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Assembly and Testing of the Resistive Plate Chamber Upgrade for the PHENIX Muon Arms[1] WILLIAM POWELL, Morgan State University, PHENIX TEAM — Important questions remain to be answered about the origin of the proton spin. A new fast resistive plate chamber (RPC) based trigger system is being developed for the PHENIX muon spectrometer arms that will allow for the first time the measurement of the flavor structure of the quark polarization in the proton through the observations of W-bosons in polarized proton-proton collisions at the Relativistic Heavy Ion Collider (RHIC) at Brookhaven National Laboratory. The new PHENIX Muon Trigger will improve the efficiency by which the data acquisition system can identify potential W events by approximately two orders of magnitude. W-bosons can be detected through the appearance of a high-energy muon in one of two existing muon spectrometers. The upgrade consists of four detector stations based on RPC technology, and new front-end electronics for the existing muon tracking detectors. Detector modules for one RPC station are currently being assembled and tested. Testing of the module components, completed modules and half octants will be described. Tests results and progress will be reported.

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