

Contribution ID: 5

Type: not specified

Measurement of inclusive production cross section of photons in association with $t\bar{t}$ in I+jets channel (cancelled)

Tuesday 29 November 2022 15:40 (20 minutes)

The optimal way to measure the top-photon coupling and later interpret it within an EFT-framework would be an e^+e^- collider with sufficient energy. As such a collider does not exist, another possibility is to look for $t\bar{t}$ pairs in association with a photon. Unfortunately, most of such photons will originate from the decay products of the top quarks and hence do not convey any information about the top-photon coupling. In contrast, photons produced in the production of the $t\bar{t}$ pair mostly originate from the top quark (beside a small contribution from ISR). The separation of photons originating from production and decay is tried for the first time in this ATLAS analysis. In this talk, the status of the currently ongoing inclusive cross section measurement of the $t\bar{t} + \gamma$ process in the *l*+jets and dilepton channel will be presented. The talk will focus on two topics, the usage of deep neural networks to separate photons from the production stage from the background and the fit to extract the inclusive production cross section.

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Session Classification: Parallel Session