

Dynamical evolution of D meson spectrum in viscous QCD plasma

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We investigate D meson spectrum and nuclear modification factor by incorporating the off-equilibrium distribution function in a dynamic viscous QCD plasma.

The spectrum is determined by heavy quark energy (drag) and momentum relaxation (diffusion) coefficients.

We study modifications of these coefficients due to viscous corrections to the bosonic and fermionic thermal distribution functions.

The Fokker-Planck equation is then used to obtain the D meson spectrum within the relativistic viscous hydrodynamic evolution of the medium. We incorporate the many-body interaction effects via the hard thermal loop technique in the calculation. We also explore the effects of different momentum dependences of the off-equilibrium distribution function on the spectrum as well as on the nuclear modification factor.

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