$$C_{qu}^{(8)\,i1\_i2\_i3\_i4\_} \to -\frac{1}{m_\Phi^2} c_\gamma^2 \overline{y_u}^{i2i3} y_u^{i1i4} +$$
$$\hbar\Big(-\frac{1}{72}\frac{1}{m_\Phi^2}\Big(c_\gamma^2\Big(-9\overline{y_d}^{pr}y_d^{i1r}\overline{y_u}^{i2i3}y_u^{pi4}(-1+s_\gamma^2)+y_u^{i1i4}\big(\overline{y_u}^{i2i3}(17g_1^2+27g_2^2+96g_3^2)+$$
$$9\overline{y_u}^{ri3}\big(-\overline{y_d}^{i2p}y_d^{rp}(-1+s_\gamma^2)+3\overline{y_u}^{i2p}y_u^{rp}(1+c_\gamma^2)\big)\big)+$$
$$27\overline{y_u}^{pr}\overline{y_u}^{i2i3}\big(y_u^{pi4}y_u^{i1r}(1+c_\gamma^2)-8s_\gamma^2y_u^{pr}y_u^{i1i4}\big)+16g_3^2\overline{y_u}^{pi3}y_u^{pi4}\delta_{i1i2}\Big)+$$
$$8g_3^2\big(s_\gamma^2\overline{y_d}^{i2p}y_d^{i1p}+c_\gamma^2\overline{y_u}^{i2p}y_u^{i1p}\big)\delta_{i3i4}\Big)+\frac{2}{3}g_3^4 LF_{3,0}[m_3]\delta_{i1i2}\delta_{i3i4}+$$
$$g_3^4 LF_{4,-1}[m_3]\delta_{i1i2}\delta_{i3i4}-\frac{16}{15}g_3^4 LF_{5,-2}[m_3]\delta_{i1i2}\delta_{i3i4}-$$
$$\frac12\sum_p c_\gamma g_1^2\frac{1}{m_\Phi^4}\overline{y_u}^{i2i3}y_u^{i1i4}(c_{2\gamma}c_\gamma-2s_{2\gamma}s_\gamma)LF_{1,0}[m_{\tilde d}^p]+$$
$$\frac29\sum_p g_3^4 LF_{3,0}[m_{\tilde d}^p]\delta_{i1i2}\delta_{i3i4}-\frac{5}{12}\sum_p g_3^4 LF_{4,-1}[m_{\tilde d}^p]\delta_{i1i2}\delta_{i3i4}+$$
$$\frac{8}{45}\sum_p g_3^4 LF_{5,-2}[m_{\tilde d}^p]\delta_{i1i2}\delta_{i3i4}-$$
$$3s_\gamma c_\gamma\frac{1}{m_\Phi^4}\overline{y_d}^{pr}y_d^{pr}\overline{y_u}^{i2i3}y_u^{i1i4}(s_{2\gamma}+s_\gamma c_\gamma)LF_{1,0}[m_{\tilde d}^r]-$$
$$\frac12\sum_p c_\gamma g_1^2\frac{1}{m_\Phi^4}\overline{y_u}^{i2i3}y_u^{i1i4}(c_{2\gamma}c_\gamma-2s_{2\gamma}s_\gamma)LF_{1,0}[m_{\tilde e}^p]-$$
$$s_\gamma c_\gamma\frac{1}{m_\Phi^4}\overline{y_e}^{pr}y_e^{pr}\overline{y_u}^{i2i3}y_u^{i1i4}(s_{2\gamma}+s_\gamma c_\gamma)LF_{1,0}[m_{\tilde e}^r]+$$
$$\frac12 c_\gamma\frac{1}{m_\Phi^4}\overline{y_u}^{i2i3}y_u^{i1i4}\big(-2s_\gamma\overline{y_e}^{pr}y_e^{pr}(s_{2\gamma}+s_\gamma c_\gamma)+\sum_p g_1^2(c_{2\gamma}c_\gamma-2s_{2\gamma}s_\gamma)\big)LF_{1,0}[m_{\tilde l}^p]-$$
$$\frac12 c_\gamma\frac{1}{m_\Phi^4}\overline{y_u}^{i2i3}y_u^{i1i4}$$
$$\big(6s_\gamma\overline{y_d}^{pr}y_d^{pr}(s_{2\gamma}+s_\gamma c_\gamma)+6\overline{y_u}^{pr}y_u^{pr}(c_\gamma^3-s_{2\gamma}s_\gamma)+\sum_p g_1^2(c_{2\gamma}c_\gamma-2s_{2\gamma}s_\gamma)\big)$$
$$LF_{1,0}[m_{\tilde q}^p]+\frac49\sum_p g_3^4 LF_{3,0}[m_{\tilde q}^p]\delta_{i1i2}\delta_{i3i4}-$$
$$\frac56\sum_p g_3^4 LF_{4,-1}[m_{\tilde q}^p]\delta_{i1i2}\delta_{i3i4}+\frac{16}{45}\sum_p g_3^4 LF_{5,-2}[m_{\tilde q}^p]\delta_{i1i2}\delta_{i3i4}+$$
$$\sum_p c_\gamma g_1^2\frac{1}{m_\Phi^4}\overline{y_u}^{i2i3}y_u^{i1i4}(c_{2\gamma}c_\gamma-2s_{2\gamma}s_\gamma)LF_{1,0}[m_{\tilde u}^p]+\frac29\sum_p g_3^4 LF_{3,0}[m_{\tilde u}^p]\delta_{i1i2}\delta_{i3i4}-$$
$$\frac{5}{12}\sum_p g_3^4 LF_{4,-1}[m_{\tilde u}^p]\delta_{i1i2}\delta_{i3i4}+\frac{8}{45}\sum_p g_3^4 LF_{5,-2}[m_{\tilde u}^p]\delta_{i1i2}\delta_{i3i4}-$$
$$3c_\gamma\frac{1}{m_\Phi^4}\overline{y_u}^{pr}\overline{y_u}^{i2i3}y_u^{pr}y_u^{i1i4}(c_\gamma^3-s_{2\gamma}s_\gamma)LF_{1,0}[m_{\tilde u}^r]+$$
$$\frac14 c_\gamma\frac{1}{m_\Phi^4}\overline{y_u}^{i2i3}y_u^{i1i4}\big(c_\gamma\big(g_1^2(1-3c_{2\gamma}^2)-3g_2^2(-1+c_{2\gamma}^2)\big)+3s_{4\gamma}s_\gamma(g_1^2+g_2^2)\big)$$
$$LF_{1,0}[m_\Phi]+\frac14\frac{1}{m_\Phi^2}c_\gamma^2\big(3\overline{y_u}^{i2i3}y_u^{pi4}(-s_\gamma^2\overline{y_d}^{pr}y_d^{i1r}+c_\gamma^2\overline{y_u}^{pr}y_u^{i1r})-$$
$$y_u^{i1i4}\big(2\overline{y_u}^{i2i3}(g_1^2+3g_2^2)+3\overline{y_u}^{ri3}(s_\gamma^2\overline{y_d}^{i2p}y_d^{rp}-c_\gamma^2\overline{y_u}^{i2p}y_u^{rp})\big)\big)LF_{1,1}[m_\Phi]+$$
$$\frac{1}{12}\Big(c_\gamma^2\big(6s_\gamma^2\overline{y_d}^{pr}y_d^{i1r}\overline{y_u}^{i2i3}y_u^{pi4}+3y_u^{i1i4}(\overline{y_u}^{i2i3}(g_1^2+3g_2^2)+2s_\gamma^2\overline{y_d}^{i2p}y_d^{rp}\overline{y_u}^{ri3})-$$
$$8g_3^2\overline{y_u}^{pi3}y_u^{pi4}\delta_{i1i2}\big)-4g_3^2(s_\gamma^2\overline{y_d}^{i2p}y_d^{i1p}+c_\gamma^2\overline{y_u}^{i2p}y_u^{i1p})\delta_{i3i4}\Big)LF_{1,2}[m_\Phi]+$$
$$\frac{1}{36}g_1^2\frac{1}{m_\Phi^2}c_\gamma^2\overline{y_u}^{i2i3}y_u^{i1i4}LF_{1,1,0}[m_1,m_{\tilde q}^{i1}]-\frac{1}{72}g_1^2\frac{1}{m_\Phi^2}c_\gamma^2\overline{y_u}^{i2i3}y_u^{i1i4}LF_{2,1,-1}[m_1,m_{\tilde q}^{i1}]+$$
$$\frac{1}{36}g_1^2\frac{1}{m_\Phi^2}c_\gamma^2\overline{y_u}^{i2i3}y_u^{i1i4}LF_{1,1,0}[m_1,m_{\tilde q}^{i2}]-\frac{1}{72}g_1^2\frac{1}{m_\Phi^2}c_\gamma^2\overline{y_u}^{i2i3}y_u^{i1i4}LF_{2,1,-1}[m_1,m_{\tilde q}^{i2}]+$$
$$\frac{1}{108}g_1^2g_3^2LF_{2,1,0}[m_1,m_{\tilde q}^{i2}]\delta_{i1i2}\delta_{i3i4}+\frac{1}{108}g_1^2g_3^2LF_{2,2,-1}[m_1,m_{\tilde q}^{i2}]\delta_{i1i2}\delta_{i3i4}-$$
$$\frac{1}{54}g_1^2g_3^2LF_{3,1,-1}[m_1,m_{\tilde q}^{i2}]\delta_{i1i2}\delta_{i3i4}+\frac{1}{108}g_1^2g_3^2LF_{4,1,-2}[m_1,m_{\tilde q}^{i2}]\delta_{i1i2}\delta_{i3i4}+$$
$$\frac49 g_1^2\frac{1}{m_\Phi^2}c_\gamma^2\overline{y_u}^{i2i3}y_u^{i1i4}LF_{1,1,0}[m_1,m_{\tilde u}^{i3}]-\frac29 g_1^2\frac{1}{m_\Phi^2}c_\gamma^2\overline{y_u}^{i2i3}y_u^{i1i4}LF_{2,1,-1}[m_1,m_{\tilde u}^{i3}]+$$
$$\frac49 g_1^2\frac{1}{m_\Phi^2}c_\gamma^2\overline{y_u}^{i2i3}y_u^{i1i4}LF_{1,1,0}[m_1,m_{\tilde u}^{i4}]-\frac29 g_1^2\frac{1}{m_\Phi^2}c_\gamma^2\overline{y_u}^{i2i3}y_u^{i1i4}LF_{2,1,-1}[m_1,m_{\tilde u}^{i4}]+$$
$$\frac{4}{27}g_1^2g_3^2LF_{2,1,0}[m_1,m_{\tilde u}^{i4}]\delta_{i1i2}\delta_{i3i4}+\frac{4}{27}g_1^2g_3^2LF_{2,2,-1}[m_1,m_{\tilde u}^{i4}]\delta_{i1i2}\delta_{i3i4}-$$
$$\frac{8}{27}g_1^2g_3^2LF_{3,1,-1}[m_1,m_{\tilde u}^{i4}]\delta_{i1i2}\delta_{i3i4}+\frac{4}{27}g_1^2g_3^2LF_{4,1,-2}[m_1,m_{\tilde u}^{i4}]\delta_{i1i2}\delta_{i3i4}+$$
$$g_1^2\frac{1}{m_\Phi^4}c_\gamma^2\overline{y_u}^{i2i3}y_u^{i1i4}(c_\gamma^2+s_\gamma^2)LF_{1,1,-1}[m_1,\tilde\mu]+$$
$$2m_1s_\gamma\tilde\mu c_\gamma g_1^2\frac{1}{m_\Phi^4}\overline{y_u}^{i2i3}y_u^{i1i4}(-2c_\gamma^2+s_\gamma^2)LF_{1,1,0}[m_1,\tilde\mu]+$$
$$\frac34 g_2^2\frac{1}{m_\Phi^2}c_\gamma^2\overline{y_u}^{i2i3}y_u^{i1i4}LF_{1,1,0}[m_2,m_{\tilde q}^{i1}]-\frac38 g_2^2\frac{1}{m_\Phi^2}c_\gamma^2\overline{y_u}^{i2i3}y_u^{i1i4}LF_{2,1,-1}[m_2,m_{\tilde q}^{i1}]+$$
$$\frac34 g_2^2\frac{1}{m_\Phi^2}c_\gamma^2\overline{y_u}^{i2i3}y_u^{i1i4}LF_{1,1,0}[m_2,m_{\tilde q}^{i2}]-\frac38 g_2^2\frac{1}{m_\Phi^2}c_\gamma^2\overline{y_u}^{i2i3}y_u^{i1i4}LF_{2,1,-1}[m_2,m_{\tilde q}^{i2}]+$$
$$\frac14 g_2^2g_3^2LF_{2,1,0}[m_2,m_{\tilde q}^{i2}]\delta_{i1i2}\delta_{i3i4}+\frac14 g_2^2g_3^2LF_{2,2,-1}[m_2,m_{\tilde q}^{i2}]\delta_{i1i2}\delta_{i3i4}-$$
$$\frac12 g_2^2g_3^2LF_{3,1,-1}[m_2,m_{\tilde q}^{i2}]\delta_{i1i2}\delta_{i3i4}+\frac14 g_2^2g_3^2LF_{4,1,-2}[m_2,m_{\tilde q}^{i2}]\delta_{i1i2}\delta_{i3i4}+$$
$$3g_2^2\frac{1}{m_\Phi^4}c_\gamma^2\overline{y_u}^{i2i3}y_u^{i1i4}(c_\gamma^2+s_\gamma^2)LF_{1,1,-1}[m_2,\tilde\mu]+$$
$$6m_2s_\gamma\tilde\mu c_\gamma g_2^2\frac{1}{m_\Phi^4}\overline{y_u}^{i2i3}y_u^{i1i4}(-2c_\gamma^2+s_\gamma^2)LF_{1,1,0}[m_2,\tilde\mu]+$$
$$\frac43 g_3^2\frac{1}{m_\Phi^2}c_\gamma^2\overline{y_u}^{i2i3}y_u^{i1i4}LF_{1,1,0}[m_3,m_{\tilde q}^{i1}]-\frac23 g_3^2\frac{1}{m_\Phi^2}c_\gamma^2\overline{y_u}^{i2i3}y_u^{i1i4}LF_{2,1,-1}[m_3,m_{\tilde q}^{i1}]+$$
$$\frac43 g_3^2\frac{1}{m_\Phi^2}c_\gamma^2\overline{y_u}^{i2i3}y_u^{i1i4}LF_{1,1,0}[m_3,m_{\tilde q}^{i2}]-\frac23 g_3^2\frac{1}{m_\Phi^2}c_\gamma^2\overline{y_u}^{i2i3}y_u^{i1i4}LF_{2,1,-1}[m_3,m_{\tilde q}^{i2}]-$$
$$\frac{1}{18}g_3^4LF_{2,1,0}[m_3,m_{\tilde q}^{i2}]\delta_{i1i2}\delta_{i3i4}-\frac{1}{18}g_3^4LF_{2,2,-1}[m_3,m_{\tilde q}^{i2}]\delta_{i1i2}\delta_{i3i4}-$$
$$\frac{25}{18}g_3^4LF_{3,1,-1}[m_3,m_{\tilde q}^{i2}]\delta_{i1i2}\delta_{i3i4}+\frac49 g_3^4LF_{4,1,-2}[m_3,m_{\tilde q}^{i2}]\delta_{i1i2}\delta_{i3i4}+$$
$$\frac43 g_3^2\frac{1}{m_\Phi^2}c_\gamma^2\overline{y_u}^{i2i3}y_u^{i1i4}LF_{1,1,0}[m_3,m_{\tilde u}^{i3}]-\frac23 g_3^2\frac{1}{m_\Phi^2}c_\gamma^2\overline{y_u}^{i2i3}y_u^{i1i4}LF_{2,1,-1}[m_3,m_{\tilde u}^{i3}]+$$
$$\frac43 g_3^2\frac{1}{m_\Phi^2}c_\gamma^2\overline{y_u}^{i2i3}y_u^{i1i4}LF_{1,1,0}[m_3,m_{\tilde u}^{i4}]-\frac23 g_3^2\frac{1}{m_\Phi^2}c_\gamma^2\overline{y_u}^{i2i3}y_u^{i1i4}LF_{2,1,-1}[m_3,m_{\tilde u}^{i4}]-$$
$$\frac{1}{18}g_3^4LF_{2,1,0}[m_3,m_{\tilde u}^{i4}]\delta_{i1i2}\delta_{i3i4}-\frac{1}{18}g_3^4LF_{2,2,-1}[m_3,m_{\tilde u}^{i4}]\delta_{i1i2}\delta_{i3i4}-$$
$$\frac{25}{18}g_3^4LF_{3,1,-1}[m_3,m_{\tilde u}^{i4}]\delta_{i1i2}\delta_{i3i4}+\frac49 g_3^4LF_{4,1,-2}[m_3,m_{\tilde u}^{i4}]\delta_{i1i2}\delta_{i3i4}+$$
$$\frac12\frac{1}{m_\Phi^2}c_\gamma^2\overline{y_d}^{i2p}y_d^{rp}\overline{y_u}^{ri3}y_u^{i1i4}LF_{1,1,0}[m_{\tilde d}^p,\tilde\mu]-\frac13 g_3^2\overline{y_d}^{i2p}y_d^{i1p}LF_{2,1,0}[m_{\tilde d}^p,\tilde\mu]\delta_{i3i4}+$$
$$\frac16 g_3^2\overline{y_d}^{i2p}y_d^{i1p}LF_{2,2,-1}[m_{\tilde d}^p,\tilde\mu]\delta_{i3i4}+\frac16 g_3^2\overline{y_d}^{i2p}y_d^{i1p}LF_{3,1,-1}[m_{\tilde d}^p,\tilde\mu]\delta_{i3i4}+$$
$$3c_\gamma\frac{1}{m_\Phi^4}\overline{y_u}^{i2i3}y_u^{i1i4}\big(\tilde\mu\overline{y_d}^{pr}(a_d^{pr}(-2s_\gamma c_\gamma^2+s_\gamma^3)-\tilde\mu c_\gamma y_d^{pr}(c_\gamma^2-2s_\gamma^2))+$$
$$s_\gamma\overline{a_d}^{pr}(-3s_\gamma c_\gamma a_d^{pr}+\tilde\mu y_d^{pr}(-2c_\gamma^2+s_\gamma^2))\big)LF_{1,1,0}[m_{\tilde d}^r,m_{\tilde q}^p]+$$
$$\frac12\frac{1}{m_\Phi^2}c_\gamma^2\overline{y_d}^{pr}y_d^{i1r}\overline{y_u}^{i2i3}y_u^{pi4}LF_{1,1,0}[m_{\tilde d}^r,\tilde\mu]+c_\gamma\frac{1}{m_\Phi^4}\overline{y_u}^{i2i3}y_u^{i1i4}$$
$$\big(\tilde\mu\overline{y_e}^{pr}(a_e^{pr}(-2s_\gamma c_\gamma^2+s_\gamma^3)-\tilde\mu c_\gamma y_e^{pr}(c_\gamma^2-2s_\gamma^2))+$$
$$s_\gamma\overline{a_e}^{pr}(-3s_\gamma c_\gamma a_e^{pr}+\tilde\mu y_e^{pr}(-2c_\gamma^2+s_\gamma^2))\big)LF_{1,1,0}[m_{\tilde e}^r,m_{\tilde l}^p]+s_\gamma c_\gamma\frac{1}{m_\Phi^2}\overline{y_u}^{i2i3}y_u^{i1i4}$$
$$\big(\tilde\mu\overline{y_e}^{pr}(a_e^{pr}(c_\gamma^2-s_\gamma^2)-2s_\gamma\tilde\mu c_\gamma y_e^{pr})+\overline{a_e}^{pr}(2s_\gamma c_\gamma a_e^{pr}+\tilde\mu y_e^{pr}(c_\gamma^2-s_\gamma^2))\big)$$
$$LF_{2,1,0}[m_{\tilde l}^p,m_{\tilde e}^r]+s_\gamma c_\gamma\frac{1}{m_\Phi^2}\overline{y_u}^{i2i3}y_u^{i1i4}\big(\tilde\mu\overline{y_e}^{pr}(a_e^{pr}(-c_\gamma^2+s_\gamma^2)+2s_\gamma\tilde\mu c_\gamma y_e^{pr})+$$
$$\overline{a_e}^{pr}(-2s_\gamma c_\gamma a_e^{pr}+\tilde\mu y_e^{pr}(-c_\gamma^2+s_\gamma^2))\big)LF_{3,1,-1}[m_{\tilde l}^p,m_{\tilde e}^r]-$$
$$s_\gamma^2\overline{y_u}^{i2i3}y_u^{i1i4}(-c_\gamma\overline{a_e}^{pr}+s_\gamma\tilde\mu\overline{y_e}^{pr})(-c_\gamma a_e^{pr}+s_\gamma\tilde\mu y_e^{pr})LF_{3,1,0}[m_{\tilde l}^p,m_{\tilde e}^r]+$$
$$3s_\gamma^2\overline{y_u}^{i2i3}y_u^{i1i4}(-c_\gamma\overline{a_e}^{pr}+s_\gamma\tilde\mu\overline{y_e}^{pr})(-c_\gamma a_e^{pr}+s_\gamma\tilde\mu y_e^{pr})LF_{4,1,-1}[m_{\tilde l}^p,m_{\tilde e}^r]-$$
$$2s_\gamma^2\overline{y_u}^{i2i3}y_u^{i1i4}(-c_\gamma\overline{a_e}^{pr}+s_\gamma\tilde\mu\overline{y_e}^{pr})(-c_\gamma a_e^{pr}+s_\gamma\tilde\mu y_e^{pr})LF_{5,1,-2}[m_{\tilde l}^p,m_{\tilde e}^r]+$$
$$3s_\gamma c_\gamma\frac{1}{m_\Phi^2}\overline{y_u}^{i2i3}y_u^{i1i4}$$
$$\big(\tilde\mu\overline{y_d}^{pr}(a_d^{pr}(c_\gamma^2-s_\gamma^2)-2s_\gamma\tilde\mu c_\gamma y_d^{pr})+\overline{a_d}^{pr}(2s_\gamma c_\gamma a_d^{pr}+\tilde\mu y_d^{pr}(c_\gamma^2-s_\gamma^2))\big)$$
$$LF_{2,1,0}[m_{\tilde q}^p,m_{\tilde d}^r]+3s_\gamma c_\gamma\frac{1}{m_\Phi^2}\overline{y_u}^{i2i3}y_u^{i1i4}\big(\tilde\mu\overline{y_d}^{pr}(a_d^{pr}(-c_\gamma^2+s_\gamma^2)+2s_\gamma\tilde\mu c_\gamma y_d^{pr})+$$
$$\overline{a_d}^{pr}(-2s_\gamma c_\gamma a_d^{pr}+\tilde\mu y_d^{pr}(-c_\gamma^2+s_\gamma^2))\big)LF_{3,1,-1}[m_{\tilde q}^p,m_{\tilde d}^r]-$$
$$3s_\gamma^2\overline{y_u}^{i2i3}y_u^{i1i4}(-c_\gamma\overline{a_d}^{pr}+s_\gamma\tilde\mu\overline{y_d}^{pr})(-c_\gamma a_d^{pr}+s_\gamma\tilde\mu y_d^{pr})LF_{3,1,0}[m_{\tilde q}^p,m_{\tilde d}^r]+$$
$$9s_\gamma^2\overline{y_u}^{i2i3}y_u^{i1i4}(-c_\gamma\overline{a_d}^{pr}+s_\gamma\tilde\mu\overline{y_d}^{pr})(-c_\gamma a_d^{pr}+s_\gamma\tilde\mu y_d^{pr})LF_{4,1,-1}[m_{\tilde q}^p,m_{\tilde d}^r]-$$
$$6s_\gamma^2\overline{y_u}^{i2i3}y_u^{i1i4}(-c_\gamma\overline{a_d}^{pr}+s_\gamma\tilde\mu\overline{y_d}^{pr})(-c_\gamma a_d^{pr}+s_\gamma\tilde\mu y_d^{pr})LF_{5,1,-2}[m_{\tilde q}^p,m_{\tilde d}^r]+$$
$$3c_\gamma\frac{1}{m_\Phi^4}\overline{y_u}^{i2i3}y_u^{i1i4}\big(s_\gamma\tilde\mu\overline{y_u}^{pr}(a_u^{pr}(-2c_\gamma^2+s_\gamma^2)-3s_\gamma\tilde\mu c_\gamma y_u^{pr})+$$
$$\overline{a_u}^{pr}(-a_u^{pr}(c_\gamma^3-2c_\gamma s_\gamma^2)+s_\gamma\tilde\mu y_u^{pr}(-2c_\gamma^2+s_\gamma^2))\big)LF_{1,1,0}[m_{\tilde q}^p,m_{\tilde u}^r]+$$
$$\frac{1}{m_\Phi^2}c_\gamma^2\overline{y_u}^{pr}\overline{y_u}^{i2i3}y_u^{pi4}y_u^{i1r}LF_{1,1,0}[m_{\tilde q}^p,\tilde\mu]-\frac23 g_3^2\overline{y_u}^{pi3}y_u^{pi4}LF_{2,1,0}[m_{\tilde q}^p,\tilde\mu]\delta_{i1i2}+$$
$$\frac13 g_3^2\overline{y_u}^{pi3}y_u^{pi4}LF_{2,2,-1}[m_{\tilde q}^p,\tilde\mu]\delta_{i1i2}+\frac13 g_3^2\overline{y_u}^{pi3}y_u^{pi4}LF_{3,1,-1}[m_{\tilde q}^p,\tilde\mu]\delta_{i1i2}+$$
$$\frac{1}{m_\Phi^2}c_\gamma^2\overline{y_u}^{ri3}\overline{y_u}^{i2p}y_u^{rp}y_u^{i1i4}LF_{1,1,0}[m_{\tilde q}^r,\tilde\mu]-\frac{1}{54}g_1^2g_3^2LF_{2,1,0}[m_{\tilde q}^{i2},m_1]\delta_{i1i2}\delta_{i3i4}+$$
$$\frac{1}{108}g_1^2g_3^2LF_{3,1,-1}[m_{\tilde q}^{i2},m_1]\delta_{i1i2}\delta_{i3i4}-\frac12 g_2^2g_3^2LF_{2,1,0}[m_{\tilde q}^{i2},m_2]\delta_{i1i2}\delta_{i3i4}+$$
$$\frac14 g_2^2g_3^2LF_{3,1,-1}[m_{\tilde q}^{i2},m_2]\delta_{i1i2}\delta_{i3i4}+\frac19 g_3^4LF_{2,1,0}[m_{\tilde q}^{i2},m_3]\delta_{i1i2}\delta_{i3i4}-$$
$$\frac{1}{18}g_3^4LF_{3,1,-1}[m_{\tilde q}^{i2},m_3]\delta_{i1i2}\delta_{i3i4}+\frac12\frac{1}{m_\Phi^2}c_\gamma^2\overline{y_u}^{ri3}\overline{y_u}^{i2p}y_u^{rp}y_u^{i1i4}LF_{1,1,0}[m_{\tilde u}^p,\tilde\mu]-$$
$$\frac13 g_3^2\overline{y_u}^{i2p}y_u^{i1p}LF_{2,1,0}[m_{\tilde u}^p,\tilde\mu]\delta_{i3i4}+\frac16 g_3^2\overline{y_u}^{i2p}y_u^{i1p}LF_{2,2,-1}[m_{\tilde u}^p,\tilde\mu]\delta_{i3i4}+$$
$$\frac16 g_3^2\overline{y_u}^{i2p}y_u^{i1p}LF_{3,1,-1}[m_{\tilde u}^p,\tilde\mu]\delta_{i3i4}+3s_\gamma c_\gamma\frac{1}{m_\Phi^2}\overline{y_u}^{i2i3}y_u^{i1i4}$$
$$\big(\tilde\mu\overline{y_u}^{pr}(a_u^{pr}(c_\gamma^2-s_\gamma^2)+2s_\gamma\tilde\mu c_\gamma y_u^{pr})+\overline{a_u}^{pr}(-2s_\gamma c_\gamma a_u^{pr}+\tilde\mu y_u^{pr}(c_\gamma^2-s_\gamma^2))\big)$$
$$LF_{2,1,0}[m_{\tilde u}^r,m_{\tilde q}^p]+3s_\gamma c_\gamma\frac{1}{m_\Phi^2}\overline{y_u}^{i2i3}y_u^{i1i4}\big(\tilde\mu\overline{y_u}^{pr}(a_u^{pr}(-c_\gamma^2+s_\gamma^2)-2s_\gamma\tilde\mu c_\gamma y_u^{pr})+$$
$$\overline{a_u}^{pr}(2s_\gamma c_\gamma a_u^{pr}+\tilde\mu y_u^{pr}(-c_\gamma^2+s_\gamma^2))\big)LF_{3,1,-1}[m_{\tilde u}^r,m_{\tilde q}^p]-$$
$$3s_\gamma^2\overline{y_u}^{i2i3}y_u^{i1i4}(s_\gamma\overline{a_u}^{pr}-\tilde\mu c_\gamma\overline{y_u}^{pr})(s_\gamma a_u^{pr}-\tilde\mu c_\gamma y_u^{pr})LF_{3,1,0}[m_{\tilde u}^r,m_{\tilde q}^p]+$$
$$9s_\gamma^2\overline{y_u}^{i2i3}y_u^{i1i4}(s_\gamma\overline{a_u}^{pr}-\tilde\mu c_\gamma\overline{y_u}^{pr})(s_\gamma a_u^{pr}-\tilde\mu c_\gamma y_u^{pr})LF_{4,1,-1}[m_{\tilde u}^r,m_{\tilde q}^p]-$$
$$6s_\gamma^2\overline{y_u}^{i2i3}y_u^{i1i4}(s_\gamma\overline{a_u}^{pr}-\tilde\mu c_\gamma\overline{y_u}^{pr})(s_\gamma a_u^{pr}-\tilde\mu c_\gamma y_u^{pr})LF_{5,1,-2}[m_{\tilde u}^r,m_{\tilde q}^p]+$$
$$\frac12\frac{1}{m_\Phi^2}c_\gamma^2\overline{y_u}^{pr}\overline{y_u}^{i2i3}y_u^{pi4}y_u^{i1r}LF_{1,1,0}[m_{\tilde u}^r,\tilde\mu]-$$
$$\frac{8}{27}g_1^2g_3^2LF_{2,1,0}[m_{\tilde u}^{i4},m_1]\delta_{i1i2}\delta_{i3i4}+\frac{4}{27}g_1^2g_3^2LF_{3,1,-1}[m_{\tilde u}^{i4},m_1]\delta_{i1i2}\delta_{i3i4}+$$
$$\frac19 g_3^4LF_{2,1,0}[m_{\tilde u}^{i4},m_3]\delta_{i1i2}\delta_{i3i4}-\frac{1}{18}g_3^4LF_{3,1,-1}[m_{\tilde u}^{i4},m_3]\delta_{i1i2}\delta_{i3i4}+$$
$$2m_1s_\gamma\tilde\mu c_\gamma g_1^2\frac{1}{m_\Phi^2}\overline{y_u}^{i2i3}y_u^{i1i4}(c_\gamma^2-s_\gamma^2)LF_{2,1,0}[\tilde\mu,m_1]+$$
$$2s_\gamma g_1^2\frac{1}{m_\Phi^2}\overline{y_u}^{i2i3}y_u^{i1i4}\big(s_\gamma m_\Phi^2(c_\gamma^2+s_\gamma^2)+m_1\tilde\mu c_\gamma(-c_\gamma^2+s_\gamma^2)\big)LF_{3,1,-1}[\tilde\mu,m_1]+$$
$$2m_1\tilde\mu c_\gamma g_1^2s_\gamma^3\overline{y_u}^{i2i3}y_u^{i1i4}LF_{3,1,0}[\tilde\mu,m_1]-$$
$$4g_1^2s_\gamma^2\overline{y_u}^{i2i3}y_u^{i1i4}(c_\gamma^2+s_\gamma^2)LF_{4,1,-2}[\tilde\mu,m_1]-$$
$$6m_1\tilde\mu c_\gamma g_1^2s_\gamma^3\overline{y_u}^{i2i3}y_u^{i1i4}LF_{4,1,-1}[\tilde\mu,m_1]+$$
$$2g_1^2s_\gamma^2\overline{y_u}^{i2i3}y_u^{i1i4}(c_\gamma^2+s_\gamma^2)LF_{5,1,-3}[\tilde\mu,m_1]+$$
$$4m_1\tilde\mu c_\gamma g_1^2s_\gamma^3\overline{y_u}^{i2i3}y_u^{i1i4}LF_{5,1,-2}[\tilde\mu,m_1]+$$
$$6m_2s_\gamma\tilde\mu c_\gamma g_2^2\frac{1}{m_\Phi^2}\overline{y_u}^{i2i3}y_u^{i1i4}(c_\gamma^2-s_\gamma^2)LF_{2,1,0}[\tilde\mu,m_2]+$$
$$6s_\gamma g_2^2\frac{1}{m_\Phi^2}\overline{y_u}^{i2i3}y_u^{i1i4}\big(s_\gamma m_\Phi^2(c_\gamma^2+s_\gamma^2)+m_2\tilde\mu c_\gamma(-c_\gamma^2+s_\gamma^2)\big)LF_{3,1,-1}[\tilde\mu,m_2]+$$
$$6m_2\tilde\mu c_\gamma g_2^2s_\gamma^3\overline{y_u}^{i2i3}y_u^{i1i4}LF_{3,1,0}[\tilde\mu,m_2]-$$
$$12g_2^2s_\gamma^2\overline{y_u}^{i2i3}y_u^{i1i4}(c_\gamma^2+s_\gamma^2)LF_{4,1,-2}[\tilde\mu,m_2]-$$
$$18m_2\tilde\mu c_\gamma g_2^2s_\gamma^3\overline{y_u}^{i2i3}y_u^{i1i4}LF_{4,1,-1}[\tilde\mu,m_2]+$$
$$6g_2^2s_\gamma^2\overline{y_u}^{i2i3}y_u^{i1i4}(c_\gamma^2+s_\gamma^2)LF_{5,1,-3}[\tilde\mu,m_2]+$$
$$12m_2\tilde\mu c_\gamma g_2^2s_\gamma^3\overline{y_u}^{i2i3}y_u^{i1i4}LF_{5,1,-2}[\tilde\mu,m_2]-$$
$$\frac14\frac{1}{m_\Phi^2}c_\gamma^2\overline{y_d}^{i2p}y_d^{rp}\overline{y_u}^{ri3}y_u^{i1i4}LF_{2,1,-1}[\tilde\mu,m_{\tilde d}^p]+\frac16 g_3^2\overline{y_d}^{i2p}y_d^{i1p}LF_{2,1,0}[\tilde\mu,m_{\tilde d}^p]\delta_{i3i4}-$$
$$\frac13 g_3^2\overline{y_d}^{i2p}y_d^{i1p}LF_{3,1,-1}[\tilde\mu,m_{\tilde d}^p]\delta_{i3i4}+\frac16 g_3^2\overline{y_d}^{i2p}y_d^{i1p}LF_{4,1,-2}[\tilde\mu,m_{\tilde d}^p]\delta_{i3i4}-$$
$$\frac14\frac{1}{m_\Phi^2}c_\gamma^2\overline{y_d}^{pr}y_d^{i1r}\overline{y_u}^{i2i3}y_u^{pi4}LF_{2,1,-1}[\tilde\mu,m_{\tilde d}^r]-$$
$$\frac12\frac{1}{m_\Phi^2}c_\gamma^2\overline{y_u}^{pr}\overline{y_u}^{i2i3}y_u^{pi4}y_u^{i1r}LF_{2,1,-1}[\tilde\mu,m_{\tilde q}^p]+\frac13 g_3^2\overline{y_u}^{pi3}y_u^{pi4}LF_{2,1,0}[\tilde\mu,m_{\tilde q}^p]\delta_{i1i2}-$$
$$\frac23 g_3^2\overline{y_u}^{pi3}y_u^{pi4}LF_{3,1,-1}[\tilde\mu,m_{\tilde q}^p]\delta_{i1i2}+\frac13 g_3^2\overline{y_u}^{pi3}y_u^{pi4}LF_{4,1,-2}[\tilde\mu,m_{\tilde q}^p]\delta_{i1i2}-$$
$$\frac12\frac{1}{m_\Phi^2}c_\gamma^2\overline{y_u}^{ri3}\overline{y_u}^{i2p}y_u^{rp}y_u^{i1i4}LF_{2,1,-1}[\tilde\mu,m_{\tilde q}^r]-$$
$$\frac14\frac{1}{m_\Phi^2}c_\gamma^2\overline{y_u}^{ri3}\overline{y_u}^{i2p}y_u^{rp}y_u^{i1i4}LF_{2,1,-1}[\tilde\mu,m_{\tilde u}^p]+\frac16 g_3^2\overline{y_u}^{i2p}y_u^{i1p}LF_{2,1,0}[\tilde\mu,m_{\tilde u}^p]\delta_{i3i4}-$$
$$\frac13 g_3^2\overline{y_u}^{i2p}y_u^{i1p}LF_{3,1,-1}[\tilde\mu,m_{\tilde u}^p]\delta_{i3i4}+\frac16 g_3^2\overline{y_u}^{i2p}y_u^{i1p}LF_{4,1,-2}[\tilde\mu,m_{\tilde u}^p]\delta_{i3i4}-$$
$$\frac14\frac{1}{m_\Phi^2}c_\gamma^2\overline{y_u}^{pr}\overline{y_u}^{i2i3}y_u^{pi4}y_u^{i1r}LF_{2,1,-1}[\tilde\mu,m_{\tilde u}^r]-$$
$$\frac29 m_1c_\gamma g_1^2\frac{1}{m_\Phi^2}\overline{y_u}^{i2i3}(c_\gamma a_u^{i1i4}+s_\gamma\tilde\mu y_u^{i1i4})LF_{1,1,1,0}[m_1,m_{\tilde q}^{i1},m_{\tilde u}^{i4}]+$$
$$\frac{1}{18}m_1s_\gamma g_1^2\overline{y_u}^{i2i3}(s_\gamma a_u^{i1i4}-\tilde\mu c_\gamma y_u^{i1i4})LF_{2,2,1,-1}[m_1,m_{\tilde q}^{i1},m_{\tilde u}^{i4}]+$$
$$\frac16 g_1^2\frac{1}{m_\Phi^2}c_\gamma^2\overline{y_u}^{i2i3}y_u^{i1i4}LF_{1,1,1,-1}[m_1,m_{\tilde q}^{i1},\tilde\mu]-$$
$$\frac16 m_1s_\gamma\tilde\mu c_\gamma g_1^2\frac{1}{m_\Phi^2}\overline{y_u}^{i2i3}y_u^{i1i4}LF_{1,1,1,0}[m_1,m_{\tilde q}^{i1},\tilde\mu]-$$
$$\frac29 m_1c_\gamma g_1^2\frac{1}{m_\Phi^2}y_u^{i1i4}(c_\gamma\overline{a_u}^{i2i3}+s_\gamma\tilde\mu\overline{y_u}^{i2i3})LF_{1,1,1,0}[m_1,m_{\tilde q}^{i2},m_{\tilde u}^{i3}]+$$
$$\frac{1}{18}m_1s_\gamma g_1^2y_u^{i1i4}(s_\gamma\overline{a_u}^{i2i3}-\tilde\mu c_\gamma\overline{y_u}^{i2i3})LF_{2,2,1,-1}[m_1,m_{\tilde q}^{i2},m_{\tilde u}^{i3}]+$$
$$\frac16 g_1^2\frac{1}{m_\Phi^2}c_\gamma^2\overline{y_u}^{i2i3}y_u^{i1i4}LF_{1,1,1,-1}[m_1,m_{\tilde q}^{i2},\tilde\mu]-$$
$$\frac16 m_1s_\gamma\tilde\mu c_\gamma g_1^2\frac{1}{m_\Phi^2}\overline{y_u}^{i2i3}y_u^{i1i4}LF_{1,1,1,0}[m_1,m_{\tilde q}^{i2},\tilde\mu]+$$
$$\frac{1}{18}m_1s_\gamma g_1^2y_u^{i1i4}(s_\gamma\overline{a_u}^{i2i3}-\tilde\mu c_\gamma\overline{y_u}^{i2i3})LF_{2,2,1,-1}[m_1,m_{\tilde u}^{i3},m_{\tilde q}^{i2}]-$$
$$\frac23 g_1^2\frac{1}{m_\Phi^2}c_\gamma^2\overline{y_u}^{i2i3}y_u^{i1i4}LF_{1,1,1,-1}[m_1,m_{\tilde u}^{i3},\tilde\mu]+$$
$$\frac23 m_1s_\gamma\tilde\mu c_\gamma g_1^2\frac{1}{m_\Phi^2}\overline{y_u}^{i2i3}y_u^{i1i4}LF_{1,1,1,0}[m_1,m_{\tilde u}^{i3},\tilde\mu]+$$
$$\frac{1}{18}m_1s_\gamma g_1^2\overline{y_u}^{i2i3}(s_\gamma a_u^{i1i4}-\tilde\mu c_\gamma y_u^{i1i4})LF_{2,2,1,-1}[m_1,m_{\tilde u}^{i4},m_{\tilde q}^{i1}]-$$
$$\frac23 g_1^2\frac{1}{m_\Phi^2}c_\gamma^2\overline{y_u}^{i2i3}y_u^{i1i4}LF_{1,1,1,-1}[m_1,m_{\tilde u}^{i4},\tilde\mu]+$$
$$\frac23 m_1s_\gamma\tilde\mu c_\gamma g_1^2\frac{1}{m_\Phi^2}\overline{y_u}^{i2i3}y_u^{i1i4}LF_{1,1,1,0}[m_1,m_{\tilde u}^{i4},\tilde\mu]+$$
$$\frac{1}{12}g_1^2s_\gamma^2\overline{y_u}^{i2i3}y_u^{i1i4}LF_{2,2,1,-2}[m_1,\tilde\mu,m_{\tilde q}^{i1}]+$$
$$\frac{1}{12}m_1s_\gamma\tilde\mu c_\gamma g_1^2\overline{y_u}^{i2i3}y_u^{i1i4}LF_{2,2,1,-1}[m_1,\tilde\mu,m_{\tilde q}^{i1}]+$$
$$\frac{1}{12}g_1^2s_\gamma^2\overline{y_u}^{i2i3}y_u^{i1i4}LF_{2,2,1,-2}[m_1,\tilde\mu,m_{\tilde q}^{i2}]+$$
$$\frac{1}{12}m_1s_\gamma\tilde\mu c_\gamma g_1^2\overline{y_u}^{i2i3}y_u^{i1i4}LF_{2,2,1,-1}[m_1,\tilde\mu,m_{\tilde q}^{i2}]-$$
$$\frac13 g_1^2s_\gamma^2\overline{y_u}^{i2i3}y_u^{i1i4}LF_{2,2,1,-2}[m_1,\tilde\mu,m_{\tilde u}^{i3}]-$$
$$\frac13 m_1s_\gamma\tilde\mu c_\gamma g_1^2\overline{y_u}^{i2i3}y_u^{i1i4}LF_{2,2,1,-1}[m_1,\tilde\mu,m_{\tilde u}^{i3}]-$$
$$\frac13 g_1^2s_\gamma^2\overline{y_u}^{i2i3}y_u^{i1i4}LF_{2,2,1,-2}[m_1,\tilde\mu,m_{\tilde u}^{i4}]-$$
$$\frac13 m_1s_\gamma\tilde\mu c_\gamma g_1^2\overline{y_u}^{i2i3}y_u^{i1i4}LF_{2,2,1,-1}[m_1,\tilde\mu,m_{\tilde u}^{i4}]-$$
$$\frac32 g_2^2\frac{1}{m_\Phi^2}c_\gamma^2\overline{y_u}^{i2i3}y_u^{i1i4}LF_{1,1,1,-1}[m_2,m_{\tilde q}^{i1},\tilde\mu]+$$
$$\frac32 m_2s_\gamma\tilde\mu c_\gamma g_2^2\frac{1}{m_\Phi^2}\overline{y_u}^{i2i3}y_u^{i1i4}LF_{1,1,1,0}[m_2,m_{\tilde q}^{i1},\tilde\mu]-$$
$$\frac32 g_2^2\frac{1}{m_\Phi^2}c_\gamma^2\overline{y_u}^{i2i3}y_u^{i1i4}LF_{1,1,1,-1}[m_2,m_{\tilde q}^{i2},\tilde\mu]+$$
$$\frac32 m_2s_\gamma\tilde\mu c_\gamma g_2^2\frac{1}{m_\Phi^2}\overline{y_u}^{i2i3}y_u^{i1i4}LF_{1,1,1,0}[m_2,m_{\tilde q}^{i2},\tilde\mu]-$$
$$\frac34 g_2^2s_\gamma^2\overline{y_u}^{i2i3}y_u^{i1i4}LF_{2,2,1,-2}[m_2,\tilde\mu,m_{\tilde q}^{i1}]-$$
$$\frac34 m_2s_\gamma\tilde\mu c_\gamma g_2^2\overline{y_u}^{i2i3}y_u^{i1i4}LF_{2,2,1,-1}[m_2,\tilde\mu,m_{\tilde q}^{i1}]-$$
$$\frac34 g_2^2s_\gamma^2\overline{y_u}^{i2i3}y_u^{i1i4}LF_{2,2,1,-2}[m_2,\tilde\mu,m_{\tilde q}^{i2}]-$$
$$\frac34 m_2s_\gamma\tilde\mu c_\gamma g_2^2\overline{y_u}^{i2i3}y_u^{i1i4}LF_{2,2,1,-1}[m_2,\tilde\mu,m_{\tilde q}^{i2}]-$$
$$\frac83 m_3c_\gamma g_3^2\frac{1}{m_\Phi^2}\overline{y_u}^{i2i3}(c_\gamma a_u^{i1i4}+s_\gamma\tilde\mu y_u^{i1i4})LF_{1,1,1,0}[m_3,m_{\tilde q}^{i1},m_{\tilde u}^{i4}]+$$
$$\frac23 m_3s_\gamma g_3^2\overline{y_u}^{i2i3}(s_\gamma a_u^{i1i4}-\tilde\mu c_\gamma y_u^{i1i4})LF_{2,2,1,-1}[m_3,m_{\tilde q}^{i1},m_{\tilde u}^{i4}]-$$
$$\frac83 m_3c_\gamma g_3^2\frac{1}{m_\Phi^2}y_u^{i1i4}(c_\gamma\overline{a_u}^{i2i3}+s_\gamma\tilde\mu\overline{y_u}^{i2i3})LF_{1,1,1,0}[m_3,m_{\tilde q}^{i2},m_{\tilde u}^{i3}]+$$
$$\frac23 m_3s_\gamma g_3^2y_u^{i1i4}(s_\gamma\overline{a_u}^{i2i3}-\tilde\mu c_\gamma\overline{y_u}^{i2i3})LF_{2,2,1,-1}[m_3,m_{\tilde q}^{i2},m_{\tilde u}^{i3}]+$$
$$\frac13 g_3^4LF_{2,1,1,-1}[m_3,m_{\tilde q}^{i2},m_{\tilde u}^{i4}]\delta_{i1i2}\delta_{i3i4}-\frac73 g_3^4m_3^2LF_{2,1,1,0}[m_3,m_{\tilde q}^{i2},m_{\tilde u}^{i4}]\delta_{i1i2}\delta_{i3i4}+$$
$$\frac23 m_3s_\gamma g_3^2y_u^{i1i4}(s_\gamma\overline{a_u}^{i2i3}-\tilde\mu c_\gamma\overline{y_u}^{i2i3})LF_{2,2,1,-1}[m_3,m_{\tilde u}^{i3},m_{\tilde q}^{i2}]+$$
$$\frac23 m_3s_\gamma g_3^2\overline{y_u}^{i2i3}(s_\gamma a_u^{i1i4}-\tilde\mu c_\gamma y_u^{i1i4})LF_{2,2,1,-1}[m_3,m_{\tilde u}^{i4},m_{\tilde q}^{i1}]-$$
$$\tilde\mu c_\gamma\frac{1}{m_\Phi^2}\overline{y_d}^{i2p}\overline{y_u}^{ri3}y_u^{i1i4}(s_\gamma a_d^{rp}+\tilde\mu c_\gamma y_d^{rp})LF_{1,1,1,0}[m_{\tilde d}^p,m_{\tilde q}^r,\tilde\mu]+$$
$$\frac12 s_\gamma\tilde\mu\overline{y_d}^{i2p}\overline{y_u}^{ri3}y_u^{i1i4}(c_\gamma a_d^{rp}-s_\gamma\tilde\mu y_d^{rp})LF_{2,1,1,0}[m_{\tilde d}^p,m_{\tilde q}^r,\tilde\mu]+$$
$$\frac12 s_\gamma\tilde\mu\overline{y_d}^{i2p}\overline{y_u}^{ri3}y_u^{i1i4}(-c_\gamma a_d^{rp}+s_\gamma\tilde\mu y_d^{rp})LF_{3,1,1,-1}[m_{\tilde d}^p,m_{\tilde q}^r,\tilde\mu]+$$
$$\frac14 s_\gamma\tilde\mu\overline{y_d}^{i2p}\overline{y_u}^{ri3}y_u^{i1i4}(-c_\gamma a_d^{rp}+s_\gamma\tilde\mu y_d^{rp})LF_{2,2,1,-1}[m_{\tilde d}^p,\tilde\mu,m_{\tilde q}^r]-$$
$$\tilde\mu c_\gamma\frac{1}{m_\Phi^2}y_d^{i1r}\overline{y_u}^{i2i3}y_u^{pi4}(s_\gamma\overline{a_d}^{pr}+\tilde\mu c_\gamma\overline{y_d}^{pr})LF_{1,1,1,0}[m_{\tilde d}^r,m_{\tilde q}^p,\tilde\mu]+$$
$$\frac12 s_\gamma\tilde\mu y_d^{i1r}\overline{y_u}^{i2i3}y_u^{pi4}(c_\gamma\overline{a_d}^{pr}-s_\gamma\tilde\mu\overline{y_d}^{pr})LF_{2,1,1,0}[m_{\tilde d}^r,m_{\tilde q}^p,\tilde\mu]+$$
$$\frac12 s_\gamma\tilde\mu y_d^{i1r}\overline{y_u}^{i2i3}y_u^{pi4}(-c_\gamma\overline{a_d}^{pr}+s_\gamma\tilde\mu\overline{y_d}^{pr})LF_{3,1,1,-1}[m_{\tilde d}^r,m_{\tilde q}^p,\tilde\mu]+$$
$$\frac14 s_\gamma\tilde\mu y_d^{i1r}\overline{y_u}^{i2i3}y_u^{pi4}(-c_\gamma\overline{a_d}^{pr}+s_\gamma\tilde\mu\overline{y_d}^{pr})LF_{2,2,1,-1}[m_{\tilde d}^r,\tilde\mu,m_{\tilde q}^p]+$$
$$\frac12 s_\gamma\tilde\mu y_d^{i1r}\overline{y_u}^{i2i3}y_u^{pi4}(c_\gamma\overline{a_d}^{pr}-s_\gamma\tilde\mu\overline{y_d}^{pr})LF_{2,1,1,0}[m_{\tilde q}^p,m_{\tilde d}^r,\tilde\mu]+$$
$$\frac12 s_\gamma\tilde\mu y_d^{i1r}\overline{y_u}^{i2i3}y_u^{pi4}(-c_\gamma\overline{a_d}^{pr}+s_\gamma\tilde\mu\overline{y_d}^{pr})LF_{3,1,1,-1}[m_{\tilde q}^p,m_{\tilde d}^r,\tilde\mu]+$$
$$\frac14 s_\gamma\tilde\mu y_d^{i1r}\overline{y_u}^{i2i3}y_u^{pi4}(-c_\gamma\overline{a_d}^{pr}+s_\gamma\tilde\mu\overline{y_d}^{pr})LF_{2,2,1,-1}[m_{\tilde q}^p,\tilde\mu,m_{\tilde d}^r]+$$
$$\frac12 s_\gamma\tilde\mu\overline{y_d}^{i2p}\overline{y_u}^{ri3}y_u^{i1i4}(c_\gamma a_d^{rp}-s_\gamma\tilde\mu y_d^{rp})LF_{2,1,1,0}[m_{\tilde q}^r,m_{\tilde d}^p,\tilde\mu]+$$
$$\frac12 s_\gamma\tilde\mu\overline{y_d}^{i2p}\overline{y_u}^{ri3}y_u^{i1i4}(-c_\gamma a_d^{rp}+s_\gamma\tilde\mu y_d^{rp})LF_{3,1,1,-1}[m_{\tilde q}^r,m_{\tilde d}^p,\tilde\mu]+$$
$$\frac14 s_\gamma\tilde\mu\overline{y_d}^{i2p}\overline{y_u}^{ri3}y_u^{i1i4}(-c_\gamma a_d^{rp}+s_\gamma\tilde\mu y_d^{rp})LF_{2,2,1,-1}[m_{\tilde q}^r,\tilde\mu,m_{\tilde d}^p]+$$
$$\frac19 m_1s_\gamma g_1^2\overline{y_u}^{i2i3}(-s_\gamma a_u^{i1i4}+\tilde\mu c_\gamma y_u^{i1i4})LF_{2,1,1,0}[m_{\tilde q}^{i1},m_1,m_{\tilde u}^{i4}]+$$
$$\frac19 m_1s_\gamma g_1^2\overline{y_u}^{i2i3}(s_\gamma a_u^{i1i4}-\tilde\mu c_\gamma y_u^{i1i4})LF_{3,1,1,-1}[m_{\tilde q}^{i1},m_1,m_{\tilde u}^{i4}]+$$
$$\frac43 m_3s_\gamma g_3^2\overline{y_u}^{i2i3}(-s_\gamma a_u^{i1i4}+\tilde\mu c_\gamma y_u^{i1i4})LF_{2,1,1,0}[m_{\tilde q}^{i1},m_3,m_{\tilde u}^{i4}]+$$
$$\frac43 m_3s_\gamma g_3^2\overline{y_u}^{i2i3}(s_\gamma a_u^{i1i4}-\tilde\mu c_\gamma y_u^{i1i4})LF_{3,1,1,-1}[m_{\tilde q}^{i1},m_3,m_{\tilde u}^{i4}]+$$
$$\frac19 m_1s_\gamma g_1^2y_u^{i1i4}(-s_\gamma\overline{a_u}^{i2i3}+\tilde\mu c_\gamma\overline{y_u}^{i2i3})LF_{2,1,1,0}[m_{\tilde q}^{i2},m_1,m_{\tilde u}^{i3}]+$$
$$\frac19 m_1s_\gamma g_1^2y_u^{i1i4}(s_\gamma\overline{a_u}^{i2i3}-\tilde\mu c_\gamma\overline{y_u}^{i2i3})LF_{3,1,1,-1}[m_{\tilde q}^{i2},m_1,m_{\tilde u}^{i3}]+$$
$$\frac43 m_3s_\gamma g_3^2y_u^{i1i4}(-s_\gamma\overline{a_u}^{i2i3}+\tilde\mu c_\gamma\overline{y_u}^{i2i3})LF_{2,1,1,0}[m_{\tilde q}^{i2},m_3,m_{\tilde u}^{i3}]+$$
$$\frac43 m_3s_\gamma g_3^2y_u^{i1i4}(s_\gamma\overline{a_u}^{i2i3}-\tilde\mu c_\gamma\overline{y_u}^{i2i3})LF_{3,1,1,-1}[m_{\tilde q}^{i2},m_3,m_{\tilde u}^{i3}]+$$
$$\frac19 m_1s_\gamma g_1^2y_u^{i1i4}(-s_\gamma\overline{a_u}^{i2i3}+\tilde\mu c_\gamma\overline{y_u}^{i2i3})LF_{2,1,1,0}[m_{\tilde u}^{i3},m_1,m_{\tilde q}^{i2}]+$$
$$\frac19 m_1s_\gamma g_1^2y_u^{i1i4}(s_\gamma\overline{a_u}^{i2i3}-\tilde\mu c_\gamma\overline{y_u}^{i2i3})LF_{3,1,1,-1}[m_{\tilde u}^{i3},m_1,m_{\tilde q}^{i2}]+$$
$$\frac43 m_3s_\gamma g_3^2y_u^{i1i4}(-s_\gamma\overline{a_u}^{i2i3}+\tilde\mu c_\gamma\overline{y_u}^{i2i3})LF_{2,1,1,0}[m_{\tilde u}^{i3},m_3,m_{\tilde q}^{i2}]+$$
$$\frac43 m_3s_\gamma g_3^2y_u^{i1i4}(s_\gamma\overline{a_u}^{i2i3}-\tilde\mu c_\gamma\overline{y_u}^{i2i3})LF_{3,1,1,-1}[m_{\tilde u}^{i3},m_3,m_{\tilde q}^{i2}]+$$
$$\frac19 m_1s_\gamma g_1^2\overline{y_u}^{i2i3}(-s_\gamma a_u^{i1i4}+\tilde\mu c_\gamma y_u^{i1i4})LF_{2,1,1,0}[m_{\tilde u}^{i4},m_1,m_{\tilde q}^{i1}]+$$
$$\frac19 m_1s_\gamma g_1^2\overline{y_u}^{i2i3}(s_\gamma a_u^{i1i4}-\tilde\mu c_\gamma y_u^{i1i4})LF_{3,1,1,-1}[m_{\tilde u}^{i4},m_1,m_{\tilde q}^{i1}]+$$
$$\frac43 m_3s_\gamma g_3^2\overline{y_u}^{i2i3}(-s_\gamma a_u^{i1i4}+\tilde\mu c_\gamma y_u^{i1i4})LF_{2,1,1,0}[m_{\tilde u}^{i4},m_3,m_{\tilde q}^{i1}]+$$
$$\frac43 m_3s_\gamma g_3^2\overline{y_u}^{i2i3}(s_\gamma a_u^{i1i4}-\tilde\mu c_\gamma y_u^{i1i4})LF_{3,1,1,-1}[m_{\tilde u}^{i4},m_3,m_{\tilde q}^{i1}]-$$
$$\frac29 g_1^2g_3^2LF_{1,1,1,1,-1}[m_1,m_3,m_{\tilde q}^{i2},m_{\tilde u}^{i4}]\delta_{i1i2}\delta_{i3i4}-$$
$$\frac49 m_1m_3g_1^2g_3^2LF_{1,1,1,1,0}[m_1,m_3,m_{\tilde q}^{i2},m_{\tilde u}^{i4}]\delta_{i1i2}\delta_{i3i4}-$$
$$\frac19 g_1^2\overline{y_u}^{i2i3}y_u^{i1i4}LF_{1,1,1,1,-1}[m_1,m_{\tilde q}^{i1},m_{\tilde u}^{i3},\tilde\mu]+$$
$$\frac{1}{36}g_1^2\overline{y_u}^{i2i3}y_u^{i1i4}LF_{1,1,1,1,-1}[m_1,m_{\tilde q}^{i2},m_{\tilde q}^{i1},\tilde\mu]-$$
$$\frac19 g_1^2\overline{y_u}^{i2i3}y_u^{i1i4}LF_{1,1,1,1,-1}[m_1,m_{\tilde q}^{i2},m_{\tilde u}^{i4},\tilde\mu]+$$
$$\frac49 g_1^2\overline{y_u}^{i2i3}y_u^{i1i4}LF_{1,1,1,1,-1}[m_1,m_{\tilde u}^{i4},m_{\tilde u}^{i3},\tilde\mu]+$$
$$\frac34 g_2^2\overline{y_u}^{i2i3}y_u^{i1i4}LF_{1,1,1,1,-1}[m_2,m_{\tilde q}^{i2},m_{\tilde q}^{i1},\tilde\mu]+$$
$$\frac16 g_3^2\overline{y_u}^{i2i3}y_u^{i1i4}LF_{1,1,1,1,-1}[m_3,m_{\tilde q}^{i1},m_{\tilde u}^{i3},\tilde\mu]-$$
$$\frac16 g_3^2\overline{y_u}^{i2i3}y_u^{i1i4}LF_{1,1,1,1,-1}[m_3,m_{\tilde q}^{i2},m_{\tilde q}^{i1},\tilde\mu]+$$
$$\frac16 g_3^2\overline{y_u}^{i2i3}y_u^{i1i4}LF_{1,1,1,1,-1}[m_3,m_{\tilde q}^{i2},m_{\tilde u}^{i4},\tilde\mu]-$$
$$\frac16 g_3^2\overline{y_u}^{i2i3}y_u^{i1i4}LF_{1,1,1,1,-1}[m_3,m_{\tilde u}^{i4},m_{\tilde u}^{i3},\tilde\mu]\Big)$$