

Some selected highlights of relativistic heavy-ion collisions experiment

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In this report I will present an overview of some selected results obtained in recent experimental studies of strongly-interacting matter at extreme conditions, as formed in ultra-relativistic nucleus-nucleus collisions at modern facilities. This will include the overview of fluctuations and correlations and flow studies in Pb+Pb, p+Pb and p+p collisions by ALICE and CMS at the LHC, role of strangeness and charm in heavy-ion collisions, search of the critical end-point (CEP) by NA61/SHINE at the SPS. Production of light (anti)nuclei in high-energy pp, p–A, and A–A collisions is another topic of interest to be touched in comparison with hadronization models.

Perspectives for analysis of cumulants of conserved quantities in HI collisions at the MPD at NICA will be also discussed briefly. Finally, some recent results by Saint-Petersburg State University developments for the data analysis are supposed to be also presented – the multipomeron exchange model, the long-range correlations and application of strongly intensive observables, the modified Glauber approach to the estimates of nucleon-nucleon collisions number, new observation of the independence of ratios of transverse energies of ϕ -mesons to other strange hadrons produced at midrapidity in very central A+A collisions in a wide range of $\sqrt{s_{NN}}$ from 30 GeV to 2760 GeV.

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