

Efficient and Portable Multiple Recursive Generators of Large Order

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Abstract

DX Generator, proposed first by Deng and Xu (2003) is becoming well-known in the computer simulation and scientific computing community with its record-breaking period. DX generator is a special class of multiple recursive generators of prime modulus and a large order where all nonzero coefficients of the recurrence are equal. In this talk, we discuss some key issues and their solutions to find large order generators with the property of high-dimensional equidistribution and extremely long period length. Some specific generators will be presented with the period length approximately of $10^{14903.1}$.