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CBMTRD: Chamber Prototype and Readout Developments

Poster Abstract:

The Compressed Baryonic Matter (CBM) experiment is one of the major experiments which is planned for the Facility for Antiproton and Ion Research (FAIR) in Darmstadt, Germany. The goal of the CBM research program is to explore the QCD phase diagram in the region of high baryon densities using high energy nucleus-nucleus collisions. In the CBM experiment, high interaction rates will be measured. For this purpose, a special detector design is required to be fast enough to digest these extreme rates.

The Transition Radiation Detector (TRD) is being designed to identify electrons and positrons with $p > 1.5$ GeV/c, emerging from these collisions. This will allow the measurement of J/Ψ and low mass vector mesons in A+A and P+A collisions with the CBM experiment. In Frankfurt, a Multi Wire Proportional Chamber (MWPC) prototype with high signal collection speed is designed and developed, that will be able to cope with the high hit rates anticipated in the CBM.

The poster will demonstrate TRD prototype designs as well as electronic readout chain applied to accumulate the data from the planned test beam campaign at the CERN-SPS in Geneva, Switzerland.

Keywords: CBM; TRD

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