



Contribution ID: 139

Type: **not specified**

Search for neutral MSSM Higgs bosons decaying to a tau-antitau pair in the ATLAS detector produced with 13 TeV proton-proton collisions at the LHC

Tuesday 16 May 2017 14:00 (20 minutes)

We present the latest results in the search for Minimal Supersymmetric Standard Model (MSSM) neutral Higgs bosons decaying to a tau-antitau pair ($H/A \rightarrow \tau\tau$). We consider tau-pair decays in the Leptonic-Hadronic (LepHad) and Hadronic-Hadronic (HadHad) modes. We analyse Run 2 data recorded with the ATLAS detector, produced with proton-proton collisions at a centre-of-mass energy of 13 TeV at the Large Hadron Collider (LHC). The background theory of the MSSM will be introduced as an extension to the Standard Model (SM) predicting these additional Higgs bosons with masses heavier than the SM Higgs Boson. The resulting limits on the production rates of the MSSM Higgs boson, which are used to constrain the theory, will be presented.

Summary

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Session Classification: Posters