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High pT probes of proton-lead collisions with the ATLAS detector

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Measurements of high pT processes in ultrarelativistic proton-nucleus collisions are sensitive to changes in the partonic densities arising from the presence of the high-density nuclear environment. Additionally, such measurements serve as a benchmark of the so called “cold nuclear matter” effects, providing the context within which to understand the strong suppression of high pT processes observed in nucleus-nucleus collisions. Furthermore, measurements of the centrality dependence of jet production at forward (proton-going) rapidities may even shed light on the behavior of the proton wavefunction at large Bjorken-x. The latest ATLAS results for inclusive jets and charged particles in 28/nb of 5.02 TeV proton-lead collisions at the LHC are presented. The centrality in these collisions is characterized through the sum of the transverse energy in the lead-going forward calorimeter. The nuclear modification factors RpPb and RCP are presented for jets and charged particles as a function of transverse momentum, rapidity and centrality.

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