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Single Top quark production cross section using the ATLAS detector at the LHC (15' + 5')

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Measurements of single top-quark production in proton proton collisions are presented at a center of mass energy of 8 TeV and 13 TeV. A measurement of the cross section where a W boson is exchanged in the t-channel is discussed. The single top-quark and anti-top total production cross sections, their ratio, as well as measurements of the inclusive production cross sections are presented. Differential cross-section measurements of the t-channel process are also discussed. 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. Evidence for single-top production in the s-channel with the 8 TeV ATLAS dataset is discussed. Finally, measurements of the properties of the Wtb vertex allows to set limits on anomalous couplings. All measurements are compared to state-of-the-art theoretical calculations.

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