Abstract Submitted
for the APR10 Meeting of
The American Physical Society

Status of the Muon Trigger Resistive Plate Chamber Upgrade Project in PHENIX IHNJEA CHOI, University of Illinois at Urbana Champaign, PHENIX COLLABORATION — The exploration of proton spin structure is one of the major goals of the PHENIX experiment at the Relativistic Heavy Ion Collider at Brookhaven National Laboratory. Single longitudinal spin asymmetries for high momentum muons from W-boson decay at $\sqrt{s} = 500$ GeV are a promising probe for the flavor decomposition of quark helicity distributions in the proton. The PHENIX muon trigger upgrade will provide the ability to select rare events with high momentum muons from the dominant background of low momentum muons from hadron decay. The upgrade consists of two components. (1) The existing muon spectrometer will be upgraded with new, fast trigger front-end electronics. (2) Fast Resistive Plate Chamber (RPC) stations will be added upstream and downstream of the two PHENIX muon spectrometers. In combination these upgrades make it possible to select high momentum tracks in the first level trigger and to reject beam related backgrounds. PHENIX muon trigger RPC technology, including the front-end electronics, follows closely the design of the CMS muon trigger RPCs. We report the status of the RPC upgrade project including the progress in detector assembly and RPC installation in the PHENIX muon spectrometers.

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Date submitted: 27 Oct 2009 Electronic form version 1.4