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Searches for supersymmetry in final states with at least two hadronically decaying tau leptons using the ATLAS detector

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Final states with tau leptons are experimentally challenging but open up exciting opportunities for supersymmetry (SUSY) searches. SUSY models with light sleptons could offer a dark matter candidate consistent with the observed relic dark matter density due to accessible co-annihilation processes. Additionally, final states with hadronically decaying taus in Run-2 benefit from the increased available dataset and improved tau identification using machine learning algorithms. We present analyses that use the full Run 2 dataset of $\sqrt{s} = 13$ TeV proton-proton collision events recorded by ATLAS, which significantly extend existing limits on the electroweak production of supersymmetric particles in hadronic tau final states and extend the simplified models studied in these signatures.

In-person participation

No

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