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Type: **Parallel Talk**

## Recent Results from the STAR Fixed-Target Program

*Tuesday 15 May 2018 16:00 (20 minutes)*

The data from RHIC Beam Energy Scan phase I (BES-I) have shown interesting results below  $\sqrt{s_{NN}} < 19.6$  GeV in identified hadron anisotropy ( $v_1, v_2, v_3$ ), kaon over pion ratios, and net-proton higher moments. These interesting features continue to the lowest energy,  $\sqrt{s_{NN}} = 7.7$  GeV, and motivate the investigation to even lower energy collisions. The STAR fixed-target program extends the energy reach from  $\sqrt{s_{NN}} = 7.7$  GeV to  $\sqrt{s_{NN}} = 3.0$  GeV, corresponding to baryon chemical potential 420 MeV to about 700 MeV range. The comparison of the asymmetric system (Al+Au) and symmetric system (Au+Au) at almost equal number of participating nucleons from most central to mid-central collisions provides useful information on nucleon stopping, which is key to understanding the baryon chemical potential.

We present results from Al (beam)+Au (target) collisions at  $\sqrt{s_{NN}} = 4.9$  GeV and Au+Au collisions at  $\sqrt{s_{NN}} = 4.5$  GeV from the STAR fixed-target program. We will report transverse mass spectra, rapidity density distributions, particle ratios, centrality dependence and directed flow of protons,  $\pi^\pm$ ,  $K_s$  and  $\Lambda$ , elliptic flow of protons,  $\pi^\pm$  and K, and HBT homogeneity lengths of pions. Pion and proton elliptic flow show mass ordering. Number of constituent quark scaling tests will be presented. For the asymmetric Al+Au system, the peak of the rapidity density distributions is shifted from the nucleon-nucleon center-of-mass rapidity. The magnitude of this shift varies with centrality and is a measure of the nucleon stopping. These newly measured data will be compared with previously published results from the AGS and SPS. The implications of the results on future STAR fixed-target physics runs will be discussed.

### Content type

Experiment

### Collaboration

STAR

### Centralised submission by Collaboration

Presenter name already specified

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