



Contribution ID: 630

Type: Poster

The RICH detector for the CBM experiment at FAIR

Tuesday 15 May 2018 19:10 (30 minutes)

The Compressed Baryonic Matter (CBM) experiment at the future FAIR complex will investigate the phase diagram of strongly interacting matter at high baryon density and moderate temperature in A+A collisions from 2-15 AGeV (SIS 100). One of the most promising observables to explore this matter is electromagnetic radiation from the fireball.

One of the key detectors for clean electron identification is the RICH (Ring Imaging Cherenkov) detector using CO₂ as radiator gas, spherical glass mirrors with reflective Al+MgF₂ coating as focusing elements and a photo-detector plane consisting of an array of H12700 MAPMTs from Hamamatsu. Prior to the CBM start at FAIR about half of these MAPMTs will be employed for the upgrade of the HADES RICH detector. An FPGA-TDC based readout chain is being developed in cooperation with both experiments.

The mirror wall will consist of two half spheres with 40 trapezoidal glass mirrors each with high reflectivity and excellent surface homogeneity. An important aspect to guarantee a stable operation of the RICH detector is the mirror alignment and its control.

In this poster we will report on the design and status of the CBM RICH developments with particular focus on the mirror wall development as well as qualitative and quantitative measurements to monitor and correct potential mirror misalignments.

Content type

Experiment

Collaboration

CBM

Centralised submission by Collaboration

Presenter name already specified

Authors: BENDAROUACH, Jordan (Justus Liebig University (Giessen)); CBM COLLABORATION

Presenter: BENDAROUACH, Jordan (Justus Liebig University (Giessen))

Session Classification: Poster Session

Track Classification: Future facilities, upgrades and instrumentation