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## Measurements of the top quark pair production cross section in pp collisions

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Precision measurements are presented of the top-quark pair inclusive production cross section in proton-proton collisions at the LHC at centre-of-mass energies of 7 TeV and 8 TeV. The data are collected with the CMS experiment during the years 2011 and 2012. The analyses include all top quark pair final states with the exception of events with two tau-leptons in the final state. In most analyses b-jet identification is used to increase the purity of the selection. The backgrounds are determined using data-driven techniques. The results are combined with each other and compared with theory predictions. Indirect constraints on both the top quark mass and  $\alpha_s$  are obtained through their relation to the inclusive cross section.

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