

Abstract Submitted
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Measurement of Transverse Single-Spin Asymmetries in Neutral Pion and Charged Hadron Production at PHENIX WALED EMAM, University of California at Riverside, PHENIX COLLABORATION — A number of experiments studied polarized proton collisions at center of mass energies $\sqrt{s} \leq 20$ GeV and observed large transverse single-spin asymmetries for pion production at high x_F and moderate transverse momentum ($0.5 \leq p_T \leq 2.0$ GeV/c). At high center of mass energy of 200 GeV the π^0 asymmetry at high x_F was found to persist. On the other hand, a 20-GeV measurement of the asymmetry in π^0 production at $-0.15 < x_F < +0.15$ and $1 < p_T < 4$ GeV/c was found to be consistent with zero. These asymmetries can be generated by spin-dependent effects such as the Collins fragmentation function and the Sivers function. The PHENIX experiment, one of the large experiments being conducted at the Relativistic Heavy Ion Collider (RHIC), has measured the transverse single-spin asymmetries for mid-rapidity production of neutral pions and non-identified charged hadrons in polarized proton-proton collisions. From data collected during the 2001-2 run at $\sqrt{s} = 200$ GeV, $0.5 < p_T < 5.0$ GeV/c, and x_F close to zero, the asymmetries seen are consistent with zero within statistical errors of a few percent.

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