

Prospects for a study of strangeness and hypenuclei production at NICA/MPD

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Relativistic heavy-ion collisions provide a unique opportunity to study nuclear matter under extreme density and temperature. NICA (Nuclotron-based Ion Collider fAcility) is a new flagship project aimed at the construction at JINR (Dubna) a modern machine providing beams of heavy ions with the highest intensity ever achieved in the energy range from 4 to 11 GeV per nucleon. The main scientific goal of the NICA project is the experimental exploration of a yet poorly known region of the QCD phase diagram of the highest net-baryon density with an emphasis on the nature of deconfinement phase transition, study of hadron properties in dense baryonic matter, and search for the critical end point (CEP).

The study of strangeness production is of particular interest. Since strange hadrons are initially not present but created during the heavy-ion collisions, the strangeness is one among the most sensitive probes for the deconfinement phase transition as well as for the in-medium effects in dense nuclear matter.

The prospects for a study of strangeness and hypenuclei production with the MultiPurpose Detector (MPD) at NICA will be presented and the detector performance for such physics analyses, evaluated from the Monte Carlo simulation, demonstrated.

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