

Abstract Submitted
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Longitudinal Spin Asymmetry and Cross Section for Inclusive π^0 Production in Polarized p+p Collisions at STAR ALAN HOFFMAN, M.I.T., STAR COLLABORATION — The primary goal of the polarized p+p program at RHIC, the first high-energy polarized p+p collider, is the study of the gluon polarization in the proton via spin asymmetry measurements in a variety of processes. The STAR detector, with its large-acceptance tracking and calorimetry, is an ideal tool for these studies. We present the most recent measurement of the cross section and the double longitudinal spin asymmetry for inclusive π^0 production in polarized p+p collisions at mid-rapidity, using the STAR detector's barrel electromagnetic calorimeter. The measured cross section is compared to next-to-leading order perturbative QCD calculations. The agreement of NLO pQCD evaluations and the measured unpolarized cross section supports the use of this framework in extracting gluon polarization from the polarized measurements. The double longitudinal spin asymmetry is compared to NLO pQCD calculations based on different assumptions for the gluon polarization in the nucleon to provide constraints on $\Delta g/g$. Results from RHIC run 5 are presented as well as the current status of the RHIC run 6 analysis.

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