数学与系统科学研究院

计算数学所学术报告

报告人：　**Dr. Yue Zhao**

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报告题目：

A spectral method for stochastic fractional PDEs using dynamically-orthogonal/bi-orthogonal decomposition

邀请人：　唐贻发 研究员

报告时间：**2021** 年 **11** 月 **27** 日（周六）

上午 **11:00-12:00**

报告地点：数学院南楼

702 教室

Abstract:

We consider a stochastic fractional diffusion-reaction equation and combine a Galerkin spectral method based on poly-fractonomials with the modal decomposition of the stochastic fields to formulate effective numerical methods for stochastic fractional partial differential equations. Specifically, we employ a generalized KL expansion and proper dynamically-orthogonal/bi-orthogonal (DO/BO) constraints to derive new Galerkin formulations for the mean solution, the time-dependent spatial basis, and the stochastic time-dependent coefficients. Both the DO and BO methods converge fast with respect to the number of modes, and they are especially effective for nonlinear problems and long-time integration for a modest number of stochastic dimensions.

欢迎大家参加！