

A FAST VECTORISED IMPLEMENTATION OF WALLACE'S NORMAL RANDOM NUMBER GENERATOR

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ABSTRACT

Wallace has proposed a new class of pseudo-random generators for normal variates. These generators do not require a stream of uniform pseudo-random numbers, except for initialisation. The inner loops are essentially matrix-vector multiplications and are very suitable for implementation on vector processors or vector/parallel processors such as the Fujitsu VPP300. In this report we outline Wallace's idea, consider some variations on it, and describe a vectorised implementation RANN4 which is more than three times faster than its best competitors (the Polar and Box-Muller methods) on the Fujitsu VP2200 and VPP300.

COMMENTS

Only the Abstract is given here. The full report appeared as [3] and a preliminary version as [2]. The idea is to vectorize Wallace's method [5]. For earlier (and slower) methods, see [1, 4].

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