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## Single top quark production and CKM matrix elements measurements with CMS

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The study of single top quark inclusive production provides important insight into the electroweak processes of the standard model of elementary particles and into the structure of the proton. It also enables a direct measurement of the magnitude of the Cabibbo–Kobayashi–Maskawa (CKM) matrix elements. Among the production channels, the t-channel process is the dominant mechanism in proton-proton collisions at the CERN LHC accounting for approximately 70% of the total single top quark production cross section at center-of-mass energy of 13 TeV. The state of the art of on single top quark t-channel measurements performed by the CMS experiment, and their impact on our knowledge of the CKM matrix elements and top quark couplings will be presented.

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