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Multiparameter persistence modules in the large scale

A persistence module with d discrete parameters is a diagram of vector spaces indexed by the poset $\mathbb{N}^d$. If we are only interested in the large scale behavior of such a diagram, then we can consider two diagrams equivalent if they agree outside of a "negligeable" region. In the 2-dimensional case, we classify the indecomposable diagrams up to finitely supported diagrams. In higher dimension, we partially classify the indecomposable diagrams up to suitably finite diagrams.

Along the way, we classify the tensor closed Serre subcategories of the category of finitely generated d-parameter persistence modules: they are in bijection with the simplicial complexes on d vertices. This is joint work with Don Stanley.