

Figure 1: Feynman diagrams for the HH production via gluon fusion at the leading order.

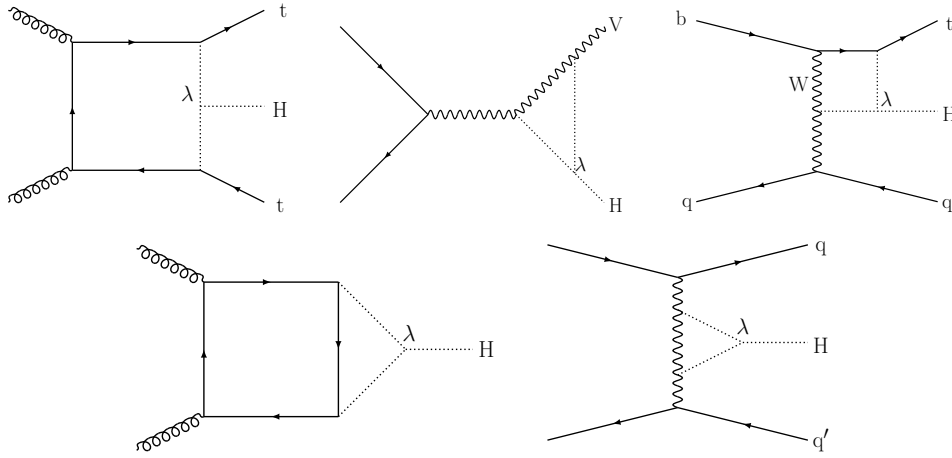
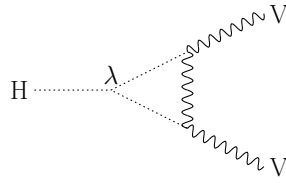


Figure 2: Some Feynman diagrams representing the λ -dependent corrections at the electroweak NLO for the main single Higgs boson production processes.



$$\frac{BR^f}{BR_{SM}^f} = \frac{\kappa_f^2 + C_1^f(\kappa_\lambda - 1)}{\sum_j BR_{SM}^j \left[\kappa_f^2 + C_1^j(\kappa_\lambda - 1) \right]} \quad (1)$$

$$\frac{\sigma}{\sigma_{SM}} = \frac{1}{1 - (\lambda^2 - 1)d_{ZH}} \left[\kappa_i^2 + (\kappa_\lambda - 1) \cdot \frac{C_1^i}{K_{EW}} \right] \quad (2)$$