



CRC Press
Taylor & Francis Group



Urban

Remote

Sensing

Edited by
Qihao Weng
Dale A. Quattrochi

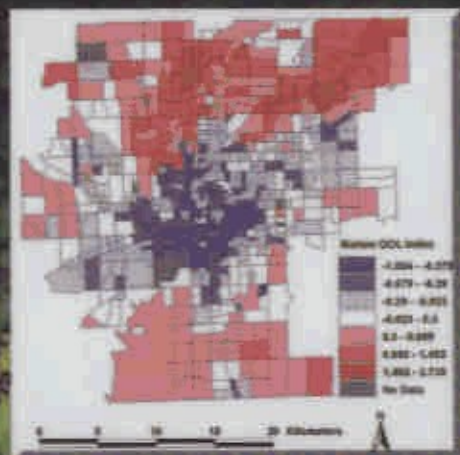


Table of Contents

An Introduction to Urban Remote Sensing

Part I

Urban Feature Extraction	1
--------------------------------	---

Chapter 1 True Orthoimage Generation for Urban Areas with Very High Buildings	3
--	---

Guoqing Zhou and John A. Kelmelis

Chapter 2 Urban Terrain and Building Extraction from Airborne LIDAR Data	21
---	----

Jie Shan and Aparajithan Sampath

Chapter 3 Reconstruction of Buildings in SAR Imagery of Urban Areas	47
--	----

Uwe Stilla and Uwe Soergel

Part II

Urban Composition and Structure.....	69
--------------------------------------	----

Chapter 4 Subpixel Analysis of Urban Landscapes	71
--	----

Qihao Weng and Dengsheng Lu

Chapter 5 Bayesian Spectral Mixture Analysis for Urban Vegetation	91
--	----

Conghe Song

Chapter 6 Urban Mapping with Geospatial Algorithms	109
---	-----

Soe W. Myint

Chapter 7 Applying Imaging Spectrometry in Urban Areas	137
---	-----

Martin Herold, Sebastian Schiefer, Patrick Hostert, and Dar A. Roberts

Part III

Urban Land Dynamics	163
---------------------------	-----

Chapter 8 Urban Land Use Prediction Model with Spatiotemporal Data Mining and GIS.....	165
---	-----

Weiguo Liu, Karen C. Seto, Zhanli Sun, and Yong Tian

Chapter 9 Assessing Urban Growth with Subpixel Impervious Surface Coverage	179
---	-----

George Xian

Chapter 10	Remote Sensing and Urban Growth Theory	201
	<i>Martin Herold, Jeff Hemphill, and Keith C. Clarke</i>	
Part IV		
	Urban Planning and Socioeconomic Applications	221
Chapter 11	Urban Heat Island Identification and Climatologic Analysis in a Coastal, Tropical City: San Juan, Puerto Rico.....	223
	<i>Jorge E. González, Jeffrey C. Luvall, Douglas L. Rickman, Daniel Comarazamy, and Ana J. Picón</i>	
Chapter 12	Assessing Urban Environmental Quality with Multiple Parameters.....	253
	<i>Janet Elizabeth Nichol and Man Sing Wong</i>	
Chapter 13	Population Estimation and Interpolation Using Remote Sensing.....	269
	<i>Xiaohang Liu and Martin Herold</i>	
Chapter 14	Sociodemographic Characterization of Urban Areas Using Nighttime Imagery, Google Earth, Landsat, and “Social” Ground Truthing.....	291
	<i>Paul C. Sutton, Matthew J. Taylor, Sharolyn Anderson, and Christopher D. Elvidge</i>	
Chapter 15	Integration of Remote Sensing and Census Data for Assessing Urban Quality of Life: Model Development and Validation	311
	<i>Guiying M. Li and Qihao Weng</i>	
Part V		
	Progress, Problems, and Prospects.....	337
Chapter 16	Mapping Human Settlements Using the Middle Infrared (3–5 μm): Advantages, Prospects, and Limitations	339
	<i>Geoffrey M. Henebry</i>	
Chapter 17	New Developments and Trends for Urban Remote Sensing	357
	<i>Manfred Ehlers</i>	
Chapter 18	Spectral Resolution in the Context of Very High Resolution Urban Remote Sensing	377
	<i>Paolo Gamba and Fabio Dell’Acqua</i>	
	About the Contributors	393
	Index.....	405