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Performance of the STAR Event Plane Detector

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The Beam Energy Scan (BES) program at the Relativistic Heavy-Ion Collider has shown hints of a critical point and first order phase transition at the BES energies. Key measurements for locating the critical point and determining the first order phase transition are limited by poor event plane resolution, limited statistics and a TPC-only centrality determination. A new event plane and collision centrality detector (EPD) is planned to replace the existing detector, the Beam-Beam Counter (BBC), with higher granularity and acceptance. The design of the EPD consists of two scintillator discs at $z = \pm 3.75$ m from the center of STAR, covering $2.1 < |\eta| < 5.1$. The EPD is estimated to increase 1st order Reaction Plane resolution by a factor of at least 1.5 and has timing resolution on the order of 1 ns. One quarter of a single disc was installed in STAR for the 2017 run for commissioning. We will discuss the detector performance during the 2017 commissioning run in AuAu collisions at $\sqrt{s_{NN}} = 54.4$ GeV and the 2018 isobar run. Outlook on the performance of the EPD in BESII will also be discussed.

Content type

Experiment

Collaboration

STAR

Centralised submission by Collaboration

Presenter name already specified

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