

國立中山大學應用數學系

學術演講

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講題：Global existence and strong trace property of entropy solutions to nonlinear hyperbolic balance laws

時間：2019/11/21 (Thursday) 15:30 ~ 16:30

地點：理學院四樓理 SC 4009-1 室

茶會：15:00 於理 SC 4010 室 (系辦公室)

Abstract

In this talk, we consider the initial-boundary value problem for a nonlinear hyperbolic system of balance laws with source terms $a_x g$ and $a_t h$. We assume that the boundary data satisfy a linear or smooth nonlinear relation. The generalized Riemann and boundary Riemann solutions are provided with the variation of a concentrated on a thin T -shaped region in each grid. We generalize Goodman's boundary interaction estimates, introduce a new version of Glimm scheme to construct the approximation solutions, and provide their stability by considering two types of functions of $a(x, t)$. The global existence of entropy solutions is established. Under some sampling condition, we find the entropy solutions converge to their boundary values in L^1_{loc} as x approaches the boundary. In addition, such boundary values match the boundary condition almost everywhere in t .

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