

Contents

PART A – CONCEPTS, TOOLS AND APPLICATIONS

1. Advances in geomatic simulations for environmental dynamics ..... 3  
Paegelow M and Camacho Olmedo MT

PART B – CASE STUDIES

Model comparison applied to deforestation and reforestation

2. Land use / Land cover change dynamics in the Mexican highlands: current situation and long term scenarios..... 57  
Guerrero G, Masera O and Mas J-F

3. Tropical deforestation modelling: comparative analysis of different predictive approaches. The case study of Peten, Guatemala..... 77  
Follador M, Villa N, Paegelow M, Renno F and Bruno R

4. Evaluation of prospective modelling methods: fuzzy logics and cellular automaton applied to deforestation in Venezuela ..... 109  
Selleron G and Mezzadri-Centeno T

5. Prospective modelling of environmental dynamics: A methodological comparison applied to mountain land cover changes ..... 141  
Paegelow M, Camacho Olmedo MT, Ferraty F, Ferré L, Sarda P and Villa N

Decision support and participatory modelling

6. GIS-supported modelling and diagnosis of fire risk at the wildland urban interface. A methodological approach for operational management ..... 169  
Galtié JF

- 
- 7. Participatory modelling of social and ecological dynamics in mountain landscapes subjected to spontaneous ash reforestation** ..... 199  
Monteil C, Simon C, Ladet S, Sheeren D, Etienne M and Gibon A
- 8. Land use scenarios: a communication tool with local communities** ..... 223  
Cuevas G and Mas J-F
- 

### **Retrospective modelling**

---

- 9. Retrospective geomatic landscape modelling. A probabilistic approach** ..... 247  
Camacho Olmedo MT, Paegelow M and García Martínez P
- 

### **Multi objective conflicts and environmental impact of intensive agriculture**

---

- 10. Simulating greenhouse growth in urban zoning on the coast of Granada (Spain)** ..... 269  
Aguilera Benavente F, Matarán Ruiz A, Pérez Campaña R and Valenzuela Montes LM
- 11. Greenhouses, land use change, and predictive models: MaxEnt and Geomod working together** ..... 297  
Benito de Pando B and Peñas de Giles J
- 

### **Urban environment and urban growth**

---

- 12. Modelling intra-urban dynamics in the Savassi neighbourhood, Belo Horizonte city, Brazil** ..... 319  
Godoy M and Soares-Filho BS
- 13. Creation and evaluation of development scenarios for metropolitan patterns** ..... 339  
Valenzuela Montes LM, Aguilera Benavente F, Soria Lara JA and Molero Melgarejo E
- 14. Towards a set of IPCC SRES urban land use scenarios: modelling urban land use in the Madrid region** ..... 363  
Barredo JI and Gómez Delgado M
- 

- Index** ..... 387

Modelling Environmental Dynamics

Advances in Geomatic Solutions

Paegelow, M.; Camacho Olmedo, M.T. (Eds.)

2008, XXII, 390 p. 122 illus., 17 illus. in color., Hardcover

ISBN: 978-3-540-68489-3