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MSSM Higgs-boson production in bottom-quark fusion: electroweak radiative corrections

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Higgs-boson production in association with bottom quarks is an important discovery channel for supersymmetric Higgs particles at hadron colliders for large values of $\tan \beta$. We present the complete order α electroweak and order α_s strong corrections to Higgs production through bottom fusion in the MSSM and improve this next-to-leading-order prediction by known two-loop contributions to the Higgs self-energies, as provided by the program FeynHiggs. Choosing proper renormalization and input-parameter schemes, the bulk of the corrections (in particular the leading terms for large $\tan \beta$) can be absorbed into an improved Born approximation. The remaining non-universal corrections are typically of the order of a few per cent. Numerical results are discussed for several benchmark scenarios like SPS 1b and SPS 4.

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