

Abstract Submitted  
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**Design and Construction of a Drift Chamber for RPC Detector Development** ALEX BURNAP, University of Illinois Urban-Champaign, PHENIX COLLABORATION — Currently, the PHENIX experiment at the Relativistic Heavy Ion Collider at Brookhaven National Lab is developing resistive plate counters (RPC) to be used as one component of the Level 1 trigger for high  $p_T$  muons produced in the decay of  $W$ -bosons. The single spin asymmetries of  $W$ -bosons in polarized p-p collisions can be used to measure sea quark spin contributions to the proton spin. RPC prototypes are tested at UIUC by utilizing cosmic rays. Drift chambers are placed in planes parallel with resistive plate counters for cosmic ray track reconstruction. The drift chamber design was updated with novel improvements, optimized using Garfield simulation, and a prototype was built and tested. In this poster we present results from the simulation, details of the design and construction, as well as test results obtained from the drift chamber prototype.

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