Abstract Submitted
for the HAW14 Meeting of
The American Physical Society

Transverse single-spin asymmetry of heavy-flavor production in $p + p$ collisions at $\sqrt{s} = 200$ GeV FENG WEI, New Mexico State University, PHENIX COLLABORATION — Transverse single-spin asymmetries provide valuable information about the spin structure of the nucleon. At RHIC energies, heavy-flavor production is dominated by gluon-gluon fusion, and the subsequent decay into high p_T electrons or muons is easily observed in a collider detector like PHENIX. The transverse single-spin asymmetry in heavy-flavor production originates from the initial state correlation between the internal transverse momentum of the parton and the transverse spin of the nucleon (similar with the known Sivers effect). The measurement of transverse single-spin asymmetry of single muons from heavy flavor decay at RHIC serves as a clean probe and would provide important information on the gluon Sivers function. In 2012, the PHENIX experiment collected 9.2 pb^{-1} integrated luminosity in transversely polarized $p+p$ collisions at $\sqrt{s} = 200$ GeV with a polarization of 60%. The signal-to-background ratio was improved by a factor of two compared to the previous RHIC 2006 and 2008 results in high transverse momentum region ($p_T > 3$GeV). The status of the recent analysis of transverse single-spin asymmetries of single muons from heavy flavor decay at forward-rapidity will be presented. In addition, I would like to discuss possible improvement on this measur

Feng Wei
New Mexico State University

Date submitted: 01 Jul 2014 Electronic form version 1.4