

$$\begin{aligned} & -\frac{1}{4}\frac{1}{g_Y^2}B^{\nu\gamma 2}-\frac{1}{4}\frac{1}{g_Y^2}B^{\nu\gamma 2}-\frac{1}{4}\frac{1}{g_S^2}G^{\nu\gamma A2}-\frac{1}{24}\frac{1}{\epsilon}W^{\nu\gamma I2}-\frac{1}{4}\frac{1}{g_L^2}W^{\nu\gamma I2}- \\ & -\frac{1}{24}\frac{h}{\epsilon}B^{\nu\gamma 2}\mathrm{Log}\left[\frac{\overline{m}^2}{M_\phi^2}\right]-\frac{1}{24}\frac{h}{\epsilon}W^{\nu\gamma I2}\mathrm{Log}\left[\frac{\overline{m}^2}{M_\phi^2}\right]+D_0\overline{H}_iD_0H^i+C_H\overline{H}_iH^i+\dot{z}\left(\overline{d}_0^s\cdot\gamma_\mu P_R\cdot D_0d^{3r}\right)+ \\ & i\left(\overline{e}^r\cdot\gamma_\mu P_R\cdot D_0e^r\right)+i\left(\overline{\ell}_i^r\cdot\gamma_\mu P_L\cdot D_0\ell^r\right)+i\left(\overline{a}_0^s\cdot\gamma_\mu P_L\cdot D_0q^{3ir}\right)+i\left(\overline{u}_0^s\cdot\gamma_\mu P_R\cdot D_0u^{3r}\right)- \\ & -\frac{1}{2}\lambda\overline{H}_iH^iH^j+\frac{h}{\epsilon}\lambda_{H_X}\overline{H}_iH^iH^j+\frac{h}{\epsilon}\lambda_{H_X}\lambda_{H_X}\overline{H}_iH^iH^j+\frac{1}{2}\frac{h}{\epsilon}\lambda_{H_X}\overline{H}_iH^iH^j+\frac{1}{2}\frac{h}{\epsilon}\lambda_{H_X}\overline{H}_iH^iH^j\mathrm{Log}\left[\frac{\overline{m}^2}{M_\phi^2}\right]+ \\ & +\frac{1}{2}\frac{h}{\epsilon}\lambda_{H_X}\lambda_{H_X}\overline{H}_iH^iH^j+\frac{h}{2}\lambda_{H_X}\overline{H}_iH^iH^j\mathrm{Log}\left[\frac{\overline{m}^2}{M_\phi^2}\right]+\frac{h}{2}\lambda_{H_X}\lambda_{H_X}\overline{H}_iH^iH^j\mathrm{Log}\left[\frac{\overline{m}^2}{M_\phi^2}\right]+ \\ & -\frac{1}{2}\frac{h}{\epsilon}\lambda_{H_X}\overline{H}_iH^iH^j\mathrm{Log}\left[\frac{\overline{m}^2}{M_\phi^2}\right]+\frac{1}{2}\frac{h}{\epsilon}\lambda_{H_X}\lambda_{H_X}\overline{H}_iH^iH^j\mathrm{Log}\left[\frac{\overline{m}^2}{M_\phi^2}\right]- \\ & \overline{Y}_e^{pr}\overline{H}_i\left(\overline{d}_0^r\cdot P_L\cdot q^{3ip}\right)-\overline{Y}_e^{pr}\overline{H}_i\left(\overline{e}^r\cdot P_L\cdot \ell^{ip}\right)-\frac{1}{8}\frac{h}{\epsilon}\overline{Y}_e^{sr}\overline{\lambda}_{\psi X}^{\mathrm{pt}}\lambda_{\psi X}\mathrm{st}\overline{H}_i\left(\overline{e}^r\cdot P_L\cdot \ell^{ip}\right)+ \\ & -\frac{1}{4}\frac{h}{\epsilon}\frac{1}{\overline{Y}_e^{sr}}\overline{\lambda}_{\psi X}^{\mathrm{pt}}\lambda_{\psi X}\mathrm{st}\overline{H}_i\left(\overline{e}^r\cdot P_L\cdot \ell^{ip}\right)+\frac{1}{2}\frac{h}{\epsilon}\overline{Y}_e^{sr}\overline{\lambda}_{\psi X}^{\mathrm{pt}}\lambda_{\psi X}\mathrm{st}L_{F_{1,1,0}}\left[M_\phi,M_X^t\right]\overline{H}_i\left(\overline{e}^r\cdot P_L\cdot \ell^{ip}\right)- \\ & -\frac{1}{4}\frac{h}{\epsilon}\overline{Y}_e^{sr}\overline{\lambda}_{\psi X}^{\mathrm{pt}}\lambda_{\psi X}\mathrm{st}L_{F_{2,1,-1}}\left[M_X^t,M_\phi\right]\overline{H}_i\left(\overline{e}^r\cdot P_L\cdot \ell^{ip}\right)-Y_e^rH^i\left(\overline{\ell}_i^r\cdot P_R\cdot e^p\right)- \\ & -\frac{1}{8}\frac{h}{\epsilon}Y_e^s\overline{\lambda}_{\psi X}^{\mathrm{st}}\lambda_{\psi X}\mathrm{rt}H^i\left(\overline{\ell}_i^r\cdot P_R\cdot e^p\right)+\frac{1}{4}\frac{1}{\epsilon}Y_e^s\overline{\lambda}_{\psi X}^{\mathrm{st}}\lambda_{\psi X}\mathrm{rt}H^i\left(\overline{\ell}_i^r\cdot P_R\cdot e^p\right)+ \\ & -\frac{1}{2}\frac{h}{\epsilon}Y_e^s\overline{\lambda}_{\psi X}^{\mathrm{st}}\lambda_{\psi X}\mathrm{rt}L_{F_{1,1,0}}\left[M_\phi,M_X^t\right]H^i\left(\overline{\ell}_i^r\cdot P_R\cdot e^p\right)- \\ & -\frac{1}{4}\frac{h}{\epsilon}Y_e^s\overline{\lambda}_{\psi X}^{\mathrm{st}}\lambda_{\psi X}\mathrm{rt}L_{F_{2,1,-1}}\left[M_X^t,M_\phi\right]H^i\left(\overline{\ell}_i^r\cdot P_R\cdot e^p\right)-Y_d^rD^iH^i\left(\overline{q}_{3i}^r\cdot P_R\cdot d^{3p}\right)- \\ & Y_u^rD^i\left(\overline{q}_{3j}^r\cdot P_R\cdot u^{3p}\right)\epsilon^{j i}-\overline{Y}_u^rH^j\left(\overline{u}_0^s\cdot P_L\cdot q^{3ip}\right)\overline{\epsilon}_{i j}-\frac{1}{360}\frac{h}{\epsilon}\frac{1}{W^{\nu\gamma K}W^{\nu\gamma J}W^{\nu\gamma I}}\epsilon^{IJK}- \\ & -\frac{1}{240}\frac{h}{\epsilon}C_H\overline{g}^4\frac{1}{M_\phi^2}\overline{H}_iH^iH^j-\frac{1}{240}\frac{h}{\epsilon}C_H\overline{g}^4\frac{1}{M_\phi^2}\overline{H}_iH^iH^j-\frac{1}{3}\frac{h}{\epsilon}C_H\overline{g}^2\frac{1}{M_\phi^2}\lambda_{H_X}\overline{H}_iH^iH^j- \\ & -\frac{1}{3}\frac{h}{\epsilon}C_H\lambda_{H_X}\lambda_{H_X}\frac{1}{M_\phi^2}\overline{H}_iH^iH^j-\frac{1}{6}\frac{h}{\epsilon}C_H\overline{g}^2\frac{1}{M_\phi^2}\lambda_{H_X}\overline{H}_iH^iH^j+\frac{1}{240}\frac{h}{\epsilon}g_L^4\frac{1}{M_\phi^2}\overline{H}_iH^iH^jH^k+ \\ & -\frac{1}{240}\frac{h}{\epsilon}\lambda_{H_X}\overline{g}^4\frac{1}{M_\phi^2}\overline{H}_iH^iH^jH^k+\frac{1}{3}\frac{h}{\epsilon}\lambda_{H_X}\overline{g}^2\frac{1}{M_\phi^2}\lambda_{H_X}\overline{H}_iH^iH^jH^k+\frac{1}{3}\frac{h}{\epsilon}\lambda_{H_X}\overline{g}^2\frac{1}{M_\phi^2}\lambda_{H_X}\overline{H}_iH^iH^jH^k+ \\ & -\frac{1}{3}\frac{h}{\epsilon}\lambda_{H_X}\lambda_{H_X}\frac{1}{M_\phi^2}\overline{H}_iH^iH^jH^k-\frac{1}{2}\frac{h}{\epsilon}\lambda_{H_X}\frac{1}{M_\phi^2}\lambda_{H_X}\overline{H}_iH^iH^jH^k+ \\ & -\frac{1}{6}\frac{h}{\epsilon}\lambda_{H_X}\frac{1}{M_\phi^2}\lambda_{H_X}\overline{H}_iH^iH^jH^k+\frac{1}{2}\frac{h}{\epsilon}\lambda_{H_X}\frac{1}{M_\phi^2}\lambda_{H_X}\overline{H}_iH^iH^jH^k+ \\ & -\frac{1}{6}\frac{h}{\epsilon}\frac{1}{M_\phi^2}\lambda_{H_X}\overline{H}_iH^iH^jH^k+\frac{1}{2}\frac{h}{\epsilon}\lambda_{H_X}\frac{1}{M_\phi^2}\lambda_{H_X}\overline{H}_iH^iH^jH^k-\frac{1}{80}\frac{h}{\epsilon}g_L^4\frac{1}{M_\phi^2}\overline{H}_iD_0\overline{H}_jH^iD_0H^j- \\ & -\frac{1}{120}\frac{h}{\epsilon}g_Y^4\frac{1}{M_\phi^2}D_0\overline{H}_iH^iD_0H^j-\frac{1}{240}\frac{h}{\epsilon}g_Y^4\frac{1}{M_\phi^2}\overline{H}_iD_0\overline{H}_jH^iD_0H^j-\frac{1}{3}\frac{h}{\epsilon}\frac{1}{M_\phi^2}\lambda_{H_X}\overline{H}_iD_0\overline{H}_jH^iD_0H^j- \\ & -\frac{1}{3}\frac{h}{\epsilon}\lambda_{H_X}\lambda_{H_X}\frac{1}{M_\phi^2}\overline{H}_iD_0\overline{H}_jH^iD_0H^j-\frac{1}{6}\frac{h}{\epsilon}\frac{1}{M_\phi^2}\lambda_{H_X}\overline{H}_iD_0\overline{H}_jH^iD_0H^j+\frac{1}{6}\frac{h}{\epsilon}\lambda_{H_X}\lambda_{H_X}\frac{1}{M_\phi^2}D_0\overline{H}_iH^iD_0H^j+ \\ & -\frac{1}{6}\frac{h}{\epsilon}\lambda_{H_X}\frac{1}{M_\phi^2}\overline{H}_iD_0\overline{H}_jH^iD_0H^j-\frac{1}{24}\frac{h}{\epsilon}\lambda_{H_X}\frac{1}{M_\phi^2}\overline{H}_iH^iB^{\nu\gamma 2}-\frac{1}{48}\frac{h}{\epsilon}\lambda_{H_X}\frac{1}{M_\phi^2}\overline{H}_iH^iB^{\nu\gamma 2}+ \\ & -\frac{1}{12}\frac{h}{\epsilon}\lambda_{H_X}\frac{1}{M_\phi^2}\overline{H}_iH^iB^{\nu\gamma}W^{\nu\gamma I}\tau_{Ij}^r-\frac{1}{24}\frac{h}{\epsilon}\lambda_{H_X}\frac{1}{M_\phi^2}\overline{H}_iH^iW^{\nu\gamma I2}-\frac{1}{48}\frac{h}{\epsilon}\lambda_{H_X}\frac{1}{M_\phi^2}\overline{H}_iH^iW^{\nu\gamma I2}+ \\ & -\frac{1}{480}\frac{h}{\epsilon}g_L^4\frac{1}{M_\phi^2}\overline{Y}_d^{pr}\overline{H}_iH^i\left(\overline{d}_0^r\cdot P_L\cdot q^{3ip}\right)+\frac{1}{480}\frac{h}{\epsilon}g_Y^4\frac{1}{M_\phi^2}\overline{Y}_d^{pr}\overline{H}_iH^i\left(\overline{d}_0^r\cdot P_L\cdot q^{3ip}\right)+ \\ & -\frac{1}{6}\frac{h}{\epsilon}\frac{1}{M_\phi^2}\lambda_{H_X}\overline{Y}_d^{pr}\overline{H}_iH^i\left(\overline{d}_0^r\cdot P_L\cdot q^{3ip}\right)+\frac{1}{6}\frac{h}{\epsilon}\lambda_{H_X}\lambda_{H_X}\frac{1}{M_\phi^2}\overline{Y}_d^{pr}\overline{H}_iH^i\left(\overline{d}_0^r\cdot P_L\cdot q^{3ip}\right)+ \\ & -\frac{1}{12}\frac{h}{\epsilon}\frac{1}{M_\phi^2}\lambda_{H_X}\overline{Y}_d^{pr}\overline{H}_iH^i\left(\overline{d}_0^r\cdot P_L\cdot q^{3ip}\right)+\frac{1}{480}\frac{h}{\epsilon}g_L^4\frac{1}{M_\phi^2}\overline{Y}_e^{pr}\overline{H}_iH^i\left(\overline{e}^r\cdot P_L\cdot \ell^{ip}\right)+ \\ & -\frac{1}{480}\frac{h}{\epsilon}g_Y^4\frac{1}{M_\phi^2}\overline{Y}_e^{pr}\overline{H}_iH^i\left(\overline{e}^r\cdot P_L\cdot \ell^{ip}\right)+\frac{1}{6}\frac{h}{\epsilon}\frac{1}{M_\phi^2}\lambda_{H_X}\overline{Y}_e^{pr}\overline{H}_iH^i\left(\overline{e}^r\cdot P_L\cdot \ell^{ip}\right)+ \\ & -\frac{1}{6}\frac{h}{\epsilon}\lambda_{H_X}\lambda_{H_X}\frac{1}{M_\phi^2}\overline{Y}_e^{pr}\overline{H}_iH^i\left(\overline{e}^r\cdot P_L\cdot \ell^{ip}\right)+\frac{1}{12}\frac{h}{\epsilon}\frac{1}{M_\phi^2}\lambda_{H_X}\overline{Y}_e^{pr}\overline{H}_iH^i\left(\$$