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# Hidden Sector Assisted 125 GeV Higgs

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## Abstract content

In order to significantly raise the mass of the SUSY Higgs, we consider a radiative correction to it by heavy (\sim 1 TeV) hidden sector fields, which communicate with the Higgs through relatively heavy "messengers" (300-500 GeV). The messenger fields (S, \bar{S}) are coupled to the Higgs ("y_HSH_uH_d," y_H\lesssim 0.7) and also to hidden sector fields with a Yukawa coupling of order unity. The hidden sector fields are assumed to be large representations of a hidden gauge group, and so their scalar partner masses can be heavier than other typical soft scalars in the visible sector. Even with a relatively small y_H (\sim 0.2) or tan\beta\sim 10 but without top-stop's considerable contributions, the radiative correction by such hidden sector fields can be enhanced enough to yield the 125 GeV Higgs mass.

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