Longitudinal Dynamics of Baryon and Strangeness production at RHIC

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The observation of an enhancement of proton and anti-proton yields compared to pion yields in the intermediate p_T region has inspired several theoretical models of quark hadronization [1-4]. The recent experimental data obtained for the pp, AuAu and CuCu colliding systems are expected to result in a better understanding of how the medium effects this process.

Central Au+Au collisions are expected to provide a partonic medium where the coalescence of soft partons can occur. Coalescence will depend on the system size of the partonic fluid and is expected to be less influential for the Cu+Cu system.

In this process, the p/π ratios can provide important information on dynamics of how the medium evolves longitudinally. We will present rapidity dependent p/π ratios in $0 < y < 3$ from Au+Au, Cu+Cu collisions at $\sqrt{s_{NN}}$ = 62 GeV and 200 GeV measured using the BRAHMS detector system. The Kaon production relative to proton and pion yields will be also presented in the context of baryonic dynamics. Comparisons with theoretical models will be discussed.

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