

ON THE EFFECTIVENESS OF PERSISTENT HOMOLOGY

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Persistent homology (PH) is, arguably, the most widely used method in Topological Data Analysis. In the last decades it has been successfully applied to a variety of applications, from predicting biomolecular properties, to discriminating breast-cancer subtypes, classifying fingerprints, or studying the morphology of leaves. At the same time, the reasons behind these successes are not yet well understood. We believe that for PH to remain relevant, there is a need to better understand why it is so successful. In this talk I will discuss recent work that tries to take a first step in this direction. The talk is based on joint work with Renata Turkeš and Guido Montúfar.