{}^2\,\,\overline{\mathsf{y}_{\mathsf{u}}}{}^{\mathsf{pr}}\,\,\overline{\mathsf{y}_{\mathsf{u}}}{}^{\mathsf{st}}\,\,\mathsf{y}_{\mathsf{u}}{}^{\mathsf{sr}}\,\,\mathsf{a}_{\mathsf{u}}{}^{\mathsf{pt}}\,+\,
                                                                                                                                                                                                               \overline{a_{u}}^{pr} \left( s_{\gamma}^{2} y_{u}^{sr} \overline{a_{u}}^{st} a_{u}^{pt} + \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) \right) \right)
                                                                                                                                                        \mathsf{LF_{2,2,1,1,-1}}\big[\mathsf{m}_{\tilde{\mathsf{q}}}{}^{\mathsf{s}}\,,\,\mathsf{m}_{\tilde{\mathsf{u}}}{}^{\mathsf{r}}\,,\,\mathsf{m}_{\tilde{\mathsf{q}}}{}^{\mathsf{p}}\,,\,\mathsf{m}_{\tilde{\mathsf{u}}}{}^{\mathsf{t}}\big] + 3\,\,\mathsf{m}_{\mathsf{H}}^2\,\mathsf{s}_{\scriptscriptstyle{\gamma}}\,\tilde{\mu}\,\,\mathsf{c}_{\scriptscriptstyle{\gamma}}\,\left(\tilde{\mu}^2\,\,\mathsf{c}_{\scriptscriptstyle{\gamma}}^{\,\,2}\,\,\overline{\mathsf{y}_{\mathsf{u}}}^{\mathsf{pr}}\,\,\overline{\mathsf{y}_{\mathsf{u}}}^{\mathsf{st}}\,\,\mathsf{y}_{\mathsf{u}}^{\,\,\mathsf{sr}}\,\,\mathsf{a}_{\mathsf{u}}^{\,\,\mathsf{pt}} + \right.
                                                                                                                                                                                                               \overline{a_u}^{\text{pr}} \left( s_\gamma^2 \ y_u^{\text{sr}} \ \overline{a_u}^{\text{st}} \ a_u^{\text{pt}} + \overline{y_u}^{\text{st}} \left( s_\gamma \ a_u^{\text{pt}} - \widetilde{\mu} \ c_\gamma \ y_u^{\text{pt}} \right) \ \left( s_\gamma \ a_u^{\text{sr}} - \widetilde{\mu} \ c_\gamma \ y_u^{\text{sr}} \right) \right) \right) \ LF_{2,2,1,1,-1} \left[ m_{\tilde{q}}^{\text{s}}, m_{\tilde{q}}^{\text{st}} \right] \left( m_{\tilde{q}}^{\text{s}}, m_{\tilde{q}}^{\text{st}} \right) \left( m_{\tilde{q}}^{\text{st}}, m_{\tilde{q}
                                                                                                                                                                                \mathbf{m_{\tilde{u}}^{t}},\ \mathbf{m_{\tilde{u}}^{r}},\ \mathbf{m_{\tilde{u}}^{r}}]\ +\ 6\ \mathbf{m_{\tilde{H}}^{2}}\left(\tilde{\mu}^{2}\ \mathbf{c_{\gamma}^{2}}\ \overline{y_{u}^{pr}}\ \overline{y_{u}^{st}}\ \left(\tilde{\mu}^{2}\ \mathbf{c_{\gamma}^{2}}\ y_{u}^{pt}\ y_{u}^{sr} + \mathbf{s_{\gamma}}\ a_{u}^{pt}\ \left(\mathbf{s_{\gamma}}\ a_{u}^{sr} - \tilde{\mu}\ \mathbf{c_{\gamma}}\ y_{u}^{sr}\right)\right)\ +\ \mathbf{a_{\tilde{u}}^{r}}
                                                                                                                                                                                                               s_{\gamma} \; \overline{a_{u}}^{pr} \; \left( -\,\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} \; + \; \overline{a_{u}}
                                                                                                                                                                                                                                                                                                                                    \left(\widetilde{\mu}^2\;c_{\gamma}^{\;2}\;y_{u}^{\;pt}\;y_{u}^{\;sr}+s_{\gamma}\;a_{u}^{\;pt}\;\left(s_{\gamma}\;a_{u}^{\;sr}-\widetilde{\mu}\;c_{\gamma}\;y_{u}^{\;sr}\right)\right)\right)\;\mathsf{LF}_{2,1,1,1,0}\!\left[\mathsf{m}_{\tilde{u}}^{\;r},\;\mathsf{m}_{\tilde{q}}^{\;p},\;\mathsf{m}_{\tilde{q}}^{\;s},\;\mathsf{m}_{\tilde{u}}^{\;t}\right]-
                                                                                                                         6 \; m_H^2 \; \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}} - \widetilde{\mu} \; c_{\gamma} \; y_u^{\; \text{sr}} \right) \right) \; + \\
                                                                                                                                                                                                               \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}} - \widetilde{\mu} \; c_{\gamma} \; y_u^{\; \text{sr}}\right)\right)\right) \; \mathsf{LF}_{3,1,1,1,-1} \left[\mathsf{m}_{\widetilde{\mu}}^{\; \text{r}}, \; \mathsf{m}_{\widetilde{a}}^{\; \text{p}}, \; \mathsf{m}_{\widetilde{a}}^{\; \text{s}}, \; \mathsf{m}_{\widetilde{u}}^{\; \text{t}}\right] \; - \; \mathsf{m}_{\widetilde{a}}^{\; \text{s}} \; \mathsf{m}_{\widetilde{a}}^{\; \text{s}}, \; \mathsf{m
                                                                                                                         3\ m_H^2\ \left(\widetilde{\mu}^2\ c_\gamma^{\ 2}\ \overline{y_u}^{pr}\ \overline{y_u}^{st}\ \left(\widetilde{\mu}^2\ c_\gamma^{\ 2}\ y_u^{\ pt}\ y_u^{\ sr} + s_\gamma\ a_u^{\ pt}\ \left(s_\gamma\ a_u^{\ sr} - 2\ \widetilde{\mu}\ c_\gamma\ y_u^{\ sr}\right)\right) + \\
                                                                                                                                                                                                               s_{\gamma} \; \overline{a_{u}}^{\text{pr}} \; \left( -2 \; \widetilde{\mu} \; c_{\gamma} \; \overline{y_{u}}^{\text{st}} \; \left( -s_{\gamma} \; a_{u}^{\; \text{pt}} + \widetilde{\mu} \; c_{\gamma} \; y_{u}^{\; \text{pt}} \right) \; \left( -s_{\gamma} \; a_{u}^{\; \text{sr}} + \widetilde{\mu} \; c_{\gamma} \; y_{u}^{\; \text{sr}} \right) \; + \\
                                                                                                                                                                                                                                                                                                     s_{\gamma} \, \overline{a_{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) \right) \right)
                                                                                                                                                        \mathsf{LF_{2,2,1,1,-1}}\big[\,\mathsf{m_{\tilde{u}}}^{\,\mathsf{t}}\,,\,\,\mathsf{m_{\tilde{u}}}^{\,\mathsf{t}}\,,\,\,\mathsf{m_{\tilde{q}}}^{\,\mathsf{p}}\,,\,\,\mathsf{m_{\tilde{q}}}^{\,\mathsf{s}}\big]\,\,-\,6\,\,\mathsf{m_{H}^{2}}\,\,\mathsf{s_{\gamma}}\,\,\widetilde{\mu}\,\,\mathsf{c_{\gamma}}\,\,\left(\widetilde{\mu}^{2}\,\,\mathsf{c_{\gamma}}^{2}\,\,\overline{y_{\mathsf{u}}}^{\mathsf{pr}}\,\,\overline{y_{\mathsf{u}}}^{\mathsf{st}}\,\,\mathsf{y_{\mathsf{u}}}^{\mathsf{sr}}\,\,\mathsf{a_{\mathsf{u}}}^{\mathsf{pt}}\,\,+\,\,\mathsf{a_{\mathsf{u}}^{\mathsf{pt}}}\,\,\mathsf{b_{\mathsf{u}}^{\mathsf{st}}}\,\,\mathsf{a_{\mathsf{u}}}^{\,\mathsf{pt}}\,\,\mathsf{b_{\mathsf{u}}^{\mathsf{st}}}\,\,\mathsf{a_{\mathsf{u}}^{\mathsf{pt}}}\,\,\mathsf{b_{\mathsf{u}}^{\mathsf{st}}}\,\,\mathsf{a_{\mathsf{u}}^{\mathsf{pt}}}\,\,\mathsf{b_{\mathsf{u}}^{\mathsf{st}}}\,\,\mathsf{a_{\mathsf{u}}^{\mathsf{pt}}}\,\,\mathsf{b_{\mathsf{u}}^{\mathsf{st}}}\,\,\mathsf{b_{\mathsf{u}}^{\mathsf{st}}}\,\,\mathsf{b_{\mathsf{u}}^{\mathsf{st}}}\,\,\mathsf{b_{\mathsf{u}}^{\mathsf{st}}}\,\,\mathsf{b_{\mathsf{u}}^{\mathsf{st}}}\,\,\mathsf{b_{\mathsf{u}}^{\mathsf{st}}}\,\,\mathsf{b_{\mathsf{u}}^{\mathsf{st}}}\,\,\mathsf{b_{\mathsf{u}}^{\mathsf{st}}}\,\,\mathsf{b_{\mathsf{u}}^{\mathsf{st}}}\,\,\mathsf{b_{\mathsf{u}}^{\mathsf{st}}}\,\,\mathsf{b_{\mathsf{u}}^{\mathsf{st}}}\,\,\mathsf{b_{\mathsf{u}}^{\mathsf{st}}}\,\,\mathsf{b_{\mathsf{u}}^{\mathsf{st}}}\,\,\mathsf{b_{\mathsf{u}}^{\mathsf{st}}}\,\,\mathsf{b_{\mathsf{u}}^{\mathsf{st}}}\,\,\mathsf{b_{\mathsf{u}}^{\mathsf{st}}}\,\,\mathsf{b_{\mathsf{u}}^{\mathsf{st}}}\,\,\mathsf{b_{\mathsf{u}}^{\mathsf{st}}}\,\,\mathsf{b_{\mathsf{u}}^{\mathsf{st}}}\,\,\mathsf{b_{\mathsf{u}}^{\mathsf{st}}}\,\,\mathsf{b_{\mathsf{u}}^{\mathsf{st}}}\,\,\mathsf{b_{\mathsf{u}}^{\mathsf{st}}}\,\,\mathsf{b_{\mathsf{u}}^{\mathsf{st}}}\,\,\mathsf{b_{\mathsf{u}}^{\mathsf{st}}}\,\,\mathsf{b_{\mathsf{u}}^{\mathsf{st}}}\,\,\mathsf{b_{\mathsf{u}}^{\mathsf{st}}}\,\,\mathsf{b_{\mathsf{u}}^{\mathsf{st}}}\,\,\mathsf{b_{\mathsf{u}}^{\mathsf{st}}}\,\,\mathsf{b_{\mathsf{u}}^{\mathsf{st}}}\,\,\mathsf{b_{\mathsf{u}}^{\mathsf{st}}}\,\,\mathsf{b_{\mathsf{u}}^{\mathsf{st}}}\,\,\mathsf{b_{\mathsf{u}}^{\mathsf{st}}}\,\,\mathsf{b_{\mathsf{u}}^{\mathsf{st}}}\,\,\mathsf{b_{\mathsf{u}}^{\mathsf{st}}}\,\,\mathsf{b_{\mathsf{u}}^{\mathsf{st}}}\,\,\mathsf{b_{\mathsf{u}}^{\mathsf{st}}}\,\,\mathsf{b_{\mathsf{u}}^{\mathsf{st}}}\,\,\mathsf{b_{\mathsf{u}}^{\mathsf{st}}}\,\,\mathsf{b_{\mathsf{u}}^{\mathsf{st}}}\,\,\mathsf{b_{\mathsf{u}}^{\mathsf{st}}}\,\,\mathsf{b_{\mathsf{u}}^{\mathsf{st}}}\,\,\mathsf{b_{\mathsf{u}}^{\mathsf{st}}}\,\,\mathsf{b_{\mathsf{u}}^{\mathsf{st}}}\,\,\mathsf{b_{\mathsf{u}}^{\mathsf{st}}}\,\,\mathsf{b_{\mathsf{u}}^{\mathsf{st}}}\,\,\mathsf{b_{\mathsf{u}}^{\mathsf{st}}}\,\,\mathsf{b_{\mathsf{u}}^{\mathsf{st}}}\,\,\mathsf{b_{\mathsf{u}}^{\mathsf{st}}}\,\,\mathsf{b_{\mathsf{u}}^{\mathsf{st}}}\,\,\mathsf{b_{\mathsf{u}}^{\mathsf{st}}}\,\,\mathsf{b_{\mathsf{u}}^{\mathsf{st}}}\,\,\mathsf{b_{\mathsf{u}}^{\mathsf{st}}}\,\,\mathsf{b_{\mathsf{u}}^{\mathsf{st}}}\,\,\mathsf{b_{\mathsf{u}}^{\mathsf{st}}}\,\,\mathsf{b_{\mathsf{u}}^{\mathsf{st}}}\,\,\mathsf{b_{\mathsf{u}}^{\mathsf{st}}}\,\,\mathsf{b_{\mathsf{u}}^{\mathsf{st}}}\,\,\mathsf{b_{\mathsf{u}}^{\mathsf{st}}}\,\,\mathsf{b_{\mathsf{u}}^{\mathsf{st}}}\,\,\mathsf{b_{\mathsf{u}}^{\mathsf{st}}}\,\,\mathsf{b_{\mathsf{u}}^{\mathsf{st}}}\,\,\mathsf{b_{\mathsf{u}}^{\mathsf{st}}}\,\,\mathsf{b_{\mathsf{u}}^{\mathsf{st}}}\,\,\mathsf{b_{\mathsf{u}}^{\mathsf{st}}}\,\,\mathsf{b_{\mathsf{u}}^{\mathsf{st}}}\,\,\mathsf{b_{\mathsf{u}}^{\mathsf{st}}}\,\,\mathsf{b_{\mathsf{u}}^{\mathsf{st}}}\,\,\mathsf{b_{\mathsf{u}}^{\mathsf{st}}}\,\,\mathsf{b_{\mathsf{u}}^{\mathsf{st}}}\,\,\mathsf{b_{\mathsf{u}}^{\mathsf{st}}}\,\,\mathsf{b_{\mathsf{u}}^{\mathsf{st}}}\,\,\mathsf{b_{\mathsf{u}}^{\mathsf{st}}}\,\,\mathsf{b_{\mathsf{u}}^{\mathsf{st}}}\,\,\mathsf{b_{\mathsf{u}}^{\mathsf{st}}}\,\,\mathsf{b_{\mathsf{u}}^{\mathsf{st}}}\,\,\mathsf{b_{\mathsf{u
                                                                                                                                                                                                            \overline{a_u}^{\text{pr}} \left( s_{\gamma}^{\ 2} \ y_u^{\, \text{sr}} \ \overline{a_u}^{\text{st}} \ a_u^{\, \text{pt}} + \overline{y_u}^{\text{st}} \left( s_{\gamma} \ a_u^{\, \text{pt}} - \widetilde{\mu} \ c_{\gamma} \ y_u^{\, \text{pt}} \right) \ \left( s_{\gamma} \ a_u^{\, \text{sr}} - \widetilde{\mu} \ c_{\gamma} \ y_u^{\, \text{sr}} \right) \right) \right)
                                                                                                                                                     \mathsf{LF_{2,1,1,1,0}}\big[\mathsf{m_{\tilde{u}}}^\mathsf{t},\,\mathsf{m_{\tilde{q}}}^\mathsf{p},\,\mathsf{m_{\tilde{q}}}^\mathsf{s},\,\mathsf{m_{\tilde{u}}}^\mathsf{r}\big] + 6\,\mathsf{m_H^2}\,\mathsf{s_Y}\,\widetilde{\mu}\,\mathsf{c_Y}\,\left(\widetilde{\mu}^2\,\mathsf{c_Y}^2\,\overline{\mathsf{y_u}}^\mathsf{pr}\,\overline{\mathsf{y_u}}^\mathsf{st}\,\mathsf{y_u}^\mathsf{sr}\,\mathsf{a_u}^\mathsf{pt} + \right)
                                                                                                                                                                                                               \overline{a_{u}}^{\text{pr}}\left(s_{\gamma}^{2} y_{u}^{\text{sr}} \overline{a_{u}}^{\text{st}} a_{u}^{\text{pt}} + \overline{y_{u}}^{\text{st}} \left(s_{\gamma} a_{u}^{\text{pt}} - \widetilde{\mu} c_{\gamma} y_{u}^{\text{pt}}\right) \left(s_{\gamma} a_{u}^{\text{sr}} - \widetilde{\mu} c_{\gamma} y_{u}^{\text{sr}}\right)\right)\right)
                                                                                                                                                        LF_{3,1,1,1,-1}[m_{\tilde{u}}^{t}, m_{\tilde{q}}^{p}, m_{\tilde{q}}^{s}, m_{\tilde{u}}^{r}])
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