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SUSY searches using top quark tagging at CMS

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Results for searches for supersymmetry targeting top squarks and gluinos will be presented in this talk. The analysis is optimized to specifically target top squark pair production and more generic supersymmetry signals with tops in the final state, including gluino pair production. These searches employ methods of tagging top quarks in the final state to reject standard model background in addition to traditional selection requirements such as missing transverse momentum. Due to the wide range of top quark transverse momentum and multiplicity produced in supersymmetric models, custom algorithms which combine traditional boosted top tagging techniques with algorithms designed to reconstruct tops combining individual reconstructed jets were developed. The results, using 35.9 fb of data collected by the CMS experiment, are interpreted using simplified models of supersymmetry to place limits on top squark and gluino production.

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