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Yukawa corrections to b anti- b H production (LHC)

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We investigate the leading one-loop Yukawa corrections to the process $pp \rightarrow b\bar{b}H$ in the SM. We find that the NLO correction to the cross section is about -4% if the Higgs mass is 120GeV. In the limit of vanishing bottom-Higgs Yukawa coupling the cross section is generated solely at the loop level. This contribution is very small at $M_H \sim 120\text{GeV}$ and increases with growing Higgs mass, reaching about $+17\%$ of the cross section when the Higgs mass is about 150GeV. The leading Landau singularity occurs in a scalar box integral if $M_H > 2M_W$.

Auteur principal: M. LE, Duc Ninh (LAPTH)

Orateur: M. LE, Duc Ninh (LAPTH)

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