

Local well-posedness of compressible Radiation Hydrodynamic equations with density-dependent viscosities and vacuum

Hao Li¹ and Yachun Li¹

¹Shanghai Jiao Tong University

May 23, 2020

Abstract

In this paper, we consider the Cauchy problem for three-dimensional isentropic compressible radiation hydrodynamic equations with density-dependent viscosity coefficients. When the viscosity coefficients are given as power of density (ρ^δ with $\delta > 1$), we establish the local-in-time existence of classical solutions containing a vacuum for large initial data. Here, we point out that the initial layer compatibility conditions are not necessary.

Hosted file

Local well-posedness of compressible radiation hydrodynamic equations with density-dependent viscosities and vacuum available at <https://authorea.com/users/325533/articles/453525-local-well-posedness-of-compressible-radiation-hydrodynamic-equations-with-density-dependent-viscosities-and-vacuum>