Abstract Submitted
for the HAW05 Meeting of
The American Physical Society

Measurement of charged $\overline{\Sigma}$ Baryons at RHIC-PHENIX CHRISTOPHER PINKENBURG, Brookhaven National Laboratory, PHENIX COLLABORATION — The PHENIX experiment at RHIC has the ability to detect the annihilation signal of anti neutrons with its highly segmented large acceptance electromagnetic calorimeter. Utilizing this capability, a measurement of $\overline{\Sigma}^{\pm} \rightarrow \overline{n}\pi^{\pm}$ is technically feasible. Charged pions are measured in the central arm spectrometer of the PHENIX detector which provides excellent particle identification up to high transverse momentum. The major challange of this analysis is therfore to understand the response of the PHENIX electromagnetic calorimeter for anti neutrons which is currently derived from the observed response for identified anti protons. Over the last years PHENIX took high statistics datasets for a variety of systems (p-p, d-Au, Cu-Cu, Au-Au) at various energies. This provides an ideal basis for the development of such an analysis. Due to the similarity of the measurement this analysis can serve to set an upper limit on a possible anti–Pentaquark production ($\overline{\Theta}^{-} \rightarrow \overline{n}K^{-}$). We will present the method and the current status of the analysis.

Christopher Pinkenburg
Brookhaven National Laboratory

Date submitted: 25 May 2005 Electronic form version 1.4