

Abstract Submitted
for the DNP07 Meeting of
The American Physical Society

Testing Scintillator Efficiency for Use in RPC Test Stand for PHENIX at RHIC AMANDA CARINGI, Muhlenberg College, PHENIX COLLABORATION — The PHENIX experiment at RHIC is a large-scale detector for the study of polarized proton-proton collisions and heavy ion collisions. An upgrade to the muon trigger is being constructed. This upgrade is necessary for a detailed study of W-boson particles. It will selectively trigger on high transverse momentum muons only and not on the low transverse momentum muon background. By reconstructing W-boson particles, new insight into the spin structure of a proton will be gained. Resistive Plate Chambers (RPCs) will be used in the trigger upgrade. An “RPC factory” is being setup to build and test the RPCs. In order to test the RPCs we will be using a cosmic ray test stand in which hodoscopes are used as triggers. The hodoscopes are being built and tested for efficiency this summer. The efficiency of the hodoscopes is essential to the testing of the RPCs. Testing the RPCs in the cosmic ray test stand will be a time consuming process and without efficient hodoscopes as triggers the testing time will be significantly lengthened. By implementing a data acquisition system for the testing and use of the hodoscopes we are able to easily calculate efficiencies of the scintillators used to construct the hodoscopes. The methods, setup, and results for scintillator efficiency will be presented.

Amanda Caringi
Muhlenberg College

Date submitted: 01 Aug 2007

Electronic form version 1.4