

Zbl 469.10037**Burr, Stefan A.; Erdős, Paul***Completeness properties of perturbed sequences.* (In English)**J. Number Theory 13, 446-455 (1981). [0022-314X]**

For each sequence S of positive integers, denote by $P(S)$ the set of integers representable as a sum of distinct terms of S . The sequence S is called complete if $P(S)$ contains all large integers, entirely complete if $P(S)$ contains all positive integers, strongly complete if S remains complete after the removal of a finite number of terms and subcomplete if $P(S)$ contains an infinite arithmetic progression (the definition on p. 446 has “any” instead of “an”). Completeness is a delicate property in the sense that it can be destroyed by the removal of a few terms of the sequence. It is shown that even the less restrictive property of subcompleteness is not very robust since any sequence can be perturbed by adding integers (possibly ≤ 0) of moderate modulus to each term to yield a sequence satisfying rather mild growth conditions which is strongly complete. On the other hand it is shown that sufficiently rapidly growing sequences are not complete and that certain classes of perturbations of particular sequences are not complete. A number of open questions arising from this work are also discussed.

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11B25 Arithmetic progressions

11A99 Elementary number theory

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sequence of positive integers; sum of distinct terms; completeness; subcompleteness; incompleteness