$$-\frac{1}{9}\,\hbar\,\frac{1}{\epsilon}\,B^{\mu\nu 2}-\frac{1}{4}\,\frac{1}{g_Y{}^2}\,B^{\mu\nu 2}-\frac{1}{24}\,\hbar\,\frac{1}{\epsilon}\,G^{\mu\nu A2}-\frac{1}{4}\,\frac{1}{g_s{}^2}\,G^{\mu\nu A2}-\frac{1}{4}\,\frac{1}{g_L{}^2}\,W^{\mu\nu I2}-\frac{1}{9}\,\hbar\,B^{\mu\nu 2}\,\text{Log}\left[\frac{\overline{\mu}^2}{M_\phi{}^2}\right]-$$

$$\frac{1}{24}\,\hbar\,G^{\mu\nu A2}\,\text{Log}\left[\frac{\overline{\mu}^2}{M_\phi{}^2}\right]+D_\mu\overline{H}_i\,D_\mu H^i+C_{H^2}\,\overline{H}_i\,H^i+\mathbb{i}\,\left(\overline{d}^r_a\cdot\gamma_\mu\,P_R\cdot D_\mu d^{ar}\right)+\mathbb{i}\,\left(\overline{e}^r\cdot\gamma_\mu\,P_R\cdot D_\mu e^r\right)+$$

$$\mathbb{i}\,\left(\overline{l}^r_i\cdot\gamma_\mu\,P_L\cdot D_\mu l^{ir}\right)+\mathbb{i}\,\left(\overline{q}^r_{ai}\cdot\gamma_\mu\,P_L\cdot D_\mu q^{air}\right)+\mathbb{i}\,\left(\overline{u}^r_a\cdot\gamma_\mu\,P_R\cdot D_\mu u^{ar}\right)-\frac{1}{2}\,\lambda\,\overline{H}_i\,\overline{H}_j\,H^i\,H^j+$$

$$\frac{3}{2}\,\hbar\,\frac{1}{\epsilon}\,\lambda_{H\chi}{}^2\,\overline{H}_i\,\overline{H}_j\,H^i\,H^j+\frac{3}{2}\,\hbar\,\lambda_{H\chi}{}^2\,\overline{H}_i\,\overline{H}_j\,H^i\,H^j\,\text{Log}\left[\frac{\overline{\mu}^2}{M_\phi{}^2}\right]-\overline{Y_d}^{pr}\,\overline{H}_i\,\left(\overline{d}^r_a\cdot P_L\cdot q^{aip}\right)-$$

$$\overline{Y_e}^{pr}\,\overline{H}_i\,\left(\overline{e}^r\cdot P_L\cdot l^{ip}\right)-Y_e{}^{rp}\,H^i\,(\overline{l}^r_i\cdot P_R\cdot e^p)-Y_d{}^{rp}\,H^i\,(\overline{q}^r_{ai}\cdot P_R\cdot d^{ap})-Y_u{}^{rp}\,\overline{H}_i\,(\overline{q}^r_{aj}\cdot P_R\cdot u^{ap})\,\varepsilon^{ji}-$$

$$\frac{1}{8}\,\hbar\,Y_u{}^{rt}\,\overline{\lambda_{\psi\chi}}^{ps}\,\lambda_{\psi\chi}{}^{ts}\,\overline{H}_i\,(\overline{q}^r_{aj}\cdot P_R\cdot u^{ap})\,\varepsilon^{ji}+\frac{1}{4}\,\hbar\,\frac{1}{\epsilon}\,Y_u{}^{rt}\,\overline{\lambda_{\psi\chi}}^{ps}\,\lambda_{\psi\chi}{}^{ts}\,\overline{H}_i\,(\overline{q}^r_{aj}\cdot P_R\cdot u^{ap})\,\varepsilon^{ji}+$$

$$\frac{1}{2}\,\hbar\,Y_u{}^{rt}\,\overline{\lambda_{\psi\chi}}^{ps}\,\lambda_{\psi\chi}{}^{ts}\,\text{LF}_{1,1,0}\left[M_\phi,\,M_\chi{}^s\right]\,\overline{H}_i\,(\overline{q}^r_{aj}\cdot P_R\cdot u^{ap})\,\varepsilon^{ji}-$$

$$\frac{1}{4}\,\hbar\,Y_u{}^{rt}\,\overline{\lambda_{\psi\chi}}^{ps}\,\lambda_{\psi\chi}{}^{ts}\,\text{LF}_{2,1,-1}\left[M_\chi{}^s,\,M_\phi\right]\,\overline{H}_i\,(\overline{q}^r_{aj}\cdot P_R\cdot u^{ap})\,\varepsilon^{ji}-\overline{Y_u}^{pr}\,H^j\,\left(\overline{u}^r_a\cdot P_L\cdot q^{aip}\right)\,\overline{\varepsilon}_{ij}-$$

$$\frac{1}{8}\,\hbar\,\overline{Y_u}^{ps}\,\overline{\lambda_{\psi\chi}}^{st}\,\lambda_{\psi\chi}{}^{rt}\,H^j\,\left(\overline{u}^r_a\cdot P_L\cdot q^{aip}\right)\,\overline{\varepsilon}_{ij}+\frac{1}{4}\,\hbar\,\frac{1}{\epsilon}\,\overline{Y_u}^{ps}\,\overline{\lambda_{\psi\chi}}^{st}\,\lambda_{\psi\chi}{}^{rt}\,H^j\,\left(\overline{u}^r_a\cdot P_L\cdot q^{aip}\right)\,\overline{\varepsilon}_{ij}+$$

$$\frac{1}{2}\,\hbar\,\overline{Y_u}^{ps}\,\overline{\lambda_{\psi\chi}}^{st}\,\lambda_{\psi\chi}{}^{rt}\,\text{LF}_{1,1,0}\left[M_\phi,\,M_\chi{}^t\right]\,H^j\,\left(\overline{u}^r_a\cdot P_L\cdot q^{aip}\right)\,\overline{\varepsilon}_{ij}-$$

$$\frac{1}{4}\,\hbar\,\overline{Y_u}^{ps}\,\overline{\lambda_{\psi\chi}}^{st}\,\lambda_{\psi\chi}{}^{rt}\,\text{LF}_{2,1,-1}\left[M_\chi{}^t,\,M_\phi\right]\,H^j\,\left(\overline{u}^r_a\cdot P_L\cdot q^{aip}\right)\,\overline{\varepsilon}_{ij}-$$

$$\frac{1}{360}\,\hbar\,\frac{1}{M_\phi{}^2}\,G^{\mu\nu C}\,G^{\mu\rho B}\,G^{\nu\rho A}\,f^{ABC}-\frac{1}{90}\,\hbar\,C_{H^2}\,g_Y{}^4\,\frac{1}{M_\phi{}^2}\,\overline{H}_i\,\overline{H}_j\,H^i\,H^j-\frac{1}{2}\,\hbar\,C_{H^2}\,\frac{1}{M_\phi{}^2}\,\lambda_{H\chi}{}^2\,\overline{H}_i\,\overline{H}_j\,H^i\,H^j+$$

$$\frac{1}{90}\,\hbar\,\lambda\,g_Y{}^4\,\frac{1}{M_\phi{}^2}\,\overline{H}_i\,\overline{H}_j\,\overline{H}_k\,H^i\,H^j\,H^k+\frac{1}{2}\,\hbar\,\lambda\,\frac{1}{M_\phi{}^2}\,\lambda_{H\chi}{}^2\,\overline{H}_i\,\overline{H}_j\,\overline{H}_k\,H^i\,H^j\,H^k+$$

$$\frac{1}{2}\,\hbar\,\frac{1}{M_\phi{}^2}\,\lambda_{H\chi}{}^3\,\overline{H}_i\,\overline{H}_j\,\overline{H}_k\,H^i\,H^j\,H^k-\frac{1}{45}\,\hbar\,g_Y{}^4\,\frac{1}{M_\phi{}^2}\,D_\mu\overline{H}_i\,\overline{H}_j\,H^i\,D_\mu H^j-\frac{1}{90}\,\hbar\,g_Y{}^4\,\frac{1}{M_\phi{}^2}\,\overline{H}_i\,D_\mu\overline{H}_j\,H^i\,D_\mu H^j-$$

$$\frac{1}{2}\,\hbar\,\frac{1}{M_\phi{}^2}\,\lambda_{H\chi}{}^2\,\overline{H}_i\,D_\mu\overline{H}_j\,H^i\,D_\mu H^j-\frac{1}{9}\,\hbar\,\lambda_{H\chi}\,\frac{1}{M_\phi{}^2}\,\overline{H}_i\,H^i\,B^{\mu\nu 2}-\frac{1}{24}\,\hbar\,\lambda_{H\chi}\,\frac{1}{M_\phi{}^2}\,\overline{H}_i\,H^i\,G^{\mu\nu A2}+$$

$$\frac{1}{180}\,\hbar\,g_Y{}^4\,\frac{1}{M_\phi{}^2}\,\overline{Y_d}^{pr}\,\overline{H}_i\,\overline{H}_j\,H^i\,\left(\overline{d}^r_a\cdot P_L\cdot q^{ajp}\right)+\frac{1}{4}\,\hbar\,\frac{1}{M_\phi{}^2}\,\lambda_{H\chi}{}^2\,\overline{Y_d}^{pr}\,\overline{H}_i\,\overline{H}_j\,H^i\,\left(\overline{d}^r_a\cdot P_L\cdot q^{ajp}\right)+$$

$$\frac{1}{180}\,\hbar\,g_Y{}^4\,\frac{1}{M_\phi{}^2}\,\overline{Y_e}^{pr}\,\overline{H}_i\,\overline{H}_j\,H^i\,\left(\overline{e}^r\cdot P_L\cdot l^{jp}\right)+\frac{1}{4}\,\hbar\,\frac{1}{M_\phi{}^2}\,\lambda_{H\chi}{}^2\,\overline{Y_e}^{pr}\,\overline{H}_i\,\overline{H}_j\,H^i\,\left(\overline{e}^r\cdot P_L\cdot l^{jp}\right)+$$

$$\frac{1}{180}\,\hbar\,g_Y{}^4\,\frac{1}{M_\phi{}^2}\,Y_e{}^{rp}\,\overline{H}_i\,H^i\,H^j\,(\overline{l}^r_j\cdot P_R\cdot e^p)+\frac{1}{4}\,\hbar\,\frac{1}{M_\phi{}^2}\,\lambda_{H\chi}{}^2\,Y_e{}^{rp}\,\overline{H}_i\,H^i\,H^j\,(\overline{l}^r_j\cdot P_R\cdot e^p)+$$

$$\frac{1}{180}\,\hbar\,g_Y{}^4\,\frac{1}{M_\phi{}^2}\,Y_d{}^{rp}\,\overline{H}_i\,H^i\,H^j\,(\overline{q}^r_{aj}\cdot P_R\cdot d^{ap})+\frac{1}{4}\,\hbar\,\frac{1}{M_\phi{}^2}\,\lambda_{H\chi}{}^2\,Y_d{}^{rp}\,\overline{H}_i\,H^i\,H^j\,(\overline{q}^r_{aj}\cdot P_R\cdot d^{ap})+$$

$$\frac{1}{180}\,\hbar\,g_Y{}^4\,\frac{1}{M_\phi{}^2}\,Y_u{}^{rp}\,\overline{H}_i\,\overline{H}_j\,H^i\,(\overline{q}^r_{ak}\cdot P_R\cdot u^{ap})\,\varepsilon^{kj}+\frac{1}{4}\,\hbar\,\frac{1}{M_\phi{}^2}\,\lambda_{H\chi}{}^2\,Y_u{}^{rp}\,\overline{H}_i\,\overline{H}_j\,H^i\,(\overline{q}^r_{ak}\cdot P_R\cdot u^{ap})\,\varepsilon^{kj}-$$

$$\frac{1}{2}\,\hbar\,\lambda_{H\chi}\,Y_u{}^{rt}\,\overline{\lambda_{\psi\chi}}^{ps}\,\lambda_{\psi\chi}{}^{ts}\,\text{LF}_{2,1,0}\left[M_\phi,\,M_\chi{}^s\right]\,\overline{H}_i\,\overline{H}_j\,H^i\,(\overline{q}^r_{ak}\cdot P_R\cdot u^{ap})\,\varepsilon^{kj}+$$

$$\frac{1}{4}\,\hbar\,\lambda_{H\chi}\,Y_u{}^{rt}\,\overline{\lambda_{\psi\chi}}{}^{ps}\,\lambda_{\psi\chi}{}^{ts}\,LF_{2,2,-1}\left[M_\phi,\,M_\chi{}^s\right]\,\overline{H}_i\,\overline{H}_j\,H^i\,(\overline{q}^r_{ak}\cdot P_R\cdot u^{ap})\,\varepsilon^{kj}\,-$$

$$\frac{1}{2}\,\hbar\,\overline{Y_u}{}^{st}\,Y_u{}^{rv}\,Y_u{}^{sp}\,\overline{\lambda_{\psi\chi}}{}^{tu}\,\lambda_{\psi\chi}{}^{vu}\,LF_{2,1,0}\left[M_\chi{}^u,\,M_\phi\right]\,\overline{H}_i\,\overline{H}_j\,H^i\,(\overline{q}^r_{ak}\cdot P_R\cdot u^{ap})\,\varepsilon^{kj}\,+$$

$$\hbar\,\overline{Y_u}{}^{st}\,Y_u{}^{rv}\,Y_u{}^{sp}\,\overline{\lambda_{\psi\chi}}{}^{tu}\,\lambda_{\psi\chi}{}^{vu}\,LF_{3,1,-1}\left[M_\chi{}^u,\,M_\phi\right]\,\overline{H}_i\,\overline{H}_j\,H^i\,(\overline{q}^r_{ak}\cdot P_R\cdot u^{ap})\,\varepsilon^{kj}\,-$$

$$\frac{1}{2}\,\hbar\,\overline{Y_u}{}^{st}\,Y_u{}^{rv}\,Y_u{}^{sp}\,\overline{\lambda_{\psi\chi}}{}^{tu}\,\lambda_{\psi\chi}{}^{vu}\,LF_{4,1,-2}\left[M_\chi{}^u,\,M_\phi\right]\,\overline{H}_i\,\overline{H}_j\,H^i\,(\overline{q}^r_{ak}\cdot P_R\cdot u^{ap})\,\varepsilon^{kj}\,+$$

$$\frac{1}{180}\,\hbar\,g_Y{}^4\,\frac{1}{M_\phi{}^2}\,\overline{Y_u}{}^{pr}\,\overline{H}_i\,H^i\,H^k\,\left(\overline{u}^r_a\cdot P_L\cdot q^{ajp}\right)\,\overline{\varepsilon}_{jk}+\frac{1}{4}\,\hbar\,\frac{1}{M_\phi{}^2}\,\lambda_{H\chi}{}^2\,\overline{Y_u}{}^{pr}\,\overline{H}_i\,H^i\,H^k\,\left(\overline{u}^r_a\cdot P_L\cdot q^{ajp}\right)\,\overline{\varepsilon}_{jk}\,-$$

$$\frac{1}{2}\,\hbar\,\lambda_{H\chi}\,\overline{Y_u}{}^{ps}\,\overline{\lambda_{\psi\chi}}{}^{st}\,\lambda_{\psi\chi}{}^{rt}\,LF_{2,1,0}\left[M_\phi,\,M_\chi{}^t\right]\,\overline{H}_i\,H^i\,H^k\,\left(\overline{u}^r_a\cdot P_L\cdot q^{ajp}\right)\,\overline{\varepsilon}_{jk}\,+$$

$$\frac{1}{4}\,\hbar\,\lambda_{H\chi}\,\overline{Y_u}{}^{ps}\,\overline{\lambda_{\psi\chi}}{}^{st}\,\lambda_{\psi\chi}{}^{rt}\,LF_{2,2,-1}\left[M_\phi,\,M_\chi{}^t\right]\,\overline{H}_i\,H^i\,H^k\,\left(\overline{u}^r_a\cdot P_L\cdot q^{ajp}\right)\,\overline{\varepsilon}_{jk}\,-$$

$$\frac{1}{2}\,\hbar\,\overline{Y_u}{}^{ps}\,\overline{Y_u}{}^{tr}\,Y_u{}^{tv}\,\overline{\lambda_{\psi\chi}}{}^{su}\,\lambda_{\psi\chi}{}^{vu}\,LF_{2,1,0}\left[M_\chi{}^u,\,M_\phi\right]\,\overline{H}_i\,H^i\,H^k\,\left(\overline{u}^r_a\cdot P_L\cdot q^{ajp}\right)\,\overline{\varepsilon}_{jk}\,+$$

$$\hbar\,\overline{Y_u}{}^{ps}\,\overline{Y_u}{}^{tr}\,Y_u{}^{tv}\,\overline{\lambda_{\psi\chi}}{}^{su}\,\lambda_{\psi\chi}{}^{vu}\,LF_{3,1,-1}\left[M_\chi{}^u,\,M_\phi\right]\,\overline{H}_i\,H^i\,H^k\,\left(\overline{u}^r_a\cdot P_L\cdot q^{ajp}\right)\,\overline{\varepsilon}_{jk}\,-$$

$$\frac{1}{2}\,\hbar\,\overline{Y_u}{}^{ps}\,\overline{Y_u}{}^{tr}\,Y_u{}^{tv}\,\overline{\lambda_{\psi\chi}}{}^{su}\,\lambda_{\psi\chi}{}^{vu}\,LF_{4,1,-2}\left[M_\chi{}^u,\,M_\phi\right]\,\overline{H}_i\,H^i\,H^k\,\left(\overline{u}^r_a\cdot P_L\cdot q^{ajp}\right)\,\overline{\varepsilon}_{jk}\,-$$

$$\frac{\mathbb{i}}{135}\,\hbar\,g_Y{}^4\,\frac{1}{M_\phi{}^2}\,D_\mu\overline{H}_i\,H^i\,\left(\overline{d}^r_a\cdot\gamma_\mu\,P_R\cdot d^{ar}\right)+\frac{\mathbb{i}}{135}\,\hbar\,g_Y{}^4\,\frac{1}{M_\phi{}^2}\,\overline{H}_i\,D_\mu H^i\,\left(\overline{d}^r_a\cdot\gamma_\mu\,P_R\cdot d^{ar}\right)\,-$$

$$\frac{\mathbb{i}}{45}\,\hbar\,g_Y{}^4\,\frac{1}{M_\phi{}^2}\,D_\mu\overline{H}_i\,H^i\,\left(\overline{e}^r\cdot\gamma_\mu\,P_R\cdot e^r\right)+\frac{\mathbb{i}}{45}\,\hbar\,g_Y{}^4\,\frac{1}{M_\phi{}^2}\,\overline{H}_i\,D_\mu H^i\,\left(\overline{e}^r\cdot\gamma_\mu\,P_R\cdot e^r\right)\,-$$

$$\frac{\mathbb{i}}{90}\,\hbar\,g_Y{}^4\,\frac{1}{M_\phi{}^2}\,D_\mu\overline{H}_i\,H^i\,\left(\overline{l}^r_j\cdot\gamma_\mu\,P_L\cdot l^{jr}\right)+\frac{\mathbb{i}}{90}\,\hbar\,g_Y{}^4\,\frac{1}{M_\phi{}^2}\,\overline{H}_i\,D_\mu H^i\,\left(\overline{l}^r_j\cdot\gamma_\mu\,P_L\cdot l^{jr}\right)\,-$$

$$\frac{\mathbb{i}}{2}\,\hbar\,\overline{Y_u}{}^{ps}\,Y_u{}^{ru}\,\overline{\lambda_{\psi\chi}}{}^{st}\,\lambda_{\psi\chi}{}^{ut}\,LF_{2,1,0}\left[M_\chi{}^t,\,M_\phi\right]\,D_\mu\overline{H}_i\,H^j\,\left(\overline{q}^r_{aj}\cdot\gamma_\mu\,P_L\cdot q^{aip}\right)\,+$$

$$\frac{\mathbb{i}}{2}\,\hbar\,\overline{Y_u}{}^{ps}\,Y_u{}^{ru}\,\overline{\lambda_{\psi\chi}}{}^{st}\,\lambda_{\psi\chi}{}^{ut}\,LF_{2,1,0}\left[M_\chi{}^t,\,M_\phi\right]\,\overline{H}_i\,D_\mu H^j\,\left(\overline{q}^r_{aj}\cdot\gamma_\mu\,P_L\cdot q^{aip}\right)\,+$$

$$\mathbb{i}\,\hbar\,\overline{Y_u}{}^{ps}\,Y_u{}^{ru}\,\overline{\lambda_{\psi\chi}}{}^{st}\,\lambda_{\psi\chi}{}^{ut}\,LF_{3,1,-1}\left[M_\chi{}^t,\,M_\phi\right]\,D_\mu\overline{H}_i\,H^j\,\left(\overline{q}^r_{aj}\cdot\gamma_\mu\,P_L\cdot q^{aip}\right)\,-$$

$$\mathbb{i}\,\hbar\,\overline{Y_u}{}^{ps}\,Y_u{}^{ru}\,\overline{\lambda_{\psi\chi}}{}^{st}\,\lambda_{\psi\chi}{}^{ut}\,LF_{3,1,-1}\left[M_\chi{}^t,\,M_\phi\right]\,\overline{H}_i\,D_\mu H^j\,\left(\overline{q}^r_{aj}\cdot\gamma_\mu\,P_L\cdot q^{aip}\right)\,-$$

$$\frac{\mathbb{i}}{2}\,\hbar\,\overline{Y_u}{}^{ps}\,Y_u{}^{ru}\,\overline{\lambda_{\psi\chi}}{}^{st}\,\lambda_{\psi\chi}{}^{ut}\,LF_{4,1,-2}\left[M_\chi{}^t,\,M_\phi\right]\,D_\mu\overline{H}_i\,H^j\,\left(\overline{q}^r_{aj}\cdot\gamma_\mu\,P_L\cdot q^{aip}\right)\,+$$

$$\frac{\mathbb{i}}{2}\,\hbar\,\overline{Y_u}{}^{ps}\,Y_u{}^{ru}\,\overline{\lambda_{\psi\chi}}{}^{st}\,\lambda_{\psi\chi}{}^{ut}\,LF_{4,1,-2}\left[M_\chi{}^t,\,M_\phi\right]\,\overline{H}_i\,D_\mu H^j\,\left(\overline{q}^r_{aj}\cdot\gamma_\mu\,P_L\cdot q^{aip}\right)\,+$$

$$\frac{\mathbb{i}}{270}\,\hbar\,g_Y{}^4\,\frac{1}{M_\phi{}^2}\,\delta_{pr}\,D_\mu\overline{H}_i\,H^i\,\left(\overline{q}^r_{aj}\cdot\gamma_\mu\,P_L\cdot q^{ajp}\right)-\frac{\mathbb{i}}{270}\,\hbar\,g_Y{}^4\,\frac{1}{M_\phi{}^2}\,\delta_{pr}\,\overline{H}_i\,D_\mu H^i\,\left(\overline{q}^r_{aj}\cdot\gamma_\mu\,P_L\cdot q^{ajp}\right)\,+$$

$$\frac{\mathbb{i}}{2}\,\hbar\,\overline{Y_u}{}^{ps}\,Y_u{}^{ru}\,\overline{\lambda_{\psi\chi}}{}^{st}\,\lambda_{\psi\chi}{}^{ut}\,LF_{2,1,0}\left[M_\chi{}^t,\,M_\phi\right]\,D_\mu\overline{H}_i\,H^i\,\left(\overline{q}^r_{aj}\cdot\gamma_\mu\,P_L\cdot q^{ajp}\right)\,-$$

$$\frac{\mathbb{i}}{2}\,\hbar\,\overline{Y_u}{}^{ps}\,Y_u{}^{ru}\,\overline{\lambda_{\psi\chi}}{}^{st}\,\lambda_{\psi\chi}{}^{ut}\,LF_{2,1,0}\left[M_\chi{}^t,\,M_\phi\right]\,\overline{H}_i\,D_\mu H^i\,\left(\overline{q}^r_{aj}\cdot\gamma_\mu\,P_L\cdot q^{ajp}\right)\,-$$

$$\mathbb{i}\,\hbar\,\overline{Y_u}{}^{ps}\,Y_u{}^{ru}\,\overline{\lambda_{\psi\chi}}{}^{st}\,\lambda_{\psi\chi}{}^{ut}\,LF_{3,1,-1}\left[M_\chi{}^t,\,M_\phi\right]\,D_\mu\overline{H}_i\,H^i\,\left(\overline{q}^r_{aj}\cdot\gamma_\mu\,P_L\cdot q^{ajp}\right)\,+$$

$$\mathbb{i}\,\hbar\,\overline{Y_u}{}^{ps}\,Y_u{}^{ru}\,\overline{\lambda_{\psi\chi}}{}^{st}\,\lambda_{\psi\chi}{}^{ut}\,LF_{3,1,-1}\left[M_\chi{}^t,\,M_\phi\right]\,\overline{H}_i\,D_\mu H^i\,\left(\overline{q}^r_{aj}\cdot\gamma_\mu\,P_L\cdot q^{ajp}\right)\,+$$

$$\frac{\mathbb{i}}{2}\,\hbar\,\overline{Y_u}^{ps}\,Y_u{}^{ru}\,\overline{\lambda_{\psi\chi}}^{st}\,\lambda_{\psi\chi}{}^{ut}\,LF_{4,1,-2}\left[M_\chi{}^t,\,M_\phi\right]\,D_\mu\overline{H}_i\,H^i\,\left(\overline{q}^r_{aj}\cdot\gamma_\mu\,P_L\cdot q^{ajp}\right)-$$

$$\frac{\mathbb{i}}{2}\,\hbar\,\overline{Y_u}^{ps}\,Y_u{}^{ru}\,\overline{\lambda_{\psi\chi}}^{st}\,\lambda_{\psi\chi}{}^{ut}\,LF_{4,1,-2}\left[M_\chi{}^t,\,M_\phi\right]\,\overline{H}_i\,D_\mu H^i\,\left(\overline{q}^r_{aj}\cdot\gamma_\mu\,P_L\cdot q^{ajp}\right)+$$

$$\frac{2\,\mathbb{i}}{135}\,\hbar\,g_Y{}^4\,\frac{1}{M_\phi{}^2}\,\delta_{pr}\,D_\mu\overline{H}_i\,H^i\,\left(\overline{u}^r_a\cdot\gamma_\mu\,P_R\cdot u^{ap}\right)-\frac{2\,\mathbb{i}}{135}\,\hbar\,g_Y{}^4\,\frac{1}{M_\phi{}^2}\,\delta_{pr}\,\overline{H}_i\,D_\mu H^i\,\left(\overline{u}^r_a\cdot\gamma_\mu\,P_R\cdot u^{ap}\right)+$$

$$\frac{\mathbb{i}}{9}\,\hbar\,g_Y{}^2\,\overline{\lambda_{\psi\chi}}^{ps}\,\lambda_{\psi\chi}{}^{rs}\,LF_{2,1,0}\left[M_\phi,\,M_\chi{}^s\right]\,D_\mu\overline{H}_i\,H^i\,\left(\overline{u}^r_a\cdot\gamma_\mu\,P_R\cdot u^{ap}\right)-$$

$$\frac{\mathbb{i}}{9}\,\hbar\,g_Y{}^2\,\overline{\lambda_{\psi\chi}}^{ps}\,\lambda_{\psi\chi}{}^{rs}\,LF_{2,1,0}\left[M_\phi,\,M_\chi{}^s\right]\,\overline{H}_i\,D_\mu H^i\,\left(\overline{u}^r_a\cdot\gamma_\mu\,P_R\cdot u^{ap}\right)-$$

$$\frac{\mathbb{i}}{18}\,\hbar\,g_Y{}^2\,\overline{\lambda_{\psi\chi}}^{ps}\,\lambda_{\psi\chi}{}^{rs}\,LF_{2,2,-1}\left[M_\phi,\,M_\chi{}^s\right]\,D_\mu\overline{H}_i\,H^i\,\left(\overline{u}^r_a\cdot\gamma_\mu\,P_R\cdot u^{ap}\right)+$$

$$\frac{\mathbb{i}}{18}\,\hbar\,g_Y{}^2\,\overline{\lambda_{\psi\chi}}^{ps}\,\lambda_{\psi\chi}{}^{rs}\,LF_{2,2,-1}\left[M_\phi,\,M_\chi{}^s\right]\,\overline{H}_i\,D_\mu H^i\,\left(\overline{u}^r_a\cdot\gamma_\mu\,P_R\cdot u^{ap}\right)-$$

$$\frac{\mathbb{i}}{18}\,\hbar\,g_Y{}^2\,\overline{\lambda_{\psi\chi}}^{ps}\,\lambda_{\psi\chi}{}^{rs}\,LF_{3,1,-1}\left[M_\phi,\,M_\chi{}^s\right]\,D_\mu\overline{H}_i\,H^i\,\left(\overline{u}^r_a\cdot\gamma_\mu\,P_R\cdot u^{ap}\right)+$$

$$\frac{\mathbb{i}}{18}\,\hbar\,g_Y{}^2\,\overline{\lambda_{\psi\chi}}^{ps}\,\lambda_{\psi\chi}{}^{rs}\,LF_{3,1,-1}\left[M_\phi,\,M_\chi{}^s\right]\,\overline{H}_i\,D_\mu H^i\,\left(\overline{u}^r_a\cdot\gamma_\mu\,P_R\cdot u^{ap}\right)-$$

$$\frac{\mathbb{i}}{18}\,\hbar\,g_Y{}^2\,\overline{\lambda_{\psi\chi}}^{ps}\,\lambda_{\psi\chi}{}^{rs}\,LF_{2,1,0}\left[M_\chi{}^s,\,M_\phi\right]\,D_\mu\overline{H}_i\,H^i\,\left(\overline{u}^r_a\cdot\gamma_\mu\,P_R\cdot u^{ap}\right)+$$

$$\frac{\mathbb{i}}{18}\,\hbar\,g_Y{}^2\,\overline{\lambda_{\psi\chi}}^{ps}\,\lambda_{\psi\chi}{}^{rs}\,LF_{2,1,0}\left[M_\chi{}^s,\,M_\phi\right]\,\overline{H}_i\,D_\mu H^i\,\left(\overline{u}^r_a\cdot\gamma_\mu\,P_R\cdot u^{ap}\right)+$$

$$\frac{\mathbb{i}}{9}\,\hbar\,g_Y{}^2\,\overline{\lambda_{\psi\chi}}^{ps}\,\lambda_{\psi\chi}{}^{rs}\,LF_{3,1,-1}\left[M_\chi{}^s,\,M_\phi\right]\,D_\mu\overline{H}_i\,H^i\,\left(\overline{u}^r_a\cdot\gamma_\mu\,P_R\cdot u^{ap}\right)-$$

$$\frac{\mathbb{i}}{9}\,\hbar\,g_Y{}^2\,\overline{\lambda_{\psi\chi}}^{ps}\,\lambda_{\psi\chi}{}^{rs}\,LF_{3,1,-1}\left[M_\chi{}^s,\,M_\phi\right]\,\overline{H}_i\,D_\mu H^i\,\left(\overline{u}^r_a\cdot\gamma_\mu\,P_R\cdot u^{ap}\right)-$$

$$\frac{\mathbb{i}}{18}\,\hbar\,g_Y{}^2\,\overline{\lambda_{\psi\chi}}^{ps}\,\lambda_{\psi\chi}{}^{rs}\,LF_{4,1,-2}\left[M_\chi{}^s,\,M_\phi\right]\,D_\mu\overline{H}_i\,H^i\,\left(\overline{u}^r_a\cdot\gamma_\mu\,P_R\cdot u^{ap}\right)+$$

$$\frac{\mathbb{i}}{18}\,\hbar\,g_Y{}^2\,\overline{\lambda_{\psi\chi}}^{ps}\,\lambda_{\psi\chi}{}^{rs}\,LF_{4,1,-2}\left[M_\chi{}^s,\,M_\phi\right]\,\overline{H}_i\,D_\mu H^i\,\left(\overline{u}^r_a\cdot\gamma_\mu\,P_R\cdot u^{ap}\right)+$$

$$\frac{\mathbb{i}}{6}\,\hbar\,Y_u{}^{rt}\,\overline{\lambda_{\psi\chi}}^{ps}\,\lambda_{\psi\chi}{}^{ts}\,LF_{2,1,0}\left[M_\chi{}^s,\,M_\phi\right]\,\overline{H}_i\,B^{\mu\nu}\,\left(\overline{q}^r_{aj}\cdot\Gamma_{\mu\nu}\,P_R\cdot u^{ap}\right)\,\varepsilon^{ji}-$$

$$\frac{\mathbb{i}}{3}\,\hbar\,Y_u{}^{rt}\,\overline{\lambda_{\psi\chi}}^{ps}\,\lambda_{\psi\chi}{}^{ts}\,LF_{3,1,-1}\left[M_\chi{}^s,\,M_\phi\right]\,\overline{H}_i\,B^{\mu\nu}\,\left(\overline{q}^r_{aj}\cdot\Gamma_{\mu\nu}\,P_R\cdot u^{ap}\right)\,\varepsilon^{ji}+$$

$$\frac{\mathbb{i}}{6}\,\hbar\,Y_u{}^{rt}\,\overline{\lambda_{\psi\chi}}^{ps}\,\lambda_{\psi\chi}{}^{ts}\,LF_{4,1,-2}\left[M_\chi{}^s,\,M_\phi\right]\,\overline{H}_i\,B^{\mu\nu}\,\left(\overline{q}^r_{aj}\cdot\Gamma_{\mu\nu}\,P_R\cdot u^{ap}\right)\,\varepsilon^{ji}+$$

$$\frac{\mathbb{i}}{4}\,\hbar\,Y_u{}^{rt}\,\overline{\lambda_{\psi\chi}}^{ps}\,\lambda_{\psi\chi}{}^{ts}\,LF_{2,1,0}\left[M_\chi{}^s,\,M_\phi\right]\,\overline{H}_i\,G^{\mu\nu A}\,\left(\overline{q}^r_{aj}\cdot\Gamma_{\mu\nu}\,P_R\cdot u^{bp}\right)\,\varepsilon^{ji}\,T^{Aa}_b-$$

$$\frac{\mathbb{i}}{2}\,\hbar\,Y_u{}^{rt}\,\overline{\lambda_{\psi\chi}}^{ps}\,\lambda_{\psi\chi}{}^{ts}\,LF_{3,1,-1}\left[M_\chi{}^s,\,M_\phi\right]\,\overline{H}_i\,G^{\mu\nu A}\,\left(\overline{q}^r_{aj}\cdot\Gamma_{\mu\nu}\,P_R\cdot u^{bp}\right)\,\varepsilon^{ji}\,T^{Aa}_b+$$

$$\frac{\mathbb{i}}{4}\,\hbar\,Y_u{}^{rt}\,\overline{\lambda_{\psi\chi}}^{ps}\,\lambda_{\psi\chi}{}^{ts}\,LF_{4,1,-2}\left[M_\chi{}^s,\,M_\phi\right]\,\overline{H}_i\,G^{\mu\nu A}\,\left(\overline{q}^r_{aj}\cdot\Gamma_{\mu\nu}\,P_R\cdot u^{bp}\right)\,\varepsilon^{ji}\,T^{Aa}_b+$$

$$\frac{\mathbb{i}}{6}\,\hbar\,\overline{Y_u}^{ps}\,\overline{\lambda_{\psi\chi}}^{st}\,\lambda_{\psi\chi}{}^{rt}\,LF_{2,1,0}\left[M_\chi{}^t,\,M_\phi\right]\,H^j\,B^{\mu\nu}\,\left(\overline{u}^r_a\cdot\Gamma_{\mu\nu}\,P_L\cdot q^{aip}\right)\,\overline{\varepsilon}_{ij}-$$

$$\frac{i}{3}\,\hbar\,\overline{Y_u}^{ps}\,\overline{\lambda_{\psi\chi}}^{st}\,\lambda_{\psi\chi}{}^{rt}\,\mathrm{LF}_{3,1,-1}\left[M_\chi{}^t,\,M_\phi\right]\,H^j\,B^{\mu\nu}\,\left(\overline{u}^r_a\cdot\Gamma_{\mu\nu}\,P_L\cdot q^{aip}\right)\,\overline{\varepsilon}_{ij}\,+$$

$$\frac{i}{6}\,\hbar\,\overline{Y_u}^{ps}\,\overline{\lambda_{\psi\chi}}^{st}\,\lambda_{\psi\chi}{}^{rt}\,\mathrm{LF}_{4,1,-2}\left[M_\chi{}^t,\,M_\phi\right]\,H^j\,B^{\mu\nu}\,\left(\overline{u}^r_a\cdot\Gamma_{\mu\nu}\,P_L\cdot q^{aip}\right)\,\overline{\varepsilon}_{ij}\,+$$

$$\frac{i}{4}\,\hbar\,\overline{Y_u}^{ps}\,\overline{\lambda_{\psi\chi}}^{st}\,\lambda_{\psi\chi}{}^{rt}\,\mathrm{LF}_{2,1,0}\left[M_\chi{}^t,\,M_\phi\right]\,H^j\,G^{\mu\nu A}\,\left(\overline{u}^r_a\cdot\Gamma_{\mu\nu}\,P_L\cdot q^{bip}\right)\,\overline{\varepsilon}_{ij}\,T^{Aa}_b\,-$$

$$\frac{i}{2}\,\hbar\,\overline{Y_u}^{ps}\,\overline{\lambda_{\psi\chi}}^{st}\,\lambda_{\psi\chi}{}^{rt}\,\mathrm{LF}_{3,1,-1}\left[M_\chi{}^t,\,M_\phi\right]\,H^j\,G^{\mu\nu A}\,\left(\overline{u}^r_a\cdot\Gamma_{\mu\nu}\,P_L\cdot q^{bip}\right)\,\overline{\varepsilon}_{ij}\,T^{Aa}_b\,+$$

$$\frac{i}{4}\,\hbar\,\overline{Y_u}^{ps}\,\overline{\lambda_{\psi\chi}}^{st}\,\lambda_{\psi\chi}{}^{rt}\,\mathrm{LF}_{4,1,-2}\left[M_\chi{}^t,\,M_\phi\right]\,H^j\,G^{\mu\nu A}\,\left(\overline{u}^r_a\cdot\Gamma_{\mu\nu}\,P_L\cdot q^{bip}\right)\,\overline{\varepsilon}_{ij}\,T^{Aa}_b\,-$$

$$\frac{1}{240}\,\hbar\,g_s{}^4\,\frac{1}{M_\phi{}^2}\,\delta_{pt}\,\delta_{rs}\,\left(\overline{d}^s_a\cdot\gamma_\mu\,P_R\cdot d^{ap}\right)\,\left(\overline{d}^t_b\cdot\gamma_\mu\,P_R\cdot d^{br}\right)\,+$$

$$\frac{1}{720}\,\hbar\,g_s{}^4\,\frac{1}{M_\phi{}^2}\,\delta_{ps}\,\delta_{rt}\,\left(\overline{d}^s_a\cdot\gamma_\mu\,P_R\cdot d^{ap}\right)\,\left(\overline{d}^t_b\cdot\gamma_\mu\,P_R\cdot d^{br}\right)\,-$$

$$\frac{1}{405}\,\hbar\,g_Y{}^4\,\frac{1}{M_\phi{}^2}\,\delta_{ps}\,\delta_{rt}\,\left(\overline{d}^s_a\cdot\gamma_\mu\,P_R\cdot d^{ap}\right)\,\left(\overline{d}^t_b\cdot\gamma_\mu\,P_R\cdot d^{br}\right)\,-$$

$$\frac{1}{90}\,\hbar\,g_Y{}^4\,\frac{1}{M_\phi{}^2}\,\left(\overline{e}^s\cdot\gamma_\mu\,P_R\cdot e^t\right)\,\left(\overline{e}^t\cdot\gamma_\mu\,P_R\cdot e^s\right)-\frac{2}{135}\,\hbar\,g_Y{}^4\,\frac{1}{M_\phi{}^2}\,\left(\overline{d}^s_a\cdot\gamma_\mu\,P_R\cdot d^{as}\right)\,\left(\overline{e}^t\cdot\gamma_\mu\,P_R\cdot e^t\right)\,-$$

$$\frac{1}{90}\,\hbar\,g_Y{}^4\,\frac{1}{M_\phi{}^2}\,\left(\overline{e}^s\cdot\gamma_\mu\,P_R\cdot e^s\right)\,\left(\overline{e}^t\cdot\gamma_\mu\,P_R\cdot e^t\right)-\frac{1}{135}\,\hbar\,g_Y{}^4\,\frac{1}{M_\phi{}^2}\,\left(\overline{d}^s_a\cdot\gamma_\mu\,P_R\cdot d^{as}\right)\,\left(\overline{l}^t_i\cdot\gamma_\mu\,P_L\cdot l^{it}\right)\,-$$

$$\frac{1}{45}\,\hbar\,g_Y{}^4\,\frac{1}{M_\phi{}^2}\,\left(\overline{e}^s\cdot\gamma_\mu\,P_R\cdot e^s\right)\,\left(\overline{l}^t_i\cdot\gamma_\mu\,P_L\cdot l^{it}\right)-\frac{1}{180}\,\hbar\,g_Y{}^4\,\frac{1}{M_\phi{}^2}\,\left(\overline{l}^s_i\cdot\gamma_\mu\,P_L\cdot l^{is}\right)\,\left(\overline{l}^t_j\cdot\gamma_\mu\,P_L\cdot l^{jt}\right)\,+$$

$$\frac{1}{135}\,\hbar\,g_Y{}^4\,\frac{1}{M_\phi{}^2}\,\left(\overline{e}^s\cdot\gamma_\mu\,P_R\cdot e^s\right)\,\left(\overline{q}^t_{ai}\cdot\gamma_\mu\,P_L\cdot q^{ait}\right)\,+$$

$$\frac{1}{270}\,\hbar\,g_Y{}^4\,\frac{1}{M_\phi{}^2}\,\left(\overline{l}^s_i\cdot\gamma_\mu\,P_L\cdot l^{is}\right)\,\left(\overline{q}^t_{aj}\cdot\gamma_\mu\,P_L\cdot q^{ajt}\right)\,-$$

$$\frac{1}{120}\,\hbar\,g_s{}^4\,\frac{1}{M_\phi{}^2}\,\left(\overline{d}^s_a\cdot\gamma_\mu\,P_R\cdot d^{bs}\right)\,\left(\overline{q}^t_{bi}\cdot\gamma_\mu\,P_L\cdot q^{ait}\right)\,+$$

$$\frac{1}{360}\,\hbar\,g_s{}^4\,\frac{1}{M_\phi{}^2}\,\left(\overline{d}^s_a\cdot\gamma_\mu\,P_R\cdot d^{as}\right)\,\left(\overline{q}^t_{bi}\cdot\gamma_\mu\,P_L\cdot q^{bit}\right)\,+$$

$$\frac{1}{405}\,\hbar\,g_Y{}^4\,\frac{1}{M_\phi{}^2}\,\left(\overline{d}^s_a\cdot\gamma_\mu\,P_R\cdot d^{as}\right)\,\left(\overline{q}^t_{bi}\cdot\gamma_\mu\,P_L\cdot q^{bit}\right)\,-$$

$$\frac{1}{240}\,\hbar\,g_s{}^4\,\frac{1}{M_\phi{}^2}\,\left(\overline{q}^s_{ai}\cdot\gamma_\mu\,P_L\cdot q^{ajt}\right)\,\left(\overline{q}^t_{bj}\cdot\gamma_\mu\,P_L\cdot q^{bis}\right)\,+$$

$$\frac{1}{720}\,\hbar\,g_s{}^4\,\frac{1}{M_\phi{}^2}\,\left(\overline{q}^s_{ai}\cdot\gamma_\mu\,P_L\cdot q^{ais}\right)\,\left(\overline{q}^t_{bj}\cdot\gamma_\mu\,P_L\cdot q^{bjt}\right)\,-$$

$$\frac{1}{1620}\,\hbar\,g_Y{}^4\,\frac{1}{M_\phi{}^2}\,\left(\overline{q}^s_{ai}\cdot\gamma_\mu\,P_L\cdot q^{ais}\right)\,\left(\overline{q}^t_{bj}\cdot\gamma_\mu\,P_L\cdot q^{bjt}\right)\,+$$

$$\frac{4}{135}\,\hbar\,g_Y{}^4\,\frac{1}{M_\phi{}^2}\,\delta_{ps}\,\delta_{rt}\,\left(\overline{e}^s\cdot\gamma_\mu\,P_R\cdot e^p\right)\,\left(\overline{u}^t_a\cdot\gamma_\mu\,P_R\cdot u^{ar}\right)\,+$$

$$\frac{2}{9}\,\hbar\, g_Y{}^2\, \overline{\lambda_{\psi\chi}}^{ru}\, \lambda_{\psi\chi}{}^{tu}\, \mathtt{LF}_{2,1,0}\left[M_\phi,\, M_\chi{}^u\right] \delta_{ps} \left(\overline{e}^s\cdot\gamma_\mu\, P_R\cdot e^p\right)\left(\overline{u}^t_a\cdot\gamma_\mu\, P_R\cdot u^{ar}\right) -$$

$$\frac{1}{9}\,\hbar\, g_Y{}^2\, \overline{\lambda_{\psi\chi}}^{ru}\, \lambda_{\psi\chi}{}^{tu}\, \mathtt{LF}_{2,2,-1}\left[M_\phi,\, M_\chi{}^u\right] \delta_{ps} \left(\overline{e}^s\cdot\gamma_\mu\, P_R\cdot e^p\right)\left(\overline{u}^t_a\cdot\gamma_\mu\, P_R\cdot u^{ar}\right) -$$

$$\frac{1}{9}\,\hbar\, g_Y{}^2\, \overline{\lambda_{\psi\chi}}^{ru}\, \lambda_{\psi\chi}{}^{tu}\, \mathtt{LF}_{3,1,-1}\left[M_\phi,\, M_\chi{}^u\right] \delta_{ps} \left(\overline{e}^s\cdot\gamma_\mu\, P_R\cdot e^p\right)\left(\overline{u}^t_a\cdot\gamma_\mu\, P_R\cdot u^{ar}\right) -$$

$$\frac{1}{9}\,\hbar\, g_Y{}^2\, \overline{\lambda_{\psi\chi}}^{ru}\, \lambda_{\psi\chi}{}^{tu}\, \mathtt{LF}_{2,1,0}\left[M_\chi{}^u,\, M_\phi\right] \delta_{ps} \left(\overline{e}^s\cdot\gamma_\mu\, P_R\cdot e^p\right)\left(\overline{u}^t_a\cdot\gamma_\mu\, P_R\cdot u^{ar}\right) +$$

$$\frac{2}{9}\,\hbar\, g_Y{}^2\, \overline{\lambda_{\psi\chi}}^{ru}\, \lambda_{\psi\chi}{}^{tu}\, \mathtt{LF}_{3,1,-1}\left[M_\chi{}^u,\, M_\phi\right] \delta_{ps} \left(\overline{e}^s\cdot\gamma_\mu\, P_R\cdot e^p\right)\left(\overline{u}^t_a\cdot\gamma_\mu\, P_R\cdot u^{ar}\right) -$$

$$\frac{1}{9}\,\hbar\, g_Y{}^2\, \overline{\lambda_{\psi\chi}}^{ru}\, \lambda_{\psi\chi}{}^{tu}\, \mathtt{LF}_{4,1,-2}\left[M_\chi{}^u,\, M_\phi\right] \delta_{ps} \left(\overline{e}^s\cdot\gamma_\mu\, P_R\cdot e^p\right)\left(\overline{u}^t_a\cdot\gamma_\mu\, P_R\cdot u^{ar}\right) +$$

$$\frac{2}{135}\,\hbar\, g_Y{}^4\, \frac{1}{M_\phi{}^2}\, \delta_{ps}\, \delta_{rt} \left(\overline{l}^s_i\cdot\gamma_\mu\, P_L\cdot l^{ip}\right)\left(\overline{u}^t_a\cdot\gamma_\mu\, P_R\cdot u^{ar}\right) +$$

$$\frac{1}{9}\,\hbar\, g_Y{}^2\, \overline{\lambda_{\psi\chi}}^{ru}\, \lambda_{\psi\chi}{}^{tu}\, \mathtt{LF}_{2,1,0}\left[M_\phi,\, M_\chi{}^u\right] \delta_{ps} \left(\overline{l}^s_i\cdot\gamma_\mu\, P_L\cdot l^{ip}\right)\left(\overline{u}^t_a\cdot\gamma_\mu\, P_R\cdot u^{ar}\right) -$$

$$\frac{1}{18}\,\hbar\, g_Y{}^2\, \overline{\lambda_{\psi\chi}}^{ru}\, \lambda_{\psi\chi}{}^{tu}\, \mathtt{LF}_{2,2,-1}\left[M_\phi,\, M_\chi{}^u\right] \delta_{ps} \left(\overline{l}^s_i\cdot\gamma_\mu\, P_L\cdot l^{ip}\right)\left(\overline{u}^t_a\cdot\gamma_\mu\, P_R\cdot u^{ar}\right) -$$

$$\frac{1}{18}\,\hbar\, g_Y{}^2\, \overline{\lambda_{\psi\chi}}^{ru}\, \lambda_{\psi\chi}{}^{tu}\, \mathtt{LF}_{3,1,-1}\left[M_\phi,\, M_\chi{}^u\right] \delta_{ps} \left(\overline{l}^s_i\cdot\gamma_\mu\, P_L\cdot l^{ip}\right)\left(\overline{u}^t_a\cdot\gamma_\mu\, P_R\cdot u^{ar}\right) -$$

$$\frac{1}{18}\,\hbar\, g_Y{}^2\, \overline{\lambda_{\psi\chi}}^{ru}\, \lambda_{\psi\chi}{}^{tu}\, \mathtt{LF}_{2,1,0}\left[M_\chi{}^u,\, M_\phi\right] \delta_{ps} \left(\overline{l}^s_i\cdot\gamma_\mu\, P_L\cdot l^{ip}\right)\left(\overline{u}^t_a\cdot\gamma_\mu\, P_R\cdot u^{ar}\right) +$$

$$\frac{1}{9}\,\hbar\, g_Y{}^2\, \overline{\lambda_{\psi\chi}}^{ru}\, \lambda_{\psi\chi}{}^{tu}\, \mathtt{LF}_{3,1,-1}\left[M_\chi{}^u,\, M_\phi\right] \delta_{ps} \left(\overline{l}^s_i\cdot\gamma_\mu\, P_L\cdot l^{ip}\right)\left(\overline{u}^t_a\cdot\gamma_\mu\, P_R\cdot u^{ar}\right) -$$

$$\frac{1}{18}\,\hbar\, g_Y{}^2\, \overline{\lambda_{\psi\chi}}^{ru}\, \lambda_{\psi\chi}{}^{tu}\, \mathtt{LF}_{4,1,-2}\left[M_\chi{}^u,\, M_\phi\right] \delta_{ps} \left(\overline{l}^s_i\cdot\gamma_\mu\, P_L\cdot l^{ip}\right)\left(\overline{u}^t_a\cdot\gamma_\mu\, P_R\cdot u^{ar}\right) -$$

$$\frac{1}{120}\,\hbar\, g_s{}^4\, \frac{1}{M_\phi{}^2}\, \delta_{ps}\, \delta_{rt} \left(\overline{d}^s_a\cdot\gamma_\mu\, P_R\cdot d^{bp}\right)\left(\overline{u}^t_b\cdot\gamma_\mu\, P_R\cdot u^{ar}\right) -$$

$$\frac{1}{6}\,\hbar\, g_s{}^2\, \overline{\lambda_{\psi\chi}}^{ru}\, \lambda_{\psi\chi}{}^{tu}\, \mathtt{LF}_{2,1,0}\left[M_\phi,\, M_\chi{}^u\right] \delta_{ps} \left(\overline{d}^s_a\cdot\gamma_\mu\, P_R\cdot d^{bp}\right)\left(\overline{u}^t_b\cdot\gamma_\mu\, P_R\cdot u^{ar}\right) +$$

$$\frac{1}{12}\,\hbar\, g_s{}^2\, \overline{\lambda_{\psi\chi}}^{ru}\, \lambda_{\psi\chi}{}^{tu}\, \mathtt{LF}_{2,2,-1}\left[M_\phi,\, M_\chi{}^u\right] \delta_{ps} \left(\overline{d}^s_a\cdot\gamma_\mu\, P_R\cdot d^{bp}\right)\left(\overline{u}^t_b\cdot\gamma_\mu\, P_R\cdot u^{ar}\right) +$$

$$\frac{1}{12}\,\hbar\, g_s{}^2\, \overline{\lambda_{\psi\chi}}^{ru}\, \lambda_{\psi\chi}{}^{tu}\, \mathtt{LF}_{3,1,-1}\left[M_\phi,\, M_\chi{}^u\right] \delta_{ps} \left(\overline{d}^s_a\cdot\gamma_\mu\, P_R\cdot d^{bp}\right)\left(\overline{u}^t_b\cdot\gamma_\mu\, P_R\cdot u^{ar}\right) +$$

$$\frac{1}{12}\,\hbar\, g_s{}^2\, \overline{\lambda_{\psi\chi}}^{ru}\, \lambda_{\psi\chi}{}^{tu}\, \mathtt{LF}_{2,1,0}\left[M_\chi{}^u,\, M_\phi\right] \delta_{ps} \left(\overline{d}^s_a\cdot\gamma_\mu\, P_R\cdot d^{bp}\right)\left(\overline{u}^t_b\cdot\gamma_\mu\, P_R\cdot u^{ar}\right) -$$

$$\frac{1}{6}\,\hbar\, g_s{}^2\, \overline{\lambda_{\psi\chi}}^{ru}\, \lambda_{\psi\chi}{}^{tu}\, \mathtt{LF}_{3,1,-1}\left[M_\chi{}^u,\, M_\phi\right] \delta_{ps} \left(\overline{d}^s_a\cdot\gamma_\mu\, P_R\cdot d^{bp}\right)\left(\overline{u}^t_b\cdot\gamma_\mu\, P_R\cdot u^{ar}\right) +$$

$$\frac{1}{12}\,\hbar\, g_s{}^2\, \overline{\lambda_{\psi\chi}}^{ru}\, \lambda_{\psi\chi}{}^{tu}\, \mathtt{LF}_{4,1,-2}\left[M_\chi{}^u,\, M_\phi\right] \delta_{ps} \left(\overline{d}^s_a\cdot\gamma_\mu\, P_R\cdot d^{bp}\right)\left(\overline{u}^t_b\cdot\gamma_\mu\, P_R\cdot u^{ar}\right) -$$

$$\frac{1}{120}\,\hbar\, g_s{}^4\, \frac{1}{M_\phi{}^2}\, \delta_{ps}\, \delta_{rt} \left(\overline{q}^s_{ai}\cdot\gamma_\mu\, P_L\cdot q^{bip}\right)\left(\overline{u}^t_b\cdot\gamma_\mu\, P_R\cdot u^{ar}\right) -$$

$$\frac{1}{6}\,\hbar\, g_s{}^2\, \overline{\lambda_{\psi\chi}}^{ru}\, \lambda_{\psi\chi}{}^{tu}\, \mathtt{LF}_{2,1,0}\left[M_\phi,\, M_\chi{}^u\right] \delta_{ps} \left(\overline{q}^s_{ai}\cdot\gamma_\mu\, P_L\cdot q^{bip}\right)\left(\overline{u}^t_b\cdot\gamma_\mu\, P_R\cdot u^{ar}\right) +$$

$$\frac{1}{12}\,\hbar\, g_s{}^2\, \overline{\lambda_{\psi\chi}}^{ru}\, \lambda_{\psi\chi}{}^{tu}\, \text{LF}_{2,2,-1}\left[M_\phi,\, M_\chi{}^u\right]\, \delta_{ps}\, \left(\overline{q}^s_{ai}\cdot\gamma_\mu\, P_L\cdot q^{bip}\right)\, \left(\overline{u}^t_b\cdot\gamma_\mu\, P_R\cdot u^{ar}\right) +$$

$$\frac{1}{12}\,\hbar\, g_s{}^2\, \overline{\lambda_{\psi\chi}}^{ru}\, \lambda_{\psi\chi}{}^{tu}\, \text{LF}_{3,1,-1}\left[M_\phi,\, M_\chi{}^u\right]\, \delta_{ps}\, \left(\overline{q}^s_{ai}\cdot\gamma_\mu\, P_L\cdot q^{bip}\right)\, \left(\overline{u}^t_b\cdot\gamma_\mu\, P_R\cdot u^{ar}\right) +$$

$$\frac{1}{12}\,\hbar\, g_s{}^2\, \overline{\lambda_{\psi\chi}}^{ru}\, \lambda_{\psi\chi}{}^{tu}\, \text{LF}_{2,1,0}\left[M_\chi{}^u,\, M_\phi\right]\, \delta_{ps}\, \left(\overline{q}^s_{ai}\cdot\gamma_\mu\, P_L\cdot q^{bip}\right)\, \left(\overline{u}^t_b\cdot\gamma_\mu\, P_R\cdot u^{ar}\right) -$$

$$\frac{1}{6}\,\hbar\, g_s{}^2\, \overline{\lambda_{\psi\chi}}^{ru}\, \lambda_{\psi\chi}{}^{tu}\, \text{LF}_{3,1,-1}\left[M_\chi{}^u,\, M_\phi\right]\, \delta_{ps}\, \left(\overline{q}^s_{ai}\cdot\gamma_\mu\, P_L\cdot q^{bip}\right)\, \left(\overline{u}^t_b\cdot\gamma_\mu\, P_R\cdot u^{ar}\right) +$$

$$\frac{1}{12}\,\hbar\, g_s{}^2\, \overline{\lambda_{\psi\chi}}^{ru}\, \lambda_{\psi\chi}{}^{tu}\, \text{LF}_{4,1,-2}\left[M_\chi{}^u,\, M_\phi\right]\, \delta_{ps}\, \left(\overline{q}^s_{ai}\cdot\gamma_\mu\, P_L\cdot q^{bip}\right)\, \left(\overline{u}^t_b\cdot\gamma_\mu\, P_R\cdot u^{ar}\right) +$$

$$\frac{1}{360}\,\hbar\, g_s{}^4\, \frac{1}{M_\phi{}^2}\, \delta_{ps}\, \delta_{rt}\, \left(\overline{d}^s_a\cdot\gamma_\mu\, P_R\cdot d^{ap}\right)\, \left(\overline{u}^t_b\cdot\gamma_\mu\, P_R\cdot u^{br}\right) +$$

$$\frac{4}{405}\,\hbar\, g_Y{}^4\, \frac{1}{M_\phi{}^2}\, \delta_{ps}\, \delta_{rt}\, \left(\overline{d}^s_a\cdot\gamma_\mu\, P_R\cdot d^{ap}\right)\, \left(\overline{u}^t_b\cdot\gamma_\mu\, P_R\cdot u^{br}\right) +$$

$$\frac{1}{18}\,\hbar\, g_s{}^2\, \overline{\lambda_{\psi\chi}}^{ru}\, \lambda_{\psi\chi}{}^{tu}\, \text{LF}_{2,1,0}\left[M_\phi,\, M_\chi{}^u\right]\, \delta_{ps}\, \left(\overline{d}^s_a\cdot\gamma_\mu\, P_R\cdot d^{ap}\right)\, \left(\overline{u}^t_b\cdot\gamma_\mu\, P_R\cdot u^{br}\right) +$$

$$\frac{2}{27}\,\hbar\, g_Y{}^2\, \overline{\lambda_{\psi\chi}}^{ru}\, \lambda_{\psi\chi}{}^{tu}\, \text{LF}_{2,1,0}\left[M_\phi,\, M_\chi{}^u\right]\, \delta_{ps}\, \left(\overline{d}^s_a\cdot\gamma_\mu\, P_R\cdot d^{ap}\right)\, \left(\overline{u}^t_b\cdot\gamma_\mu\, P_R\cdot u^{br}\right) -$$

$$\frac{1}{36}\,\hbar\, g_s{}^2\, \overline{\lambda_{\psi\chi}}^{ru}\, \lambda_{\psi\chi}{}^{tu}\, \text{LF}_{2,2,-1}\left[M_\phi,\, M_\chi{}^u\right]\, \delta_{ps}\, \left(\overline{d}^s_a\cdot\gamma_\mu\, P_R\cdot d^{ap}\right)\, \left(\overline{u}^t_b\cdot\gamma_\mu\, P_R\cdot u^{br}\right) -$$

$$\frac{1}{27}\,\hbar\, g_Y{}^2\, \overline{\lambda_{\psi\chi}}^{ru}\, \lambda_{\psi\chi}{}^{tu}\, \text{LF}_{2,2,-1}\left[M_\phi,\, M_\chi{}^u\right]\, \delta_{ps}\, \left(\overline{d}^s_a\cdot\gamma_\mu\, P_R\cdot d^{ap}\right)\, \left(\overline{u}^t_b\cdot\gamma_\mu\, P_R\cdot u^{br}\right) -$$

$$\frac{1}{36}\,\hbar\, g_s{}^2\, \overline{\lambda_{\psi\chi}}^{ru}\, \lambda_{\psi\chi}{}^{tu}\, \text{LF}_{3,1,-1}\left[M_\phi,\, M_\chi{}^u\right]\, \delta_{ps}\, \left(\overline{d}^s_a\cdot\gamma_\mu\, P_R\cdot d^{ap}\right)\, \left(\overline{u}^t_b\cdot\gamma_\mu\, P_R\cdot u^{br}\right) -$$

$$\frac{1}{27}\,\hbar\, g_Y{}^2\, \overline{\lambda_{\psi\chi}}^{ru}\, \lambda_{\psi\chi}{}^{tu}\, \text{LF}_{3,1,-1}\left[M_\phi,\, M_\chi{}^u\right]\, \delta_{ps}\, \left(\overline{d}^s_a\cdot\gamma_\mu\, P_R\cdot d^{ap}\right)\, \left(\overline{u}^t_b\cdot\gamma_\mu\, P_R\cdot u^{br}\right) -$$

$$\frac{1}{36}\,\hbar\, g_s{}^2\, \overline{\lambda_{\psi\chi}}^{ru}\, \lambda_{\psi\chi}{}^{tu}\, \text{LF}_{2,1,0}\left[M_\chi{}^u,\, M_\phi\right]\, \delta_{ps}\, \left(\overline{d}^s_a\cdot\gamma_\mu\, P_R\cdot d^{ap}\right)\, \left(\overline{u}^t_b\cdot\gamma_\mu\, P_R\cdot u^{br}\right) -$$

$$\frac{1}{27}\,\hbar\, g_Y{}^2\, \overline{\lambda_{\psi\chi}}^{ru}\, \lambda_{\psi\chi}{}^{tu}\, \text{LF}_{2,1,0}\left[M_\chi{}^u,\, M_\phi\right]\, \delta_{ps}\, \left(\overline{d}^s_a\cdot\gamma_\mu\, P_R\cdot d^{ap}\right)\, \left(\overline{u}^t_b\cdot\gamma_\mu\, P_R\cdot u^{br}\right) +$$

$$\frac{1}{18}\,\hbar\, g_s{}^2\, \overline{\lambda_{\psi\chi}}^{ru}\, \lambda_{\psi\chi}{}^{tu}\, \text{LF}_{3,1,-1}\left[M_\chi{}^u,\, M_\phi\right]\, \delta_{ps}\, \left(\overline{d}^s_a\cdot\gamma_\mu\, P_R\cdot d^{ap}\right)\, \left(\overline{u}^t_b\cdot\gamma_\mu\, P_R\cdot u^{br}\right) +$$

$$\frac{2}{27}\,\hbar\, g_Y{}^2\, \overline{\lambda_{\psi\chi}}^{ru}\, \lambda_{\psi\chi}{}^{tu}\, \text{LF}_{3,1,-1}\left[M_\chi{}^u,\, M_\phi\right]\, \delta_{ps}\, \left(\overline{d}^s_a\cdot\gamma_\mu\, P_R\cdot d^{ap}\right)\, \left(\overline{u}^t_b\cdot\gamma_\mu\, P_R\cdot u^{br}\right) -$$

$$\frac{1}{36}\,\hbar\, g_s{}^2\, \overline{\lambda_{\psi\chi}}^{ru}\, \lambda_{\psi\chi}{}^{tu}\, \text{LF}_{4,1,-2}\left[M_\chi{}^u,\, M_\phi\right]\, \delta_{ps}\, \left(\overline{d}^s_a\cdot\gamma_\mu\, P_R\cdot d^{ap}\right)\, \left(\overline{u}^t_b\cdot\gamma_\mu\, P_R\cdot u^{br}\right) -$$

$$\frac{1}{27}\,\hbar\, g_Y{}^2\, \overline{\lambda_{\psi\chi}}^{ru}\, \lambda_{\psi\chi}{}^{tu}\, \text{LF}_{4,1,-2}\left[M_\chi{}^u,\, M_\phi\right]\, \delta_{ps}\, \left(\overline{d}^s_a\cdot\gamma_\mu\, P_R\cdot d^{ap}\right)\, \left(\overline{u}^t_b\cdot\gamma_\mu\, P_R\cdot u^{br}\right) +$$

$$\frac{1}{360}\,\hbar\, g_s{}^4\, \frac{1}{M_\phi{}^2}\, \delta_{ps}\, \delta_{rt}\, \left(\overline{q}^s_{ai}\cdot\gamma_\mu\, P_L\cdot q^{aip}\right)\, \left(\overline{u}^t_b\cdot\gamma_\mu\, P_R\cdot u^{br}\right) -$$

$$\frac{2}{405}\,\hbar\, g_Y{}^4\, \frac{1}{M_\phi{}^2}\, \delta_{ps}\, \delta_{rt}\, \left(\overline{q}^s_{ai}\cdot\gamma_\mu\, P_L\cdot q^{aip}\right)\, \left(\overline{u}^t_b\cdot\gamma_\mu\, P_R\cdot u^{br}\right) +$$

$$\frac{1}{18}\,\hbar\, g_s{}^2\, \overline{\lambda_{\psi\chi}}^{ru}\, \lambda_{\psi\chi}{}^{tu}\, \text{LF}_{2,1,0}\left[M_\phi,\, M_\chi{}^u\right]\, \delta_{ps}\, \left(\overline{q}^s_{ai}\cdot\gamma_\mu\, P_L\cdot q^{aip}\right)\, \left(\overline{u}^t_b\cdot\gamma_\mu\, P_R\cdot u^{br}\right) -$$

$$\frac{1}{27}\,\hbar\, g_Y{}^2\, \overline{\lambda_{\psi\chi}}^{ru}\, \lambda_{\psi\chi}{}^{tu}\, LF_{2,1,0}\left[M_\phi,\, M_\chi{}^u\right] \delta_{ps} \left(\overline{q}^s_{ai}\cdot\gamma_\mu\, P_L\cdot q^{aip}\right) \left(\overline{u}^t_b\cdot\gamma_\mu\, P_R\cdot u^{br}\right) -$$

$$\frac{1}{36}\,\hbar\, g_s{}^2\, \overline{\lambda_{\psi\chi}}^{ru}\, \lambda_{\psi\chi}{}^{tu}\, LF_{2,2,-1}\left[M_\phi,\, M_\chi{}^u\right] \delta_{ps} \left(\overline{q}^s_{ai}\cdot\gamma_\mu\, P_L\cdot q^{aip}\right) \left(\overline{u}^t_b\cdot\gamma_\mu\, P_R\cdot u^{br}\right) +$$

$$\frac{1}{54}\,\hbar\, g_Y{}^2\, \overline{\lambda_{\psi\chi}}^{ru}\, \lambda_{\psi\chi}{}^{tu}\, LF_{2,2,-1}\left[M_\phi,\, M_\chi{}^u\right] \delta_{ps} \left(\overline{q}^s_{ai}\cdot\gamma_\mu\, P_L\cdot q^{aip}\right) \left(\overline{u}^t_b\cdot\gamma_\mu\, P_R\cdot u^{br}\right) -$$

$$\frac{1}{36}\,\hbar\, g_s{}^2\, \overline{\lambda_{\psi\chi}}^{ru}\, \lambda_{\psi\chi}{}^{tu}\, LF_{3,1,-1}\left[M_\phi,\, M_\chi{}^u\right] \delta_{ps} \left(\overline{q}^s_{ai}\cdot\gamma_\mu\, P_L\cdot q^{aip}\right) \left(\overline{u}^t_b\cdot\gamma_\mu\, P_R\cdot u^{br}\right) +$$

$$\frac{1}{54}\,\hbar\, g_Y{}^2\, \overline{\lambda_{\psi\chi}}^{ru}\, \lambda_{\psi\chi}{}^{tu}\, LF_{3,1,-1}\left[M_\phi,\, M_\chi{}^u\right] \delta_{ps} \left(\overline{q}^s_{ai}\cdot\gamma_\mu\, P_L\cdot q^{aip}\right) \left(\overline{u}^t_b\cdot\gamma_\mu\, P_R\cdot u^{br}\right) -$$

$$\frac{1}{36}\,\hbar\, g_s{}^2\, \overline{\lambda_{\psi\chi}}^{ru}\, \lambda_{\psi\chi}{}^{tu}\, LF_{2,1,0}\left[M_\chi{}^u,\, M_\phi\right] \delta_{ps} \left(\overline{q}^s_{ai}\cdot\gamma_\mu\, P_L\cdot q^{aip}\right) \left(\overline{u}^t_b\cdot\gamma_\mu\, P_R\cdot u^{br}\right) +$$

$$\frac{1}{54}\,\hbar\, g_Y{}^2\, \overline{\lambda_{\psi\chi}}^{ru}\, \lambda_{\psi\chi}{}^{tu}\, LF_{2,1,0}\left[M_\chi{}^u,\, M_\phi\right] \delta_{ps} \left(\overline{q}^s_{ai}\cdot\gamma_\mu\, P_L\cdot q^{aip}\right) \left(\overline{u}^t_b\cdot\gamma_\mu\, P_R\cdot u^{br}\right) +$$

$$\frac{1}{18}\,\hbar\, g_s{}^2\, \overline{\lambda_{\psi\chi}}^{ru}\, \lambda_{\psi\chi}{}^{tu}\, LF_{3,1,-1}\left[M_\chi{}^u,\, M_\phi\right] \delta_{ps} \left(\overline{q}^s_{ai}\cdot\gamma_\mu\, P_L\cdot q^{aip}\right) \left(\overline{u}^t_b\cdot\gamma_\mu\, P_R\cdot u^{br}\right) -$$

$$\frac{1}{27}\,\hbar\, g_Y{}^2\, \overline{\lambda_{\psi\chi}}^{ru}\, \lambda_{\psi\chi}{}^{tu}\, LF_{3,1,-1}\left[M_\chi{}^u,\, M_\phi\right] \delta_{ps} \left(\overline{q}^s_{ai}\cdot\gamma_\mu\, P_L\cdot q^{aip}\right) \left(\overline{u}^t_b\cdot\gamma_\mu\, P_R\cdot u^{br}\right) -$$

$$\frac{1}{36}\,\hbar\, g_s{}^2\, \overline{\lambda_{\psi\chi}}^{ru}\, \lambda_{\psi\chi}{}^{tu}\, LF_{4,1,-2}\left[M_\chi{}^u,\, M_\phi\right] \delta_{ps} \left(\overline{q}^s_{ai}\cdot\gamma_\mu\, P_L\cdot q^{aip}\right) \left(\overline{u}^t_b\cdot\gamma_\mu\, P_R\cdot u^{br}\right) +$$

$$\frac{1}{54}\,\hbar\, g_Y{}^2\, \overline{\lambda_{\psi\chi}}^{ru}\, \lambda_{\psi\chi}{}^{tu}\, LF_{4,1,-2}\left[M_\chi{}^u,\, M_\phi\right] \delta_{ps} \left(\overline{q}^s_{ai}\cdot\gamma_\mu\, P_L\cdot q^{aip}\right) \left(\overline{u}^t_b\cdot\gamma_\mu\, P_R\cdot u^{br}\right) -$$

$$\frac{1}{240}\,\hbar\, g_s{}^4\, \frac{1}{M_\phi{}^2}\, \delta_{pt}\, \delta_{rs} \left(\overline{u}^s_a\cdot\gamma_\mu\, P_R\cdot u^{ap}\right) \left(\overline{u}^t_b\cdot\gamma_\mu\, P_R\cdot u^{br}\right) +$$

$$\frac{1}{720}\,\hbar\, g_s{}^4\, \frac{1}{M_\phi{}^2}\, \delta_{ps}\, \delta_{rt} \left(\overline{u}^s_a\cdot\gamma_\mu\, P_R\cdot u^{ap}\right) \left(\overline{u}^t_b\cdot\gamma_\mu\, P_R\cdot u^{br}\right) -$$

$$\frac{4}{405}\,\hbar\, g_Y{}^4\, \frac{1}{M_\phi{}^2}\, \delta_{ps}\, \delta_{rt} \left(\overline{u}^s_a\cdot\gamma_\mu\, P_R\cdot u^{ap}\right) \left(\overline{u}^t_b\cdot\gamma_\mu\, P_R\cdot u^{br}\right) +$$

$$\frac{1}{18}\,\hbar\, g_s{}^2\, \overline{\lambda_{\psi\chi}}^{ru}\, \lambda_{\psi\chi}{}^{tu}\, LF_{2,1,0}\left[M_\phi,\, M_\chi{}^u\right] \delta_{ps} \left(\overline{u}^s_a\cdot\gamma_\mu\, P_R\cdot u^{ap}\right) \left(\overline{u}^t_b\cdot\gamma_\mu\, P_R\cdot u^{br}\right) -$$

$$\frac{4}{27}\,\hbar\, g_Y{}^2\, \overline{\lambda_{\psi\chi}}^{ru}\, \lambda_{\psi\chi}{}^{tu}\, LF_{2,1,0}\left[M_\phi,\, M_\chi{}^u\right] \delta_{ps} \left(\overline{u}^s_a\cdot\gamma_\mu\, P_R\cdot u^{ap}\right) \left(\overline{u}^t_b\cdot\gamma_\mu\, P_R\cdot u^{br}\right) -$$

$$\frac{1}{6}\,\hbar\, g_s{}^2\, \overline{\lambda_{\psi\chi}}^{ru}\, \lambda_{\psi\chi}{}^{su}\, LF_{2,1,0}\left[M_\phi,\, M_\chi{}^u\right] \delta_{pt} \left(\overline{u}^s_a\cdot\gamma_\mu\, P_R\cdot u^{ap}\right) \left(\overline{u}^t_b\cdot\gamma_\mu\, P_R\cdot u^{br}\right) -$$

$$\frac{1}{36}\,\hbar\, g_s{}^2\, \overline{\lambda_{\psi\chi}}^{ru}\, \lambda_{\psi\chi}{}^{tu}\, LF_{2,2,-1}\left[M_\phi,\, M_\chi{}^u\right] \delta_{ps} \left(\overline{u}^s_a\cdot\gamma_\mu\, P_R\cdot u^{ap}\right) \left(\overline{u}^t_b\cdot\gamma_\mu\, P_R\cdot u^{br}\right) +$$

$$\frac{2}{27}\,\hbar\, g_Y{}^2\, \overline{\lambda_{\psi\chi}}^{ru}\, \lambda_{\psi\chi}{}^{tu}\, LF_{2,2,-1}\left[M_\phi,\, M_\chi{}^u\right] \delta_{ps} \left(\overline{u}^s_a\cdot\gamma_\mu\, P_R\cdot u^{ap}\right) \left(\overline{u}^t_b\cdot\gamma_\mu\, P_R\cdot u^{br}\right) +$$

$$\frac{1}{12}\,\hbar\, g_s{}^2\, \overline{\lambda_{\psi\chi}}^{ru}\, \lambda_{\psi\chi}{}^{su}\, LF_{2,2,-1}\left[M_\phi,\, M_\chi{}^u\right] \delta_{pt} \left(\overline{u}^s_a\cdot\gamma_\mu\, P_R\cdot u^{ap}\right) \left(\overline{u}^t_b\cdot\gamma_\mu\, P_R\cdot u^{br}\right) -$$

$$\frac{1}{36}\,\hbar\, g_s{}^2\, \overline{\lambda_{\psi\chi}}^{ru}\, \lambda_{\psi\chi}{}^{tu}\, LF_{3,1,-1}\left[M_\phi,\, M_\chi{}^u\right] \delta_{ps} \left(\overline{u}^s_a\cdot\gamma_\mu\, P_R\cdot u^{ap}\right) \left(\overline{u}^t_b\cdot\gamma_\mu\, P_R\cdot u^{br}\right) +$$

$$\frac{2}{27}\,\hbar\, g_Y{}^2\, \overline{\lambda_{\psi\chi}}^{ru}\, \lambda_{\psi\chi}{}^{tu}\, LF_{3,1,-1}\left[M_\phi,\, M_\chi{}^u\right] \delta_{ps} \left(\overline{u}^s_a\cdot\gamma_\mu\, P_R\cdot u^{ap}\right) \left(\overline{u}^t_b\cdot\gamma_\mu\, P_R\cdot u^{br}\right) +$$

$$\frac{1}{12}\,\hbar\,g_s{}^2\,\overline{\lambda_{\psi\chi}}^{ru}\,\lambda_{\psi\chi}{}^{su}\,LF_{3,1,-1}\left[M_\phi,\,M_\chi{}^u\right]\,\delta_{pt}\,\left(\overline{u}_a^s\cdot\gamma_\mu\,P_R\cdot u^{ap}\right)\,\left(\overline{u}_b^t\cdot\gamma_\mu\,P_R\cdot u^{br}\right)\,-$$

$$\frac{1}{36}\,\hbar\,g_s{}^2\,\overline{\lambda_{\psi\chi}}^{ru}\,\lambda_{\psi\chi}{}^{tu}\,LF_{2,1,0}\left[M_\chi{}^u,\,M_\phi\right]\,\delta_{ps}\,\left(\overline{u}_a^s\cdot\gamma_\mu\,P_R\cdot u^{ap}\right)\,\left(\overline{u}_b^t\cdot\gamma_\mu\,P_R\cdot u^{br}\right)\,+$$

$$\frac{2}{27}\,\hbar\,g_Y{}^2\,\overline{\lambda_{\psi\chi}}^{ru}\,\lambda_{\psi\chi}{}^{tu}\,LF_{2,1,0}\left[M_\chi{}^u,\,M_\phi\right]\,\delta_{ps}\,\left(\overline{u}_a^s\cdot\gamma_\mu\,P_R\cdot u^{ap}\right)\,\left(\overline{u}_b^t\cdot\gamma_\mu\,P_R\cdot u^{br}\right)\,+$$

$$\frac{1}{12}\,\hbar\,g_s{}^2\,\overline{\lambda_{\psi\chi}}^{ru}\,\lambda_{\psi\chi}{}^{su}\,LF_{2,1,0}\left[M_\chi{}^u,\,M_\phi\right]\,\delta_{pt}\,\left(\overline{u}_a^s\cdot\gamma_\mu\,P_R\cdot u^{ap}\right)\,\left(\overline{u}_b^t\cdot\gamma_\mu\,P_R\cdot u^{br}\right)\,+$$

$$\frac{1}{18}\,\hbar\,g_s{}^2\,\overline{\lambda_{\psi\chi}}^{ru}\,\lambda_{\psi\chi}{}^{tu}\,LF_{3,1,-1}\left[M_\chi{}^u,\,M_\phi\right]\,\delta_{ps}\,\left(\overline{u}_a^s\cdot\gamma_\mu\,P_R\cdot u^{ap}\right)\,\left(\overline{u}_b^t\cdot\gamma_\mu\,P_R\cdot u^{br}\right)\,-$$

$$\frac{4}{27}\,\hbar\,g_Y{}^2\,\overline{\lambda_{\psi\chi}}^{ru}\,\lambda_{\psi\chi}{}^{tu}\,LF_{3,1,-1}\left[M_\chi{}^u,\,M_\phi\right]\,\delta_{ps}\,\left(\overline{u}_a^s\cdot\gamma_\mu\,P_R\cdot u^{ap}\right)\,\left(\overline{u}_b^t\cdot\gamma_\mu\,P_R\cdot u^{br}\right)\,-$$

$$\frac{1}{6}\,\hbar\,g_s{}^2\,\overline{\lambda_{\psi\chi}}^{ru}\,\lambda_{\psi\chi}{}^{su}\,LF_{3,1,-1}\left[M_\chi{}^u,\,M_\phi\right]\,\delta_{pt}\,\left(\overline{u}_a^s\cdot\gamma_\mu\,P_R\cdot u^{ap}\right)\,\left(\overline{u}_b^t\cdot\gamma_\mu\,P_R\cdot u^{br}\right)\,-$$

$$\frac{1}{36}\,\hbar\,g_s{}^2\,\overline{\lambda_{\psi\chi}}^{ru}\,\lambda_{\psi\chi}{}^{tu}\,LF_{4,1,-2}\left[M_\chi{}^u,\,M_\phi\right]\,\delta_{ps}\,\left(\overline{u}_a^s\cdot\gamma_\mu\,P_R\cdot u^{ap}\right)\,\left(\overline{u}_b^t\cdot\gamma_\mu\,P_R\cdot u^{br}\right)\,+$$

$$\frac{2}{27}\,\hbar\,g_Y{}^2\,\overline{\lambda_{\psi\chi}}^{ru}\,\lambda_{\psi\chi}{}^{tu}\,LF_{4,1,-2}\left[M_\chi{}^u,\,M_\phi\right]\,\delta_{ps}\,\left(\overline{u}_a^s\cdot\gamma_\mu\,P_R\cdot u^{ap}\right)\,\left(\overline{u}_b^t\cdot\gamma_\mu\,P_R\cdot u^{br}\right)\,+$$

$$\frac{1}{12}\,\hbar\,g_s{}^2\,\overline{\lambda_{\psi\chi}}^{ru}\,\lambda_{\psi\chi}{}^{su}\,LF_{4,1,-2}\left[M_\chi{}^u,\,M_\phi\right]\,\delta_{pt}\,\left(\overline{u}_a^s\cdot\gamma_\mu\,P_R\cdot u^{ap}\right)\,\left(\overline{u}_b^t\cdot\gamma_\mu\,P_R\cdot u^{br}\right)\,+$$

$$\frac{1}{8}\,\hbar\,\overline{\lambda_{\psi\chi}}^{pu}\,\overline{\lambda_{\psi\chi}}^{rv}\,\lambda_{\psi\chi}{}^{sv}\,\lambda_{\psi\chi}{}^{tu}\,LF_{2,1,1,-1}\left[M_\phi,\,M_\chi{}^u,\,M_\chi{}^v\right]\,\left(\overline{u}_a^s\cdot\gamma_\mu\,P_R\cdot u^{ap}\right)\,\left(\overline{u}_b^t\cdot\gamma_\mu\,P_R\cdot u^{br}\right)\,+$$

$$\frac{1}{4}\,\hbar\,M_\chi{}^u\,M_\chi{}^v\,\overline{\lambda_{\psi\chi}}^{pu}\,\overline{\lambda_{\psi\chi}}^{ru}\,\lambda_{\psi\chi}{}^{sv}\,\lambda_{\psi\chi}{}^{tv}\,LF_{2,1,1,0}\left[M_\phi,\,M_\chi{}^u,\,M_\chi{}^v\right]\,\left(\overline{u}_a^s\cdot\gamma_\mu\,P_R\cdot u^{ap}\right)\,\left(\overline{u}_b^t\cdot\gamma_\mu\,P_R\cdot u^{br}\right)$$