数学与系统科学研究院

计算数学所学术报告

报告人：Prof. Yaushu Wong

（ *Department of Mathematical & Statistical Sciences, University of Alberta Edmonton, Alberta, CANADA* ）

报告题目：

Uncertainty Investigation in Nonlinear Aeroelastic Model

邀请人：　曹礼群研究员

报告时间：2011 年 6 月 24 日（周五）

上午 10：00-11：00

报告地点：　科技综合楼三层 301

计算数学所小报告厅

Abstract：

As numerical simulation and scientific computing have been widely used to solve complex problems in science and engineering, the study of uncertainty quantification is becoming more popular and they play an important role in the verification and validation process of the computed solutions.   It has been known that small variations in the system parameters and in the initial / boundary conditions could have a strong effect in the system response.

In this talk, we investigate the effects due to uncertainty in a nonlinear aeroelastic system. The uncertainty is introduced in the system parameters and in the initial conditions. In addition to the popular Monte Carlo simulations, we consider numerical techniques based on the polynomial chaos and the stochastic collocation methods. It will be demonstrated that the stochastic collocation method is an efficient and effective tool to study uncertainty quantification in an aeroelastic model. The results are in good agreement with those obtained using other numerical techniques, but it is straightforward to implement and requires less computing time.

Joint work with Jian Deng & Christina Adela Popescu

欢迎大家参加！