

Abstract Submitted
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Calibrating the STAR Endcap Electromagnetic Calorimeter Using π^0 's¹ BENJAMIN BARBER, Valparaiso University, STAR COLLABORATION — Current calibrations of the STAR Endcap Electromagnetic Calorimeter (EEMC) have relied on the energy deposition of minimally-ionizing particles (MIPs). Alternative calibrations methods using the energy deposition of the di-photon pairs created by π^0 decays were explored, and used to verify the MIP-based method. Particle interactions with the EEMC result in energy clusters within the detector. Using standard two-body kinematics, the invariant mass spectrum of distinct energy cluster pairs is reconstructed from the 2009 data in the EEMC, resulting in a π^0 peak. Using this peak as the standard π^0 mass, parameters from the energy calibration for each EEMC detector element are varied to minimize the difference between the given and measured π^0 mass and the peak width. Current work has focused on the sensitivity of the resulting mass spectrum to the specific clustering algorithm used. Energy was clustered using K-means methods, fuzzy C-means methods, and a hybrid method of the two. Highlights and preliminary results will be presented.

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