## Single Spin Transverse Asymmetries of Neutral Pions at Forward Rapidities in $\sqrt{s} = 62$ GeV Polarized Proton Collisions at RHIC

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Transverse single spin asymmetries in hadronic collisions have had a long history of surprises, such as the observation by the E704 collaboration of very large asymmetries in inclusive hadron production at high  $x_F$  in  $\sqrt{s} = 20$  GeV polarized proton collisions. These asymmetries, ranging up to over 20%, were discovered to persist at collider energies by STAR and then the Brahms collaboration. These asymmetries are interesting because they point toward new understanding of internal proton structure, such as the existence of a Sivers function or perhaps a non-zero transversity distribution. Further progress in theoretical understanding will require more detailed experimental studies to determine the source of the asymmetries.

In the last RHIC run in 2006, PHENIX recorded data from 20 nb<sup>-1</sup> of transversely polarized p+p collisions at  $\sqrt{s} = 62.4$  GeV with polarization of about 50%. Also in this last run PHENIX commissioned a new PbWO<sub>4</sub> based electromagnetic calorimeter, the Muon Piston Calorimeter (MPC), covering  $2\pi$  in azimuth and  $3.1 < \eta < 3.65$ . The very forward coverage allows PHENIX to measure high  $x_F \pi^0$  production. We present the latest status of the analysis for the single inclusive  $\pi^0$  transverse asymmetry, A<sub>N</sub>, at this intermediate collision energy of 62.4 GeV and out to high  $x_F$ . We will also comment on the ability of PHENIX to experimentally distinguish between the mechanisms which cause these asymmetries.