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Measurement of photon and photon+jet production cross sections at 7 TeV and constraints to PDFs

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Measurement of the inclusive photon production performed by the ATLAS collaboration using 4.6 fb⁻¹ of $\sqrt{s}=7$ TeV collision data is reported. Comparisons to the data of next-to-leading order QCD calculations MCFM and JetPhox with different PDFs are presented. The theoretical uncertainties, including scale, strong coupling, and PDF uncertainties are evaluated. The compatibility between data and theory is assessed by χ^2 evaluation, taking into account the correlations between systematic uncertainties. The cross sections for photons produced in association with jets are also measured by the ATLAS collaboration at $\sqrt{s}=7$ TeV as functions of photon and jet kinematics and are compared to next-to-leading-order QCD calculations.

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