

Qian, Peter Z. G.

Nested Latin hypercube designs. (English) Zbl 1179.62103
Biometrika 96, No. 4, 957-970 (2009).

Summary: We propose an approach to constructing nested Latin hypercube designs. Such designs are useful for conducting multiple computer experiments with different levels of accuracy. A nested Latin hypercube design with two layers is defined to be a special Latin hypercube design that contains a smaller Latin hypercube design as a subset. Our method is easy to implement and can accommodate any number of factors. We also extend this method to construct nested Latin hypercube designs with more than two layers. Illustrative examples are given. Some statistical properties of the constructed designs are derived.

MSC:

[62K10](#) Statistical block designs
[62K15](#) Factorial statistical designs
[65C60](#) Computational problems in statistics (MSC2010)
[05B15](#) Orthogonal arrays, Latin squares, Room squares

Cited in **1** Review
Cited in **20** Documents

Keywords:

computer experiments; design of experiments; Latin hypercube design; linking parameters; multi-fidelity computer model; sequential evaluation; space-filling designs

Full Text: [DOI](#)