Insightful™
intelligence from data

S+ SpatialStats®

S+SpatialStats is the first comprehensive, object-oriented software package for the analysis of spatial data. Providing a whole new set of analysis tools, S+SpatialStats was created specifically for the exploration and modeling of spatially correlated data.

Taking full advantage of the object-oriented methods and modeling language of S-PLUS, S+SpatialStats allows you to analyze data with spatial structure thoroughly and correctly.

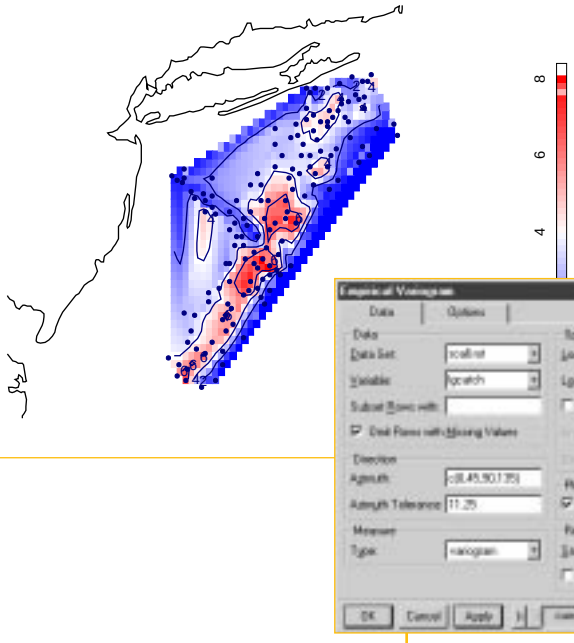
S+SpatialStats can be used to analyze data arising in technical areas such as environmental science, mining and petroleum engineering, natural resources, geography, epidemiology, demography, and others where data is sampled spatially.

S+SpatialStats provides tools specifically developed for the exploratory data analysis and modeling of three broad classes of spatial data: geostatistical data, point patterns, and lattice data.

S+SpatialStats operates in conjunction with S-PLUS, the most powerful data analysis software available today. S-PLUS is based on the object-oriented S language developed at Lucent Technologies specifically for analyzing scientific and technical data. S-PLUS contains a rich set of analysis, visualization, and modeling tools, including a complete suite of classical and robust methods.

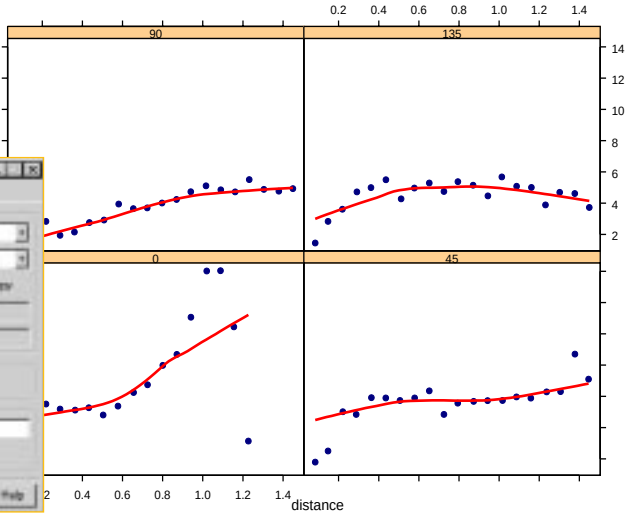
When you combine S+SpatialStats with S-PLUS, you'll have the complete control and freedom you need to develop a thorough, penetrating analysis of your spatial data.

Scallop Abundance Along East Coast



Scallop abundance data were collected in the Atlantic Ocean off the northeast U.S. coast. The scatter plots display variograms for the abundance data in four directions. The different shapes for each direction indicate an anisotropic system.

Directional Variogram for Rotated Scallop Abundance Data



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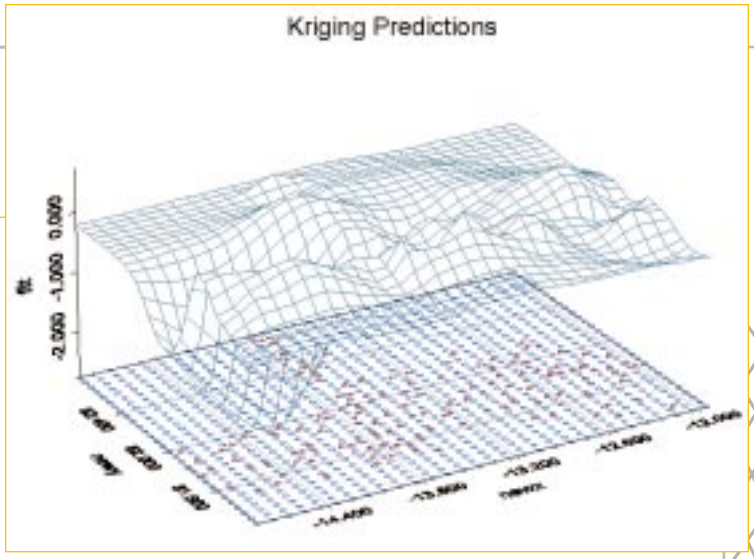
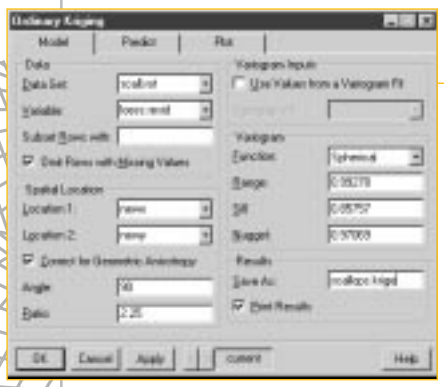
Scallop abundance data: Surface plot of the kriging predictions for logged scallops total catch. The projected points depict the sampling and the prediction locations.





Features

- Menu-based graphical user interface
- Object-oriented programming environment

Geostatistical Data

- Contour plots
- 3-D point clouds
- Variogram plots and boxplots
- Directional variograms and correlograms for exploring anisotropy
- Empirical variogram estimation including robust methods
- Variogram model fitting including spherical and exponential
- Ordinary and universal kriging
- Block and Point Kriging prediction at arbitrary locations with standard errors
- Parametric and nonparametric trend surfaces

Point Patterns

- Point maps that include region boundaries
- Spatial randomness tests
- Ripley's K-functions
- Simulation of spatial random processes
- Local intensity estimation

Lattice Data

- "Binning" of high density data into a regular lattice of counts
- Geary and Moran spatial autocorrelation coefficients
- Spatial regression models including conditional and simultaneous autoregressive models
- Nearest neighbor search routines
- Visualization of neighbor structures

System Requirements

Windows System Requirements

- S+SpatialStats version 1.5 requires the S-PLUS data analysis package version 2000 or later for operation.
- Pentium processor with 96MB of memory running Microsoft Windows NT, ME, 95, 98, 2000.

UNIX/Linux System Requirements

- S+SpatialStats version 1.5 requires the S-PLUS data analysis package version 5.1 or later for operation.
- Sun Solaris 2.6 or later on SPARC 32-bit architecture, Sun Solaris 2.7 or later on SPARC 64-bit architecture, SGI IRIX 6.5 or later, Compaq Alpha running Tru64 UNIX 4.0F or later, HP-UX 11.0 or later, Red Hat Linux 6.1 or later or SuSE Linux 6.4 or later.

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