

On some zero-sum invariants for abelian groups of rank three

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Abstract. Let G be an additive finite abelian group with exponent $\exp(G)$. For $L \subseteq \mathbb{N}$, let $\mathfrak{s}_L(G)$ be the smallest integer ℓ such that every sequence S over G of length ℓ has a zero-sum subsequence T of length $|T| \in L$. In this paper, we consider the invariants $\mathfrak{s}_{[1, \ell]}(G)$ and $\mathfrak{s}_{\{k \exp(G)\}}(G)$ (with $k \in \mathbb{N}$). We obtain precise values as well as upper bounds of the above invariants for some abelian groups of rank three. Some of these results improve previous results of Gao–Thangadurai and Han–Zhang.

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