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Top-Bottom Interference Contribution to Fully-Inclusive Higgs Production

Monday 15 April 2024 10:00 (30 minutes)

We evaluate the top-bottom interference contribution to the fully-inclusive Higgs production cross section at next-to-next-to-leading order in QCD. To this end, we compute the relevant two-loop master integrals that enter the real-virtual contribution numerically using the method of differential equations. In addition, the Higgs-gluon form factor at three loops in QCD with two different massive quark flavors must be included for consistency and is derived in terms of deep asymptotic expansions. With this result, we address one of the leading theory uncertainties of the cross section.

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