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Probing Dense Nuclear Matter by Heavy Ion Collision Experiments at NICA

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Heavy-ion collisions offer a unique opportunity to study strongly interacting QCD matter under extreme conditions of temperatures and baryon densities. The main goal of this research has been to better understand the rich structure of the QCD phase diagram. The Nuclotron Ion Collider-fAcility (NICA) offers an opportunity to extend these studies to the range of ion collision energies from 2.4 to 11 GeV (center-of-mass) by providing high-luminosity scans both in collision energy and system size. The BM@N experiment at NICA has already taken data with argon and xenon beams, while commissioning of the MPD detector starts later this year. In this talk, I will overview the status and the perspectives of the heavy ion research program at NICA. In particular, the recent results on hadron and light nuclei production as well as on collective flow from centrality selected Ar-nucleus and Xe-nucleus collisions at 3-4A GeV from the BM@N experiment will be discussed. The opportunities for future studies with the MPD experiment will be presented.

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