

The Pointwise Estimates of Hyperbolic Conservation Law with Dissipative Structure in Multi-Dimensions

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In this talk, I will study the time-asymptotic behavior of solutions on hyperbolic equations with dissipative structure. We want consider the following typical hyperbolic systems with dissipative connection terms:

1. the hyperbolic system with viscosity;
2. the hyperbolic system with damping;
3. the hyperbolic system with relaxation.

We obtained the pointwise estimates of solutions as the systems satisfy some entropy condition. It is shown that the solutions exhibit different large time decay frame for different equations. Our approach is based on a detailed analysis of the Green function of the linearized system and some energy estimates.