

A Factorization-Theoretic Perspective on Power Monoids

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Let H be a multiplicative monoid, and let $\mathcal{P}_{\text{fin},1}(H)$ denote its reduced power monoid, that is, the monoid (under setwise multiplication) of all finite subsets of H containing the identity. Since $\mathcal{P}_{\text{fin},1}(H)$ is non-cancellative whenever H is nontrivial, it plays a central role in a general theory of factorization recently introduced by Cossu and Tringali, which studies decompositions into “irreducible” factors in monoids that may admit nontrivial idempotents. Within this framework, we investigate arithmetic aspects of $\mathcal{P}_{\text{fin},1}(H)$.

REFERENCES

- [1] L. Cossu, S. Tringali, *On the arithmetic of power monoids*, J. Algebra **686** (2026), 793–813.

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