

Strangeness in Quark Matter 2019



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Vorticity structure and helicity separation in heavy-ion collision.

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Simulations of peripheral Au+Au collisions at NICA energies are performed in the PHSD transport model. The properties of velocity and vorticity fields, hydrodynamic helicity are studied at different impact parameters. The general structure of velocity field follows the "little bang" pattern which may be quantified by the velocity dependence allowing to extract the "little Hubble" constant. Quadrupole structures of the vorticity field in all planes are obtained. A thin layer of large vorticity is found at the boundary of the fireball, the so-called vortex sheet. The effect of helicity separation is detected. The thermal vorticity is calculated and its structure is compared with the classical one. Calculation of hyperon polarization in thermodynamic and anomalous models is performed.

Collaboration name

Track

Hydrodynamics, chirality and vorticity

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Session Classification: Poster session with "aperitivo"