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Type: **Talk**

Measuring QCD in its extremes at ATLAS

The high energy and diverse running operations at the LHC allow the ATLAS detector to probe QCD in extreme phase spaces and environments. This talk will highlight recent QCD results for the ATLAS experiment. This includes measurements of photon-induced dijet production in UPC events and measurements of two-particle azimuthal correlations in photo-nuclear collisions. Measurements of hard probes, such as a new measurement of jet-hadron correlations and hadrons correlated with Z bosons are presented, together with a measurement of prompt photon production over a large kinematic range. Photon-induced processes will also be discussed including tau-pair production measurements, which can constrain the tau lepton's anomalous magnetic dipole moment. Finally, this talk will also present a new measurement studying the relationship between the production of hard and soft particles through the correlation of Upsilon meson states with the inclusive-charged particle yields in 13 TeV pp collisions.

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