

Three-loop Corrections to the Mass of the Light Higgs Boson in the MSSM

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The Minimal Supersymmetric extension of the Standard Model (MSSM) predicts the existence of a light neutral Higgs Boson. Once found at the LHC, its mass will immediately become a precision observable.

The theoretical value of the Higgs mass is subject to large radiative corrections. Due to the large top Yukawa coupling, loops of top quarks and their superpartners provide the dominant contribution to the radiative corrections.

We present a calculation of the SUSY-QCD corrections to these diagrams, up to the three-loop order.

We find that our results are relevant compared with the expected experimental accuracy at the LHC and significantly reduce the theoretical uncertainty.

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