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Short-lived resonances and neutral mesons in the physical program of the NICA-MPD

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Short-lived hadronic resonances such as $K*(892)^{0,\pm}$, $\rho(770)^0$, $\phi(1020)$, $\Sigma(1385)^{\pm}$, $\Lambda(1520)$ and $\Xi(1530)^0$) are used to study different aspects of particle production and collision dynamics in pp, p—A and relativistic heavy-ion collisions. The yields of resonances are sensitive to the competing processes of hadron rescattering and regeneration, thus making these particles unique probes of the properties of the late hadronic phase. Measurements of resonances with different masses and quantum numbers also provide insight into strangeness production and processes that determine the shapes of particle momentum spectra.
We discuss results of the model-based studies of the influence of the
hadronic phase on the measured properties of resonances in heavy-ion
collisions at NICA energies. Moreover, we discuss prospects for resonance measurements in the MPD experimental setup and results of the feasibility studies obtained using Monte Carlo simulation of the detector performance.

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