Archibald, M.; Knopfmacher, A.
The water capacity of geometrically distributed words. (English) [Zbl 07373769] Aequationes Math. 95, No. 4, 777-796 (2021)

Summary: We consider the bargraph representation of geometrically distributed words, which we use to define the water capacity of such words. We first find a bivariate capacity generating function for all geometrically distributed words, from which we compute the generating function for the mean capacity. Thereafter, by making extensive use of Rice’s method (Rice’s integrals) we derive an asymptotic formula for the average capacity of random words of length $n$ as $n$ tends to infinity.

MSC:
68R15 Combinatorics on words
05A16 Asymptotic enumeration
05A05 Permutations, words, matrices

Keywords:
geometric random variable; water capacity; bargraph; generating function

Full Text: DOI

References:

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