

STATISTICS COLLOQUIUM

WEDNESDAY, MAY 02, 2012
TALK: 4:30 PM — SCIENCE CENTER RM. 300H

Li Zhu
Statistics Department
Harvard University

“Space-filling design with unknown constraints”

ABSTRACT

The defense deals with generating space-filling design in feasible regions of complex response surfaces with unknown constraints. Two different types of sequential design strategies are proposed with the objective of generating a sequence of design points that will quickly carve out the (unknown) infeasible regions and generate more and more points in the (unknown) feasible region. The generated design is space-filling (in some sense) within the feasible region. The first strategy is model independent, whereas the second one is model based. Theoretical properties of proposed strategies are derived and simulation studies are conducted to evaluate the performance of proposed strategies. The strategies are developed assuming that the response function is deterministic, and extensions are proposed for random response functions.