

1154-55-2154 **Brett A. Jefferson*** (brett.jefferson@pnnl.gov). *An Investigation Using Homology and Inverted Distances*. Preliminary report.

Persistent homology has been gaining traction as a tool for studying patterns in real-world data-sets. We have sought to understand a slight variant on the typical computation of homology of a metric space. This exposition will survey that work. We include early findings from computations on samples from common spaces (the circle, the disc, and the square), one conjecture and one lemma regarding 1-dimensional cycles, and an application to simulated data. (Received September 17, 2019)