Hierarchical Clustering from Vertex Links

ShengLi Tzeng

Department of Applied Mathematics, National Sun Yat-sen University

Abstract

We implemented the hierarchical clustering for spatial data. It requires clustering results not only homogeneous in non-geographical features among samples but also geographically close to each other within a cluster. We modfied typically used hierarchical agglomerative clustering algorithms to introduce the spatial homogeneity, by considering geographical locations as vertices and converting spatial adjacency into whether a shared edge exists between a pair of vertices. The main function HCV obeying constraints of the vertex links automatically enforces the spatial contiguity property at each step of iterations. In addition, two methods to find an appropriate number of clusters and to report cluster members are also provided.

Keywords: R package, spatial clustering, spatial contiguity