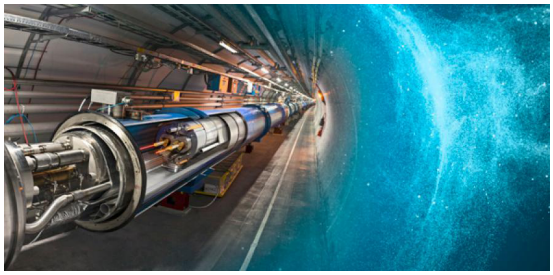

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The comparison study of the ratio between $t\bar{t}\gamma$ and $t\bar{t}$ in the $e\mu$ channel at 13 TeV using the ATLAS detector

Tuesday, 22 March 2022 17:15 (15 minutes)

With the goal of increasing the precision of NLO QCD predictions for the $pp \to t\bar{t}\gamma$ process in the di-lepton top quark decay channel we present a study of the ratio of top quarks together with a photon to the top quark pair. Fully realistic LO and NLO computations for $t\bar{t}\gamma$ and $t\bar{t}$ production are employed. Events with exactly one electron and one muon, and at least two jets with one of them being a b-tagged are selected. Multiple observables are related with Monte Carlo simulations at leading-order and next-to-leading-order theoretical calculations. The variables include photon kinematic variables, angular separation between the two leptons, and angular variables related to the photon and the leptons.

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