

# Map Analysis – Understanding Spatial Patterns and Relationships

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Special session at GeoTec 2008, Wednesday, June 4 from 10:30 - 11:00am in Capital Hall 2A

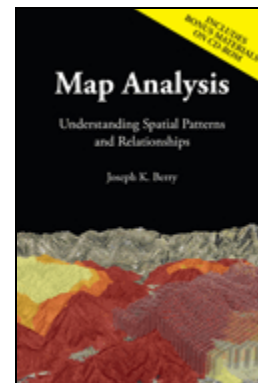
## **Abstract**

Increasing popularity of inexpensive and easy-to-use desktop mapping systems has fueled introductory GIS courses and sections in a variety of disciplines on most campuses. Textbooks and supplemental teaching materials support basic concepts and procedures, such as data issues, thematic mapping, geo-query and display. However, the bulk of the introductory materials focus on vector data processing with negligible reference to grid-based map analysis. What has been lacking is an inexpensive and easy-to-use grid-based package that seamlessly interfaces with desktop mapping systems and supports a variety of instructional settings from formal classes to independent self-learning projects. This special session describes the topics and exercises in the book *Map Analysis – Understanding Spatial Patterns and Relationships* (Berry, GeoTec Media 2007; \$45; [www.innovativegis.com/basis/Books/MapAnalysis/](http://www.innovativegis.com/basis/Books/MapAnalysis/)).

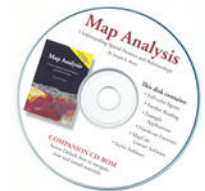
## **General Description**

The **Map Analysis** book is a collection of selected works from of Joe Berry's popular "Beyond Mapping" columns published in GeoWorld magazine from 1996 through 2006. In this compilation Berry develops a structured view of important concepts, considerations and procedures involved in grid-based map analysis. The companion CD contains further readings and software for hands-on experience with the material presented.

While numerous books focus on Geographic Information Systems (GIS) capabilities of computer mapping and spatial database management, few provide an understanding of its analytical potential and practical realities in a non-technical manner. The unique character of this book draws from the author's ability to convey seemingly complex concepts of spatial data and GIS operations in words that resonant with others less technically versed. The result is a book that engages the reader to "think spatially" and formulate new and innovative solutions to complex spatial problems. Key to this process is a paradigm shift that extends the traditional paper map perspective of "where is what" to the modern perspective of "why and so what." Within this context, maps become data and map analysis becomes the means to derive information about spatial patterns and relationships within and among map layers



Berry, J.K., 2007  
GeoTec Media  
224 pages; \$45



To order—

[www.geoplace.com/books/mapanalysis](http://www.geoplace.com/books/mapanalysis)

## **Book Topics and Organization**

The **Map Analysis** book is organized into ten topics and specially designed resources that lead the reader from an understanding of the fundamental nature of mapped data through a series of basic procedures used in deriving, analyzing and applying spatial information. A case study approach is used with each topic area describing the application of a set of related analysis techniques.

**Introduction — Data Structure Implications — Fundamental Map Analysis Approaches —  
Basic Techniques in Spatial Analysis — Calculating Effective Distance — Calculating Visual Exposure —  
Summarizing Neighbors — Basic Spatial Modeling Approaches — Spatial Modeling Example —  
Basic Techniques in Spatial Statistics — Spatial Data Mining — Epilog — Appendix/Resources**

The discussion in each Topic is supported by a comprehensive set of CD materials providing extended readings and practical experience in applying the techniques.

**Links to Further Reading** sections provide hyperlinks to other GeoWorld Beyond Mapping columns, feature articles and papers extending each Topic's discussion — **Hands-on Experience** sections provide links to thoroughly annotated, step-by-step exercises using the supplied software and databases — **Full-color/resolution Figures** are included — **Instructor Materials** are available for presenting three levels of courses: four-hour Awareness session with real-time demos, eight-hour Introductory session with hands-on exercises and all course materials for a UG/Grad formal course including slide sets, advanced exercises, databases, study questions and exams