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Two-loop QCD amplitudes for Higgs production with a bottom quark pair

Wednesday 9 November 2022 15:20 (15 minutes)

I present the computation of the two-loop helicity amplitudes for Higgs boson production in association with a bottom quark pair. This work is of relevance to the precision studies of the bottom-quark Yukawa coupling, such as the analysis of new physics models which modify the strength of this coupling. I give an overview of the method and describe how we overcome the computational bottlenecks by using finite field reconstruction and the method of differential equations. The results are presented in terms of special functions suitable for numerical evaluation across the full physical phase space, making them useful for phenomenological applications.
This talk is based on arXiv:2107.14733

Type of talk

Theory

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