

Impact of renormalisation group equation on Higgs production in the SMEFT

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We study the impact of RGE running and mixing of SMEFT operators on differential observables in Hj , $t\bar{t}H$ and HH production at the LHC. We focus on a subset of operators closed under the QCD-induced anomalous dimension matrix and explore the impact of employing a fixed or dynamical scale on the EFT predictions for the Higgs transverse momentum and Higgs pair invariant mass spectra. We then explore the impact of taking into account RGE effects on the constraints obtained on the Wilson coefficients through fits to current data, as well as projections for the HL-LHC.

Primary author: VENTURA, Giuseppe

Co-authors: VRYONIDOU, Eleni (University of Manchester (GB)); Prof. MALTONI, Fabio (Universite Catholique de Louvain (UCL) (BE) and Università di Bologna)

Presenter: VENTURA, Giuseppe

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