Di-hadron correlations in p+p, p+Au and p+Alcollisions at STAR

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Abstract

Two-particle azimuthal correlation has been proposed to be one of the most direct and 5 sensitive channels to access the nonlinear gluon dynamics in nuclei. In hadron collisions 6 at RHIC, forward particle production probes gluons at small momentum fraction where 7 the gluon density rises sharply. During the 2015 RHIC run, STAR collected data for 8 measuring azimuthal correlations of neutral pions detected with the Forward Meson 9 Spectrometer (FMS, 2.6 $\leq \eta \leq 4.0$) in p+p, p+Au and p+Al collisions at $\sqrt{s_{\rm NN}} = 200$ 10 GeV. In this talk, we will present the measurement of di-hadron correlations as a function 11 of mass number A and transverse momenta (p_T) of both the trigger π^0 (1.4 GeV/c < p_T 12 < 5 GeV/c) and the associated back-to-back π^0 (1 GeV/c $< p_T < 2.8 \text{ GeV/c}$). 13