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Search for New Physics in the Trilepton Channel at the ATLAS Detector STEVE FARRELL, University of California Irvine, ATLAS COLLABORATION — Several potential models for new physics predict final states with three or more leptons produced at the LHC. This trilepton signature has low background from Standard Model processes and thus offers great potential for discovery. In Supersymmetry this signature comes from the decay chains of new heavy particles mediated by the electroweak gauge bosons. We present a search for SUSY-like processes with the ATLAS detector using 35pb^{-1} at $\sqrt{s} = 7$ TeV. We look for events with three or more isolated leptons of any flavor, high energy hadronic jets, and large missing transverse momentum. Our analysis is formulated in terms of a simplified model expressed as an effective Lagrangian that can test a large family of SUSY models.

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