

Abstract Submitted  
for the HAW05 Meeting of  
The American Physical Society

**Baryon/meson Effects in Hot and Cold Nuclear Matter** JULIA VELKOVSKA, Vanderbilt, PHENIX COLLABORATION — A number of exciting phenomena have been observed at intermediate- $p_T$  (2 - 5 GeV/c) in heavy ion collisions at RHIC: enhanced proton/pion ratios, particle species dependent yield suppression factors, and quark-number scaling of elliptic flow. Quark-recombination models have been invoked to explain the data, but alternate mechanisms such as baryon junctions and strong radial flow have also been proposed. Particle species dependencies are also seen in the Cronin enhancement measured at RHIC and at lower energies. Measurements involving heavy mesons are necessary to distinguish mass effects from baryon/meson effects. We study the nuclear modification factors for  $\phi$ -mesons in d+Au and Au+Au collisions at  $\sqrt{s_{NN}} = 200$  GeV as a function centrality and compare to the results for protons and pions. The high-statistics Au+Au data sample obtained in Run-4 of RHIC allows for a  $v_2$  measurement of  $\phi$  that can be used to further test the empirical quark-scaling rule. We also investigate the effect of baryon transport using  $\pi/K/p$  spectra from 62 GeV Au+Au collisions.

Julia Velkovska  
Vanderbilt

Date submitted: 25 May 2005

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