

Brown, T. C.; Freedman, A. R.**Arithmetic progressions in lacunary sets.** (English) Zbl 0632.10052
Rocky Mt. J. Math. 17, 587-596 (1987).

One of the well-known Erdős conjectures says: If for a set A of positive integers the series $\sum_{a \in A} a^{-1}$ diverges then A contains a k -term arithmetic progression for all $k \geq 1$. In the paper some observations regarding this conjecture are made and several special cases of the conjecture are proved.

For instance, the following statement is equivalent to the above conjecture: For each positive integer k there exists T such that if $\sum_{a \in A} a^{-1} > T$ then A contains a k -term arithmetic progression. Or, if A is M -lacunary (i.e. if the sequence of differences of consecutive terms of A is non-decreasing and tends to infinity) and $\sum_{a \in A} a^{-1} = \infty$, then A satisfies the Erdős conjecture, etc.

Reviewer: Št.Porubský

MSC:**11B25** Arithmetic progressions
11N13 Primes in congruence classesCited in **2** Reviews
Cited in **13** Documents**Keywords:**Szemerédi's theorem; Erdős conjecture; lacunary sequence; k -term arithmetic progression**Full Text:** [DOI](#)