ICM 1998, Berlin, Aug. 18–27

Abstracts of Short Communications and Posters

Section:

14. Mathematical Aspects of Computer Science

1991 MS Classification: 62, 68

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A method for Computer Generation of Random Vectors.

In building-up simulation models, as well as in various numerical Monte-Carlo method calculation it is necessary to use the algorithms for computer generation of different types of random vectors. The problem considered here is to built-up an algorithm for generating a random sampling value of a given m-dimensional random vector X, when its probability density function $f(x), x \in \mathbb{R}^m$, is known. The method presented is based on transforming finite sequences of uniform random numbers into other random variates or vectors. Reference: S. Ştefănescu, and I. Văduca, On Computer Generation of Random Vectors by Transformations of Uniformly Distributed Vectors, Computing 39, 141 - 153 (1987)