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First results of iHKM at RHIC BES energies: measuring shear viscosity of QGP

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Integrated hydro-kinetic model was modified and first time applied to baryon-rich matter created in heavy-ion collisions at relatively low energies of RHIC BES program. The model employs a transport approach at the early and late non-equilibrium stages of evolution of the system and viscous hydrodynamics with smooth continuous thermalization in the middle stage of near-equilibrium expansion of quark-gluon plasma. First results for p_T spectra, elliptic flow, and femtoscopy are presented. Simulations indicate that the most successful description of the existing data corresponds to the lowest possible share viscosity to entropy density ratio $\eta/s = 1/4\pi$ and fast thermalization with $\tau_{th} \sim 0.5$fm/c.

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