

# **Persistence Steenrod modules**

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## *Abstract*

It has long been envisioned that the strength of the barcode invariant of filtered cellular complexes could be increased using cohomology operations. Leveraging recent advances in the computation of Steenrod squares, we introduce a new family of computable invariants on mod 2 persistent cohomology termed Steenrod barcodes. We present a complete algorithmic pipeline for their computation and illustrate their real-world applicability using the space of conformations of the cyclo-octane molecule.