$$-\frac{1}{24}\hbar\frac{1}{\epsilon}B^{\mu\nu 2}-\frac{1}{4}\frac{1}{g_Y{}^2}B^{\mu\nu 2}-\frac{1}{4}\frac{1}{g_s{}^2}G^{\mu\nu A2}-\frac{1}{24}\hbar\frac{1}{\epsilon}W^{\mu\nu I2}-\frac{1}{4}\frac{1}{g_L{}^2}W^{\mu\nu I2}-$$

$$\frac{1}{24}\hbar B^{\mu\nu 2}\,\mathrm{Log}\left[\frac{\overline{\mu}^2}{M_\phi{}^2}\right]-\frac{1}{24}\hbar W^{\mu\nu I2}\,\mathrm{Log}\left[\frac{\overline{\mu}^2}{M_\phi{}^2}\right]+D_\mu\overline{H}_i\,D_\mu H^i+C_{H^2}\,\overline{H}_i\,H^i+\mathrm{i}\left(\overline{d}^r_a\cdot\gamma_\mu P_R\cdot D_\mu d^{ar}\right)+$$

$$\mathrm{i}\left(\overline{e}^r\cdot\gamma_\mu P_R\cdot D_\mu e^r\right)+\mathrm{i}\left(\overline{l}^r_i\cdot\gamma_\mu P_L\cdot D_\mu l^{ir}\right)+\mathrm{i}\left(\overline{q}^r_{ai}\cdot\gamma_\mu P_L\cdot D_\mu q^{air}\right)+\mathrm{i}\left(\overline{u}^r_a\cdot\gamma_\mu P_R\cdot D_\mu u^{ar}\right)-$$

$$\frac{1}{2}\lambda\,\overline{H}_i\,\overline{H}_j\,H^i\,H^j+\hbar\frac{1}{\epsilon}\lambda_{H\chi}{}^2\,\overline{H}_i\,\overline{H}_j\,H^i\,H^j+\hbar\frac{1}{\epsilon}\lambda_{H\chi}\,\lambda_{H\chi}\,\overline{H}_i\,\overline{H}_j\,H^i\,H^j+\frac{1}{2}\hbar\frac{1}{\epsilon}\lambda_{H\chi}{}^2\,\overline{H}_i\,\overline{H}_j\,H^i\,H^j+$$

$$\frac{1}{2}\hbar\frac{1}{\epsilon}\overline{\lambda_{H\chi}}\,\lambda_{H\chi}\,\overline{H}_i\,\overline{H}_j\,H^i\,H^j+\hbar\,\lambda_{H\chi}{}^2\,\overline{H}_i\,\overline{H}_j\,H^i\,H^j\,\mathrm{Log}\left[\frac{\overline{\mu}^2}{M_\phi{}^2}\right]+\hbar\,\lambda_{H\chi}\,\lambda_{H\chi}\,\overline{H}_i\,\overline{H}_j\,H^i\,H^j\,\mathrm{Log}\left[\frac{\overline{\mu}^2}{M_\phi{}^2}\right]+$$

$$\frac{1}{2}\hbar\,\lambda_{H\chi}{}^2\,\overline{H}_i\,\overline{H}_j\,H^i\,H^j\,\mathrm{Log}\left[\frac{\overline{\mu}^2}{M_\phi{}^2}\right]+\frac{1}{2}\hbar\,\overline{\lambda_{H\chi}}\,\lambda_{H\chi}\,\overline{H}_i\,\overline{H}_j\,H^i\,H^j\,\mathrm{Log}\left[\frac{\overline{\mu}^2}{M_\phi{}^2}\right]-$$

$$\overline{Y_d}^{pr}\,\overline{H}_i\left(\overline{d}^r_a\cdot P_L\cdot q^{aip}\right)-\overline{Y_e}^{pr}\,\overline{H}_i\left(\overline{e}^r\cdot P_L\cdot l^{ip}\right)-\frac{1}{8}\hbar\,\overline{Y_e}^{sr}\,\overline{\lambda_{\psi\chi}}^{pt}\,\lambda_{\psi\chi}{}^{st}\,\overline{H}_i\left(\overline{e}^r\cdot P_L\cdot l^{ip}\right)+$$

$$\frac{1}{4}\hbar\frac{1}{\epsilon}\overline{Y_e}^{sr}\,\overline{\lambda_{\psi\chi}}^{pt}\,\lambda_{\psi\chi}{}^{st}\,\overline{H}_i\left(\overline{e}^r\cdot P_L\cdot l^{ip}\right)+\frac{1}{2}\hbar\,\overline{Y_e}^{sr}\,\overline{\lambda_{\psi\chi}}^{pt}\,\lambda_{\psi\chi}{}^{st}\,\mathrm{LF}_{1,1,0}\left[M_\phi,M_\chi{}^t\right]\overline{H}_i\left(\overline{e}^r\cdot P_L\cdot l^{ip}\right)-$$

$$\frac{1}{4}\hbar\,\overline{Y_e}^{sr}\,\overline{\lambda_{\psi\chi}}^{pt}\,\lambda_{\psi\chi}{}^{st}\,\mathrm{LF}_{2,1,-1}\left[M_\chi{}^t,M_\phi\right]\overline{H}_i\left(\overline{e}^r\cdot P_L\cdot l^{ip}\right)-Y_e{}^{rp}\,H^i\left(\overline{l}^r_i\cdot P_R\cdot e^p\right)-$$

$$\frac{1}{8}\hbar\,Y_e{}^{sp}\,\overline{\lambda_{\psi\chi}}^{st}\,\lambda_{\psi\chi}{}^{rt}\,H^i\left(\overline{l}^r_i\cdot P_R\cdot e^p\right)+\frac{1}{4}\hbar\frac{1}{\epsilon}Y_e{}^{sp}\,\overline{\lambda_{\psi\chi}}^{st}\,\lambda_{\psi\chi}{}^{rt}\,H^i\left(\overline{l}^r_i\cdot P_R\cdot e^p\right)+$$

$$\frac{1}{2}\hbar\,Y_e{}^{sp}\,\overline{\lambda_{\psi\chi}}^{st}\,\lambda_{\psi\chi}{}^{rt}\,\mathrm{LF}_{1,1,0}\left[M_\phi,M_\chi{}^t\right]H^i\left(\overline{l}^r_i\cdot P_R\cdot e^p\right)-$$

$$\frac{1}{4}\hbar\,Y_e{}^{sp}\,\overline{\lambda_{\psi\chi}}^{st}\,\lambda_{\psi\chi}{}^{rt}\,\mathrm{LF}_{2,1,-1}\left[M_\chi{}^t,M_\phi\right]H^i\left(\overline{l}^r_i\cdot P_R\cdot e^p\right)-Y_d{}^{rp}\,H^i\left(\overline{q}^r_{ai}\cdot P_R\cdot d^{ap}\right)-$$

$$Y_u{}^{rp}\,\overline{H}_i\left(\overline{q}^r_{aj}\cdot P_R\cdot u^{ap}\right)\varepsilon^{ji}-\overline{Y_u}^{pr}\,H^j\left(\overline{u}^r_a\cdot P_L\cdot q^{aip}\right)\overline{\varepsilon}_{ij}-$$

$$\frac{1}{2}\hbar\,\overline{\lambda_{H\chi}}\,M_\chi{}^s\,\lambda_{\psi\chi}{}^{ps}\,\lambda_{\psi\chi}{}^{rs}\,\mathrm{LF}_{2,1,0}\left[M_\phi,M_\chi{}^s\right]\overline{H}_i\,\overline{H}_j\left(\overline{l}^r_l\cdot C\,P_R\cdot\overline{l}^{pT}_k\right)\varepsilon^{ik}\,\varepsilon^{jl}-$$

$$\frac{1}{2}\hbar\,\lambda_{H\chi}\,M_\chi{}^s\,\overline{\lambda_{\psi\chi}}^{ps}\,\overline{\lambda_{\psi\chi}}^{rs}\,\mathrm{LF}_{2,1,0}\left[M_\phi,M_\chi{}^s\right]H^i\,H^k\left(l^{jp^T}\cdot C\,P_L\cdot l^{lr}\right)\overline{\varepsilon}_{ij}\,\overline{\varepsilon}_{kl}-$$

$$\frac{1}{360}\hbar\frac{1}{M_\phi{}^2}W^{\mu\nu K}\,W^{\mu\rho J}\,W^{\nu\rho I}\,f^{IJK}-\frac{1}{240}\hbar\,C_{H^2}\,g_L{}^4\frac{1}{M_\phi{}^2}\overline{H}_i\,\overline{H}_j\,H^i\,H^j-\frac{1}{240}\hbar\,C_{H^2}\,g_Y{}^4\frac{1}{M_\phi{}^2}\overline{H}_i\,\overline{H}_j\,H^i\,H^j-$$

$$\frac{1}{3}\hbar\,C_{H^2}\frac{1}{M_\phi{}^2}\lambda_{H\chi}{}^2\,\overline{H}_i\,\overline{H}_j\,H^i\,H^j-\frac{1}{3}\hbar\,C_{H^2}\,\lambda_{H\chi}\,\lambda_{H\chi}\frac{1}{M_\phi{}^2}\overline{H}_i\,\overline{H}_j\,H^i\,H^j-\frac{1}{6}\hbar\,C_{H^2}\frac{1}{M_\phi{}^2}\lambda_{H\chi}{}^2\,\overline{H}_i\,\overline{H}_j\,H^i\,H^j+$$

$$\frac{1}{240}\hbar\,\lambda\,g_L{}^4\frac{1}{M_\phi{}^2}\overline{H}_i\,\overline{H}_j\,\overline{H}_k\,H^i\,H^j\,H^k+\frac{1}{240}\hbar\,\lambda\,g_Y{}^4\frac{1}{M_\phi{}^2}\overline{H}_i\,\overline{H}_j\,\overline{H}_k\,H^i\,H^j\,H^k+$$

$$\frac{1}{3}\hbar\,\lambda\frac{1}{M_\phi{}^2}\lambda_{H\chi}{}^2\,\overline{H}_i\,\overline{H}_j\,\overline{H}_k\,H^i\,H^j\,H^k+\frac{1}{3}\hbar\frac{1}{M_\phi{}^2}\lambda_{H\chi}{}^3\,\overline{H}_i\,\overline{H}_j\,\overline{H}_k\,H^i\,H^j\,H^k+$$

$$\frac{1}{3}\hbar\,\lambda\,\lambda_{H\chi}\,\lambda_{H\chi}\frac{1}{M_\phi{}^2}\overline{H}_i\,\overline{H}_j\,\overline{H}_k\,H^i\,H^j\,H^k+\frac{1}{2}\hbar\,\lambda_{H\chi}\frac{1}{M_\phi{}^2}\lambda_{H\chi}{}^2\,\overline{H}_i\,\overline{H}_j\,\overline{H}_k\,H^i\,H^j\,H^k+$$

$$\frac{1}{6}\hbar\,\lambda\frac{1}{M_\phi{}^2}\lambda_{H\chi}{}^2\,\overline{H}_i\,\overline{H}_j\,\overline{H}_k\,H^i\,H^j\,H^k+\frac{1}{2}\hbar\,\lambda_{H\chi}\frac{1}{M_\phi{}^2}\lambda_{H\chi}{}^2\,\overline{H}_i\,\overline{H}_j\,\overline{H}_k\,H^i\,H^j\,H^k+$$

$$\frac{1}{6}\hbar\frac{1}{M_\phi{}^2}\lambda_{H\chi}{}^3\,\overline{H}_i\,\overline{H}_j\,\overline{H}_k\,H^i\,H^j\,H^k+\frac{1}{2}\hbar\,\lambda_{H\chi}\,\overline{\lambda_{H\chi}}\,\lambda_{H\chi}\frac{1}{M_\phi{}^2}\overline{H}_i\,\overline{H}_j\,\overline{H}_k\,H^i\,H^j\,H^k-\frac{1}{80}\hbar\,g_L{}^4\frac{1}{M_\phi{}^2}\overline{H}_i\,D_\mu\overline{H}_j\,H^i\,D_\mu H^j-$$

$$\frac{1}{120}\hbar\,g_Y{}^4\frac{1}{M_\phi{}^2}D_\mu\overline{H}_i\,\overline{H}_j\,H^i\,D_\mu H^j-\frac{1}{240}\hbar\,g_Y{}^4\frac{1}{M_\phi{}^2}\overline{H}_i\,D_\mu\overline{H}_j\,H^i\,D_\mu H^j-\frac{1}{3}\hbar\frac{1}{M_\phi{}^2}\lambda_{H\chi}{}^2\,\overline{H}_i\,D_\mu\overline{H}_j\,H^i\,D_\mu H^j-$$

$$\frac{1}{3}\hbar\,\lambda_{H\chi}\,\lambda_{H\chi}\frac{1}{M_\phi{}^2}\overline{H}_i\,D_\mu\overline{H}_j\,H^i\,D_\mu H^j-\frac{1}{6}\hbar\frac{1}{M_\phi{}^2}\lambda_{H\chi}{}^2\,D_\mu\overline{H}_i\,\overline{H}_j\,H^i\,D_\mu H^j+\frac{1}{6}\hbar\,\overline{\lambda_{H\chi}}\,\lambda_{H\chi}\frac{1}{M_\phi{}^2}D_\mu\overline{H}_i\,\overline{H}_j\,H^i\,D_\mu H^j+$$

$$\frac{1}{6}\hbar\,\overline{\lambda_{H\chi}}\,\lambda_{H\chi}\frac{1}{M_\phi{}^2}\overline{H}_i\,D_\mu\overline{H}_j\,H^i\,D_\mu H^j-\frac{1}{24}\hbar\,\lambda_{H\chi}\frac{1}{M_\phi{}^2}\overline{H}_i\,H^i\,B^{\mu\nu 2}-\frac{1}{48}\hbar\,\lambda_{H\chi}\frac{1}{M_\phi{}^2}\overline{H}_i\,H^i\,B^{\mu\nu 2}+$$

$$\frac{1}{12}\hbar\,\lambda_{H\chi}\frac{1}{M_\phi{}^2}\overline{H}_i\,H^j\,B^{\mu\nu}\,W^{\mu\nu I}\,T^{Ii}_j-\frac{1}{24}\hbar\,\lambda_{H\chi}\frac{1}{M_\phi{}^2}\overline{H}_i\,H^i\,W^{\mu\nu I2}-\frac{1}{48}\hbar\,\lambda_{H\chi}\frac{1}{M_\phi{}^2}\overline{H}_i\,H^i\,W^{\mu\nu I2}+$$

$$\frac{1}{480}\hbar\,g_L{}^4\frac{1}{M_\phi{}^2}\overline{Y_d}^{pr}\,\overline{H}_i\,\overline{H}_j\,H^i\left(\overline{d}^r_a\cdot P_L\cdot q^{ajp}\right)+\frac{1}{480}\hbar\,g_Y{}^4\frac{1}{M_\phi{}^2}\overline{Y_d}^{pr}\,\overline{H}_i\,\overline{H}_j\,H^i\left(\overline{d}^r_a\cdot P_L\cdot q^{ajp}\right)+$$

$$\frac{1}{6}\hbar\frac{1}{M_\phi{}^2}\lambda_{H\chi}{}^2\,\overline{Y_d}^{pr}\,\overline{H}_i\,\overline{H}_j\,H^i\left(\overline{d}^r_a\cdot P_L\cdot q^{ajp}\right)+\frac{1}{6}\hbar\,\lambda_{H\chi}\,\lambda_{H\chi}\frac{1}{M_\phi{}^2}\overline{Y_d}^{pr}\,\overline{H}_i\,\overline{H}_j\,H^i\left(\overline{d}^r_a\cdot P_L\cdot q^{ajp}\right)+$$

$$\frac{1}{12}\hbar\frac{1}{M_\phi{}^2}\lambda_{H\chi}{}^2\,\overline{Y_d}^{pr}\,\overline{H}_i\,\overline{H}_j\,H^i\left(\overline{d}^r_a\cdot P_L\cdot q^{ajp}\right)+\frac{1}{480}\hbar\,g_L{}^4\frac{1}{M_\phi{}^2}\overline{Y_e}^{pr}\,\overline{H}_i\,\overline{H}_j\,H^i\left(\overline{e}^r\cdot P_L\cdot l^{jp}\right)+$$

$$\frac{1}{480}\hbar\,g_Y{}^4\frac{1}{M_\phi{}^2}\overline{Y_e}^{pr}\,\overline{H}_i\,\overline{H}_j\,H^i\left(\overline{e}^r\cdot P_L\cdot l^{jp}\right)+\frac{1}{6}\hbar\frac{1}{M_\phi{}^2}\lambda_{H\chi}{}^2\,\overline{Y_e}^{pr}\,\overline{H}_i\,\overline{H}_j\,H^i\left(\overline{e}^r\cdot P_L\cdot l^{jp}\right)+$$

$$\frac{1}{6}\hbar\,\lambda_{H\chi}\,\lambda_{H\chi}\frac{1}{M_\phi{}^2}\overline{Y_e}^{pr}\,\overline{H}_i\,\overline{H}_j\,H^i\left(\overline{e}^r\cdot P_L\cdot l^{jp}\right)+\frac{1}{12}\hbar\frac{1}{M_\phi{}^2}\lambda_{H\chi}{}^2\,\overline{Y_e}^{pr}\,\overline{H}_i\,\overline{H}_j\,H^i\left(\overline{e}^r\cdot P_L\cdot l^{jp}\right)-$$

$$\frac{1}{2}\hbar\,\lambda_{H\chi}\,\overline{Y_e}^{sr}\,\overline{\lambda_{\psi\chi}}^{pt}\,\lambda_{\psi\chi}{}^{st}\,\mathrm{LF}_{2,1,0}\left[M_\phi,M_\chi{}^t\right]\overline{H}_i\,\overline{H}_j\,H^i\left(\overline{e}^r\cdot P_L\cdot l^{jp}\right)-$$

$$\frac{1}{2}\hbar\,\lambda_{H\chi}\,\overline{Y_e}^{sr}\,\overline{\lambda_{\psi\chi}}^{pt}\,\lambda_{\psi\chi}{}^{st}\,\mathrm{LF}_{2,1,0}\left[M_\phi,M_\chi{}^t\right]\overline{H}_i\,\overline{H}_j\,H^i\left(\overline{e}^r\cdot P_L\cdot l^{jp}\right)+$$

$$\frac{1}{4}\hbar\,\lambda_{H\chi}\,\overline{Y_e}^{sr}\,\overline{\lambda_{\psi\chi}}^{pt}\,\lambda_{\psi\chi}{}^{st}\,\mathrm{LF}_{2,2,-1}\left[M_\phi,M_\chi{}^t\right]\overline{H}_i\,\overline{H}_j\,H^i\left(\overline{e}^r\cdot P_L\cdot l^{jp}\right)+$$

$$\frac{1}{4}\hbar\,\lambda_{H\chi}\,\overline{Y_e}^{sr}\,\overline{\lambda_{\psi\chi}}^{pt}\,\lambda_{\psi\chi}{}^{st}\,\mathrm{LF}_{2,2,-1}\left[M_\phi,M_\chi{}^t\right]\overline{H}_i\,\overline{H}_j\,H^i\left(\overline{e}^r\cdot P_L\cdot l^{jp}\right)-$$

$$\frac{1}{2}\hbar\,\overline{Y_e}^{ps}\,\overline{Y_e}^{tr}\,Y_e{}^{us}\,\overline{\lambda_{\psi\chi}}^{uv}\,\lambda_{\psi\chi}{}^{tv}\,\mathrm{LF}_{2,1,0}\left[M_\chi{}^v,M_\phi\right]\overline{H}_i\,\overline{H}_j\,H^i\left(\overline{e}^r\cdot P_L\cdot l^{jp}\right)+$$

$$\hbar\,\overline{Y_e}^{ps}\,\overline{Y_e}^{tr}\,Y_e{}^{us}\,\overline{\lambda_{\psi\chi}}^{uv}\,\lambda_{\psi\chi}{}^{tv}\,\mathrm{LF}_{3,1,-1}\left[M_\chi{}^v,M_\phi\right]\overline{H}_i\,\overline{H}_j\,H^i\left(\overline{e}^r\cdot P_L\cdot l^{jp}\right)-$$

$$\frac{1}{2}\hbar\,\overline{Y_e}^{ps}\,\overline{Y_e}^{tr}\,Y_e{}^{us}\,\overline{\lambda_{\psi\chi}}^{uv}\,\lambda_{\psi\chi}{}^{tv}\,\mathrm{LF}_{4,1,-2}\left[M_\chi{}^v,M_\phi\right]\overline{H}_i\,\overline{H}_j\,H^i\left(\overline{e}^r\cdot P_L\cdot l^{jp}\right)+$$

$$\frac{1}{480}\hbar\,g_L{}^4\frac{1}{M_\phi{}^2}Y_e{}^{rp}\,\overline{H}_i\,H^i\,H^j\left(\overline{l}^r_j\cdot P_R\cdot e^p\right)+$$

$$\frac{1}{480}\hbar\,g_Y{}^4\frac{1}{M_\phi{}^2}Y_e{}^{rp}\,\overline{H}_i\,H^i\,H^j\left(\overline{l}^r_j\cdot P_R\cdot e^p\right)+\frac{1}{6}\hbar\frac{1}{M_\phi{}^2}\lambda_{H\chi}{}^2\,Y_e{}^{rp}\,\overline{H}_i\,H^i\,H^j\left(\overline{l}^r_j\cdot P_R\cdot e^p\right)+$$

$$\frac{1}{6}\hbar\,\lambda_{H\chi}\,\lambda_{H\chi}\frac{1}{M_\phi{}^2}Y_e{}^{rp}\,\overline{H}_i\,H^i\,H^j\left(\overline{l}^r_j\cdot P_R\cdot e^p\right)+\frac{1}{12}\hbar\frac{1}{M_\phi{}^2}\lambda_{H\chi}{}^2\,Y_e{}^{rp}\,\overline{H}_i\,H^i\,H^j\left(\overline{l}^r_j\cdot P_R\cdot e^p\right)-$$

$$\frac{1}{2}\hbar\,\lambda_{H\chi}\,Y_e{}^{sp}\,\overline{\lambda_{\psi\chi}}^{st}\,\lambda_{\psi\chi}{}^{rt}\,\mathrm{LF}_{2,1,0}\left[M_\phi,M_\chi{}^t\right]\overline{H}_i\,H^i\,H^j\left(\overline{l}^r_j\cdot P_R\cdot e^p\right)-$$

$$\frac{1}{2}\hbar\,\lambda_{H\chi}\,Y_e{}^{sp}\,\overline{\lambda_{\psi\chi}}^{st}\,\lambda_{\psi\chi}{}^{rt}\,\mathrm{LF}_{2,1,0}\left[M_\phi,M_\chi{}^t\right]\overline{H}_i\,H^i\,H^j\left(\overline{l}^r_j\cdot P_R\cdot e^p\right)+$$

$$\frac{1}{4}\hbar\,\lambda_{H\chi}\,Y_e{}^{sp}\,\overline{\lambda_{\psi\chi}}^{st}\,\lambda_{\psi\chi}{}^{rt}\,\mathrm{LF}_{2,2,-1}\left[M_\phi,M_\chi{}^t\right]\overline{H}_i\,H^i\,H^j\left(\overline{l}^r_j\cdot P_R\cdot e^p\right)+$$

$$\frac{1}{4}\hbar\,\lambda_{H\chi}\,Y_e{}^{sp}\,\overline{\lambda_{\psi\chi}}^{st}\,\lambda_{\psi\chi}{}^{rt}\,\mathrm{LF}_{2,2,-1}\left[M_\phi,M_\chi{}^t\right]\overline{H}_i\,H^i\,H^j\left(\overline{l}^r_j\cdot P_R\cdot e^p\right)-$$

$$\frac{1}{2}\hbar\,\overline{Y_e}^{st}\,Y_e{}^{rt}\,Y_e{}^{up}\,\overline{\lambda_{\psi\chi}}^{uv}\,\lambda_{\psi\chi}{}^{sv}\,\mathrm{LF}_{2,1,0}\left[M_\chi{}^v,M_\phi\right]\overline{H}_i\,H^i\,H^j\left(\overline{l}^r_j\cdot P_R\cdot e^p\right)+$$

$$\hbar\,\overline{Y_e}^{st}\,Y_e{}^{rt}\,Y_e{}^{up}\,\overline{\lambda_{\psi\chi}}^{uv}\,\lambda_{\psi\chi}{}^{sv}\,\mathrm{LF}_{3,1,-1}\left[M_\chi{}^v,M_\phi\right]\overline{H}_i\,H^i\,H^j\left(\overline{l}^r_j\cdot P_R\cdot e^p\right)-$$

$$\frac{1}{2}\hbar\,\overline{Y_e}^{st}\,Y_e{}^{rt}\,Y_e{}^{up}\,\overline{\lambda_{\psi\chi}}^{uv}\,\lambda_{\psi\chi}{}^{sv}\,\mathrm{LF}_{4,1,-2}\left[M_\chi{}^v,M_\phi\right]\overline{H}_i\,H^i\,H^j\left(\overline{l}^r_j\cdot P_R\cdot e^p\right)+$$

$$\frac{1}{480}\hbar\,g_L{}^4\frac{1}{M_\phi{}^2}Y_d{}^{rp}\,\overline{H}_i\,H^i\,H^j\left(\overline{q}^r_{aj}\cdot P_R\cdot d^{ap}\right)+\frac{1}{480}\hbar\,g_Y{}^4\frac{1}{M_\phi{}^2}Y_d{}^{rp}\,\overline{H}_i\,H^i\,H^j\left(\overline{q}^r_{aj}\cdot P_R\cdot d^{ap}\right)+$$

$$\frac{1}{6}\hbar\frac{1}{M_\phi{}^2}\lambda_{H\chi}{}^2\,Y_d{}^{rp}\,\overline{H}_i\,H^i\,H^j\left(\overline{q}^r_{aj}\cdot P_R\cdot d^{ap}\right)+\frac{1}{6}\hbar\,\lambda_{H\chi}\,\lambda_{H\chi}\frac{1}{M_\phi{}^2}Y_d{}^{rp}\,\overline{H}_i\,H^i\,H^j\left(\overline{q}^r_{aj}\cdot P_R\cdot d^{ap}\right)+$$

$$\frac{1}{12}\hbar\frac{1}{M_\phi{}^2}\lambda_{H\chi}{}^2\,Y_d{}^{rp}\,\overline{H}_i\,H^i\,H^j\left(\overline{q}^r_{aj}\cdot P_R\cdot d^{ap}\right)+\frac{1}{480}\hbar\,g_L{}^4\frac{1}{M_\phi{}^2}Y_u{}^{rp}\,\overline{H}_i\,\overline{H}_j\,H^i\left(\overline{q}^r_{ak}\cdot P_R\cdot u^{ap}\right)\varepsilon^{kj}+$$

$$\frac{1}{480}\hbar\,g_Y{}^4\frac{1}{M_\phi{}^2}Y_u{}^{rp}\,\overline{H}_i\,\overline{H}_j\,H^i\left(\overline{q}^r_{ak}\cdot P_R\cdot u^{ap}\right)\varepsilon^{kj}+\frac{1}{6}\hbar\frac{1}{M_\phi{}^2}\lambda_{H\chi}{}^2\,Y_u{}^{rp}\,\overline{H}_i\,\overline{H}_j\,H^i\left(\overline{q}^r_{ak}\cdot P_R\cdot u^{ap}\right)\varepsilon^{kj}+$$

$$\frac{1}{6}\hbar\,\lambda_{H\chi}\,\lambda_{H\chi}\frac{1}{M_\phi{}^2}Y_u{}^{rp}\,\overline{H}_i\,\overline{H}_j\,H^i\left(\overline{q}^r_{ak}\cdot P_R\cdot u^{ap}\right)\varepsilon^{kj}+$$

$$\frac{1}{12}\hbar\frac{1}{M_\phi{}^2}\lambda_{H\chi}{}^2\,Y_u{}^{rp}\,\overline{H}_i\,\overline{H}_j\,H^i\left(\overline{q}^r_{ak}\cdot P_R\cdot u^{ap}\right)\varepsilon^{kj}+\frac{1}{480}\hbar\,g_L{}^4\frac{1}{M_\phi{}^2}\overline{Y_u}^{pr}\,\overline{H}_i\,H^i\,H^k\left(\overline{u}^r_a\cdot P_L\cdot q^{ajp}\right)\overline{\varepsilon}_{jk}+$$

$$\frac{1}{480}\hbar\,g_Y{}^4\frac{1}{M_\phi{}^2}\overline{Y_u}^{pr}\,\overline{H}_i\,H^i\,H^k\left(\overline{u}^r_a\cdot P_L\cdot q^{ajp}\right)\overline{\varepsilon}_{jk}+\frac{1}{6}\hbar\frac{1}{M_\phi{}^2}\lambda_{H\chi}{}^2\,\overline{Y_u}^{pr}\,\overline{H}_i\,H^i\,H^k\left(\overline{u}^r_a\cdot P_L\cdot q^{ajp}\right)\overline{\varepsilon}_{jk}+$$

$$\frac{1}{6}\hbar\,\lambda_{H\chi}\,\lambda_{H\chi}\frac{1}{M_\phi{}^2}\overline{Y_u}^{pr}\,\overline{H}_i\,H^i\,H^k\left(\overline{u}^r_a\cdot P_L\cdot q^{ajp}\right)\overline{\varepsilon}_{jk}+\frac{1}{12}\hbar\frac{1}{M_\phi{}^2}\lambda_{H\chi}{}^2\,\overline{Y_u}^{pr}\,\overline{H}_i\,H^i\,H^k\left(\overline{u}^r_a\cdot P_L\cdot q^{ajp}\right)\overline{\varepsilon}_{jk}-$$

$$\frac{\mathrm{i}}{360}\hbar\,g_Y{}^4\frac{1}{M_\phi{}^2}D_\mu\overline{H}_i\,H^i\left(\overline{d}^r_a\cdot\gamma_\mu P_R\cdot d^{ar}\right)+\frac{\mathrm{i}}{360}\hbar\,g_Y{}^4\frac{1}{M_\phi{}^2}\overline{H}_i\,D_\mu H^i\left(\overline{d}^r_a\cdot\gamma_\mu P_R\cdot d^{ar}\right)-$$

$$\frac{\mathrm{i}}{120}\hbar\,g_Y{}^4\frac{1}{M_\phi{}^2}\delta_{pr}\,D_\mu\overline{H}_i\,H^i\left(\overline{e}^r\cdot\gamma_\mu P_R\cdot e^p\right)+\frac{\mathrm{i}}{120}\hbar\,g_Y{}^4\frac{1}{M_\phi{}^2}\delta_{pr}\,\overline{H}_i\,D_\mu H^i\left(\overline{e}^r\cdot\gamma_\mu P_R\cdot e^p\right)+$$

$$\frac{\mathrm{i}}{2}\hbar\,\overline{Y_e}^{sr}\,Y_e{}^{tp}\,\overline{\lambda_{\psi\chi}}^{tu}\,\lambda_{\psi\chi}{}^{su}\,\mathrm{LF}_{2,1,0}\left[M_\chi{}^u,M_\phi\right]D_\mu\overline{H}_i\,H^i\left(\overline{e}^r\cdot\gamma_\mu P_R\cdot e^p\right)-$$

$$\frac{\mathrm{i}}{2}\hbar\,\overline{Y_e}^{sr}\,Y_e{}^{tp}\,\overline{\lambda_{\psi\chi}}^{tu}\,\lambda_{\psi\chi}{}^{su}\,\mathrm{LF}_{2,1,0}\left[M_\chi{}^u,M_\phi\right]\overline{H}_i\,D_\mu H^i\left(\overline{e}^r\cdot\gamma_\mu P_R\cdot e^p\right)-$$

$$\mathrm{i}\,\hbar\,\overline{Y_e}^{sr}\,Y_e{}^{tp}\,\overline{\lambda_{\psi\chi}}^{tu}\,\lambda_{\psi\chi}{}^{su}\,\mathrm{LF}_{3,1,-1}\left[M_\chi{}^u,M_\phi\right]D_\mu\overline{H}_i\,H^i\left(\overline{e}^r\cdot\gamma_\mu P_R\cdot e^p\right)+$$

$$\mathrm{i}\,\hbar\,\overline{Y_e}^{sr}\,Y_e{}^{tp}\,\overline{\lambda_{\psi\chi}}^{tu}\,\lambda_{\psi\chi}{}^{su}\,\mathrm{LF}_{3,1,-1}\left[M_\chi{}^u,M_\phi\right]\overline{H}_i\,D_\mu H^i\left(\overline{e}^r\cdot\gamma_\mu P_R\cdot e^p\right)+$$

$$\frac{\mathrm{i}}{2}\hbar\,\overline{Y_e}^{sr}\,Y_e{}^{tp}\,\overline{\lambda_{\psi\chi}}^{tu}\,\lambda_{\psi\chi}{}^{su}\,\mathrm{LF}_{4,1,-2}\left[M_\chi{}^u,M_\phi\right]D_\mu\overline{H}_i\,H^i\left(\overline{e}^r\cdot\gamma_\mu P_R\cdot e^p\right)-$$

$$\frac{\mathrm{i}}{2}\hbar\,\overline{Y_e}^{sr}\,Y_e{}^{tp}\,\overline{\lambda_{\psi\chi}}^{tu}\,\lambda_{\psi\chi}{}^{su}\,\mathrm{LF}_{4,1,-2}\left[M_\chi{}^u,M_\phi\right]\overline{H}_i\,D_\mu H^i\left(\overline{e}^r\cdot\gamma_\mu P_R\cdot e^p\right)+$$

$$\frac{\mathrm{i}}{120}\hbar\,g_L{}^4\frac{1}{M_\phi{}^2}\delta_{pr}\,D_\mu\overline{H}_i\,H^j\left(\overline{l}^r_j\cdot\gamma_\mu P_L\cdot l^{ip}\right)-\frac{\mathrm{i}}{120}\hbar\,g_L{}^4\frac{1}{M_\phi{}^2}\delta_{pr}\,\overline{H}_i\,D_\mu H^j\left(\overline{l}^r_j\cdot\gamma_\mu P_L\cdot l^{ip}\right)+$$

$$\frac{\mathrm{i}}{6}\hbar\,g_L{}^2\,\overline{\lambda_{\psi\chi}}^{ps}\,\lambda_{\psi\chi}{}^{rs}\,\mathrm{LF}_{2,1,0}\left[M_\phi,M_\chi{}^s\right]D_\mu\overline{H}_i\,H^j\left(\overline{l}^r_j\cdot\gamma_\mu P_L\cdot l^{ip}\right)-$$

$$\frac{\mathrm{i}}{6}\hbar\,g_L{}^2\,\overline{\lambda_{\psi\chi}}^{ps}\,\lambda_{\psi\chi}{}^{rs}\,\mathrm{LF}_{2,1,0}\left[M_\phi,M_\chi{}^s\right]\overline{H}_i\,D_\mu H^j\left(\overline{l}^r_j\cdot\gamma_\mu P_L\cdot l^{ip}\right)-$$

$$\frac{\mathrm{i}}{12}\hbar\,g_L{}^2\,\overline{\lambda_{\psi\chi}}^{ps}\,\lambda_{\psi\chi}{}^{rs}\,\mathrm{LF}_{2,2,-1}\left[M_\phi,M_\chi{}^s\right]D_\mu\overline{H}_i\,H^j\left(\overline{l}^r_j\cdot\gamma_\mu P_L\cdot l^{ip}\right)+$$

$$\frac{\mathrm{i}}{12}\hbar\,g_L{}^2\,\overline{\lambda_{\psi\chi}}^{ps}\,\lambda_{\psi\chi}{}^{rs}\,\mathrm{LF}_{2,2,-1}\left[M_\phi,M_\chi{}^s\right]\overline{H}_i\,D_\mu H^j\left(\overline{l}^r_j\cdot\gamma_\mu P_L\cdot l^{ip}\right)-$$

$$\frac{\mathrm{i}}{12}\hbar\,g_L{}^2\,\overline{\lambda_{\psi\chi}}^{ps}\,\lambda_{\psi\chi}{}^{rs}\,\mathrm{LF}_{3,1,-1}\left[M_\phi,M_\chi{}^s\right]D_\mu\overline{H}_i\,H^j\left(\overline{l}^r_j\cdot\gamma_\mu P_L\cdot l^{ip}\right)+$$

$$\frac{\mathrm{i}}{12}\hbar\,g_L{}^2\,\overline{\lambda_{\psi\chi}}^{ps}\,\lambda_{\psi\chi}{}^{rs}\,\mathrm{LF}_{3,1,-1}\left[M_\phi,M_\chi{}^s\right]\overline{H}_i\,D_\mu H^j\left(\overline{l}^r_j\cdot\gamma_\mu P_L\cdot l^{ip}\right)-$$

$$\frac{\mathrm{i}}{12}\hbar\,g_L{}^2\,\overline{\lambda_{\psi\chi}}^{ps}\,\lambda_{\psi\chi}{}^{rs}\,\mathrm{LF}_{2,1,0}\left[M_\chi{}^s,M_\phi\right]D_\mu\overline{H}_i\,H^j\left(\overline{l}^r_j\cdot\gamma_\mu P_L\cdot l^{ip}\right)+$$

$$\frac{\mathrm{i}}{12}\hbar\,g_L{}^2\,\overline{\lambda_{\psi\chi}}^{ps}\,\lambda_{\psi\chi}{}^{rs}\,\mathrm{LF}_{2,1,0}\left[M_\chi{}^s,M_\phi\right]\overline{H}_i\,D_\mu H^j\left(\overline{l}^r_j\cdot\gamma_\mu P_L\cdot l^{ip}\right)+$$

$$\frac{\mathrm{i}}{6}\hbar\,g_L{}^2\,\overline{\lambda_{\psi\chi}}^{ps}\,\lambda_{\psi\chi}{}^{rs}\,\mathrm{LF}_{3,1,-1}\left[M_\chi{}^s,M_\phi\right]D_\mu\overline{H}_i\,H^j\left(\overline{l}^r_j\cdot\gamma_\mu P_L\cdot l^{ip}\right)-$$

$$\frac{\mathrm{i}}{6}\hbar\,g_L{}^2\,\overline{\lambda_{\psi\chi}}^{ps}\,\lambda_{\psi\chi}{}^{rs}\,\mathrm{LF}_{3,1,-1}\left[M_\chi{}^s,M_\phi\right]\overline{H}_i\,D_\mu H^j\left(\overline{l}^r_j\cdot\gamma_\mu P_L\cdot l^{ip}\right)-$$

$$\frac{\mathrm{i}}{12}\hbar\,g_L{}^2\,\overline{\lambda_{\psi\chi}}^{ps}\,\lambda_{\psi\chi}{}^{rs}\,\mathrm{LF}_{4,1,-2}\left[M_\chi{}^s,M_\phi\right]D_\mu\overline{H}_i\,H^j\left(\overline{l}^r_j\cdot\gamma_\mu P_L\cdot l^{ip}\right)+$$

$$\frac{\mathrm{i}}{12}\hbar\,g_L{}^2\,\overline{\lambda_{\psi\chi}}^{ps}\,\lambda_{\psi\chi}{}^{rs}\,\mathrm{LF}_{4,1,-2}\left[M_\chi{}^s,M_\phi\right]\overline{H}_i\,D_\mu H^j\left(\overline{l}^r_j\cdot\gamma_\mu P_L\cdot l^{ip}\right)-$$

$$\frac{\mathrm{i}}{240}\hbar\,g_L{}^4\frac{1}{M_\phi{}^2}\delta_{pr}\,D_\mu\overline{H}_i\,H^i\left(\overline{l}^r_j\cdot\gamma_\mu P_L\cdot l^{jp}\right)-\frac{\mathrm{i}}{240}\hbar\,g_Y{}^4\frac{1}{M_\phi{}^2}\delta_{pr}\,D_\mu\overline{H}_i\,H^i\left(\overline{l}^r_j\cdot\gamma_\mu P_L\cdot l^{jp}\right)+$$

$$\frac{\mathrm{i}}{240}\hbar\,g_L{}^4\frac{1}{M_\phi{}^2}\delta_{pr}\,\overline{H}_i\,D_\mu H^i\left(\overline{l}^r_j\cdot\gamma_\mu P_L\cdot l^{jp}\right)+\frac{\mathrm{i}}{240}\hbar\,g_Y{}^4\frac{1}{M_\phi{}^2}\delta_{pr}\,\overline{H}_i\,D_\mu H^i\left(\overline{l}^r_j\cdot\gamma_\mu P_L\cdot l^{jp}\right)-$$

$$\frac{\mathrm{i}}{12}\hbar\,g_L{}^2\,\overline{\lambda_{\psi\chi}}^{ps}\,\lambda_{\psi\chi}{}^{rs}\,\mathrm{LF}_{2,1,0}\left[M_\phi,M_\chi{}^s\right]D_\mu\overline{H}_i\,H^i\left(\overline{l}^r_j\cdot\gamma_\mu P_L\cdot l^{jp}\right)-$$

$$\frac{\mathrm{i}}{12}\hbar\,g_Y{}^2\,\overline{\lambda_{\psi\chi}}^{ps}\,\lambda_{\psi\chi}{}^{rs}\,\mathrm{LF}_{2,1,0}\left[M_\phi,M_\chi{}^s\right]D_\mu\overline{H}_i\,H^i\left(\overline{l}^r_j\cdot\gamma_\mu P_L\cdot l^{jp}\right)+$$

$$\frac{\mathrm{i}}{12}\hbar\,g_L{}^2\,\overline{\lambda_{\psi\chi}}^{ps}\,\lambda_{\psi\chi}{}^{rs}\,\mathrm{LF}_{2,1,0}\left[M_\phi,M_\chi{}^s\right]\overline{H}_i\,D_\mu H^i\left(\overline{l}^r_j\cdot\gamma_\mu P_L\cdot l^{jp}\right)+$$

$$\frac{\mathrm{i}}{12}\hbar\,g_Y{}^2\,\overline{\lambda_{\psi\chi}}^{ps}\,\lambda_{\psi\chi}{}^{rs}\,\mathrm{LF}_{2,1,0}\left[M_\phi,M_\chi{}^s\right]\overline{H}_i\,D_\mu H^i\left(\overline{l}^r_j\cdot\gamma_\mu P_L\cdot l^{jp}\right)+$$

$$\frac{\mathrm{i}}{24}\hbar\,g_L{}^2\,\overline{\lambda_{\psi\chi}}^{ps}\,\lambda_{\psi\chi}{}^{rs}\,\mathrm{LF}_{2,2,-1}\left[M_\phi,M_\chi{}^s\right]D_\mu\overline{H}_i\,H^i\left(\overline{l}^r_j\cdot\gamma_\mu P_L\cdot l^{jp}\right)+$$

$$\frac{\mathrm{i}}{24}\hbar\,g_Y{}^2\,\overline{\lambda_{\psi\chi}}^{ps}\,\lambda_{\psi\chi}{}^{rs}\,\mathrm{LF}_{2,2,-1}\left[M_\phi,M_\chi{}^s\right]D_\mu\overline{H}_i\,H^i\left(\overline{l}^r_j\cdot\gamma_\mu P_L\cdot l^{jp}\right)-$$

$$\frac{\mathrm{i}}{24}\hbar\,g_L{}^2\,\overline{\lambda_{\psi\chi}}^{ps}\,\lambda_{\psi\chi}{}^{rs}\,\mathrm{LF}_{2,2,-1}\left[M_\phi,M_\chi{}^s\right]\overline{H}_i\,D_\mu H^i\left(\overline{l}^r_j\cdot\gamma_\mu P_L\cdot l^{jp}\right)-$$

$$\frac{\mathrm{i}}{24}\hbar\,g_Y{}^2\,\overline{\lambda_{\psi\chi}}^{ps}\,\lambda_{\psi\chi}{}^{rs}\,\mathrm{LF}_{2,2,-1}\left[M_\phi,M_\chi{}^s\right]\overline{H}_i\,D_\mu H^i\left(\overline{l}^r_j\cdot\gamma_\mu P_L\cdot l^{jp}\right)+$$

$$\frac{\mathrm{i}}{24}\hbar\,g_L{}^2\,\overline{\lambda_{\psi\chi}}^{ps}\,\lambda_{\psi\chi}{}^{rs}\,\mathrm{LF}_{3,1,-1}\left[M_\phi,M_\chi{}^s\right]D_\mu\overline{H}_i\,H^i\left(\overline{l}^r_j\cdot\gamma_\mu P_L\cdot l^{jp}\right)+$$

$$\frac{\mathrm{i}}{24}\hbar\,g_Y{}^2\,\overline{\lambda_{\psi\chi}}^{ps}\,\lambda_{\psi\chi}{}^{rs}\,\mathrm{LF}_{3,1,-1}\left[M_\phi,M_\chi{}^s\right]D_\mu\overline{H}_i\,H^i\left(\overline{l}^r_j\cdot\gamma_\mu P_L\cdot l^{jp}\right)-$$

$$\frac{\mathrm{i}}{24}\hbar\,g_L{}^2\,\overline{\lambda_{\psi\chi}}^{ps}\,\lambda_{\psi\chi}{}^{rs}\,\mathrm{LF}_{3,1,-1}\left[M_\phi,M_\chi{}^s\right]\overline{H}_i\,D_\mu H^i\left(\overline{l}^r_j\cdot\gamma_\mu P_L\cdot l^{jp}\right)-$$

$$\frac{\mathrm{i}}{24}\hbar\,g_Y{}^2\,\overline{\lambda_{\psi\chi}}^{ps}\,\lambda_{\psi\chi}{}^{rs}\,\mathrm{LF}_{3,1,-1}\left[M_\phi,M_\chi{}^s\right]\overline{H}_i\,D_\mu H^i\left(\overline{l}^r_j\cdot\gamma_\mu P_L\cdot l^{jp}\right)+$$

$$\frac{\mathrm{i}}{24}\hbar\,g_L{}^2\,\overline{\lambda_{\psi\chi}}^{ps}\,\lambda_{\psi\chi}{}^{rs}\,\mathrm{LF}_{2,1,0}\left[M_\chi{}^s,M_\phi\right]D_\mu\overline{H}_i\,H^i\left(\overline{l}^r_j\cdot\gamma_\mu P_L\cdot l^{jp}\right)+$$

$$\frac{\mathrm{i}}{24}\hbar\,g_Y{}^2\,\overline{\lambda_{\psi\chi}}^{ps}\,\lambda_{\psi\chi}{}^{rs}\,\mathrm{LF}_{2,1,0}\left[M_\chi{}^s,M_\phi\right]D_\mu\overline{H}_i\,H^i\left(\overline{l}^r_j\cdot\gamma_\mu P_L\cdot l^{jp}\right)-$$

$$\frac{\mathrm{i}}{24}\hbar\,g_L{}^2\,\overline{\lambda_{\psi\chi}}^{ps}\,\lambda_{\psi\chi}{}^{rs}\,\mathrm{LF}_{2,1,0}\left[M_\chi{}^s,M_\phi\right]\overline{H}_i\,D_\mu H^i\left(\overline{l}^r_j\cdot\gamma_\mu P_L\cdot l^{jp}\right)-$$

$$\frac{\mathrm{i}}{24}\hbar\,g_Y{}^2\,\overline{\lambda_{\psi\chi}}^{ps}\,\lambda_{\psi\chi}{}^{rs}\,\mathrm{LF}_{2,1,0}\left[M_\chi{}^s,M_\phi\right]\overline{H}_i\,D_\mu H^i\left(\overline{l}^r_j\cdot\gamma_\mu P_L\cdot l^{jp}\right)-$$

$$\frac{\mathrm{i}}{12}\hbar\,g_L{}^2\,\overline{\lambda_{\psi\chi}}^{ps}\,\lambda_{\psi\chi}{}^{rs}\,\mathrm{LF}_{3,1,-1}\left[M_\chi{}^s,M_\phi\right]D_\mu\overline{H}_i\,H^i\left(\overline{l}^r_j\cdot\gamma_\mu P_L\cdot l^{jp}\right)-$$

$$\frac{\mathrm{i}}{12}\hbar\,g_Y{}^2\,\overline{\lambda_{\psi\chi}}^{ps}\,\lambda_{\psi\chi}{}^{rs}\,\mathrm{LF}_{3,1,-1}\left[M_\chi{}^s,M_\phi\right]D_\mu\overline{H}_i\,H^i\left(\overline{l}^r_j\cdot\gamma_\mu P_L\cdot l^{jp}\right)+$$

$$\frac{\mathrm{i}}{12}\hbar\,g_L{}^2\,\overline{\lambda_{\psi\chi}}^{ps}\,\lambda_{\psi\chi}{}^{rs}\,\mathrm{LF}_{3,1,-1}\left[M_\chi{}^s,M_\phi\right]\overline{H}_i\,D_\mu H^i\left(\overline{l}^r_j\cdot\gamma_\mu P_L\cdot l^{jp}\right)+$$

$$\frac{\mathrm{i}}{12}\hbar\,g_Y{}^2\,\overline{\lambda_{\psi\chi}}^{ps}\,\lambda_{\psi\chi}{}^{rs}\,\mathrm{LF}_{3,1,-1}\left[M_\chi{}^s,M_\phi\right]\overline{H}_i\,D_\mu H^i\left(\overline{l}^r_j\cdot\gamma_\mu P_L\cdot l^{jp}\right)+$$

$$\frac{\mathrm{i}}{24}\hbar\,g_L{}^2\,\overline{\lambda_{\psi\chi}}^{ps}\,\lambda_{\psi\chi}{}^{rs}\,\mathrm{LF}_{4,1,-2}\left[M_\chi{}^s,M_\phi\right]D_\mu\overline{H}_i\,H^i\left(\overline{l}^r_j\cdot\gamma_\mu P_L\cdot l^{jp}\right)+$$

$$\frac{\mathrm{i}}{24}\hbar\,g_Y{}^2\,\overline{\lambda_{\psi\chi}}^{ps}\,\lambda_{\psi\chi}{}^{rs}\,\mathrm{LF}_{4,1,-2}\left[M_\chi{}^s,M_\phi\right]D_\mu\overline{H}_i\,H^i\left(\overline{l}^r_j\cdot\gamma_\mu P_L\cdot l^{jp}\right)-$$

$$\frac{\mathrm{i}}{24}\hbar\,g_L{}^2\,\overline{\lambda_{\psi\chi}}^{ps}\,\lambda_{\psi\chi}{}^{rs}\,\mathrm{LF}_{4,1,-2}\left[M_\chi{}^s,M_\phi\right]\overline{H}_i\,D_\mu H^i\left(\overline{l}^r_j\cdot\gamma_\mu P_L\cdot l^{jp}\right)-$$

$$\frac{\mathrm{i}}{24}\hbar\,g_Y{}^2\,\overline{\lambda_{\psi\chi}}^{ps}\,\lambda_{\psi\chi}{}^{rs}\,\mathrm{LF}_{4,1,-2}\left[M_\chi{}^s,M_\phi\right]\overline{H}_i\,D_\mu H^i\left(\overline{l}^r_j\cdot\gamma_\mu P_L\cdot l^{jp}\right)+$$

$$\frac{\mathrm{i}}{120}\hbar\,g_L{}^4\frac{1}{M_\phi{}^2}D_\mu\overline{H}_i\,H^j\left(\overline{q}^r_{aj}\cdot\gamma_\mu P_L\cdot q^{air}\right)-\frac{\mathrm{i}}{120}\hbar\,g_L{}^4\frac{1}{M_\phi{}^2}\overline{H}_i\,D_\mu H^j\left(\overline{q}^r_{aj}\cdot\gamma_\mu P_L\cdot q^{air}\right)-$$

$$\frac{\mathrm{i}}{240}\hbar\,g_L{}^4\frac{1}{M_\phi{}^2}D_\mu\overline{H}_i\,H^i\left(\overline{q}^r_{aj}\cdot\gamma_\mu P_L\cdot q^{ajr}\right)+\frac{\mathrm{i}}{720}\hbar\,g_Y{}^4\frac{1}{M_\phi{}^2}D_\mu\overline{H}_i\,H^i\left(\overline{q}^r_{aj}\cdot\gamma_\mu P_L\cdot q^{ajr}\right)+$$

$$\frac{\mathrm{i}}{240}\hbar\,g_L{}^4\frac{1}{M_\phi{}^2}\overline{H}_i\,D_\mu H^i\left(\overline{q}^r_{aj}\cdot\gamma_\mu P_L\cdot q^{ajr}\right)-\frac{\mathrm{i}}{720}\hbar\,g_Y{}^4\frac{1}{M_\phi{}^2}\overline{H}_i\,D_\mu H^i\left(\overline{q}^r_{aj}\cdot\gamma_\mu P_L\cdot q^{ajr}\right)+$$

$$\frac{\mathrm{i}}{180}\hbar\,g_Y{}^4\frac{1}{M_\phi{}^2}D_\mu\overline{H}_i\,H^i\left(\overline{u}^r_a\cdot\gamma_\mu P_R\cdot u^{ar}\right)-\frac{\mathrm{i}}{180}\hbar\,g_Y{}^4\frac{1}{M_\phi{}^2}\overline{H}_i\,D_\mu H^i\left(\overline{u}^r_a\cdot\gamma_\mu P_R\cdot u^{ar}\right)-$$

$$\frac{\mathrm{i}}{8}\hbar\,\overline{Y_e}^{sr}\,\overline{\lambda_{\psi\chi}}^{pt}\,\lambda_{\psi\chi}{}^{st}\,\mathrm{LF}_{2,1,0}\left[M_\chi{}^t,M_\phi\right]\overline{H}_i\,B^{\mu\nu}\left(\overline{e}^r\cdot\Gamma_{\mu\nu}P_L\cdot l^{ip}\right)+$$

$$\frac{\mathrm{i}}{4}\hbar\,\overline{Y_e}^{sr}\,\overline{\lambda_{\psi\chi}}^{pt}\,\lambda_{\psi\chi}{}^{st}\,\mathrm{LF}_{3,1,-1}\left[M_\chi{}^t,M_\phi\right]\overline{H}_i\,B^{\mu\nu}\left(\overline{e}^r\cdot\Gamma_{\mu\nu}P_L\cdot l^{ip}\right)-$$

$$\frac{\mathrm{i}}{8}\hbar\,\overline{Y_e}^{sr}\,\overline{\lambda_{\psi\chi}}^{pt}\,\lambda_{\psi\chi}{}^{st}\,\mathrm{LF}_{4,1,-2}\left[M_\chi{}^t,M_\phi\right]\overline{H}_i\,B^{\mu\nu}\left(\overline{e}^r\cdot\Gamma_{\mu\nu}P_L\cdot l^{ip}\right)+$$

$$\frac{\mathrm{i}}{4}\hbar\,\overline{Y_e}^{sr}\,\overline{\lambda_{\psi\chi}}^{pt}\,\lambda_{\psi\chi}{}^{st}\,\mathrm{LF}_{2,1,0}\left[M_\chi{}^t,M_\phi\right]\overline{H}_i\,W^{\mu\nu I}\left(\overline{e}^r\cdot\Gamma_{\mu\nu}P_L\cdot l^{jp}\right)T^{Ii}_j-$$

$$\frac{\mathrm{i}}{2}\hbar\,\overline{Y_e}^{sr}\,\overline{\lambda_{\psi\chi}}^{pt}\,\lambda_{\psi\chi}{}^{st}\,\mathrm{LF}_{3,1,-1}\left[M_\chi{}^t,M_\phi\right]\overline{H}_i\,W^{\mu\nu I}\left(\overline{e}^r\cdot\Gamma_{\mu\nu}P_L\cdot l^{jp}\right)T^{Ii}_j+$$

$$\frac{\mathrm{i}}{4}\hbar\,\overline{Y_e}^{sr}\,\overline{\lambda_{\psi\chi}}^{pt}\,\lambda_{\psi\chi}{}^{st}\,\mathrm{LF}_{4,1,-2}\left[M_\chi{}^t,M_\phi\right]\overline{H}_i\,W^{\mu\nu I}\left(\overline{e}^r\cdot\Gamma_{\mu\nu}P_L\cdot l^{jp}\right)T^{Ii}_j-$$

$$\frac{\mathrm{i}}{8}\hbar\,Y_e{}^{sp}\,\overline{\lambda_{\psi\chi}}^{st}\,\lambda_{\psi\chi}{}^{rt}\,\mathrm{LF}_{2,1,0}\left[M_\chi{}^t,M_\phi\right]H^i\,B^{\mu\nu}\left(\overline{l}^r_i\cdot\Gamma_{\mu\nu}P_R\cdot e^p\right)+$$

$$\frac{\mathrm{i}}{4}\hbar\,Y_e{}^{sp}\,\overline{\lambda_{\psi\chi}}^{st}\,\lambda_{\psi\chi}{}^{rt}\,\mathrm{LF}_{2,1,0}\left[M_\chi{}^t,M_\phi\right]H^j\,W^{\mu\nu I}\left(\overline{l}^r_i\cdot\Gamma_{\mu\nu}P_R\cdot e^p\right)T^{Ii}_j+$$

$$\frac{\mathrm{i}}{4}\hbar\,Y_e{}^{sp}\,\overline{\lambda_{\psi\chi}}^{st}\,\lambda_{\psi\chi}{}^{rt}\,\mathrm{LF}_{3,1,-1}\left[M_\chi{}^t,M_\phi\right]H^i\,B^{\mu\nu}\left(\overline{l}^r_i\cdot\Gamma_{\mu\nu}P_R\cdot e^p\right)-$$

$$\frac{\mathrm{i}}{2}\hbar\,Y_e{}^{sp}\,\overline{\lambda_{\psi\chi}}^{st}\,\lambda_{\psi\chi}{}^{rt}\,\mathrm{LF}_{3,1,-1}\left[M_\chi{}^t,M_\phi\right]H^j\,W^{\mu\nu I}\left(\overline{l}^r_i\cdot\Gamma_{\mu\nu}P_R\cdot e^p\right)T^{Ii}_j-$$

$$\frac{\mathrm{i}}{8}\hbar\,Y_e{}^{sp}\,\overline{\lambda_{\psi\chi}}^{st}\,\lambda_{\psi\chi}{}^{rt}\,\mathrm{LF}_{4,1,-2}\left[M_\chi{}^t,M_\phi\right]H^i\,B^{\mu\nu}\left(\overline{l}^r_i\cdot\Gamma_{\mu\nu}P_R\cdot e^p\right)+$$

$$\frac{\mathrm{i}}{4}\hbar\,Y_e{}^{sp}\,\overline{\lambda_{\psi\chi}}^{st}\,\lambda_{\psi\chi}{}^{rt}\,\mathrm{LF}_{4,1,-2}\left[M_\chi{}^t,M_\phi\right]H^j\,W^{\mu\nu I}\left(\overline{l}^r_i\cdot\Gamma_{\mu\nu}P_R\cdot e^p\right)T^{Ii}_j-$$

$$\frac{1}{1080}\hbar\,g_Y{}^4\frac{1}{M_\phi{}^2}\left(\overline{d}^s_a\cdot\gamma_\mu P_R\cdot d^{as}\right)\left(\overline{d}^t_b\cdot\gamma_\mu P_R\cdot d^{bt}\right)-\frac{1}{240}\hbar\,g_Y{}^4\frac{1}{M_\phi{}^2}\left(\overline{e}^s\cdot\gamma_\mu P_R\cdot e^t\right)\left(\overline{e}^t\cdot\gamma_\mu P_R\cdot e^s\right)-$$

$$\frac{1}{180}\hbar\,g_Y{}^4\frac{1}{M_\phi{}^2}\left(\overline{d}^s_a\cdot\gamma_\mu P_R\cdot d^{as}\right)\left(\overline{e}^t\cdot\gamma_\mu P_R\cdot e^t\right)-\frac{1}{240}\hbar\,g_Y{}^4\frac{1}{M_\phi{}^2}\left(\overline{e}^s\cdot\gamma_\mu P_R\cdot e^s\right)\left(\overline{e}^t\cdot\gamma_\mu P_R\cdot e^t\right)-$$

$$\frac{1}{360}\hbar\,g_Y{}^4\frac{1}{M_\phi{}^2}\delta_{ps}\,\delta_{rt}\left(\overline{d}^s_a\cdot\gamma_\mu P_R\cdot d^{ap}\right)\left(\overline{l}^t_i\cdot\gamma_\mu P_L\cdot l^{ir}\right)-$$

$$\frac{1}{18}\hbar\,g_Y{}^2\,\overline{\lambda_{\psi\chi}}^{ru}\,\lambda_{\psi\chi}{}^{tu}\,\mathrm{LF}_{2,1,0}\left[M_\phi,M_\chi{}^u\right]\delta_{ps}\left(\overline{d}^s_a\cdot\gamma_\mu P_R\cdot d^{ap}\right)\left(\overline{l}^t_i\cdot\gamma_\mu P_L\cdot l^{ir}\right)+$$

$$\frac{1}{36}\hbar\,g_Y{}^2\,\overline{\lambda_{\psi\chi}}^{ru}\,\lambda_{\psi\chi}{}^{tu}\,\mathrm{LF}_{2,2,-1}\left[M_\phi,M_\chi{}^u\right]\delta_{ps}\left(\overline{d}^s_a\cdot\gamma_\mu P_R\cdot d^{ap}\right)\left(\overline{l}^t_i\cdot\gamma_\mu P_L\cdot l^{ir}\right)+$$

$$\frac{1}{36}\hbar\,g_Y{}^2\,\overline{\lambda_{\psi\chi}}^{ru}\,\lambda_{\psi\chi}{}^{tu}\,\mathrm{LF}_{3,1,-1}\left[M_\phi,M_\chi{}^u\right]\delta_{ps}\left(\overline{d}^s_a\cdot\gamma_\mu P_R\cdot d^{ap}\right)\left(\overline{l}^t_i\cdot\gamma_\mu P_L\cdot l^{ir}\right)+$$

$$\frac{1}{36}\hbar\,g_Y{}^2\,\overline{\lambda_{\psi\chi}}^{ru}\,\lambda_{\psi\chi}{}^{tu}\,\mathrm{LF}_{2,1,0}\left[M_\chi{}^u,M_\phi\right]\delta_{ps}\left(\overline{d}^s_a\cdot\gamma_\mu P_R\cdot d^{ap}\right)\left(\overline{l}^t_i\cdot\gamma_\mu P_L\cdot l^{ir}\right)-$$

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

$$\frac{1}{36}\hbar\,g_Y{}^2\,\overline{\lambda_{\psi\chi}}^{ru}\,\lambda_{\psi\chi}{}^{tu}\,\mathrm{LF}_{4,1,-2}\left[M_\chi{}^u,M_\phi\right]\delta_{ps}\left(\overline{d}^s_a\cdot\gamma_\mu P_R\cdot d^{ap}\right)\left(\overline{l}^t_i\cdot\gamma_\mu P_L\cdot l^{ir}\right)-$$

$$\frac{1}{120}\hbar\,g_Y{}^4\frac{1}{M_\phi{}^2}\delta_{ps}\,\delta_{rt}\left(\overline{e}^s\cdot\gamma_\mu P_R\cdot e^p\right)\left(\overline{l}^t_i\cdot\gamma_\mu P_L\cdot l^{ir}\right)-$$

$$\frac{1}{6}\hbar\,g_Y{}^2\,\overline{\lambda_{\psi\chi}}^{ru}\,\lambda_{\psi\chi}{}^{tu}\,\mathrm{LF}_{2,1,0}\left[M_\phi,M_\chi{}^u\right]\delta_{ps}\left(\overline{e}^s\cdot\gamma_\mu P_R\cdot e^p\right)\left(\overline{l}^t_i\cdot\gamma_\mu P_L\cdot l^{ir}\right)+$$

$$\frac{1}{12}\hbar\,g_Y{}^2\,\overline{\lambda_{\psi\chi}}^{ru}\,\lambda_{\psi\chi}{}^{tu}\,\mathrm{LF}_{2,2,-1}\left[M_\phi,M_\chi{}^u\right]\delta_{ps}\left(\overline{e}^s\cdot\gamma_\mu P_R\cdot e^p\right)\left(\overline{l}^t_i\cdot\gamma_\mu P_L\cdot l^{ir}\right)+$$

$$\frac{1}{12}\hbar\,g_Y{}^2\,\overline{\lambda_{\psi\chi}}^{ru}\,\lambda_{\psi\chi}{}^{tu}\,\mathrm{LF}_{3,1,-1}\left[M_\phi,M_\chi{}^u\right]\delta_{ps}\left(\overline{e}^s\cdot\gamma_\mu P_R\cdot e^p\right)\left(\overline{l}^t_i\cdot\gamma_\mu P_L\cdot l^{ir}\right)+$$

$$\frac{1}{12}\hbar\,g_Y{}^2\,\overline{\lambda_{\psi\chi}}^{ru}\,\lambda_{\psi\chi}{}^{tu}\,\mathrm{LF}_{2,1,0}\left[M_\chi{}^u,M_\phi\right]\delta_{ps}\left(\overline{e}^s\cdot\gamma_\mu P_R\cdot e^p\right)\left(\overline{l}^t_i\cdot\gamma_\mu P_L\cdot l^{ir}\right)-$$

$$\frac{1}{6}\hbar\,g_Y{}^2\,\overline{\lambda_{\psi\chi}}^{ru}\,\lambda_{\psi\chi}{}^{tu}\,\mathrm{LF}_{3,1,-1}\left[M_\chi{}^u,M_\phi\right]\delta_{ps}\left(\overline{e}^s\cdot\gamma_\mu P_R\cdot e^p\right)\left(\overline{l}^t_i\cdot\gamma_\mu P_L\cdot l^{ir}\right)+$$

$$\frac{1}{12}\hbar\,g_Y{}^2\,\overline{\lambda_{\psi\chi}}^{ru}\,\lambda_{\psi\chi}{}^{tu}\,\mathrm{LF}_{4,1,-2}\left[M_\chi{}^u,M_\phi\right]\delta_{ps}\left(\overline{e}^s\cdot\gamma_\mu P_R\cdot e^p\right)\left(\overline{l}^t_i\cdot\gamma_\mu P_L\cdot l^{ir}\right)-$$

$$\frac{1}{240}\hbar\,g_L{}^4\frac{1}{M_\phi{}^2}\delta_{pt}\,\delta_{rs}\left(\overline{l}^s_i\cdot\gamma_\mu P_L\cdot l^{ip}\right)\left(\overline{l}^t_j\cdot\gamma_\mu P_L\cdot l^{jr}\right)+$$

$$\frac{1}{480}\hbar\,g_L{}^4\frac{1}{M_\phi{}^2}\delta_{ps}\,\delta_{rt}\left(\overline{l}^s_i\cdot\gamma_\mu P_L\cdot l^{ip}\right)\left(\overline{l}^t_j\cdot\gamma_\mu P_L\cdot l^{jr}\right)-$$

$$\frac{1}{480}\hbar\,g_Y{}^4\frac{1}{M_\phi{}^2}\delta_{ps}\,\delta_{rt}\left(\overline{l}^s_i\cdot\gamma_\mu P_L\cdot l^{ip}\right)\left(\overline{l}^t_j\cdot\gamma_\mu P_L\cdot l^{jr}\right)+$$

$$\frac{1}{12}\hbar\,g_L{}^2\,\overline{\lambda_{\psi\chi}}^{ru}\,\lambda_{\psi\chi}{}^{tu}\,\mathrm{LF}_{2,1,0}\left[M_\phi,M_\chi{}^u\right]\delta_{ps}\left(\overline{l}^s_i\cdot\gamma_\mu P_L\cdot l^{ip}\right)\left(\overline{l}^t_j\cdot\gamma_\mu P_L\cdot l^{jr}\right)-$$

$$\frac{1}{12}\hbar\,g_Y{}^2\,\overline{\lambda_{\psi\chi}}^{ru}\,\lambda_{\psi\chi}{}^{tu}\,\mathrm{LF}_{2,1,0}\left[M_\phi,M_\chi{}^u\right]\delta_{ps}\left(\overline{l}^s_i\cdot\gamma_\mu P_L\cdot l^{ip}\right)\left(\overline{l}^t_j\cdot\gamma_\mu P_L\cdot l^{jr}\right)-$$

$$\frac{1}{6}\hbar\,g_L{}^2\,\overline{\lambda_{\psi\chi}}^{ru}\,\lambda_{\psi\chi}{}^{su}\,\mathrm{LF}_{2,1,0}\left[M_\phi,M_\chi{}^u\right]\delta_{pt}\left(\overline{l}^s_i\cdot\gamma_\mu P_L\cdot l^{ip}\right)\left(\overline{l}^t_j\cdot\gamma_\mu P_L\cdot l^{jr}\right)-$$

$$\frac{1}{24}\hbar\,g_L{}^2\,\overline{\lambda_{\psi\chi}}^{ru}\,\lambda_{\psi\chi}{}^{tu}\,\mathrm{LF}_{2,2,-1}\left[M_\phi,M_\chi{}^u\right]\delta_{ps}\left(\overline{l}^s_i\cdot\gamma_\mu P_L\cdot l^{ip}\right)\left(\overline{l}^t_j\cdot\gamma_\mu P_L\cdot l^{jr}\right)+$$

$$\frac{1}{24}\hbar\,g_Y{}^2\,\overline{\lambda_{\psi\chi}}^{ru}\,\lambda_{\psi\chi}{}^{tu}\,\mathrm{LF}_{2,2,-1}\left[M_\phi,M_\chi{}^u\right]\delta_{ps}\left(\overline{l}^s_i\cdot\gamma_\mu P_L\cdot l^{ip}\right)\left(\overline{l}^t_j\cdot\gamma_\mu P_L\cdot l^{jr}\right)+$$

$$\frac{1}{12}\hbar\,g_L{}^2\,\overline{\lambda_{\psi\chi}}^{ru}\,\lambda_{\psi\chi}{}^{su}\,\mathrm{LF}_{2,2,-1}\left[M_\phi,M_\chi{}^u\right]\delta_{pt}\left(\overline{l}^s_i\cdot\gamma_\mu P_L\cdot l^{ip}\right)\left(\overline{l}^t_j\cdot\gamma_\mu P_L\cdot l^{jr}\right)-$$

$$\frac{1}{24}\hbar\,g_L{}^2\,\overline{\lambda_{\psi\chi}}^{ru}\,\lambda_{\psi\chi}{}^{tu}\,\mathrm{LF}_{3,1,-1}\left[M_\phi,M_\chi{}^u\right]\delta_{ps}\left(\overline{l}^s_i\cdot\gamma_\mu P_L\cdot l^{ip}\right)\left(\overline{l}^t_j\cdot\gamma_\mu P_L\cdot l^{jr}\right)+$$

$$\frac{1}{24}\hbar\,g_Y{}^2\,\overline{\lambda_{\psi\chi}}^{ru}\,\lambda_{\psi\chi}{}^{tu}\,\mathrm{LF}_{3,1,-1}\left[M_\phi,M_\chi{}^u\right]\delta_{ps}\left(\overline{l}^s_i\cdot\gamma_\mu P_L\cdot l^{ip}\right)\left(\overline{l}^t_j\cdot\gamma_\mu P_L\cdot l^{jr}\right)+$$

$$\frac{1}{12}\hbar\,g_L{}^2\,\overline{\lambda_{\psi\chi}}^{ru}\,\lambda_{\psi\chi}{}^{su}\,\mathrm{LF}_{3,1,-1}\left[M_\phi,M_\chi{}^u\right]\delta_{pt}\left(\overline{l}^s_i\cdot\gamma_\mu P_L\cdot l^{ip}\right)\left(\overline{l}^t_j\cdot\gamma_\mu P_L\cdot l^{jr}\right)-$$

$$\frac{1}{24}\hbar\,g_L{}^2\,\overline{\lambda_{\psi\chi}}^{ru}\,\lambda_{\psi\chi}{}^{tu}\,\mathrm{LF}_{2,1,0}\left[M_\chi{}^u,M_\phi\right]\delta_{ps}\left(\overline{l}^s_i\cdot\gamma_\mu P_L\cdot l^{ip}\right)\left(\overline{l}^t_j\cdot\gamma_\mu P_L\cdot l^{jr}\right)+$$

$$\frac{1}{24}\hbar\,g_Y{}^2\,\overline{\lambda_{\psi\chi}}^{ru}\,\lambda_{\psi\chi}{}^{tu}\,\mathrm{LF}_{2,1,0}\left[M_\chi{}^u,M_\phi\right]\delta_{ps}\left(\overline{l}^s_i\cdot\gamma_\mu P_L\cdot l^{ip}\right)\left(\overline{l}^t_j\cdot\gamma_\mu P_L\cdot l^{jr}\right)+$$

$$\frac{1}{12}\hbar\,g_L{}^2\,\overline{\lambda_{\psi\chi}}^{ru}\,\lambda_{\psi\chi}{}^{su}\,\mathrm{LF}_{2,1,0}\left[M_\chi{}^u,M_\phi\right]\delta_{pt}\left(\overline{l}^s_i\cdot\gamma_\mu P_L\cdot l^{ip}\right)\left(\overline{l}^t_j\cdot\gamma_\mu P_L\cdot l^{jr}\right)+$$

$$\frac{1}{12}\hbar\,g_L{}^2\,\overline{\lambda_{\psi\chi}}^{ru}\,\lambda_{\psi\chi}{}^{tu}\,\mathrm{LF}_{3,1,-1}\left[M_\chi{}^u,M_\phi\right]\delta_{ps}\left(\overline{l}^s_i\cdot\gamma_\mu P_L\cdot l^{ip}\right)\left(\overline{l}^t_j\cdot\gamma_\mu P_L\cdot l^{jr}\right)-$$

$$\frac{1}{12}\hbar\,g_Y{}^2\,\overline{\lambda_{\psi\chi}}^{ru}\,\lambda_{\psi\chi}{}^{tu}\,\mathrm{LF}_{3,1,-1}\left[M_\chi{}^u,M_\phi\right]\delta_{ps}\left(\overline{l}^s_i\cdot\gamma_\mu P_L\cdot l^{ip}\right)\left(\overline{l}^t_j\cdot\gamma_\mu P_L\cdot l^{jr}\right)-$$

$$\frac{1}{6}\hbar\,g_L{}^2\,\overline{\lambda_{\psi\chi}}^{ru}\,\lambda_{\psi\chi}{}^{su}\,\mathrm{LF}_{3,1,-1}\left[M_\chi{}^u,M_\phi\right]\delta_{pt}\left(\overline{l}^s_i\cdot\gamma_\mu P_L\cdot l^{ip}\right)\left(\overline{l}^t_j\cdot\gamma_\mu P_L\cdot l^{jr}\right)-$$

$$\frac{1}{24}\hbar\,g_L{}^2\,\overline{\lambda_{\psi\chi}}^{ru}\,\lambda_{\psi\chi}{}^{tu}\,\mathrm{LF}_{4,1,-2}\left[M_\chi{}^u,M_\phi\right]\delta_{ps}\left(\overline{l}^s_i\cdot\gamma_\mu P_L\cdot l^{ip}\right)\left(\overline{l}^t_j\cdot\gamma_\mu P_L\cdot l^{jr}\right)+$$

$$\frac{1}{24}\hbar\,g_Y{}^2\,\overline{\lambda_{\psi\chi}}^{ru}\,\lambda_{\psi\chi}{}^{tu}\,\mathrm{LF}_{4,1,-2}\left[M_\chi{}^u,M_\phi\right]\delta_{ps}\left(\overline{l}^s_i\cdot\gamma_\mu P_L\cdot l^{ip}\right)\left(\overline{l}^t_j\cdot\gamma_\mu P_L\cdot l^{jr}\right)+$$

$$\frac{1}{12}\hbar\,g_L{}^2\,\overline{\lambda_{\psi\chi}}^{ru}\,\lambda_{\psi\chi}{}^{su}\,\mathrm{LF}_{4,1,-2}\left[M_\chi{}^u,M_\phi\right]\delta_{pt}\left(\overline{l}^s_i\cdot\gamma_\mu P_L\cdot l^{ip}\right)\left(\overline{l}^t_j\cdot\gamma_\mu P_L\cdot l^{jr}\right)+$$

$$\frac{1}{8}\hbar\,\overline{\lambda_{\psi\chi}}^{pu}\,\overline{\lambda_{\psi\chi}}^{rv}\,\lambda_{\psi\chi}{}^{sv}\,\lambda_{\psi\chi}{}^{tu}\,\mathrm{LF}_{2,1,1,-1}\left[M_\phi,M_\chi{}^u,M_\chi{}^v\right]\left(\overline{l}^s_i\cdot\gamma_\mu P_L\cdot l^{ip}\right)\left(\overline{l}^t_j\cdot\gamma_\mu P_L\cdot l^{jr}\right)+$$

$$\frac{1}{4}\hbar\,M_\chi{}^u\,M_\chi{}^v\,\overline{\lambda_{\psi\chi}}^{pu}\,\overline{\lambda_{\psi\chi}}^{ru}\,\lambda_{\psi\chi}{}^{sv}\,\lambda_{\psi\chi}{}^{tv}\,\mathrm{LF}_{2,1,1,0}\left[M_\phi,M_\chi{}^u,M_\chi{}^v\right]\left(\overline{l}^s_i\cdot\gamma_\mu P_L\cdot l^{ip}\right)\left(\overline{l}^t_j\cdot\gamma_\mu P_L\cdot l^{jr}\right)+$$

$$\frac{1}{360}\hbar\,g_Y{}^4\frac{1}{M_\phi{}^2}\left(\overline{e}^s\cdot\gamma_\mu P_R\cdot e^s\right)\left(\overline{q}^t_{ai}\cdot\gamma_\mu P_L\cdot q^{ait}\right)-$$

$$\frac{1}{120}\hbar\,g_L{}^4\frac{1}{M_\phi{}^2}\delta_{ps}\,\delta_{rt}\left(\overline{l}^s_i\cdot\gamma_\mu P_L\cdot l^{jp}\right)\left(\overline{q}^t_{aj}\cdot\gamma_\mu P_L\cdot q^{air}\right)-$$

$$\frac{1}{6}\hbar\,g_L{}^2\,\overline{\lambda_{\psi\chi}}^{pu}\,\lambda_{\psi\chi}{}^{su}\,\mathrm{LF}_{2,1,0}\left[M_\phi,M_\chi{}^u\right]\delta_{rt}\left(\overline{l}^s_i\cdot\gamma_\mu P_L\cdot l^{jp}\right)\left(\overline{q}^t_{aj}\cdot\gamma_\mu P_L\cdot q^{air}\right)+$$

$$\frac{1}{12}\hbar\,g_L{}^2\,\overline{\lambda_{\psi\chi}}^{pu}\,\lambda_{\psi\chi}{}^{su}\,\mathrm{LF}_{2,2,-1}\left[M_\phi,M_\chi{}^u\right]\delta_{rt}\left(\overline{l}^s_i\cdot\gamma_\mu P_L\cdot l^{jp}\right)\left(\overline{q}^t_{aj}\cdot\gamma_\mu P_L\cdot q^{air}\right)+$$

$$\frac{1}{12}\hbar\,g_L{}^2\,\overline{\lambda_{\psi\chi}}^{pu}\,\lambda_{\psi\chi}{}^{su}\,\mathrm{LF}_{3,1,-1}\left[M_\phi,M_\chi{}^u\right]\delta_{rt}\left(\overline{l}^s_i\cdot\gamma_\mu P_L\cdot l^{jp}\right)\left(\overline{q}^t_{aj}\cdot\gamma_\mu P_L\cdot q^{air}\right)+$$

$$\frac{1}{12}\hbar\,g_L{}^2\,\overline{\lambda_{\psi\chi}}^{pu}\,\lambda_{\psi\chi}{}^{su}\,\mathrm{LF}_{2,1,0}\left[M_\chi{}^u,M_\phi\right]\delta_{rt}\left(\overline{l}^s_i\cdot\gamma_\mu P_L\cdot l^{jp}\right)\left(\overline{q}^t_{aj}\cdot\gamma_\mu P_L\cdot q^{air}\right)-$$

$$\frac{1}{6}\hbar\,g_L{}^2\,\overline{\lambda_{\psi\chi}}^{pu}\,\lambda_{\psi\chi}{}^{su}\,\mathrm{LF}_{3,1,-1}\left[M_\chi{}^u,M_\phi\right]\delta_{rt}\left(\overline{l}^s_i\cdot\gamma_\mu P_L\cdot l^{jp}\right)\left(\overline{q}^t_{aj}\cdot\gamma_\mu P_L\cdot q^{air}\right)+$$

$$\frac{1}{12}\hbar\,g_L{}^2\,\overline{\lambda_{\psi\chi}}^{pu}\,\lambda_{\psi\chi}{}^{su}\,\mathrm{LF}_{4,1,-2}\left[M_\chi{}^u,M_\phi\right]\delta_{rt}\left(\overline{l}^s_i\cdot\gamma_\mu P_L\cdot l^{jp}\right)\left(\overline{q}^t_{aj}\cdot\gamma_\mu P_L\cdot q^{air}\right)+$$

$$\frac{1}{240}\hbar\,g_L{}^4\frac{1}{M_\phi{}^2}\delta_{ps}\,\delta_{rt}\left(\overline{l}^s_i\cdot\gamma_\mu P_L\cdot l^{ip}\right)\left(\overline{q}^t_{aj}\cdot\gamma_\mu P_L\cdot q^{ajr}\right)+$$

$$\frac{1}{720}\hbar\,g_Y{}^4\frac{1}{M_\phi{}^2}\delta_{ps}\,\delta_{rt}\left(\overline{l}^s_i\cdot\gamma_\mu P_L\cdot l^{ip}\right)\left(\overline{q}^t_{aj}\cdot\gamma_\mu P_L\cdot q^{ajr}\right)+$$

$$\frac{1}{12}\hbar\,g_L{}^2\,\overline{\lambda_{\psi\chi}}^{pu}\,\lambda_{\psi\chi}{}^{su}\,\mathrm{LF}_{2,1,0}\left[M_\phi,M_\chi{}^u\right]\delta_{rt}\left(\overline{l}^s_i\cdot\gamma_\mu P_L\cdot l^{ip}\right)\left(\overline{q}^t_{aj}\cdot\gamma_\mu P_L\cdot q^{ajr}\right)+$$

$$\frac{1}{36}\hbar\,g_Y{}^2\,\overline{\lambda_{\psi\chi}}^{pu}\,\lambda_{\psi\chi}{}^{su}\,\mathrm{LF}_{2,1,0}\left[M_\phi,M_\chi{}^u\right]\delta_{rt}\left(\overline{l}^s_i\cdot\gamma_\mu P_L\cdot l^{ip}\right)\left(\overline{q}^t_{aj}\cdot\gamma_\mu P_L\cdot q^{ajr}\right)-$$

$$\frac{1}{24}\hbar\,g_L{}^2\,\overline{\lambda_{\psi\chi}}^{pu}\,\lambda_{\psi\chi}{}^{su}\,\mathrm{LF}_{2,2,-1}\left[M_\phi,M_\chi{}^u\right]\delta_{rt}\left(\overline{l}^s_i\cdot\gamma_\mu P_L\cdot l^{ip}\right)\left(\overline{q}^t_{aj}\cdot\gamma_\mu P_L\cdot q^{ajr}\right)-$$

$$\frac{1}{72}\hbar\,g_Y{}^2\,\overline{\lambda_{\psi\chi}}^{pu}\,\lambda_{\psi\chi}{}^{su}\,\mathrm{LF}_{2,2,-1}\left[M_\phi,M_\chi{}^u\right]\delta_{rt}\left(\overline{l}^s_i\cdot\gamma_\mu P_L\cdot l^{ip}\right)\left(\overline{q}^t_{aj}\cdot\gamma_\mu P_L\cdot q^{ajr}\right)-$$

$$\frac{1}{24}\hbar\,g_L{}^2\,\overline{\lambda_{\psi\chi}}^{pu}\,\lambda_{\psi\chi}{}^{su}\,\mathrm{LF}_{3,1,-1}\left[M_\phi,M_\chi{}^u\right]\delta_{rt}\left(\overline{l}^s_i\cdot\gamma_\mu P_L\cdot l^{ip}\right)\left(\overline{q}^t_{aj}\cdot\gamma_\mu P_L\cdot q^{ajr}\right)-$$

$$\frac{1}{72}\hbar\,g_Y{}^2\,\overline{\lambda_{\psi\chi}}^{pu}\,\lambda_{\psi\chi}{}^{su}\,\mathrm{LF}_{3,1,-1}\left[M_\phi,M_\chi{}^u\right]\delta_{rt}\left(\overline{l}^s_i\cdot\gamma_\mu P_L\cdot l^{ip}\right)\left(\overline{q}^t_{aj}\cdot\gamma_\mu P_L\cdot q^{ajr}\right)-$$

$$\frac{1}{24}\hbar\,g_L{}^2\,\overline{\lambda_{\psi\chi}}^{pu}\,\lambda_{\psi\chi}{}^{su}\,\mathrm{LF}_{2,1,0}\left[M_\chi{}^u,M_\phi\right]\delta_{rt}\left(\overline{l}^s_i\cdot\gamma_\mu P_L\cdot l^{ip}\right)\left(\overline{q}^t_{aj}\cdot\gamma_\mu P_L\cdot q^{ajr}\right)-$$

$$\frac{1}{72}\hbar\,g_Y{}^2\,\overline{\lambda_{\psi\chi}}^{pu}\,\lambda_{\psi\chi}{}^{su}\,\mathrm{LF}_{2,1,0}\left[M_\chi{}^u,M_\phi\right]\delta_{rt}\left(\overline{l}^s_i\cdot\gamma_\mu P_L\cdot l^{ip}\right)\left(\overline{q}^t_{aj}\cdot\gamma_\mu P_L\cdot q^{ajr}\right)+$$

$$\frac{1}{12}\hbar\,g_L{}^2\,\overline{\lambda_{\psi\chi}}^{pu}\,\lambda_{\psi\chi}{}^{su}\,\mathrm{LF}_{3,1,-1}\left[M_\chi{}^u,M_\phi\right]\delta_{rt}\left(\overline{l}^s_i\cdot\gamma_\mu P_L\cdot l^{ip}\right)\left(\overline{q}^t_{aj}\cdot\gamma_\mu P_L\cdot q^{ajr}\right)+$$

$$\frac{1}{36}\hbar\,g_Y{}^2\,\overline{\lambda_{\psi\chi}}^{pu}\,\lambda_{\psi\chi}{}^{su}\,\mathrm{LF}_{3,1,-1}\left[M_\chi{}^u,M_\phi\right]\delta_{rt}\left(\overline{l}^s_i\cdot\gamma_\mu P_L\cdot l^{ip}\right)\left(\overline{q}^t_{aj}\cdot\gamma_\mu P_L\cdot q^{ajr}\right)-$$

$$\frac{1}{24}\hbar\,g_L{}^2\,\overline{\lambda_{\psi\chi}}^{pu}\,\lambda_{\psi\chi}{}^{su}\,\mathrm{LF}_{4,1,-2}\left[M_\chi{}^u,M_\phi\right]\delta_{rt}\left(\overline{l}^s_i\cdot\gamma_\mu P_L\cdot l^{ip}\right)\left(\overline{q}^t_{aj}\cdot\gamma_\mu P_L\cdot q^{ajr}\right)-$$

$$\frac{1}{72}\hbar\,g_Y{}^2\,\overline{\lambda_{\psi\chi}}^{pu}\,\lambda_{\psi\chi}{}^{su}\,\mathrm{LF}_{4,1,-2}\left[M_\chi{}^u,M_\phi\right]\delta_{rt}\left(\overline{l}^s_i\cdot\gamma_\mu P_L\cdot l^{ip}\right)\left(\overline{q}^t_{aj}\cdot\gamma_\mu P_L\cdot q^{ajr}\right)+$$

$$\frac{1}{1080}\hbar\,g_Y{}^4\frac{1}{M_\phi{}^2}\left(\overline{d}^s_a\cdot\gamma_\mu P_R\cdot d^{as}\right)\left(\overline{q}^t_{bi}\cdot\gamma_\mu P_L\cdot q^{bit}\right)-$$

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

$$\frac{1}{480}\hbar\,g_L{}^4\frac{1}{M_\phi{}^2}\left(\overline{q}^s_{ai}\cdot\gamma_\mu P_L\cdot q^{ais}\right)\left(\overline{q}^t_{bj}\cdot\gamma_\mu P_L\cdot q^{bjt}\right)-$$

$$\frac{1}{4320}\hbar\,g_Y{}^4\frac{1}{M_\phi{}^2}\left(\overline{q}^s_{ai}\cdot\gamma_\mu P_L\cdot q^{ais}\right)\left(\overline{q}^t_{bj}\cdot\gamma_\mu P_L\cdot q^{bjt}\right)+$$

$$\frac{1}{180}\hbar\,g_Y{}^4\frac{1}{M_\phi{}^2}\delta_{ps}\,\delta_{rt}\left(\overline{l}^s_i\cdot\gamma_\mu P_L\cdot l^{ip}\right)\left(\overline{u}^t_a\cdot\gamma_\mu P_R\cdot u^{ar}\right)+$$

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

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

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

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

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

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

$$\frac{1}{90}\hbar\,g_Y{}^4\frac{1}{M_\phi{}^2}\left(\overline{e}^s\cdot\gamma_\mu P_R\cdot e^s\right)\left(\overline{u}^t_a\cdot\gamma_\mu P_R\cdot u^{at}\right)+\frac{1}{270}\hbar\,g_Y{}^4\frac{1}{M_\phi{}^2}\left(\overline{d}^s_a\cdot\gamma_\mu P_R\cdot d^{as}\right)\left(\overline{u}^t_b\cdot\gamma_\mu P_R\cdot u^{bt}\right)-$$

$$\frac{1}{540}\hbar\,g_Y{}^4\frac{1}{M_\phi{}^2}\left(\overline{q}^s_{ai}\cdot\gamma_\mu P_L\cdot q^{ais}\right)\left(\overline{u}^t_b\cdot\gamma_\mu P_R\cdot u^{bt}\right)-$$

$$\frac{1}{270}\hbar\,g_Y{}^4\frac{1}{M_\phi{}^2}\left(\overline{u}^s_a\cdot\gamma_\mu P_R\cdot u^{as}\right)\left(\overline{u}^t_b\cdot\gamma_\mu P_R\cdot u^{bt}\right)$$