

## Performance studies of anisotropic flow with MPD at NICA

*Wednesday, 17 April 2019 15:15 (15 minutes)*

The Multi-Purpose Detector (MPD) at NICA collider has a substantial discovery potential concerning the exploration of the QCD phase diagram in the region of high net-baryon densities and moderate temperatures. The anisotropic transverse flow is one of the key observables to study the properties of dense matter created in heavy-ion collisions. The MPD performance for anisotropic flow measurements is studied with Monte-Carlo simulations of gold ions at NICA energies  $\sqrt{s_{NN}}=4-11$  GeV using different heavy-ion event generators. Different combinations of the MPD detector subsystems are used to investigate the possible systematic biases in flow measurements, and to study effects of detector azimuthal non-uniformity.

### Summary

The resulting performance of the MPD for flow measurements is demonstrated for directed and elliptic flow of identified charged hadrons as a function of rapidity and transverse momentum in different centrality classes.

**Primary author:** Mr PARFENOV, Peter (MEPhI, Moscow)

**Co-authors:** Dr TARANENKO, Arkadiy (NRNU MEPhI); SELYUZHENKOV, Ilya (GSI / MEPhI)

**Presenter:** Mr PARFENOV, Peter (MEPhI, Moscow)

**Session Classification:** High energy physics

**Track Classification:** High Energy Physics