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## Top quark pair and single top t-channel differential cross sections in CMS

Differential measurements of top quark pair ( $t\bar{t}$ ) and single top quark (t-channel) production cross sections are presented using data collected by CMS. The cross sections are measured as a function of various kinematic observables of the top quarks and the jets and leptons of the event final state. The results are confronted with precise theory calculations. For the first time, multidifferential  $t\bar{t}$  cross sections are presented and used to constrain simultaneously the top quark pole mass,  $\alpha_S$ , and PDFs.

**Author:** CMS COLLABORATION

**Presenter:** CMS COLLABORATION

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