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Current and future searches for direct stau slepton production in the all-hadronic final state at CMS

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Two recent searches for new physics from the CMS experiment are shown.

The first of which is a search for direct production of the tau slepton production in pp collisions at a center-of-mass energy of 13 TeV. The analysed data correspond to an integrated luminosity of 35.9 fb−1 collected with the CMS detector in 2016 and 41.3 fb−1 collected in 2017. The search is performed using events with two hadronically decaying tau leptons and a significant imbalance in the measured transverse momentum of the event.

The second search uses similar techniques to analyse direct production of stau sleptons with the CMS Phase II detector at the LH-LHC. This future new physics study assumes the collection of 3000 fb−1 of proton-proton collision data produced at a center-of-mass energy of 14 TeV.

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