数学与系统科学研究院

计算数学所学术报告

报告人： **Prof. Jack Xin**

（ ***University of California at Irvine, USA*** ）

报告题目：

G-equations and Front Motion in Fluid Flows

邀请人： 周爱辉 研究员

报告时间：**2014** 年 **9** 月 **5** 日（周五）

上午 **10:00-11:00**

报告地点： 数学院南楼 **702**

会议室

Abstract:

G-equations are level set Hamilton-Jacobi equations (HJE) for modeling flame fronts in turbulent combustion where a fundamental problem is to characterize the turbulent flame speeds s_T. We show that the existence of s_T is connected with the homogenization of HJE, however classical theory does not apply and new mathematics must be developed to address the non-coercive and non-convex nature of the level set Hamiltonian. We shall illustrate the asymptotic properties of s_T from both Eulerian and Lagrangian perspectives in the case of two dimensional periodic incompressible flows, in particular cellular flows. Analytical and numerical results demonstrate that G-equations capture well the enhancement, slow down and quenching phenomena observed in experiments. This is joint work with Yifeng Yu and Yu-Yu Liu.

欢迎大家参加！