

Energy deposition and anisotropic flow comparative analysis using FHCAL in MPD experiment (NICA)

Monday, 22 October 2018 15:40 (150)

Multi-Purpose Detector (MPD) experiment at NICA collider has a potential of discoveries in the area of QCD phase diagram with high net baryon densities and moderate temperatures. Anisotropic transverse flow is one of the key observables to study the properties of matter created in heavy-ion collisions. 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 measurement and to study effects of detector azimuthal non-uniformity. Resulting performance of the MPD for flow measurements will be demonstrated for directed and elliptic flow of identified charged hadrons as a function of rapidity and transverse momentum in different centrality classes.

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Session Classification : Poster session and coffee-buffet

Track Classification : Nuclear physics: heavy ion