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Seminar

Speaker: **Professor Robert Gramacy**
University of Chicago

Title: **Local Gaussian process approximation for large computer experiments**

Time: **3:20 – 4:20pm, *Wednesday*, April 24, 2013**

Place: **552 Hill Center**

Abstract

We provide a new approach to approximate emulation of large computer experiments. By focusing expressly on desirable properties of the predictive equations, we derive a family of local sequential design schemes that dynamically define the support of a Gaussian process predictor based on a local subset of the data. We further derive expressions for fast sequential updating of all needed quantities as the local designs are built-up iteratively. Then we show how independent application of our local design strategy across the elements of a vast predictive grid facilitates a trivially parallel implementation. The end result is a global predictor able to take advantage of modern multicore architectures, while at the same time allowing for a nonstationary modeling feature as a bonus. We demonstrate our method on two examples utilizing designs sized in the thousands, and tens of thousands of data points. Comparisons are made to the method of compactly supported covariances.

Joint with Dan Apley at Northwestern.

*** Refreshments will be served at @2:50pm in Room 502 Hill Center ****