

# Top quark mass measurements at CMS

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Measurements of the top quark mass and width using proton-proton collisions at the LHC at centre-of-mass energies of 7, 8 and 13 TeV are presented. The analyses used different decay channels and production modes of the top quark. Several techniques are investigated based on the reconstruction of the top kinematics from final state products, using leptonic decays with a  $J/\psi$ , the shapes of top quark decay distributions, or comparing the production rates to the theory expectations, among others. The results are employed to determine the top quark mass and the results furthermore combined and compared to the world average. The dependence of the mass measurement on the kinematic phase space is furthermore investigated, including measuring the difference between the masses of top and antitop quarks.

**Primary author:** CMS , Collaboration

**Presenter:** Dr STOBER, Fred (Hamburg University (DE))

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