DEPARTMENT OF MATHEMATICAL SCIENCES

Colloquium

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Finding good designs for experiments

ABSTRACT: Suppose that there are N experimental units available for an experiment to compare v treatments. The experimental units may be all alike, or they make be partitioned into blocks, or there may be rows and columns. The design is the function allocating treatments to units. It is said to be optimal if it minimizes the average value of the variance of the estimator of the difference between two treatments.

How should we find an optimal design for any given situation, with specified values of N and v? There are some theorems that cover a few cases. These lead on to some general folklore that is not always correct. One combinatorial approach is to make use of pretty patterns, to find designs with high symmetry or regularity. Another is to make a computer search. Sometimes a good design is found by a lucky accident.

Friday, March 22, 2019
11:00AM-12:00PM
Stratton Hall 203