

数学与系统科学研究院

计算数学所学术报告

报告人: **Prof. Hailiang Liu**

(*Iowa State University, USA*)

报告题目:

**Structure Preserving Methods for
Fokker-Planck-type Equations**

邀请人: 周爱辉 研究员

报告时间: **2014 年 9 月 26 日 (周五)**

上午 10:00-11:00

报告地点: **数学院南楼七层 702**

会议室

Abstract:

Kinetic Fokker-Planck equations arise in many applications, and thus there has been considerable interest in the development of accurate numerical methods to solve them. The peculiar feature of these models is that the transient solution converges to certain equilibrium when time becomes large. For the numerical method to capture the long-time pattern of the underlying solution, some structure preserving methods have been designed to preserve physical properties exactly at the discrete level. I shall explain the main ideas and challenges through several examples, including the Fokker-Planck equation of the dumbbell model for polymers, a reaction-diffusion-advection equation for the evolution of biased dispersal of population dynamics, and a direct competitive selection model. Numerical results are reported to illustrate the capacity of the proposed algorithms.

欢迎大家参加!