Propagation of Singularities in Compressible Viscous Fluids

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Abstract

In this talk, we will study the propagation of weak singularities of solutions to the Cauchy problem of the compressible Navier-Stokes equations with heat conduction. By using paradifferential operators we derive an equivalent decoupled form of the Navier-Stokes equations. Then, we obtain that the Navier-Stokes equations have finite speeds for the propagation of singularities, and the microlocal singularities are propagated only along the null bicharacteristics of the convective field. This is a joint work with Chen Shuxing.