

Colloquium announcement

“New Experimental Design Methods for Computer Experiments”

Presented by
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Thursday, March 30, 2017
300 Seitz Hall
3:30 p.m.

Abstract: Computer experiments provide a competitive advantage in industry where fast and cost effective product development is critical. In many industrial applications computer experiments are replacing physical experiments because the physical creation and testing of prototypes is very prohibitive in terms of time and cost. Computer experiments typically involve complex systems with numerous input variables. A primary goal in the application of computer experiments is to develop a surrogate model – a good empirical approximation to the original complex computer model. This provides an easier and faster approach to sensitivity analysis, prediction and optimization. This talk will show some recent research involving academia-industry collaboration in order to address some experimental design challenges in the area of computer experiments. The first part of the talk discusses a new sequential design framework in order to quickly screen out inert factors, so that the final design is space-filling with respect to only the active factors. This can lead to better prediction accuracy and substantial savings in simulation resources. The second part of the talk discusses Robust Parameter Design using computer experiments. New experimental design methods for computer simulations involving noise factor are proposed. This new approach develops space-filling designs that distinguish control and noise factors because their distributional properties are entirely different.

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Please join us after the colloquium for refreshments at
Top of the Stairs (217 College Ave.)

