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# Higgs boson pair production at N3LO QCD

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The Higgs boson pair production via gluon fusion at high-energy hadron colliders, such as the LHC, is vital in deciphering the Higgs potential and in pinning down the electroweak symmetry breaking mechanism. We carry out the next-to-next-to-next-to-leading order (N3LO) QCD calculations in the infinite top-quark mass limit. Such corrections are indispensable in stabilising the perturbative expansion of the cross section in the strong coupling constant.Given that the inclusion of the top-quark mass effects is essential for the phenomenological applications, we use several schemes to incorporate the N3LO results in the infinite top-quark mass limit and the next-to-leading order (NLO) results with full top-quark mass dependence.Our results provide one of the most precise theoretical predictions for the process.

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## Secondary track (number)

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