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Higgs boson production at the LHC: NNLO partonic cross sections through order ϵ and convolutions with splitting functions to $N^3\text{LO}$

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This talk considers Higgs boson production at hadron colliders via gluon fusion and the computation of higher order terms in the regularization parameter ϵ . In particular, the next-to-next-to-leading order cross section needs to be evaluated including order ϵ terms. These results are used to compute all convolutions with the splitting functions entering the next-to-next-to-next-to-leading order cross section. A clear account is given on the solution of the occurring convolution integrals involving harmonic polylogarithms and generalized functions.

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