

Centrality determination in MPD at NICA

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We present a study of centrality class determination based on number of charged particles registered with Time Projection Chamber in Multi-Purpose Detector at NICA complex. Precise determination of centrality classes will allow to select the ion collisions within a certain class of initial conditions in order to study behavior of some variables on the mean energy densities reached.

It will be important to study the QCD matter with respect to the geometric properties of the collision between nuclei, but these properties cannot be experimentally measured. Therefore, we compare in this work the centrality classes which are obtained using different sets of observables as proxies for centrality. They include the number of hits in the TPC and transverse momentum of registered particles in the TPC sub-detector for Bi+Bi collisions at $\sqrt{S_{NN}} = 7.7, 9$ and 9.46 GeV, Data generated by several Monte Carlo models are used. Results are discussed.

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