

Abstract Submitted  
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**Measurement of the inclusive isolated prompt photon cross section in  $pp$  collisions at  $\sqrt{s} = 7 \text{ TeV}$  with the ATLAS detector using  $4.9 \text{ fb}^{-1}$**  SCARLET NORBERG, University of Oklahoma — A measurement of the cross section for the inclusive production of isolated prompt photons in  $pp$  collisions at a center-of-mass energy  $\sqrt{s} = 7 \text{ TeV}$  is presented. The measurement covers the pseudorapidity ranges  $|\eta^\gamma| < 1.37$  and  $1.52 \leq |\eta^\gamma| < 2.37$ , in the transverse energy range  $100 \leq \eta^\gamma < 1000 \text{ GeV}$ . The results are based on an integrated luminosity of  $4.9 \text{ fb}^{-1}$ , collected with the ATLAS detector at the LHC. Photon candidates are identified by exploiting the fine granularity of the electromagnetic calorimeter, which provides event-by-event rejection of the dominant background from photons produced by  $\pi^0$  decays, and of the inner detector, which allows the reconstruction of photons that convert to electron-positron pairs. Residual background in the selected sample is estimated using data-driven techniques based on the observed distribution of the isolation energy in a narrow cone around the photon candidate. The results are compared with next-to-leading order perturbative QCD calculations.

Scarlet Norberg  
University of Oklahoma

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