Status of the NICA project at the JINR

Prof. Grigoriy Trubnikov

Joint Institute for Nuclear Research, Dubna, 141980, Russia

The NICA (Nuclotron-based Ion Collider fAcility) project is now under active realization at the Joint Institute for Nuclear Research (JINR, Dubna). The main goal of the project is a study of hot and dense strongly interacting matter in heavy-ion (up to Au) collisions at center-of-mass energies up to 11 GeV per nucleon. Two modes of operation are foreseen, collider mode and extracted beams, with two detectors: MPD and BM@N. The both experiments are in preparation stage. An average luminosity in the collider mode is expected as 10^{27} cm⁻² s⁻¹ for Au (79+). Extracted beams of various nuclei species with maximum momenta of 13 GeV/c (for protons) will be available. A study of spin physics with extracted and colliding beams of polarized deuterons and protons at the energies up to 27 GeV (for protons) is foreseen with the NICA facility. The proposed program allows search for possible signs of the phase transitions and critical phenomena as well as to shed light on the problem of nucleon spin structure.