

Double Longitudinal Spin Asymmetry in Neutral Pion Production in Polarized p+p Collisions at $\sqrt{s}=200$ GeV at PHENIX

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A major goal of the RHIC spin program is to measure the gluon contribution to the proton's spin, Δg . Measurements by PHENIX of the double longitudinal spin asymmetry, A_{LL} , of the neutral pion production at mid-rapidity in polarized proton collisions have been shown to constrain Δg . Results from the 2005 RHIC run excluded the maximal positive gluon scenario while the maximal negative gluon scenario is also disfavored.¹ In the 2006 RHIC run, the average polarization (P) was increased from the 2005 run value of 46% to 60%. The integrated luminosity (L) also increased by a factor of roughly 3 to 7.5 pb^{-1} . This signifies an increase in the figure of merit, P^4L , by a factor of 8. The current status of our analysis of π^0 A_{LL} will be presented.

¹ K. Boyle for the PHENIX Collaboration, nucl-ex/0606008, proceedings for the XVIIth Particles and Nuclei International Conference