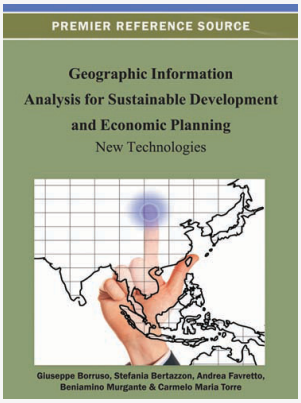
Geographic Information Analysis for Sustainable Development and Economic Planning: New Technologies



By Giuseppe Borruso, Stefania Bertazzon, Andrea Favretto, Beniamino Murgante and Carmelo Maria Torre

IGI GLOBAL

434 pages | Hardback
1st edition | July 2012
ISBN 978-1-46-661924-1

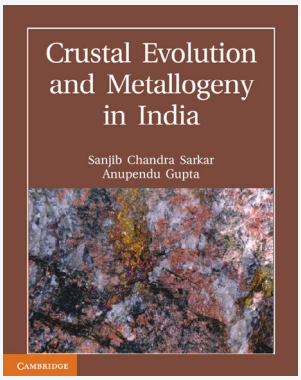
Price: $136 (~€110)

Publisher's summary

Spatial analytical techniques and geographical analysis and modelling methods are required in order to analyze data and to facilitate the decision process at all levels. Old geographical issues can find an answer thanks to new methods and instruments, while new issues are developing, challenging the researchers for new solutions.

Geographic Information Analysis for Sustainable Development and Economic Planning: New Technologies tackles topics related to, to-date development of Geographic Information in terms of the technologies available for retrieving, managing, and analyzing geographical data. This book is useful for academic staff, as well as postgraduate students (MSc, PhD levels) in GIS, remote sensing, economic geography, spatial planning, geostatistics, and related fields.and geology and a beneficial tool for professional scientists seeking a better understanding of the mathematics and physics within Earth sciences.

Crustal Evolution and Metallogeny in India



By Sanjib Chandra Sarkar and Anupendu Gupta

CAMBRIDGE UNIVERSITY PRESS

912 pages | Hardback
1st edition | April 2012
ISBN 978-1-10-700715-4

Price: £90 (~€114)

Publisher's summary

Crustal evolution means the resultant changes that the Earth's crust has gone through in its geologic past affected by changes in the mantle-crust system, the atmosphere, the hydrosphere, and the biosphere. Metallogeny is the genesis of metallic mineral deposits. Both the terms are used in the book in their conventional sense, but keeping in mind an Indian context. This book is the first of its kind to document in detail the nature, origin and evolution of mineral deposits in India and is contextualized in local, regional and global geology. The book is unique in that it combines both metallogeny and crustal evolution that were hitherto treated as stand-alone topics. The exhaustive chapters in the book carry detailed case studies of the distribution and occurrence of ores. The book would be useful to students of advanced geology, researchers, teachers, planners, and global metallogeneticists around the world.

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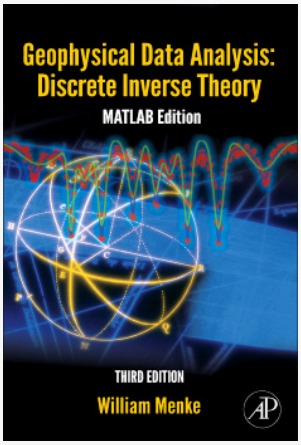
Geophysical Data Analysis: Discrete Inverse Theory, MATLAB edition



By William Menke

ACADEMIC PRESS
(ELSEVIER)

348 pages | Hardcover
3rd edition | June 2012
ISBN 978-0-12-397160-9

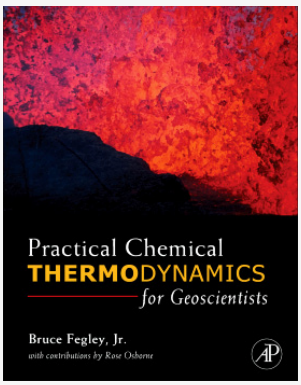
Price: € 64.95

Publisher's summary

Since 1984, *Geophysical Data Analysis* has filled the need for a short, concise reference on inverse theory for individuals who have an intermediate background in science and mathematics. The new edition maintains the accessible and succinct manner for which it is known, with the addition of: MATLAB examples and problem sets; advanced colour graphics, coverage of new topics, including Adjoint Methods, Inversion by Steepest Descent, Monte Carlo and Simulated Annealing methods, and Bootstrap algorithm for determining empirical confidence intervals; online data sets and MATLAB scripts that can be used as an inverse theory tutorial.

This book is suited for graduate students and researchers in solid earth geophysics, seismology, atmospheric sciences and other areas of applied physics (e.g. image processing) and mathematics.

Practical Chemical Thermodynamics for Geoscientists



By Bruce Fegley, Jr.

ACADEMIC PRESS
(ELSEVIER)

696 pages | Hardback
1st edition | July 2012
ISBN 978-0-12-251100-4

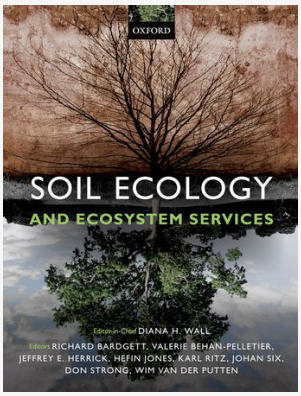
Price: €89.95

Publisher's summary

Practical Chemical Thermodynamics for Geoscientists covers classical chemical thermodynamics and focuses on applications to practical problems in the geosciences, environmental sciences, and planetary sciences. This book will provide a strong theoretical foundation for students, while also proving beneficial for earth and planetary scientists seeking a review of thermodynamic principles and their application to a specific problem.

This book is suited for students and researchers in earth sciences and related fields, including astronomy and physics.

Soil Ecology and Ecosystem Services



Edited by Diana H. Wall, et al.

OXFORD UNIVERSITY
PRESS

424 pages | Hardback
1st edition | June 2012
ISBN 978-0-19-957592-3

Price: £75 (~€95)

Publisher's summary

This multi-contributor, international volume synthesizes contributions from the world's leading soil scientists and ecologists, describing cutting-edge research that provides a basis for the maintenance of soil health and sustainability. The book covers these advances from a unique perspective of examining the ecosystem services produced by soil biota across different scales – from biotic interactions at microscales to communities functioning at regional and global scales. The book leads the user towards an understanding of how the sustainability of soils, biodiversity, and ecosystem services can be maintained and how humans, other animals, and ecosystems are dependent on living soils and ecosystem services.

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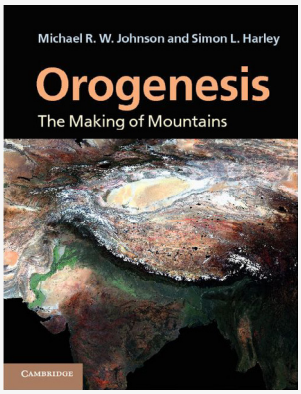
Orogenesis: The Making of Mountains

A book review



By Michael R. W. Johnson and Simon L. Harley

CAMBRIDGE UNIVERSITY PRESS

398 pages | Hardback
1st edition | March 2012
ISBN 978-0-52-176556-5

Price: £45.00 (~€55.00)

Mountains have always attracted the attention of humanity because, as natural barriers for trade, they played a vital role in its history. Moreover, they have a strong influence in the culture and the way of life of people residing next to them.

Orogenesis, a Greek term used to describe the process of mountain building, is the title of a recently published Cambridge University Press book. The term refers to the collision of two tectonic plates, which either forces material upwards and creates mountain belts or causes a plate to be subducted below the other creating volcanic mountain chains. A great majority of orogens – belts of rocks involved in the formation of mountains – mark the sites of ancient oceans, which have closed completely. Examples include the Alps and the Caledonian orogens, which represent the closure of the Tethys and Iapetus oceans, respectively. The study of mountains therefore reveals the history of the Earth, concerning the growth and closure of oceans, the formation of its continents, and its geomorphologic features.

The new book is edited by two internationally recognized academics from the University of Edinburgh. Michael R. W. Johnson, a veteran of geology, and Simon L. Harley, a specialist in metamorphism, have carried out research on orogens worldwide and synthetize their knowledge in an up-to-date overview of orogenic research.

The book provides the necessary background knowledge on 'the making of mountains', and presents the major features of selected orogenic belts of the Earth, ranging from the Alps to the Himalayas and the Andes. It offers particularly detailed information on the formation of the Himalayas.

The book is structured in 12 chapters. The first three chapters deal with the basics of mountain building processes, such as plate tectonics, the driving mechanisms, and mass and heat transfer issues in the lithosphere.

The following chapter covers the essential characteristics of orogens giving examples from major mountain belts.

Chapters five to nine mainly focus on the evolution of orogens and the mechanisms that take place during it. They make an extensive analysis of the metamorphism, erosion, exhumation, and sedimentation processes that occur during the evolution of orogens.

The book ends with two chapters dedicated to topics that have been subject of debate in recent years. One focuses on the impact of mountain building on climate and climate change. Mountains affect climate because they obstruct air circulation, but the jury is still out on the exact role of orogenesis in climate change. The final chapter looks into the question of secular change in the formation of mountains.

The book suits the role of textbook for undergraduate and graduate students of structural geology and plate tectonics. But *Orogenesis* is also recommended to researchers of geodynamics or related fields such as petrology geochemistry and sedimentology.

Overall, *Orogenesis* is a must for those who have a keen scientific interest in mountains and want to deepen their knowledge in this exciting topic.

Lida Maria Soukouli, engineering geologist based in Greece

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