The sequence A of nonnegative integers is an asymptotic basis of order h if every sufficiently large integer can be written as the sum of h elements of A. Let M_h^A denote the et of elements that have more than one representation as a sum of h elements of A. It is proved that there exists an asymptotic basis A such that

$$M_h^A(x) = 0(x^{1-1/h+\varepsilon})$$

for every $\varepsilon > 0$. An asymptotic basis A of order h is minimal if no proper subset of A is an asymptotic basis of order h. It is proved that there does not exist a sequence A that is simultaneously a minimal basis of orders 2,3, and 4. Several open problems concerning minimal bases are also discussed.

Classification:
11B13 Additive bases

Keywords:
minimal asymptotic bases