

Zbl 161.04703

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On sequences of distances of a sequence (In English)

Colloq. Math. 17, 191-193 (1967). [0010-1354]

Let $A = \{a_1 < a_2 < \dots\}$ be a sequence of positive integers and $D(A) = \{d_1 < d_2 < \dots\}$ the sequence of integers of the form $a_i - a_j$, $i > j$. A subsequence B of $D(A)$ will be called avoidable if there is an infinite subsequence A' of A such that $D(A')$ contains no term of B . The authors prove:

(1) To every A there is a $B \subset D(A)$ of density $< \varepsilon$ in $D(A)$ which is not avoidable.

(2) If A has positive lower density in $N = \{1, 2, \dots\}$ and B has lower density 0 in N then B is avoidable.

The authors give an example of sequences A and B , such that $B \subset D(A)$ and has lower density 0 in $D(A)$ and is not avoidable and also give two sufficient conditions for avoidability.

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Classification:

11B83 Special sequences of integers and polynomials

11B05 Topology etc. of sets of numbers