Prototyping Electromagnetic Calorimeter for STAR Forward Calorimeter System using Au + Au at $\sqrt{s} = 200GeV$ data

Xilin Liang, for the STAR Collaboration

University of California, Riverside

Abstract

The STAR forward upgrade program is motivated to explore a wide range of rich cold QCD physics in the very high and low regions of Bjorken x. This requires new detector capabilities in the forward region including the Forward Calorimeter System (FCS). π^0 reconstruction was developed using a prototype of Electromagnetic Calorimeter (ECal) of the FCS using Au + Au collision at $\sqrt{s} = 200GeV$ data collected during the 2019 RHIC run. We present this analysis to obtain the gain factors and invariant mass π^0 reconstruction using two different methods (cluster finder method and point maker method) to isolate the two photon candidates of the π^0.