

Soft gluon resummation for the associated production of a top quark pair with a Higgs boson at the LHC

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The measurement of the associated production of a Higgs boson with a pair of top quarks is among the highest priorities of the current LHC physics program. In this talk latest results for threshold resummation of soft gluon corrections for the $pp \rightarrow t\bar{t}H$ process will be presented. The resummation is carried out at next-to-next-to-leading-logarithmic accuracy using the direct QCD Mellin space technique in the three-particle invariant mass kinematics. Numerical predictions for total inclusive cross sections and invariant mass distributions for the associated production of top quarks with a Higgs boson or a heavy vector boson at the LHC will be discussed.

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