数学与系统科学研究院

计算数学所学术报告

报告人：　**Prof. Baofeng Feng**

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报告题目：

Self-adaptive moving mesh methods for a class of nonlinear wave equations with hodograph transformation

邀请人：　胡星标 研究员

报告时间：**2014** 年 **6** 月 **25** 日（周三）

上午 **10:00-11:00**

报告地点：　数学院南楼六层

602 会议室

Abstract:

In the first part of my talk, I will give a survey on our recent work of integrable discretizations for a class of soliton equations with hodograph transformations. Based on Hirota's bilinear method and reductions from the Kadomtsev-Petviashvili (KP) hierarchy, integrable semi-discretizations are constructed for many soliton equations such as the Camassa-Holm equation, the Degasperis-Procesi equation and their short-wave limit models, the short pulse equation and its two-component generalizations etc. In the second part of the talk, I will show how these integrable semi-discretizations can be successfully used as a self-adaptive moving mesh method for the numerical simulation of these PDEs. Various numerical experiments including loop, breather and loop-breather interaction reveal very good results when compared with exact solutions. In the last, I also will show that the self-adaptive moving mesh scheme is not necessarily to be integrable by several examples.

This is a joint work with Dr. Ohta at Kobe University and Dr. Maruno at Waseda University of Japan.

欢迎大家参加！