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Search for 3rd generation superpartners with the ATLAS experiment

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Two of the most important parameters in supersymmetry are the masses of the stop and sbottom, the supersymmetric partners of the third generation quarks. A stop mass lighter than 1 TeV is favored in theory, however experimental evidence for a light stop has not been indicated from the various searches at the LHC so far. Therefore, it is very important to extend the searches to various pMSSM models with different mass splittings between the stop, neutralino(s), and chargino(s).

Recent ATLAS results from searches for direct stop (sbottom) pair production are presented in final states with jets, missing transverse momentum, and leptons. The analyses are based on 36 fb^{-1} of $\sqrt{s}$ =13 TeV proton-proton collision data recorded with ATLAS detector at the LHC in 2015 and 2016.

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