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Searches for electroweak production of supersymmetric gauginos and sleptons at ATLAS

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Supersymmetry postulates the existence of a superpartner (sparticles) whose spin differs by one half unit from each corresponding Standard Model partner. The sector of sparticles with only electroweak interactions contains charginos, neutralinos, sleptons, and sneutrinos. Charginos and neutralinos are the mass eigenstates formed from the linear superpositions of the superpartners of the charged and neutral Higgs bosons and electroweak gauge bosons. In R-parity conserving models, sparticles can only be produced in pairs and the lightest supersymmetric particle is stable and a dark matter candidate. This is typically the lightest neutralino, which can then provide a natural candidate for dark matter. When produced in the decay of heavier SUSY particles, a neutralino LSP would escape detection, leading to an amount of missing transverse momentum significantly larger than for SM processes, a canonical signature that can be exploited to extract SUSY signals. In this talk we present a set of recent searches for the electroweak production of charginos, neutralinos and sleptons decaying to final states with at least four leptons. These searches rely on proton-proton collision data delivered by the Large Hadron Collider at a center-of-mass energy of $\sqrt{s} = 13$ TeV, collected and reconstructed with the ATLAS detector.

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