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First measurement of single top production in the tW-channel in pp collisions

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We present the first measurement of single top quark production in the tW-channel in pp collisions, in which a top quark is produced in association with a W boson. The data are collected with the CMS detector at center-of-mass energies of 7 TeV and 8 TeV. The experimental signature is similar to top pair production, and there is interference at higher orders between the two processes. The measurement is perfomed using final states in which the associated W boson as well as the one originating from the top quark decay leptonically. Multivariate methods are used to extract the cross section. The result is compared with current standard model theory predictions.

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