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Test Beam Data Analysis of a Prototype Bakelite Resistive Plate Chamber for Muon Chamber in CBM Experiment

The Compressed baryonic matter (CBM) experiment is one of the major scientific pillars at the future accelerator facility for anti-proton and ion research (FAIR) in GSI Germany. It is a fixed target experiment aimed to explore the QCD phase diagram in the region of very high net-baryon density by colliding heavy ions in the energy range of 2-45 A GeV at an exceptionally high interaction rate of 10 MHz . Resistive Plate Chambers (RPCs) will be one of the active detectors to be used in the 3rd and 4th station in Muon Chamber (MUCH) in CBM. A small prototype (30 cm X 30 cm) RPC with a gas gap of 0.2 cm have been fabricated and tested in H4 beam-line with Pb+Pb collisions having beam energy of 150 A GeV at SPS at CERN, Switzerland. The RPC has also been tested for its efficiency and noise rate with cosmic rays at Variable Energy Cyclotron Centre (VECC), Kolkata. The details of the fabrication, cosmic ray test results and beam-test results will be presented.

Presentation type

Oral

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