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Search for direct production of sleptons in two leptons final states at LHC Run 2 with the ATLAS detector

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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. An analysis in progress, base on the 2015-2016 ATLAS detector data, will be presented. The slepton direct production with two leptons in the final state is considered. The key kinematic variables for the signal discrimination are the leptonic stransverse mass and the leptons invariant mass. A good sensitivity is obtained in the signal region for sleptons masses beyond the Run 1 limits.

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