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A search for R-Parity Violating supersymmetry through top squark pair production in $\sqrt{s} = 13$ TeV pp collisions with the ATLAS experiment

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A search is presented for the direct pair production of scalar tops, which each decay through an R -parity violating coupling to a charged lepton and a b -quark. The final state has two resonances formed by the lepton-jet pairs. Expected sensitivity will be shown for the dataset consisting of an integrated luminosity of 140 fb^{-1} of proton-proton collisions at a center-of-mass energy of $\sqrt{s} = 13$ TeV, collected between 2015 and 2018 by the ATLAS detector at the LHC. Supersymmetry is able to resolve many questions left unanswered by the Standard Model, such as the hierarchy problem. This search is inspired by the minimal supersymmetric B-L extension of the Standard Model, which has spontaneous R -parity violation that allows violation of lepton number.

Mini Symposia (Invited Talks Only)

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