Investigating π^0 and η Production from STAR 2013 Endcap Calorimeter Data

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The Solenoidal Tracker at RHIC (STAR) experiment, located at Brookhaven National Laboratory, uses collisions of longitudinally polarized proton beams to study the gluon contribution to proton spin. While the proton spin is known to be 1/2 ħ, the contribution from gluon spin is not precisely known. We seek to determine the asymmetry of spin-dependent production of neutral pions (π^0) and eta (η) mesons that are sensitive to the gluon contribution to the spin of the proton. π^0s and ηs are produced within the STAR detector via collisions of longitudinally polarized protons provided by the Relativistic Heavy Ion Collider (RHIC). The π^0s and ηs rapidly decay into two photons, which are detected by the Endcap Electromagnetic Calorimeter (EEMC). An invariant mass spectrum is constructed from the two-photon pairs. From this, the total number of π^0s and ηs can be determined. Various quality assurance checks are performed to assure the quality of the data being analyzed. The current status of this analysis, focusing on the 2013 dataset, will be presented.