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Binod Rimal* (brimal2014@fau.edu) and **William Hahn**. *Compressed Topological Data Analysis*.

The Johnson-Lindenstrauss lemma concerns the existence of embeddings such that the geometry of a point cloud is approximately preserved when mapping from a high dimensional space to a lower-dimensional space. Random matrices, which w.h.p. satisfy the restricted isometry property, allow data to be mapped to a lower dimension before computing persistent topology. In this talk, we discuss techniques for computing persistence diagrams directly from lower dimensional random projections. We analyze a synthetic classification problem and examine the performance of topological data analysis on compressed persistence diagrams through the machine learning technique. (Received August 03, 2020)