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ЛАБОРАТОРИЯ ТЕОРЕТИЧЕСКОЙ ФИЗИКИ
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Семинар
"ТЕОРИЯ АДРОННОГО ВЕЩЕСТВА ПРИ ЭКСТРЕМАЛЬНЫХ УСЛОВИЯХ"

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Семинар состоится в

среду 20 февраля в 14.00

в аудитории им. Д. И. Блохинцева (4 этаж ЛТФ)

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Heavy-Ion Collisions within Multi-Fluid Simulations: Scenarios with and without Deconfinement Transition

Simulations of relativistic heavy-ion collisions within the three-fluid model, employing a purely hadronic EoS and two versions of EoS involving the deconfinement transition, are presented. The latter are an EoS with a first-order phase transition and another with a smooth crossover transition. The analysis is performed in a wide range of incident energies 2.7 GeV $\leq \sqrt{s_{NN}} \leq$ 39 GeV in terms of the center-of-mass energy. First results of these different scenarios are compared with available experimental data. Scenarios with a deconfinement transition look preferable at high incident energies $\sqrt{s_{NN}} \geq 5$ GeV. It is found that the predictions within deconfinement-transition scenarios exhibit a "peak-dip-peak-dip" irregularity (in the dependence on the incident energy) of the form of the net-proton rapidity distributions in central collisions. This irregularity signals the onset of deconfinement occurring in the hot and dense stage of the nuclear collision.

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