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Neutral Pion Asymmetries at Intermediate Pseudorapidity in Transversely Polarized p + p Collisions at $\sqrt{s}$ = 200 GeV

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Among the unanswered questions pertaining to nucleon spin physics is the origin of large azimuthal asymmetries (A_N) found in π^0s produced at forward pseudorapidity, η, from high-energy transversely polarized $p+p$ collisions. One possible explanation is offered by twist-3 parton distribution and fragmentation functions. In order to test these and other mechanisms, it is important to study how the asymmetry changes over a range of pion kinematics. The STAR Endcap Electromagnetic Calorimeter (EEMC) is the only RHIC detector with the ability to study A_N for π^0s in the kinematic range available at intermediate pseudorapidity, $0.8 \leq \eta \leq 2.0$. STAR recently published the first measurement of A_N for π^0s at intermediate pseudorapidity using data collected in 2006 with collision energy $\sqrt{s} = 200$ GeV. In 2012 STAR collected a high-statistics dataset with transverse beam polarization at $\sqrt{s} = 200$ GeV. This offers over a five-fold increase in integrated luminosity relative to the 2006 dataset and a chance to enhance the precision of the previous results. The primary objective of this study is to determine the quality of the data from 2012 and to estimate the final statistical uncertainty. Preliminary results from this study indicate a significant improvement over the 2006 results.