

Abstract Submitted
for the DNP16 Meeting of
The American Physical Society

Double-Spin Asymmetry in Neutral Pion Production at Intermediate Pseudorapidity in Longitudinally Polarized $p + p$ Collisions in the STAR Detector at RHIC ADAM GIBSON, Valparaiso University, STAR COLLABORATION COLLABORATION — One of the outstanding problems in nuclear physics is to explain the helicity of the proton in terms of its constituents. It has long been known that the helicity of the quarks is insufficient, initially a puzzling result. In recent years it has become clear that the gluon plays an important role, but the uncertainty on the contribution from low x gluons in particular has remained large. The STAR and PHENIX detectors at RHIC have been critical in illuminating the role of the gluon. STAR published an analysis of neutral pions in the intermediate pseudorapidity Endcap Electromagnetic Calorimeter (EEMC, $1.09 < \eta < 2.00$) using a dataset from 2006 at $\sqrt{s} = 200$ GeV that was complimentary to results using jets and pions at mid-rapidity and at forward pseudorapidities. Our present analysis extends that earlier EEMC result using a much larger dataset in the EEMC at $\sqrt{s} = 510$ GeV, extending the reach of the analysis to lower gluon x . We will present the status of this analysis of the double-spin asymmetry in neutral pion production in longitudinally polarized $p + p$ collisions in the STAR detector at RHIC ($\pi^0 A_{LL}$), and discuss prospects for the future.

Adam Gibson
Valparaiso University

Date submitted: 01 Jul 2016

Electronic form version 1.4