



Contribution ID: 71

Type: Oral Presentation

Phenomenology of 2HDM+S at the LHC

Tuesday, 26 June 2018 11:20 (20 minutes)

Evidences of new physics begins from the updated data sets at the ATLAS and CMS detectors based at the Large Hadron Collider. Among the noted deviations in multi-lepton final states which leads signatures of the heavy scalars beyond the Standard Model Higgs boson, in this talk we discuss how these deviations can be explained by introducing two scalars of masses around 150 and 270 GeV in an effective field theory approach and further in a model dependent two-Higgs doublet model with an additional singlet scalar (2HDM+S). Also we explain how the parameter space of this model constrained from the available relevant data sets. Further associated phenomenology of 2HDM+S is discussed.

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Session Classification: Theoretical and Computational Physics

Track Classification: Track G - Theoretical and Computational Physics