

Top-mass effects in differential Higgs production through gluon fusion at order α_s^4

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Effects from a finite top quark mass on differential distributions in the Higgs+jet production cross section through gluon fusion are studied at next-to-leading order in the strong coupling, i.e. $O(\alpha_s^4)$. Terms formally subleading in $1/m_{\text{Top}}$ are calculated, and their influence on the transverse momentum and rapidity distribution of the Higgs boson are evaluated. We find that, for the differential K-factor, the heavy-top limit is valid at the 2-3% level as long as the transverse momentum of the Higgs remains below about 150 GeV.

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