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Aaron Pixton* (apixton@princeton.edu). *Sequences with small subsum sets.*

Gao and Leader made the following conjecture: if $X = (x_i)_{i=1}^n$ is a sequence of length n in a finite abelian group of exponent n , then either some subsequence of X sums to zero or the set of all sums of subsequences of X has cardinality at least $2n - 1$. This conjecture turns out to be a simple consequence of a theorem of Olson and White; we investigate generalizations that are not implied by this theorem. In particular, we prove the following result: if $X = (x_i)_{i=1}^n$ is a sequence of length n , the terms of which generate a finite abelian group of rank at least 3, then either some subsequence of X sums to zero or the set of all sums of subsequences of X has cardinality at least $4n - 5$. (Received September 13, 2007)