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Jet-like azimuthal correlations in p+p and p+A collisions at forward rapidity with STAR

At very low Bjorken x, parton densities in a nucleon/nucleus reach a point where the gluons are expected to transit to a saturation regime. The saturation scale (Q_s) is defined as the inverse of typical transverse inter-partonic distance and can be expressed as $Q_s \sim (A/x)^{1/3}$. So far no clear experimental observation of the onset of gluon saturation has been made. Observables at forward rapidity at STAR probe gluons at very small x (.001< x <.005) in heavy nuclei where parton saturation is expected. Previous results on di-pion azimuthal correlations in d+Au collisions in STAR showed hints of saturation. The azimuthal correlations of jets produced in hard scatterings are expected to be modified due to multiple gluon scatterings in proton-nuclei collisions. Scanning these correlations as a function of rapidity and the transverse momentum has the potential to yield critical insight into gluon saturation.
During the 2015 RHIC run, STAR recorded data in p+p, p+Al and p+Au collisions at $\sqrt{s}$ = 200 GeV, with central calorimeters and the Forward Meson Spectrometer (FMS), which covers a wide acceptance of 2.5 to 4.0 in pseudorapidity over the full azimuth. Jets are reconstructed from these data using electromagnetic energy deposits from the calorimeter depositions using the anti-k_T clustering algorithms. The status of azimuthal jet-like correlations for the data in this unique acceptance will be presented.

Primary author: Dr MONDAL, Mriganka Mouli (for STAR Collaboration, Institute of Physics, Bhubaneswar)

Presenter: Dr MONDAL, Mriganka Mouli (for STAR Collaboration, Institute of Physics, Bhubaneswar)