

数学与系统科学研究院

计算数学所学术报告

报告人: **Prof. Barbara Keyfitz**

(*Ohio State University*)

报告题目:

**Some Analysis of Multidimensional
Hyperbolic Conservation Laws**

邀请人: 陈志明 研究员

报告时间: **2013 年 5 月 13 日 (周一)**

上午 10:00

报告地点: **科技综合楼三层 311**

计算数学所报告厅

Abstract:

The study of quasilinear hyperbolic partial differential equations (also known as conservation laws) presents formidable technical challenges. For example, the solutions to most initial-value problems have rather low regularity, and are found in function spaces which are themselves not easy to analyze. In a single space dimension, there is now a satisfactory theory, although it is limited to small data. In more than one space dimension, there is almost no theory.

In this presentation, I will give an overview of how technical difficulties in one space dimension have been overcome, emphasizing the underlying concepts that distinguish nonlinear from linear problems. This sets the stage for a description of the small amount of analysis that has been completed for conservation laws in two space dimensions, where the study of self-similar problems has yielded some rigorous results. I will illustrate with an exposition of a model problem involving Mach stems for a nonlinear wave equation. This example is joint work with Suncica Canic and Eun Heui Kin.

欢迎大家参加!