

Di-hadron correlations in $p+p$, $p+Au$ and $p+Al$ collisions at STAR

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Abstract

Two-particle azimuthal correlation has been proposed to be one of the most direct and sensitive channels to access the underlying nonlinear gluon dynamics. In hadron collisions at RHIC, forward particle production probes gluons at small x where the gluon density rises sharply. During the 2015 RHIC run, STAR has collected data for measuring azimuthal correlations of neutral pions detected with the Forward Meson Spectrometer (FMS, $2.6 \leq \eta \leq 4.0$) in $p+p$, $p+Au$ and $p+Al$ collisions at $\sqrt{s_{NN}} = 200$ GeV. In this talk, we will present the measurement of di-hadron correlations as a function of A and transverse momenta of both the trigger π^0 ($1.4 \text{ GeV}/c < p_T < 5 \text{ GeV}/c$) and the associated back-to-back π^0 ($1 \text{ GeV}/c < p_T < 2.8 \text{ GeV}/c$).