



Contribution ID: 510

Type: **Poster Presentation**

Search for top squark pair production in final states with two leptons at LHC Run 2 with the ATLAS detector

Although no experimental evidence has been found during LHC Run1, supersymmetry (SUSY) remains one of the most promising and motivated Standard Model extensions. Focusing the attention on its minimal formulation, the Minimal Supersymmetric Standard Model (MSSM), where the multiplicative quantum number R-parity is conserved, the latest results in searching for pair production of top squarks decaying to a bottom quark and a chargino1 or to a top quark and the lightest supersymmetric particle (neutralino) in a final state with 2 leptons are presented, using proton-proton collision data collected by the ATLAS experiment during 2015 and 2016 at the center-of-mass energy of 13 TeV and corresponding to an integrated luminosity of 36.1 fb⁻¹. Both the decay modes are searched in the context of a simplified model where a branching ratio of 100% is assumed for both signal models.

Experimental Collaboration

ATLAS

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