Abstract Submitted
for the DNP07 Meeting of
The American Physical Society

Accessing the Gluon Polarization in the Proton through the Measurement of the Double Helicity Asymmetry in Neutral Pion Production in Polarized Proton Collisions at PHENIX KIERAN BOYLE, Stony Brook University, PHENIX COLLABORATION — A primary goal of the RHIC Spin program is to measure the gluon spin contribution (ΔG) to the spin of the proton through the measurement of double helicity asymmetries (A_{LL}) in polarized proton collisions. Pions are abundantly produced in proton-proton collisions and so are a good candidate for a high statistics analysis. The PHENIX EMCal has good energy resolution and high granularity which, when used with a high energy photon trigger, yield a substantial π^0 sample over a wide range in transverse momentum (p_T). The 2005 and 2006 polarized proton runs (at $\sqrt{s} = 200$ GeV) saw large increases in luminosity (L) and polarization (P) compared to previous runs, resulting in a high figure of merit (P^4L). π^0 A_{LL} from 2005 and 2006 are precise enough to be sensitive to ΔG. Results from 2005 and 2006 for π^0 A_{LL} at mid rapidity will be shown.

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Date submitted: 01 Jul 2007 Electronic form version 1.4