

STANFORD UNIVERSITY
DEPARTMENT OF STATISTICS
DEPARTMENTAL SEMINAR

4:15 p.m., Tuesday, April 1, 2003
Sequoia Hall Room 200
(Cookies at 3:45 in 1st Floor Lounge)

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Application-driven Sequential Designs for Simulation Experiments: Kriging Metamodeling

In this seminar I propose a novel method to select an experimental design for interpolation in simulation. Though I focus on Kriging in deterministic simulation, the method also applies to other types of metamodels (besides Kriging), and to stochastic simulation. I focus on simulations that require much computer time, so it is important to select a design with a small number of observations. The proposed method is therefore sequential. The novelty of the method is that it accounts for the specific input/output function of the particular simulation model at hand; i.e., the method is application-driven or customized. This customization is achieved through cross-validation and jackknifing. The new method is tested through two academic applications, which demonstrate that the method indeed gives better results than a design with a prefixed sample size.