

Supplementary material

Several software packages are available for kernel density estimation and calculating local measures of spatial autocorrelation. Here we provide a few examples.

Kernel density estimation

In the ArcMap the Spatial Analyst's Density function, enables kernel density estimation. This tool will accept point data with or without attributes. The kernel has a quartic form to enable computation of large data sets. There is no functionality within ArcMap to select statistically optimized kernel bandwidths. The free-ware R has several libraries that are more flexible for kernel density estimation. For beginners we recommend the package developed by Bowman and Azzalini (1997) called **sm**.

Local measures of spatial autocorrelation

The ArcMap Spatial Statistics ToolBox may be used has tools for calculating G_i^* and Moran's I_i . These tools are limiting in that they only allow neighbourhoods to be selected based on distance. For Moran's I_i a much more flexible tool is GeoDa, freeware developed by Dr. Luc Anselin's Spatial Analysis Laboratory (SAL) in the Dept of Geography at the Univ. of Illinois, Urbana-Champaign. Computation of G_i^* and Moran's I_i can also be carried out using free-ware called point pattern analysis (PPA) developed by Jared Aldstadt, DongMei Chen and Arthur Getis at San Diego State Univ. <<http://www.nku.edu/~longa/cgi-bin/cgi-tcl-examples/generic/ppa/ppa.cgi>>, although it is helpful to have GIS software for visualizing results.