

Life & Earth Sciences

September to December 2022

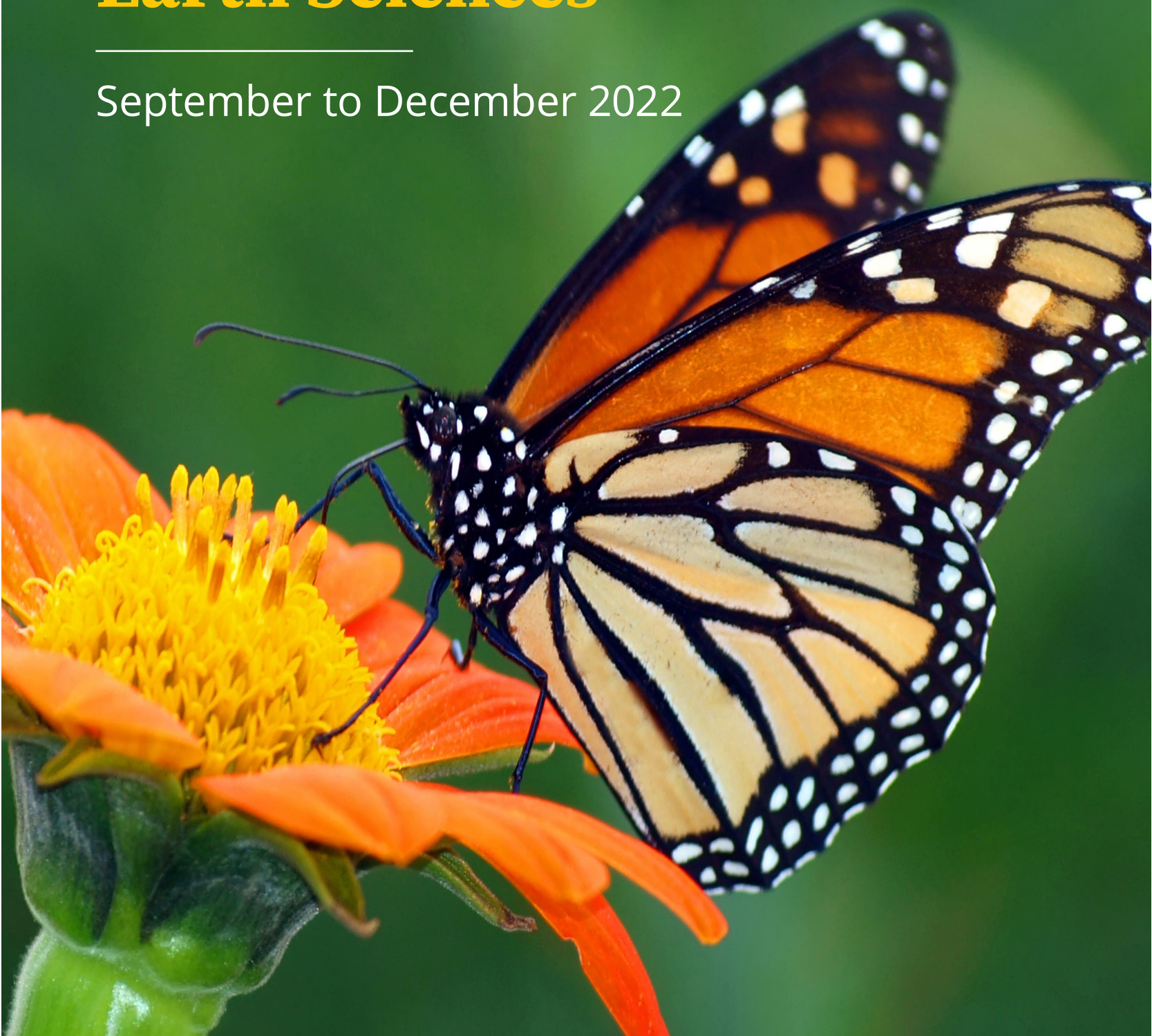


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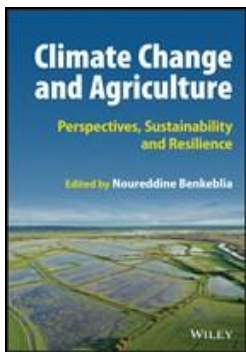
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Climate Change and Agriculture

Perspectives, Sustainability and Resilience

Nouredine Benkeblia

Summary

Authoritative and comprehensive resource covering climate-smart agriculture with key insight into its implementation

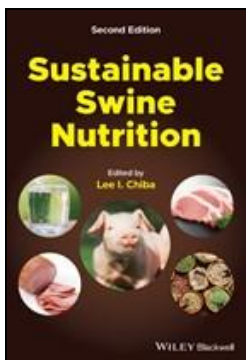
Climate Change and Agriculture provides a complete overview of the development of sustainable agroecosystems and cropping systems and details how to improve the resilience of cultivated crops and cropping systems to the adverse conditions of the climate, such as drought, raising carbon dioxide, global warming, and many other secondary effects such as soils fertility depletion, uncommon disease, and pests. Additionally, the text suggests different agricultural practices to face the severity of frequency of the natural events.

Climate Change and Agriculture also delves into the different climate-resilient ways and climate-smarter agriculture (CSA) for food production by building healthier soils through different sustainable practices, redesigning diverse agroecosystems, and developing new crop varieties, livestock breeds, and farm practices. Insight into how modern technology has affected the field, and how it may affect the field in the future, is included.

Other topics di...

Contributor Bio

Nouredine Benkeblia, The University of the West Indies Mona Campus, Kingston, Jamaica. Nouredine has more than thirty years' experience in teaching and research, focusing on agricultural science and related disciplines including climate change and crop science.



Sustainable Swine Nutrition (2nd Edition)

LI Chiba

Summary

As climate change continues to have a significant impact on the modern world, it is crucial to find alternative sources of energy and nutrients for swine production. The development of optimal feeding revolves around a multitude of considerations—genetic variations in the pig, variability, availability, and stability of nutrients in feed ingredients, interactions among nutrients and non-nutritive factors, voluntary feed intake, physical (& social) environment of pigs, and more. Establishing the ideal network of factors will only grow in importance as humans assess the methods for our own food networks.

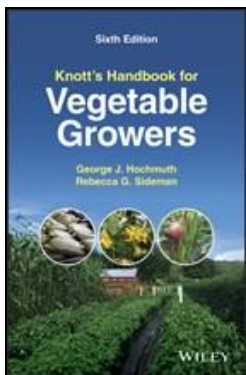
Sustainable Swine Nutrition is a comprehensive book on swine nutrition, covering some fundamental aspects of nutrition—namely digestive physiology, water, protein or amino acids, lipids, carbohydrates, energy metabolism, vitamins, minerals, and nutrition and immunology. Providing the most up-to-date information on each of these areas, a major emphasis of this second edition is on recent developments and current advances in the field, with a focus on pertinent issues linked with energy a...

Contributor Bio

Lee I. Chiba, PhD, is Professor of Animal Science at Auburn University, in Alabama, US. His current research focuses on growing pig and sow nutrition.

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Science / Life Sciences



Wiley
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Paperback

592 Pages
Technology & Engineering /
Agriculture

Knott's Handbook for Vegetable Growers (6th Edition)

George J. Hochmuth, Rebecca G. Sideman

Summary

Authoritative and comprehensive go-to reference work for commercial vegetable growers around the world

For more than 65 years, *Knott's Handbook for Vegetable Growers* has provided generations of commercial growers with the most timely, accessible, and useful information available on the subject, containing key guidance on transplant production, planting rates and spacing, irrigation, fertilization, methods for controlling diseases, and insect pest identification, plus important information on topics such as composting, post-harvest storage and processing, genetically-engineered crops, organic growing, federal regulations and best management practices, environmentally friendly pest management, and food safety.

To allow for convenient and efficient access to the enormous amount of data contained within, most of the information is presented in the form of tables and charts. The work goes above and beyond to provide everything a reader needs to know on the subject, even including a multilanguage vegetable dictionary.

Now in its 6th edition, the work has been significantly expanded and modern...

Contributor Bio

George J. Hochmuth, Professor Emeritus at the Soil and Water Sciences Department, University of Florida, Gainesville, Florida, USA, and Fellow of the American Society for Horticultural Science. Throughout his career, his areas of specialization included fertilization of commercial vegetables, row crops, and specialty crops.

Rebecca G. Sideman is an Extension Professor in the Department of Agriculture, Nutrition & Food Systems, University of New Hampshire, Durham, New Hampshire, USA. Her research interests include horticultural crop production, season extension, sustainable agriculture, and plant breeding and genetics.

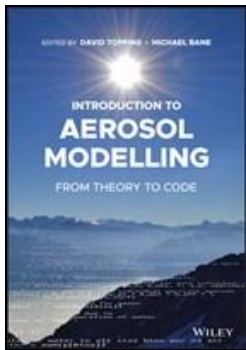


Nanopesticides, Volume 1

Charles Oluwaseun Adetunji, Julius Kola Oloke

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Hardcover

400 Pages
Technology & Engineering /
Agriculture
Series: Handbook of
Agricultural
Bionanobiotechnology



Introduction to Aerosol Modelling

From Theory to Code

DL Topping

Summary

INTRODUCTION TO AEROSOL MODELLING

Introduction to Aerosol Modelling: From Theory to Code

An aerosol particle is defined as a solid or liquid particle suspended in a carrier gas. Whilst we often treat scientific challenges in a siloed way, aerosol particles are of interest across many disciplines. For example, atmospheric aerosol particles are key determinants of air quality and climate change. Knowledge of aerosol physics and generation mechanisms is key to efficient fuel delivery and drug delivery to the lungs. Likewise, various manufacturing processes require optimal generation, delivery and removal of aerosol particles in a range of conditions.

There is a natural tendency for the aerosol scientist to therefore work at the interface of the traditional academic subjects of physics, chemistry, biology, mathematics and computing. The impacts that aerosol particles have are linked to their evolving chemical and physical characteristics. Likewise, the chemical and physical characteristic of aerosol particles reflect their sources and subsequent processes they have been subject to. Computat...

Contributor Bio

About the Editors

David Topping is Professor of the Digital Environment in the department of Earth and Environmental Science, University of Manchester.

Michael Bane is a Lecturer in the Department of Computing and Mathematics at the Manchester Metropolitan University, UK, and Director of High End Compute LTD



A Problem-Solving Workbook on Ionospheric and Space Physics

Rezy Pradipta

Summary

Enables students to understand and master basic and advanced concepts of space, atmosphere, and ionospheric physics

A Problem-Solving Workbook on Ionospheric and Space Physics is a unique textbook that contains a set of problems and exercises accompanied with complete solutions that explore and elucidate the most relevant concepts in ionospheric and space physics. The author has chosen problems that are interesting topic-wise, challenging, and that exemplify the physical and mathematical reasoning in ionospheric and space physics.

Specifically, the text conveys core concepts of ionospheric and space physics using a problem-based approach. Each problem elucidates prototypical aspects that readers can easily generalize. Each problem also consists of multi-part questions to facilitate step-by-step understanding. A short introduction to each problem defines the theme and provides context to the readers.

In *A Problem-Solving Workbook on Ionospheric and Space Physics*, readers can expect to learn about:

- Sensing ionospheric plasmas from the ground, slab thickness of a transparent layer, reflecto...

Contributor Bio

Rezy Pradipta, PhD, is Research Scientist at Boston College, MA, USA.

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Science / Earth Sciences



American Geophysical Union
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Hardcover

240 Pages
Science / Physics
Series: Geophysical
Monograph Series

Earth Observation Applications and Global Policy Frameworks

Argyro Kavvada, Douglas Cripe, Lawrence Friedl

Summary

Applying Earth science knowledge to sustainable development, disaster risk reduction, and climate action

Data and insights from Earth observations are critical for assessing the health of our planet, monitoring change, and addressing societal challenges from the local to the global scale.

Earth Observation Applications and Global Policy Frameworks presents case studies of Earth science information integrated with statistics and socioeconomic data for managing development targets, improving disaster resilience, and mitigating and adapting to climate change. It also showcases open collaboration among researchers, United Nations and government officials, entrepreneurs, and the public.

Volume highlights include:

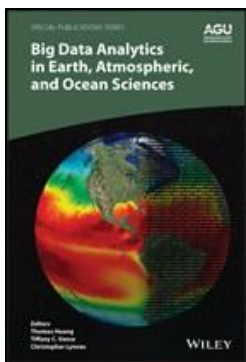
- Case studies of projects working with local and national governments, and through public-private partnerships, to make the most of the large volume of complex and diverse Earth science information sources
- Applications from diverse disciplines including wetland preservation, food security, water quality, marine conservation, disasters, urbanization, drought and land degradation, and gr...

Contributor Bio

Argyro Kavvada, National Aeronautics and Space Administration, USA

Douglas Cripe, Group on Earth Observations, Switzerland

Lawrence Friedl, National Aeronautics and Space Administration, USA



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Science / Earth Sciences
Series: Special Publications

Big Data Analytics in Earth, Atmospheric and Ocean Sciences

Thomas Huang, Tiffany C. Vance, Christopher Lynnes

Summary

Big Data Analytics in Earth, Atmospheric and Ocean Sciences SPECIAL PUBLICATIONS SERIES

Big Data Analytics in Earth, Atmospheric, and Ocean Sciences

An ever-increasing volume of Earth data is being gathered. These data are "big" not only in size but also in their complexity, different formats, and varied scientific disciplines. As such, big data are disrupting traditional research. New methods and platforms, such as the cloud, are tackling these new challenges.

Big Earth Data Analytics explores new tools for the analysis and display of the rapidly increasing volume of data about the Earth.

Volume highlights include:

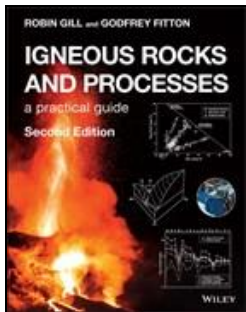
- An introduction to the breadth of big earth data analytics
- Architectures developed to support big earth data analytics
- Different analysis and statistical methods for big earth data
- Current applications of analytics to Earth science data
- Challenges to fully implementing big data analytics

The American Geophysical Union promotes discovery in Earth and space science for the benefit of humanity. Its publications disseminate scientific knowledge and provide resources for researchers, stu...

Contributor Bio

Thomas Huang, NASA Jet Propulsion Laboratory, USA

Tiffany C. Vance, NOAA Integrated Ocean Observing System, USA



Igneous Rocks and Processes (2nd Edition)

A Practical Guide

R Gill

Summary

IGNEOUS ROCKS AND PROCESSES

A practical introduction to igneous petrology for students and practitioners

The newly revised Second Edition of *Igneous Rocks and Processes: A Practical Guide*, delivers an authoritative introduction to igneous petrology and helps students to develop key skills and confidence in identifying igneous materials and in naming and interpreting unknown igneous rocks presented to them. It serves as both a conventional course text and a practical laboratory manual.

The authors review igneous nomenclature and subsequently describe specific compositional categories of magmatic rocks. Each chapter covers definitions, mineralogy, eruption and emplacement processes, textures and crystallization processes, geotectonic distribution, geochemistry, and aspects of magma genesis. Additional chapters address phase equilibrium experiments and physical volcanology.

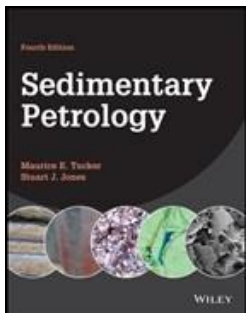
This latest edition offers readers extensively updated chapters, as well as access to a companion website with supplementary material. It also provides:

- Thorough introductions to magmas, magmatic rocks, and magma differen...

Contributor Bio

Robin Gill lectured in igneous petrology, geochemistry, and volcanology at Royal Holloway, University of London, UK.

Godfrey Fitton is Professor of Igneous Petrology at the University of Edinburgh, UK.



Sedimentary Petrology (4th Edition)

ME Tucker

Summary

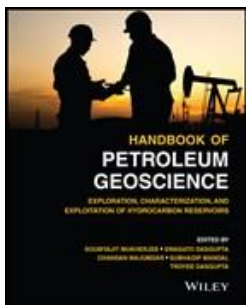
Authoritative, accessible, and updated introduction to sedimentary rocks for undergraduate students

Sedimentary Petrology provides readers with a concise account of sedimentary rock composition, mineralogy, texture, structure, diagenesis, and depositional environments. The new edition of this classic text incorporates the many technological and analytical advances of the last decade, revealing exciting details of processes such as microbial precipitation, how microporosity is created within mudrocks, and the chemical composition of foraminifera deposits, which can be a key indicator for changing seawater temperature.

This fourth edition offers a comprehensive update and expansion of the previous editions with a new set of illustrations, new references, and further reading. The new co-author Stuart Jones has brought his considerable expertise in clastic sedimentology to the rewritten chapters on sandstones and mudrocks. The addition of color images throughout the text will aid students immensely in their studies and petrographic fieldwork.

Sample topics covered in *Sedimentary Petrology* i...

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448 Pages
Science / Earth Sciences



Handbook of Petroleum Geoscience

Exploration, Characterization, and Exploitation of Hydrocarbon Reservoirs

Soumyajit Mukherjee, Swagato Dasgupta, Chandan Majumdar, Subhadip Mandal, Troyee Dasgupta

Summary

This reference brings together the latest industrial updates and research advances in regional tectonics and geomechanics, based on case studies from a range of different regions, highlighting core concepts and themes as well as regional variations.

Key topics discussed in the book are:

- Drilling solutions from the Kutch offshore basin
- Geophysical studies from a gas field in Bangladesh
- Exploring Himalayan terrain in India
- Unconventional gas reservoirs in Brazil

This book is an invaluable industry resource for professionals and academics working in and studying the fields of petroleum geoscience and tectonics.

Contributor Bio

Soumyajit Mukherjee, Indian Institute of Technology, Mumbai, Maharashtra, India

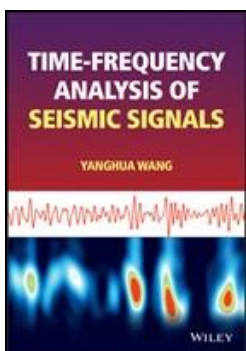
Subhadip Mandal, Integrated Reservoir Solutions, Houston, Texas, USA

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Hardcover
500 Pages
Science / Earth Sciences



Time-frequency Analysis of Seismic Signals

Y Wang

Summary

A practical and insightful discussion of time-frequency analysis methods and technologies

Time–frequency analysis of seismic signals aims to reveal the local properties of nonstationary signals. The local properties, such as time-period, frequency, and spectral content, vary with time, and the time of a seismic signal is a proxy of geologic depth. Therefore, the time–frequency spectrum is composed of the frequency spectra that are generated by using the classic Fourier transform at different time positions.

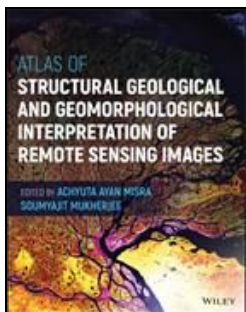
Different time–frequency analysis methods are distinguished in the construction of the local kernel prior to using the Fourier transform. Based on the difference in constructing the Fourier transform kernel, this book categorises time–frequency analysis methods into two groups: Gabor transform-type methods and energy density distribution methods.

This book systematically presents time–frequency analysis methods, including technologies which have not been previously discussed in print or in which the author has been instrumental in developing. In the presentation of each method, the f...

Contributor Bio

Yanghua Wang is a Professor of Geophysics at Imperial College London and the Director of the Resource Geophysics Academy. He is a Fellow of the Royal Academy of Engineering (FREng). He has received the Conrad Schlumberger Award (2021) from the European Association of Geo-scientists & Engineers for his scientific contribution to geophysics.

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224 Pages
Science / Earth Sciences

Atlas of Structural Geological and Geomorphological Interpretation of Remote Sensing Images

Achyuta Ayan Misra, Soumyajit Mukherjee

Summary

An extensive compilation of case studies in geology and geomorphology for interpreting remotely sensed images

In the *Atlas of Structural Geological and Geomorphological Interpretation of Remote Sensing Images*, a team of distinguished experts delivers an extensive collection of over 20 different examples of structural geological and geomorphological studies by remote sensing. The book demonstrates how to properly interpret geological features and gather robust and reliable information from remote sensing images.

This atlas contains high-quality images that depict a diversity of structures and geomorphic features from different tectonic regimes and geographic localities in the Americas, Europe, and Australasia. While its primary emphasis is on structural geology, geomorphology is considered in some depth as well. The examples also cover geological hazards, including volcanic eruptions and earthquakes.

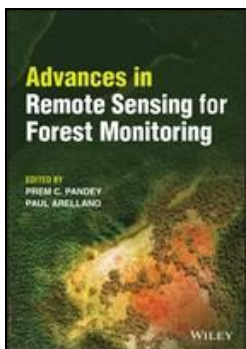
Readers will also find:

- A thorough introduction to the background of remote sensing, including foundational concepts and the classification of remote sensing based on data type, source, platf...

Contributor Bio

Achyuta Ayan Misra, Reliance Industries Ltd., Mumbai, India

Soumyajit Mukherjee, Department of Earth Sciences, Indian Institute of Technology, Mumbai, India.



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400 Pages
Technology & Engineering / Remote Sensing & Geographic Information Systems

Advances in Remote Sensing for Forest Monitoring

Prem C. Pandey, Paul Arellano

Summary

An expert overview of remote sensing as applied to forests and other vegetation

In *Advances in Remote Sensing for Forest Monitoring*, a team of distinguished researchers delivers an expansive and insightful discussion of the latest research on remote sensing technologies as they relate to the monitoring of forests, plantations, and other vegetation. The authors also explore the use of unmanned aerial vehicles and drones, as well as multisource and multi-sensor data – such as optical, SAR, LIDAR, and hyperspectral data.

The book draws on the latest data and research to show how remote sensing solutions are being used in real-world settings. It offers contributions from researchers and practitioners from a wide variety of backgrounds and geographical regions to provide a diverse and global set of perspectives on the subject.

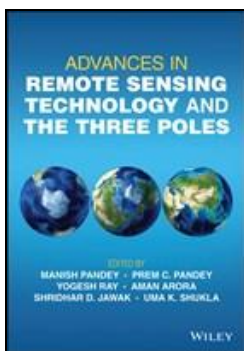
Readers will also find:

- A thorough introduction to forest monitoring using remote sensing, including recent advances in remote sensing technology
- Comprehensive explorations of sustainable forest management to enhance ecosystem services and livelihood security using a ge...

Contributor Bio

Prem C. Pandey, Shiv Nadar University, Center for Environmental Science, Greater Noida, India

Paul Arellano, Michigan Technological University, College of Forest Resources and Environmental Science, Houghton, USA



Advances in Remote Sensing Technology and the Three Poles

Manish Pandey, Prem C. Pandey, Yogesh Ray, Aman Arora, Shridhar D. Jawak, Uma K. Shukla

Summary

Covers recent advances in remote sensing technology as applied to the so-called Three Poles the Arctic, Antarctica, and the Himalayas

Advances in Remote Sensing Technology and the Three Poles explores the developments in satellite remote sensing, geoinformatics, and landscape evolution modeling techniques that have made it possible to trace the harsh effects of climate change on the three poles and attempts to understand the subtle link between climate change and its effects on cryospheric and related processes. The work also addresses the increased resolution of the satellite data that has aided in the quantification of ever-changing landforms and surface processes.

Sample topics covered in the work include:

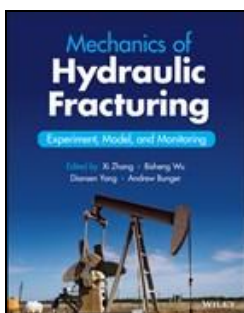
- Terrestrial net primary production of the Arctic and modeling of Arctic landform evolution
- Glaciers and glacial environments, including a geological, geophysical, and geospatial survey of Himalayan glaciers
- Sea ice dynamics in the Antarctic region under a changing climate, plus the quaternary geology and geomorphology of Antarctica
- Continuous satellite missions, data availability, and...

Contributor Bio

Manish Pandey currently works at the University Center for Research & Development (UCRD), Chandigarh University located in Mohali, Punjab, India.

Prem Chandra Pandey currently works as Assistant Professor in Center for Environmental Sciences and Engineering, Shiv Nadar University, UP India.

Shridhar Jawak is currently working as a Senior Adviser in Remote Sensing at the Svalbard Integrated Arctic Earth Observing System (SIOS), Longyearbyen, Norway.



Mechanics of Hydraulic Fracturing

Experiment, Model, and Monitoring

Xin-rong Zhang, Bisheng Wu, Diansen Yang, Andrew Bunger

Summary

Comprehensive single-volume reference work providing an overview of experimental results and predictive methods for hydraulic fracture growth in rocks

Mechanics of Hydraulic Fracturing: Experiment, Model, and Monitoring provides a summary of the research in mechanics of hydraulic fractures undertaken the past two decades, plus new research trends to look for in the future. The book covers the contributions from theory, modeling, and experimentation, including the applications of models to reservoir stimulation, mining preconditioning, and the formation of geological structures. The four well-qualified editors emphasize the variety of diverse methods and tools in hydraulic fracturing and help the reader understand hydraulic fracture mechanics in complex geological situations.

To aid in reader comprehension, examples of the applications of new approaches and methods are included throughout the book. Key topics covered in the book include:

- Prediction of fracture shapes, sizes, and distributions in sedimentary basins, plus their importance in petroleum industry
- Real-time monitoring methods, ...

Contributor Bio

Xi Zhang, Professor, Faculty of Engineering, China University of Geosciences, Wuhan, China.

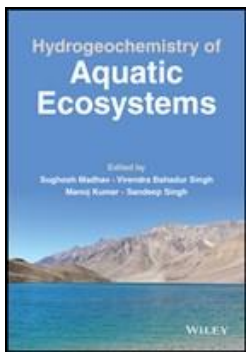
Bisheng Wu, Associate Professor, Department of Hydraulic Engineering, Tsinghua University, China.

Diansen Yang, Research Professor, Institute of Rock and Soil Mechanics of the Chinese Academy of Sciences, China.

Andrew Bunger, Associate Professor of Civil and Environmental Engineering, University of Pittsburgh, USA.

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Hydraulics



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Hardcover

416 Pages
Science / Earth Sciences

Hydrogeochemistry of Aquatic Ecosystems

Sughosh Madhav, Virendra Bahadur Singh, Manoj Kumar, Sandeep Singh

Summary

Discover the geological foundation of global water supply, focusing on resource conservation and restoration

Hydrogeochemistry explores the connections between the geology of a region and the chemical characteristics and quality of its water sources, including such factors as erosion, evaporation, and, increasingly, man-made activities. With the emergence of climate change as a major factor reshaping water quality and availability, the need to understand interactions between hydrochemistry and geology has never been greater.

Hydrogeochemistry of Aquatic Ecosystems meets this need by offering foundational knowledge about the hydrochemistry of different types of aquatic systems, the nature of their interactions with various pollutants and geological processes, and the possibilities and dangers of human intervention. With a particular focus on aqueous resource conservation and restoration, this is a vital, timely guide to a potentially life-saving subject.

Hydrogeochemistry of Aquatic Ecosystems readers will also find:

- Detailed treatment of subjects including water-sediment interactions, ar...



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Hardcover

240 Pages
Science / Earth Sciences
Series: Geophysical
Monograph Series

Threats to Springs in a Changing World

Science and Policies for Water Protection

Matthew Currell, Brian G. Katz

Summary

Documents the declining quality and quantity of springs around the world and efforts to preserve, protect, and restore them

Anthropogenic causes, including climate change, have been degrading springs around the world. Changes in spring water quality and flow impact human health, cultural values, ecology, and livelihoods.

Threats to Springs in a Changing World: Science and Policies for Protection presents a range of international studies illustrating the causes of spring degradation and strategies being used to safeguard springs both now and for the future.

Volume highlights include:

- Examples of threatened springs in diverse hydrogeologic settings
- Innovative methods and tools for understanding the hydrogeology of spring systems
- Current policy and governance approaches for alleviating damage to springs
- Different approaches to management of springs
- A call for practitioners, policy makers, scientists, and the public to work together

The American Geophysical Union promotes discovery in Earth and space science for the benefit of humanity. Its publications disseminate scientific knowledge and provid...

Contributor Bio

Matthew J. Currell, RMIT University, Australia.

Brian G. Katz, Environmental Consultant, USA.

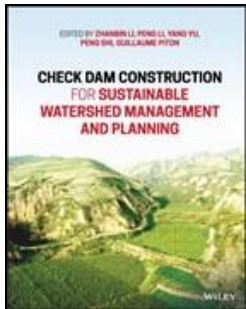
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Multi-Criteria Decision Making for Risk Assessment of Emerging Environmental Contaminants

Vijay Kumar, Prasenjit Chatterjee, Jyoti Chawla, Rajeev Kumar

Wiley-Scrivener
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\$195.00 USD
Hardcover

300 Pages
Political Science / Public
Policy
Series: Sustainable
Computing and Optimization



Wiley
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Hardcover

320 Pages
Science / Earth Sciences

Check Dam Construction for Sustainable Watershed Management and Planning

Zhanbin Li, Peng Li, Yang Yu, Peng Shi, Guillaume Piton

Summary

CHECK DAM CONSTRUCTION FOR SUSTAINABLE WATERSHED MANAGEMENT AND PLANNING
Authoritative and comprehensive reference on the potential for watershed development through the use of check dams

Check Dam Construction for Sustainable Watershed Management and Planning summarizes current knowledge of check dams as key soil and water conservation structures in some of the most sensitive and vulnerable ecosystems in the world, as exemplified by the Mediterranean area and the Chinese Loess Plateau, providing detailed information on check dam design and watershed planning, the use of advanced modeling techniques, challenges in dam construction and how to overcome them.

The work integrates decades of research in the field of soil and water conservation and gully management, including advanced studies in check dam construction and watershed management. It also covers important new techniques and methods, such as hydrological modeling, isotope tracing, and more.

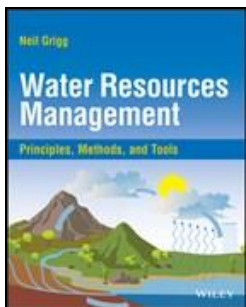
To aid in reader comprehension, the five highly qualified editors have divided the work into three distinct sections. Sections I and II focus o...

Contributor Bio

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Yang Yu, Jixian National Forest Ecosystem Observation and Research Station, CNERN, School of Soil and Water Conservation, Beijing Forestry University, China.

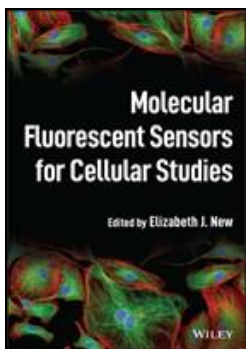


Water Resources Management: Principles, Methods, and Tools

Grigg

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Hardcover

400 Pages



Molecular Fluorescent Sensors for Cellular Studies

Elizabeth J. New

Summary

Molecular Fluorescent Sensors for Cellular Studies

Enables readers to fully understand the fundamentals and chemical principles of fluorescent sensing and the design of fluorescent sensors

Fluorescent sensors are able to provide specific chemical information about cells and can be invaluable in understanding processes that underpin health and disease. *Molecular Fluorescent Sensors for Cellular Studies* provides an avenue into and overview of currently available fluorescent sensing technology and its application to biological imaging.

This book aims to help the reader understand the principles of fluorescence and the mechanisms by which fluorescent sensors operate in order to ensure appropriate and optimal use of sensors. Key applications of fluorescent sensing are presented, with explanations not only of how new sensors can be designed, but also how existing sensors can be applied to various biological settings and conditions. Clear and engaging schematics throughout the book explain chemical principles of sensing to the non-expert.

- Discusses the breadth of fluorescent sensors, from comme...

Contributor Bio

Elizabeth J. New undertook her undergraduate and Masters studies at the University of Sydney before completing her PhD studies in 2010 at the University of Durham (UK), followed by postdoctoral training at UC Berkeley. Her research focuses on the development of small molecule fluorescent sensors for biological and environmental applications. Her novel sensors for oxidative stress, hypoxia, and essential and therapeutic metal ions are being widely used in research studies around the world.



Microbial Biotechnology

Role in Ecological Sustainability and Research

Pankaj Chowdhary, Sujata Mani, Preeti Chaturvedi

Summary

A holistic approach covering a wide range of environmental microbial applications along with current and future trends

In *Microbial Biotechnology: Role in Ecological Sustainability and Research*, a team of distinguished researchers delivers an authoritative overview of the role of microbial biotechnology in the pursuit of environmental and ecological sustainability. The book provides readers with compelling presentations of microbial technology, including its applications in the removal of environmental pollutants, and sustainable agriculture using microbial biocontrol agents or bio-fertilizers.

Readers will also be able to explore the microbial reduction of greenhouse gases and a wide range of other cutting-edge applications, including the removal of various toxic environmental contaminants, such as antibiotics, pesticides, dyes, and heavy metals.

Microbial Biotechnology provides:

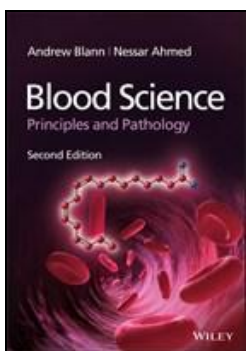
- A thorough introduction to microorganisms, their metabolic engineering, the human microbiome, and other foundational topics
- An in-depth exploration of environmental management, including bioremediation through a...

Contributor Bio

Pankaj Chowdhary is a Postdoctoral Fellow at the Aquatic Toxicology Laboratory in the Environmental Toxicology Group at the Indian Institute of Toxicology Research in Lucknow, India.

Sujata Mani is Assistant Professor in the Department of Biochemistry at the Gramin Science College in Vishnupuri, Nanded, India.

Preeti Chaturvedi is Senior Scientist in the Environmental Toxicology Group at the CSIR, Indian Institute of



Blood Science (2nd Edition)

Principles and Pathology

A Blann

Summary

The second edition of the leading introduction to blood science, updated new illustrations and case studies

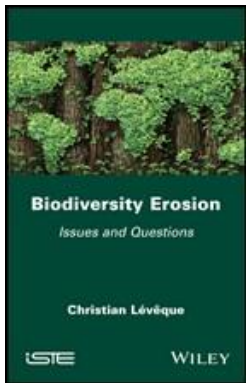
Blood Science: Principles and Pathology integrates hematology and blood transfusion, clinical biochemistry, and immunology to provide a thorough introduction to this rapidly expanding discipline. Reflecting recent changes in education and training for healthcare scientists, this comprehensive textbook covers the analytical techniques used in blood science, the diagnosis and management of various blood disorders, and more.

Fully revised, the second edition presents new case studies and high-quality images throughout, illustrating the practical skills and knowledge required by today's undergraduate students and practitioners. Detailed yet accessible chapters contain learning objectives and summaries, links to further readings and resources, and real-world case studies with easy-to-follow interpretations. Throughout the text, the authors highlight how laboratory data and clinical details are used to investigate patients with actual or suspected diseases in real-world scenarios

- Multi-...

Wiley
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\$225.00 USD
Hardcover
496 Pages
Science / Biotechnology

Wiley
9781119864110
Pub Date: 11/21/22
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Paperback
608 Pages
Science / Life Sciences



Biodiversity Erosion

Issues and Questions

Christian Lévêque

Summary

The erosion of biodiversity is currently highly publicized. Militant movements accuse humans of destroying nature and being responsible for a sixth mass extinction. However, this anxiety-provoking message is sometimes based on misconceptions, false or partisan ideas, and media relays that favor and amplify alarmist information. If the situation of certain populations is worrying, it is not a general phenomenon because others are expanding. Rather than holding a globalizing discourse, it is necessary to recontextualize and relativize the debate to better define the necessary actions.

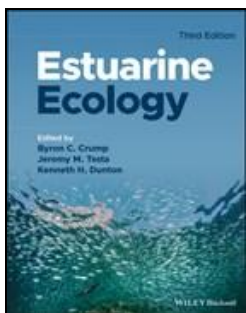
Biodiversity Erosion analyzes numerous scientific publications, as well as alarming discussions, emphasizing the multiple biases present in the way information is presented. This book questions the relevance of the notion of species and the desire to compile an inventory of all living things. It argues for a less Manichean approach to our relationship with nature.

Contributor Bio

Christian Leveque is Honorary Director of Research at the Institut de recherche pour le développement, France, Honorary President of the French Academy of Agriculture and a specialist in the ecology of continental aquatic environments. He is the author of numerous works on ecology and biodiversity.

Wiley-ISTE
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Hardcover

256 Pages
Science / Life Sciences



Estuarine Ecology (3rd Edition)

Crump

Summary

A detailed and accessible exploration of the fundamentals and the latest advances in estuarine ecology

In the newly revised third edition of *Estuarine Ecology*, a team of distinguished ecologists presents the current knowledge in estuarine ecology with particular emphasis on recent trends and advances. The book is accessible to undergraduate students while also providing a welcome summary of up-to-date content for a more advanced readership.

This latest edition is optimized for classroom use, with a more intuitive mode of presentation that takes into account feedback from the previous edition's readers. Review questions and exercises have been added for all chapters that greatly assist in the learning and retention of the complex concepts discussed here.

Estuarine Ecology remains the gold standard for the discipline by taking stock of the dramatic technological and scientific breakthroughs made in the field since the last edition was written. It also offers:

- Thorough introductions to the ecology, geomorphology, circulation, and chemistry of estuaries
- In-depth treatments of estuarine primar...

Contributor Bio

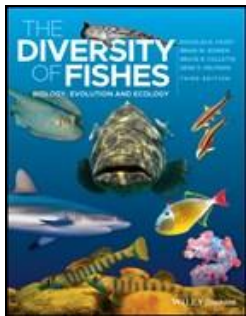
Byron C. Crump, PhD, is Professor at the College of Earth, Ocean, and Atmospheric Sciences at Oregon State University in the United States.

Jeremy M. Testa, PhD, is Associate Professor at the University of Maryland Center for Environmental Science in the United States.

Kenneth H. Dunton, PhD, is Professor at the University of Texas at Austin in the United States.

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Science / Life Sciences



Wiley
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Hardcover

720 Pages
Science / Life Sciences

The Diversity of Fishes (3rd Edition)

Biology, Evolution and Ecology

Douglas E. Facey, Brian W. Bowen, Bruce B. Collette, Gene Helfman

Summary

The third edition of *The Diversity of Fishes* is a major revision of the widely adopted ichthyology textbook, incorporating the latest advances in the biology of fishes, covering taxonomy, anatomy, physiology, biogeography, ecology, and behavior. Key information on the evolution of various fishes is also presented, providing expansive and conclusive coverage on all key topics pertaining to the field.

To aid in reader comprehension, each chapter begins with a summary that provides a broad overview of the content of that chapter, which may be particularly useful for those using the text for a course who don't intend to address some chapters in detail. Detailed color photographs throughout the book demonstrate just some of the diversity and beauty of fishes that attract many to the field. A companion website provides related videos selected by the authors, instructor resources, and additional references and websites for further reading.

Sample topics covered and learning resources included in *The Diversity of Fishes* are as follows:

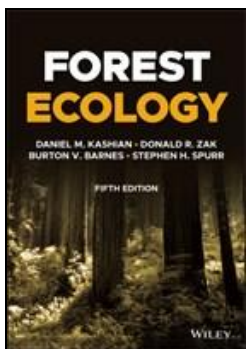
- How molecular genetics has transformed many aspects of icht...

Contributor Bio

Douglas E. Facey, Emeritus Professor of Biology, Saint Michael's College, Vermont, USA

Brian W. Bowen, Research Professor, Hawaii Institute of Marine Biology, University of Hawaii at Manoa, Honolulu, Hawaii, USA

Bruce B. Collette, Research Associate...



Wiley
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\$100.00 USD
Paperback

768 Pages
Science / Life Sciences

Forest Ecology (5th Edition)

Kashian

Summary

Authoritative resource covering traditional plant ecology topics and contemporary components such as climate change, invasive species, ecosystem services, and more

Forest Ecology provides comprehensive coverage of the field, focusing on traditional plant ecology topics of tree structure and growth, regeneration, effects of light and temperature on tree physiology, forest communities, succession, and diversity. The work also reviews abiotic factors of light, temperature, physiography (landforms and topography), soil, and disturbance (especially fire), and provides coverage of ecosystem-level topics including carbon storage and balance, nutrient cycling, and forest ecosystem productivity.

The 5th edition of *Forest Ecology* retains the readability and accessibility of the previous editions and includes important additional topical material that has surfaced in the field. All topics are approached with a landscape ecosystem or geo-ecological view, which places biota (organisms and communities) in context as integral parts of whole ecosystems that also include air (atmosphere and climate), t...

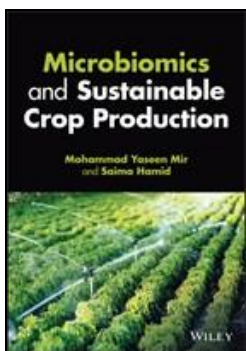
Contributor Bio

Daniel M. Kashian, Professor of Biological Sciences, Department of Biological Sciences, Wayne State University, Detroit, USA.

Donald R. Zak, Alexander H. Smith Distinguished University Professor of Ecology; Arthur F. Thurnau Professor, School for Environment and Sustainability, University of Michigan, Ann Arbor, USA.

Burton V. Barnes (deceased) was an integral part of the authorship of *Forest Ecology* from its 2nd edition.

Stephen H. Spurr (deceased) authored the original *Forest Ecology* book and subsequent revisions.



Microbiomics and Sustainable Crop Production

Mohammad Y. Mir, Saima Hamid

Summary

Highly detailed resource covering microbiome research, new omics, and gene editing technologies and approaches

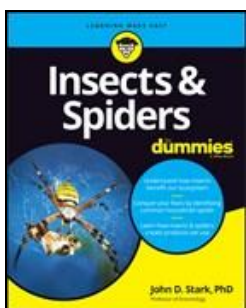
Microbiomics and Sustainable Crop Production presents an overview of the current state of the art in microbiome research, discussing many new technologies and approaches in order to bridge knowledge gaps between field and lab experimental systems. New and emerging strategies to improve the survival and activity of microbial inoculants are covered, including the use of selected indigenous microbes, optimizing microbial delivery methods, and taking advantage of modern gene editing tools to engineer microbial inoculants.

The two highly qualified authors address new molecular tools and powerful biotechnological advances, providing readers with knowledge of the complex chemical and biological interactions that occur in the rhizosphere and ensuring that strategies to engineer the rhizosphere are safe, beneficial to productivity, and result in improvements to the sustainability of agricultural systems. The relationship between phyllosphere microbial communities and functional traits ...

Contributor Bio

Dr Mohammad Yaseen Mir, Centre of Research for Development, University of Kashmir, India. Dr. Mir's research interest is in studying the ecology, molecular biology, conservation, and management of plant resources.

Dr Saima Hamid, Researcher, Department of Environmental Sciences, University of Kashmir, India. Dr. Hamid researches plant stress biology, genetic diversity of high altitudinal medicinal plants, and more.



Insects & Spiders For Dummies

John D. Stark

Summary

Gain a greater understanding of the entomological world

Insects make up more than half of all living things on the planet. Spiders are everywhere, too. Conquer your fear of creepy-crawlies and learn more about these fascinating creatures with *Insects & Spiders For Dummies*. Inside, you'll discover how they benefit our ecosystem, learn about different types of species, understand their habitats, and more. This book is packed with information to help you learn about their anatomy, their role in the food chain, the numerous benefits they provide, and even how we put them to use to make products that we use. The next time you want to swat that fly, step on that annoying ant, or squeamishly squish that spider scurrying across the floor, think again!

- Understand how insects benefit our ecosystem
- Admire the diversity—and beauty—of bugs
- Learn fascinating facts about well-known insects and spiders
- Discover why bugs are so successful on every corner of the planet

This is the perfect Dummies guide for nature lovers, gardeners, educators, and anyone else with an itch to know more about the six- and eigh...

For Dummies
9781119900313
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\$24.99 USD
Paperback

384 Pages
Nature / Animals



Assessing the Microbiological Health of Ecosystems

Christon J. Hurst

Summary

A timely exploration of the coordinated functions of microbiological communities and the impacts of global climate change on microbial life

Ecosystems function like interlocking puzzles and ultimately the health of an ecosystem depends upon the niche activities of its microbial communities.

Assessing the Microbiological Health of Ecosystems summarizes our understanding of how microbial community processes are organized and the mechanisms by which activities of their constituent species are coordinated. The authors collectively present a basis for understanding what produces healthy microbial components of an ecosystem, thereby supplying a foundation for achieving one of the eventual future goals of environmental microbiology: to diagnose and correct the integrative nature of microbial activities when ecosystems fail. *Assessing the Microbiological Health of Ecosystems* will prove to be a valuable resource to environmental microbiologists, ecologists and integrative biologists. The book will:

- help researchers and students to understand the commonalities of processes, techniques, and discov...

Wiley
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\$150.00 USD
Hardcover
304 Pages
Science / Life Sciences

Genetic Theory and Analysis (2nd Edition)

Finding Meaning in a Genome

R. Scott Hawley, Danny E. Miller, Angela L. Miller

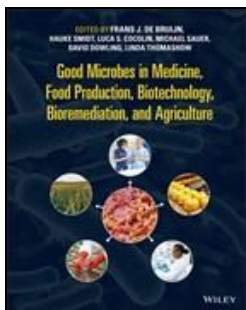
Summary

The 2nd edition will be approximately 50% longer than the current edition and will significantly expand coverage of epistasis and mosaic analysis, as well as high-throughput methodologies in yeast. Due to advances in the field, the second edition will also update the coverage of RNAi and include new materials on the use of NextGen Sequencing as a tool for mapping. The new edition will build on the discussion of evolving model systems such as zebra fish and planaria, genetic technology available in the mouse, and the impact of epigenetic phenomena on genetics.



Wiley-Blackwell
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Paperback

384 Pages
Science / Life Sciences



The Good Microbes in Medicine, Food Production, Biotechnology, Bioremediation, and Agriculture

Frans J. de Bruijn, Hauke Smidt, Luca Cocolin, Michael Sauer, David N. Dowling, Linda Thomashow

Summary

Good Microbes in Medicine, Food Production, Biotechnology, Bioremediation, and Agriculture Discover the positive and helpful contributions made by microorganisms to various areas of human health, food preservation and production, biotechnology, industry, environmental clean-up and sustainable agriculture.

In *Good Microbes in Medicine, Food Production, Biotechnology, Bioremediation, and Agriculture*, a team of distinguished researchers delivers a comprehensive and eye-opening look at the positive side of bacteria and other microbes. The book explores the important and positive roles played by microorganisms.

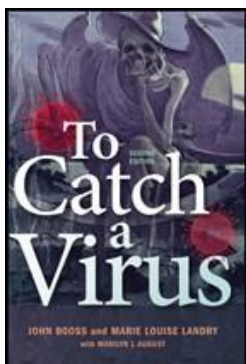
Divided into five sections, *Good Microbes* examines the use of microorganisms and the microbiome in human health, food production, industrial use, bioremediation, and sustainable agriculture. Coverage spans from food allergies, skin disorders, microbial food preservation and fermentation of various beverages and food products, and from an ethical point of view to the beneficial use of microbes in biotechnology, industry, bioeconomy, environmental remediation such as resource recovery, ...

Contributor Bio

Frans J. de Bruijn, PhD, was Director of the Laboratory for Plant-Microbe Interactions and Environment, a mixed INRAE/CNRS research facility with about 100 scientists and support staff in Toulouse, France. He is presently Director of Recherche DR1 and editor of multiple books on a variety of topics.

Hauke Smidt, PhD, is a member of the management team at the National BE-Basic Program and Senior Scientist and Theme Council member at TI Food & Nutrition.

Luca S. Cocolin, PhD, is Full Professor in the Department of Agricultural, Forest, and Food Sciences at the University of Torino, Italy.



To Catch A Virus (2nd Edition)

John Booss, Marie Louise Landry

Summary

Trace the evolution of diagnostic virology from yellow fever to COVID-19

Join expert storytellers John Booss, Marilyn J. August, and Marie Louise Landry in a journey through the history of viral epidemics and the detective work of those determined to identify the culprits and treat the infected.

From the identification of the first virus in the late 1800s to the molecular techniques that enabled the rapid recognition of and vaccine development for the SARS-CoV-2 virus, viral diagnostic methods have progressed over the past century to become a formidable tool in human health care. This collection of gripping historical narratives covers a range of fascinating outbreaks and public health challenges, from yellow fever and smallpox to AIDS and COVID-19. This new edition chronicles the ongoing story of the COVID-19 pandemic, highlighting the people, the pathogen, and the progress in the diagnostic laboratory and clinical settings that has touched every aspect of global health.

The many photographs and rich biographical sketches of key figures, diagrams of diagnostic procedures, micrographs o...

ASM Press
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Paperback

392 Pages
Science / Life Sciences
Series: ASM Books



Unravelling Long COVID

Don Goldenberg, Marc Dichter

Summary

An authoritative medical reference on the various ways in which Long-COVID presents and an in-depth discussion of its mechanisms and therapeutic options.

Unravelling Long-COVID aims to provide a better awareness and understanding of the persistent health problems that can arise following SARS-CoV-2 infection. Various described as Long-COVID, Long-Haulers' Syndrome, and Post-Acute Sequelae of SARS-CoV-2, this newly-designated disorder is estimated to have affected somewhere between 50 to 250 million people. It is in fact considered by many as the next global public health disaster.

With such a broad and important topic, the authors of *Unravelling Long-COVID* have focused primarily on two major problems in the current understanding of Long-COVID: 1.) the failure to distinguish patients with organ damage—here called Long-COVID Disease – and those with unexplained, persistent symptoms—what is termed Long-COVID syndrome, 2.) and the failure of current medical approaches to comprehend and treat those persistent unexplained symptoms

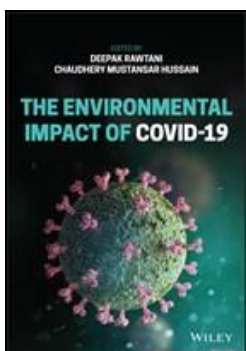
Unravelling Long-COVID is:

- One of the first books focused spe...

Contributor Bio

Don Goldenberg, MD, is Emeritus Professor of Medicine at Tufts University, School of Medicine.

Marc Dichter, MD, PhD, is Emeritus Professor of Neurology at the Perelman School of Medicine, at the University of Pennsylvania.



The Environmental Impact of COVID-19

Deepak Rawtani, Chaudhery Mustansar Hussain

Summary

Discover the wider environmental effects of the COVID-19 pandemic with this timely and up to date resource

Environmental Impact of COVID-19 delivers an insightful analysis of various environmental aspects of the COVID-19 pandemic that have caused global concern. The book discusses the transmission of COVID-19 in the environment, the evaluation and analysis of COVID-19, the socio-economic implications of COVID-19, its environmental impact, risk mitigation and management, waste management, and the environmental implications of the virus.

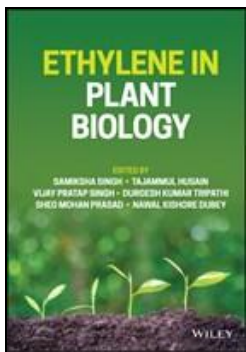
It also considers the socio-economic implications of COVID-19's spread, including the effects of international lockdowns on different strata of society and various industries, including the biomedical industry, the environmental industry, and the pharmaceutical industry.

An entire section of the text is devoted to a discussion about the waste generated due to COVID-19 and the effect of that waste on different environmental bodies. Another is dedicated to the impact of COVID-19 on the environment in the short- and long-term, including its effect on clim...

Contributor Bio

Chaudhery Mustansar Hussain, PhD is an Adjunct Professor and Director of Chemistry & EVSc Labs in the Department of Chemistry & Environmental Sciences at the New Jersey Institute of Technology (NJIT), Newark, New Jersey, USA. His research is focused on the applications of Nanotechnology & Advanced technologies & Materials, Analytical Chemistry, Environmental Management, and Various Industries. Dr. Hussain is the author of numerous papers in peer-reviewed journals as well as prolific author and editor of several scientific monographs and handbooks.

Wiley
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Hardcover
304 Pages
Technology & Engineering /
Environmental



Ethylene in Plant Biology

S Singh

Summary

ETHYLENE IN PLANT BIOLOGY

Comprehensive resource detailing the role of ethylene in plant development regulation, gene regulation, root development, stress tolerance, and more

Ethylene in Plant Biology presents ethylene research from leading laboratories around the globe to allow readers to gain strong foundational coverage of the topic and aid in further ethylene research as it pertains to plant biology. The work covers general ideas as well as more specific and technical knowledge, detailing the overall role of ethylene in plant biology as a gaseous plant hormone that has emerged as an important signaling molecule which regulates several steps of a plant's life cycle. The ideas covered in the work range from discovery of ethylene, to its wide roles in plant growth and development, all the way to niche topics such as stress acclimation.

Written by highly qualified authors in fields directly related to plant biology and research, the work is divided into 20 chapters, with each chapter covering a specific facet of ethylene or the interaction between ethylene and plant health. Topics discu...

Contributor Bio

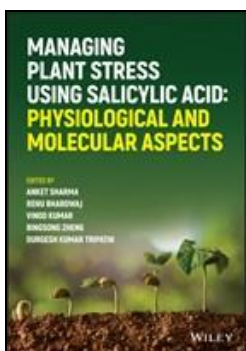
Samiksha Singh, Laboratory of Herbal Pesticides, Banaras Hindu University, Varanasi, India

Tajammul Husain, Department of Botany, University of Allahabad, Prayagraj, India

Vijay Pratap Singh, Department of Botany, C.M.P. Degree College, University of Allahabad, Prayagraj, India

Durgesh Kumar Tripathi, Crop Nanobiology and Molecular Stress Physiology Laboratory, Amity Institute of Organic Agriculture, Amity University Uttar Pradesh, India

Sheo Mohan Prasad, Department of Botany, University of Allahabad, Prayagraj, India



Managing Plant Stress Using Salicylic Acid

Physiological and Molecular Aspects

A Sharma

Summary

Enables readers to understand the ability of salicylic acid in reducing the effects of abiotic stresses in different crop species

Salicylic acid is an important plant hormone which acts as a multifunctional molecule and regulates key physiological and biochemical processes in plants. This book highlights the tremendous potential of treating plants with salicylic acid, either prior to or during stress. It focuses on the specific challenges and opportunities related to the exogenous application or priming technology, such as the mode of application, new methodologies, and the potential impacts of salicylic acid on the environment. Sample topics covered in the book include:

- The latest research on the ability of salicylic acid in reducing the effects of abiotic stresses in different crop species
- The mechanism of action of salicylic acid at the biochemical and molecular level
- Salicylic acid and its crosstalk with other plant hormones under stressful environments
- Regulation of abiotic stress by salicylic acid at the gene level
- Role of salicylic acid on postharvest physiology of plants

This book w...

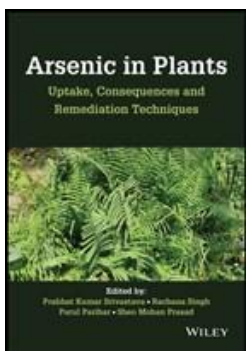
Contributor Bio

Dr Anket Sharma, Post-Doctoral Scientist at State Key Laboratory of Subtropical Silviculture, Zhejiang A&F University, China.

Dr Renu Bhardwaj, Guru Nanak Dev University, Punjab, India.

Dr Vinod Kumar, Assistant Professor, Government Degree College, Ramban, J&K, India.

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Hardcover
368 Pages
Science / Life Sciences



Arsenic in Plants

Uptake, Consequences and Remediation Techniques

P Srivastava

Summary

Comprehensive resource detailing the chemistry, toxicity and impact of arsenic in plants, and solutions to the problem

Arsenic in Plants: Uptake, Consequences and Remediation Techniques provides comprehensive coverage of the subject, detailing arsenic in our environment, the usage of arsenicals in crop fields, phytotoxicity of arsenic and arsenic's impact on the morphology, anatomy and quantitative and qualitative traits of different plant groups, including their physiology and biochemistry. The work emphasizes the occurrence of arsenic, its speciation and transportation in plants as well as differences in mechanisms of tolerance in hyper-accumulator and non-accumulator plants.

Throughout the text, the highly qualified authors delve into every facet of the interaction of arsenic with plants, including the ionomics, genomics, transcriptomics and proteomics in relation to arsenic toxicity, impact of exogenous phytohormones and growth-regulating substances, management of arsenic contamination in the soil-plant continuum, phytoremediation of arsenic toxicity and physical removal of arsenic...

Contributor Bio

Prabhat Kumar Srivastava works as an Assistant Professor of Botany in KS Saket PG College, Ayodhya, India.

Rachana Singh is a Research Fellow in Ranjan Plant Physiology and Biochemistry Laboratory, Department of Botany, University of Allahabad, Prayagraj, India.

Parul Parihar is an Assistant Professor at the School of Bioengineering and Biosciences, Lovely Professional University, Punjab, India.

Sheo Mohan Prasad is a Professor of Botany at the University of Allahabad, Prayagraj, India.



Plant Breeding Reviews, Volume 46

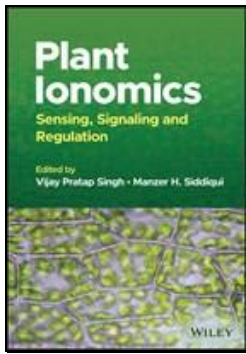
Irwin Goldman

Summary

Plant Breeding Reviews presents state-of-the-art reviews on plant genetics and the breeding of all types of crops by both traditional means and molecular methods. Many of the crops widely grown today stem from a very narrow genetic base; understanding and preserving crop genetic resources is vital to the security of food systems worldwide. The emphasis of the series is on methodology, a fundamental understanding of crop genetics, and applications to major crops.

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Hardcover

720 Pages
Science / Life Sciences
Series: Plant Breeding
Reviews



Plant Ionomics

Sensing, Signaling and Regulation

Vijay Pratap Singh, Manzer H. Siddiqui

Summary

A thoroughly up-to-date exploration of nutrient uptake in plants

In *Plant Ionomics: Sensing, Signaling, and Regulation*, accomplished botanists and researchers Dr. Vijay Singh and Dr. Manzer Siddiqui deliver an up-to-date discussion of the sensing, signaling, and regulation of nutrient uptake in plants under a variety of conditions. The book offers an accessible and easy-to-use reference for researchers with an interest in plant ionomics, combining the latest research from leading laboratories around the globe.

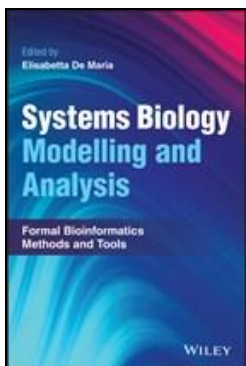
The authors provide coverage of a variety of critical topics, including plant and soil nutrient stoichiometry, nutrient management and stress tolerance in crops, and the relationship between agricultural production and nutrient applications. Readers will also find:

- A thorough introduction to nutrient regulation and abiotic stress tolerance in plants
- In-depth discussions of nutrient uptake and transport in plants and the role of nutrients in ROS metabolism
- Practical explorations of nutrient and sugar signaling and associated gene networks in plants
- Extensive treatments of the role of n...

Contributor Bio

Vijay Pratap Singh is an Assistant Professor in the Department of Botany at C.M.P. Degree College in the University of Allahabad in India. His research is focused on the regulation of abiotic stress in plants, with a special emphasis on nitric oxide, nutrients, phytohormonal, hydrogen sulfide, and reactive oxygen species signaling.

Manzer H. Siddiqui is serving as an Associate Professor of plant physiology at the Department of Botany and Microbiology, College of Science, King Saud University, Saudi Arabia. Dr. Siddiqui has more than 22 years of



Systems Biology Modelling and Analysis

Formal Bioinformatics Methods and Tools

Elisabetta De Maria

Summary

Describes important modelling and computational methods for systems biology research to enable practitioners to select and use the most suitable technique

Systems Biology Modelling and Analysis provides an overview of state-of-the-art techniques and introduces related tools and practices to formalize models and automate reasoning for systems biology. The authors present and compare the main formal methods used in systems biology for modelling biological networks, including discussion of their advantages, drawbacks, and main applications.

Each chapter includes an intuitive presentation of the specific formalism, a brief history of the formalism and of its applications in systems biology, a formal description of the formalism and its variants, at least one realistic case study, some applications of formal techniques to validate and make deep analysis of models encoded with the formalism, and a discussion on the kind of biological systems for which the formalism is suited, along with concrete ideas on its possible evolution.

Written by a highly qualified author with significant experience ...

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Science / Life Sciences

Wiley Offices in Asia

China Beijing

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