Contribution ID: **106** Type: **not specified**

Astrophysics in the laboratory- The research program of the CBM experiment at FAIR

Wednesday 28 August 2019 10:00 (30 minutes)

The Compressed Baryonic Matter (CBM) experiment is of the major scientific pillars of the future Facility for Antiproton and Ion Research (FAIR) in Darmstadt. The goal of the CBM research program is to explore the properties of nuclear matter at neutron star core densities using high-energy nucleus-nucleus collisions. This includes the study of the high-density equation-of-state (EOS) of nuclear matter, and the search for new phases of QCD matter at high densities. Up to now, the EOS of symmetric nuclear matter and the symmetry energy have been studied in the laboratory up to twice saturation density. However, the core density of massive neutron stars is expected to exceed five times the density of an atomic nucleus. These densities can be produced in collisions between heavy nuclei at FAIR energies. Promising experimental observables sensitive to the EOS and to the symmetry energy will be discussed, together with the expected performance of the CBM experiment.

Primary author: Prof. SENGER, Peter (GSI Helmholtzzentrum)

Presenter: Prof. SENGER, Peter (GSI Helmholtzzentrum)

Session Classification: Workshop on Physics at FAIR-NICA-SPS-BES/RHIC