NICA heavy ion collider at JINR (Dubna): Physics and Lyrics

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"The present status of the project of NICA project, which is close to commissioning at JINR (Dubna) is given. The main goal of the NICA project is to provide colliding heavy ion beams for experimental studies of hot and dense strongly interacting baryonic matter and spin physics.
The proposed physics program concentrates on the search for possible manifestations of the phase transitions and critical phenomena in the energy region, where the excited matter is produced with maximal achievable net baryon density, and clarification of the origin of nucleon spin. The NICA collider will provide heavy ion collisions in the energy range of √ sNN =4÷11 AGeV at average luminosity of L=1·10^27 cm^− 2·s^− 1 for 197Au79+ nuclei and polarized proton collisions in energy range of √ sNN =12÷27 AGeV at luminosity of L ≥ 10^32 cm^−2·s^-1. The collider ring and the first IP detector are now in the final stage of assembly and start of commissioning. Challenges for physics study, expected observables and phenomena to measure, results of first experiments on fixed target set-up, time-line for 2025, details of start-up configuration, challenges of beam parameters and luminosity preservation are presented in the talk."

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