

数学与系统科学研究院

计算数学所学术报告

报告人: **Associate Prof. Peijun Li**

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报告题目:

Inverse Random Source Problems

邀请人: 郑伟英 研究员

报告时间: 2016 年 7 月 11 日 (周一)

上午 10:00-11:00

报告地点: 科技综合楼三层

311 报告厅

Abstract:

This talk concerns the inverse source problems for several typical differential equations. The source is assumed to be a random function driven by an additive white noise. Given the random source, the direct problems are to determine the random solutions. The inverse problems are to reconstruct statistical properties of the source from the boundary measurements. Using the Helmholtz equation as an illustrative example, we consider both the direct and inverse problems. We show that the direct problem has a unique mild solution via a constructive proof. Using the mild solution, we derive effective Fredholm integral equations for the inverse problem. A regularized Kaczmarz method is developed by adopting multi-frequency scattering data to overcome the challenges of solving the ill-posed and large scale integral equations. Numerical experiments will be shown to demonstrate the efficiency of the proposed method.

欢迎大家参加！