

# Higgs masses and couplings in a general 2HDM with unitarity bounds

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We investigate a general two Higgs doublet model imposing both the unitarity conditions and the bounded-from-below conditions. In the work we show that these conditions can be written in terms of invariants. Both conditions make restrictions on the ranges of the model parameters. We study model in the Higgs basis, together with the experimental bounds of oblique parameter  $T$ , to produce scalar particles with masses and the cubic and quartic couplings of the Higgs in agreement with the phenomenology. The numerical calculations of the model make the prediction that all the extra scalars are heavier (more or less) than 200 GeV.

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