# Contents

**Introduction: Ecosystem Assessment and Management**
Huhua Cao, Sheng-Quan Ma and Fengmin Li

1

**Part I  Ecosystem Assessment, Management and Information**

**Geomatics in Ecosystem Assessment and Management**
Rui-bo Han, Jun-kuo Cao and Sheng-Quan Ma

9

**Framework of an Ecotourism Early Warning System: What can we Learn for Hainan, China?**
Li-qin Zhang, Jiang-feng Li and Sheng-Quan Ma

23

**Study on Eco-Safety Early-Warning and Assessment Index System of Hainan Province**
Sheng-Quan Ma, Hu-hua Cao, Jian-xin Wang and Song Lin

33

**Analysis of Economic Spatial Structure Evolvement and Characteristic in Qinghai Province**
Ying-yi Cao

45

**Emergy Footprint Analysis of Gannan Tibet an Autonomous Prefecture Ecological Economic Systems**
Hua Liu, Yu-mei Wei and Xin Jin

53

**The Analysis of Water Resource Ecological Carrying Capacity of Hainan International Island**
Jun-kuo Cao, Jie Zhang and Sheng-Quan Ma

63

**Discussion on the Architecture Design of the Evaluation Management of Early-Warning Information System of Eco-Tourism**
Xue-ping Zhang, Jian-xin Wang, Song Lin and Sheng-Quan Ma

73
<table>
<thead>
<tr>
<th>Title</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research on Hainan Ecotourism System Early Warning</td>
<td>81</td>
</tr>
<tr>
<td>Xiu-hong Zhang, Song Lin and Mingcai Lin</td>
<td></td>
</tr>
<tr>
<td>The Method of Tourism Environmental Carrying Capacity</td>
<td>87</td>
</tr>
<tr>
<td>Xiu-hong Zhang, Mingcai Lin and Song Lin</td>
<td></td>
</tr>
<tr>
<td>Construction of Evaluation Index System for Ecotourism City Based on Information Entropy and AHP</td>
<td>93</td>
</tr>
<tr>
<td>Yu-ping Zhou, Sheng-Quan Ma and Qing-yu Hao</td>
<td></td>
</tr>
<tr>
<td>Study on Evaluation Method of Eco-Tourism City to Hainan Island</td>
<td>103</td>
</tr>
<tr>
<td>Yu-ping Zhou, Sheng-Quan Ma and Qing-yu Hao</td>
<td></td>
</tr>
<tr>
<td>An Analytical Study on Tourism Informatization in Hainan International Tourism Island</td>
<td>121</td>
</tr>
<tr>
<td>Wen-juan Jiang and Bin Meng</td>
<td></td>
</tr>
<tr>
<td>Part II Intelligent Algorithm, Fuzzy Optimization and Engineering Application</td>
<td></td>
</tr>
<tr>
<td>Land Use and Land Cover Mapping Using Fuzzy Logic</td>
<td>129</td>
</tr>
<tr>
<td>Ruibo Han</td>
<td></td>
</tr>
<tr>
<td>Global Stability of Two Linear Non-autonomous Takagi–Sugeno Fuzzy Systems</td>
<td>147</td>
</tr>
<tr>
<td>Min Zhou, Sheng-gang Li and Xiao-fei Yang</td>
<td></td>
</tr>
<tr>
<td>A New Measurement of Similarity About Rough Vague Set</td>
<td>157</td>
</tr>
<tr>
<td>Jian-xin Wang, Sheng-Quan Ma and Zhi-qing Zhao</td>
<td></td>
</tr>
<tr>
<td>Agricultural Product Traceability with Services Resource Provisioning</td>
<td>165</td>
</tr>
<tr>
<td>Bin Wen, Zi-qiang Luo, Chang-qing Liu and Song Lin</td>
<td></td>
</tr>
<tr>
<td>Raster-Based Parallel Multiplicatively Weighted Voronoi Diagrams Algorithm with MapReduce</td>
<td>177</td>
</tr>
<tr>
<td>Ming Xu, Han Cao and Chang-ying Wang</td>
<td></td>
</tr>
<tr>
<td>Design of Evaluation System of Residents’ Tourism Quality of Tourism Area Based on Fuzzy Evaluation</td>
<td>189</td>
</tr>
<tr>
<td>Ruiqiong Zhou, Song Lin and Mingcai Lin</td>
<td></td>
</tr>
</tbody>
</table>
Qualitative Evaluation of Software Reliability Considering Many Uncertain Factors ........................................ 199
Peng Cao, Guo-chun Tang, Yu Zhang and Zi-qiang Luo

Quantum-Behaved Particle Swarm Optimization with Diversity-Maintained ........................................ 207
Hai-xia Long and Shu-lei Wu

A Delay Fractioning Approach to Global Synchronization of Delayed Complex Networks with Neutral-Type Coupling ........ 221
Hongli Wu, Ya-peng Zhao, Huan-huan Mai and Zheng-xia Wang

Research of Image Watermarking Algorithm and Application in Eco-Tourism Digital Museums Copyrights Protection .................. 243
Li-hua Wu, Wen-juan Jiang and Junkuo Cao

Research of Travel Route Programming on Hainan Island .......... 257
De-jun Peng and Cheng-yi Zhang

Path Optimization Method of Logistics Distribution Based on Mixed Multi-Intelligence Algorithms ................................. 265
Rui-qiong Zhou and Jun-kuo Cao

Association Rules Mining Based on Minimal Generator of Frequent Closed Itemset ........................................ 275
Xiao-mei Chen, Chang-ying Wang and Han Cao

Part III Spatial Data Analysis and Intelligent Information Processing

Evaluation of Suitability Areas for Maize in China Based on GIS and Its Variation Trend on the Future Climate Condition ... 285
Chao-jie Jia, Le-le Wang, Xiao-li Luo, Wei-hong Zhou,
Ya-xiong Chen and Guo-jun Sun

City in Transition: The Structure of Social Space in Tianjin in 2000 ................................................................. 301
Zi-wei Liu, Rui-bo Han and Li-qin Zhang

Hainan Virtual Tourism GIS Based on Speech Interface ............ 315
Jun-kuo Cao, Rui-qiong Zhou and Li-hua Wu
The Trend of GIS-Based Suitable Planting Areas for Chinese Soybean Under the Future Climate Scenario ............... 325
Wen-ying He, Le-le Wang, Xiao-li Luo and Guo-jun Sun

Construction and Implementation of the Three-Dimensional Virtual Panoramic Roaming System of Hainan Ecotourism .......... 339
Li-hua Wu, Jian-Ping Feng and Shu-qian He

The Application of RS and GIS in Forest Park Planning:
A Case Study of Diaoluoshan National Forest Park ................. 353
Zhi Lin, Cong-ju Zhao and Peng-shan Li

Analysis of Spatial Distribution Pattern of Main Tourism Resources in Hainan Island Based on GIS ....................... 367
Jie-hua Song, Ping Wang and Cong-ju Zhao

Research of 3D Virtual Scene Generation and Visualization Based on Images ....................................................... 375
Jian-ping Feng, Li-hua Wu and Sheng-Quan Ma

Part IV Tourism Culture, Development and Planning

International Tourism: Geopolitical Dimensions of a Global Phenomenon ......................................................... 389
Olivier Dehoorne, Kevin Depault, Sheng-Quan Ma and Huhua Cao

Data Inputs and Research Outputs: Social Network Analysis as a Tool in Sampling and Dissemination Strategies ............... 397
Matthew Gaudreau

Economic Valuation of Terrestrial Ecosystem Services:
Present and Future Planning Perspectives for Ledong County,
Hainan Province, China .................................................. 407
Li-qin Zhang, Hu-hua Cao, Jiang-hong Zhu and Li-ping Qu

Hainan Resources and Characteristics of Cultural Tourism ........ 421
Jing Ma, Sheng-Quan Ma and Olivier Dehoorne

Sustainable Tourism and Ecotourism: Experiences in the Lesser Antilles ......................................................... 433
Sopheap Theng, Xiao Qiong, Dorina Ilies and Olivier Dehoorne
Contents

Cruise Tourism: Global Logic and Asian Perspectives ............................... 447
Olivier Dehoorne, Corina Tatar and Sopheap Theng

Ecotourism as an Alternative to ‘Sun, Sand, and Sea’ Tourism
Development in the Caribbean: A Comparison of Martinique
and Dominica ..................................................................................... 461
Leah Weiler and Olivier Dehoorne

On the Archiving Conservation of Hainan Tourism Culture .................... 471
Jin-xia Zheng

Research on Classification and Evaluation of Tropical
Sports Tourism Resources in China ..................................................... 479
Tian Jianqiang, Xia Minhui and Song Jingmin

ASEB Analysis of Tropical Out-of-Season Sports Tourism
Products in China ............................................................................... 493
Zhao Feng, Tian Jianqiang and Wang Xiaolin

Study on Sino-Foreign Cooperation in Golf Education ......................... 505
Li Jia, Tian Jianqiang and Jiang Yanwen

Part V  Application of Operations Research and Fuzzy Systems

Ideas of Ancient Extensional Operational Decision-making
and Its Expectation ............................................................................ 515
Pei-Hua Wang and Bing-Yuan Cao

Fuzzy Comprehensive Benefit Evaluation of Different Land
Management Mode: Semi-arid Case Study in Fuxin North China ....... 523
Ji-hui Yang, Xiao-yan Han and Jie Lv
Ecosystem Assessment and Fuzzy Systems Management
Cao, B.-Y.; Ma, S.-Q.; Cao, H.-h. (Eds.)
2014, XV, 529 p. 119 illus., Softcover
ISBN: 978-3-319-03448-5