Contribution ID: **109** Type: **not specified**

The fragment effects on shear viscosity and liquid-gas phase transition in nuclear plasma

Wednesday, 9 October 2019 18:00 (1 hour)

We simulated nuclear matter in a periodic box with an improved quantum molecular dynamic (ImQMD) model and extracted shear viscosity using the Gaussian thermostated SLLOD algorithm. As the mean filed is switched on, fragments forming at low density and low temperature, shear viscosity is declined. And also a slope of the shear viscosity, the ratio of the number of free nucleons to that of the intermediate mass fragments and the mean mass of the largest fragments as functions of temperature are discussed. We found, in all cases, turning points lying in a critical temperature regions around T~8 MeV, which can be signals of the liquid-gas phase transition.

Abstract Type

Poster

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Session Classification: S5: Poster 分会场

Track Classification: S5 分会场：Poster