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Parameter estimation, and random number generation to stable distributions

Csilla Csendes

Department of Applied Mathematics, University of Miskolc
e-mail: matcs@uni-miskolc.hu

Abstract

In this paper a robust parameter estimation based on the method of moments called probability integral transformation is represented. The method is used to determine the characteristic exponent α, the scale γ and location parameter δ of a univariate symmetric stable distribution simultaneously from a random sample. A simulation sequence is made to test the accuracy and robustness of the estimation. In the second part we describe algorithms to multivariate stable random number generation. In radial symmetric case we assume continuous spectral measure and it is discrete when using Zolotarev's formula. The simulation results are illustrated.

Keywords: α parameter, stable distributions, random number generation

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Csilla Csendes
University of Miskolc, Miskolc-Egyetemváros 3515 Hungary