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80523. *Multidimensional scaling: Infinite Metric Measure Spaces.*

Multidimensional scaling (MDS) is a popular technique for mapping a finite metric space (X, d_X) into a lowdimensional Euclidean space in a way that best preserves pairwise distances. We are studying a notion of MDS on infinite metric measure spaces, along with its optimality properties and goodness of fit. Furthermore, we hope to address questions on convergence of MDS. For instance, if a sequence of metric measure spaces converges to a metric measure space X , then in what sense do the MDS embeddings of these spaces converge to the MDS embedding of X ? Convergence is well-understood when each metric space has the same finite number of points, but we are also interested in convergence when the number of points varies and is possibly infinite. (Received August 22, 2018)