复旦大学数学科学学院
数学综合报告会

报告题目：Uniqueness of BV solution for compressible Euler equations

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报告摘要：

Compressible Euler equations are a typical system of hyperbolic conservation laws,whose solution forms shock waves in general. It is well known that global BV solutions of system of hyperbolic conservation laws exist, when one considers small BV initial data. In this talk, we will present our recent proof on uniqueness of BV solution.

As a major breakthrough for system of hyperbolic conservation laws in 1990's, by Bressan and his collaborators, solutions have been proved to be unique among BV solutions verifying either the so-called Tame Oscillation Condition, or the Bounded Variation Conditionon space-like curves.

In this talk, we show that these solutions are stable in a larger class of weak (and possibly not even BV) solutions of the system. As a consequence of our result, one does not have to assume the Bounded Variation Condition on space-like curves in the uniqueness theory, for systems with two unknowns andnon-isentropic Euler equations. Hence, the uniqueness of BV solution is proved. This is a joint work with Sam Krupa and Alexis Vasseur.

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