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Karamatou Yacoubou Djima* (kyacouboudjima@amherst.edu), **Linda Ness, Melanie Weber** and **Patricia Medina**. *Heuristic Framework for Multi-Scale Testing of the Multi-Manifold Hypothesis*.

Global linear models often overestimate the number of parameters required to analyze or efficiently represent datasets, for example when a data set is sampled from a manifold of lower dimension than the ambient space. The manifold hypothesis consists in asking whether the data lies on or near a d -dimensional manifold or is sampled from a distribution supported on a manifold. In this talk, we outline a heuristic framework for a hypothesis test suitable for computation and empirical data analysis. We consider two datasets made of multiple manifolds and test our manifold hypothesis on a set of spline-interpolated manifolds constructed based variance-based intrinsic dimensions computed from the data. (Received January 13, 2020)