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Erdős, Paul; Nicolas, J.L.
On practical partitions. (In English)
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Let $\mathcal{A} = \{a_1 = 1 < a_2 < \cdots < a_k < \dots\}$ be an infinite subset of $\mathbb{N}$. A partition of n with parts in $\mathcal{A}$ is a way of writing $n = a_{i_1} + a_{i_2} + \cdots + a_{i_j}$ with $1 \le i_1 \le i_2 \le \cdots \le i_j$. An integer a is said to be represented by the above partition, if it can be written $a = \sum_{r=1}^{j} \varepsilon_r a_{i_r}$ with $\varepsilon_r = 0$ or 1. A partition will be called practical if all a's, $1 \le a \le n$, can be represented. When $\mathcal{A} = \mathbb{N}$, it has been proved by P. Erdős and M. Szalay that almost all paritions are practical. In this paper, a similar result is proved, first when $a_k = 2^k$, secondly when $a_k \ge k a_{k-1}$. Finally an example due to D. Hickerson gives a set $\mathcal{A}$ and integers n for which a lot of non practical partitions do exist.

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