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Search for direct production of electroweakinos in multileptons final states at LHC Run 2 with the ATLAS detector

Supersymmetry is one of the most motivated Standard Model extensions. Despite the meticulous search during the LHC Run I, there is no evidence supporting this theory. Starting from 2015, LHC is performing a second data taking run with a higher center of mass energy (13 TeV), providing a great occasion for the search of beyond the Standard Model physics. New results obtained with the 2015-2016 ATLAS detector data will be presented. The direct production of electroweakinos, with two or three leptons in the final state and missing transverse momentum, is considered. In particular, an analysis targetting the slepton direct production with two leptons in the final state, will be illustrated. The key kinematic variables for the signal discrimination are the leptonic transverse mass and the leptons invariant mass. A good sensitivity is obtained in the signal region for sleptons masses beyond the Run 1 limits.

Experimental Collaboration

ATLAS

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