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Jet fragmentation measurements in p+Pb collisions with ATLAS

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Proton-nucleus collisions have been studied to provide baseline measurements for hard processes in heavy ion collisions. The rates of such processes can be modified compared to the expectation from binary scaled pp reference through nuclear modifications of the parton distribution functions. The measurements of jets in minimum bias p+Pb collisions at $\sqrt{s_{NN}}=5.02$ TeV show small deviations from the binary scaling, in line with expectations based on nuclear parton distribution functions tuned to existing data. Measurement of charged particles at high pT (above 30 GeV) show an increase in yields with respect to the expectation from binary scaling which is larger than any deviations seen in the jet measurements. Since particles at these pT arise from jet production, these measurements could be an evidence for modification of the jet fragmentation in p+Pb collisions compared to pp collisions. Measurements of the jet internal structure in p+Pb collisions spanning the jet pT from 45 GeV to 260 GeV are presented. The fragmentation functions measured in $\sqrt{s}=2.76$ TeV pp collisions were extrapolated to $\sqrt{s}=5.02$ TeV in order to provide a comparison for the p+Pb fragmentation functions.

On behalf of collaboration:

ATLAS

Primary author: RYBAR, Martin (Univ. Illinois at Urbana-Champaign (US))

Presenter: RYBAR, Martin (Univ. Illinois at Urbana-Champaign (US))

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