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Physics Capabilities of the PHENIX Muon Trigger Upgrade

RUSTY TOWELL, Abilene Christian University, PHENIX COLLABORATION — While significant progress has been made in understanding the structure of the nucleon, many important questions remain including the origin of the proton spin. Plans have been made to develop a new state-of-the-art trigger system for the PHENIX muon arms. With this new system a precise measurement of the flavor structure of the quark polarizations in the proton can be made via the observations of W-bosons in polarized proton-proton collisions. W-bosons can be detected in PHENIX through the appearance of a high-energy muon in one of the two existing muon spectrometers. The trigger upgrade is based on fast resistive plate counter stations. This talk will describe the proposed upgrade and some of the physics results that can be expected.

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