System and Rapidity dependence of Baryon/Meson ratios at RHIC

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The observed increase at intermediate p_T in the p/π^+ and $\bar{p}/\pi^-$ ratios at RHIC [1] is suggestive of new physics. Alternative models that attempt to describe these ratios include a phase-space determined quark coalescence picture [2,3], and the dynamics driven models as recombination [4] and baryon-junction transport [5]. 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. This process can be also modified by the longitudinal expansion of the medium, and should become unimportant at sufficiently high p_T or high rapidity. We will present rapidity dependent baryon/meson ratios in $0 < y < 3$ from Au+Au, Cu+Cu collisions at $\sqrt{s_{NN}} = 62$ GeV and 200 GeV.

[1] S.S. Adler*et al.*, PHENIX Collaboration, Phys. Rev. Lett.**91**(2003)172301.
[2] V. Greco, C. M. Ko and P. L*é*vai, Phys. Rev. Lett. **90** (2003) 202302.
[3] V. Greco, C. M. Ko and I. Vitev, Phys. Rev. **C71** (2005) 041901(R).
[4] R. C. Hwa and C. B. Yang, Phys. Rev. **C70** (2004) 024905.
[5] I. Vitev and M. Gyulassy, Nucl. Phys. **A715** (2003) 779c.