

Search for supersymmetry in single lepton events with the full Run 2 data

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Results are presented from a search for supersymmetry in events with a single electron or muon, and multiple hadronic jets. The data corresponds to a sample of proton-proton collisions at $\sqrt{s} = 13$ TeV with an integrated luminosity of 138 fb^{-1} , recorded by the CMS experiment at the LHC.

We use the angular correlation between the lepton and the W boson four vectors for a strong separation between the signal and the background region. The investigation of the two different signal models benefits from improved top and W tagging methods.

The search targets gluino pair production, where the gluinos decay into the lightest supersymmetric particle (LSP) and either a top quark-antiquark pair or a pair of light quarks in the final state.