

Bender, Edward A.; Canfield, E. Rodney; Richmond, L. Bruce; Wilf, Herbert S.
A discontinuity in the distribution of fixed point sums. (English) [Zbl 1011.05009](#)
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Summary: The quantity $f(n, r)$, defined as the number of permutations of the set $[n] = \{1, 2, \dots, n\}$ whose fixed points sum to r , shows a sharp discontinuity in the neighborhood of $r = n$. We explain this discontinuity and study the possible existence of other discontinuities in $f(n, r)$ for permutations. We generalize our results to other families of structures that exhibit the same kind of discontinuities, by studying $f(n, r)$ when “fixed points” is replaced by “components of size 1” in a suitable graph of the structure. Among the objects considered are permutations, all functions and set partitions.

MSC:

[05A17](#) Combinatorial aspects of partitions of integers
[05A20](#) Combinatorial inequalities
[05A16](#) Asymptotic enumeration
[11P81](#) Elementary theory of partitions

Keywords:

[permutation](#)

Full Text: [EMIS](#) [EuDML](#) [arXiv](#)