

DIS2023: XXX International Workshop on Deep-Inelastic Scattering and Related Subjects



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Type: **Parallel talk**

Precision measurements of jet and photon production at ATLAS

Tuesday, 28 March 2023 09:00 (20 minutes)

The production of jets and prompt isolated photons at hadron colliders provides stringent tests of perturbative QCD. We present the latest measurements using proton-proton collision data collected by the ATLAS experiment at $\sqrt{s} = 13$ TeV. Prompt inclusive photon production is measured for two distinct photon isolation cones, $R=0.2$ and 0.4 , as well as for their ratio. The measurement is sensitive to gluon parton density distribution. We will discuss the measurement of new event-shape jet observables defined in terms of reference geometries with cylindrical and circular symmetries using the energy mover's distance. In addition, we present the measurements of variables probing the properties of the multijet energy flow which are used to determine the strong coupling constant. The measurements are compared to state-of-the-art NLO and NNLO predictions.

Submitted on behalf of a Collaboration?

Yes

Participate in poster competition?

No

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