

Measurement of the inclusive isolated-photon production cross section in pp collisions at $\sqrt{s} = 13$ TeV

Wednesday, 20 November 2024 09:50 (20 minutes)

The production cross section of inclusive isolated photons has been measured by the ALICE experiment at the CERN LHC in pp collisions at centre-of-momentum energy of $\sqrt{s} = 13$ TeV collected during the LHC Run 2 data-taking period.

The measurement is performed by combining the measurements of the electromagnetic calorimeter EMCal and the central tracking detectors ITS and TPC, covering a pseudorapidity range of $|\eta^\gamma| < 0.67$ and a transverse momentum range of $7 < p_T^\gamma < 200$ GeV/c. The result extends to lower p_T^γ and $x_T^\gamma = 2p_T^\gamma/\sqrt{s}$ ranges, the lowest x_T^γ of any isolated photon measurements to date, extending significantly those measured by the ATLAS and CMS experiments towards lower p_T^γ

at the same collision energy with a small overlap between the measurements.

The measurement is compared with next-to-leading order perturbative QCD calculations and the results from the ATLAS and CMS experiments as well as with measurements at other collision energies. The measurement and theory prediction are in agreement with each other within the experimental and theoretical uncertainties.

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Session Classification: Wednesday Morning First Session