

Abstract Submitted
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Reduction of Background in Observation of W Decay Using the Forward Vertex (FVTX) detector at PHENIX¹ ABRAHAM MELES, New Mexico State University — One of the major emphases of the RHIC spin program over the next few years is the observation of the parity-violating asymmetry A_L in the production of W bosons in $p + p$ collisions at $\sqrt{S} = 510$ GeV. This asymmetry is sensitive to the polarization of light quarks and anti-quarks in the proton. Identifying the lepton (e or μ) from the decay of the W is challenging due to a great background of hadronic processes. In PHENIX, in the forward and backward hemispheres, the muon spectrometers have been recently upgraded in order to provide additional tracking information to suppress those backgrounds. One of those upgrades is the Forward Vertex (FVTX) detector, a silicon-strip tracker. The FVTX will be especially useful in eliminating events where a low-momentum hadron decays in flight, and the decay muon is mis-reconstructed as a high momentum particle. In 2012, PHENIX collected an integrated luminosity of ≈ 30 pb⁻¹ of polarized $p + p$ collisions at $\sqrt{s} = 510$ GeV with a beam polarization of $\approx 52\%$. The ability of the FVTX to improve W observation will be reviewed and progress on simulation and analysis of real data from the first use of the FVTX in the RHIC 2012 run will be discussed.

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