

1. Record Nr.	UNINA9910144251703321
Titolo	Spatial modelling of the terrestrial environment [[electronic resource] /] / editors, Richard E.J. Kelly, Nicholas A. Drake, Stuart L. Barr
Pubbl/distr/stampa	Chichester, West Sussex, England ; ; Hoboken, NJ, : Wiley, c2004
ISBN	1-280-26951-0 9786610269518 0-470-09400-1 0-470-09399-4
Descrizione fisica	1 online resource (300 p.)
Altri autori (Persone)	KellyRichard E. J DrakeNicholas A BarrStuart L
Disciplina	550.15515 550/.1/5515 910.285
Soggetti	Earth sciences - Mathematical models Earth sciences - Remote sensing Geographic information systems Spatial analysis (Statistics) Electronic books.
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Spatial Modelling of the Terrestrial Environment; Contents; List of Contributors; Preface; 1 Spatial Modelling of the Terrestrial Environment: The Coupling of Remote Sensing with Spatial Models; PART I HYDROLOGICAL APPLICATIONS; Editorial: Spatial Modelling in Hydrology; 2 Modelling Ice Sheet Dynamics with the Aid of Satellite-Derived Topography; 3 Using Remote Sensing and Spatial Models to Monitor Snow Depth and Snow Water Equivalent; 4 Using Coupled Land Surface and Microwave Emission Models to Address Issues in Satellite-Based Estimates of Soil Moisture 5 Flood Inundation Modelling Using LiDAR and SAR DataPART II TERRESTRIAL SEDIMENT AND HEAT FLUX APPLICATIONS; Editorial:

Terrestrial Sediment and Heat Fluxes; 6 Remotely Sensed Topographic Data for River Channel Research: The Identification, Explanation and Management of Error; 7 Modelling Wind Erosion and Dust Emission on Vegetated Surfaces; 8 Near Real-Time Modelling of Regional Scale Soil Erosion Using AVHRR and METEOSAT Data: A Tool for Monitoring the Impact of Sediment Yield on the Biodiversity of Lake Tanganyika
9 Estimation of Energy Emissions, Fireline Intensity and Biomass Consumption in Wildland Fires: A Potential Approach Using Remotely Sensed Fire Radiative Energy
PART III SPATIAL MODELLING OF URBAN SYSTEM DYNAMICS; Editorial: Spatial Modelling of Urban System Dynamics; 10 Characterizing Land Use in Urban Systems via Built-Form Connectivity Models; 11 Modelling the Impact of Traffic Emissions on the Urban Environment: A New Approach Using Remotely Sensed Data; PART IV CURRENT CHALLENGES AND FUTURE DIRECTIONS; 12 Land, Water and Energy Data Assimilation
13 Spatial Modelling of the Terrestrial Environment: Outlook
Index

Sommario/riassunto

Understanding and predicting the behaviour of natural and human environmental systems is crucial for the effective management of the Earth's limited resources. Recently, great advances have been made through spatial modelling. This book provides a snapshot of the latest research in modelling technologies and methodologies within five environmental fields; the cryosphere, hydrology, geomorphology, vegetation interfaces and urban environments. Spatial Modelling of the Terrestrial Environment deals with the use of remote sensing, numerical models and GIS in addressing important natural and human environmental sciences issues, focusing on the theory and application of modelling remotely sensed data within the context of environmental processes. Extensive case material exemplifies the latest research and modelling paradigms presented in the book. Addresses important research themes through a series of applications. Presents a range of spatial modelling examples and demonstrates how they can be used to inform and enhance our understanding of the terrestrial environment. Uses a range of tools, such as remote sensing instruments, geographical information systems and numerical simulation methods. Each section is prefaced with an introduction to key research practices, ensuring the accessibility of all topics. This book is essential for postgraduate and academic researchers in remote sensing, GIS, physical geography, environmental science, geology and urban geography. Professionals working with remotely-sensed data and GIS in the context of environmental modelling would find this book an essential reference-source. In addition, it will make valuable reading for upper-level undergraduates taking modules in remote sensing and spatial modelling within departments of geography, environmental science and geology.
