

Current status of MSSM Higgs sector with LHC 13 TeV data

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ATLAS and CMS collaborations have just reported the new results on Higgs search analyzing $\sim 15/\text{fb}$ data from Run-II of LHC at 13 TeV. In this work we study the Higgs sector of the phenomenological Minimal Supersymmetric Standard Model, in the light of the new Higgs data presented at ICHEP 2016, on and above the existing Run-I data, and comment on their relative impacts. We have observed that the new data has two major impacts on the parameter space: The first one is through the H to tau tau direct search limit which rules out the high $\tan\beta$ regions more efficiently than the Run-I data. Secondly, the correlated light Higgs observables as reported by ATLAS with Run-II data in the h to ZZ channel, which disfavors pseudoscalar mass below 450 GeV. Finally we discuss the possible decay modes of heavy Higgs bosons to supersymmetric particles.

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