

Scalars 2015

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Fitting the two-loop renormalized Two-Higgs-Doublet model

Content :

We present the latest status of global fits to the softly broken $U(1)_X$ symmetric Two-Higgs-Doublet models of type I and II with CP conservation in the scalar potential. We show how much the parameter space is constrained by the combination of the relevant theoretical and experimental inputs, including the LHC data after the first run and interpreting the 125 GeV boson as the light CP even Higgs. Using the next-to-leading order renormalization group equations, we address the questions of vacuum stability and the hierarchy problem in the context of the mentioned Two-Higgs-Doublet models.

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