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The parameter space of the 2HDM-III beyond Glashow-Weinberg Theorem

Content

1. An study of the Yukawa lagrangian of 2HDM-III and the Yukawa matrices,
2. Limits from strict Glashow-Weimberg Theorem and Alignment to minimal FCNC scenarios,
3. New parametrization for Yukawa matrices in terms of diagonal and non-diagonal entries,
4. Limits and patterns of FCNC Higgs couplings,
5. Conclusions

Summary

In this talk we discuss further aspects of the conservation and non-conservation of flavor in the two Higgs doublets model of type III, beyond the domain of the Glashow-Weinberg theorem. We present an study of the Yukawa Lagrangian of the model, with a proposed parametrization for the Yukawa matrices, and consider different scenarios that cover from flavor-conserving ones (2HDM-I,II and alignment) up to minimal deviations from Alignment that include FCNC Higgs couplings. A comparision of phenomenological predictions with LHC data is present, with empahsis on the general trends and lessons from LHC on the Higgs profile.

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