

Abstract Submitted
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Measurement of the Proton Quark Structure from Parity Violating Lepton Asymmetries in W Production in PHENIX at RHIC¹ JOHN HILL, Iowa State University, PHENIX COLLABORATION — A major emphasis of the RHIC scientific program is study of the origin of proton spin carried out by studying collisions of 100 and 250 GeV polarized proton beams. Parity violation of the weak interaction in combination with control over proton spin orientation gives access to the flavor spin structure of the proton. The PHENIX experiment will measure lepton single spin asymmetries in polarized W production from 250 GeV proton-proton collisions to determine helicity distributions for quarks and anti-quarks. This will be done by measurement of high p_T muons from W decay using the PHENIX forward muon spectrometers. Determination of the charge of the W-boson allows separation of contributions from various quark flavors. The measurement requires upgrade of the first level muon trigger in the forward spectrometer to reject backgrounds related to the proton beams and decay muons from hadrons produced in collisions. The upgrade consists of new electronics reading information from the muon tracking systems to the level 1 trigger processors and new fast RPC tracking stations inserted upstream and downstream of the PHENIX muon spectrometers. An overview of the expected performance will be given.

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John Hill
Iowa State University

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