$$C_{lequ}^{(1)}{}^{i1\_i2\_i3\_i4\_} \to s_\gamma c_\gamma \frac{1}{m_\Phi^2} y_e^{i1i2} y_u^{i3i4} +$$

$$\hbar\Big(\frac{1}{72} s_\gamma c_\gamma \frac{1}{m_\Phi^2}\Big(9 y_e^{i1i2} y_u^{pi4}\big(\overline{y_d}^{pr} y_d^{i3r}(1+2c_\gamma^2+s_\gamma^2)+3\overline{y_u}^{pr} y_u^{i3r}(1+c_\gamma^2)\big)+$$

$$y_u^{i3i4}\big(9\overline{y_e}^{pr}(3 y_e^{pi2} y_e^{i1r}(1+s_\gamma^2)+4 s_\gamma^2 y_e^{pr} y_e^{i1i2})+$$

$$y_e^{i1i2}(31 g_1^2+27 g_2^2+48 g_3^2+108 c_\gamma^2 \overline{y_u}^{pr} y_u^{pr})\big)\Big)+$$

$$\frac12 \sum_p g_1^2 \frac{1}{m_\Phi^4} y_e^{i1i2} y_u^{i3i4}(s_{2\gamma}c_\gamma^2+s_\gamma c_{2\gamma}c_\gamma - s_{2\gamma}s_\gamma^2)\, LF_{1,0}[m_{\tilde d}^p]+$$

$$\frac32 \frac{1}{m_\Phi^4}\overline{y_d}^{pr} y_d^{pr} y_e^{i1i2} y_u^{i3i4}(-s_{2\gamma}c_\gamma^2+s_{2\gamma}s_\gamma^2+2c_\gamma s_\gamma^3)\, LF_{1,0}[m_{\tilde d}^r]+$$

$$\frac12\sum_p g_1^2 \frac{1}{m_\Phi^4} y_e^{i1i2}y_u^{i3i4}(s_{2\gamma}c_\gamma^2+s_\gamma c_{2\gamma}c_\gamma - s_{2\gamma}s_\gamma^2)\, LF_{1,0}[m_{\tilde e}^p]+$$

$$\frac12\frac{1}{m_\Phi^4}\overline{y_e}^{pr}y_e^{pr}y_e^{i1i2}y_u^{i3i4}(-s_{2\gamma}c_\gamma^2+s_{2\gamma}s_\gamma^2+2c_\gamma s_\gamma^3)\, LF_{1,0}[m_{\tilde e}^r]+\frac12\frac{1}{m_\Phi^4}y_e^{i1i2}y_u^{i3i4}$$

$$\Big(\overline{y_e}^{pr}y_e^{pr}(-s_{2\gamma}c_\gamma^2+s_{2\gamma}s_\gamma^2+2c_\gamma s_\gamma^3)-\sum_p g_1^2(s_{2\gamma}c_\gamma^2+s_\gamma c_{2\gamma}c_\gamma-s_{2\gamma}s_\gamma^2)\Big)\, LF_{1,0}[m_{\tilde l}^p]+$$

$$\frac12\frac{1}{m_\Phi^4}y_e^{i1i2}y_u^{i3i4}\Big(3\overline{y_d}^{pr}y_d^{pr}(-s_{2\gamma}c_\gamma^2+s_{2\gamma}s_\gamma^2+2c_\gamma s_\gamma^3)+$$

$$3\overline{y_u}^{pr}y_u^{pr}(s_{2\gamma}c_\gamma^2+2s_\gamma c_\gamma^3-s_{2\gamma}s_\gamma^2)+\sum_p g_1^2(s_{2\gamma}c_\gamma^2+s_\gamma c_{2\gamma}c_\gamma-s_{2\gamma}s_\gamma^2)\Big)\, LF_{1,0}[m_{\tilde q}^p]-$$

$$\sum_p g_1^2\frac{1}{m_\Phi^4}y_e^{i1i2}y_u^{i3i4}(s_{2\gamma}c_\gamma^2+s_\gamma c_{2\gamma}c_\gamma-s_{2\gamma}s_\gamma^2)\, LF_{1,0}[m_{\tilde u}^p]+$$

$$\frac32\frac{1}{m_\Phi^4}y_e^{i1i2}\overline{y_u}^{pr}y_u^{pr}y_u^{i3i4}(s_{2\gamma}c_\gamma^2+2s_\gamma c_\gamma^3-s_{2\gamma}s_\gamma^2)\, LF_{1,0}[m_{\tilde u}^r]+\frac18\frac{1}{m_\Phi^4}y_e^{i1i2}y_u^{i3i4}$$

$$\Big(3s_{4\gamma}c_\gamma^2(g_1^2+g_2^2)+2s_\gamma c_\gamma\big(g_1^2(-1+3c_{2\gamma}^2)+3g_2^2(-1+c_{2\gamma}^2)\big)-3s_{4\gamma}s_\gamma^2(g_1^2+g_2^2)\Big)$$

$$LF_{1,0}[m_\Phi]+\frac14 s_\gamma c_\gamma\frac{1}{m_\Phi^2}\Big(3y_e^{i1i2}y_u^{pi4}(s_\gamma^2\overline{y_d}^{pr}y_d^{i3r}-c_\gamma^2\overline{y_u}^{pr}y_u^{i3r})+$$

$$y_u^{i3i4}\big(-3s_\gamma^2\overline{y_e}^{pr}y_e^{pi2}y_e^{i1r}+2y_e^{i1i2}(g_1^2+3g_2^2)\big)\Big)\, LF_{1,1}[m_\Phi]+$$

$$\frac14 s_\gamma c_\gamma y_e^{i1i2}\big(2c_\gamma^2\overline{y_d}^{pr}y_d^{i3r}y_u^{pi4}-y_u^{i3i4}(g_1^2+3g_2^2)\big)\, LF_{1,2}[m_\Phi]-$$

$$s_\gamma c_\gamma g_1^2\frac{1}{m_\Phi^2}y_e^{i1i2}y_u^{i3i4}LF_{1,1,0}[m_1,m_{\tilde e}^{i2}]+\frac12 s_\gamma c_\gamma g_1^2\frac{1}{m_\Phi^2}y_e^{i1i2}y_u^{i3i4}LF_{2,1,-1}[m_1,m_{\tilde e}^{i2}]-$$

$$\frac14 s_\gamma c_\gamma g_1^2\frac{1}{m_\Phi^2}y_e^{i1i2}y_u^{i3i4}LF_{1,1,0}[m_1,m_{\tilde l}^{i1}]+\frac18 s_\gamma c_\gamma g_1^2\frac{1}{m_\Phi^2}y_e^{i1i2}y_u^{i3i4}LF_{2,1,-1}[m_1,m_{\tilde l}^{i1}]-$$

$$\frac1{36} s_\gamma c_\gamma g_1^2\frac{1}{m_\Phi^2}y_e^{i1i2}y_u^{i3i4}LF_{1,1,0}[m_1,m_{\tilde q}^{i3}]+$$

$$\frac1{72} s_\gamma c_\gamma g_1^2\frac{1}{m_\Phi^2}y_e^{i1i2}y_u^{i3i4}LF_{2,1,-1}[m_1,m_{\tilde q}^{i3}]-$$

$$\frac49 s_\gamma c_\gamma g_1^2\frac{1}{m_\Phi^2}y_e^{i1i2}y_u^{i3i4}LF_{1,1,0}[m_1,m_{\tilde u}^{i4}]+\frac29 s_\gamma c_\gamma g_1^2\frac{1}{m_\Phi^2}y_e^{i1i2}y_u^{i3i4}LF_{2,1,-1}[m_1,m_{\tilde u}^{i4}]-$$

$$s_\gamma c_\gamma g_1^2\frac1{m_\Phi^4}y_e^{i1i2}y_u^{i3i4}(c_\gamma^2+s_\gamma^2)\, LF_{1,1,-1}[m_1,\tilde\mu]-$$

$$m_1\tilde\mu g_1^2\frac1{m_\Phi^4}y_e^{i1i2}y_u^{i3i4}(c_\gamma^4-4s_\gamma^2c_\gamma^2+s_\gamma^4)\, LF_{1,1,0}[m_1,\tilde\mu]-$$

$$\frac34 s_\gamma c_\gamma g_2^2\frac{1}{m_\Phi^2}y_e^{i1i2}y_u^{i3i4}LF_{1,1,0}[m_2,m_{\tilde l}^{i1}]+\frac38 s_\gamma c_\gamma g_2^2\frac{1}{m_\Phi^2}y_e^{i1i2}y_u^{i3i4}LF_{2,1,-1}[m_2,m_{\tilde l}^{i1}]-$$

$$\frac34 s_\gamma c_\gamma g_2^2\frac{1}{m_\Phi^2}y_e^{i1i2}y_u^{i3i4}LF_{1,1,0}[m_2,m_{\tilde q}^{i3}]+\frac38 s_\gamma c_\gamma g_2^2\frac{1}{m_\Phi^2}y_e^{i1i2}y_u^{i3i4}LF_{2,1,-1}[m_2,m_{\tilde q}^{i3}]-$$

$$3s_\gamma c_\gamma g_2^2\frac1{m_\Phi^4}y_e^{i1i2}y_u^{i3i4}(c_\gamma^2+s_\gamma^2)\, LF_{1,1,-1}[m_2,\tilde\mu]-$$

$$3m_2\tilde\mu g_2^2\frac1{m_\Phi^4}y_e^{i1i2}y_u^{i3i4}(c_\gamma^4-4s_\gamma^2c_\gamma^2+s_\gamma^4)\, LF_{1,1,0}[m_2,\tilde\mu]-$$

$$\frac43 s_\gamma c_\gamma g_3^2\frac{1}{m_\Phi^2}y_e^{i1i2}y_u^{i3i4}LF_{1,1,0}[m_3,m_{\tilde q}^{i3}]+\frac23 s_\gamma c_\gamma g_3^2\frac{1}{m_\Phi^2}y_e^{i1i2}y_u^{i3i4}LF_{2,1,-1}[m_3,m_{\tilde q}^{i3}]-$$

$$\frac43 s_\gamma c_\gamma g_3^2\frac{1}{m_\Phi^2}y_e^{i1i2}y_u^{i3i4}LF_{1,1,0}[m_3,m_{\tilde u}^{i4}]+\frac23 s_\gamma c_\gamma g_3^2\frac{1}{m_\Phi^2}y_e^{i1i2}y_u^{i3i4}LF_{2,1,-1}[m_3,m_{\tilde u}^{i4}]-$$

$$3\frac1{m_\Phi^4}y_e^{i1i2}y_u^{i3i4}\Big(s_\gamma\tilde\mu c_\gamma\overline{y_d}^{pr}\big(-3s_\gamma c_\gamma a_d^{pr}+\tilde\mu y_d^{pr}(-2c_\gamma^2+s_\gamma^2)\big)+$$

$$\overline{a_d}^{pr}\big(s_\gamma c_\gamma a_d^{pr}(c_\gamma^2-2s_\gamma^2)+\tilde\mu y_d^{pr}(c_\gamma^4-s_\gamma^2c_\gamma^2+s_\gamma^4)\big)\Big)$$

$$LF_{1,1,0}[m_{\tilde d}^r,m_{\tilde q}^p]-\frac12 s_\gamma c_\gamma\frac1{m_\Phi^2}\overline{y_d}^{pr}y_d^{i3r}y_e^{i1i2}y_u^{pi4}LF_{1,1,0}[m_{\tilde d}^r,\tilde\mu]-$$

$$\frac1{m_\Phi^4}y_e^{i1i2}y_u^{i3i4}\Big(s_\gamma\tilde\mu c_\gamma\overline{y_e}^{pr}\big(-3s_\gamma c_\gamma a_e^{pr}+\tilde\mu y_e^{pr}(-2c_\gamma^2+s_\gamma^2)\big)+$$

$$\overline{a_e}^{pr}\big(s_\gamma c_\gamma a_e^{pr}(c_\gamma^2-2s_\gamma^2)+\tilde\mu y_e^{pr}(c_\gamma^4-s_\gamma^2c_\gamma^2+s_\gamma^4)\big)\Big)$$

$$LF_{1,1,0}[m_{\tilde e}^r,m_{\tilde l}^p]-\frac12 s_\gamma c_\gamma\frac1{m_\Phi^2}\overline{y_e}^{pr}y_e^{pi2}y_e^{i1r}y_u^{i3i4}LF_{1,1,0}[m_{\tilde e}^r,\tilde\mu]+$$

$$\frac1{m_\Phi^2}y_e^{i1i2}y_u^{i3i4}\Big(s_\gamma\tilde\mu c_\gamma\overline{y_e}^{pr}\big(-2s_\gamma c_\gamma a_e^{pr}+\tilde\mu y_e^{pr}(-c_\gamma^2+s_\gamma^2)\big)+$$

$$\overline{a_e}^{pr}\big(s_\gamma c_\gamma a_e^{pr}(c_\gamma^2-s_\gamma^2)+\tilde\mu y_e^{pr}(c_\gamma^4+s_\gamma^4)\big)\Big)\, LF_{2,1,0}[m_{\tilde l}^p,m_{\tilde e}^r]+$$

$$\frac1{m_\Phi^2}y_e^{i1i2}y_u^{i3i4}\Big(s_\gamma\tilde\mu c_\gamma\overline{y_e}^{pr}\big(2s_\gamma c_\gamma a_e^{pr}+\tilde\mu y_e^{pr}(c_\gamma^2-s_\gamma^2)\big)+$$

$$\overline{a_e}^{pr}\big(s_\gamma c_\gamma a_e^{pr}(-c_\gamma^2+s_\gamma^2)-\tilde\mu y_e^{pr}(c_\gamma^4+s_\gamma^4)\big)\Big)\, LF_{3,1,-1}[m_{\tilde l}^p,m_{\tilde e}^r]-$$

$$s_\gamma c_\gamma y_e^{i1i2}y_u^{i3i4}(c_\gamma\overline{a_e}^{pr}-s_\gamma\tilde\mu\overline{y_e}^{pr})(c_\gamma a_e^{pr}-s_\gamma\tilde\mu y_e^{pr})\, LF_{3,1,0}[m_{\tilde l}^p,m_{\tilde e}^r]+$$

$$3s_\gamma c_\gamma y_e^{i1i2}y_u^{i3i4}(c_\gamma\overline{a_e}^{pr}-s_\gamma\tilde\mu\overline{y_e}^{pr})(c_\gamma a_e^{pr}-s_\gamma\tilde\mu y_e^{pr})\, LF_{4,1,-1}[m_{\tilde l}^p,m_{\tilde e}^r]-$$

$$2s_\gamma c_\gamma y_e^{i1i2}y_u^{i3i4}(c_\gamma\overline{a_e}^{pr}-s_\gamma\tilde\mu\overline{y_e}^{pr})(c_\gamma a_e^{pr}-s_\gamma\tilde\mu y_e^{pr})\, LF_{5,1,-2}[m_{\tilde l}^p,m_{\tilde e}^r]-$$

$$s_\gamma c_\gamma\frac1{m_\Phi^2}\overline{y_e}^{pr}y_e^{pi2}y_e^{i1r}y_u^{i3i4}LF_{1,1,0}[m_{\tilde l}^p,\tilde\mu]+$$

$$3\frac1{m_\Phi^2}y_e^{i1i2}y_u^{i3i4}\Big(s_\gamma\tilde\mu c_\gamma\overline{y_d}^{pr}\big(-2s_\gamma c_\gamma a_d^{pr}+\tilde\mu y_d^{pr}(-c_\gamma^2+s_\gamma^2)\big)+$$

$$\overline{a_d}^{pr}\big(s_\gamma c_\gamma a_d^{pr}(c_\gamma^2-s_\gamma^2)+\tilde\mu y_d^{pr}(c_\gamma^4+s_\gamma^4)\big)\Big)\, LF_{2,1,0}[m_{\tilde q}^p,m_{\tilde d}^r]-$$

$$3\frac1{m_\Phi^2}y_e^{i1i2}y_u^{i3i4}\Big(s_\gamma\tilde\mu c_\gamma\overline{y_d}^{pr}\big(-2s_\gamma c_\gamma a_d^{pr}+\tilde\mu y_d^{pr}(-c_\gamma^2+s_\gamma^2)\big)+$$

$$\overline{a_d}^{pr}\big(s_\gamma c_\gamma a_d^{pr}(c_\gamma^2-s_\gamma^2)+\tilde\mu y_d^{pr}(c_\gamma^4+s_\gamma^4)\big)\Big)\, LF_{3,1,-1}[m_{\tilde q}^p,m_{\tilde d}^r]-$$

$$3s_\gamma c_\gamma y_e^{i1i2}y_u^{i3i4}(c_\gamma\overline{a_d}^{pr}-s_\gamma\tilde\mu\overline{y_d}^{pr})(c_\gamma a_d^{pr}-s_\gamma\tilde\mu y_d^{pr})\, LF_{3,1,0}[m_{\tilde q}^p,m_{\tilde d}^r]+$$

$$9s_\gamma c_\gamma y_e^{i1i2}y_u^{i3i4}(c_\gamma\overline{a_d}^{pr}-s_\gamma\tilde\mu\overline{y_d}^{pr})(c_\gamma a_d^{pr}-s_\gamma\tilde\mu y_d^{pr})\, LF_{4,1,-1}[m_{\tilde q}^p,m_{\tilde d}^r]-$$

$$6s_\gamma c_\gamma y_e^{i1i2}y_u^{i3i4}(c_\gamma\overline{a_d}^{pr}-s_\gamma\tilde\mu\overline{y_d}^{pr})(c_\gamma a_d^{pr}-s_\gamma\tilde\mu y_d^{pr})\, LF_{5,1,-2}[m_{\tilde q}^p,m_{\tilde d}^r]-$$

$$3\frac1{m_\Phi^4}y_e^{i1i2}y_u^{i3i4}\Big(s_\gamma\tilde\mu c_\gamma\overline{y_u}^{pr}\big(-3s_\gamma c_\gamma a_u^{pr}+\tilde\mu y_u^{pr}(c_\gamma^2-2s_\gamma^2)\big)+$$

$$\overline{a_u}^{pr}\big(s_\gamma c_\gamma a_u^{pr}(-2c_\gamma^2+s_\gamma^2)+\tilde\mu y_u^{pr}(c_\gamma^4-s_\gamma^2c_\gamma^2+s_\gamma^4)\big)\Big)$$

$$LF_{1,1,0}[m_{\tilde q}^p,m_{\tilde u}^r]-s_\gamma c_\gamma\frac1{m_\Phi^2}y_e^{i1i2}\overline{y_u}^{pr}y_u^{pi4}y_u^{i3r}LF_{1,1,0}[m_{\tilde q}^p,\tilde\mu]+$$

$$3\frac1{m_\Phi^2}y_e^{i1i2}y_u^{i3i4}\Big(s_\gamma\tilde\mu c_\gamma\overline{y_u}^{pr}\big(-2s_\gamma c_\gamma a_u^{pr}+\tilde\mu y_u^{pr}(c_\gamma^2-s_\gamma^2)\big)+$$

$$\overline{a_u}^{pr}\big(s_\gamma c_\gamma a_u^{pr}(-c_\gamma^2+s_\gamma^2)+\tilde\mu y_u^{pr}(c_\gamma^4+s_\gamma^4)\big)\Big)\, LF_{2,1,0}[m_{\tilde u}^r,m_{\tilde q}^p]+$$

$$3\frac1{m_\Phi^2}y_e^{i1i2}y_u^{i3i4}\Big(s_\gamma\tilde\mu c_\gamma\overline{y_u}^{pr}\big(2s_\gamma c_\gamma a_u^{pr}+\tilde\mu y_u^{pr}(-c_\gamma^2+s_\gamma^2)\big)+$$

$$\overline{a_u}^{pr}\big(s_\gamma c_\gamma a_u^{pr}(c_\gamma^2-s_\gamma^2)-\tilde\mu y_u^{pr}(c_\gamma^4+s_\gamma^4)\big)\Big)\, LF_{3,1,-1}[m_{\tilde u}^r,m_{\tilde q}^p]-$$

$$3s_\gamma c_\gamma y_e^{i1i2}y_u^{i3i4}(-s_\gamma\overline{a_u}^{pr}+\tilde\mu c_\gamma\overline{y_u}^{pr})(-s_\gamma a_u^{pr}+\tilde\mu c_\gamma y_u^{pr})\, LF_{3,1,0}[m_{\tilde u}^r,m_{\tilde q}^p]+$$

$$9s_\gamma c_\gamma y_e^{i1i2}y_u^{i3i4}(-s_\gamma\overline{a_u}^{pr}+\tilde\mu c_\gamma\overline{y_u}^{pr})(-s_\gamma a_u^{pr}+\tilde\mu c_\gamma y_u^{pr})\, LF_{4,1,-1}[m_{\tilde u}^r,m_{\tilde q}^p]-$$

$$6s_\gamma c_\gamma y_e^{i1i2}y_u^{i3i4}(-s_\gamma\overline{a_u}^{pr}+\tilde\mu c_\gamma\overline{y_u}^{pr})(-s_\gamma a_u^{pr}+\tilde\mu c_\gamma y_u^{pr})\, LF_{5,1,-2}[m_{\tilde u}^r,m_{\tilde q}^p]-$$

$$\frac12 s_\gamma c_\gamma\frac1{m_\Phi^2}y_e^{i1i2}\overline{y_u}^{pr}y_u^{pi4}y_u^{i3r}LF_{1,1,0}[m_{\tilde u}^r,\tilde\mu]+$$

$$m_1\tilde\mu g_1^2\frac1{m_\Phi^2}y_e^{i1i2}y_u^{i3i4}LF_{2,1,0}[\tilde\mu,m_1](c_\gamma^2-s_\gamma^2)^2+$$

$$g_1^2\frac1{m_\Phi^2}y_e^{i1i2}y_u^{i3i4}\big(2s_\gamma c_\gamma m_\Phi^2(c_\gamma^2+s_\gamma^2)-m_1\tilde\mu(c_\gamma^2-s_\gamma^2)^2\big)\, LF_{3,1,-1}[\tilde\mu,m_1]+$$

$$2m_1\tilde\mu g_1^2 s_\gamma^2c_\gamma^2 y_e^{i1i2}y_u^{i3i4}LF_{3,1,0}[\tilde\mu,m_1]-$$

$$4s_\gamma c_\gamma g_1^2 y_e^{i1i2}y_u^{i3i4}(c_\gamma^2+s_\gamma^2)\, LF_{4,1,-2}[\tilde\mu,m_1]-$$

$$6m_1\tilde\mu g_1^2 s_\gamma^2 c_\gamma^2 y_e^{i1i2}y_u^{i3i4}LF_{4,1,-1}[\tilde\mu,m_1]+$$

$$2s_\gamma c_\gamma g_1^2 y_e^{i1i2}y_u^{i3i4}(c_\gamma^2+s_\gamma^2)\, LF_{5,1,-3}[\tilde\mu,m_1]+$$

$$4m_1\tilde\mu g_1^2 s_\gamma^2c_\gamma^2 y_e^{i1i2}y_u^{i3i4}LF_{5,1,-2}[\tilde\mu,m_1]+$$

$$3m_2\tilde\mu g_2^2\frac1{m_\Phi^2}y_e^{i1i2}y_u^{i3i4}LF_{2,1,0}[\tilde\mu,m_2](c_\gamma^2-s_\gamma^2)^2+$$

$$3g_2^2\frac1{m_\Phi^2}y_e^{i1i2}y_u^{i3i4}\big(2s_\gamma c_\gamma m_\Phi^2(c_\gamma^2+s_\gamma^2)-m_2\tilde\mu(c_\gamma^2-s_\gamma^2)^2\big)\, LF_{3,1,-1}[\tilde\mu,m_2]+$$

$$6m_2\tilde\mu g_2^2 s_\gamma^2c_\gamma^2 y_e^{i1i2}y_u^{i3i4}LF_{3,1,0}[\tilde\mu,m_2]-$$

$$12s_\gamma c_\gamma g_2^2 y_e^{i1i2}y_u^{i3i4}(c_\gamma^2+s_\gamma^2)\, LF_{4,1,-2}[\tilde\mu,m_2]-$$

$$18m_2\tilde\mu g_2^2 s_\gamma^2c_\gamma^2 y_e^{i1i2}y_u^{i3i4}LF_{4,1,-1}[\tilde\mu,m_2]+$$

$$6s_\gamma c_\gamma g_2^2 y_e^{i1i2}y_u^{i3i4}(c_\gamma^2+s_\gamma^2)\, LF_{5,1,-3}[\tilde\mu,m_2]+$$

$$12m_2\tilde\mu g_2^2 s_\gamma^2c_\gamma^2 y_e^{i1i2}y_u^{i3i4}LF_{5,1,-2}[\tilde\mu,m_2]+$$

$$\frac14 s_\gamma c_\gamma\frac1{m_\Phi^2}\overline{y_d}^{pr}y_d^{i3r}y_e^{i1i2}y_u^{pi4}LF_{2,1,-1}[\tilde\mu,m_{\tilde d}^r]+$$

$$\frac14 s_\gamma c_\gamma\frac1{m_\Phi^2}\overline{y_e}^{pr}y_e^{pi2}y_e^{i1r}y_u^{i3i4}LF_{2,1,-1}[\tilde\mu,m_{\tilde e}^r]+$$

$$\frac12 s_\gamma c_\gamma\frac1{m_\Phi^2}\overline{y_e}^{pr}y_e^{pi2}y_e^{i1r}y_u^{i3i4}LF_{2,1,-1}[\tilde\mu,m_{\tilde l}^p]+$$

$$\frac12 s_\gamma c_\gamma\frac1{m_\Phi^2}y_e^{i1i2}\overline{y_u}^{pr}y_u^{pi4}y_u^{i3r}LF_{2,1,-1}[\tilde\mu,m_{\tilde q}^p]+$$

$$\frac14 s_\gamma c_\gamma\frac1{m_\Phi^2}y_e^{i1i2}\overline{y_u}^{pr}y_u^{pi4}y_u^{i3r}LF_{2,1,-1}[\tilde\mu,m_{\tilde u}^r]+$$

$$m_1 c_\gamma g_1^2\frac1{m_\Phi^2}y_u^{i3i4}(s_\gamma a_e^{i1i2}+\tilde\mu c_\gamma y_e^{i1i2})\, LF_{1,1,1,0}[m_1,m_{\tilde e}^{i2},m_{\tilde l}^{i1}]+$$

$$\frac14 m_1 s_\gamma g_1^2 y_u^{i3i4}(c_\gamma a_e^{i1i2}-s_\gamma\tilde\mu y_e^{i1i2})\, LF_{2,2,1,-1}[m_1,m_{\tilde e}^{i2},m_{\tilde l}^{i1}]+$$

$$s_\gamma c_\gamma g_1^2\frac1{m_\Phi^2}y_e^{i1i2}y_u^{i3i4}LF_{1,1,1,-1}[m_1,m_{\tilde e}^{i2},\tilde\mu]-$$

$$m_1\tilde\mu g_1^2\frac1{m_\Phi^2}c_\gamma^2 y_e^{i1i2}y_u^{i3i4}LF_{1,1,1,0}[m_1,m_{\tilde e}^{i2},\tilde\mu]+$$

$$\frac14 m_1 s_\gamma g_1^2 y_u^{i3i4}(c_\gamma a_e^{i1i2}-s_\gamma\tilde\mu y_e^{i1i2})\, LF_{2,2,1,-1}[m_1,m_{\tilde l}^{i1},m_{\tilde e}^{i2}]-$$

$$\frac12 s_\gamma c_\gamma g_1^2\frac1{m_\Phi^2}y_e^{i1i2}y_u^{i3i4}LF_{1,1,1,-1}[m_1,m_{\tilde l}^{i1},\tilde\mu]+$$

$$\frac12 m_1\tilde\mu g_1^2\frac1{m_\Phi^2}c_\gamma^2 y_e^{i1i2}y_u^{i3i4}LF_{1,1,1,0}[m_1,m_{\tilde l}^{i1},\tilde\mu]+$$

$$\frac29 m_1 s_\gamma g_1^2\frac1{m_\Phi^2}y_e^{i1i2}(c_\gamma a_u^{i3i4}+s_\gamma\tilde\mu y_u^{i3i4})\, LF_{1,1,1,0}[m_1,m_{\tilde q}^{i3},m_{\tilde u}^{i4}]+$$

$$\frac1{18}m_1 c_\gamma g_1^2 y_e^{i1i2}(s_\gamma a_u^{i3i4}-\tilde\mu c_\gamma y_u^{i3i4})\, LF_{2,2,1,-1}[m_1,m_{\tilde q}^{i3},m_{\tilde u}^{i4}]-$$

$$\frac16 s_\gamma c_\gamma g_1^2\frac1{m_\Phi^2}y_e^{i1i2}y_u^{i3i4}LF_{1,1,1,-1}[m_1,m_{\tilde q}^{i3},\tilde\mu]+$$

$$\frac16 m_1\tilde\mu g_1^2\frac1{m_\Phi^2}s_\gamma^2 y_e^{i1i2}y_u^{i3i4}LF_{1,1,1,0}[m_1,m_{\tilde q}^{i3},\tilde\mu]+$$

$$\frac1{18}m_1 c_\gamma g_1^2 y_e^{i1i2}(s_\gamma a_u^{i3i4}-\tilde\mu c_\gamma y_u^{i3i4})\, LF_{2,2,1,-1}[m_1,m_{\tilde u}^{i4},m_{\tilde q}^{i3}]+$$

$$\frac23 s_\gamma c_\gamma g_1^2\frac1{m_\Phi^2}y_e^{i1i2}y_u^{i3i4}LF_{1,1,1,-1}[m_1,m_{\tilde u}^{i4},\tilde\mu]-$$

$$\frac23 m_1\tilde\mu g_1^2\frac1{m_\Phi^2}s_\gamma^2 y_e^{i1i2}y_u^{i3i4}LF_{1,1,1,0}[m_1,m_{\tilde u}^{i4},\tilde\mu]-$$

$$\frac12 s_\gamma c_\gamma g_1^2 y_e^{i1i2}y_u^{i3i4}LF_{2,2,1,-2}[m_1,\tilde\mu,m_{\tilde e}^{i2}]-$$

$$\frac12 m_1\tilde\mu g_1^2 s_\gamma^2 y_e^{i1i2}y_u^{i3i4}LF_{2,2,1,-1}[m_1,\tilde\mu,m_{\tilde e}^{i2}]+$$

$$\frac14 s_\gamma c_\gamma g_1^2 y_e^{i1i2}y_u^{i3i4}LF_{2,2,1,-2}[m_1,\tilde\mu,m_{\tilde l}^{i1}]+$$

$$\frac14 m_1\tilde\mu g_1^2 s_\gamma^2 y_e^{i1i2}y_u^{i3i4}LF_{2,2,1,-1}[m_1,\tilde\mu,m_{\tilde l}^{i1}]+$$

$$\frac1{12} s_\gamma c_\gamma g_1^2 y_e^{i1i2}y_u^{i3i4}LF_{2,2,1,-2}[m_1,\tilde\mu,m_{\tilde q}^{i3}]+$$

$$\frac1{12} m_1\tilde\mu g_1^2 c_\gamma^2 y_e^{i1i2}y_u^{i3i4}LF_{2,2,1,-1}[m_1,\tilde\mu,m_{\tilde q}^{i3}]-$$

$$\frac13 s_\gamma c_\gamma g_1^2 y_e^{i1i2}y_u^{i3i4}LF_{2,2,1,-2}[m_1,\tilde\mu,m_{\tilde u}^{i4}]-$$

$$\frac13 m_1\tilde\mu g_1^2 c_\gamma^2 y_e^{i1i2}y_u^{i3i4}LF_{2,2,1,-1}[m_1,\tilde\mu,m_{\tilde u}^{i4}]+$$

$$\frac32 s_\gamma c_\gamma g_2^2\frac1{m_\Phi^2}y_e^{i1i2}y_u^{i3i4}LF_{1,1,1,-1}[m_2,m_{\tilde l}^{i1},\tilde\mu]-$$

$$\frac32 m_2\tilde\mu g_2^2\frac1{m_\Phi^2}c_\gamma^2 y_e^{i1i2}y_u^{i3i4}LF_{1,1,1,0}[m_2,m_{\tilde l}^{i1},\tilde\mu]+$$

$$\frac32 s_\gamma c_\gamma g_2^2\frac1{m_\Phi^2}y_e^{i1i2}y_u^{i3i4}LF_{1,1,1,-1}[m_2,m_{\tilde q}^{i3},\tilde\mu]-$$

$$\frac32 m_2\tilde\mu g_2^2\frac1{m_\Phi^2}s_\gamma^2 y_e^{i1i2}y_u^{i3i4}LF_{1,1,1,0}[m_2,m_{\tilde q}^{i3},\tilde\mu]-$$

$$\frac34 s_\gamma c_\gamma g_2^2 y_e^{i1i2}y_u^{i3i4}LF_{2,2,1,-2}[m_2,\tilde\mu,m_{\tilde l}^{i1}]-$$

$$\frac34 m_2\tilde\mu g_2^2 s_\gamma^2 y_e^{i1i2}y_u^{i3i4}LF_{2,2,1,-1}[m_2,\tilde\mu,m_{\tilde l}^{i1}]-$$

$$\frac34 s_\gamma c_\gamma g_2^2 y_e^{i1i2}y_u^{i3i4}LF_{2,2,1,-2}[m_2,\tilde\mu,m_{\tilde q}^{i3}]-$$

$$\frac34 m_2\tilde\mu g_2^2 c_\gamma^2 y_e^{i1i2}y_u^{i3i4}LF_{2,2,1,-1}[m_2,\tilde\mu,m_{\tilde q}^{i3}]+$$

$$\frac83 m_3 s_\gamma g_3^2\frac1{m_\Phi^2}y_e^{i1i2}(c_\gamma a_u^{i3i4}+s_\gamma\tilde\mu y_u^{i3i4})\, LF_{1,1,1,0}[m_3,m_{\tilde q}^{i3},m_{\tilde u}^{i4}]+$$

$$\frac23 m_3 c_\gamma g_3^2 y_e^{i1i2}(s_\gamma a_u^{i3i4}-\tilde\mu c_\gamma y_u^{i3i4})\, LF_{2,2,1,-1}[m_3,m_{\tilde q}^{i3},m_{\tilde u}^{i4}]+$$

$$\frac23 m_3 c_\gamma g_3^2 y_e^{i1i2}(s_\gamma a_u^{i3i4}-\tilde\mu c_\gamma y_u^{i3i4})\, LF_{2,2,1,-1}[m_3,m_{\tilde u}^{i4},m_{\tilde q}^{i3}]+$$

$$s_\gamma\tilde\mu\frac1{m_\Phi^2}y_d^{i3r}y_e^{i1i2}y_u^{pi4}(s_\gamma\overline{a_d}^{pr}+\tilde\mu c_\gamma\overline{y_d}^{pr})\, LF_{1,1,1,0}[m_{\tilde d}^r,m_{\tilde q}^p,\tilde\mu]+$$

$$\frac12\tilde\mu c_\gamma y_d^{i3r}y_e^{i1i2}y_u^{pi4}(c_\gamma\overline{a_d}^{pr}-s_\gamma\tilde\mu\overline{y_d}^{pr})\, LF_{2,1,1,0}[m_{\tilde d}^r,m_{\tilde q}^p,\tilde\mu]+$$

$$\frac12\tilde\mu c_\gamma y_d^{i3r}y_e^{i1i2}y_u^{pi4}(-c_\gamma\overline{a_d}^{pr}+s_\gamma\tilde\mu\overline{y_d}^{pr})\, LF_{3,1,1,-1}[m_{\tilde d}^r,m_{\tilde q}^p,\tilde\mu]+$$

$$\frac14\tilde\mu c_\gamma y_d^{i3r}y_e^{i1i2}y_u^{pi4}(-c_\gamma\overline{a_d}^{pr}+s_\gamma\tilde\mu\overline{y_d}^{pr})\, LF_{2,2,1,-1}[m_{\tilde d}^r,\tilde\mu,m_{\tilde q}^p]+$$

$$\frac12 m_1 s_\gamma g_1^2 y_u^{i3i4}(-c_\gamma a_e^{i1i2}+s_\gamma\tilde\mu y_e^{i1i2})\, LF_{2,1,1,0}[m_{\tilde e}^{i2},m_1,m_{\tilde l}^{i1}]+$$

$$\frac12 m_1 s_\gamma g_1^2 y_u^{i3i4}(c_\gamma a_e^{i1i2}-s_\gamma\tilde\mu y_e^{i1i2})\, LF_{3,1,1,-1}[m_{\tilde e}^{i2},m_1,m_{\tilde l}^{i1}]+$$

$$\frac12 m_1 s_\gamma g_1^2 y_u^{i3i4}(-c_\gamma a_e^{i1i2}+s_\gamma\tilde\mu y_e^{i1i2})\, LF_{2,1,1,0}[m_{\tilde l}^{i1},m_1,m_{\tilde e}^{i2}]+$$

$$\frac12 m_1 s_\gamma g_1^2 y_u^{i3i4}(c_\gamma a_e^{i1i2}-s_\gamma\tilde\mu y_e^{i1i2})\, LF_{3,1,1,-1}[m_{\tilde l}^{i1},m_1,m_{\tilde e}^{i2}]+$$

$$\frac12\tilde\mu c_\gamma y_d^{i3r}y_e^{i1i2}y_u^{pi4}(c_\gamma\overline{a_d}^{pr}-s_\gamma\tilde\mu\overline{y_d}^{pr})\, LF_{2,1,1,0}[m_{\tilde q}^p,m_{\tilde d}^r,\tilde\mu]+$$

$$\frac12\tilde\mu c_\gamma y_d^{i3r}y_e^{i1i2}y_u^{pi4}(-c_\gamma\overline{a_d}^{pr}+s_\gamma\tilde\mu\overline{y_d}^{pr})\, LF_{3,1,1,-1}[m_{\tilde q}^p,m_{\tilde d}^r,\tilde\mu]+$$

$$\frac14\tilde\mu c_\gamma y_d^{i3r}y_e^{i1i2}y_u^{pi4}(-c_\gamma\overline{a_d}^{pr}+s_\gamma\tilde\mu\overline{y_d}^{pr})\, LF_{2,2,1,-1}[m_{\tilde q}^p,\tilde\mu,m_{\tilde d}^r]+$$

$$\frac19 m_1 c_\gamma g_1^2 y_e^{i1i2}(-s_\gamma a_u^{i3i4}+\tilde\mu c_\gamma y_u^{i3i4})\, LF_{2,1,1,0}[m_{\tilde q}^{i3},m_1,m_{\tilde u}^{i4}]+$$

$$\frac19 m_1 c_\gamma g_1^2 y_e^{i1i2}(s_\gamma a_u^{i3i4}-\tilde\mu c_\gamma y_u^{i3i4})\, LF_{3,1,1,-1}[m_{\tilde q}^{i3},m_1,m_{\tilde u}^{i4}]+$$

$$\frac43 m_3 c_\gamma g_3^2 y_e^{i1i2}(-s_\gamma a_u^{i3i4}+\tilde\mu c_\gamma y_u^{i3i4})\, LF_{2,1,1,0}[m_{\tilde q}^{i3},m_3,m_{\tilde u}^{i4}]+$$

$$\frac43 m_3 c_\gamma g_3^2 y_e^{i1i2}(s_\gamma a_u^{i3i4}-\tilde\mu c_\gamma y_u^{i3i4})\, LF_{3,1,1,-1}[m_{\tilde q}^{i3},m_3,m_{\tilde u}^{i4}]+$$

$$\frac19 m_1 c_\gamma g_1^2 y_e^{i1i2}(-s_\gamma a_u^{i3i4}+\tilde\mu c_\gamma y_u^{i3i4})\, LF_{2,1,1,0}[m_{\tilde u}^{i4},m_1,m_{\tilde q}^{i3}]+$$

$$\frac19 m_1 c_\gamma g_1^2 y_e^{i1i2}(s_\gamma a_u^{i3i4}-\tilde\mu c_\gamma y_u^{i3i4})\, LF_{3,1,1,-1}[m_{\tilde u}^{i4},m_1,m_{\tilde q}^{i3}]+$$

$$\frac43 m_3 c_\gamma g_3^2 y_e^{i1i2}(-s_\gamma a_u^{i3i4}+\tilde\mu c_\gamma y_u^{i3i4})\, LF_{2,1,1,0}[m_{\tilde u}^{i4},m_3,m_{\tilde q}^{i3}]+$$

$$\frac43 m_3 c_\gamma g_3^2 y_e^{i1i2}(s_\gamma a_u^{i3i4}-\tilde\mu c_\gamma y_u^{i3i4})\, LF_{3,1,1,-1}[m_{\tilde u}^{i4},m_3,m_{\tilde q}^{i3}]-$$

$$\frac16 m_1\tilde\mu g_1^2 y_e^{i1i2}y_u^{i3i4}LF_{1,1,1,1,0}[m_1,m_{\tilde e}^{i2},m_{\tilde q}^{i3},\tilde\mu]+$$

$$\frac23 m_1\tilde\mu g_1^2 y_e^{i1i2}y_u^{i3i4}LF_{1,1,1,1,0}[m_1,m_{\tilde e}^{i2},m_{\tilde u}^{i4},\tilde\mu]+$$

$$\frac1{12} m_1\tilde\mu g_1^2 y_e^{i1i2}y_u^{i3i4}LF_{1,1,1,1,0}[m_1,m_{\tilde l}^{i1},m_{\tilde q}^{i3},\tilde\mu]-$$

$$\frac13 m_1\tilde\mu g_1^2 y_e^{i1i2}y_u^{i3i4}LF_{1,1,1,1,0}[m_1,m_{\tilde l}^{i1},m_{\tilde u}^{i4},\tilde\mu]+$$

$$\frac34 m_2\tilde\mu g_2^2 y_e^{i1i2}y_u^{i3i4}LF_{1,1,1,1,0}[m_2,m_{\tilde l}^{i1},m_{\tilde q}^{i3},\tilde\mu]\Big)$$