Abstract Submitted
for the APR10 Meeting of
The American Physical Society

Measurement of gluon polarization contribution to proton spin through Charged Pion probes at PHENIX SOOK HYUN LEE, Stony Brook University, PHENIX COLLABORATION — The RHIC spin program is designed to study the nucleon spin structure. A major research is to determine the gluon contribution to the total proton spin with the use of channels in longitudinally polarized proton-proton collisions. When taken along with other channels (e.g. associated with neutral π^0 mesons, direct photons and η particles) the single inclusive charged pion channel can constrain the contribution of gluon spin, ΔG, additionally it can give the sign information on ΔG. The goal of this analysis is to measure the asymmetry A_{LL} as a function of transverse momentum(p_T) of charged pion with central arm tracking in PHENIX and eventually to use it along with other data to extract ΔG using next to leading order pQCD calculation. For this purpose, the kinematic region of interest is $p_T > 5$GeV/c where quark-gluon and gluon-gluon hard processes dominate charged pion production at midrapidity. The status of the charged pion A_{LL} analysis on the 2009 Run data at center of mass energies of 200GeV with $\sim$55% polarization and integrated luminosity $\sim$15 pb^{-1} will be presented.

Sook Hyun Lee
Stony Brook University

Date submitted: 23 Oct 2009 Electronic form version 1.4