

LA CONJECTURE DE DICKSON ET CLASSES PARTICULIÈRES D'ENTRIERS

ABDELMADJID BOUDAUD

Topic #3: *Nonstandard Methods in Combinatorial Number Theory.*

As a consequence of Dickson's Conjecture, we prove, for each couple of integers $q > 0$ and $k > 0$, the existence of an infinite set $L_{q,k} \subset \mathbb{N}$ such that, for each $n \in L_{q,k}$ and every integer s , $0 < |s| \leq q$, we have $n + s = |s| t_1 \dots t_k$ where $t_1 < \dots < t_k$ are prime numbers.

Similarly, we prove the existence of an infinite set $M_{q,k} \subset \mathbb{N}$ such that, for each $n \in M_{q,k}$ and every integer $s \in [-q, q]$ (including 0), we have $n + s = l t_1 \dots t_k$ where $t_1 < \dots < t_k$ are prime numbers and $l \in [1, 2q + 1]$ is an integer.

The nonstandard interpretation of this result suggests the following question: Is every unlimited integer equal to the sum of a limited integer and a product of two unlimited integers? We present families of integers in which each unlimited member is a product of two unlimited integers.

DÉPARTEMENT DE MATHÉMATIQUES, UNIVERSITÉ DE M'SILA, ALGÉRIE
E-mail address: boudaoudab@yahoo.fr