Abstract Submitted
for the APR10 Meeting of
The American Physical Society

Measurement of Forward Azimuthal Di-Hadron Correlations in d+Au Collisions with the PHENIX Detector at RHIC BEAU MEREDITH, UIUC, PHENIX COLLABORATION — Deuteron-gold collisions at RHIC provide a system wherein one can explore nuclear effects on initial-state parton densities in the absence of final-state medium effects. RHIC experiments have shown a suppression in nuclear modification factors (R_{dA}, R_{cp}) for $\sqrt{s_{NN}} = 200$ GeV d+Au collisions in the forward (deuteron) direction and an enhancement in the backward (gold) direction. Multiple theories exist that can explain the observed suppression and enhancement, but a conclusive measurement discriminating between the different mechanisms has yet to be carried out. Two forward electromagnetic calorimeters (Muon Piston Calorimeters or MPCs, $-3.7 < \eta < -3.1$, $3.1 < \eta < 3.9$) allow PHENIX to study parton densities at low x. Azimuthal correlations of di-hadron pairs at different pseudorapidities will be shown; the forward pseudorapidity correlations are especially interesting because it is expected that they provide a test of gluon saturation at low x in the Au nucleus. The analysis presented is based on the high integrated luminosity data sample of d+Au collisions at $\sqrt{s_{NN}} = 200$ GeV taken at RHIC in 2008.

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Date submitted: 26 Oct 2009 Electronic form version 1.4