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Search for top squark pair production and decay in four bodies, with two leptons in the final state, at the ATLAS Experiment with LHC Run2 data

Supersymmetry (SUSY) still remains one of the most interesting theories which are candidates to describe physics beyond the Standard Model, even if the latest Run1 results and interpretations have so far shown no experimental evidence for the existence of superparticles. If SUSY exists, the strong production of coloured SUSY particles is expected to be the dominant production process at the LHC. In this poster a search for the top quark Supersymmetric partner (stop) pairs production is reported, using 36.1 fb−1 of proton-proton collision data collected by the ATLAS experiment in 2015 and 2016. The analysis targets the stop decaying, with 100% branching ratio, into a b quark, a neutralino (the lighest Supersymmetric particle), a fermion and an antifermion, with a final state including two isolated electrons or muons and missing transverse momentum. The results are interpreted in the stop and neutralino mass plane in terms of exclusion limits, since no excess in data has been found for this analysis.

Experimental Collaboration

ATLAS

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