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54\;\overline{y_d}^{\text{pr}}\;\left({m_{_{\!\#}}}^2\;{y_d}^{\text{pi2}}\;{y_d}^{\text{ilr}}\;\left(1+{s_{_{\!Y}}}^2\right)\;+4\;{m_H}^2\,{s_{_{\!Y}}}^2\,{y_d}^{\text{pr}}\;{y_d}^{\text{ili2}}\right)\;+
                                                                                                                                              18\; y_{d}^{\;pi2}\; \overline{y_{u}}^{pr}\; y_{u}^{\;i1r}\; \left(m_{_{\! \!\! \oplus}}^{\;2}\; \left(1+\, c_{_{\!\chi}}^{\;2}\right) \,+\, 2\; m_{H}^{2}\; s_{_{\!\chi}}^{\;2}\right) \,\right) \; -\, \frac{1}{2}\; \sum_{p} \, s_{_{2}\,_{\chi}} \; s_{_{\chi}} \; g_{_{1}}^{\;2}\; \frac{1}{m_{_{\! \! \! \wp}}^{\;4}} \; y_{d}^{\;i1i2}
                                                            \left(m_{H}^{2}+m_{\Phi}^{2}\right) \; LF_{1,0}\left[m_{\tilde{d}}^{\;p}\right] \; + \; \frac{3}{2} \; s_{2\,\gamma} \; s_{\gamma} \; \frac{1}{m_{\Phi}^{\;4}} \; \overline{y_{d}}^{pr} \; y_{d}^{\;pr} \; y_{d}^{\;ili2} \; \left(m_{H}^{2}+m_{\Phi}^{\;2}\right) \; LF_{1,0}\left[m_{\tilde{d}}^{\;r}\right] \; - \; \frac{1}{2} \; \left(m_{H}^{2}+m_{\Phi}^{2}\right) \; LF_{1,0}\left[m_{\tilde{d}}^{\;pr}\right] \; + \; \frac{3}{2} \; s_{2\,\gamma} \; s_{\gamma} \; \frac{1}{m_{\Phi}^{\;4}} \; \overline{y_{d}}^{pr} \; y_{d}^{\;pr} \; y_{d}^{\;ili2} \; \left(m_{H}^{2}+m_{\Phi}^{2}\right) \; LF_{1,0}\left[m_{\tilde{d}}^{\;r}\right] \; - \; \frac{1}{2} \; s_{2\,\gamma} \; s_{\gamma} \; \frac{1}{m_{\Phi}^{\;4}} \; \overline{y_{d}}^{pr} \; y_{d}^{\;pr} \; y_{d}^{\;pr}
          \frac{1}{2}\, \sum_{p}\, s_{2\,\gamma}\, \, s_{\gamma}\, \, g_{1}^{2}\, \, \frac{1}{m_{_{0}}{}^{4}}\, \, y_{d}^{\,\text{ili2}}\, \left(m_{H}^{2}\, + \, m_{_{\overline{\Phi}}}^{\,2}\right) \, \, LF_{1,0} \left[\, m_{\tilde{e}}^{\,\,p}\, \right] \, + \, \frac{1}{2}\, \, s_{2\,\gamma}\, \, s_{\gamma}\, \, \frac{1}{m_{_{0}}{}^{4}}\, \, y_{d}^{\,\,\text{ili2}}\, \, \overline{y_{e}}^{pr}\, y_{e}^{\,pr} \, y_{e}^{\,\,pr} \, y_{e}^{\,\,pr} \, \, y_{e
                                                            \left(m_{H}^{2}+m_{\bar{\oplus}}^{2}\right) \text{ LF}_{1,0}\left[m_{\bar{e}}^{r}\right] + \frac{1}{2} \text{ S}_{2\,\gamma} \text{ S}_{\gamma} \frac{1}{m_{\bar{e}}^{4}} \text{ yd}^{\text{11i2}} \left(m_{H}^{2}+m_{\bar{\oplus}}^{2}\right) \left(\overline{y_{e}}^{pr} y_{e}^{pr} + \sum_{p} g_{1}^{2}\right) \text{ LF}_{1,0}\left[m_{\bar{l}}^{p}\right] - \left(m_{\bar{l}}^{p}\right) \left(m_{\bar{l}}^{p
                \frac{1}{2} \; {s_2}_{\text{Y}} \; {s_{\text{Y}}} \; \frac{1}{{m_{\text{D}}}^4} \; y_d \\ \\ ^{\text{ili2}} \; \left( m_H^2 + m_{\text{D}}^2 \right) \; \left( -3 \; \overline{y_d}^{\text{pr}} \; y_d^{\text{pr}} + 3 \; \overline{y_u}^{\text{pr}} \; y_u^{\text{pr}} + \sum_{p} g_1^2 \right) \; LF_{1,0} \left[ m_{\tilde{q}}^{-\tilde{p}} \right] \; + \left( -3 \; \overline{y_d}^{\text{pr}} \; y_d^{\text{pr}} + 3 \; \overline{y_u}^{\text{pr}} \; y_d^{\text{pr}} + \sum_{p} g_1^2 \right) \; LF_{1,0} \left[ m_{\tilde{q}}^{-\tilde{p}} \right] \; + \left( -3 \; \overline{y_d}^{\text{pr}} \; y_d^{\text{pr}} + 3 \; \overline{y_d}^{\text{pr}} \; y_d^{\text{pr}} + \sum_{p} g_1^2 \right) \; LF_{1,0} \left[ m_{\tilde{q}}^{-\tilde{p}} \right] \; + \left( -3 \; \overline{y_d}^{\text{pr}} \; y_d^{\text{pr}} + 3 \; \overline{y_d}^{\text{pr}} \; y_d^{\text{pr}} + \sum_{p} g_1^2 \right) \; LF_{1,0} \left[ m_{\tilde{q}}^{-\tilde{p}} \; y_d^{\text{pr}} + 3 \; \overline{y_d}^{\text{pr}} \; y_d^{\text{pr}} + 3 \; \overline{y_d}^{\text{pr}} \right] \; + \left( -3 \; \overline{y_d}^{\text{pr}} \; y_d^{\text{pr}} + 3 \; \overline{y_d}^{\text{pr}} \; y_d^{\text{pr}} + 3 \; \overline{y_d}^{\text{pr}} \right) \; + \left( -3 \; \overline{y_d}^{\text{pr}} \; y_d^{\text{pr}} + 3 \; \overline{y_d}^{\text{pr}} \right) \; + \left( -3 \; \overline{y_d}^{\text{pr}} \; y_d^{\text{pr}} + 3 \; \overline{y_d}^{\text{pr}} \right) \; + \left( -3 \; \overline{y_d}^{\text{pr}} \; y_d^{\text{pr}} + 3 \; \overline{y_d}^{\text{pr}} \right) \; + \left( -3 \; \overline{y_d}^{\text{pr}} \; y_d^{\text{pr}} + 3 \; \overline{y_d}^{\text{pr}} \right) \; + \left( -3 \; \overline{y_d}^{\text{pr}} \; y_d^{\text{pr}} + 3 \; \overline{y_d}^{\text{pr}} \right) \; + \left( -3 \; \overline{y_d}^{\text{pr}} \; y_d^{\text{pr}} + 3 \; \overline{y_d}^{\text{pr}} \right) \; + \left( -3 \; \overline{y_d}^{\text{pr}} \; y_d^{\text{pr}} + 3 \; \overline{y_d}^{\text{pr}} \right) \; + \left( -3 \; \overline{y_d}^{\text{pr}} \; y_d^{\text{pr}} + 3 \; \overline{y_d}^{\text{pr}} \right) \; + \left( -3 \; \overline{y_d}^{\text{pr}} \; y_d^{\text{pr}} + 3 \; \overline{y_d}^{\text{pr}} \right) \; + \left( -3 \; \overline{y_d}^{\text{pr}} \; y_d^{\text{pr}} + 3 \; \overline{y_d}^{\text{pr}} \right) \; + \left( -3 \; \overline{y_d}^{\text{pr}} \; y_d^{\text{pr}} + 3 \; \overline{y_d}^{\text{pr}} \right) \; + \left( -3 \; \overline{y_d}^{\text{pr}} \; y_d^{\text{pr}} + 3 \; \overline{y_d}^{\text{pr}} \right) \; + \left( -3 \; \overline{y_d}^{\text{pr}} \; y_d^{\text{pr}} \right) \; + \left( -3 \; \overline{y_d}^{\text{pr}} \; y_d^{\text{pr}} + 3 \; \overline{y_d}^{\text{pr}} \right) \; + \left( -3 \; \overline{y_d}^{\text{pr}} \; y_d^{\text{pr}} + 3 \; \overline{y_d}^{\text{pr}} \right) \; + \left( -3 \; \overline{y_d}^{\text{pr}} \; y_d^{\text{pr}} + 3 \; \overline{y_d}^{\text{pr}} \right) \; + \left( -3 \; \overline{y_d}^{\text{pr}} \; y_d^{\text{pr}} \right) \; + \left( -3 \; \overline{y_d}^{\text{pr}} \; y_d^{\text{pr}} \right) \; + \left( -3 \; \overline{y_d}^{\text{pr}} \; y_d^{\text{pr}} \right) \; + \left( -3 \; \overline{y_d}^{\text{pr}} \; y_d^{\text{pr}} \right) \; + \left( -3 \; \overline{y_d}^{\text{pr}} \; y_d^{\text{pr}} \right) \; + \left( -3 \; \overline{y_d}^{\text{pr
     \sum\nolimits_{p} \, {{s_{2}}_{\text{Y}}} \, {{s_{\text{Y}}}} \, {{g_{1}}^{2}} \, \frac{1}{{{m_{0}}^{4}}} \, {{y_{d}}^{\text{ili2}}} \, \left( {{m_{H}^{2}} + {m_{\Phi}^{2}}} \right) \, L{F_{1,0}}\left[ {{m_{u}^{\text{p}}}^{\text{p}}} \right] \, - \, \left( {{m_{u}^{\text{p}}}} \right) \, \left( {{m_{H}^{\text{p}}}} \right) \, \left( {{m_{H
                \frac{3}{2} \text{ S}_{2\,\gamma} \text{ S}_{\gamma} \frac{1}{m_{\text{o}}^4} \text{ y}_{\text{d}}^{\text{ili2}} \overline{\text{y}_{\text{u}}}^{\text{pr}} \text{ y}_{\text{u}}^{\text{pr}} \left(\text{m}_{\text{H}}^2 + \text{m}_{\text{\tiny{\varpi}}}^2\right) \text{ LF}_{\text{1,0}} \left[\text{m}_{\tilde{\text{u}}}^{\text{r}}\right] - \frac{1}{2} \left(\text{m}_{\tilde{\text{u}}}^{\text{r}}\right)^2 + \frac{1}{2} \left(\text{m}_{\tilde{\text{u}}}^
          \frac{\text{3}}{\text{8}} \text{ S}_{\text{4} \, \text{\gamma}} \text{ S}_{\text{\gamma}} \, \frac{\text{1}}{\text{m}_{\text{o}}^{\text{4}}} \, \text{y}_{\text{d}}^{\text{11i2}} \, \left( g_{\text{1}}^{2} + g_{\text{2}}^{2} \right) \, \left( m_{\text{H}}^{2} + m_{\text{\oplus}}^{2} \right) \, \text{LF}_{\text{1,0}} \left[ \, m_{\text{\oplus}} \, \right] \, - \, \left( m_{\text{H}}^{2} + m_{\text{\oplus}}^{2} \right) \, \left( m_{\text{H}}^{2} + m_{\text{\oplus}}^{2
          \frac{1}{4} \; c_{\gamma} \; y_{d}^{\; \text{pi2}} \; \left( 3 \; s_{\gamma}^{\; 2} \; \overline{y_{d}}^{\text{pr}} \; y_{d}^{\; \text{ilr}} + \overline{y_{u}}^{\text{pr}} \; y_{u}^{\; \text{ilr}} \; \left( c_{\gamma}^{\; 2} + 4 \; s_{\gamma}^{\; 2} \right) \right) \; \text{LF}_{\text{1,1}}[\, m_{\scriptscriptstyle \oplus} \,] \; + \left( c_{\gamma}^{\; 2} + 4 \; s_{\gamma}^{\; 2} \right) \; \left( c_{\gamma}^{\; 2} + 4 \; s_{\gamma}^{\; 2} \right) \; + \left( c_{\gamma}^{\; 2} + 4 \; s_{\gamma}^{\; 2} \right) \; + \left( c_{\gamma}^{\; 2} + 4 \; s_{\gamma}^{\; 2} \right) \; + \left( c_{\gamma}^{\; 2} + 4 \; s_{\gamma}^{\; 2} \right) \; + \left( c_{\gamma}^{\; 2} + 4 \; s_{\gamma}^{\; 2} \right) \; + \left( c_{\gamma}^{\; 2} + 4 \; s_{\gamma}^{\; 2} \right) \; + \left( c_{\gamma}^{\; 2} + 4 \; s_{\gamma}^{\; 2} \right) \; + \left( c_{\gamma}^{\; 2} + 4 \; s_{\gamma}^{\; 2} \right) \; + \left( c_{\gamma}^{\; 2} + 4 \; s_{\gamma}^{\; 2} \right) \; + \left( c_{\gamma}^{\; 2} + 4 \; s_{\gamma}^{\; 2} \right) \; + \left( c_{\gamma}^{\; 2} + 4 \; s_{\gamma}^{\; 2} \right) \; + \left( c_{\gamma}^{\; 2} + 4 \; s_{\gamma}^{\; 2} \right) \; + \left( c_{\gamma}^{\; 2} + 4 \; s_{\gamma}^{\; 2} \right) \; + \left( c_{\gamma}^{\; 2} + 4 \; s_{\gamma}^{\; 2} \right) \; + \left( c_{\gamma}^{\; 2} + 4 \; s_{\gamma}^{\; 2} \right) \; + \left( c_{\gamma}^{\; 2} + 4 \; s_{\gamma}^{\; 2} \right) \; + \left( c_{\gamma}^{\; 2} + 4 \; s_{\gamma}^{\; 2} \right) \; + \left( c_{\gamma}^{\; 2} + 4 \; s_{\gamma}^{\; 2} \right) \; + \left( c_{\gamma}^{\; 2} + 4 \; s_{\gamma}^{\; 2} \right) \; + \left( c_{\gamma}^{\; 2} + 4 \; s_{\gamma}^{\; 2} \right) \; + \left( c_{\gamma}^{\; 2} + 4 \; s_{\gamma}^{\; 2} \right) \; + \left( c_{\gamma}^{\; 2} + 4 \; s_{\gamma}^{\; 2} \right) \; + \left( c_{\gamma}^{\; 2} + 4 \; s_{\gamma}^{\; 2} \right) \; + \left( c_{\gamma}^{\; 2} + 4 \; s_{\gamma}^{\; 2} \right) \; + \left( c_{\gamma}^{\; 2} + 4 \; s_{\gamma}^{\; 2} \right) \; + \left( c_{\gamma}^{\; 2} + 4 \; s_{\gamma}^{\; 2} \right) \; + \left( c_{\gamma}^{\; 2} + 4 \; s_{\gamma}^{\; 2} \right) \; + \left( c_{\gamma}^{\; 2} + 4 \; s_{\gamma}^{\; 2} \right) \; + \left( c_{\gamma}^{\; 2} + 4 \; s_{\gamma}^{\; 2} \right) \; + \left( c_{\gamma}^{\; 2} + 4 \; s_{\gamma}^{\; 2} \right) \; + \left( c_{\gamma}^{\; 2} + 4 \; s_{\gamma}^{\; 2} \right) \; + \left( c_{\gamma}^{\; 2} + 4 \; s_{\gamma}^{\; 2} \right) \; + \left( c_{\gamma}^{\; 2} + 4 \; s_{\gamma}^{\; 2} \right) \; + \left( c_{\gamma}^{\; 2} + 4 \; s_{\gamma}^{\; 2} \right) \; + \left( c_{\gamma}^{\; 2} + 4 \; s_{\gamma}^{\; 2} \right) \; + \left( c_{\gamma}^{\; 2} + 4 \; s_{\gamma}^{\; 2} \right) \; + \left( c_{\gamma}^{\; 2} + 4 \; s_{\gamma}^{\; 2} \right) \; + \left( c_{\gamma}^{\; 2} + 4 \; s_{\gamma}^{\; 2} \right) \; + \left( c_{\gamma}^{\; 2} + 4 \; s_{\gamma}^{\; 2} \right) \; + \left( c_{\gamma}^{\; 2} + 4 \; s_{\gamma}^{\; 2} \right) \; + \left( c_{\gamma}^{\; 2} + 4 \; s_{\gamma}^{\; 2} \right) \; + \left( c_{\gamma}^{\; 2} + 4 \; s_{\gamma}^{\; 2} \right) \; + \left( c_{\gamma}^{\; 2} + 4 \; s_{\gamma}^{\; 2} \right) \; + \left( c_{\gamma}^{\; 2} + 4 \; s_{\gamma}^{\; 2} \right) \; + \left( c_{\gamma}^{\; 2} + 4 \; s_{\gamma}^{\; 2} \right) \; +
          \frac{1}{2}\; m_{H}^{2}\; c_{\gamma}\; s_{\gamma}^{\; 2}\; y_{d}^{\; pi2}\; \overline{y_{u}}^{pr}\; y_{u}^{\; i1r}\; LF_{1,2}\left[\,m_{\Phi}\,\right] \; - \; \frac{1}{9}\; c_{\gamma}\; g_{1}^{\; 2}\; y_{d}^{\; i1i2}\; LF_{1,1,9}\left[\,m_{1}\,,\; m_{\tilde{d}}^{\; i2}\,\right] \; + \; \frac{1}{2}\; m_{H}^{2}\; c_{\gamma}\; g_{1}^{\; 2}\; y_{d}^{\; i1i2}\; LF_{1,1,9}\left[\,m_{1}\,,\; m_{\tilde{d}}^{\; i2}\,\right] \; + \; \frac{1}{2}\; m_{H}^{2}\; c_{\gamma}\; g_{1}^{\; 2}\; y_{d}^{\; i1i2}\; LF_{1,1,9}\left[\,m_{1}\,,\; m_{\tilde{d}}^{\; i2}\,\right] \; + \; \frac{1}{2}\; m_{H}^{2}\; c_{\gamma}\; g_{1}^{\; 2}\; y_{d}^{\; i1i2}\; LF_{1,1,9}\left[\,m_{1}\,,\; m_{\tilde{d}}^{\; i2}\,\right] \; + \; \frac{1}{2}\; m_{H}^{2}\; c_{\gamma}\; g_{1}^{\; 2}\; y_{d}^{\; i1i2}\; LF_{1,1,9}\left[\,m_{1}\,,\; m_{\tilde{d}}^{\; i2}\,\right] \; + \; \frac{1}{2}\; m_{H}^{2}\; c_{\gamma}\; g_{1}^{\; 2}\; y_{d}^{\; i1i2}\; LF_{1,1,9}\left[\,m_{1}\,,\; m_{\tilde{d}}^{\; i2}\,\right] \; + \; \frac{1}{2}\; m_{H}^{2}\; c_{\gamma}\; g_{1}^{\; 2}\; y_{d}^{\; 2}\;
          \frac{1}{18} \; c_{\gamma} \; g_{1}^{\; 2} \; y_{d}^{\; \text{ili2}} \; \mathsf{LF}_{2,1,\text{--}1} \big[ \, \mathsf{m}_{1} \,, \; \mathsf{m}_{\tilde{d}}^{\; \text{i2}} \, \big] \; - \; \frac{1}{36} \; c_{\gamma} \; g_{1}^{\; 2} \; y_{d}^{\; \text{ili2}} \; \mathsf{LF}_{1,1,0} \left[ \, \mathsf{m}_{1} \,, \; \mathsf{m}_{\tilde{q}}^{\; \text{i1}} \, \big] \; + \; \frac{1}{36} \; c_{\gamma} \; g_{1}^{\; 2} \; y_{d}^{\; \text{ili2}} \; \mathsf{LF}_{1,1,0} \left[ \, \mathsf{m}_{1} \,, \; \mathsf{m}_{\tilde{q}}^{\; \text{i1}} \, \big] \; + \; \frac{1}{36} \; c_{\gamma} \; g_{1}^{\; 2} \; y_{d}^{\; \text{ili2}} \; \mathsf{LF}_{1,1,0} \left[ \, \mathsf{m}_{1} \,, \; \mathsf{m}_{\tilde{q}}^{\; \text{ili2}} \, \big] \; + \; \frac{1}{36} \; c_{\gamma} \; g_{1}^{\; 2} \; y_{d}^{\; \text{ili2}} \; \mathsf{LF}_{1,1,0} \left[ \, \mathsf{m}_{1} \,, \; \mathsf{m}_{\tilde{q}}^{\; \text{ili2}} \, \big] \; + \; \frac{1}{36} \; c_{\gamma} \; g_{1}^{\; 2} \; y_{d}^{\; \text{ili2}} \; \mathsf{LF}_{1,1,0} \left[ \, \mathsf{m}_{1} \,, \; \mathsf{m}_{\tilde{q}}^{\; \text{ili2}} \, \big] \; + \; \frac{1}{36} \; c_{\gamma} \; g_{1}^{\; 2} \; y_{d}^{\; \text{ili2}} \; \mathsf{LF}_{1,1,0} \left[ \, \mathsf{m}_{1} \,, \; \mathsf{m}_{\tilde{q}}^{\; \text{ili2}} \, \big] \; + \; \frac{1}{36} \; c_{\gamma} \; g_{1}^{\; 2} \; y_{d}^{\; \text{ili2}} \; \mathsf{LF}_{1,1,0} \left[ \, \mathsf{m}_{1} \,, \; \mathsf{m}_{\tilde{q}}^{\; \text{ili2}} \, \big] \; + \; \frac{1}{36} \; c_{\gamma} \; g_{1}^{\; 2} \; y_{d}^{\; \text{ili2}} \; \mathsf{LF}_{1,1,0} \left[ \, \mathsf{m}_{1} \,, \; \mathsf{m}_{\tilde{q}}^{\; \text{ili2}} \, \big] \; + \; \frac{1}{36} \; c_{\gamma} \; g_{1}^{\; 2} \; y_{d}^{\; \text{ili2}} \; \mathsf{LF}_{1,1,0} \left[ \, \mathsf{m}_{1} \,, \; \mathsf{m}_{\tilde{q}}^{\; \text{ili2}} \, \big] \; + \; \frac{1}{36} \; c_{\gamma} \; g_{1}^{\; 2} \; y_{d}^{\; \text{ili2}} \; \mathsf{LF}_{1,1,0} \left[ \, \mathsf{m}_{1} \,, \; \mathsf{m}_{\tilde{q}}^{\; \text{ili2}} \, \big] \; + \; \frac{1}{36} \; c_{\gamma} \; g_{1}^{\; 2} \; y_{d}^{\; \text{ili2}} \; \mathsf{LF}_{1,1,0} \left[ \, \mathsf{m}_{1} \,, \; \mathsf{m}_{\tilde{q}}^{\; \text{ili2}} \, \big] \; + \; \frac{1}{36} \; c_{\gamma} \; g_{1}^{\; 2} \; y_{d}^{\; \text{ili2}} \; \mathsf{LF}_{1,1,0} \left[ \, \mathsf{m}_{1} \,, \; \mathsf{m}_{\tilde{q}}^{\; \text{ili2}} \, y_{d}^{\; \text{ili2}} \, y_{d}^{\; \text{ili2}} \, y_{d}^{\; \text{ili2}} \; y
                \frac{1}{72} \; c_{\gamma} \; g_{1}^{2} \; y_{d}^{\,\text{ili2}} \; \mathsf{LF}_{2,1,-1} \big[ \, \mathsf{m}_{1} \, , \; \mathsf{m}_{\tilde{q}}^{\,\,\text{il}} \, \big] \; + \; \mathsf{m}_{1} \; \mathsf{s}_{\gamma} \; \tilde{\mu} \; g_{1}^{\,\,2} \; \frac{1}{\mathsf{m}_{_{0}}^{\,\,4}} \; y_{d}^{\,\,\text{ili2}} \; \left( \, \mathsf{m}_{H}^{2} + \, \mathsf{m}_{_{\overline{D}}}^{\,\,2} \, \right) \; \left( \, c_{\gamma}^{\,\,2} - \, s_{\gamma}^{\,\,2} \, \right) \; \mathsf{LF}_{1,1,0} \left[ \, \mathsf{m}_{1} \, , \; \tilde{\mu} \, \right] \; - \; \mathsf{m}_{1} \; \mathsf{m}_{2} \; \mathsf{m}_{2} \; \mathsf{m}_{3} \; \mathsf{m
          3\; {\rm m_2}\; {\rm s_{\gamma}}\; \widetilde{\mu}\; {\rm g_2}^2\; \frac{1}{{\rm m_0}^4}\; {\rm y_d}^{\rm ili2}\; \left({\rm m_H^2+m_{\bar{\rm m}}}^2\right)\; \left({\rm c_{\gamma}}^2-{\rm s_{\gamma}}^2\right)\; {\rm LF_{1,1,0}}\left[\,{\rm m_2}\,,\;\widetilde{\mu}\,\right]\; - \left({\rm c_{\gamma}}^2-{\rm s_{\gamma}}^2\right)\; {\rm LF_{1,1,0}}\left[\,{\rm m_2}\,,\;\widetilde{\mu}\,\right] \; - \left({\rm c_{\gamma}}^2-{\rm s_{\gamma}}^2\right)\; {\rm LF_{1,1,0}}\left[\,{\rm m_2}\,,\;\widetilde{\mu}\,\right] \; - \left({\rm c_{\gamma}}^2-{\rm c_{\gamma}}^2\right)\; {\rm LF_{1,1,0}}\left[\,{\rm c_{\gamma}}\,\right] \; - \left({\rm c_{\gamma}}^2-{\rm c_{\gamma}}^2\right)\; {\rm LF_{1,1,0}}\left[\,{\rm c_{\gamma}}\,\right] \; - \left({\rm c_{\gamma}}^2-{\rm c_{\gamma}}^2\right) \; {\rm LF_{1,1,0}}\left[\,{\rm c_{\gamma}}\,\right] \; - \left({\rm c_{\gamma}}^2-{\rm c_{\gamma}}^2\right) \; {\rm LF_{1,1,0}}\left[\,{\rm c_{\gamma}}\,\right] \; - \left({\rm c_{\gamma}}^2-{\rm c_{\gamma}}^2\right) \; {\rm LF_{1,1,0}}\left[\,{\rm c_{\gamma}}\,\right] \; - \left({\rm c_{\gamma}}^2-{\rm c_{\gamma}}^2\right) \; {\rm LF_{1,1,0}}\left[\,{\rm c_{\gamma}}\,\right] \; - \left({\rm c_{\gamma}}^2-{\rm c_{\gamma}}^2\right) \; {\rm LF_{1,1,0}}\left[\,{\rm c_{\gamma}}\,\right] \; - \left({\rm c_{\gamma}}^2-{\rm c_{\gamma}}^2\right) \; {\rm LF_{1,1,0}}\left[\,{\rm c_{\gamma}}\,\right] \; - \left({\rm c_{\gamma}}^2-{\rm c_{\gamma}}^2\right) \; {\rm LF_{1,1,0}}\left[\,{\rm c_{\gamma}}\,\right] \; - \left({\rm c_{\gamma}}^2-{\rm c_{\gamma}}^2\right) \; {\rm LF_{1,1,0}}\left[\,{\rm c_{\gamma}}\,\right] \; - \left({\rm c_{\gamma}}^2-{\rm c_{\gamma}}^2\right) \; {\rm LF_{1,1,0}}\left[\,{\rm c_{\gamma}}\,\right] \; - \left({\rm c_{\gamma}}^2-{\rm c_{\gamma}}^2\right) \; {\rm LF_{1,1,0}}\left[\,{\rm c_{\gamma}}\,\right] \; - \left({\rm c_{\gamma}}^2-{\rm c_{\gamma}}^2\right) \; {\rm LF_{1,1,0}}\left[\,{\rm c_{\gamma}}\,\right] \; - \left({\rm c_{\gamma}}^2-{\rm c_{\gamma}}^2\right) \; {\rm LF_{1,1,0}}\left[\,{\rm c_{\gamma}}\,\right] \; - \left({\rm c_{\gamma}}^2-{\rm c_{\gamma}}^2\right) 
          \frac{4}{3}\;c_{\gamma}\;g_{3}^{\;2}\;y_{d}^{\;i1i2}\;\mathsf{LF_{1,1,0}}\!\left[\,\mathsf{m}_{3}\,,\;\mathsf{m}_{\bar{d}}^{\;i2}\,\right]\,+\,\frac{2}{3}\;c_{\gamma}\;g_{3}^{\;2}\;y_{d}^{\;i1i2}\;\mathsf{LF_{2,1,-1}}\!\left[\,\mathsf{m}_{3}\,,\;\mathsf{m}_{\bar{d}}^{\;i2}\,\right]\,-\,\frac{1}{3}\;\mathsf{m}_{3}^{\;2}\;\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3}^{\;2}\,\mathsf{m}_{3
          \frac{4}{3} \; c_{\gamma} \; g_{3}{}^{2} \; y_{d}{}^{\text{ili2}} \; \mathsf{LF}_{1,1,0} \big[ \, \mathsf{m}_{3} \, , \; \mathsf{m}_{\tilde{\mathsf{q}}}{}^{\text{il}} \big] \; + \; \frac{2}{3} \; c_{\gamma} \; g_{3}{}^{2} \; y_{d}{}^{\text{ili2}} \; \mathsf{LF}_{2,1,-1} \big[ \, \mathsf{m}_{3} \, , \; \mathsf{m}_{\tilde{\mathsf{q}}}{}^{\text{il}} \big] \; + \; \frac{2}{3} \; c_{\gamma} \; g_{3}{}^{2} \; y_{d}{}^{\text{ili2}} \; \mathsf{LF}_{2,1,-1} \big[ \, \mathsf{m}_{3} \, , \; \mathsf{m}_{\tilde{\mathsf{q}}}{}^{\text{il}} \big] \; + \; \frac{2}{3} \; c_{\gamma} \; g_{3}{}^{2} \; y_{d}{}^{\text{ili2}} \; \mathsf{LF}_{2,1,-1} \big[ \, \mathsf{m}_{3} \, , \; \mathsf{m}_{\tilde{\mathsf{q}}}{}^{\text{il}} \big] \; + \; \frac{2}{3} \; c_{\gamma} \; g_{3}{}^{2} \; y_{d}{}^{\text{ili2}} \; \mathsf{LF}_{2,1,-1} \big[ \, \mathsf{m}_{3} \, , \; \mathsf{m}_{\tilde{\mathsf{q}}}{}^{\text{il}} \big] \; + \; \frac{2}{3} \; c_{\gamma} \; g_{3}{}^{2} \; y_{d}{}^{\text{ili2}} \; \mathsf{LF}_{2,1,-1} \big[ \, \mathsf{m}_{3} \, , \; \mathsf{m}_{\tilde{\mathsf{q}}}{}^{\text{il}} \big] \; + \; \frac{2}{3} \; c_{\gamma} \; g_{3}{}^{2} \; y_{d}{}^{\text{ili2}} \; \mathsf{LF}_{2,1,-1} \big[ \, \mathsf{m}_{3} \, , \; \mathsf{m}_{\tilde{\mathsf{q}}}{}^{\text{il}} \big] \; + \; \frac{2}{3} \; c_{\gamma} \; g_{3}{}^{2} \; y_{d}{}^{\text{ili2}} \; \mathsf{LF}_{2,1,-1} \big[ \, \mathsf{m}_{3} \, , \; \mathsf{m}_{\tilde{\mathsf{q}}}{}^{\text{il}} \big] \; + \; \frac{2}{3} \; c_{\gamma} \; g_{3}{}^{2} \; y_{d}{}^{\text{ili2}} \; \mathsf{LF}_{2,1,-1} \big[ \, \mathsf{m}_{3} \, , \; \mathsf{m}_{\tilde{\mathsf{q}}}{}^{\text{il}} \big] \; + \; \frac{2}{3} \; c_{\gamma} \; g_{3}{}^{2} \; y_{d}{}^{\text{ili2}} \; \mathsf{LF}_{2,1,-1} \big[ \, \mathsf{m}_{3} \, , \; \mathsf{m}_{\tilde{\mathsf{q}}}{}^{\text{il}} \big] \; + \; \frac{2}{3} \; c_{\gamma} \; g_{3}{}^{2} \; y_{d}{}^{\text{ili2}} \; \mathsf{LF}_{2,1,-1} \big[ \, \mathsf{m}_{3} \, , \; \mathsf{m}_{\tilde{\mathsf{q}}}{}^{\text{il}} \big] \; + \; \frac{2}{3} \; c_{\gamma} \; g_{3}{}^{2} \; y_{d}{}^{\text{ili2}} \; \mathsf{LF}_{2,1,-1} \big[ \, \mathsf{m}_{3} \, , \; \mathsf{m}_{\tilde{\mathsf{q}}}{}^{\text{ili2}} \big] \; + \; \frac{2}{3} \; c_{\gamma} \; g_{3}{}^{\text{ili2}} \; \mathsf{LF}_{3,1,-1} \big[ \, \mathsf{m}_{3} \, , \; \mathsf{m}_{\tilde{\mathsf{q}}}{}^{\text{ili2}} \big] \; + \; \frac{2}{3} \; c_{\gamma} \; g_{3}{}^{\text{ili2}} \; \mathsf{LF}_{3,1} \, \mathsf{LF}_{3,1
3 \; s_{\gamma} \; \frac{_{1}}{_{m_{0}}{^{4}}} \; y_{d} \\ ^{\text{ili2}} \; \left( m_{H}^{2} + m_{_{\overline{0}}}{^{2}} \right) \; \left( s_{\gamma} \; \overline{a_{d}}{^{pr}} + \widetilde{\mu} \; c_{\gamma} \; \overline{y_{d}}{^{pr}} \right) \; \left( c_{\gamma} \; a_{d}{^{pr}} - s_{\gamma} \; \widetilde{\mu} \; y_{d}{^{pr}} \right) \; LF_{1,1,0} \left[ m_{\bar{d}}{^{r}}, \; m_{\bar{q}}{^{p}} \right] \; - \left( m_{\bar{d}}{^{pr}} + m_{_{\overline{0}}} \right) \; \left( m_{_{\overline{0}}}{^{pr}} + m_{_{\overline{0}}} \right) \; \left( m_{_{\overline{0}}} + m_{_{\overline{0}}} \right) \; \left( m_{_{\overline{0}}}{^{pr}} + m_{_{\overline{0}}} \right
          rac{1}{2} c_{\gamma} \overline{y_d}^{pr} y_d^{pi2} y_d^{i1r} LF_{1,1,0} [m_{\tilde{d}}^{r}, \tilde{\mu}] +
     s_{\gamma} \, \frac{1}{m_{e}^{\, 4}} \, y_{d}^{\, 11\dot{1}2} \, \left(m_{H}^{2} + m_{\bar{\Phi}}^{\, 2}\right) \, \left(s_{\gamma} \, \overline{a_{e}}^{pr} + \widetilde{\mu} \, c_{\gamma} \, \overline{y_{e}}^{pr}\right) \, \left(c_{\gamma} \, a_{e}^{\, pr} - s_{\gamma} \, \widetilde{\mu} \, y_{e}^{\, pr}\right) \, LF_{1,1,0} \left[m_{\bar{e}}^{\, r} \, , \, m_{\tilde{l}}^{\, p}\right] \, \\ + \, \frac{1}{2} \, \frac{1}{m_{e}^{\, 2}} \, y_{d}^{\, 11\dot{1}2} \, \left(m_{e}^{\, 2} + m_{\bar{\Phi}}^{\, 2}\right) \, \left(s_{\gamma} \, \overline{a_{e}}^{\, pr} + \widetilde{\mu} \, c_{\gamma} \, \overline{y_{e}}^{\, pr}\right) \, \left(s_{\gamma} \, \overline{a_{e}}^{\, pr} - s_{\gamma} \, \widetilde{\mu} \, y_{e}^{\, pr}\right) \, LF_{1,1,0} \left[m_{\bar{e}}^{\, r} \, , \, m_{\tilde{l}}^{\, p}\right] \, \\ + \, \frac{1}{2} \, \frac{1}{m_{e}^{\, 2}} \, y_{d}^{\, 11\dot{1}2} \, \left(m_{e}^{\, pr} + m_{\bar{e}}^{\, pr}\right) \, \left(s_{\gamma} \, \overline{a_{e}}^{\, pr} + \widetilde{\mu} \, c_{\gamma} \, \overline{y_{e}}^{\, pr}\right) \, \left(s_{\gamma} \, \overline{a_{e}}^{\, pr} + \widetilde{\mu} \, c_{\gamma} \, \overline{y_{e}}^{\, pr}\right) \, \left(s_{\gamma} \, \overline{a_{e}}^{\, pr} + \widetilde{\mu} \, c_{\gamma} \, \overline{y_{e}}^{\, pr}\right) \, \left(s_{\gamma} \, \overline{a_{e}}^{\, pr} + \widetilde{\mu} \, c_{\gamma} \, \overline{y_{e}}^{\, pr}\right) \, \left(s_{\gamma} \, \overline{a_{e}}^{\, pr} + \widetilde{\mu} \, c_{\gamma} \, \overline{y_{e}}^{\, pr}\right) \, \left(s_{\gamma} \, \overline{a_{e}}^{\, pr} + \widetilde{\mu} \, c_{\gamma} \, \overline{y_{e}}^{\, pr}\right) \, \left(s_{\gamma} \, \overline{a_{e}}^{\, pr} + \widetilde{\mu} \, c_{\gamma} \, \overline{y_{e}}^{\, pr}\right) \, \left(s_{\gamma} \, \overline{a_{e}}^{\, pr} + \widetilde{\mu} \, c_{\gamma} \, \overline{y_{e}}^{\, pr}\right) \, \left(s_{\gamma} \, \overline{a_{e}}^{\, pr} + \widetilde{\mu} \, \overline{y_{e}}^{\, pr}\right) \, \left(s_{\gamma} \, \overline{a_{e}}^{\, pr} + \widetilde{\mu} \, \overline{y_{e}}^{\, pr}\right) \, \left(s_{\gamma} \, \overline{a_{e}}^{\, pr} + \widetilde{\mu} \, \overline{y_{e}}^{\, pr}\right) \, \left(s_{\gamma} \, \overline{a_{e}}^{\, pr} + \widetilde{\mu} \, \overline{y_{e}}^{\, pr}\right) \, \left(s_{\gamma} \, \overline{a_{e}}^{\, pr} + \widetilde{\mu} \, \overline{y_{e}}^{\, pr}\right) \, \left(s_{\gamma} \, \overline{a_{e}}^{\, pr} + \widetilde{\mu} \, \overline{y_{e}}^{\, pr}\right) \, \left(s_{\gamma} \, \overline{a_{e}}^{\, pr}\right) \, 
                                                            \left(\overline{a_{e}}^{pr} \left(m_{\bar{\text{\tiny $\Phi$}}}^2 \, c_{\gamma}^{\ 2} - 2 \, m_{\text{\tiny $H$}}^2 \, s_{\gamma}^{\ 2}\right) \, - \, s_{\gamma} \, \widetilde{\mu} \, \, c_{\gamma} \, \overline{y_{e}}^{pr} \, \left(2 \, m_{\text{\tiny $H$}}^2 + m_{\bar{\text{\tiny $\Phi$}}}^2\right) \right) \, \left(c_{\gamma} \, a_{e}^{\, pr} - s_{\gamma} \, \widetilde{\mu} \, y_{e}^{\, pr}\right) \, \text{LF}_{2,1,0} \left[m_{\bar{\text{\tiny $L$}}}^{\, p} \, , \, m_{\bar{\text{\tiny $e$}}}^{\, r}\right] \, - \, \left(m_{\bar{\text{\tiny $A$}}}^2 \, m_{\bar{\text{\tiny $A$}}}^2 + m_{\bar{\text{\tiny 
                \frac{1}{2}\ \frac{1}{m_{\text{o}}^{2}}\ y_{\text{d}}^{\text{iii2}}\ \left(\overline{a_{\text{e}}}^{\text{pr}}\ \left(m_{\!_{\boldsymbol{\Phi}}}^{2}\ c_{\scriptscriptstyle{\boldsymbol{\gamma}}}^{2}-2\ m_{\!_{\boldsymbol{H}}}^{2}\ s_{\scriptscriptstyle{\boldsymbol{\gamma}}}^{2}\right)\ -\ s_{\scriptscriptstyle{\boldsymbol{\gamma}}}\ \widetilde{\boldsymbol{\mu}}\ c_{\scriptscriptstyle{\boldsymbol{\gamma}}}\ \overline{\boldsymbol{y_{\text{e}}}}^{\text{pr}}\ \left(2\ m_{\!_{\boldsymbol{H}}}^{2}+m_{\!_{\boldsymbol{\Phi}}}^{2}\right)\right)\ \left(c_{\scriptscriptstyle{\boldsymbol{\gamma}}}\ a_{\text{e}}^{\text{pr}}-s_{\scriptscriptstyle{\boldsymbol{\gamma}}}\ \widetilde{\boldsymbol{\mu}}\ y_{\text{e}}^{\text{pr}}\right)
                                           \mathsf{LF_{3,1,-1}}\big[\mathsf{m}_{\bar{l}}^{\ p},\ \mathsf{m}_{\bar{e}}^{\ r}\big] \ -\ \mathsf{m}_{\mathsf{H}}^{2}\ \mathsf{c}_{\mathsf{Y}}\ \mathsf{y_{\mathsf{d}}}^{\ \mathsf{ili2}}\ \left(\mathsf{c}_{\mathsf{Y}}\ \overline{\mathsf{a_{\mathsf{e}}}}^{\mathsf{pr}} - \mathsf{s}_{\mathsf{Y}}\ \widetilde{\mu}\ \overline{\mathsf{y_{\mathsf{e}}}}^{\mathsf{pr}}\right)\ \left(\mathsf{c}_{\mathsf{Y}}\ \mathsf{a_{\mathsf{e}}}^{\mathsf{pr}} - \mathsf{s}_{\mathsf{Y}}\ \widetilde{\mu}\ \mathsf{y_{\mathsf{e}}}^{\mathsf{pr}}\right)\ \mathsf{LF_{3,1,0}}\big[\mathsf{m}_{\bar{l}}^{\ p},\ \mathsf{m}_{\bar{\mathsf{e}}}^{\ r}\big] \ +\ \mathsf{m}_{\mathsf{e}}^{\ \mathsf{pr}} + \mathsf{m}_{\mathsf{e}}^{\ \mathsf{pr}}
     3\; m_H^2\; c_\gamma\; y_d^{\text{ili2}}\; \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)\; \text{LF}_{4,1,-1}\big[m_{\tilde{l}}^{\;p},\; m_{\tilde{e}}^{\;r}\big] \; - \; \left(c_\gamma\; a_e^{pr} - s_\gamma\; \widetilde{\mu}\; y_e^{pr}\right) \; \text{LF}_{4,1,-1}\big[m_{\tilde{l}}^{\;p},\; m_{\tilde{e}}^{\;r}\big] \; - \; \left(c_\gamma\; a_e^{pr} - s_\gamma\; \widetilde{\mu}\; y_e^{pr}\right) \; \text{LF}_{4,1,-1}\big[m_{\tilde{l}}^{\;p},\; m_{\tilde{e}}^{\;r}\big] \; - \; \left(c_\gamma\; a_e^{pr} - s_\gamma\; \widetilde{\mu}\; y_e^{pr}\right) \; \text{LF}_{4,1,-1}\big[m_{\tilde{l}}^{\;p},\; m_{\tilde{e}}^{\;r}\big] \; - \; \left(c_\gamma\; a_e^{pr} - s_\gamma\; \widetilde{\mu}\; y_e^{pr}\right) \; \text{LF}_{4,1,-1}\big[m_{\tilde{l}}^{\;p},\; m_{\tilde{e}}^{\;r}\big] \; - \; \left(c_\gamma\; a_e^{pr} - s_\gamma\; \widetilde{\mu}\; y_e^{pr}\right) \; \text{LF}_{4,1,-1}\big[m_{\tilde{l}}^{\;p},\; m_{\tilde{e}}^{\;r}\big] \; - \; \left(c_\gamma\; a_e^{pr} - s_\gamma\; \widetilde{\mu}\; y_e^{pr}\right) \; \text{LF}_{4,1,-1}\big[m_{\tilde{l}}^{\;p},\; m_{\tilde{e}}^{\;p}\big] \; - \; \left(c_\gamma\; a_e^{pr} - s_\gamma\; \widetilde{\mu}\; y_e^{pr}\right) \; \text{LF}_{4,1,-1}\big[m_{\tilde{l}}^{\;p},\; m_{\tilde{e}}^{\;p}\big] \; - \; \left(c_\gamma\; a_e^{pr} - s_\gamma\; \widetilde{\mu}\; y_e^{pr}\right) \; \text{LF}_{4,1,-1}\big[m_{\tilde{l}}^{\;p},\; m_{\tilde{e}}^{\;p}\big] \; - \; \left(c_\gamma\; a_e^{pr} - s_\gamma\; \widetilde{\mu}\; y_e^{pr}\right) \; \text{LF}_{4,1,-1}\big[m_{\tilde{l}}^{\;p},\; m_{\tilde{e}}^{\;p}\big] \; - \; \left(c_\gamma\; a_e^{pr} - s_\gamma\; \widetilde{\mu}\; y_e^{pr}\right) \; \text{LF}_{4,1,-1}\big[m_{\tilde{l}}^{\;p},\; m_{\tilde{e}}^{\;p}\big] \; - \; \left(c_\gamma\; a_e^{pr} - s_\gamma\; \widetilde{\mu}\; y_e^{pr}\right) \; \text{LF}_{4,1,-1}\big[m_{\tilde{l}}^{\;p},\; m_{\tilde{e}}^{\;p}\big] \; - \; \left(c_\gamma\; a_e^{pr} - s_\gamma\; \widetilde{\mu}\; y_e^{pr}\right) \; + \; \left(c_\gamma\; a_e^{pr} - s_\gamma\; \widetilde{\mu}\; y_e^{pr}\right) \; + \; \left(c_\gamma\; a_e^{pr} - s_\gamma\; \widetilde{\mu}\; y_e^{pr}\right) \; + \; \left(c_\gamma\; a_e^{pr} - s_\gamma\; \widetilde{\mu}\; y_e^{pr}\right) \; + \; \left(c_\gamma\; a_e^{pr} - s_\gamma\; \widetilde{\mu}\; y_e^{pr}\right) \; + \; \left(c_\gamma\; a_e^{pr} - s_\gamma\; \widetilde{\mu}\; y_e^{pr}\right) \; + \; \left(c_\gamma\; a_e^{pr} - s_\gamma\; \widetilde{\mu}\; y_e^{pr}\right) \; + \; \left(c_\gamma\; a_e^{pr} - s_\gamma\; \widetilde{\mu}\; y_e^{pr}\right) \; + \; \left(c_\gamma\; a_e^{pr} - s_\gamma\; \widetilde{\mu}\; y_e^{pr}\right) \; + \; \left(c_\gamma\; a_e^{pr} - s_\gamma\; \widetilde{\mu}\; y_e^{pr}\right) \; + \; \left(c_\gamma\; a_e^{pr} - s_\gamma\; \widetilde{\mu}\; y_e^{pr}\right) \; + \; \left(c_\gamma\; a_e^{pr} - s_\gamma\; \widetilde{\mu}\; y_e^{pr}\right) \; + \; \left(c_\gamma\; a_e^{pr} - s_\gamma\; \widetilde{\mu}\; y_e^{pr}\right) \; + \; \left(c_\gamma\; a_e^{pr} - s_\gamma\; \widetilde{\mu}\; y_e^{pr}\right) \; + \; \left(c_\gamma\; a_e^{pr} - s_\gamma\; \widetilde{\mu}\; y_e^{pr}\right) \; + \; \left(c_\gamma\; a_e^{pr} - s_\gamma\; \widetilde{\mu}\; y_e^{pr}\right) \; + \; \left(c_\gamma\; a_e^{pr} - s_\gamma\; \widetilde{\mu}\; y_e^{pr}\right) \; + \; \left(c_\gamma\; a_e^{pr} - s_\gamma\; \widetilde{\mu}\; y_e^{
     2\; m_H^2\; c_\gamma\; y_d^{\,\textbf{ili2}}\; \left(c_\gamma\; \overline{a_e}^{\text{pr}} - s_\gamma\; \widetilde{\mu}\; \overline{y_e}^{\text{pr}}\right) \; \left(c_\gamma\; a_e^{\,\text{pr}} - s_\gamma\; \widetilde{\mu}\; y_e^{\,\text{pr}}\right) \; LF_{\textbf{5},\textbf{1},\textbf{-2}}\left[m_{\widetilde{\textbf{l}}}^{\,\text{p}},\; m_{\widetilde{\textbf{e}}}^{\,\text{r}}\right] \; + \frac{3}{2}\; \frac{1}{m_e^2} \; y_d^{\,\textbf{ili2}}
                                                            \left(\overline{a_d}^{pr} \left(m_{\scriptscriptstyle \oplus}^2 c_{\scriptscriptstyle Y}^{\ 2} - 2 \, m_H^2 \, s_{\scriptscriptstyle Y}^{\ 2}\right) - s_{\scriptscriptstyle Y} \, \widetilde{\mu} \, c_{\scriptscriptstyle Y} \, \overline{y_d}^{pr} \, \left(2 \, m_H^2 + m_{\scriptscriptstyle \oplus}^2\right)\right) \, \left(c_{\scriptscriptstyle Y} \, a_d^{pr} - s_{\scriptscriptstyle Y} \, \widetilde{\mu} \, y_d^{pr}\right) \, \text{LF}_{2,1,0} \left[m_{\tilde{q}}^{\ p}, \, m_{\tilde{d}}^{\ r}\right] - m_{\tilde{q}}^{\ p} \, \left(m_{\scriptscriptstyle \oplus}^2 \, m_{\tilde{q}}^2 + m_{\scriptscriptstyle \oplus}^2\right) \, \left(m_{\scriptscriptstyle \oplus}^2 \, m_{\scriptscriptstyle \oplus}^2 + m_{\scriptscriptstyle \oplus}^2\right) \, \left(m_{\scriptscriptstyle \oplus}^2 \, m_{\scriptscriptstyle \oplus}^2 + m_{\scriptscriptstyle \oplus}^2\right) \, \left(m_{\scriptscriptstyle \oplus}^2 \, m_{\scriptscriptstyle \oplus}^2 + m_{\scriptscriptstyle \oplus}^2\right) \, \left(m_{\scriptscriptstyle \oplus}^2 \, m_{\scriptscriptstyle \oplus}^2 + m_{\scriptscriptstyle \oplus}^2\right) \, \left(m_{\scriptscriptstyle \oplus}^2 \, m_{\scriptscriptstyle \oplus}^2 + m_{\scriptscriptstyle \oplus}^2\right) \, \left(m_{\scriptscriptstyle \oplus}^2 \, m_{\scriptscriptstyle \oplus}^2 + m_{\scriptscriptstyle \oplus}^2\right) \, \left(m_{\scriptscriptstyle \oplus}^2 \, m_{\scriptscriptstyle \oplus}^2 + m_{\scriptscriptstyle \oplus}^2\right) \, \left(m_{\scriptscriptstyle \oplus}^2 \, m_{\scriptscriptstyle \oplus}^2 + m_{\scriptscriptstyle \oplus}^2\right) \, \left(m_{\scriptscriptstyle \oplus}^2 \, m_{\scriptscriptstyle \oplus}^2 + m_{\scriptscriptstyle \oplus}^2\right) \, \left(m_{\scriptscriptstyle \oplus}^2 \, m_{\scriptscriptstyle \oplus}^2 + m_{\scriptscriptstyle \oplus}^2\right) \, \left(m_{\scriptscriptstyle \oplus}^2 \, m_{\scriptscriptstyle \oplus}^2 + m_{\scriptscriptstyle \oplus}^2\right) \, \left(m_{\scriptscriptstyle \oplus}^2 \, m_{\scriptscriptstyle \oplus}^2 + m_{\scriptscriptstyle \oplus}^2\right) \, \left(m_{\scriptscriptstyle \oplus}^2 \, m_{\scriptscriptstyle \oplus}^2 + m_{\scriptscriptstyle \oplus}^2\right) \, \left(m_{\scriptscriptstyle \oplus}^2 \, m_{\scriptscriptstyle \oplus}^2 + m_{\scriptscriptstyle \oplus}^2\right) \, \left(m_{\scriptscriptstyle \oplus}^2 \, m_{\scriptscriptstyle \oplus}^2 + m_{\scriptscriptstyle \oplus}^2\right) \, \left(m_{\scriptscriptstyle \oplus}^2 \, m_{\scriptscriptstyle \oplus}^2 + m_{\scriptscriptstyle \oplus}^2\right) \, \left(m_{\scriptscriptstyle \oplus}^2 \, m_{\scriptscriptstyle \oplus}^2 + m_{\scriptscriptstyle \oplus}^2\right) \, \left(m_{\scriptscriptstyle \oplus}^2 \, m_{\scriptscriptstyle \oplus}^2 + m_{\scriptscriptstyle \oplus}^2\right) \, \left(m_{\scriptscriptstyle \oplus}^2 \, m_{\scriptscriptstyle \oplus}^2 + m_{\scriptscriptstyle \oplus}^2\right) \, \left(m_{\scriptscriptstyle \oplus}^2 \, m_{\scriptscriptstyle \oplus}^2 + m_{\scriptscriptstyle \oplus}^2\right) \, \left(m_{\scriptscriptstyle \oplus}^2 \, m_{\scriptscriptstyle \oplus}^2 + m_{\scriptscriptstyle \oplus}^2\right) \, \left(m_{\scriptscriptstyle \oplus}^2 \, m_{\scriptscriptstyle \oplus}^2 + m_{\scriptscriptstyle \oplus}^2\right) \, \left(m_{\scriptscriptstyle \oplus}^2 \, m_{\scriptscriptstyle \oplus}^2 + m_{\scriptscriptstyle \oplus}^2\right) \, \left(m_{\scriptscriptstyle \oplus}^2 \, m_{\scriptscriptstyle \oplus}^2 + m_{\scriptscriptstyle \oplus}^2\right) \, \left(m_{\scriptscriptstyle \oplus}^2 \, m_{\scriptscriptstyle \oplus}^2 + m_{\scriptscriptstyle \oplus}^2\right) \, \left(m_{\scriptscriptstyle \oplus}^2 \, m_{\scriptscriptstyle \oplus}^2 + m_{\scriptscriptstyle \oplus}^2\right) \, \left(m_{\scriptscriptstyle \oplus}^2 \, m_{\scriptscriptstyle \oplus}^2 + m_{\scriptscriptstyle \oplus}^2\right) \, \left(m_{\scriptscriptstyle \oplus}^2 \, m_{\scriptscriptstyle \oplus}^2 + m_{\scriptscriptstyle \oplus}^2\right) \, \left(m_{\scriptscriptstyle \oplus}^2 \, m_{\scriptscriptstyle \oplus}^2 + m_{\scriptscriptstyle \oplus}^2\right) \, \left(m_{\scriptscriptstyle \oplus}^2 \, m_{\scriptscriptstyle \oplus}^2 + m_{\scriptscriptstyle \oplus}^2\right) \, \left(m_{\scriptscriptstyle \oplus}^2 \, m_{\scriptscriptstyle \oplus}^2 + m_{\scriptscriptstyle \oplus}^2\right) \, \left(m_{\scriptscriptstyle \oplus}^2 \, m_{\scriptscriptstyle \oplus}^2 + m_{\scriptscriptstyle \oplus}^2\right) \, \left(m_{\scriptscriptstyle \oplus}^2 \, m_{\scriptscriptstyle \oplus}^2 + m_{\scriptscriptstyle \oplus}^2\right) \, \left(m_{\scriptscriptstyle \oplus}^2 \, m_{\scriptscriptstyle \oplus}^2 + m_{\scriptscriptstyle \oplus}^2\right) \, \left(m_{\scriptscriptstyle \oplus}^2 \, m_{\scriptscriptstyle \oplus}^2 + m_{\scriptscriptstyle \oplus}^2\right) \, \left(m_{\scriptscriptstyle \oplus}^2 \, m_{\scriptscriptstyle \oplus}^2 + m_{\scriptscriptstyle \oplus}^2\right) \, \left(m_{\scriptscriptstyle \oplus}^2 \, m_{\scriptscriptstyle \oplus}^2 + m_{\scriptscriptstyle \oplus}^2\right) \, \left(m_{\scriptscriptstyle \oplus}^2 \, m_{\scriptscriptstyle \oplus}^2 + m_{\scriptscriptstyle \oplus}^2\right) \, \left(m_{\scriptscriptstyle \oplus}^2 \, m_{\scriptscriptstyle \oplus}^2 + m_{\scriptscriptstyle \oplus}^2\right) \, \left(m_{\scriptscriptstyle \oplus}^2 \, m_{\scriptscriptstyle \oplus}^2 + m_{\scriptscriptstyle \oplus}^2\right) \, \left(m_{\scriptscriptstyle \oplus}^2 \, m_{\scriptscriptstyle \oplus}^2 + m_{\scriptscriptstyle \oplus}^2\right) \, \left(m_{\scriptscriptstyle \oplus}^2 \, m_{\scriptscriptstyle \oplus}^2 + m_{\scriptscriptstyle \oplus}^2\right) \, \left(m_{\scriptscriptstyle \oplus}^2 \, m_{\scriptscriptstyle \oplus}^2 + m_{\scriptscriptstyle \oplus}^2\right) \, \left(m_{\scriptscriptstyle \oplus}^2 \, m_{
                \frac{\text{3}}{\text{2}} \; \frac{\text{1}}{\text{m}_{\text{o}}^{2}} \; y_{\text{d}}^{\; \text{ili2}} \; \left( \overline{a_{\text{d}}}^{\text{pr}} \; \left( m_{\text{\Phi}}^{\; 2} \; c_{\text{y}}^{\; 2} - 2 \; m_{\text{H}}^{2} \; s_{\text{y}}^{\; 2} \right) \; - \; s_{\text{y}} \; \widetilde{\mu} \; c_{\text{y}} \; \overline{y_{\text{d}}}^{\text{pr}} \; \left( 2 \; m_{\text{H}}^{2} + m_{\text{\Phi}}^{\; 2} \right) \right) \; \left( c_{\text{y}} \; a_{\text{d}}^{\; \text{pr}} - s_{\text{y}} \; \widetilde{\mu} \; y_{\text{d}}^{\; \text{pr}} \right) \; \left( c_{\text{y}} \; a_{\text{d}}^{\; \text{pr}} - s_{\text{y}} \; \widetilde{\mu} \; y_{\text{d}}^{\; \text{pr}} \right) \; \left( c_{\text{y}} \; a_{\text{d}}^{\; \text{pr}} - s_{\text{y}} \; \widetilde{\mu} \; y_{\text{d}}^{\; \text{pr}} \right) \; \left( c_{\text{y}} \; a_{\text{d}}^{\; \text{pr}} - s_{\text{y}} \; \widetilde{\mu} \; y_{\text{d}}^{\; \text{pr}} \right) \; \left( c_{\text{y}} \; a_{\text{d}}^{\; \text{pr}} - s_{\text{y}} \; \widetilde{\mu} \; y_{\text{d}}^{\; \text{pr}} \right) \; \left( c_{\text{y}} \; a_{\text{d}}^{\; \text{pr}} - s_{\text{y}} \; \widetilde{\mu} \; y_{\text{d}}^{\; \text{pr}} \right) \; \left( c_{\text{y}} \; a_{\text{d}}^{\; \text{pr}} - s_{\text{y}} \; \widetilde{\mu} \; y_{\text{d}}^{\; \text{pr}} \right) \; \left( c_{\text{y}} \; a_{\text{d}}^{\; \text{pr}} - s_{\text{y}} \; \widetilde{\mu} \; y_{\text{d}}^{\; \text{pr}} \right) \; \left( c_{\text{y}} \; a_{\text{d}}^{\; \text{pr}} - s_{\text{y}} \; \widetilde{\mu} \; y_{\text{d}}^{\; \text{pr}} \right) \; \left( c_{\text{y}} \; a_{\text{d}}^{\; \text{pr}} - s_{\text{y}} \; \widetilde{\mu} \; y_{\text{d}}^{\; \text{pr}} \right) \; \left( c_{\text{y}} \; a_{\text{d}}^{\; \text{pr}} - s_{\text{y}} \; \widetilde{\mu} \; y_{\text{d}}^{\; \text{pr}} \right) \; \left( c_{\text{y}} \; a_{\text{d}}^{\; \text{pr}} - s_{\text{y}} \; \widetilde{\mu} \; y_{\text{d}}^{\; \text{pr}} \right) \; \left( c_{\text{y}} \; a_{\text{d}}^{\; \text{pr}} - s_{\text{y}} \; \widetilde{\mu} \; y_{\text{d}}^{\; \text{pr}} \right) \; \left( c_{\text{y}} \; a_{\text{d}}^{\; \text{pr}} - s_{\text{y}} \; \widetilde{\mu} \; y_{\text{d}}^{\; \text{pr}} \right) \; \left( c_{\text{y}} \; a_{\text{d}}^{\; \text{pr}} - s_{\text{y}} \; \widetilde{\mu} \; y_{\text{d}}^{\; \text{pr}} \right) \; \left( c_{\text{y}} \; a_{\text{d}}^{\; \text{pr}} - s_{\text{y}} \; \widetilde{\mu} \; y_{\text{d}}^{\; \text{pr}} \right) \; \left( c_{\text{y}} \; a_{\text{d}}^{\; \text{pr}} - s_{\text{y}} \; \widetilde{\mu} \; y_{\text{d}}^{\; \text{pr}} \right) \; \left( c_{\text{y}} \; a_{\text{d}}^{\; \text{pr}} - s_{\text{y}} \; \widetilde{\mu} \; y_{\text{d}}^{\; \text{pr}} \right) \; \left( c_{\text{y}} \; a_{\text{d}}^{\; \text{pr}} - s_{\text{y}} \; \widetilde{\mu} \; y_{\text{d}}^{\; \text{pr}} \right) \; \left( c_{\text{y}} \; a_{\text{d}}^{\; \text{pr}} - s_{\text{y}} \; \widetilde{\mu} \; y_{\text{d}}^{\; \text{pr}} \right) \; \left( c_{\text{y}} \; a_{\text{d}}^{\; \text{pr}} - s_{\text{y}} \; \widetilde{\mu} \; y_{\text{d}}^{\; \text{pr}} \right) \; \left( c_{\text{y}} \; a_{\text{d}}^{\; \text{pr}} - s_{\text{y}} \; \widetilde{\mu} \; y_{\text{d}}^{\; \text{pr}} \right) \; \left( c_{\text{y}} \; a_{\text{d}}^{\; \text{pr}} + s_{\text{d}}^{\; \text{pr}} \right) \; \left( c_{\text{y}} \; a_{\text{d}}^{
                                           9\; m_{H}^{2}\; c_{\gamma}\; y_{d}^{\text{ili2}}\; \left(c_{\gamma}\; \overline{a_{d}}^{\text{pr}} - s_{\gamma}\; \widetilde{\mu}\; \overline{y_{d}}^{\text{pr}}\right) \; \left(c_{\gamma}\; a_{d}^{\text{pr}} - s_{\gamma}\; \widetilde{\mu}\; y_{d}^{\text{pr}}\right) \; \text{LF}_{4,1,-1}\big[m_{\tilde{q}}^{\text{p}},\; m_{\tilde{d}}^{\text{r}}\big] \; - \; m_{\tilde{q}}^{\text{pr}} \; m_{\tilde{q}}^{\text{pr}} \; + \; m_{\tilde{q}}^{\text{pr}} \; m_
     6\; m_H^2\; c_\gamma\; {y_d}^{\text{ili2}}\; \left(c_\gamma\; \overline{a_d}^{\text{pr}} - s_\gamma\; \widetilde{\mu}\; \overline{y_d}^{\text{pr}}\right) \; \left(c_\gamma\; {a_d}^{\text{pr}} - s_\gamma\; \widetilde{\mu}\; {y_d}^{\text{pr}}\right) \; \text{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{d}}^{\;\;r}\right) \; \left(m_{\tilde{q}}^{\;\;p},\; m_{\tilde{d}}^{\;\;p},\; m_{\tilde{d}}^{\;\;r}\right) \; - \left(m_{\tilde{q}}^{\;\;p},\; m_{\tilde{d}}^{\;\;p},\; 
     3 \; s_{\gamma} \; \frac{_{1}}{_{m_{o}}^{4}} \; y_{d} \\ ^{\text{ili2}} \; \left( m_{H}^{2} + m_{\bar{\oplus}}^{2} \right) \; \left( s_{\gamma} \; \overline{a_{u}}^{pr} - \widetilde{\mu} \; c_{\gamma} \; \overline{y_{u}}^{pr} \right) \; \left( c_{\gamma} \; a_{u}^{\; pr} + s_{\gamma} \; \widetilde{\mu} \; y_{u}^{\; pr} \right) \; LF_{1,1,0} \left[ m_{\bar{q}}^{\; p}, \; m_{\bar{u}}^{\; r} \right] \; - \left( m_{\bar{q}}^{\; p}, \; m_{\bar{q}}^{\; r} \right) \; \left( m_{\bar{q}}^{\; p}, \; m_{\bar{q}}^{\; r} \right) \; \left( m_{\bar{q}}^{\; p}, \; m_{\bar{q}}^{\; p}, \; m_{\bar{q}}^{\; r} \right) \; \left( m_{\bar{q}}^{\; p}, \; m_{\bar{q}}^{\; p}, 
     c_{\gamma}\,\overline{y_{d}}^{pr}\,y_{d}^{\text{pi2}}\,y_{d}^{\text{iir}}\,LF_{\text{1,1,0}}\!\left[\,m_{\widetilde{q}}^{\,\,p},\,\widetilde{\mu}\,\right]\,+\,\frac{3}{2}\,\,\frac{1}{m_{o}^{\,2}}\,y_{d}^{\,\text{iii2}}\,\left(\,s_{\gamma}\,\,\overline{a_{u}}^{pr}-\,\widetilde{\mu}\,\,c_{\gamma}\,\,\overline{y_{u}}^{pr}\right)
                                                            \left(\,\mathsf{S}_{\gamma}\;\mathsf{c}_{\gamma}\;\mathsf{a}_{\mathsf{u}}^{\;\mathsf{pr}}\;\left(\,\mathsf{2}\;\mathsf{m}_{\mathsf{H}}^{2}\,+\,\mathsf{m}_{\varpi}^{\;\;2}\,\right)\,+\,\widetilde{\mu}\;\mathsf{y}_{\mathsf{u}}^{\;\;\mathsf{pr}}\;\left(\,-\,\mathsf{m}_{\varpi}^{\;\;2}\;\mathsf{c}_{\gamma}^{\;\;2}\,+\,\mathsf{2}\;\mathsf{m}_{\mathsf{H}}^{2}\;\mathsf{s}_{\gamma}^{\;\;2}\,\right)\,\right)\;\mathsf{LF}_{\mathsf{2,1,0}}\!\left[\,\mathsf{m}_{\bar{\mathsf{u}}}^{\;\;\mathsf{r}}\,,\,\,\mathsf{m}_{\bar{\mathsf{q}}}^{\;\;\mathsf{p}}\,\right]\,-\,\frac{3}{2}\;\frac{1}{\mathsf{m}_{\mathsf{s}}^{\;\;2}}\;\mathsf{y}_{\mathsf{d}}^{\;\mathsf{ili2}}
                                                            \left(s_{\gamma}\,\overline{a_{u}}^{pr}-\widetilde{\mu}\;c_{\gamma}\,\overline{y_{u}}^{pr}\right)\;\left(s_{\gamma}\;c_{\gamma}\;a_{u}^{\;pr}\;\left(2\;m_{H}^{2}+m_{\bar{\omega}}^{\;2}\right)+\widetilde{\mu}\;y_{u}^{\;pr}\;\left(-m_{\bar{\omega}}^{\;2}\;c_{\gamma}^{\;2}+2\;m_{H}^{2}\;s_{\gamma}^{\;2}\right)\right)\;\mathsf{LF_{3,1,-1}}\!\left[m_{\bar{u}}^{\;r}\,,\;m_{\bar{q}}^{\;p}\right]-m_{\bar{\omega}}^{\;2}\left(s_{\gamma}^{\;2}+s_{\gamma}^{\;2}+s_{\gamma}^{\;2}+s_{\gamma}^{\;2}+s_{\gamma}^{\;2}\right)
     3\; m_H^2\; c_{\gamma}\; y_d^{\;\text{ili2}}\; \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) \; LF_{3,1,0}\left[\left.m_{\widetilde{u}}^{\;\;r}\right,\; m_{\widetilde{q}}^{\;\;p}\right] \; + \left.m_{\widetilde{q}}^{\;\;r}\right) \; \left(-\; s_{\gamma}\; a_u^{\;\;pr} + \widetilde{\mu}\; c_{\gamma}\; y_u^{\;\;pr}\right) \; LF_{3,1,0}\left[\left.m_{\widetilde{u}}^{\;\;r}\right,\; m_{\widetilde{q}}^{\;\;p}\right] \; + \left.m_{\widetilde{q}}^{\;\;r}\right] \; + \left.m_{\widetilde{q}}^
9\; \mathsf{m_{H}^{2}}\; c_{\gamma}\; y_{d}^{\;i1i2}\; \left(-\, s_{\gamma}\; \overline{a_{u}}^{pr}\, +\, \widetilde{\mu}\; c_{\gamma}\; \overline{y_{u}}^{pr}\right)\; \left(-\, s_{\gamma}\; a_{u}^{\;pr}\, +\, \widetilde{\mu}\; c_{\gamma}\; y_{u}^{\;pr}\right)\; \mathsf{LF_{4,1,-1}}\left[\, \mathsf{m_{\tilde{u}}}^{\;r}\, ,\; \mathsf{m_{\tilde{q}}}^{\,p}\,\right]\; -\, \mathsf{m_{\tilde{q}}}^{\;p} \; +\, 
     6\; \mathsf{m_{H}^{2}}\; c_{\gamma}\; \mathsf{y_{d}}^{\texttt{ili2}}\; \left(-\, \mathsf{s_{\gamma}}\; \overline{\mathsf{a_{u}}}^{\texttt{pr}}\, +\, \widetilde{\mu}\; c_{\gamma}\; \overline{\mathsf{y_{u}}}^{\texttt{pr}}\right) \; \left(-\, \mathsf{s_{\gamma}}\; a_{u}^{\;\texttt{pr}}\, +\, \widetilde{\mu}\; c_{\gamma}\; \mathsf{y_{u}}^{\texttt{pr}}\right) \; \mathsf{LF_{5,1,-2}}\left[\, \mathsf{m_{\tilde{u}}}^{\,\texttt{r}}\, ,\, \, \mathsf{m_{\tilde{q}}}^{\,\texttt{p}}\, \right] \; -\, \mathsf{m_{\tilde{u}}^{\,\texttt{p}}} \; +\, \mathsf{m_{\tilde{u}}^{\,\texttt{p}}} \; \mathsf{m_{\tilde{u}}}^{\,\texttt{p}} 
                \frac{1}{2}\;c_{\gamma}\;y_{d}^{\text{pi2}}\;\overline{y_{u}}^{\text{pr}}\;y_{u}^{\text{ilr}}\;\mathsf{LF_{1,1,0}}\!\left[\,\mathsf{m}_{\bar{u}}^{\text{r}}\,,\;\widetilde{\mu}\,\right]\;-\;\frac{3}{4}\;c_{\gamma}\;g_{1}^{2}\;y_{d}^{\text{ili2}}\;\left(\,c_{\gamma}^{\;2}\,+\;s_{\gamma}^{\;2}\,\right)\;\mathsf{LF_{2,1,-1}}\left[\,\widetilde{\mu}\,,\;\mathsf{m}_{1}\,\right]\;+\;\left(\,c_{\gamma}^{\;2}\,+\;s_{\gamma}^{\;2}\,\right)\;\mathsf{LF_{2,1,-1}}\left[\,\widetilde{\mu}\,,\;\mathsf{m}_{1}\,\right]\;+\;\left(\,c_{\gamma}^{\;2}\,+\;s_{\gamma}^{\;2}\,\right)\;\mathsf{LF_{2,1,-1}}\left[\,\widetilde{\mu}\,,\;\mathsf{m}_{1}\,\right]\;+\;\left(\,c_{\gamma}^{\;2}\,+\;s_{\gamma}^{\;2}\,\right)\;\mathsf{LF_{2,1,-1}}\left[\,\widetilde{\mu}\,,\;\mathsf{m}_{1}\,\right]\;+\;\left(\,c_{\gamma}^{\;2}\,+\;s_{\gamma}^{\;2}\,\right)\;\mathsf{LF_{2,1,-1}}\left[\,\widetilde{\mu}\,,\;\mathsf{m}_{1}\,\right]\;+\;\left(\,c_{\gamma}^{\;2}\,+\;s_{\gamma}^{\;2}\,\right)\;\mathsf{LF_{2,1,-1}}\left[\,\widetilde{\mu}\,,\;\mathsf{m}_{1}\,\right]\;+\;\left(\,c_{\gamma}^{\;2}\,+\;s_{\gamma}^{\;2}\,\right)\;\mathsf{LF_{2,1,-1}}\left[\,\widetilde{\mu}\,,\;\mathsf{m}_{1}\,\right]\;+\;\left(\,c_{\gamma}^{\;2}\,+\;s_{\gamma}^{\;2}\,\right)\;\mathsf{LF_{2,1,-1}}\left[\,\widetilde{\mu}\,,\;\mathsf{m}_{1}\,\right]\;+\;\left(\,c_{\gamma}^{\;2}\,+\;s_{\gamma}^{\;2}\,\right)\;\mathsf{LF_{2,1,-1}}\left[\,\widetilde{\mu}\,,\;\mathsf{m}_{1}\,\right]\;+\;\left(\,c_{\gamma}^{\;2}\,+\;s_{\gamma}^{\;2}\,\right)\;\mathsf{LF_{2,1,-1}}\left[\,\widetilde{\mu}\,,\;\mathsf{m}_{1}\,\right]\;+\;\left(\,c_{\gamma}^{\;2}\,+\;s_{\gamma}^{\;2}\,\right)\;\mathsf{LF_{2,1,-1}}\left[\,\widetilde{\mu}\,,\;\mathsf{m}_{1}\,\right]\;+\;\left(\,c_{\gamma}^{\;2}\,+\;s_{\gamma}^{\;2}\,\right)\;\mathsf{LF_{2,1,-1}}\left[\,\widetilde{\mu}\,,\;\mathsf{m}_{1}\,\right]\;+\;\left(\,c_{\gamma}^{\;2}\,+\;s_{\gamma}^{\;2}\,\right)\;\mathsf{LF_{2,1,-1}}\left[\,\widetilde{\mu}\,,\;\mathsf{m}_{1}\,\right]\;+\;\left(\,c_{\gamma}^{\;2}\,+\;s_{\gamma}^{\;2}\,\right)\;\mathsf{LF_{2,1,-1}}\left[\,\widetilde{\mu}\,,\;\mathsf{m}_{1}\,\right]\;+\;\left(\,c_{\gamma}^{\;2}\,+\;s_{\gamma}^{\;2}\,\right)\;\mathsf{LF_{2,1,-1}}\left[\,\widetilde{\mu}\,,\;\mathsf{m}_{1}\,\right]\;+\;\left(\,c_{\gamma}^{\;2}\,+\;s_{\gamma}^{\;2}\,\right)\;\mathsf{LF_{2,1,-1}}\left[\,\widetilde{\mu}\,,\;\mathsf{m}_{1}\,\right]\;+\;\left(\,c_{\gamma}^{\;2}\,+\;s_{\gamma}^{\;2}\,\right)\;\mathsf{LF_{2,1,-1}}\left[\,\widetilde{\mu}\,,\;\mathsf{m}_{1}\,\right]\;+\;\left(\,c_{\gamma}^{\;2}\,+\;s_{\gamma}^{\;2}\,\right)\;\mathsf{LF_{2,1,-1}}\left[\,\widetilde{\mu}\,,\;\mathsf{m}_{1}\,\right]\;+\;\left(\,c_{\gamma}^{\;2}\,+\;s_{\gamma}^{\;2}\,\right)\;\mathsf{LF_{2,1,-1}}\left[\,\widetilde{\mu}\,,\;\mathsf{m}_{1}\,\right]\;+\;\left(\,c_{\gamma}^{\;2}\,+\;s_{\gamma}^{\;2}\,+\;s_{\gamma}^{\;2}\,\right)\;\mathsf{LF_{2,1,-1}}\left[\,\widetilde{\mu}\,,\;\mathsf{m}_{1}\,\right]\;+\;\left(\,c_{\gamma}^{\;2}\,+\;s_{\gamma}^{\;2}\,+\;s_{\gamma}^{\;2}\,+\;s_{\gamma}^{\;2}\,+\;s_{\gamma}^{\;2}\,+\;s_{\gamma}^{\;2}\,+\;s_{\gamma}^{\;2}\,+\;s_{\gamma}^{\;2}\,+\;s_{\gamma}^{\;2}\,+\;s_{\gamma}^{\;2}\,+\;s_{\gamma}^{\;2}\,+\;s_{\gamma}^{\;2}\,+\;s_{\gamma}^{\;2}\,+\;s_{\gamma}^{\;2}\,+\;s_{\gamma}^{\;2}\,+\;s_{\gamma}^{\;2}\,+\;s_{\gamma}^{\;2}\,+\;s_{\gamma}^{\;2}\,+\;s_{\gamma}^{\;2}\,+\;s_{\gamma}^{\;2}\,+\;s_{\gamma}^{\;2}\,+\;s_{\gamma}^{\;2}\,+\;s_{\gamma}^{\;2}\,+\;s_{\gamma}^{\;2}\,+\;s_{\gamma}^{\;2}\,+\;s_{\gamma}^{\;2}\,+\;s_{\gamma}^{\;2}\,+\;s_{\gamma}^{\;2}\,+\;s_{\gamma}^{\;2}\,+\;s_{\gamma}^{\;2}\,+\;s_{\gamma}^{\;2}\,+\;s_{\gamma}^{\;2}\,+\;s_{\gamma}^{\;2}\,+\;s_{\gamma}^{\;2}\,+\;s_{\gamma}^{\;2}\,+\;s_{\gamma}^{\;2}\,+\;s_{\gamma}^{\;2}\,+\;s_{\gamma}^{\;2}\,+\;s_{\gamma}^{\;2}\,+\;s_{\gamma}^{\;2}\,+
\mathbf{m_{1}} \; \mathbf{s_{\gamma}} \; \widetilde{\mu} \; \mathbf{g_{1}}^{2} \; \frac{1}{m_{\text{D}}^{2}} \; \mathbf{y_{d}}^{\text{ili2}} \; \left( - \, \mathbf{c_{\gamma}}^{2} \; \left( \mathbf{m_{H}^{2}} + \, \mathbf{m_{\text{D}}^{2}} \right) \; + \, \mathbf{m_{H}^{2}} \; \mathbf{s_{\gamma}}^{2} \right) \; \mathsf{LF_{2,1,0}} \left[ \, \widetilde{\mu} \, , \; \mathbf{m_{1}} \, \right] \; + \, \mathbf{m_{1}^{2}} \; \mathbf{m_{1}^
                     \frac{1}{2} c_{\gamma} g_{1}^{2} y_{d}^{i1i2} (c_{\gamma}^{2} + s_{\gamma}^{2}) LF_{3,1,-2} [\tilde{\mu}, m_{1}] +
     g_{1}^{2} \, \, \frac{1}{m_{\text{B}}^{2}} \, \, y_{d}^{\, \text{ili2}} \, \left( 2 \, \, m_{\text{H}}^{2} \, \, c_{\gamma} \, \, m_{\bar{\text{D}}}^{\, 2} \, \, \left( c_{\gamma}^{\, 2} \, + \, s_{\gamma}^{\, 2} \right) \, + \, m_{1} \, \, s_{\gamma} \, \, \widetilde{\mu} \, \, \left( c_{\gamma}^{\, 2} \, \left( m_{\text{H}}^{2} \, + \, m_{\bar{\text{D}}}^{\, 2} \right) \, - \, m_{\text{H}}^{2} \, \, s_{\gamma}^{\, 2} \right) \, \right) \, \, LF_{3,1,-1} \left[ \, \widetilde{\mu} \, , \, \, m_{1} \, \right] \, + \, m_{1} \, \, s_{\gamma} \, \, \widetilde{\mu} \, \left( c_{\gamma}^{\, 2} \, \left( m_{\text{H}}^{2} \, + \, m_{\bar{\text{D}}}^{\, 2} \right) \, - \, m_{\text{H}}^{2} \, \, s_{\gamma}^{\, 2} \right) \, \right) \, \, LF_{3,1,-1} \left[ \, \widetilde{\mu} \, , \, \, m_{1} \, \right] \, + \, m_{2} \, \, s_{\gamma}^{\, 2} \, \left( m_{\text{H}}^{2} \, + \, m_{2}^{\, 2} \, + \, m_{2}^{\, 2} \, \right) \, \, \left( m_{\text{H}}^{2} \, + \, m_{2}^{\, 2} \, + \, m_{2}^{\, 2} \, \right) \, \, \, \left( m_{1}^{2} \, + \, m_{2}^{\, 2} \, + \, m_{2}^{\, 2} \, \right) \, \, \, \, \left( m_{1}^{2} \, + \, m_{2}^{\, 2} \, + \, m_{2}^{\, 2} \, + \, m_{2}^{\, 2} \, \right) \, \, \, \, \left( m_{1}^{2} \, + \, m_{2}^{\, 2} \, + \, m_{2}^{\,
     2\; m_1\; m_H^2\; s_\gamma\; \widetilde{\mu}\; g_1^{\;2}\; c_\gamma^{\;2}\; y_d^{\;i\,1\,i\,2}\; LF_{3,1,0}\left[\,\widetilde{\mu}\,,\; m_1\,\right] \; - \; 4\; m_H^2\; c_\gamma\; g_1^{\;2}\; y_d^{\;i\,1\,i\,2}\; \left(\,c_\gamma^{\;2}\, + \, s_\gamma^{\;2}\,\right)\; LF_{4,1,-2}\left[\,\widetilde{\mu}\,,\; m_1\,\right] \; - \; 4\; m_H^2\; c_\gamma\; g_1^{\;2}\; y_d^{\;i\,1\,i\,2}\; \left(\,c_\gamma^{\;2}\, + \, s_\gamma^{\;2}\,\right)\; LF_{4,1,-2}\left[\,\widetilde{\mu}\,,\; m_1\,\right] \; - \; 4\; m_H^2\; c_\gamma\; g_1^{\;2}\; y_d^{\;i\,1\,i\,2}\; \left(\,c_\gamma^{\;2}\, + \, s_\gamma^{\;2}\,\right)\; LF_{4,1,-2}\left[\,\widetilde{\mu}\,,\; m_1\,\right] \; - \; 4\; m_H^2\; c_\gamma\; g_1^{\;2}\; y_d^{\;i\,1\,i\,2}\; \left(\,c_\gamma^{\;2}\, + \, s_\gamma^{\;2}\,\right)\; LF_{4,1,-2}\left[\,\widetilde{\mu}\,,\; m_1\,\right] \; - \; 4\; m_H^2\; c_\gamma\; g_1^{\;2}\; y_d^{\;i\,1\,i\,2}\; \left(\,c_\gamma^{\;2}\, + \, s_\gamma^{\;2}\,\right)\; LF_{4,1,-2}\left[\,\widetilde{\mu}\,,\; m_1\,\right] \; - \; 4\; m_H^2\; c_\gamma\; g_1^{\;2}\; y_d^{\;i\,1\,i\,2}\; \left(\,c_\gamma^{\;2}\, + \, s_\gamma^{\;2}\,\right)\; LF_{4,1,-2}\left[\,\widetilde{\mu}\,,\; m_1\,\right] \; - \; 4\; m_H^2\; c_\gamma\; g_1^{\;2}\; y_d^{\;1\,i\,1\,2}\; \left(\,c_\gamma^{\;2}\, + \, s_\gamma^{\;2}\,\right)\; LF_{4,1,-2}\left[\,\widetilde{\mu}\,,\; m_1\,\right] \; - \; 4\; m_H^2\; c_\gamma\; g_1^{\;2}\; y_d^{\;1\,i\,1\,2}\; \left(\,c_\gamma^{\;2}\, + \, s_\gamma^{\;2}\,\right)\; LF_{4,1,-2}\left[\,\widetilde{\mu}\,,\; m_1\,\right] \; - \; 4\; m_H^2\; c_\gamma\; g_1^{\;2}\; y_d^{\;1\,i\,1\,2}\; \left(\,c_\gamma^{\;2}\, + \, s_\gamma^{\;2}\,\right)\; LF_{4,1,-2}\left[\,\widetilde{\mu}\,,\; m_1\,\right] \; - \; 4\; m_H^2\; c_\gamma\; g_1^{\;2}\; y_d^{\;1\,i\,1\,2}\; \left(\,c_\gamma^{\;2}\, + \, s_\gamma^{\;2}\,\right)\; LF_{4,1,-2}\left[\,\widetilde{\mu}\,,\; m_1\,\right] \; - \; 4\; m_H^2\; c_\gamma\; g_1^{\;2}\; y_d^{\;1\,i\,1\,2}\; \left(\,c_\gamma^{\;2}\, + \, s_\gamma^{\;2}\,\right)\; LF_{4,1,-2}\left[\,\widetilde{\mu}\,,\; m_1\,\right] \; - \; 4\; m_H^2\; c_\gamma\; g_1^{\;2}\; y_d^{\;1\,i\,1\,2}\; \left(\,c_\gamma^{\;2}\, + \, s_\gamma^{\;2}\,\right)\; LF_{4,1,-2}\left[\,\widetilde{\mu}\,,\; m_1\,\right] \; - \; 4\; m_H^2\; c_\gamma\; g_1^{\;2}\; y_d^{\;2}\; y
     6\; \mathsf{m_1}\; \mathsf{m_H^2}\; \mathsf{s_{\gamma}}\; \widetilde{\mu}\; \mathsf{g_1}^2\; \mathsf{c_{\gamma}}^2\; \mathsf{y_d}^{\texttt{ili2}}\; \mathsf{LF_{4,1,-1}}[\,\widetilde{\mu}\,,\; \mathsf{m_1}\,] \; + \; 2\; \mathsf{m_H^2}\; \mathsf{c_{\gamma}}\; \mathsf{g_1}^2\; \mathsf{y_d}^{\texttt{ili2}}\; \left(\mathsf{c_{\gamma}}^2 + \mathsf{s_{\gamma}}^2\right)\; \mathsf{LF_{5,1,-3}}[\,\widetilde{\mu}\,,\; \mathsf{m_1}\,] \; + \; 2\; \mathsf{m_H^2}\; \mathsf{c_{\gamma}}\; \mathsf{g_1}^2\; \mathsf{y_d}^{\texttt{ili2}}\; \left(\mathsf{c_{\gamma}}^2 + \mathsf{s_{\gamma}}^2\right)\; \mathsf{LF_{5,1,-3}}[\,\widetilde{\mu}\,,\; \mathsf{m_1}\,] \; + \; 2\; \mathsf{m_H^2}\; \mathsf{c_{\gamma}}\; \mathsf{g_1}^2\; \mathsf{y_d}^{\texttt{ili2}}\; \left(\mathsf{c_{\gamma}}^2 + \mathsf{s_{\gamma}}^2\right)\; \mathsf{LF_{5,1,-3}}[\,\widetilde{\mu}\,,\; \mathsf{m_1}\,] \; + \; 2\; \mathsf{m_H^2}\; \mathsf{c_{\gamma}}\; \mathsf{g_1}^2\; \mathsf{g_1}^2\; \mathsf{g_2}^2\; \mathsf{g_3}^2\; \mathsf{g_3}^2
     4\; \mathsf{m_1}\; \mathsf{m_H^2}\; \mathsf{s_{\scriptscriptstyle Y}}\; \tilde{\mu}\; \mathsf{g_1}^2\; \mathsf{c_{\scriptscriptstyle Y}}^2\; \mathsf{y_d}^{\text{ili2}}\; \mathsf{LF_{5,1,-2}}[\tilde{\mu},\; \mathsf{m_1}]\; -\frac{9}{4}\; \mathsf{c_{\scriptscriptstyle Y}}\; \mathsf{g_2}^2\; \mathsf{y_d}^{\text{ili2}}\; \left(\mathsf{c_{\scriptscriptstyle Y}}^2+\mathsf{s_{\scriptscriptstyle Y}}^2\right)\; \mathsf{LF_{2,1,-1}}[\tilde{\mu},\; \mathsf{m_2}]\; -\frac{9}{4}\; \mathsf{c_{\scriptscriptstyle Y}}\; \mathsf{g_2}^2\; \mathsf{y_d}^{\text{ili2}}\; \left(\mathsf{c_{\scriptscriptstyle Y}}^2+\mathsf{s_{\scriptscriptstyle Y}}^2\right)\; \mathsf{LF_{2,1,-1}}[\tilde{\mu},\; \mathsf{m_2}]\; -\frac{9}{4}\; \mathsf{c_{\scriptscriptstyle Y}}\; \mathsf{g_2}^2\; \mathsf{y_d}^{\text{ili2}}\; \left(\mathsf{c_{\scriptscriptstyle Y}}^2+\mathsf{s_{\scriptscriptstyle Y}}^2\right)\; \mathsf{LF_{2,1,-1}}[\tilde{\mu},\; \mathsf{m_2}]\; -\frac{9}{4}\; \mathsf{c_{\scriptscriptstyle Y}}\; \mathsf{g_2}^2\; \mathsf{y_d}^{\text{ili2}}\; \left(\mathsf{c_{\scriptscriptstyle Y}}^2+\mathsf{s_{\scriptscriptstyle Y}}^2\right)\; \mathsf{LF_{2,1,-1}}[\tilde{\mu},\; \mathsf{m_2}]\; -\frac{9}{4}\; \mathsf{c_{\scriptscriptstyle Y}}\; \mathsf{g_2}^2\; \mathsf{y_d}^{\text{ili2}}\; \mathsf{c_{\scriptscriptstyle Y}}\; \mathsf{g_2}^2\; \mathsf{
     3~m_2~s_{\gamma}~\widetilde{\mu}~g_2{}^2~\frac{_1}{_{m_0{}^2}}~y_d{}^{\text{ili2}}~\left(c_{\gamma}{}^2~\left(m_H^2+m_{_{\oplus}}{}^2\right)~-m_H^2~s_{\gamma}{}^2\right)~\text{LF}_{2,\text{1,0}}\left[\,\widetilde{\mu}\,\text{,}~m_2\,\right]~+
          \frac{3}{2} c_{\gamma} g_{2}^{2} y_{d}^{\text{ili2}} \left(c_{\gamma}^{2}+s_{\gamma}^{2}\right) LF_{3,1,-2}[\widetilde{\mu}, m_{2}] +
     3\;{g_{2}}^{2}\;\frac{1}{{{\text{m}}_{\text{m}}}^{2}}\;{{\text{y}}_{d}}^{\text{ili2}}\;\left(2\;{{\text{m}}_{\text{H}}}^{2}\;{{\text{c}}_{\text{Y}}}\;{{\text{m}}_{\text{m}}}^{2}\;\left({{\text{c}}_{\text{Y}}}^{2}+{{\text{s}}_{\text{Y}}}^{2}\right)\;+\;{{\text{m}}_{2}}\;{{\text{s}}_{\text{Y}}}\;\widetilde{\mu}\;\left({{\text{c}}_{\text{Y}}}^{2}\;\left({{\text{m}}_{\text{H}}}^{2}+{{\text{m}}_{\text{m}}}^{2}\right)\;-\;{{\text{m}}_{\text{H}}}^{2}\;{{\text{s}}_{\text{Y}}}^{2}\right)\right)\;L}\\ {\text{F}_{3,1,-1}}\left[\;\widetilde{\mu}\;,\;{{\text{m}}_{2}}\;\right]\;+\;{{\text{m}}_{2}}\;{{\text{m}}_{2}}^{2}\;\left({{\text{m}}_{2}}^{2}+{{\text{m}}_{2}}^{2}\right)\;+\;{{\text{m}}_{3}}^{2}\;{{\text{m}}_{3}}^{2}\right)\;
          6 \, m_2 \, m_H^2 \, s_Y \, \widetilde{\mu} \, g_2^2 \, c_Y^2 \, y_d^{\, \text{ili2}} \, \mathsf{LF}_{3,1,0} [\, \widetilde{\mu} \, , \, m_2 \, ] \, - \, 12 \, m_H^2 \, c_Y \, g_2^2 \, y_d^{\, \text{ili2}} \, \left( c_Y^{\, 2} + s_Y^{\, 2} \right) \, \mathsf{LF}_{4,1,-2} [\, \widetilde{\mu} \, , \, m_2 \, ] \, - \, 12 \, m_H^2 \, s_Y^2 \, g_2^2 \, y_d^{\, \text{ili2}} \, \left( s_Y^2 + s_Y^2 \right) \, \mathsf{LF}_{4,1,-2} [\, \widetilde{\mu} \, , \, m_2 \, ] \, - \, 12 \, m_H^2 \, s_Y^2 \, g_2^2 \, y_d^{\, \text{ili2}} \, \left( s_Y^2 + s_Y^2 \right) \, \mathsf{LF}_{4,1,-2} [\, \widetilde{\mu} \, , \, m_2 \, ] \, - \, 12 \, m_H^2 \, s_Y^2 \, g_2^2 \, y_d^{\, \text{ili2}} \, \left( s_Y^2 + s_Y^2 \right) \, \mathsf{LF}_{4,1,-2} [\, \widetilde{\mu} \, , \, m_2 \, ] \, - \, 12 \, m_H^2 \, s_Y^2 \, g_2^2 \, y_d^{\, \text{ili2}} \, \left( s_Y^2 + s_Y^2 \right) \, \mathsf{LF}_{4,1,-2} [\, \widetilde{\mu} \, , \, m_2 \, ] \, - \, 12 \, m_H^2 \, s_Y^2 \, g_2^2 \, y_d^{\, \text{ili2}} \, \left( s_Y^2 + s_Y^2 \right) \, \mathsf{LF}_{4,1,-2} [\, \widetilde{\mu} \, , \, m_2 \, ] \, - \, 12 \, m_H^2 \, s_Y^2 \, g_2^2 \, y_d^{\, \text{ili2}} \, \left( s_Y^2 + s_Y^2 \right) \, \mathsf{LF}_{4,1,-2} [\, \widetilde{\mu} \, , \, m_2 \, ] \, - \, 12 \, m_H^2 \, s_Y^2 \, g_2^2 \, y_d^{\, \text{ili2}} \, \left( s_Y^2 + s_Y^2 \right) \, \mathsf{LF}_{4,1,-2} [\, \widetilde{\mu} \, , \, m_2 \, ] \, - \, 12 \, m_H^2 \, s_Y^2 \, g_2^2 \, y_d^{\, \text{ili2}} \, \left( s_Y^2 + s_Y^2 \right) \, \mathsf{LF}_{4,1,-2} [\, \widetilde{\mu} \, , \, m_2 \, ] \, - \, 12 \, m_H^2 \, s_Y^2 
     18\; \mathsf{m_2}\; \mathsf{m_H^2}\; \mathsf{s_Y}\; \widetilde{\mu}\; \mathsf{g_2}^2\; \mathsf{c_Y}^2\; \mathsf{y_d}^{\text{ili2}}\; \mathsf{LF_{4,1,-1}}[\,\widetilde{\mu}\,,\,\,\mathsf{m_2}\,]\; + \; 6\; \mathsf{m_H^2}\; \mathsf{c_Y}\; \mathsf{g_2}^2\; \mathsf{y_d}^{\text{ili2}}\; \left(\mathsf{c_Y}^2 + \mathsf{s_Y}^2\right)\; \mathsf{LF_{5,1,-3}}[\,\widetilde{\mu}\,,\,\,\mathsf{m_2}\,]\; + \; \mathsf{h_H^2}\; \mathsf{c_Y}\; \mathsf{g_2}^2\; \mathsf{y_d}^{\text{ili2}}\; \left(\mathsf{c_Y}^2 + \mathsf{s_Y}^2\right)\; \mathsf{LF_{5,1,-3}}[\,\widetilde{\mu}\,,\,\,\mathsf{m_2}\,]\; + \; \mathsf{h_H^2}\; \mathsf{c_Y}\; \mathsf{g_2}^2\; \mathsf{v_d}^{\text{ili2}}\; \left(\mathsf{c_Y}^2 + \mathsf{s_Y}^2\right)\; \mathsf{LF_{5,1,-3}}[\,\widetilde{\mu}\,,\,\,\mathsf{m_2}\,]\; + \; \mathsf{h_H^2}\; \mathsf{c_Y}\; \mathsf{c_Y}^2\; \mathsf{v_d}^{\text{ili2}}\; \mathsf{v_d}^2\; \mathsf{v_d}^{\text{ili2}}\; \mathsf{v_d}^2\; \mathsf{v_d}^2
     12\; \mathsf{m_2}\; \mathsf{m_H^2}\; \mathsf{s_\gamma}\; \tilde{\mu}\; \mathsf{g_2}^2\; \mathsf{c_\gamma}^2\; \mathsf{y_d}^{\text{ili2}}\; \mathsf{LF_{5,1,-2}}\left[\,\tilde{\mu}\,,\; \mathsf{m_2}\,\right] \; + \; \frac{1}{4}\; \mathsf{c_\gamma}\; \overline{\mathsf{y_d}}^{\text{pr}}\; \mathsf{y_d}^{\text{pl2}}\; \mathsf{y_d}^{\text{ilr}}\; \mathsf{LF_{2,1,-1}}\left[\,\tilde{\mu}\,,\; \mathsf{m_{\tilde{d}}}^{\text{r}}\,\right] \; + \; \frac{1}{4}\; \mathsf{c_\gamma}\; \overline{\mathsf{y_d}}^{\text{pr}}\; \mathsf{y_d}^{\text{pl2}}\; \mathsf{y_d}^{\text{ilr}}\; \mathsf{LF_{2,1,-1}}\left[\,\tilde{\mu}\,,\; \mathsf{m_{\tilde{d}}}^{\text{r}}\,\right] \; + \; \frac{1}{4}\; \mathsf{c_\gamma}\; \overline{\mathsf{y_d}}^{\text{pr}}\; \mathsf{y_d}^{\text{pl2}}\; \mathsf{y_d}^{\text{pl2}}\; \mathsf{v_d}^{\text{pl2}}\; \mathsf{v_d}^{\text{pl2}}
                                                            c_{\gamma} \overline{y_d}^{\text{pr}} y_d^{\text{pi2}} y_d^{\text{ilr}} LF_{2,1,-1} \big[ \widetilde{\mu}, \, m_{\widetilde{q}}^{\text{p}} \big] + \frac{1}{4} c_{\gamma} y_d^{\text{pi2}} \overline{y_u}^{\text{pr}} y_u^{\text{ilr}} LF_{2,1,-1} \big[ \widetilde{\mu}, \, m_{\widetilde{u}}^{\text{r}} \big] + \frac{1}{4} c_{\gamma} y_d^{\text{pi2}} \overline{y_u}^{\text{pr}} y_u^{\text{ilr}} LF_{2,1,-1} \big[ \widetilde{\mu}, \, m_{\widetilde{u}}^{\text{r}} \big] + \frac{1}{4} c_{\gamma} y_d^{\text{pi2}} \overline{y_u}^{\text{pr}} y_u^{\text{ilr}} LF_{2,1,-1} \big[ \widetilde{\mu}, \, m_{\widetilde{u}}^{\text{r}} \big] + \frac{1}{4} c_{\gamma} y_d^{\text{pi2}} \overline{y_u}^{\text{pr}} y_u^{\text{ilr}} LF_{2,1,-1} \big[ \widetilde{\mu}, \, m_{\widetilde{u}}^{\text{r}} \big] + \frac{1}{4} c_{\gamma} y_d^{\text{pi2}} \overline{y_u}^{\text{pr}} y_u^{\text{ilr}} LF_{2,1,-1} \big[ \widetilde{\mu}, \, m_{\widetilde{u}}^{\text{r}} \big] + \frac{1}{4} c_{\gamma} y_d^{\text{pi2}} \overline{y_u}^{\text{pr}} y_u^{\text{ilr}} LF_{2,1,-1} \big[ \widetilde{\mu}, \, m_{\widetilde{u}}^{\text{r}} \big] + \frac{1}{4} c_{\gamma} y_d^{\text{pi2}} \overline{y_u}^{\text{pr}} y_u^{\text{ilr}} LF_{2,1,-1} \big[ \widetilde{\mu}, \, m_{\widetilde{u}}^{\text{r}} \big] + \frac{1}{4} c_{\gamma} y_d^{\text{pi2}} \overline{y_u}^{\text{pr}} y_u^{\text{ilr}} LF_{2,1,-1} \big[ \widetilde{\mu}, \, m_{\widetilde{u}}^{\text{r}} \big] + \frac{1}{4} c_{\gamma} y_d^{\text{pi2}} \overline{y_u}^{\text{pr}} y_u^{\text{ilr}} LF_{2,1,-1} \big[ \widetilde{\mu}, \, m_{\widetilde{u}}^{\text{r}} \big] + \frac{1}{4} c_{\gamma} y_d^{\text{pi2}} \overline{y_u}^{\text{pi2}} y_u^{\text{ilr}} LF_{2,1,-1} \big[ \widetilde{\mu}, \, m_{\widetilde{u}}^{\text{r}} \big] + \frac{1}{4} c_{\gamma} y_d^{\text{pi2}} \overline{y_u}^{\text{pi2}} y_u^{\text{ilr}} LF_{2,1,-1} \big[ \widetilde{\mu}, \, m_{\widetilde{u}}^{\text{r}} \big] + \frac{1}{4} c_{\gamma} y_d^{\text{pi2}} y_u^{\text{pi2}} y_u^{\text{ilr}} LF_{2,1,-1} \big[ \widetilde{\mu}, \, m_{\widetilde{u}}^{\text{r}} \big] + \frac{1}{4} c_{\gamma} y_d^{\text{pi2}} y_u^{\text{pi2}} y_u^{\text{ilr}} LF_{2,1,-1} \big[ \widetilde{\mu}, \, m_{\widetilde{u}}^{\text{r}} \big] + \frac{1}{4} c_{\gamma} y_u^{\text{ilr}} y_u^
                                                            \mathsf{m_1} \; \mathsf{g_1}^2 \; \left( - \, \mathsf{c_{\scriptscriptstyle Y}} \; \mathsf{a_d}^{\, \texttt{ili2}} + \, \mathsf{s_{\scriptscriptstyle Y}} \; \widetilde{\boldsymbol{\mu}} \; \mathsf{y_d}^{\, \texttt{ili2}} \right) \; \mathsf{LF_{1,1,1,0}} \left[ \, \mathsf{m_1} \, , \; \mathsf{m_{\tilde{d}}}^{\, \texttt{il}} \, , \; \mathsf{m_{\tilde{q}}}^{\, \texttt{il}} \, \right] \; + \; \mathsf{m_{\tilde{d}}}^{\, \texttt{ili2}} \; , \; \mathsf{m_{\tilde{d}
                \frac{1}{36} \ \mathsf{m_1} \ \mathsf{m_H^2} \ \mathsf{g_1^2} \ \left( - \, \mathsf{c_Y} \ \mathsf{a_d}^{\, \text{ili2}} + \, \mathsf{s_Y} \ \widetilde{\mu} \ \mathsf{y_d}^{\, \text{ili2}} \right) \ \mathsf{LF_{2,2,1,-1}} \big[ \, \mathsf{m_1} \, , \ \mathsf{m_{\tilde{d}}}^{\, \text{il}} \, , \ \mathsf{m_{\tilde{q}}}^{\, \text{il}} \big] \ + \\
                \frac{1}{3} \; \mathbf{c_{\gamma}} \; \mathbf{g_{1}}^{2} \; \mathbf{y_{d}}^{\texttt{ili2}} \; \mathsf{LF_{1,1,1,-1}} \big[ \; \mathbf{m_{1}} \; , \; \mathbf{m_{\bar{d}}}^{\texttt{i2}} \; , \; \widetilde{\boldsymbol{\mu}} \, \big] \; + \; \frac{1}{3} \; \mathbf{m_{1}} \; \mathbf{s_{\gamma}} \; \widetilde{\boldsymbol{\mu}} \; \mathbf{g_{1}}^{2} \; \mathbf{y_{d}}^{\texttt{ili2}} \; \mathsf{LF_{1,1,1,0}} \big[ \; \mathbf{m_{1}} \; , \; \mathbf{m_{\bar{d}}}^{\texttt{i2}} \; , \; \widetilde{\boldsymbol{\mu}} \, \big] \; + \; \frac{1}{3} \; \mathbf{m_{1}} \; \mathbf{s_{\gamma}} \; \widetilde{\boldsymbol{\mu}} \; \mathbf{g_{1}}^{2} \; \mathbf{y_{d}}^{\texttt{ili2}} \; \mathsf{LF_{1,1,1,0}} \big[ \; \mathbf{m_{1}} \; , \; \mathbf{m_{\bar{d}}}^{\texttt{i2}} \; , \; \widetilde{\boldsymbol{\mu}} \, \big] \; + \; \frac{1}{3} \; \mathbf{m_{1}} \; \mathbf{s_{\gamma}} \; \widetilde{\boldsymbol{\mu}} \; \mathbf{g_{1}}^{2} \; \mathbf{y_{d}}^{\texttt{ili2}} \; \mathsf{LF_{1,1,1,0}} \big[ \; \mathbf{m_{1}} \; , \; \mathbf{m_{\bar{d}}}^{\texttt{i2}} \; , \; \widetilde{\boldsymbol{\mu}} \, \big] \; + \; \frac{1}{3} \; \mathbf{m_{1}} \; \mathbf{s_{\gamma}} \; \widetilde{\boldsymbol{\mu}} \; \mathbf{g_{1}}^{2} \; \mathbf{y_{d}}^{\texttt{ili2}} \; \mathsf{LF_{1,1,1,0}} \big[ \; \mathbf{m_{1}} \; , \; \mathbf{m_{\bar{d}}}^{\texttt{i2}} \; , \; \widetilde{\boldsymbol{\mu}} \, \big] \; + \; \frac{1}{3} \; \mathbf{m_{1}} \; \mathbf{s_{\gamma}} \; \widetilde{\boldsymbol{\mu}} \; \mathbf{g_{1}}^{2} \; \mathbf{y_{d}}^{\texttt{ili2}} \; \mathsf{LF_{1,1,1,0}} \big[ \; \mathbf{m_{1}} \; , \; \mathbf{m_{\bar{d}}}^{\texttt{i2}} \; , \; \widetilde{\boldsymbol{\mu}} \, \big] \; + \; \frac{1}{3} \; \mathbf{m_{1}} \; \mathbf{s_{\gamma}} \; \widetilde{\boldsymbol{\mu}} \; \mathbf{g_{1}}^{\texttt{ili2}} \; \mathsf{LF_{1,1,1,0}} \big[ \; \mathbf{m_{1}} \; , \; \mathbf{m_{\bar{d}}}^{\texttt{ili2}} \; , \; \widetilde{\boldsymbol{\mu}} \, \big] \; + \; \frac{1}{3} \; \mathbf{m_{1}} \; \mathbf{s_{\gamma}} \; \widetilde{\boldsymbol{\mu}} \; \mathbf{g_{1}}^{\texttt{ili2}} \; \mathsf{LF_{1,1,1,0}} \big[ \; \mathbf{m_{1}} \; , \; \mathbf{m_{\bar{d}}}^{\texttt{ili2}} \; , \; \widetilde{\boldsymbol{\mu}} \, \big] \; + \; \frac{1}{3} \; \mathbf{m_{1}} \; \mathbf{s_{\gamma}} \; \widetilde{\boldsymbol{\mu}} \; \mathbf{g_{1}} \; , \; \widetilde{\boldsymbol{\mu}} \; \mathbf{g_{1}}^{\texttt{ili2}} \; , \; \widetilde{\boldsymbol{\mu}} \; \mathbf{g_{1}}^{\texttt{ili2
          \frac{1}{36} \ \mathsf{m_1} \ \mathsf{m_H^2} \ \mathsf{g_1^2} \ \left( - \, \mathsf{c_{_Y}} \ \mathsf{a_d^{\,ili2}} + \, \mathsf{s_{_Y}} \ \widetilde{\mu} \ \mathsf{y_d^{\,ili2}} \right) \ \mathsf{LF_{2,2,1,-1}} \big[ \, \mathsf{m_1} \, , \, \, \mathsf{m_{\tilde{q}}^{\,il}} \, , \, \, \mathsf{m_{\tilde{d}}^{\,il}} \big] \ + \\
                           \frac{1}{6}\;c_{\gamma}\;g_{1}^{2}\;y_{d}^{\,\textrm{ili2}}\;\mathsf{LF}_{1,1,1,-1}\!\left[\mathsf{m}_{1},\;\mathsf{m}_{\tilde{\mathsf{q}}}^{\,\textrm{il}},\;\tilde{\mu}\right]+\frac{1}{6}\;\mathsf{m}_{1}\;\mathsf{s}_{\gamma}\;\tilde{\mu}\;g_{1}^{\,2}\;y_{d}^{\,\textrm{ili2}}\;\mathsf{LF}_{1,1,1,0}\!\left[\mathsf{m}_{1},\;\mathsf{m}_{\tilde{\mathsf{q}}}^{\,\textrm{il}},\;\tilde{\mu}\right]-\frac{1}{6}\;\mathsf{m}_{1}\;\mathsf{s}_{\gamma}\;\tilde{\mu}\;g_{1}^{\,\textrm{il}}\;\mathsf{m}_{2}^{\,\textrm{ili2}}\;\mathsf{LF}_{1,1,1,0}\right]
                                                            \frac{1}{12} \ \mathsf{m_{H}^{2}} \ \mathsf{c_{Y}} \ \mathsf{g_{1}}^{2} \ \mathsf{y_{d}^{ili2}} \ \mathsf{LF_{2,2,1,-2}} \big[ \mathsf{m_{1}}, \ \widetilde{\mu}, \ \mathsf{m_{\tilde{q}}^{il}} \big] - \frac{1}{12} \ \mathsf{m_{1}} \ \mathsf{m_{\tilde{H}}^{2}} \ \mathsf{s_{Y}} \ \widetilde{\mu} \ \mathsf{g_{1}^{2}} \ \mathsf{y_{d}^{ili2}} \ \mathsf{LF_{2,2,1,-1}} \big[ \mathsf{m_{1}}, \ \widetilde{\mu}, \ \mathsf{m_{\tilde{q}}^{il}} \big] + \frac{1}{12} \ \mathsf{m_{1}} \ \mathsf{m_{1}^{2}} \ \mathsf{m_{1}^{2}} \ \mathsf{m_{1}^{2}} \ \mathsf{m_{1}^{2}} \ \mathsf{m_{1}^{2}} \ \mathsf{m_{2}^{2}} \ \mathsf{m_{2}^{2}}
                                                                       c_{\text{Y}}\,g_{2}{}^{2}\,y_{d}{}^{\text{ili2}}\,\mathsf{LF}_{1,1,1,-1}\big[\,\mathsf{m}_{2}\,,\,\mathsf{m}_{\tilde{\mathsf{q}}}{}^{\text{il}}\,,\,\tilde{\mu}\,\big]\,+\,\tfrac{3}{2}\,\,\mathsf{m}_{2}\,\,\mathsf{s}_{\text{Y}}\,\tilde{\mu}\,\,g_{2}{}^{2}\,\,y_{d}{}^{\text{ili2}}\,\mathsf{LF}_{1,1,1,0}\big[\,\mathsf{m}_{2}\,,\,\mathsf{m}_{\tilde{\mathsf{q}}}{}^{\text{il}}\,,\,\tilde{\mu}\,\big]\,-\,\mathsf{m}_{\tilde{\mathsf{q}}}{}^{\text{il}}\,,\,\tilde{\mu}\,\,\big]\,+\,\mathsf{m}_{\tilde{\mathsf{q}}}{}^{\text{il}}\,,\,\tilde{\mu}\,\,\big]\,+\,\mathsf{m}_{\tilde{\mathsf{q}}}{}^{\text{il}}\,,\,\tilde{\mu}\,\,\big]\,+\,\mathsf{m}_{\tilde{\mathsf{q}}}{}^{\text{il}}\,,\,\tilde{\mu}\,\,\big]\,+\,\mathsf{m}_{\tilde{\mathsf{q}}}{}^{\text{il}}\,,\,\tilde{\mu}\,\,\big]\,+\,\mathsf{m}_{\tilde{\mathsf{q}}}{}^{\text{il}}\,,\,\tilde{\mu}\,\,\big]\,+\,\mathsf{m}_{\tilde{\mathsf{q}}}{}^{\text{il}}\,,\,\tilde{\mu}\,\,\big]\,+\,\mathsf{m}_{\tilde{\mathsf{q}}}{}^{\text{il}}\,,\,\tilde{\mu}\,\,\big]\,+\,\mathsf{m}_{\tilde{\mathsf{q}}}{}^{\text{il}}\,,\,\tilde{\mu}\,\,\big]\,+\,\mathsf{m}_{\tilde{\mathsf{q}}}{}^{\text{il}}\,,\,\tilde{\mu}\,\,\big]\,+\,\mathsf{m}_{\tilde{\mathsf{q}}}{}^{\text{il}}\,,\,\tilde{\mu}\,\,\big]\,+\,\mathsf{m}_{\tilde{\mathsf{q}}}{}^{\text{il}}\,,\,\tilde{\mu}\,\,\big]\,+\,\mathsf{m}_{\tilde{\mathsf{q}}}{}^{\text{il}}\,,\,\tilde{\mu}\,\,\big]\,+\,\mathsf{m}_{\tilde{\mathsf{q}}}{}^{\text{il}}\,,\,\tilde{\mu}\,\,\big]\,+\,\mathsf{m}_{\tilde{\mathsf{q}}}{}^{\text{il}}\,,\,\tilde{\mu}\,\,\big]\,+\,\mathsf{m}_{\tilde{\mathsf{q}}}{}^{\text{il}}\,,\,\tilde{\mu}\,\,\big]\,+\,\mathsf{m}_{\tilde{\mathsf{q}}}{}^{\text{il}}\,,\,\tilde{\mu}\,\,\big]\,+\,\mathsf{m}_{\tilde{\mathsf{q}}}{}^{\text{il}}\,,\,\tilde{\mu}\,\,\big]\,+\,\mathsf{m}_{\tilde{\mathsf{q}}}{}^{\text{il}}\,,\,\tilde{\mu}\,\,\big]\,+\,\mathsf{m}_{\tilde{\mathsf{q}}}{}^{\text{il}}\,,\,\tilde{\mu}\,\,\big]\,+\,\mathsf{m}_{\tilde{\mathsf{q}}}{}^{\text{il}}\,,\,\tilde{\mu}\,\,\big]\,+\,\mathsf{m}_{\tilde{\mathsf{q}}}{}^{\text{il}}\,,\,\tilde{\mu}\,\,\big]\,+\,\mathsf{m}_{\tilde{\mathsf{q}}}{}^{\text{il}}\,,\,\tilde{\mu}\,\,\big]\,+\,\mathsf{m}_{\tilde{\mathsf{q}}}{}^{\text{il}}\,,\,\tilde{\mu}\,\,\big]\,+\,\mathsf{m}_{\tilde{\mathsf{q}}}{}^{\text{il}}\,,\,\tilde{\mu}\,\,\big]\,+\,\mathsf{m}_{\tilde{\mathsf{q}}}{}^{\text{il}}\,,\,\tilde{\mu}\,\,\big]\,+\,\mathsf{m}_{\tilde{\mathsf{q}}}{}^{\text{il}}\,,\,\tilde{\mu}\,\,\big]\,+\,\mathsf{m}_{\tilde{\mathsf{q}}}{}^{\text{il}}\,,\,\tilde{\mu}\,\,\big]\,+\,\mathsf{m}_{\tilde{\mathsf{q}}}{}^{\text{il}}\,,\,\tilde{\mu}\,\,\big]\,+\,\mathsf{m}_{\tilde{\mathsf{q}}}{}^{\text{il}}\,,\,\tilde{\mu}\,\,\big]\,+\,\mathsf{m}_{\tilde{\mathsf{q}}}{}^{\text{il}}\,,\,\tilde{\mu}\,\,\big]\,+\,\mathsf{m}_{\tilde{\mathsf{q}}}{}^{\text{il}}\,,\,\tilde{\mu}\,\,\big]\,+\,\mathsf{m}_{\tilde{\mathsf{q}}}{}^{\text{il}}\,,\,\tilde{\mu}\,\,\big]\,+\,\mathsf{m}_{\tilde{\mathsf{q}}}{}^{\text{il}}\,,\,\tilde{\mu}\,\,\big]\,+\,\mathsf{m}_{\tilde{\mathsf{q}}}{}^{\text{il}}\,,\,\tilde{\mu}\,\,\big]\,+\,\mathsf{m}_{\tilde{\mathsf{q}}}{}^{\text{il}}\,,\,\tilde{\mu}\,\,\big]\,+\,\mathsf{m}_{\tilde{\mathsf{q}}}{}^{\text{il}}\,,\,\tilde{\mu}\,\,\big]\,+\,\mathsf{m}_{\tilde{\mathsf{q}}}{}^{\text{il}}\,,\,\tilde{\mu}\,\,\big]\,+\,\mathsf{m}_{\tilde{\mathsf{q}}}{}^{\text{il}}\,,\,\tilde{\mu}\,\,\big]\,+\,\mathsf{m}_{\tilde{\mathsf{q}}}{}^{\text{il}}\,,\,\tilde{\mu}\,\,\big]\,+\,\mathsf{m}_{\tilde{\mathsf{q}}}{}^{\text{il}}\,,\,\tilde{\mu}\,\,\big]\,+\,\mathsf{m}_{\tilde{\mathsf{q}}}{}^{\text{il}}\,,\,\tilde{\mu}\,\,\big]\,+\,\mathsf{m}_{\tilde{\mathsf{q}}}{}^{\text{il}}\,,\,\tilde{\mu}\,\,\big]\,+\,\mathsf{m}_{\tilde{\mathsf{q}}}{}^{\text{il}}\,,\,\tilde{\mu}\,\,\big]\,+\,\mathsf{m}_{\tilde{\mathsf{q}}}{}^{\text{il}}\,,\,\tilde{\mu}\,\,\big]\,+\,\mathsf{m}_{\tilde{\mathsf{q}}}{}^{\text{il}}\,,\,\tilde{\mu}\,\,\big]\,+\,\mathsf{m}_{\tilde{\mathsf{q}}}{}^{\text{il}}\,,\,\tilde{\mu}\,\,\big]\,+\,\mathsf{m}_{\tilde{\mathsf{q}}}{}^{
                                                            \text{m}_{3} \; g_{3}^{\; 2} \; \left( c_{\curlyvee} \; a_{d}^{\; \text{ili2}} - s_{\curlyvee} \, \widetilde{\mu} \; y_{d}^{\; \text{ili2}} \right) \; LF_{1,1,1,0} \left[ \, m_{3} \, , \; m_{\bar{d}}^{\; \text{i2}} \, , \; m_{\bar{q}}^{\; \text{i1}} \, \right] \; + \; c_{\parallel}^{\; \text{ili2}} \; + \; c_{\parallel}^{\; \text{ili2}} \; , \; c_{\parallel}^{\; \text{ili2}} \; + \; c_{\parallel}^{\; \text{ili2}} \; , \; c_{\parallel}^{\; \text{ili2}}
                                                            \textbf{m}_{3} \; \textbf{m}_{H}^{2} \; \textbf{g}_{3}^{\; 2} \; \left( \textbf{c}_{\curlyvee} \; \textbf{a}_{d}^{\; \text{ili}}^{\; 2} - \textbf{s}_{\curlyvee} \; \widetilde{\boldsymbol{\mu}} \; \textbf{y}_{d}^{\; \text{ili}}^{\; 2} \right) \; \textbf{LF}_{2,2,1,-1} \big[ \, \textbf{m}_{3} \, , \; \textbf{m}_{\tilde{d}}^{\; \tilde{i}}^{\; 2} \, , \; \textbf{m}_{\tilde{q}}^{\; \tilde{i}}^{\; 1} \big] \; + \; \textbf{m}_{\tilde{d}}^{\; \tilde{i}}^{\; \tilde{i}}^{\; 2} \; , \; \textbf{m}_{\tilde{q}}^{\; \tilde{i}}^{\; 1} \, \big] \; + \; \textbf{m}_{\tilde{d}}^{\; \tilde{i}}^{\; \tilde{i}}^{\; 2} \; , \; \textbf{m}_{\tilde{q}}^{\; \tilde{i}}^{\; \tilde{i}}^{\; 1} \, \big] \; + \; \textbf{m}_{\tilde{d}}^{\; \tilde{i}}^{\; \tilde{i}}^{\; 2} \; , \; \textbf{m}_{\tilde{q}}^{\; \tilde{i}}^{\; \tilde{i}}^{\; 1} \, \big] \; + \; \textbf{m}_{\tilde{q}}^{\; \tilde{i}}^{\; \tilde{i}}^{\; 1} \; \big] \; + \; \textbf{m}_{\tilde{d}}^{\; \tilde{i}}^{\; \tilde{i}}^{\; 2} \; , \; \textbf{m}_{\tilde{q}}^{\; \tilde{i}}^{\; \tilde{i}}^{\; 1} \, \big] \; + \; \textbf{m}_{\tilde{d}}^{\; \tilde{i}}^{\; \tilde{i}}^{\; 2} \; , \; \textbf{m}_{\tilde{q}}^{\; \tilde{i}}^{\; \tilde{i}}^{\; 1} \, \big] \; + \; \textbf{m}_{\tilde{d}}^{\; \tilde{i}}^{\; \tilde{i}}^{\; 1} \; , \; \textbf{m}_{\tilde{q}}^{\; \tilde{i}}^{\; \tilde{i}}^{\; 1} \; \big] \; + \; \textbf{m}_{\tilde{d}}^{\; 1}
                                                                 \mathsf{m_{3}} \; \mathsf{m_{H}^{2}} \; \mathsf{g_{3}}^{2} \; \left( \mathsf{c_{Y}} \; \mathsf{a_{d}}^{\text{ili2}} - \mathsf{s_{Y}} \; \widetilde{\boldsymbol{\mu}} \; \mathsf{y_{d}}^{\text{ili2}} \right) \; \mathsf{LF_{2,2,1,-1}} \big[ \mathsf{m_{3}} \, , \; \mathsf{m_{\tilde{q}}}^{\text{il}} \, , \; \mathsf{m_{\tilde{d}}}^{\text{il}} \big] \; + \; \mathsf{m_{\tilde{q}}}^{\text{il}} \; , \; \mathsf{m_{\tilde{q}}}^{
                                                                                       \mathbf{m_{1}} \; \mathbf{m_{H}^{2}} \; \mathbf{g_{1}}^{2} \; \left( \mathbf{c_{\gamma}} \; \mathbf{a_{d}}^{\text{ili2}} - \mathbf{s_{\gamma}} \; \widetilde{\boldsymbol{\mu}} \; \mathbf{y_{d}}^{\text{ili2}} \right) \; \mathbf{LF_{2,1,1,0}} \left[ \, \mathbf{m_{\tilde{d}}}^{\text{i2}}, \; \mathbf{m_{1}}, \; \mathbf{m_{\tilde{q}}} \right] \; \mathbf{m_{1}} \; \mathbf{m_{\tilde{q}}} \; \mathbf{m_{1}} \; \mathbf{m_{1}} \; \mathbf{m_{\tilde{q}}} \; \mathbf{m_{1}} \; \mathbf{m_{1}} \; \mathbf{m_{\tilde{q}}} \; \mathbf{m_{1}} \; \mathbf{
                                                                                            \mathbf{m_{1}} \; \mathbf{m_{H}^{2}} \; \mathbf{g_{1}}^{2} \; \left( - \, \mathbf{c_{\gamma}} \; \mathbf{a_{d}}^{\, \texttt{ili2}} + \, \mathbf{s_{\gamma}} \; \widetilde{\boldsymbol{\mu}} \; \mathbf{y_{d}}^{\, \texttt{ili2}} \right) \; \mathsf{LF_{3,1,1,-1}} \big[ \, \mathbf{m_{\tilde{d}}}^{\, \texttt{i2}}, \; \mathbf{m_{1}}, \; \mathbf{m_{\tilde{q}}}^{\, \texttt{i1}} \big] \; + \\
                                                            \mathsf{m_{3}} \; \mathsf{m_{H}^{2}} \; \mathsf{g_{3}}^{2} \; \left( - \, \mathsf{c_{Y}} \; \mathsf{a_{d}}^{\, \text{ili2}} + \, \mathsf{s_{Y}} \; \widetilde{\boldsymbol{\mu}} \; \mathsf{y_{d}}^{\, \text{ili2}} \right) \; \mathsf{LF_{2,1,1,0}} \left[ \, \mathsf{m_{\tilde{d}}}^{\, \text{i2}} \, , \; \mathsf{m_{3}} \, , \; \mathsf{m_{\tilde{q}}}^{\, \text{il}} \, \right] \; + \; \mathsf{m_{\tilde{d}}}^{\, \text{ili2}} \; + \; \mathsf{s_{Y}} \; \widetilde{\boldsymbol{\mu}} \; \mathsf{y_{d}}^{\, \text{ili2}} \right) \; \mathsf{LF_{2,1,1,0}} \left[ \, \mathsf{m_{\tilde{d}}}^{\, \text{i2}} \, , \; \mathsf{m_{3}} \, , \; \mathsf{m_{\tilde{q}}}^{\, \text{il}} \, \right] \; + \; \mathsf{m_{\tilde{d}}}^{\, \text{ili2}} \; + \; \mathsf{s_{Y}} \; \widetilde{\boldsymbol{\mu}} \; \mathsf{y_{d}}^{\, \text{ili2}} \right] \; \mathsf{LF_{2,1,1,0}} \left[ \, \mathsf{m_{\tilde{d}}}^{\, \text{ili2}} \, , \; \mathsf{m_{3}} \, , \; \mathsf{m_{\tilde{q}}}^{\, \text{ili2}} \, \right] \; + \; \mathsf{m_{\tilde{d}}}^{\, \text{ili2}} \; + \; \mathsf{m_{\tilde{d}}}^{\, \text{ili2}} \; + \; \mathsf{m_{\tilde{d}}}^{\, \text{ili2}} \, \right] \; \mathsf{LF_{2,1,1,0}} \left[ \, \mathsf{m_{\tilde{d}}}^{\, \text{ili2}} \, , \; \mathsf{m_{\tilde{d}}}^{\, \text{ili2}} \, , \; \mathsf{m_{\tilde{d}}}^{\, \text{ili2}} \, \right] \; + \; \mathsf{m_{\tilde{d}}}^{\, \text{ili2}} \; + \; \mathsf{m_{\tilde{d}}}^{\, \text{ili2}} \; + \; \mathsf{m_{\tilde{d}}}^{\, \text{ili2}} \, \right] \; + \; \mathsf{m_{\tilde{d}}}^{\, \text{ili2}} \; + \; \mathsf{m_{\tilde{d}}}^{\, \text{ili2}
                                                            \mathsf{m_3} \; \mathsf{m_H^2} \; \mathsf{g_3}^2 \; \left( \mathsf{c_{_Y}} \; \mathsf{a_d}^{\text{ili2}} - \mathsf{s_{_Y}} \, \widetilde{\boldsymbol{\mu}} \; \mathsf{y_d}^{\text{ili2}} \right) \; \mathsf{LF_{3,1,1,-1}} \big[ \, \mathsf{m_{\tilde{d}}}^{\text{i2}}, \; \mathsf{m_3}, \; \mathsf{m_{\tilde{q}}}^{\text{il}} \big] \; + \; \mathsf{m_{\tilde{d}}}^{\text{il}} \; \mathsf{m_{\tilde{d}}}^{\text{il}} + \; \mathsf{m_{\tilde{d}}}^{\text{il}} \, \mathsf{m_{\tilde{d}}}^{\text{il}} \big] \; + \; \mathsf{m_{\tilde{d}}}^{\text{il}} \; \mathsf{m_{\tilde{d}}}^{\text{il}} + \; \mathsf{m_{\tilde{d}}}^{\text{il}} \, \mathsf{m_{\tilde{d}}}^{\text{il}} \, \mathsf{m_{\tilde{d}}}^{\text{il}} + \; \mathsf{m_{\tilde{d}}}^{\text{il}} \, \mathsf{m_{\tilde{d}}}^
\widetilde{\mu} \; y_{d}^{\; \text{pi2}} \; y_{u}^{\; \text{ilr}} \; \left( - \, s_{\gamma} \; \overline{a_{u}}^{\text{pr}} + \widetilde{\mu} \; c_{\gamma} \; \overline{y_{u}}^{\text{pr}} \right) \; \mathsf{LF}_{1,1,1,0} \left[ \, \mathsf{m}_{\tilde{\mathsf{q}}}^{\; p}, \; \mathsf{m}_{\tilde{\mathsf{u}}}^{\; r}, \; \widetilde{\mu} \, \right] \; + \; \widetilde{\mu} \; \mathsf{m}_{\tilde{\mathsf{q}}}^{\; p}, \; \mathsf{m}_{\tilde{\mathsf{u}}}^{\; r}, \; \widetilde{\mu} \, \right] \; + \; \widetilde{\mu} \; \mathsf{m}_{\tilde{\mathsf{q}}}^{\; p}, \; \mathsf{m}_{\tilde{\mathsf{u}}}^{\; r}, \; \widetilde{\mu} \, \right] \; + \; \widetilde{\mu} \; \mathsf{m}_{\tilde{\mathsf{q}}}^{\; p}, \; \mathsf{m}_{\tilde{\mathsf{u}}}^{\; r}, \; \widetilde{\mu} \, \right] \; + \; \widetilde{\mu} \; \mathsf{m}_{\tilde{\mathsf{q}}}^{\; p}, \; \mathsf{m}_{\tilde{\mathsf{u}}}^{\; p}, \; \mathsf{m}_{\tilde{\mathsf{u}}}^
                                                                 \mathbf{m}_{H}^{2}\,\widetilde{\boldsymbol{\mu}}\,\,\mathbf{y_{d}}^{\text{pi2}}\,\,\mathbf{y_{u}}^{\text{ilr}}\,\left(\mathbf{s_{\gamma}}\,\,\overline{\mathbf{a_{u}}}^{\text{pr}}-\widetilde{\boldsymbol{\mu}}\,\,\mathbf{c_{\gamma}}\,\,\overline{\mathbf{y_{u}}}^{\text{pr}}\right)\,\,\mathsf{LF_{2,1,1,0}}\left[\mathbf{m_{\tilde{q}}}^{\text{p}},\,\,\mathbf{m_{\tilde{u}}}^{\text{r}},\,\,\widetilde{\boldsymbol{\mu}}\right]\,+\,\,\mathbf{m_{\tilde{u}}}^{\text{pr}}\,\,\mathbf{m_{\tilde{u}}}^{\text{pr}},\,\,\mathbf{m_{\tilde{u}}}^{\text{pr}},\,\,\mathbf{m_{\tilde{u}}}^{\text{pr}},\,\,\mathbf{m_{\tilde{u}}}^{\text{pr}},\,\,\mathbf{m_{\tilde{u}}}^{\text{pr}},\,\,\mathbf{m_{\tilde{u}}}^{\text{pr}},\,\,\mathbf{m_{\tilde{u}}}^{\text{pr}},\,\,\mathbf{m_{\tilde{u}}}^{\text{pr}},\,\,\mathbf{m_{\tilde{u}}}^{\text{pr}},\,\,\mathbf{m_{\tilde{u}}}^{\text{pr}},\,\,\mathbf{m_{\tilde{u}}}^{\text{pr}},\,\,\mathbf{m_{\tilde{u}}}^{\text{pr}},\,\,\mathbf{m_{\tilde{u}}}^{\text{pr}},\,\,\mathbf{m_{\tilde{u}}}^{\text{pr}},\,\,\mathbf{m_{\tilde{u}}}^{\text{pr}},\,\,\mathbf{m_{\tilde{u}}}^{\text{pr}},\,\,\mathbf{m_{\tilde{u}}}^{\text{pr}},\,\,\mathbf{m_{\tilde{u}}}^{\text{pr}},\,\,\mathbf{m_{\tilde{u}}}^{\text{pr}},\,\,\mathbf{m_{\tilde{u}}}^{\text{pr}},\,\,\mathbf{m_{\tilde{u}}}^{\text{pr}},\,\,\mathbf{m_{\tilde{u}}}^{\text{pr}},\,\,\mathbf{m_{\tilde{u}}}^{\text{pr}},\,\,\mathbf{m_{\tilde{u}}}^{\text{pr}},\,\,\mathbf{m_{\tilde{u}}}^{\text{pr}},\,\,\mathbf{m_{\tilde{u}}}^{\text{pr}},\,\,\mathbf{m_{\tilde{u}}}^{\text{pr}},\,\,\mathbf{m_{\tilde{u}}}^{\text{pr}},\,\,\mathbf{m_{\tilde{u}}}^{\text{pr}},\,\,\mathbf{m_{\tilde{u}}}^{\text{pr}},\,\,\mathbf{m_{\tilde{u}}}^{\text{pr}},\,\,\mathbf{m_{\tilde{u}}}^{\text{pr}},\,\,\mathbf{m_{\tilde{u}}}^{\text{pr}},\,\,\mathbf{m_{\tilde{u}}}^{\text{pr}},\,\,\mathbf{m_{\tilde{u}}}^{\text{pr}},\,\,\mathbf{m_{\tilde{u}}}^{\text{pr}},\,\,\mathbf{m_{\tilde{u}}}^{\text{pr}},\,\,\mathbf{m_{\tilde{u}}}^{\text{pr}},\,\,\mathbf{m_{\tilde{u}}}^{\text{pr}},\,\,\mathbf{m_{\tilde{u}}}^{\text{pr}},\,\,\mathbf{m_{\tilde{u}}}^{\text{pr}},\,\,\mathbf{m_{\tilde{u}}}^{\text{pr}},\,\,\mathbf{m_{\tilde{u}}}^{\text{pr}},\,\,\mathbf{m_{\tilde{u}}}^{\text{pr}},\,\,\mathbf{m_{\tilde{u}}}^{\text{pr}},\,\,\mathbf{m_{\tilde{u}}}^{\text{pr}},\,\,\mathbf{m_{\tilde{u}}}^{\text{pr}},\,\,\mathbf{m_{\tilde{u}}}^{\text{pr}},\,\,\mathbf{m_{\tilde{u}}}^{\text{pr}},\,\,\mathbf{m_{\tilde{u}}}^{\text{pr}},\,\,\mathbf{m_{\tilde{u}}}^{\text{pr}},\,\,\mathbf{m_{\tilde{u}}}^{\text{pr}},\,\,\mathbf{m_{\tilde{u}}}^{\text{pr}},\,\,\mathbf{m_{\tilde{u}}}^{\text{pr}},\,\,\mathbf{m_{\tilde{u}}}^{\text{pr}},\,\,\mathbf{m_{\tilde{u}}}^{\text{pr}},\,\,\mathbf{m_{\tilde{u}}}^{\text{pr}},\,\,\mathbf{m_{\tilde{u}}}^{\text{pr}},\,\,\mathbf{m_{\tilde{u}}}^{\text{pr}},\,\,\mathbf{m_{\tilde{u}}}^{\text{pr}},\,\,\mathbf{m_{\tilde{u}}}^{\text{pr}},\,\,\mathbf{m_{\tilde{u}}}^{\text{pr}},\,\,\mathbf{m_{\tilde{u}}}^{\text{pr}},\,\,\mathbf{m_{\tilde{u}}}^{\text{pr}},\,\,\mathbf{m_{\tilde{u}}}^{\text{pr}},\,\,\mathbf{m_{\tilde{u}}}^{\text{pr}},\,\,\mathbf{m_{\tilde{u}}}^{\text{pr}},\,\,\mathbf{m_{\tilde{u}}}^{\text{pr}},\,\,\mathbf{m_{\tilde{u}}}^{\text{pr}},\,\,\mathbf{m_{\tilde{u}}}^{\text{pr}},\,\,\mathbf{m_{\tilde{u}}}^{\text{pr}},\,\,\mathbf{m_{\tilde{u}}}^{\text{pr}},\,\,\mathbf{m_{\tilde{u}}}^{\text{pr}},\,\,\mathbf{m_{\tilde{u}}}^{\text{pr}},\,\,\mathbf{m_{\tilde{u}}}^{\text{pr}},\,\,\mathbf{m_{\tilde{u}}}^{\text{pr}},\,\,\mathbf{m_{\tilde{u}}}^{\text{pr}},\,\,\mathbf{m_{\tilde{u}}}^{\text{pr}},\,\,\mathbf{m_{\tilde{u}}}^{\text{pr}},\,\,\mathbf{m_{\tilde{u}}}^{\text{pr}},\,\,\mathbf{m_{\tilde{u}}}^{\text{pr}},\,\,\mathbf{m_{\tilde{u}}}^{\text{pr}},\,\,\mathbf{m_{\tilde{u}}}^{\text
                                                                 \mathbf{m_{H}^{2}}\,\widetilde{\boldsymbol{\mu}}\,\,\mathbf{y_{d}}^{\text{pi2}}\,\,\mathbf{y_{u}}^{\text{ilr}}\,\left(-\,\mathbf{s_{\gamma}}\,\,\overline{\mathbf{a_{u}}}^{\text{pr}}\,+\,\widetilde{\boldsymbol{\mu}}\,\,\mathbf{c_{\gamma}}\,\,\overline{\mathbf{y_{u}}}^{\text{pr}}\right)\,\,\mathbf{LF_{3,1,1,-1}}\!\left[\,\mathbf{m_{\tilde{q}}}^{\text{p}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{r}}\,,\,\,\widetilde{\boldsymbol{\mu}}\,\right]\,+\,\mathbf{m_{\tilde{u}}^{r}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{p}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{p}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{p}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{p}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{p}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{p}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{p}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{p}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{p}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{p}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{p}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{p}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{p}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{p}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{p}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{p}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{p}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{p}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{p}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{p}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{p}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{p}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{p}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{p}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{p}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{p}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{p}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{p}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{p}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{p}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{p}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{p}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{p}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{p}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{p}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{p}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{p}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{p}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{p}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{p}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{p}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{p}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{p}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{p}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{p}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{p}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{p}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{p}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{p}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{p}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{p}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{p}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{p}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{p}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{p}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{p}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{p}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{p}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{p}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{p}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{p}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{p}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{p}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{p}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{p}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{p}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{p}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{p}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{p}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{p}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{p}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{p}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{p}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{p}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{p}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{p}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{p}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{p}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{p}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{p}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{p}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{p}}\,,\,\,\mathbf{m_{\tilde{
                                                                 \mathbf{m}_{H}^{2}\,\widetilde{\boldsymbol{\mu}}\,\,\mathbf{y_{d}}^{\text{pi2}}\,\,\mathbf{y_{u}}^{\text{ilr}}\,\left(-\,\mathbf{s_{\gamma}}\,\,\overline{\mathbf{a_{u}}}^{\text{pr}}\,+\,\widetilde{\boldsymbol{\mu}}\,\,\mathbf{c_{\gamma}}\,\,\overline{\mathbf{y_{u}}}^{\text{pr}}\right)\,\,\mathbf{LF_{2,2,1,-1}}\!\left[\,\mathbf{m_{\tilde{q}}}^{\text{-}p}\,,\,\,\widetilde{\boldsymbol{\mu}}\,,\,\,\mathbf{m_{\tilde{u}}}^{\text{-}r}\,\right]\,+\,\mathbf{m_{\tilde{u}}}^{\text{-}p}
                                                                                  \mathsf{m_1} \; \mathsf{m_2}^2 \; \mathsf{g_1}^2 \; \left( \mathsf{c_{\scriptscriptstyle Y}} \; \mathsf{a_d}^{\texttt{ili2}} - \mathsf{s_{\scriptscriptstyle Y}} \; \tilde{\mu} \; \mathsf{y_d}^{\texttt{ili2}} \right) \; \mathsf{LF_{2,1,1,0}} \left[ \mathsf{m_{\bar{q}}}^{\texttt{il}}, \; \mathsf{m_1}, \; \mathsf{m_{\bar{d}}}^{\texttt{il}} \right] \; + \; \mathsf{m_1}^{\mathsf{il}} \; \mathsf{m_2}^{\mathsf{il}} \; \mathsf{m_2}^{\mathsf{il}} \; \mathsf{m_2}^{\mathsf{il}} \; \mathsf{m_3}^{\mathsf{il}} \; \mathsf{
                                                                                       \mathsf{m_1} \; \mathsf{m_H^2} \; \mathsf{g_1}^2 \; \left( - \, c_{\gamma} \; a_d^{\, \text{ili2}} + \, s_{\gamma} \; \widetilde{\mu} \; \mathsf{y_d}^{\, \text{ili2}} \right) \; \mathsf{LF_{3,1,1,-1}} \big[ \, \mathsf{m_{\tilde{q}}}^{\, \text{il}} \, , \; \mathsf{m_1} \, , \; \mathsf{m_{\tilde{d}}}^{\, \text{il}} \, \big] \; + \; \mathsf{m_{\tilde{q}}}^{\, \text{il}} \, , \; \mathsf{m_2}^{\, \text{il}} \, , \; \mathsf{m_3}^{\, \text{il}} \, , 
                                                            \text{m}_{3} \,\, \text{m}_{\text{H}}^{2} \,\, \text{g}_{\text{3}}^{\,\, 2} \,\, \left(\, \text{c}_{\scriptscriptstyle Y} \,\, \text{a}_{\text{d}}^{\,\, \text{iii} \, 2} \, - \, \text{s}_{\scriptscriptstyle Y} \,\, \widetilde{\mu} \,\, \text{y}_{\text{d}}^{\,\, \text{iii} \, 2} \,\right) \,\, \text{LF}_{3,1,1,-1} \big[\, \text{m}_{\tilde{\text{q}}}^{\,\, \text{ii}} \,, \,\, \text{m}_{3} \,, \,\, \text{m}_{\tilde{\text{d}}}^{\,\, \text{i}} \,^{2} \,\big] \,\, + \,\, \text{The support of the support of
                                                                 \mathbf{m}_{H}^{2}\,\widetilde{\mu}\,\,\mathbf{y_{d}}^{\text{pi2}}\,\,\mathbf{y_{u}}^{\text{ilr}}\,\left(\mathbf{s_{\gamma}}\,\,\overline{\mathbf{a_{u}}}^{\text{pr}}\,-\,\widetilde{\mu}\,\,\mathbf{c_{\gamma}}\,\,\overline{\mathbf{y_{u}}}^{\text{pr}}\right)\,\,\mathbf{LF_{2,1,1,0}}\left[\mathbf{m_{\tilde{u}}}^{\text{r}}\,,\,\,\mathbf{m_{\tilde{q}}}^{\text{p}}\,,\,\,\widetilde{\mu}\,\right]\,+\,\mathbf{F_{2,1,1,0}}\left[\mathbf{m_{\tilde{u}}}^{\text{r}}\,,\,\,\mathbf{m_{\tilde{q}}}^{\text{p}}\,,\,\,\widetilde{\mu}\,\right]\,+\,\mathbf{F_{2,1,1,0}}\left[\mathbf{m_{\tilde{u}}}^{\text{r}}\,,\,\,\mathbf{m_{\tilde{q}}}^{\text{p}}\,,\,\,\widetilde{\mu}\,\right]\,+\,\mathbf{F_{2,1,1,0}}\left[\mathbf{m_{\tilde{u}}}^{\text{r}}\,,\,\,\mathbf{m_{\tilde{q}}}^{\text{p}}\,,\,\,\widetilde{\mu}\,\right]\,+\,\mathbf{F_{2,1,1,0}}\left[\mathbf{m_{\tilde{u}}}^{\text{r}}\,,\,\,\mathbf{m_{\tilde{q}}}^{\text{p}}\,,\,\,\widetilde{\mu}\,\right]\,+\,\mathbf{F_{2,1,1,0}}\left[\mathbf{m_{\tilde{u}}}^{\text{r}}\,,\,\,\mathbf{m_{\tilde{q}}}^{\text{p}}\,,\,\,\widetilde{\mu}\,\right]\,+\,\mathbf{F_{2,1,1,0}}\left[\mathbf{m_{\tilde{u}}}^{\text{r}}\,,\,\,\mathbf{m_{\tilde{q}}}^{\text{p}}\,,\,\,\widetilde{\mu}\,\right]
                                                                 \mathbf{m}_{H}^{2}\,\widetilde{\boldsymbol{\mu}}\,\,\mathbf{y_{d}}^{\text{pi2}}\,\,\mathbf{y_{u}}^{\text{ilr}}\,\left(-\,\mathbf{s_{\gamma}}\,\,\overline{\mathbf{a_{u}}}^{\text{pr}}\,+\,\widetilde{\boldsymbol{\mu}}\,\,\mathbf{c_{\gamma}}\,\,\overline{\mathbf{y_{u}}}^{\text{pr}}\right)\,\,\mathbf{LF_{3,1,1,-1}}\!\left[\mathbf{m_{\bar{u}}}^{\text{r}}\,,\,\,\mathbf{m_{\bar{q}}}^{\text{p}}\,,\,\,\widetilde{\boldsymbol{\mu}}\right]\,+\,\mathbf{m_{\bar{u}}}^{\text{pr}}\,,\,\,\mathbf{m_{\bar{q}}}^{\text{p}}\,,\,\,\mathbf{m_{\bar{q}}}^{\text{p}}\,,\,\,\mathbf{m_{\bar{q}}}^{\text{p}}\,,\,\,\mathbf{m_{\bar{q}}}^{\text{p}}\,,\,\,\mathbf{m_{\bar{q}}}^{\text{p}}\,,\,\,\mathbf{m_{\bar{q}}}^{\text{p}}\,,\,\,\mathbf{m_{\bar{q}}}^{\text{p}}\,,\,\,\mathbf{m_{\bar{q}}}^{\text{p}}\,,\,\,\mathbf{m_{\bar{q}}}^{\text{p}}\,,\,\,\mathbf{m_{\bar{q}}}^{\text{p}}\,,\,\,\mathbf{m_{\bar{q}}}^{\text{p}}\,,\,\,\mathbf{m_{\bar{q}}}^{\text{p}}\,,\,\,\mathbf{m_{\bar{q}}}^{\text{p}}\,,\,\,\mathbf{m_{\bar{q}}}^{\text{p}}\,,\,\,\mathbf{m_{\bar{q}}}^{\text{p}}\,,\,\,\mathbf{m_{\bar{q}}}^{\text{p}}\,,\,\,\mathbf{m_{\bar{q}}}^{\text{p}}\,,\,\,\mathbf{m_{\bar{q}}}^{\text{p}}\,,\,\,\mathbf{m_{\bar{q}}}^{\text{p}}\,,\,\,\mathbf{m_{\bar{q}}}^{\text{p}}\,,\,\,\mathbf{m_{\bar{q}}}^{\text{p}}\,,\,\,\mathbf{m_{\bar{q}}}^{\text{p}}\,,\,\,\mathbf{m_{\bar{q}}}^{\text{p}}\,,\,\,\mathbf{m_{\bar{q}}}^{\text{p}}\,,\,\,\mathbf{m_{\bar{q}}}^{\text{p}}\,,\,\,\mathbf{m_{\bar{q}}}^{\text{p}}\,,\,\,\mathbf{m_{\bar{q}}}^{\text{p}}\,,\,\,\mathbf{m_{\bar{q}}}^{\text{p}}\,,\,\,\mathbf{m_{\bar{q}}}^{\text{p}}\,,\,\,\mathbf{m_{\bar{q}}}^{\text{p}}\,,\,\,\mathbf{m_{\bar{q}}}^{\text{p}}\,,\,\,\mathbf{m_{\bar{q}}}^{\text{p}}\,,\,\,\mathbf{m_{\bar{q}}}^{\text{p}}\,,\,\,\mathbf{m_{\bar{q}}}^{\text{p}}\,,\,\,\mathbf{m_{\bar{q}}}^{\text{p}}\,,\,\,\mathbf{m_{\bar{q}}}^{\text{p}}\,,\,\,\mathbf{m_{\bar{q}}}^{\text{p}}\,,\,\,\mathbf{m_{\bar{q}}}^{\text{p}}\,,\,\,\mathbf{m_{\bar{q}}}^{\text{p}}\,,\,\,\mathbf{m_{\bar{q}}}^{\text{p}}\,,\,\,\mathbf{m_{\bar{q}}}^{\text{p}}\,,\,\,\mathbf{m_{\bar{q}}}^{\text{p}}\,,\,\,\mathbf{m_{\bar{q}}}^{\text{p}}\,,\,\,\mathbf{m_{\bar{q}}}^{\text{p}}\,,\,\,\mathbf{m_{\bar{q}}}^{\text{p}}\,,\,\,\mathbf{m_{\bar{q}}}^{\text{p}}\,,\,\,\mathbf{m_{\bar{q}}}^{\text{p}}\,,\,\,\mathbf{m_{\bar{q}}}^{\text{p}}\,,\,\,\mathbf{m_{\bar{q}}}^{\text{p}}\,,\,\,\mathbf{m_{\bar{q}}}^{\text{p}}\,,\,\,\mathbf{m_{\bar{q}}}^{\text{p}}\,,\,\,\mathbf{m_{\bar{q}}}^{\text{p}}\,,\,\,\mathbf{m_{\bar{q}}}^{\text{p}}\,,\,\,\mathbf{m_{\bar{q}}}^{\text{p}}\,,\,\,\mathbf{m_{\bar{q}}}^{\text{p}}\,,\,\,\mathbf{m_{\bar{q}}}^{\text{p}}\,,\,\,\mathbf{m_{\bar{q}}}^{\text{p}}\,,\,\,\mathbf{m_{\bar{q}}}^{\text{p}}\,,\,\,\mathbf{m_{\bar{q}}}^{\text{p}}\,,\,\,\mathbf{m_{\bar{q}}}^{\text{p}}\,,\,\,\mathbf{m_{\bar{q}}}^{\text{p}}\,,\,\,\mathbf{m_{\bar{q}}}^{\text{p}}\,,\,\,\mathbf{m_{\bar{q}}}^{\text{p}}\,,\,\,\mathbf{m_{\bar{q}}}^{\text{p}}\,,\,\,\mathbf{m_{\bar{q}}}^{\text{p}}\,,\,\,\mathbf{m_{\bar{q}}}^{\text{p}}\,,\,\,\mathbf{m_{\bar{q}}}^{\text{p}}\,,\,\,\mathbf{m_{\bar{q}}}^{\text{p}}\,,\,\,\mathbf{m_{\bar{q}}}^{\text{p}}\,,\,\,\mathbf{m_{\bar{q}}}^{\text{p}}\,,\,\,\mathbf{m_{\bar{q}}}^{\text{p}}\,,\,\,\mathbf{m_{\bar{q}}}^{\text{p}}\,,\,\,\mathbf{m_{\bar{q}}}^{\text{p}}\,,\,\,\mathbf{m_{\bar{q}}}^{\text{p}}\,,\,\,\mathbf{m_{\bar{q}}}^{\text{p}}\,,\,\,\mathbf{m_{\bar{q}}}^{\text{p}}\,,\,\,\mathbf{m_{\bar{q}}}^{\text{p}}\,,\,\,\mathbf{m_{\bar{q}}}^{\text{p}}\,,\,\,\mathbf{m_{\bar{q}}}^{\text{p}}\,,\,\,\mathbf{m_{\bar{q}}}^{\text{p}}\,,\,\,\mathbf{m_{\bar{q}}}^{\text{p}}\,,\,\,\mathbf{m_{\bar{q}}}^{\text{p}}\,,\,\,\mathbf{m_{
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 $\mathbf{m}_{H}^{2}\,\widetilde{\boldsymbol{\mu}}\,\,\mathbf{y_{d}}^{\text{pi2}}\,\,\mathbf{y_{u}}^{\text{iir}}\,\left(-\,\mathbf{s_{Y}}\,\,\overline{\mathbf{a_{u}}}^{\text{pr}}+\widetilde{\boldsymbol{\mu}}\,\,\mathbf{c_{Y}}\,\,\overline{\mathbf{y_{u}}}^{\text{pr}}\right)\,\,\mathbf{LF_{2,2,1,-1}}\!\left[\mathbf{m_{\tilde{u}}}^{\text{r}}\,,\,\,\widetilde{\boldsymbol{\mu}}\,,\,\,\mathbf{m_{\tilde{q}}}^{\text{p}}\right]$ 

 $c_{\gamma}\; y_{d}^{\;i\,1\dot{1}\,2} \; + \; \dot{\hbar}\; \left(\frac{1}{144}\; c_{\gamma}\; \frac{1}{m_{0}^{\;2}}\; \left(m_{\Phi}^{\;2}\; y_{d}^{\;i\,1\dot{1}\,2}\; \left(96\; g_{3}^{\;2} \; + \; 27\; g_{2}^{\;2}\; \left(1 \; + \; 2\; c_{\gamma}^{\;2} \; + \; 2\; s_{\gamma}^{\;2}\right) \; + \; g_{1}^{\;2}\; \left(5 \; + \; 18\; c_{\gamma}^{\;2} \; + \; 18\; s_{\gamma}^{\;2}\right)\right) \; + \; g_{1}^{\;2}\; \left(1 \; + \; 2\; c_{\gamma}^{\;2} \; + \; 2\; s_{\gamma}^{\;2}\right) \; + \; g_{1}^{\;2}\; \left(5 \; + \; 18\; c_{\gamma}^{\;2} \; + \; 18\; s_{\gamma}^{\;2}\right) \; + \; g_{1}^{\;2}\; \left(1 \; + \; 2\; c_{\gamma}^{\;2} \; + \; 2\; s_{\gamma}^{\;2}\right) \; + \; g_{1}^{\;2}\; \left(5 \; + \; 18\; c_{\gamma}^{\;2} \; + \; 18\; s_{\gamma}^{\;2}\right) \; + \; g_{1}^{\;2}\; \left(1 \; + \; 2\; c_{\gamma}^{\;2} \; + \; 2\; s_{\gamma}^{\;2}\right) \; + \; g_{1}^{\;2}\; \left(5 \; + \; 18\; c_{\gamma}^{\;2} \; + \; 18\; s_{\gamma}^{\;2}\right) \; + \; g_{1}^{\;2}\; \left(1 \; + \; 2\; c_{\gamma}^{\;2} \; + \; 2\; s_{\gamma}^{\;2}\right) \; + \; g_{1}^{\;2}\; \left(1 \; + \; 2\; c_{\gamma}^{\;2} \; + \; 2\; s_{\gamma}^{\;2}\right) \; + \; g_{1}^{\;2}\; \left(1 \; + \; 2\; c_{\gamma}^{\;2} \; + \; 2\; s_{\gamma}^{\;2}\right) \; + \; g_{1}^{\;2}\; \left(1 \; + \; 2\; c_{\gamma}^{\;2} \; + \; 2\; s_{\gamma}^{\;2}\right) \; + \; g_{1}^{\;2}\; \left(1 \; + \; 2\; c_{\gamma}^{\;2} \; + \; 2\; s_{\gamma}^{\;2}\right) \; + \; g_{1}^{\;2}\; \left(1 \; + \; 2\; c_{\gamma}^{\;2} \; + \; 2\; s_{\gamma}^{\;2}\right) \; + \; g_{1}^{\;2}\; \left(1 \; + \; 2\; c_{\gamma}^{\;2} \; + \; 2\; s_{\gamma}^{\;2}\right) \; + \; g_{1}^{\;2}\; \left(1 \; + \; 2\; c_{\gamma}^{\;2} \; + \; 2\; s_{\gamma}^{\;2}\right) \; + \; g_{1}^{\;2}\; \left(1 \; + \; 2\; c_{\gamma}^{\;2} \; + \; 2\; s_{\gamma}^{\;2}\right) \; + \; g_{1}^{\;2}\; \left(1 \; + \; 2\; c_{\gamma}^{\;2} \; + \; 2\; s_{\gamma}^{\;2}\right) \; + \; g_{1}^{\;2}\; \left(1 \; + \; 2\; c_{\gamma}^{\;2} \; + \; 2\; s_{\gamma}^{\;2}\right) \; + \; g_{1}^{\;2}\; \left(1 \; + \; 2\; c_{\gamma}^{\;2} \; + \; 2\; s_{\gamma}^{\;2}\right) \; + \; g_{1}^{\;2}\; \left(1 \; + \; 2\; c_{\gamma}^{\;2} \; + \; 2\; s_{\gamma}^{\;2}\right) \; + \; g_{1}^{\;2}\; \left(1 \; + \; 2\; c_{\gamma}^{\;2} \; + \; 2\; s_{\gamma}^{\;2}\right) \; + \; g_{1}^{\;2}\; \left(1 \; + \; 2\; c_{\gamma}^{\;2} \; + \; 2\; s_{\gamma}^{\;2}\right) \; + \; g_{1}^{\;2}\; \left(1 \; + \; 2\; c_{\gamma}^{\;2} \; + \; 2\; s_{\gamma}^{\;2}\right) \; + \; g_{1}^{\;2}\; \left(1 \; + \; 2\; c_{\gamma}^{\;2} \; + \; 2\; s_{\gamma}^{\;2}\right) \; + \; g_{1}^{\;2}\; \left(1 \; + \; 2\; c_{\gamma}^{\;2} \; + \; 2\; s_{\gamma}^{\;2}\right) \; + \; g_{1}^{\;2}\; \left(1 \; + \; 2\; c_{\gamma}^{\;2} \; + \; 2\; s_{\gamma}^{\;2}\right) \; + \; g_{1}^{\;2}\; \left(1 \; + \; 2\; c_{\gamma}^{\;2} \; + \; 2\; s_{\gamma}^{\;2}\right) \; + \; g_{1}^{\;2}\; \left(1 \; + \; 2\; c_{\gamma}^{\;2} \; + \; 2\; c_{\gamma}^{\;2}\right) \; + \; g_{1}^{\;2}\; \left(1 \; + \; 2\; c_{\gamma}^{\;2} \; + \;$ 

 $Y_d^{i1}_{-i2} \rightarrow$