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Assembling Resistive Plate Chambers for the PHENIX Detector
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A fast muon trigger for the Pioneering High Energy Nuclear Interaction eXperiment (PHENIX) will enable the study of flavor separated quark and anti-quark spin polarizations in the proton through the analysis of single spin asymmetries for $W-$boson production in proton-proton collisions. The Phenix experiment is capable of measuring high momentum muons at forward rapidity, but the current online trigger does not have sufficient rejection to sample rare leptons from W-decay at the highest luminosities at the Relativistic Heavy Ion Collider. This upgrade will enhance our ability to collect and analyze muons that decay from W-bosons produced in polarized proton-proton collisions. This upgrade is comprised of half-octants which encompass three different Resistive Plate Chamber (RPCs) modules that encase a sandwich of copper, mylar, gas gaps, and a signal plane. The summer of 2009 marked the start of this full production, with teams from many institutions contributing to the production in the assembly tent at Brookhaven National Lab. The North Arm Station 3 part of the upgrade is scheduled to be installed in the fall of 2009, and the remaining stations will be installed by the fall of 2011.

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