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Measurement of the production cross section of a top quark pair in association with a photon in pp collisions at the LHC TITAS ROY, DANIEL NOONAN, FRANCISCO YUMICEVA, Florida Institute of Technology, ANDREW IVANOV, YURII MARAVIN, MIKHAIL MAKOUSKI, Kansas State University, CMS COLLABORATION — In this analysis the production cross section of a top quark pair plus a radiated photon is measured during proton-proton collisions at the centre of mass energy of 8 TeV corresponding to an integrated luminosity of 19.7 fb at the Large Hadron Collider, at CERN. The data was recorded by the Compact Muon Solenoid experiment. The signal region is defined by top quark pairs, with a radiated photon, decaying in the process pp-¿W+W-bb γ. The signal region is defined by photons emitted directly from top quarks as well as from its decay products. An important part of the analysis is calculation of photon purity and photon identification efficiency, which are done using data-driven methods. The cross section $\sigma_{tt\gamma}$ is measured in relation to the inclusive σ_{tt} cross section. The measured cross section ratio agrees with the standard model expectation.

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