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Top quark pair production cross-section measurements with the ATLAS detector (15' + 5')

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Measurements of the inclusive and differential top-quark pair production cross sections in proton-proton collisions with the ATLAS detector at the Large Hadron Collider are presented at a center of mass energy of 8 TeV and 13 TeV. The inclusive measurements reach high precision and are compared to the best available theoretical calculations. Differential measurements of the kinematic properties of top quark pair production are also discussed. These measurements, including results using boosted tops, probe our understanding of top pair production in the TeV regime. The results, unfolded to particle and parton level, are compared to Monte Carlo generators implementing LO and NLO matrix elements matched with parton showers and NLO QCD calculations.

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