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*Wasserstein distance for generalized persistence modules and abelian categories*

In persistence theory and practice, measuring distances between modules is central. The Wasserstein distances are the standard family of  $L^p$  distances (with  $1 \leq p \leq \infty$ ) for persistence modules. We give an algebraic formulation of these distances. For  $p = 1$  the distance generalizes to abelian categories and for arbitrary  $p$  it generalizes to Krull-Schmidt categories. These distances may be useful for the computation of distance between generalized persistence modules. This is joint work with Peter Bubenik and Donald Stanley.