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## Measurement of the $t\bar{t}$ Production Cross Section at $\sqrt{s} = 7$ TeV in Lepton + Jets Events using b-quark Jet Identification Techniques

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An updated measurement of the production cross section for  $pp \rightarrow t\bar{t}$  at a center-of-mass energy of 7 TeV using data collected by the CMS detector at the Large Hadron Collider is presented. Top quark pair production candidate events are selected based on the presence of an isolated muon or electron of high transverse momentum, large missing transverse energy and hadronic jets. At least one jet is required to be consistent with originating from a b-quark. The analysed dataset corresponds to an integrated luminosity of 0.8 (1.1)/fb for the electron (muon) sample. The cross section is extracted with a profile likelihood method using a fit to the number of reconstructed jets, the number of b-tagged jets, and the secondary vertex mass distribution. The measured cross section is  $164.4 \pm 2.8$  (stat.)  $\pm 11.9$  (syst.)  $\pm 7.4$  (lum.) pb, consistent with higher order QCD calculations.

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