

# Multi-manifold data modeling via spectral curvature clustering

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We propose a fast multi-way spectral clustering algorithm for multi-manifold data modeling, i.e., modeling data by mixtures of manifolds (possibly intersecting). We describe the supporting theory as well as the practical choices guided by it. We first develop the case of hybrid linear modeling, i.e., when the underlying manifolds are affine subspaces in a Euclidean space, and then we extend this setting to more general manifolds. We exemplify the practical use of the algorithm by demonstrating its successful application to problems of motion segmentation.