Abstract
Computer experiments, as an important branch in the uncertainty quantification (UQ) area, have become increasingly popular in all kinds of engineering and scientific fields. In this talk, some new developments in both experimental design and modeling for computer experiments are introduced. On experimental design, two methods are introduced. First, a coordinate-exchange based optimal design method is developed to handle the experiments with complicated constraints, which have become common nowadays, especially in computer experiments. Different design criteria are considered, including D-, linear, and $\phi_p$ space filling optimality. Then a column-wise construction method is briefly introduced for uniform design, another popular space filling design criterion. To analyze computer experiment outputs, several new modeling approaches are developed as alternatives of the Gaussian Process model. The advantages and disadvantages of these methods are discussed and compared. At last, a project on optimal placement of the wind turbines for wind farm is discussed. In this project, computer simulation, meta-modeling, and constrained design of experiments are all integrated.

About the Speaker
Lulu Kang is an Assistant Professor of the Department of Applied Math at Illinois Institute of Technology. She obtained her M.S. in Operations Research and Ph.D. in Industrial Engineering from the Stewart School of Industrial and Systems Engineering at Georgia Tech. Her research interests are in developing statistical theories and methodologies with applications in engineering,
including: computer experiments, design and analysis of experiments, Bayesian computational statistics, and statistical learning. She has a list of publications in Technometrics and Journal of Statistical Planning and Inference, etc, and has given talks at many international conferences.

Enquiry: 3442 8408

*All are Welcome!*