The vorticity and acceleration phenomena in the heavy-ion collisions at the NICA complex energies

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In this topic, the discussion will focus on vorticity and acceleration of the nuclear medium created in heavy-ion collisions at the NICA complex energies. These phenomena will be analyzed within the framework of the Parton-Hadron-String Dynamics (PHSD) model. The vorticity field is the object of study due to its connection to the spin polarization and also due to its intricate space-time structures, such as vortex rings. Conversely, an acceleration in heavy-ion collisions signifies a novel direction in the current research by the scientific community, especially due to its influence on phase transitions. In this study, the acceleration (and the Unruh temperature) space-time distributions will be presented and subsequently compared with the temperatures of the medium for the various phases of matter 1. Also we will discuss some results studied in our previous works [2-5].

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