

Electroweak Corrections to $t\bar{t}H$ production at the Hadron Collider

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Higgs boson production associated with a top quark pair is an important process in studying the nature of the newly discovered Higgs boson at the LHC. The calculations of the next-to-leading contribution of order $\alpha_s^2\alpha^2$ to the $pp \rightarrow t\bar{t}H$ process in the standard model will be present. The sample phenomenological studies at the 13, 14 and 100 TeV hadron collider, including all the effects of electroweak and QCD corrections, will be discussed. The results for the di-leptonic decay channel of the top pair ($t \rightarrow l^+\nu_l b$ and $\bar{t} \rightarrow l^-\bar{\nu}_l \bar{b}$ with $l = e, \mu$) are also investigated.