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Top-quark-antiquark production in association with a photon in the electron-muon channel at a centre-of-mass energy of 13 TeV with the ATLAS detector

Wednesday, July 29, 2020 1:33 PM (3 minutes)

The cross-section of top-quark-antiquark pair production in association with a photon is important in order to determine the electromagnetic coupling of the top-quark with high precision. It is also of great significance to test deviations from the Standard Model (SM), such as anomalous dipole moments of the top-quark. Furthermore, such cross-section can be interpreted in effective field theories which would allow for probing effects of higher-dimensional operators of the SM fields.

The presentation covers the inclusive and differential cross-section measurements of top-quark production in association with a photon in the electron-muon channel at $\sqrt{s}$ =13 TeV with the ATLAS detector.
Both measurements are performed in a fiducial volume. The inclusive cross-section is extracted using a profile likelihood fit, while the differential cross-section is measured at parton level as a function of various observables, such as the photon transverse momentum and angular variables related to the photon and the leptons. The measurements are compared to the most recent next-to-leading order theory calculation [JHEP 10 (2018) 158] and state-of-the-art Monte Carlo simulations. The results are found to be in good agreement with the predictions within uncertainties.

I read the instructions

Secondary track (number)

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