

# XXIV International Workshop on Deep-Inelastic Scattering and Related Subjects (DIS16)



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## Measurement of photon production cross sections with the ATLAS detector

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The production of prompt isolated photons at hadron colliders provides a stringent test of perturbative QCD and can be used to probe the gluon density function of the proton.

The ATLAS collaboration has performed precise measurements of the inclusive production of isolated prompt photons in 20.3 /fb of data collected at a center-of-mass energy of 8TeV and in 3.2 /fb of data collected at a center-of-mass energy of 13TeV, differential in both rapidity and the photon transverse momentum. The measurements are compared with state-of-the-art theory predictions at NLO in QCD and with predictions of several MC generators.

If available, further detailed studies of isolated photons and hadronic jets in the 8 TeV data set will be presented. These measurements were carried out in final states with at least one, two or three hadronic jets differential in a wide range of kinematic variables describing the photon+jet production dynamic. Colour-coherence effects were investigated in events with a photon accompanied by two jets.

If available, further studies of production of pairs of isolated photons in the 8 TeV data set will be presented. These measurements are the most precise to data and were carried out both integrated and differential in a wide range of kinematic variables.

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