

# Using methods of stochastic optimization for constructing optimal experimental designs with cost constraints

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## Abstract

We propose a stochastic optimization method related to simulated annealing for constructing efficient designs of experiments under a broad class of linear constraints on the design weights.

The linear constraints can represent restrictions on various types of “costs” associated with the experiment.

To illustrate the method we computed  $D_A$ -optimal designs for estimating a set of treatment contrasts in the case of block experiments with blocks of size two.

## Keywords

Stochastic optimization, Design of experiment, Cost constraints, Block design.