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Top-quark pair production cross-section measurements with the ATLAS detector

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Measurements of the inclusive and differential top-quark pair production cross sections in proton-proton collisions at a centre-of-mass energy of 13 TeV with the ATLAS detector at the Large Hadron Collider are presented. The investigated final states include $t\bar{t}$ +jets as well as $t\bar{t}$ +heavy flavour jets. The differential measurements reach high precision and are compared to the best available theoretical calculations. These measurements, including results using boosted tops, probe our understanding of top-pair production in the TeV regime. The results are compared to Monte Carlo generators implementing LO and NLO matrix elements matched with parton showers and NLO fixed-order QCD calculations.

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