

Abstract Submitted
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High-Multiplicity Clustering in the Barrel Electromagnetic Calorimeter at STAR¹ DARRICK JONES, Cyclotron Institute, Texas A&M University (REU Student from The College of New Jersey), STAR COLLABORATION — The STAR detector at RHIC is used to investigate the formation and properties of the Quark Gluon Plasma (QGP), which is believed to be created in heavy-ion collisions. High- p_T hadron suppression was discovered and attributed to energy loss of initially scattered partons in the medium. Because direct photons are produced early and do not interact with the evolving medium, a γ -jet coincidence serves as an effective probe of the medium. For such an analysis, π^0 -decay photons must be distinguished from direct photons. The sub-detector that measures photons is the Barrel Electromagnetic Calorimeter (BEMC), which contains the Barrel Shower Maximum Detector (BSMD). Using the high (position) resolution of the BSMD, an algorithm was previously developed for high-multiplicity events. This algorithm is being modularized for implementation into libraries to be made available to all members of the STAR collaboration. We describe how the algorithm takes advantage of the structure of the BSMD and detail the methods used to distinguish direct photons from π^0 decay photons.

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