



Contribution ID : 22

Type : Oral talk

The BM@N experiment at NICA: status, upgrades, and recent physical results

Tuesday, 27 October 2026 12:00 (30)

The main goal of the NICA physics program is to study the QCD phase diagram in the poorly explored region of high net-baryon density. The BM@N experiment at NICA is well-suited for measuring a variety of hadron species in high-multiplicity nucleus-nucleus collisions. To bridge the gap between measurements at low energies at SIS-18 and higher energies at AGS, BM@N has performed an energy and system-size scan using Ar and Xe projectiles at beam kinetic energies ranging from 1.6 to 3.8 GeV per nucleon. The study of hadron and light nuclei production in intermediate-mass systems plays a crucial role in revealing the reaction dynamics and the nuclear matter Equation of State (EoS) at densities 2–4 times higher than normal nuclear density.

This report first overviews the current status and recent upgrades of the BM@N setup. The main part discusses recent results on charged pion, kaon, proton, and light nuclei production in centrality-selected Ar+Ar ($A=C, Al, Cu, Sc, Pb$) and Xe+CsI collisions. Particle spectra, yields, and ratios are presented and compared with transport model predictions incorporating different EoS implementations.

Primary author(s) : KOLESNIKOV, Vadim (JINR)

Presenter(s) : KOLESNIKOV, Vadim (JINR)

Session Classification : Plenary talks

Track Classification : Heavy ion physics