

数学与系统科学研究院

计算数学所学术报告

报告人: **Prof. Hulin Wu**

(*University of Rochester*)

报告题目:

**Issues for High-Dimensional
Optimization, System Analysis and
Control in Systems Biology
Research**

邀请人: 袁亚湘 院士

报告时间: **2013 年 9 月 17 日 (周二)**

上午 9:00-10:00

报告地点: **科技综合楼三层 301**

计算数学所小报告厅

Abstract:

Systems biology research requires to mathematically quantify multi-scale biological systems using a high-dimensional complex dynamic model. First we need to identify the dynamic system and estimate the model parameters based on experimental data using statistical approaches. Then we need to study the properties of the high-dimensional dynamic system using system analysis approaches in order to determine whether a disease could alter the system properties. We may also need to design a controller such as a therapeutic intervention for an ill biological system in order to treat the disease. In this talk, I will review some of our work and propose challenging questions in high-dimensional optimization, system analysis and control in biological research. I will use a data set for human subjects with influenza infection to illustrate the methodologies.

欢迎大家参加!