

# Global regularity v.s. finite time blowup for compressible Euler equations

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As one of the oldest nonlinear PDE systems, the compressible Euler equations has been studied by many outstanding mathematicians. However, some basic questions, such as the global existence of classical solution v.s. finite time blowup, are still open even in one space dimension. In this lecture, we will report our recent progress in this direction, including a complete understanding on isentropic flows, and a refreshed understanding on general adiabatic flows. This lecture is based on joint works with H. Cai, G. Chen, S. Zhu, and Y. Zhu.