



THE HONG KONG UNIVERSITY OF SCIENCE & TECHNOLOGY

Department of Mathematics

SEMINAR ON PDE

Stability of Riemann solution containing a shock under physically admissible perturbations

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KAIST

Abstract

I will present the so-called "a-contraction with shifts" method, which is basically energy based. This method is quite useful in studying the stability of Riemann solution containing a shock under physically admissible perturbations. First, based on the method, we prove the long-time behavior of compressible Navier-Stokes flows perturbed from Riemann solution composed of a shock and other waves of different kinds. This resolves the long-standing problem since the 1980s. On the other hand, since the method can handle large perturbations of a shock, we can also prove the uniform stability of a shock w.r.t. the strength of viscosity, which provides the result on uniqueness of Riemann solution composed of a shock in the class of inviscid limits of solutions to the compressible Navier-Stokes system.

Date: 04 November 2022 (Friday)

Time: 9:00am

Zoom Meeting: <https://hkust.zoom.us/j/95240200735> (Passcode: 611512)

All are Welcome!