Contribution ID: **163** Type: **Oral report**

Methods for centrality determination in heavy-ion collisions with the CBM experiment

Wednesday 22 September 2021 13:30 (25 minutes)

Centrality is an important concept in a study of strongly interacting matter created in a heavy-ion collision whose evolution depends on its initial geometry. Experimentally collisions can be characterized by the measured multiplicities or energy of produced particles at midrapidity or spectator fragments emitted in the forward rapidity region. Relation between collision geometry and experimentally measured multiplicities is commonly evaluated within the Monte-Carlo Glauber approach.

We will present methods for centrality determination in heavy-ion collisions with the Compressed Baryonic Matter (CBM) experiment at the future Facility for Antiproton and Ion Research (FAIR). The multiplicity of charged hadrons is provided by the CBM silicon tracking system (STS) and connected to collision geometry parameters using the Monte-Carlo Glauber model. The energy of spectator fragments is estimated with the CBM projectile spectator detector (PSD). We will discuss possibilities to determine centrality using the PSD and Monte-Carlo Glauber model.

Primary author: SEGAL, Ilya (National Research Nuclear University MEPhI (RU))

Co-authors: SELYUZHENKOV, Ilya (GSI / MEPhI); LUBYNETS, Oleksii (Goethe-University Frankfurt / GSI); KLOCHKOV, Viktor (Eberhard Karls Universität Tübingen)

Presenter: SEGAL, Ilya (National Research Nuclear University MEPhI (RU))

Session Classification: Section 4. Relativistic nuclear physics, elementary particle physics and high-energy physics

Track Classification: Section 4. Relativistic nuclear physics, elementary particle physics and high-energy physics.