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The Use of Remote Sensing in Hydrology

Hyperspectral Remote Sensing

Advanced Remote Sensing is an application-based reference that provides a single source of mathematical concepts necessary for remote sensing data gathering and assimilation. It presents state-of-the-art techniques for estimating land surface variables from a variety of data types, including optical sensors such as RADAR and LIDAR. Scientists in a number of different fields including geography, geology, atmospheric science, environmental science, planetary science and ecology will have access to critically-important data extraction techniques and their virtually unlimited applications. While rigorous enough for the most experienced of scientists, the techniques are well designed and integrated, making the book's content intuitive, clearly presented, and practical in its implementation. * Comprehensive overview of various practical methods and algorithms * Detailed description of the principles and procedures of the state-of-the-art algorithms * Real-world case studies open several chapters * More than 500 full-color figures and tables * Edited by top remote sensing experts with contributions from authors across the geosciences

Remote Sensing of Vegetation

Crop models and remote sensing techniques have been combined and applied in agriculture and crop estimation on local and regional scales, or worldwide, based on the simultaneous development of crop models and remote sensing. The literature shows that many new remote sensing sensors and valuable methods have been developed for the retrieval of canopy state variables and soil properties from remote sensing data for assimilating the retrieved variables into crop models. At the same time, remote sensing has been used in a staggering number of applications for agriculture. This book sets the context for remote sensing and modelling for agricultural systems as a mean to minimize the environmental impact, while increasing production and productivity. The eighteen papers published in this Special Issue, although not representative of all the work carried out in the field of Remote Sensing for agriculture and crop modeling, provide insight into the diversity and the complexity of developments of RS applications in agriculture. Five thematic focuses have emerged from the published papers: yield estimation, land cover mapping, soil nutrient balance, time-specific management zone delineation and the use of UAV as agricultural aerial sprayers. All contributions exploited the use of remote sensing data from different platforms (UAV, Sentinel, Landsat, QuickBird, CBERS, MODIS, WorldView), their assimilation into crop models (DSSAT, AQUACROP, EPIC, DELPHI) or on the synergy of Remote Sensing and modeling, applied to cardamom, wheat, tomato, sorghum, rice, sugarcane and olive. The intended audience is researchers and postgraduate students, as well as those outside academia in policy and practice.

Remote Sensing Applications in Environmental Research

Effectively Manage Wetland Resources Using the Best Available Remote Sensing Techniques Utilizing top scientists in the wetland classification and mapping field, Remote Sensing of Wetlands: Applications and Advances covers the rapidly changing landscape of wetlands and describes the latest advances in remote sensing that have taken place over the pa

Remote Sensing of Natural Resources

Introduction to Satellite Remote Sensing: Atmosphere, Ocean and Land Applications is the first reference book to cover ocean applications, atmospheric applications, and land applications of remote sensing. Applications of remote sensing data are finding increasing application in fields as diverse as wildlife ecology and coastal recreation management. The technology engages electromagnetic sensors to measure and monitor changes in the earth's surface and atmosphere. The book opens with an introduction to the history of remote sensing, starting from when the phrase was first coined. It goes on to discuss the basic concepts of the various systems, including atmospheric and ocean, then closes with a detailed section on land applications. Due to the cross disciplinary nature of the authors' experience and the content covered, this is a must have reference book for all practitioners and students requiring an introduction to the field of remote sensing. Provides study questions at the end of each chapter to aid learning Covers all satellite remote sensing technologies, allowing readers to use

the text as instructional material Includes the most recent technologies and their applications, allowing the reader to stay up-to-date Delves into laser sensing (LIDAR) and commercial satellites (DigitalGlobe) Presents examples of specific satellite missions, including those in which new technology has been introduced

Environmental Applications of Remote Sensing

This book covers the latest developments in remote sensing theory and applications by numerous researchers, experts and collaborators of the Remote Sensing and Geo-Environment Lab of the Department of Civil Engineering and Geomatics of the Cyprus University of Technology. The main highlight of this book is combination of several techniques such as satellite remote sensing, field spectroscopy, smart sensors, ground techniques for achieving an integrated method for the systematic monitoring of the environment.

Remote Sensing Applications for Agriculture and Crop Modelling

Advances in spatial, spectral, and temporal resolution over the past several years have greatly expanded opportunities for practical applications of remote sensing data. To explore the implications of these possibilities, the NRC held a series of three workshops on different facets of remote sensing applications. This report is on the third of those workshops: the development and use of remote sensing data and information by state, local, and regional governments. The steering committee was asked to examine the opportunities, potential challenges, and policy issues associated with the application of remote sensing data in the public sector including approaches and procedures for government agencies to use such data and barriers to development and use of the applications. The resulting report is addressed primarily to non-technical managers and decisions makers at all levels of government below the federal level.

Introduction to Satellite Remote Sensing

This was the fourth postgraduate summer school on remote sensing to be held in Dundee. These summer schools were originated by, and continue to remain in, the programme of EARSel (European Association of Remote Sensing Laboratories) Working Group 3 on Education and Training in Remote Sensing. The first of these summer schools was held in 1980 on "Remote Sensing in Meteorology, Oceanography and Hydrology". This was followed in 1982 by a more specialised summer school on "Remote Sensing Applications in Marine Science and Technology" which built on the foundation laid in 1980 and then concentrated on the marine applications of remote sensing techniques. The present summer school was another follow-up of the original 1980 summer school but this time concentrating on the atmospheric rather than the marine applications of remote sensing techniques. The 1984 summer school had not specifically involved atmospheric and marine applications but had been involved with the use of remote sensing in the field of civil engineering. This year's summer school was extremely successful. First of all, this was due to our sponsors, for without their very significant material contributions there would have been no summer school. These

sponsors included the Scientific Affairs Division of NATO, together with the European Association of Remote Sensing Laboratories, the Council of Europe, the European Space Agency, the German Aerospace Establishment (DFVLR) and the Natural Environment Research Council.

Applications of Remote Sensing to Hydrology

Applications of Remote Sensing in Agriculture contains the proceedings of the 48th Easter School in Agricultural Science, held at the University of Nottingham on April 3-7, 1989. The meeting invites 146 delegates from over 22 countries and contributions to this book come from nine countries. This book generally presents a review of the achievements of remote sensing in agriculture, establishes the state of the art, and gives pointers to developments. This text is organized into seven parts, wherein Parts I-III cover the principles of remote sensing, climate, soil, land classification, and crop inventories. Productivity; stress; techniques for agricultural applications; and opportunities, progress, and prospects in the field of remote sensing in agriculture are also discussed.

Remote Sensing

High spatial resolution data including those from satellite, manned aircraft, and unmanned aerial vehicle (UAV) platforms provide a novel data source for addressing environmental questions with an unprecedented level of detail. To effectively utilize information contained in high spatial resolution imagery, some key questions must be addressed, including: (1) what are the challenges of using new sensors and new platforms? (2) what are the cutting-edge methods for fine-level information extraction from high spatial resolution images? and (3) how can high spatial resolution data improve the quantification and characterization of physical-environmental or human patterns and processes? The chapters in this book provide a snapshot of cutting-edge high spatial resolution remote sensing image collection, preprocessing, processing, and applications. This book intends to provide a useful benchmark for the high spatial resolution remote sensing community and inspire more studies that would address important scientific and technical challenges in use of high spatial remote sensing.

Applications of Remote Sensing in Agriculture

The Application of Remote Sensing Techniques to Inter and Intra Urban Analysis

Dear Colleagues, The composition, structure and function of forest ecosystems are the key features characterizing their ecological properties, and can thus be crucially shaped and changed by various biotic and abiotic factors on multiple spatial scales. The magnitude and extent of these changes in recent decades calls for enhanced mitigation and adaption measures. Remote sensing data and methods are the main complementary sources of up-to-date synoptic and objective information of forest ecology. Due to the inherent 3D nature of forest ecosystems, the analysis of 3D sources of remote sensing data is considered to be most

appropriate for recreating the forest's compositional, structural and functional dynamics. In this Special Issue of Forests, we published a set of state-of-the-art scientific works including experimental studies, methodological developments and model validations, all dealing with the general topic of 3D remote sensing-assisted applications in forest ecology. We showed applications in forest ecology from a broad collection of method and sensor combinations, including fusion schemes. All in all, the studies and their focuses are as broad as a forest's ecology or the field of remote sensing and, thus, reflect the very diverse usages and directions toward which future research and practice will be directed.

Hyperspectral Remote Sensing

Nowadays, the innovation in space technologies creates a new trend for the Earth observation and monitoring from space. This book contains high quality and compressive work on both microwave and optical remote sensing applications. This book is divided into five sections: (i) remote sensing for biomass estimation, (ii) remote sensing-based glacier studies, (iii) remote sensing for coastal and ocean applications, (iv) sewage leaks and environment disasters, and (v) remote sensing image processing. Each chapter offers an opportunity to expand the knowledge about various remote sensing techniques and persuade researchers to deliver new research novelty for environment studies.

Land Applications of Radar Remote Sensing

This book is dedicated toward space technology application in Earth studies based on the use of a variety of methods for satellite information classification and interpretation. Advantages of geospatial data use in a large-scale area of observation and monitoring as a source of decision-making stage have been demonstrated. The book describes navigation systems providing data estimation method and review of existing data in the literature relevant to remote sensing sensors delivering main information electromagnetic spectrum and a variety of sensor applications. This aspect is important when combining/integrating satellite data processing into the field measurements. Satellites and satellite data application for the study of Earth features have been demonstrated as the next step of geospatial data application. The use of different purposeful processing technology applications of satellite data is one of the vital aspects of space technology advances. The use of GNSS GPS technology in industry and MODIS images and data interpretation for agriculture purposes has been presented. It was the aim of the book to create an attractive environment by presenting space technology application in the wide areas of Earth study. For this purpose, some of the book chapters are dedicated toward space technology advances in climate monitoring, natural disaster factor detection, satellite data processing optimization, and GIS technology for meteorology information with the aim of agriculture developments.

Multi-purposeful Application of Geospatial Data

Applications of Remote Sensing in Poland

This book is a printed edition of the Special Issue "The Use of Remote Sensing in Hydrology" that was published in Water

Remote Sensing Applications in Meteorology and Climatology

A Beginner's Guide to the World of Satellite Data Over a thousand active satellites are in orbit around the Earth with applications including navigation, the transmission of data and satellite remote sensing; a space-based technology providing data accessible to everyone. The Practical Handbook of Remote Sensing offers a complete understanding of th

3D Remote Sensing Applications in Forest Ecology

Driven by advances in technology and societal needs, the next frontier in remote sensing is urban areas. With the advent of high-resolution imagery and more capable techniques, the question has become "Now that we have the technology, how do we use it?" The need for a definitive resource that explores the technology of remote sensing and the issues it can resolve in an urban setting has never been more acute. Containing contributions from world renowned experts, Urban Remote Sensing provides a review of basic concepts, methodologies, and case studies. Each chapter demonstrates how to apply up-to-date techniques to the problems identified and how to analyze research results. Organized into five sections, this book: Focuses on data, sensors, and systems considerations as well as algorithms for urban feature extraction Analyzes urban landscapes in terms of composition and structure, especially using sub-pixel analysis techniques Presents methods for monitoring, analyzing, and modeling urban growth Illustrates various approaches to urban planning and socio-economic applications of urban remote sensing Assesses the progress made to date, identifies the existing problems and challenges, and demonstrates new developments and trends in urban remote sensing This book is ideal for upper division undergraduate and graduate students, however it can also serve as a reference for researchers or those individuals interested in the remote sensing of cities in academia, and governmental and commercial sectors. Urban Remote Sensing examines how to apply remote sensing technology to urban and suburban areas.

Remote Sensing of Coastal Environments

Land management issues, such as mapping tree species, recognizing invasive plants, and identifying key geologic features, require an understanding of complex technical issues before the best decisions can be made. Hyperspectral remote sensing is one the technologies that can help with reliable detection and identification. Presenting the fundamentals of remote sensing at an introductory level, Hyperspectral Remote Sensing: Principles and Applications explores all major aspects of hyperspectral image acquisition, exploitation, interpretation, and applications. The book begins with several chapters on the basic concepts and underlying principles of remote sensing images. It introduces spectral radiometry concepts, such as radiance, irradiance, flux, and blackbody radiation; covers imaging spectrometers, examining spectral range, full width half maximum (FWHM), resolution, sampling, signal-to-noise ratio (SNR), and multispectral and

hyperspectral sensor systems; and addresses atmospheric interactions. The book then discusses information extraction, with chapters covering the underlying physics principles that lead to the creation of an image and the interpretation of the image's information. The final chapters describe case studies that illustrate the use of hyperspectral remote sensing in agriculture, environmental monitoring, forestry, and geology. After reading this book, you will have a better understanding of how to evaluate different approaches to hyperspectral analyses and to determine which approaches will work for your applications.

Practical Handbook of Remote Sensing

USES, potentialities, and needs in agriculture and forestry. Imaging with photographic sensors. Imaging with nonphotographic sensors. Applications of remote sensing in agriculture and forestry. Physical and physiological properties. Soil, water, and plant relations. Field spectroscopy. Sampling and statistical problems. Research needs: the influence of discrimination, data processing, and system design.

Hyperspectral Remote Sensing

An accessible yet rigorous introduction to remote sensing and its application to the study of vegetation for advanced undergraduate and graduate students. The underlying physical and mathematical principles of the techniques discussed are explained in a way readily understood by those without a strong mathematical background.

Applications of Remote Sensing/ GIS in Water Resources and Flooding Risk Managements

Land use and land cover changes associated with increased urbanization have led to landscape and environmental changes throughout the world. Remote Sensing Applications for the Urban Environment places emphasis on the rapid development of worldwide urbanization and its impact on the environment, and reviews the assessment of urban land cover conditions.

Remote Sensing of Wetlands

Highlighting new technologies, Remote Sensing of Natural Resources explores advanced remote sensing systems and algorithms for image processing, enhancement, feature extraction, data fusion, image classification, image-based modeling, image-based sampling design, map accuracy assessment and quality control. It also discusses their applications for

Remote Sensing of Environment

Driven by the societal needs and improvement in sensor technology and image processing techniques, remote sensing has become an essential geospatial tool for understanding the Earth and managing Human-Earth interactions. Remote Sensing for Sustainability introduces the current state of the art remote sensing knowledge

integral for monitoring the world's natural resources and environments, managing exposure to natural disasters and man-made risks, and helping understand the sustainability and productivity of natural ecosystems. Bridging the gap between remote sensing and sustainability science this book examines theories and methods as well as practical applications of sustainable development for cities using remote sensing; focuses on remote sensing methods and techniques for sustainable natural resources with emphasize on forests; answers questions on how and what the remote sensing methods and techniques can do for the sustainability of environmental systems; and examines the issues of energy use and sustainable energy sources using remote sensing technology in countries such as Germany, China, the U.S, drawing on case studies to demonstrate the applicability of remote sensing techniques. This comprehensive guide, which can serve to professors, researchers, and students alike, takes in consideration the United Nations set of sustainable development goals and intends to contribute to the GEO's Strategic Plan by addressing and exemplifying a number of societal benefit areas of remote sensing data sets, methods, and techniques for sustainable development.

Remote Sensing Applications for the Urban Environment

Remote sensing was the primary data source since the launch of the first environmental monitoring satellite back in 1972. In the past five decades, remote sensing technology has come a long way and evolved into a mature science. Even so, new technologies, new theories, new methodologies, and new applications continue to emerge. With the rapid pace of technological advancement, it is essential to share experiences especially between different disciplines, either on breakthroughs in new theory or understanding, or applications of remote sensing on real world issues. Disciplines or fields covered in this book include geography, geology, agriculture, forestry, botany, and oceanography. Though remote sensing may be used differently in various disciplines, the principles are similar, if not the same. This book will be valuable to scientists, scholars, working professionals, or students who use remote sensing in their work, and are interested in learning how others use remote sensing in different ways.

Remote Sensing with Special Reference to Agriculture and Forestry

Filling the need for a comprehensive book that covers both theory and application, Remote Sensing of Land Use and Land Cover: Principles and Applications provides a synopsis of how remote sensing can be used for land-cover characterization, mapping, and monitoring from the local to the global scale. With contributions by leading scientists from aro

Biophysical Applications of Satellite Remote Sensing

Remote Sensing Applications in Environmental Research is the basis for advanced Earth Observation (EO) datasets used in environmental monitoring and research. Now that there are a number of satellites in orbit, EO has become imperative in today's sciences, weather and natural disaster prediction. This highly

interdisciplinary reference work brings together diverse studies on remote sensing and GIS, from a theoretical background to its applications, represented through various case studies and the findings of new models. The book offers a comprehensive range of contributions by well-known scientists from around the world and opens a new window for students in presenting interdisciplinary and methodological resources on the latest research. It explores various key aspects and offers state-of-the-art research in a simplified form, describing remote sensing and GIS studies for those who are new to the field, as well as for established researchers.

Remote Sensing for Sustainability

Report on the application of remote sensing to the collection of data on surface waters and related water balance elements.

Recent Advances and Applications in Remote Sensing

Advanced imaging spectral technology and hyperspectral analysis techniques for multiple applications are the key features of the book. This book will present in one volume complete solutions from concepts, fundamentals, and methods of acquisition of hyperspectral data to analyses and applications of the data in a very coherent manner. It will help readers to fully understand basic theories of HRS, how to utilize various field spectrometers and bioinstruments, the importance of radiometric correction and atmospheric correction, the use of analysis, tools and software, and determine what to do with HRS technology and data.

LiDAR Remote Sensing and Applications

With reference to India.

Applications of Remote Sensing in Asia and Oceania

The aim of this book is to demonstrate the use of SAR data in three application domains, i.e. land cover (Part II), topography (Part III), and land motion (Part IV). These are preceded by Part I, where an extensive and complete review on speckle and adaptive filtering is provided, essential for the understanding of SAR images. Part II is dedicated to land cover mapping. Part III is devoted to the generation of Digital Elevation Models based on radargrammetry and on a wise fusion (by considering sensor characteristic and acquisition geometry) of interferometric and photogrammetric elevation data. Part IV provides a contribution to three applications related to land motion.

Remote Sensing of Land Use and Land Cover

This book is a printed edition of the Special Issue "Applications of Remote Sensing/GIS in Water Resources and Flooding Risk Managements" that was published in Water

The SAGE Handbook of Remote Sensing

A variety of biophysical applications (e.g. leaf area index and gross primary productivity) have been derived from measurements of the Earth system obtained remotely by NASA's MODIS sensors and other satellite platforms. In *Biophysical Applications of Satellite Remote Sensing*, the authors describe major applications of satellite remote sensing for studying Earth's biophysical phenomena. The focus of the book lies on the broad palette of specific applications (metrics) of biophysical activity derived using satellite remote sensing. With in-depth discussions of satellite-derived biophysical metrics that focus specifically on theory, methodology, validation, major findings, and directions of future research, this book provides an excellent resource for remote sensing specialists, ecologists, geographers, biologists, climatologists, and environmental scientists.

Advanced Remote Sensing

LiDAR (Light Detection and Ranging) is a remote sensing technology that measures distance by illuminating a target with a laser and analyzing the reflected light. This book introduces the fundamentals of LiDAR remote sensing, LiDAR data processing and analysis methods and applications of LiDAR in forestry and vegetation mapping, urban environments, and geosciences. It includes 11 hands-on projects with step-by-step instructions and many up-to-date studies, and can be used as a textbook or reference in fields related to those listed above

Remote Sensing and Its Applications

This book explores the applicability of multiple remote sensors to acquire information relevant to restoration and conservation efforts in wetlands using data collected from airborne and space multispectral/hyperspectral sensors, light detection and ranging (LiDAR), Unmanned Aircraft Systems (UAS), and a hand-held spectroradiometer. This book also examines digital data processing techniques such as object-based image analysis, machine learning, texture analysis, and data fusion. After an introduction to the Everglades and to remote sensing, the book is divided into four parts based on the sensor systems used. There are chapters on vegetation mapping, biomass and water quality modeling, applications of hyperspectral data for plant stress analysis and coral reef mapping, studies of airborne LiDAR data for coastal vulnerability analysis and DEM improvement, as well as chapters that explore a fusion of multiple sensors for different datasets. Features Introduces concepts, theories, and advanced processing techniques A complete introduction of machine learning, object-based image analysis, data fusion, and ensemble analysis techniques in processing data from multiple remote sensors Explains how multiple remote sensing systems are applied in the wetland ecosystems of Florida The author had been teaching and using both systems and her research is widely recognized Multi-sensor System Applications in the Everglades Ecosystems provides a comprehensive application of remote sensing techniques in the Florida Everglades and its coastal ecosystems. It will prove an invaluable resource for the restoration and conservation of the Florida Everglades and beyond, for global wetlands in general. Any professional, scientist, engineer, or student working with remote sensing and wetland ecosystems will reap enormous benefits from this book.

Advances in Environmental Remote Sensing

This book is a completely updated, greatly expanded version of the previously successful volume by the author. The Second Edition includes new results and data, and discusses a unified framework and rationale for designing and evaluating image processing algorithms. Written from the viewpoint that image processing supports remote sensing science, this book describes physical models for remote sensing phenomenology and sensors and how they contribute to models for remote-sensing data. The text then presents image processing techniques and interprets them in terms of these models. Spectral, spatial, and geometric models are used to introduce advanced image processing techniques such as hyperspectral image analysis, fusion of multisensor images, and digital elevation model extraction from stereo imagery. The material is suited for graduate level engineering, physical and natural science courses, or practicing remote sensing scientists. Each chapter is enhanced by student exercises designed to stimulate an understanding of the material. Over 300 figures are produced specifically for this book, and numerous tables provide a rich bibliography of the research literature.

Multi-sensor System Applications in the Everglades Ecosystem

Hyperspectral Remote Sensing: Theory and Applications offers the latest information on the techniques, advances and wide-ranging applications of hyperspectral remote sensing, such as forestry, agriculture, water resources, soil and geology, among others. The book also presents hyperspectral data integration with other sources, such as LiDAR, Multi-spectral data, and other remote sensing techniques. Researchers who use this resource will be able to understand and implement the technology and data in their respective fields. As such, it is a valuable reference for researchers and data analysts in remote sensing and Earth Observation fields and those in ecology, agriculture, hydrology and geology. Includes the theory of hyperspectral remote sensing, along with techniques and applications across a variety of disciplines Presents the processing, methods and techniques utilized for hyperspectral remote sensing and in-situ data collection Provides an overview of the state-of-the-art, including algorithms, techniques and case studies

High Spatial Resolution Remote Sensing

Generating a satisfactory classification image from remote sensing data is not a straightforward task. Many factors contribute to this difficulty including the characteristics of a study area, availability of suitable remote sensing data, ancillary and ground reference data, proper use of variables and classification algorithms, and the analyst's e

Urban Remote Sensing

As coastal environments around the world face unprecedented natural and anthropogenic threats, advancements in the technologies that support geospatial data acquisition, imaging, and computing have profoundly enhanced monitoring

capabilities in coastal studies. Providing systematic treatment of the key developments, Remote Sensing of Coastal Environments brings together renowned scholars to supply a clear presentation of the state-of-the-art in this technically complex arena. Edited by a recipient of the prestigious PECASE award, this book provides unrivaled coverage of the issues unique to coastal environments. It presents the best available data for measuring and monitoring coastal zones and explains how decision makers and resource managers can use this data to address contemporary issues in coastal zone management. The text illustrates the latest developments in active remote sensing, hyperspectral remote sensing, high spatial resolution remote sensing, the integration of remote sensing and in situ data, and covers the effects of land-cover and land-use change on coastal environments. Complete with representative case studies, this authoritative resource provides a timely snapshot of the wide range of remote sensing applications in coastal issues to enhance the understanding of how increasing disturbances to our coastal regions are affecting the ecological dynamics, biological diversity, and ecosystem health of our coastal environments.

Using Remote Sensing in State and Local Government

'A magnificent achievement. A who's who of contemporary remote sensing have produced an engaging, wide-ranging and scholarly review of the field in just one volume' - Professor Paul Curran, Vice-Chancellor, Bournemouth University

Remote Sensing acquires and interprets small or large-scale data about the Earth from a distance. Using a wide range of spatial, spectral, temporal, and radiometric scales Remote Sensing is a large and diverse field for which this Handbook will be the key research reference. Organized in four key sections:

- Interactions of Electromagnetic Radiation with the Terrestrial Environment: chapters on Visible, Near-IR and Shortwave IR; Middle IR (3-5 micrometers); Thermal IR ; Microwave
- Digital sensors and Image Characteristics: chapters on Sensor Technology; Coarse Spatial Resolution Optical Sensors ; Medium Spatial Resolution Optical Sensors; Fine Spatial Resolution Optical Sensors; Video Imaging and Multispectral Digital Photography; Hyperspectral Sensors; Radar and Passive Microwave Sensors; Lidar
- Remote Sensing Analysis - Design and Implementation: chapters on Image Pre-Processing; Ground Data Collection; Integration with GIS; Quantitative Models in Remote Sensing; Validation and accuracy assessment;
- Remote Sensing Analysis - Applications: LITHOSPHERIC SCIENCES: chapters on Topography; Geology; Soils; PLANT SCIENCES: Vegetation; Agriculture; HYDROSPHERIC and CRYOSPHERIC SCIENCES: Hydrosphere: Fresh and Ocean Water; Cryosphere; GLOBAL CHANGE AND HUMAN ENVIRONMENTS: Earth Systems; Human Environments & Links to the Social Sciences; Real Time Monitoring Systems and Disaster Management; Land Cover Change

Illustrated throughout, an essential resource for the analysis of remotely sensed data, the SAGE Handbook of Remote Sensing provides researchers with a definitive statement of the core concepts and methodologies in the discipline.

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