HK 35: Instrumentation XI

Time: Wednesday 15:45–17:00 Location: SCH/A.101

Group Report HK 35.1 Wed 15:45 SCH/A.101

MAGIX group report — •Pepe Gülker for the MAGIX-Collaboration — Institut für Kernphysik, Johannes Gutenberg-Universität, Mainz, Germany

The versatile, low energy electron scattering experiment MAGIX, located in Mainz at the new MESA accelerator, has switched gears and entered the construction phase. The design of the main components, e.g. the two magnetic spectrometers, their small-drift focal plane TPCs and the trigger-veto system, are fixed and production has already started.

The broad physics program, ranging from rare particle searches to electro-disintegration measurements, is scheduled according to the increasing energy and availability of the energy-recovering mode of the accelerator.

This group report will redraw the design process of the whole experiment, give an overview of finalized parameters and discuss the planned measurement campaign.

Group Report HK 35.2 Wed 16:15 SCH/A.101

Status of the CBM Time-of-Flight project — •Ingo Deppner and Norbert Herrmann for the CBM-Collaboration — Physikalisches Institut, Uni. Heidelberg

In order to provide an excellent particle identification (PID) of charged hadrons at the future high-rate Compressed Baryonic Matter (CBM) experiment the CBM-TOF group has developed a concept of a 120 m^2 large Time-of-Flight (ToF) wall (with 93000 channels) with a system time resolution below 80 ps based on Multi-gap Resistive Plate Chambers (MRPC). The MRPC detectors were extensively tested in several beam campaigns at particle fluxes of up to a 30 kHz/cm^2 and reached by now the close to final design. Prior to its destined operation at the Facility for Antiproton and Ion Research (FAIR), a preproduction series of MRPCs is being used for physics research at two scientific pillars of the FAIR Phase0 program. At STAR, the fixed-target program of the Beam Energy Scan II (BES-II) relies on 108 CBM MRPC detectors enabling forward PID for center of mass energies in the range of 3 to 7.7 AGeV Au+Au collisions. At mCBM, high-performance benchmark runs of Λ production at top SIS18 energies (1.5/1.9 AGeV for Au/Ni beams) and CBM design interaction rates of 10 MHz became feasible. Apart from the physics perspectives, these FAIR Phase-0 involvements allowed for high rate detector tests and long term stability tests. Observations and conclusions for the upcoming mass production will be discussed. The project is partially funded by BMBF contract 05P21VHFC1.

HK 35.3 Wed 16:45 SCH/A.101

The Endcap-Time-Of-Flight Detector at STAR and its implications for the CBM Time-Of-Flight-Wall — •Yannick Söhngen for the CBM-Collaboration — Physikalisches Institut Universität Heidelberg

The Endcap-Time-Of-Flight Detector (ETOF) at STAR was build with 108 MRPCs designed for the CBM Time-Of-Flight-Wall and successfully operated during the Beam-Energy-Scan II (BESII) from 2018 onwards. Its status in terms of operation, data acquisition and calibration will be presented and the conclusions that could be drawn for the design of the CBM Time-Of-Flight-Wall will be discussed.