

Hard probes of p+Pb collisions with ATLAS

The hard scatter, tagged by an electroweak boson or a jet, fixes initial properties of the showering partons prior to interactions with the QGP. In large systems, modification to the parton fragmentation is an expected consequence of the strong medium interactions, while in small systems, indications of QGP droplet formation are juxtaposed with previous observations of minimal jet quenching. Measurements of photon production in p+Pb collisions are potentially sensitive to novel effects such as gluon saturation, the onset of non-linear QCD, and the energy loss of partons in the nuclear matter. In this talk, a new measurement of jet-hadron correlations in centrality-selected 5.02 TeV p+Pb collisions and hadrons correlated with Z bosons in Pb+Pb collisions is presented, together with a measurement of prompt photon production in 8.16 TeV p+Pb data over a large kinematic range. Presented measurements are compared to theoretical expectations. This new set of measurements provides stringent limits on both cold nuclear matter and possible jet quenching effects in small collision systems.

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Yes

Author: ATLAS COLLABORATION

Co-author: RIU, Imma (IFAE Barcelona (ES))

Presenter: ATLAS COLLABORATION

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