

Large time behavior of solutions to the compressible Navier-Stokes equations in a cylinder under the slip boundary condition

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Abstract

In this talk, we consider the compressible Navier-Stokes equations in a cylinder under the slip boundary condition. It is shown that if the initial data is smooth and sufficiently close to the motionless state, then there exists a unique solution globally in time. Furthermore, we show that the large time behavior of the solution is described by a superposition of one-dimensional nonlinear diffusion waves and a diffusive rigid rotation.