

Search for direct production of charginos and neutralinos in events with three leptons and missing transverse momentum with the ATLAS Detector

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Supersymmetry offers an elegant solution to the hierarchy problem and can provide a candidate for dark matter. As the limits on squark and gluino masses are pushed beyond the TeV range, direct production of charginos and neutralinos can become the dominant sparticle production at the LHC. Also, light charginos and neutralinos are favored in “Natural SUSY” models with small fine-tuning of the quantum corrections to the Higgs mass. I present the latest search results in the $C1N2 \rightarrow lll\nu N2N2$ channel with the ATLAS detector using the full 8 TeV data collected in 2012. We look for events with three or more isolated leptons of any flavor and large missing transverse momentum. We consider decays mediated by intermediate light sleptons as well as Standard Model gauge bosons. Our results are formulated in terms of simplified models as well as the phenomenological MSSM.

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Primary author: FARRELL, Steven (University of California Irvine)

Presenter: FARRELL, Steven (University of California Irvine)

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