

The KM Random Number Generator

The **GAUSS** KM random number generators are based on a recur-with-carry KISS+Monster random number generator developed by George Marsaglia. This algorithm produces random integers between 0 and $2^{32} - 1$ and has a period of 10^{8859} (according to Marsaglia). This implementation of the KISS+Monster algorithm has been tested and seems to pass all of the Diehard tests. We welcome independent investigations into the characteristics of this generator. Aptech Systems, Inc. is currently in communication with Professor Marsaglia and we expect to have more detailed information on this generator at a later date.

Articles by Marsaglia leading to the KISS+Monster random number generator include:

1. Marsaglia, G. (2000) "The Monster, A Random Number Generator with Period over 10^{2857} Times as Long as the Previously Touted Longest-period One," unpublished.
2. Marsaglia, G. (1996) "DIEHARD: A Battery of Tests of Randomness," <http://stat.fsu.edu/~geo>
3. Marsaglia, G. (1993) "Monkey Tests for Random Number Generators," Computers and Mathematics with Applications, 26, 1–10
4. Marsaglia, G. (1984) "A Current View of Random Number Generators," Proceedings of Computer Science and Statistics: 16th Symposium on the Interface, Atlanta
5. Marsaglia, G. (1972) "The Structure of Linear Congruential Sequences," Applications of Number Theory to Numerical Analysis, Academic Press
6. Marsaglia, G. (1968) "Random Numbers Fall Mainly in the Planes," Proceedings of the National Academy of Sciences of the United States of America, 60, pp. 25–28

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