RcppZiggurat: Faster Normal Random Draws

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Keywords: Simulation, Random Number Generation, Rcpp

Random numbers following a Standard Normal distribution are of great importance when using simulations as a means for investigation. The Ziggurat method [3, 4] is one of the fastest methods to generate normally distributed random numbers while also providing excellent statistical properties. However, the original papers only introduced 32-bit versions.

This talk introduces the **RcppZiggurat** package [1]. It provides updated implementations of the Ziggurat generator suitable for 32- and 64-bit operating system. It compares the original implementations to several popular Open Source implementations of the Ziggurat generator.

The package provides a new implementation which embeds the generator into an appropriate *C++* class structure [2]. The performance of the different generator is investigated both via extended timings and through a series of statistical tests, including a suggested new test for testing Normal deviates directly.

The new generator can be called via the package; further integration into *R* is discussed briefly as well.

References

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