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Search for s-channel single top-quark production in pp collisions

A search for single top quark production in the s channel in proton-proton collisions with the CMS detector at the LHC is presented. Leptonic decay modes of the top quark with an electron or muon in the final state are considered. The signal is extracted by performing a maximum-likelihood fit to the distribution of a multivariate discriminant defined using Boosted Decision Trees to separate the expected signal contribution from the background processes. The analysis is based on data collected in 2011 at a centre-of-mass energy of 7 TeV and in 2012 at 8 TeV, corresponding to an integrated luminosity of 5.1 / fb and 19.7 / fb, respectively.

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