

Abstract Submitted
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A New Calibration Technique for the ALICE Electromagnetic Calorimeter at the Large Hadron Collider E. WATKINS, M. PERALES, M. CERVANTES, E. GARCIA-SOLIS, Chicago State University, S. SAKAI, M. PLOSKON, P. JACOBS, Lawrence Berkeley National Laboratory — The Large Hadron Collider at CERN is the world's largest and highest energy, particle and heavy ion collider. The LHC will explore the frontiers of particle physics using high energy proton+proton collisions and the properties of the Quark-Gluon Plasma through the collision of heavy nuclei at high energy. ALICE is one of the four LHC experiments, specialized for the study of heavy ion collisions. This study presents a new technique for the calibration of an essential detector of ALICE - the EMCal. We utilize various computational techniques and analyze proton-proton collision data recorded at 900 GeV. The ALICE TPC is used to isolate the tracks of e+e- pairs that originate from the decay of j/psi particle and that fall within the EMCal's acceptance. The TPC measures the momentum of these electron tracks, which is compared to the energy deposited by them in the EMCal. We therefore use the precise measurement of TPC momentum as the reference to calibrate the EMCal energy measurement. In this presentation we will show the steps taken to analyze the data from the TPC, how we performed the matching of electron tracks from the j/psi decay with the energy deposited in the EMCal, and some preliminary results of this calibration technique. Research funded by NSF and DoE.

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