

# Scalars 2017



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## Update of Global Two-Higgs-Doublet Model Fits

### Content :

The Two-Higgs-doublet model (2HDM) is one of the most studied extensions of the Standard Model. But just as the other popular "New Physics" models, it gets more and more constrained by recent experimental progress, especially by the LHC data. For all four 2HDM types with a softly broken  $Z_2$  symmetry, we present updated results of global analyses obtained with the open-source HEPfit code. We obtain that deviations from the so-called alignment limit  $\beta - \alpha = \pi/2$  cannot be larger than 0.079 in type I and have to be smaller than 0.029 in the remaining types. For the latter we also observe lower limits on the heavy Higgs masses in the global fit. Further we find that the splittings between these masses cannot exceed 200 GeV in the types I and X and 130 GeV in the types II and Y.

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