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## Measurement of the $t\bar{t}$ inclusive production cross section at 5.02 TeV

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The top quark pair production cross section ( $\sigma_{t\bar{t}}$ ) is measured in pp collisions at a center-of-mass energy of 5.02 TeV. The analyzed data have been collected by the CMS experiment at the CERN LHC and correspond to an integrated luminosity of 27.4 /pb. The measurement is performed by analyzing events with at least one charged lepton. The measured cross section is  $69.5 \pm 8.4$  pb. The result is in agreement with the expectation from the standard model. The impact of the presented measurement on the gluon distribution function is illustrated through a quantum chromodynamic analysis at next-to-next-to-leading order.

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