

Abstract Submitted  
for the TSS14 Meeting of  
The American Physical Society

**PHENIX W-Boson Trigger Efficiency Analysis** RAMSEY TOWELL, Abilene Christian Univ, ABILENE CHRISTIAN UNIVERSITY COLLABORATION — The PHENIX experiment at the Relativistic Heavy Ion Collider (RHIC) at Brookhaven National Laboratory studies polarized proton-proton collisions to learn more about the spin structure of the proton. PHENIX's data acquisition system is able to record several thousand events each second. However, millions of collisions occur every second, so a forward trigger is required to select rare events of interest. To study the sea quark contribution to the spin structure of the proton, the interesting events are single high transverse momentum muons produced in the decay of W bosons. The muon trigger upgrade includes two sets of Resistive Plate Chambers (RPCs) in both muon arms. The recently completed RHIC run was the first extended run since the new forward trigger was fully commissioned. Initial studies indicate that the RPCs performed well and significant data was collected. Additional careful and systematic studies have been performed to determine the RPC efficiencies for each module and each run. Changes in efficiencies have been correlated to known hardware changes during the run. Results of the analyzed data showing the RPC efficiencies will be presented.

Ramsey Towell  
Abilene Christian Univ

Date submitted: 28 Feb 2014

Electronic form version 1.4