## RPC 2018 - THE XIV WORKSHOP ON RESISTIVE PLATE CHAMBERS AND RELATED DETECTORS

Contribution ID: 73 Type: Plenary Talk

## The CBM Time-of-Flight wall

Monday 19 February 2018 17:20 (20 minutes)

The Compressed Baryonic Matter (CBM) experiment aims at exploring the QCD phase diagram at large baryon densities in the beam energy range from 2 A GeV to 11 (35) A GeV at the SIS100 (SIS300) accelerator of FAIR/GSI. For charged particle identification that is required by many observables that are sensitive to the phase structure like collective flow, phase space population of rare hyperons, fluctuations of conserved quantities, - a high performance Time-of-Flight (TOF) wall with a granularity of about 120.000 channels and a system timing resolution of better than 80 ps is being built. The most demanding challenge, however, is the enormous incident particle fluxes between 100  $Hz/cm^2$  and 25  $kHz/cm^2$  generated at the highest interaction rates (10 MHz) that CBM is designed for. Part of the wall ( $\sim$ 10.000 channels) will be installed in the forward hemisphere

 $(1.0 < \eta < 1.5)$  of the STAR experiment at RHIC/ BNL during the beam energy scan (BES II) campaign planned for 2019/2020. This project, called eTOF, is in the scope of the FAIR phase 0 program.

The status and the performance regarding time resolution, efficiency, cluster size and rate capability of the TOF system and in particular of the eTOF system will be discussed.

Work was supported by BMBF 05P15VHFC1

**Primary authors:** DEPPNER, Ingo-Martin (Physikalisches Institut der Universität Heidelberg); HERRMANN,

Norbert (Univ. Heidelberg)

Presenter: DEPPNER, Ingo-Martin (Physikalisches Institut der Universität Heidelberg)

Session Classification: New Physics Experiments