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Resistive Plate Chamber Assembly for the PHENIX Forward **Trigger Upgrade** WALKER NIKOLAUS, Abilene Christian University, PHENIX COLLABORATION — Measuring the contributions of sea quarks to the total spin of the proton is a prominent goal of the PHENIX collaboration at the Relativistic Heavy Ion Collider (RHIC) at Brookhaven National Lab (BNL). To enable PHENIX to measure these contributions, a trigger upgrade is needed to select the single high transverse momentum muons events. hese events are common in the decay of a Wboson. Studying particles created during proton collisions is the process being used to find spin contributions through the W-boson. A trigger upgrade is needed that can meet these requirements: high time resolution, high position resolution, cheap construction, and thin form. A Resistive Plate Chamber (RPC) fits the requirements. These RPCs are high rate detectors assembled meticulously to minimize noise and cross signals. These detectors are made up of multiple layers. Within an aluminum frame sits a readout plane between two layers of gas gaps both of which are covered with copper. There are short analog wires that connect to the side of the RPCs from the readout plane. This presentation will discuss in detail the overall assembly process of RPCs and the purpose of each component.

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