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A method for approximate inversion of the hyperbolic CDF. (English) Zbl 1239.65008

Computing 69, No. 4, 291-303 (2002).

Summary: It has been observed by *E. Eberlein* and *U. Keller* [Bernoulli, 1, 281–299 (1995; [Zbl 0836.62107](#))] that the hyperbolic distribution fits logarithmic rates of returns of a stock much better than the normal distribution. We give a method for sampling from the hyperbolic distribution by the inversion method, which is suited for simulation using low discrepancy point sets. Instead of directly inverting the cumulative distribution function (CDF) we provide an approximation of the inverse function which is simple to obtain by standard numerical methods and which is fast to compute.

MSC:

[65C50](#) Other computational problems in probability (MSC2010)

[62D05](#) Sampling theory, sample surveys

[62E10](#) Characterization and structure theory of statistical distributions

[65R10](#) Numerical methods for integral transforms

[91G80](#) Financial applications of other theories

Cited in 1 Document

Keywords:

[hyperbolic model](#); [sampling by inversion](#); [QMC methods](#)

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