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Performance of the BEBE-prototype: a BEam BEam counter prototype for the MPD-NICA experiment at JINR

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Content

The Multi-Purpose Detector (MPD) is designed to study heavy ion collisions in the Nuclotron-based Ion Collider fAcility (NICA), currently under construction at the Joint Institute for Nuclear Research (JINR) in Dubna, Russia. The goal is to study the phase diagram of strongly interacting matter at high baryon density. At the design luminosity, the event rate in the MPD interaction region is about 6 kHz; the total charged particle multiplicity exceeds 1000 in the most central Au+Au collisions at $\sqrt{s_{NN}} = 11$ GeV. In order to increase the MPD capabilities to select primary vertex events and to discriminate the background, we propose to include a BEam-BEam counter detector (BEBE). In this work we present the performance of a BEBE prototype based on measurements of time resolution and GEANT4 simulations. Moreover, we show the benefits for the reconstruction of the event plane resolution when including BEBE in MPD.

Session

Poster sessions

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Session Classification : Flash Talks