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Kernel-estimated Nonparametric Overlap-Based Syncytial Clustering.

Standard clustering algorithms usually find regular-structured clusters such as ellipsoidally- or spherically-dispersed groups, but are more challenged with groups lacking formal structure or definition. Syncytial clustering is the name that we introduce for methods that merge groups obtained from standard clustering algorithms in order to reveal complex group structure in the data. Here, we develop a distribution-free fully-automated syncytial clustering algorithm that can be used with k-means and other algorithms. Our approach computes the cumulative distribution function of the normed residuals from an appropriately fit k- groups model and calculates the nonparametric overlap between each pair of groups. (Received September 17, 2019)