

Seeking the Magnitude of the Gluon Contribution to Proton Spin with STAR Endcap π^0 s

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The spin of the proton is known to be $\frac{1}{2}\hbar$. It arises from the spin and orbital angular momenta of the proton's constituents: quarks and gluons. The relative contributions of various components remain uncertain, with the quark spin contribution significantly lower than once anticipated. We seek to quantify the gluon spin contribution, in particular. At the RHIC-STAR experiment at Brookhaven National Laboratory (BNL), we observe collisions between spin-polarized beams of protons. In this measurement, our probe of initial-state gluons will be the neutral pion (π^0), abundantly produced in such collisions. The π^0 s rapidly decay into two photons, which we can detect with STAR's Endcap Electromagnetic Calorimeter (EEMC). We have been calibrating and reconstructing the 2013 data to form both photon and π^0 candidates and storing this information in data structures called trees. We track the reconstruction process and assure its quality. We will describe our efforts to identify bad data using quantities including π^0 mass distributions and the signal to background ratio. We will present the status of the EEMC π^0 measurements using the 2013 dataset and our quality assurance analysis.