Pseudo-Random Number Generation

`.Random.seed` is an integer vector, containing the random number generator (RNG) state for random number generation in R. It can be saved and restored, but should not be altered by the user.

`RNGkind` is a more friendly interface to query or set the kind of RNG in use.

Pseudo-Random Number Generation

`RNGversion` can be used to set the random generators as they were in an earlier R version (for reproducibility).

`set.seed` is the recommended way to specify seeds.

Pseudo-Random Number Generation

- Mersenne Twister(MT) is a pseudorandom number generating algorithm developped by Makoto Matsumoto and Takuji Nishimura (alphabetical order) in 1996/1997.
- An improvement on initialization was given on 2002 Jan.

Mersenne Twister

The Mersenne Twister has the following merits:

- It is designed with consideration on the flaws of various existing generators.
- The algorithm is coded into a C-source downloadable below.
- Far longer period and far higher order of equidistribution than any other implemented generators. (It is proved that the period is $2^{1}9937 - 1$, and 623-dimensional equidistribution property is assured.)

Mersenne Twister

- Fast generation. (Although it depends on the system, it is reported that MT is sometimes faster than the standard ANSI-C library in a system with pipeline and cache memory.) (Note added in 2004/3: on 1998, usually MT was much faster than rand(), but the algorithm for rand() has been substituted, and now there are no much difference in speed.)
- Efficient use of the memory. (The implemented C-code mt19937.c consumes only 624 words of working area.)