

Results from the PHENIX RPC R&D and Long-Term Performance Monitoring

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A new Resistive Plate Chamber (RPC) based fast muon trigger system has been developed and partially installed in the PHENIX experiment. This new trigger will allow the PHENIX data acquisition system to efficiently sample high p_T (> 20 GeV/c) muons from W decays in polarized proton+proton collisions at $\sqrt{s} = 500$ GeV at the Relativistic

Heavy Ion Collider at Brookhaven National Laboratory. This measurement will significantly improve our knowledge of flavor separated quark and anti-quark polarization in the proton.

Over the past four years, a multi institutional effort within the PHENIX Forward Trigger group was devoted to study the properties and performance of bakelite RPCs. In the presentation, the results of the PHENIX RPC R&D will be reported.

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