

ON MONOIDS OF WEIGHTED ZERO-SUM SEQUENCES

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Let G be an additive abelian group and let $\Gamma \subseteq \text{End}(G)$ be a subset of the endomorphism group of G . A sequence $S = g_1 \cdot \dots \cdot g_\ell$ of terms from G is a Γ -weighted zero-sum sequence if there are $\gamma_1, \dots, \gamma_\ell \in \Gamma$ such that $\gamma_1(g_1) + \dots + \gamma_\ell(g_\ell) = 0$. We consider algebraic and arithmetic properties of the monoid $\mathcal{B}_\Gamma(G)$ of all Γ -weighted zero-sum sequences. A focus will be on the case when $\Gamma = \{\text{id}, -\text{id}\}$.

REFERENCES

- [1] S. Boukheche, K. Merito, O. Ordaz, and W.A. Schmid, Monoids of sequences over finite abelian groups defined via zero-sums with respect to a given set of weights and applications to factorizations of norms of algebraic integers, *Commun. Algebra* **50** (2022), 4195 – 4217.
- [2] F. Fabsits, A. Geroldinger, A. Reinhart, and Q. Zhong, On monoids of plus-minus weighted zero-sum sequences: The isomorphism problem and the characterization problem, *J. Commutative Algebra* **16** (2024), 1 – 23.
- [3] A. Geroldinger, F. Halter-Koch, and Q. Zhong, On monoids of weighted zero-sum sequences and applications to norm monoids in Galois number fields and binary quadratic forms, *Acta Math. Hung.* **168** (2022), 144 – 185.

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