

Momentum-dependence of hydrodynamization in heavy-ion collisions

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The relativistic hydrodynamic model has been vital to the analysis of the QCD matter created in high-energy heavy-ion collisions. Experimental data indicate that low momentum particles are thermal and hydrodynamic, while high momentum particles are non-thermal and perturbative. We investigate two scenarios - (i) the Tsallis hydrodynamic model where an extended momentum range is treated as hydrodynamic [1], and (ii) the red hydrodynamic model where high momentum contributions are strictly excluded from the medium [2] - to elucidate the momentum-dependence of thermalization/hydrodynamization in heavy-ion collisions using numerical simulations.

[1] K. Kyan, A. Monnai, Phys. Rev. D 106, 054004 (2022)

[2] A. Monnai, arXiv:2301.00588 [nucl-th]

Theory / experiment

Theory

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