Contribution ID: **58** Type: **Talk**

Measurements with highly boosted top quarks using the ATLAS detector

Tuesday, 17 July 2018 17:30 (25 minutes)

The high energy of the LHC allows access to large numbers of high transverse momentum top quarks. Measurements of differential cross-sections in top quark pair production at 13 TeV with the ATLAS detector are presented. They are performed using the lepton+jets and all-hadronic final states. Jet substructure techniques are used to identify hadronically decaying top quarks. The measurements are corrected for detector effects to obtain differential cross-sections at particle-level in a fiducial region close to the event selection. These measurements probe our understanding of top quark pair production in the TeV regime. The results, unfolded to particle and parton level, are compared to predictions of Monte Carlo generators implementing NLO matrix elements matched with parton showers and NNLO QCD theory calculations.

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Session Classification: Measurements