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Testing the Standard Model in boosted top quark production with the ATLAS experiment at the LHC

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The LHC has unlocked a previously unexplored energy regime. Dedicated techniques have been developed to reconstruct and identify boosted top quarks. Measurements in boosted top quark production test the Standard Model in a region with a strongly enhanced sensitivity to high-scale new phenomena. In this contribution, several new measurements of the ATLAS experiment are presented of the differential cross section and asymmetries in this extreme kinematic regime. The measurements are based on the complete 140/fb run-2 data set of proton-proton collisions at 13 TeV collected in run 2 of the LHC. The measurements are interpreted within the Standard Model Effective Field Theory, yielding stringent bounds on the Wilson coefficients of two-light-quark-two-quark operator.

In-person participation

Yes

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