Nested Latin hypercube designs

by

Peter Z. Q. Qian University of Wisconsin-Madison Department of Statistics 1300 University Ave, Madison, WI 53706 peterq@stat.wisc.edu

Abstract

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.