Entacher, K.; Schell, T.; Uhl, A.
Bad lattice points. (English) Zbl 1115.11048
Computing 75, No. 4, 281-295 (2005); erratum ibid. 77, No. 1, 129 (2006).

The authors present a way to find points with certain properties which has applications in pseudo-random number generation. They introduce and discuss the term “bad lattice points” which can be seen as a counterpart to the method of good lattice points for Monte Carlo and quasi-Monte Carlo integration. They show several examples of the occurrence of bad lattice points in the latter fields and perform a computer search for such point sets.

The presented mathematical background of the article proves the assertions and is clearly exposed.

Reviewer: Nicolae Constantinescu (Craiova)

MSC:

11K45 Pseudo-random numbers; Monte Carlo methods
11Y16 Number-theoretic algorithms; complexity
68W40 Analysis of algorithms

Keywords:
lattice rules; random number generation; spectral test

Software:
RngSteam

Full Text: DOI

References:


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