Contribution ID: **252** Type: **Oral**

Prospects for Dilepton Measurements in the MPD Experiment at NICA

Thursday 3 July 2025 17:40 (20 minutes)

The Multi-Purpose Detector (MPD) experiment is a flagship heavy-ion experiment of the NICA facility at JINR, in Dubna expected to start operation in 2026. The experiment will operate in the energy range $\sqrt{s_{\mathrm{NN}}}$ = 4-11 GeV in collider mode and $\sqrt{s_{\mathrm{NN}}}$ = 2.4-3.5 GeV in fixed-target mode which covers the high net-baryon density region of the QCD phase diagram. Dilepton measurements in heavy-ion collisions, provide insights into the initial temperature of the medium through intermediate mass spectra as well as properties such as chiral symmetry restoration and lifetime of the fireball via low-mass pairs and vector meson spectra.

MPD experiment is well equipped for the measurements of dileptons. It offers excellent track reconstruction and electron identification capabilities together with electron-hadron separation required for these measurements. In this presentation, we will report the current status of the NICA facility and the MPD experiment. Moreover, the prospects and the detector performance for the dilepton measurements together with selected physics feasibility studies will be presented.

Primary author: Dr RODE, Sudhir Pandurang (Joint Institute For Nuclear Research, Dubna, Russia)

Presenter: Dr RODE, Sudhir Pandurang (Joint Institute For Nuclear Research, Dubna, Russia)

Session Classification: 4. Relativistic nuclear physics, high-energy and elementary particle physics: Experiment

Track Classification: Section 4. Relativistic nuclear physics, high-energy and elementary particle physics.