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Single Top quark production cross section using the ATLAS detector at the LHC

Tuesday 4 April 2017 12:00 (20 minutes)

Measurements of single top-quark production in proton-proton collisions are presented based on the 8 TeV and 13 TeV ATLAS datasets. In the leading order process, a W boson is exchanged in the t-channel. The cross-section for the production of single top-quarks and single anti-top-quarks total production cross sections, their ratio, as well as a measurement of the inclusive production cross section is presented. At 8 TeV, differential cross-section measurements of the t-channel process are also reported, these analyses include limits on anomalous contributions to the Wtb vertex and measurement of the top quark polarization. A measurement of the production cross section of a single top quark in association with a W boson, the second largest single-top production mode, is also presented. Finally, evidence for s-channel single-top production in the 8 TeV ATLAS dataset is presented. All measurements are compared to state-of-the-art theoretical calculations.

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