

Top-bottom interference effects in Higgs boson production

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“The study of Higgs boson properties form an important part of the LHC program. These studies are not only important for a better understanding of electroweak symmetry breaking mechanism but also for BSM searches. For example, most recently a strategy has been proposed to use LHC measurements of the Higgs transverse momentum distribution to constrain the Yukawa couplings of light-generation quarks to the Higgs boson. In this talk I will present the calculation of NLO QCD corrections of the top-bottom interference contribution to Higgs plus jet production at the LHC. The calculation involved computing two-loop Feynman integrals expanded in a small bottom mass, which we performed with the differential equation method and that I will elaborate upon. I will also show our results for the NLO top-bottom interference contribution to the Higgs transverse momentum distribution.”

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