

## **Towards homotopical foundations for topological data analysis**

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Motivated by the problem of comparing different constructions of ordinary cohomology, Eilenberg and Steenrod gave an axiomatic characterization of a (co)homology theory on spaces. Subsequently, cohomology has come to be viewed as a reflection of the underlying homotopy theory of spaces. In this talk, I want to outline the problem of providing an analogous framework for understanding the invariants of topological data analysis; I will describe progress so far as well as many open questions. (This talk describes joint work with Lesnick and Mandell.)