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Rediscovering the World

Map Transformations of Human and Physical Space

'We need new maps' is the central claim made in this book. In a world increasingly influenced by human action and interaction, we still rely heavily on mapping techniques that were invented to discover unknown places and explore our physical environment. Although the traditional concept of a map is currently being revived in digital environments, the underlying mapping approaches are not capable of making the complexity of human-environment relationships fully comprehensible. Starting from how people can be put on the map in new ways, this book outlines the development of a novel technique that stretches a map according to quantitative data, such as population. The new maps are called gridded cartograms as the method is based on a grid onto which a density-equalising cartogram technique is applied. The underlying grid ensures the preservation of an accurate geographic reference to the real world.

Features

► Outstanding doctoral thesis nominated for a Springer Theses Prize by the University of Sheffield, United Kingdom ► Contains a large number of innovative, full-color maps that change our understanding of the world ► This thesis has won the 2012 Germany Study Award by the Körber-Stiftung

Contents

Introduction.- Cartography and globalization.- Creating gridded cartograms.- The human shape of the planet.- Towards a gridded cartogram.- Applications for gridded cartograms.

Fields of interest

Geographical Information Systems/Cartography; Computer Imaging, Vision, Pattern Recognition and Graphics

Target groups

Research

Product category

Monograph

Due February 2013

2013. XIII, 260 p. 104 illus., 94 in color. (Springer Theses) Hardcover

► *€ (D) 106,95 | € (A) 109,95 | sFr 133,50
► € 99,95 | £90.00

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Due December 2012

2013. XXI, 251 p. 57 illus. (Lecture Notes in Mobility) Hardcover

► *€ (D) 106,95 | € (A) 109,95 | sFr 133,50
► € 99,95 | £90.00

ISBN 978-3-642-34734-4

Institute for Mobility Research (if, Institute for Mobility Research (ifmo), Munich, Germany (Ed)

Megacity Mobility Culture

How Cities Move on in a Diverse World

What determines how cities move on? The ever-increasing challenges to urban mobility come in many forms, and approaches to address them range from the technically ingenious to attempts to change travel behaviour. Key amongst factors essential to the success of any such approach is whether the urban environment proves to be fertile ground for the desired progress. Another vital determinant of success is how well individual measures to engineer the transport system interact with other developments. This leads to the principal subject of Megacity Mobility Culture: the basic principles that determine the paths along which cities move. This book demonstrates that the concept of 'mobility culture' provides a framework for understanding the development of urban transport which transcends the boundaries between academic disciplines. Based on a discussion of the diversity of megacities worldwide, it provides help in navigating the complexity of megacity mobility culture.

Features

► Presents issues and peculiarities of urban transport systems including concrete examples ► Bridges engineering and social sciences by addressing topics related to mobility culture ► Provides decision makers with expert knowledge

Contents

Setting the Context.- The Reader's Guide to Mobility Culture.- Stories from the Megacity.- Perspectives for Megacities on the Move.- the Seven Mobility Culture Temperaments of Cities.

Fields of interest

Landscape/Regional and Urban Planning; Civil Engineering; Regional/Spatial Science

Target groups

Professional/practitioner

Product category

Monograph

X. Luo, KIT, Karlsruhe, Germany

GPS Stochastic Modelling

Signal Quality Measures and ARMA Processes

Global Navigation Satellite Systems (GNSS), such as GPS, have become an efficient, reliable and standard tool for a wide range of applications. However, when processing GNSS data, the stochastic model characterising the precision of observations and the correlations between them is usually simplified and incomplete, leading to overly optimistic accuracy estimates.

Features

► Outstanding doctoral thesis nominated for a Springer Theses Prize by Karlsruhe Institute of Technology, Germany ► This work is a key step towards a realistic GNSS stochastic model, and provides good examples of statistical verification and physical interpretation of results ► This thesis gives an up-to-date overview of the GNSS error effects and a comprehensive description of the mathematical models ► Various statistical tests and methods of time series analysis are included, which can be applied in other research fields

Contents

Introduction.- Mathematical Background.- Mathematical Models for GPS Positioning.- Data and GPS Processing Strategies.- Observation Weighting Using Signal Quality Measures.- Results of SNR-based Observation Weighting.- Residual-based Temporal Correlation Modelling.- Results of Residual-based Temporal Correlation Modelling.- Conclusions and Recommendations.- Quantiles of Test Statistics.- Derivations of Equations.- Additional Graphs.- Additional Tables.

Fields of interest

Remote Sensing/Photogrammetry; Mathematical Applications in the Physical Sciences; Signal, Image and Speech Processing

Target groups

Research

Product category

Monograph

Due February 2013

2013. Approx. 280 p. (Springer Theses) Hardcover

► *€ (D) 106,95 | € (A) 109,95 | sFr 133,50
► € 99,95 | £90.00

ISBN 978-3-642-34835-8



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S. Zlatanova, Delft University of Technology, Netherlands; R. Peters, Public safety & Health Region Kennemerla, Haarlem, Netherlands; A. Dilo, H. Scholten, University of Twente, Enschede, Netherlands (Eds)

Intelligent Systems for Crisis Management

Geo-information for Disaster Management (Gi4DM) 2012

Contents

Multi-agents Evacuation Simulation Data Model with Social Considerations for Disaster Management Context.- An A*-based search approach for navigation among moving obstacles.- A Two-level Path-finding Strategy for Indoor Navigation.- An Approach to Qualitative Emergency Management.- Smoke plume modelling in crisis management.- Simulation System of Tsunami Evacuation Behavior during an Earthquake around Osaka Station Area.- Interactive Simulation and Visualisation of Realistic Flooding Scenarios.- Identification of Earthquake Disaster Hot Spots with Crowd Sourced Data.- Remote sensing based post-disaster damage mapping with collaborative methods.- Automatic Determination of Optimal Regularization Parameter in Rational Polynomial Coefficients Derivation.- Granular Computing and Dempster-Shafer Integration in Seismic Vulnerability Assessment.- Managing Satellite Precipitation Data (PERSIANN) through Web GeoServices: A Case Study in North Vietnam.- Applying GIS in seismic hazard assessment and data integration for disaster management.- Methodology for landslide susceptibility and hazard mapping using GIS and SDI.- Transport network vulnerability assessment methodology, based on the cost-distance method and GIS integration.

Field of interest

Geographical Information Systems/Cartography

Target groups

Research

Product category

Monograph

Due December 2012

2013. XI, 399 p. 178 illus., 131 in color. (Lecture Notes in Geoinformation and Cartography) Hardcover

► *€ (D) 139,05 | € (A) 142,94 | sFr 173,00

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