

Contents

Spatial Algorithms

Computing River Floods Using Massive Terrain Data	3
<i>Cici Alexander, Lars Arge, Peder Klith Bøcher, Morten Revsbæk, Brody Sandel, Jens-Christian Svenning, Constantinos Tsirogiannis, and Jungwoo Yang</i>	
Partitioning Polygons via Graph Augmentation	18
<i>Jan-Henrik Haunert and Wouter Meulemans</i>	
Hierarchical Prism Trees for Scalable Time Geographic Analysis	34
<i>Carson J.Q. Farmer and Carsten Keßler</i>	

Network Analysis

Mining Network Hotspots with Holes: A Summary of Results	51
<i>Emre Eftelioglu, Yan Li, Xun Tang, Shashi Shekhar, James M. Kang, and Christopher Farah</i>	
Distance-Constrained k Spatial Sub-Networks: A Summary of Results	68
<i>KwangSoo Yang</i>	
GIScience Considerations in Spatial Social Networks	85
<i>Dipto Sarkar, Renee Sieber, and Raja Sengupta</i>	

Spatial Analysis

On Distortion of Raster-Based Least-Cost Corridors	101
<i>Takeshi Shirabe</i>	
Model-Based Clustering of Social Vulnerability to Urban Extreme Heat Events	114
<i>Joseph V. Tuccillo and Barbara P. Battenfield</i>	
Representing the Spatial Extent of Places Based on Flickr Photos with a Representativeness-Weighted Kernel Density Estimation	130
<i>Jiaoli Chen and Shih-Lung Shaw</i>	
Scaling Behavior of Human Mobility Distributions	145
<i>Tuhin Paul, Kevin Stanley, Nathaniel Osgood, Scott Bell, and Nazeem Muhajarine</i>	

Spatial Models

pFUTURES: A Parallel Framework for Cellular Automaton Based Urban Growth Models.	163
<i>Ashwin Shashidharan, Derek B. van Berkel, Ranga Raju Vatsavai, and Ross K. Meentemeyer</i>	
From Data Streams to Fields: Extending Stream Data Models with Field Data Types	178
<i>Qinghan Liang, Silvia Nittel, and Torsten Hahmann</i>	
Point Partitions: A Qualitative Representation for Region-Based Spatial Scenes in \mathbb{R}^2	195
<i>Joshua A. Lewis and Max J. Egenhofer</i>	
Fine Scale Spatio-Temporal Modelling of Urban Air Pollution	210
<i>Xiaoxiao Liu and Stefania Bertazzon</i>	
Modeling Checkpoint-Based Movement with the Earth Mover's Distance . . .	225
<i>Matt Duckham, Marc van Kreveld, Ross Purves, Bettina Speckmann, Yaguang Tao, Kevin Verbeek, and Jo Wood</i>	

User-Generated Data and Linked Data

Exploratory Chronotopic Data Analysis	243
<i>Benjamin Adams and Mark Gahegan</i>	
Exploring the Notion of Spatial Lenses	259
<i>Christopher Allen, Thomas Herve, Sara Lafia, Daniel W. Phillips, Behzad Vahedi, and Werner Kuhn</i>	
Moon Landing or Safari? A Study of Systematic Errors and Their Causes in Geographic Linked Data	275
<i>Krzysztof Janowicz, Yingjie Hu, Grant McKenzie, Song Gao, Blake Regalia, Gengchen Mai, Rui Zhu, Benjamin Adams, and Kerry Taylor</i>	

Automated Cartography and Geovisualization

Circles in the Water: Towards Island Group Labeling	293
<i>Arthur van Goethem, Marc van Kreveld, and Bettina Speckmann</i>	
An Algorithmic Framework for Labeling Road Maps	308
<i>Benjamin Niedermann and Martin Nöllenburg</i>	
Measuring Cognitive Load for Map Tasks Through Pupil Diameter.	323
<i>Peter Kiefer, Ioannis Giannopoulos, Andrew Duchowski, and Martin Raubal</i>	

Author Index	339
-------------------------------	-----

Geographic Information Science
9th International Conference, GIScience 2016,
Montreal, QC, Canada, September 27-30, 2016,
Proceedings
Miller, J.; O'Sullivan, D.; Wiegand, N. (Eds.)
2016, XII, 339 p. 142 illus., Softcover
ISBN: 978-3-319-45737-6