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Single top quark production with CMS

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Measurements of single top quark production are presented, performed using CMS data collected in 2011, 2012 and 2015 at centre-of-mass energies of 7, 8 and 13 TeV respectively. The cross sections for the electroweak production of single top quarks in the t-channel and in association with W-bosons is measured and the results are used to place constraints on the CKM matrix element V_{tb}. In the t-channel the ratio of top and anti-top production cross sections is determined and compared with predictions from different parton density distribution functions. Measurements of top quark properties in single top quark production are also presented, such as the top-quark polarisation, the probe of tWb vertex through the W-helicity measurement in top quark decay and the searched for anomalous couplings to gluons, photons or Z bosons. A search for the s-channel is also performed.

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