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Exact top-quark mass dependence in hadronic Higgs production

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The impact of the finite top-quark mass on the inclusive Higgs production cross section at higher perturbative orders has been an open question for almost three decades. In this talk, I report on the computation of this effect at NNLO QCD. For the purely gluonic channel, it amounts to $+0.62\%$ relative to the result obtained in the HEFT approximation. The formally sub-leading partonic channels over-compensate this shift, leading to an overall effect of -0.26% at a pp collider energy of 13 TeV, and -0.1% at 8 TeV. This result eliminates one of the main theoretical uncertainties to inclusive Higgs production cross section at the LHC.

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