Wilson, Mark C.
Random and exhaustive generation of permutations and cycles. (English) Zbl 1231.68281 Ann. Comb. 12, No. 4, 509-520 (2009).

Summary: In 1986 Sattolo introduced a simple algorithm for uniform random generation of cyclic permutations on a fixed number of symbols. This algorithm is very similar to the standard method for generating a random permutation, but is less well known. We consider both methods in a unified way, and discuss their relation with exhaustive generation methods. We analyse several random variables associated with the algorithms and find their grand probability generating functions, which gives easy access to moments and limit laws.

MSC:
68W20 Randomized algorithms
68W40 Analysis of algorithms
68W99 Analysis of algorithms and problem complexity
05A05 Permutations, words, matrices

Keywords:
Sattolo's algorithm; Mahonian permutation statistic

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