

Abstract Submitted
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Transverse Single Spin Asymmetries of di-Hadron Production in Polarized $p + p$ Collisions at PHENIX RUIZHE YANG, University of Illinois, PHENIX COLLABORATION — Large transverse single spin asymmetries, A_N , have been observed in inclusive single hadron production in polarized proton-proton collisions over a broad range of center of mass energies. However, it remains difficult to decompose the observed A_N in contributions from the two possible underlying mechanisms: Collins-like and Sivers-like effects. Transverse single spin asymmetries in di-hadron production provide an alternative probe to study the proton's transverse spin structure. Single spin asymmetries for hadron pairs can be defined such that that no contribution from the Sivers mechanism arises. These asymmetries result from the combination of quark transversity distributions and the spin- dependent di-hadron fragmentation function (IFF). Results from the PHENIX experiment for di-hadron fragmentation at RHIC will be shown. The data used for this measurement were collected during the years 2006 and 2008 with a total integrated luminosity of 7.7 pb^{-1} and an average polarization of 50%. A new approach to extract quark transversity from a global analysis of di-hadron asymmetries observed in $p + p$, $e + p$ and $e^+ + e^-$ will be discussed.

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