

Abstract Submitted
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PHENIX Resistive Plate Chambers High Voltage Performance Analysis¹ MARSHALL TOWELL, Abilene Christian University, PHENIX COLLABORATION — The PHENIX experiment at the Relativistic Heavy Ion Collider (RHIC) at Brookhaven National Laboratory studies polarized proton-proton collisions to better understand the spin structure of the proton. While RHIC is operating there are millions of collisions each second, but the PHENIX data acquisition system can only record a few thousand each second. To help select the rare events of interest, a new forward trigger has been commissioned that includes four stations of Resistive Plate Chambers (RPCs). During the most recent RHIC run, significant polarized proton-proton data were recorded with the new trigger for the first time. The RPC high voltage was recorded and studied for each module and each run. Every physics run was classified into one of four categories depending on its high voltage conditions, including the number of trips and the number and magnitude of mismatches between the HV set point and readback voltage. Each condition that was required to consider a run to have good HV was investigated systematically to determine the appropriate set points. The methods and results of this systematic study will be presented.

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