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Measurements of top quark production cross-sections with the ATLAS detector

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The LHC produces a vast sample of top quark pairs and single top quarks. Measurements of the inclusive top quark production rates at the LHC have reached a precision of several percent and test advanced Next-to-Next-to-Leading Order predictions in QCD. Differential measurements in several observables are important to test SM predictions and improve Monte Carlo generator predictions. In this contribution, comprehensive measurements of top-quark-antiquark pair and single-top-quark production are presented that use data recorded by the ATLAS experiment in the years 2015-2018 during Run 2 of the LHC. A recent result from the 5 TeV operation of the LHC is also included.

In-person participation

Yes

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