

数学与系统科学研究院

计算数学所学术报告

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报告题目:

**Local Time Stepping Multiresolution
Scheme for Conservation Laws**

邀请人: 周爱辉 研究员

报告时间: **2011 年 12 月 19 日 (周一)**

下午 16: 00-17: 00

报告地点: 科技综合楼三层 **301**
计算数学所小报告厅

Abstract:

Mesh and time step adaptivity are desirable if not necessary strategies in the design of numerical methods for evolution PDEs. In the particular case of nonlinear conservation laws, a family of multiresolution techniques has been developed over the past ten years in the wake of Harten's works. Based on multiscale smoothness analysis of the solution, a fully adaptive multiresolution method was designed, analyzed and extensively used to solve a variety of systems of PDEs in many dimensions, Local time stepping enhancement to the original method allows to significantly improve its computing performances. A recent result provides the convergence of these adaptive schemes towards the entropy solution of the continuous equation in the scalar case.

Ref : F. Coquel, M. Postel, and Q.-H. Tran. Convergence of time-space adaptive algorithms for nonlinear conservation laws. To appear in IMA Journal of Numerical Analysis

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