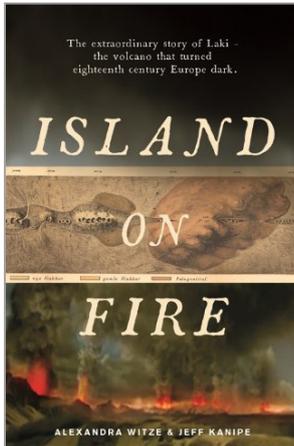




Island on Fire

The extraordinary story of Laki, the volcano that turned eighteenth-century Europe dark



By Alexandra Witze and Jeff Kanipe

PROFILE BOOKS

224 pages | Hardback
1st edition | March 2014
ISBN 978-1781250044

Price: £10.99 (~€14)

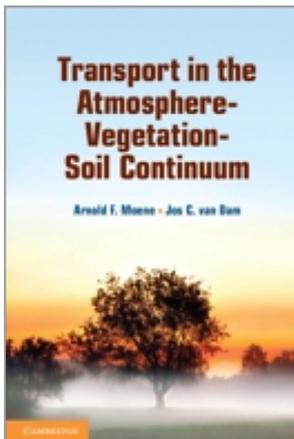
Publisher's summary

The eruption of Iceland's Laki volcano is one of history's great untold natural disasters. The eruption, spewing out a poisonous fog, lasted for eight months, but its effects lingered across Europe for years, causing the death of people as far away as the Nile, and creating famine that may have triggered the French revolution. [Island on Fire](#) is the story not only of a volcano but also of the people whose lives it changed, such as the pastor Jon Steingrímsson, who witnessed and recorded the events in Iceland. It is the story, too, of modern volcanology, and looks at how events might work out should Laki erupt again in our time.

Note

Witze was one of the winners of the 2011/2012 EGU Science Journalism Fellowship. She used the support to research this book.

Transport in the Atmosphere-Vegetation-Soil Continuum



By Arnold F. Moene and Jos C. van Dam

CAMBRIDGE UNIVERSITY PRESS

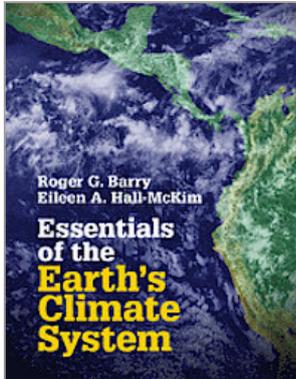
446 pages | Hardback
1st edition | May 2014
ISBN 9780521195683

Price: £45 (~€56)

Publisher's summary

Traditionally, soil science, atmospheric science, hydrology, plant science and agriculture have been studied largely as separate subjects. These systems are clearly interlinked, however, and in recent years a great deal of interdisciplinary research has been undertaken to better understand their interactions. This [textbook](#) was developed from a course that the authors have been teaching for many years on atmosphere-vegetation-soil interactions at one of the leading international research institutes in environmental science and agriculture. The book describes the atmosphere-vegetation-soil continuum from the perspective of several interrelated disciplines, integrated into one textbook. The text is interspersed with many student exercises and problems, with solutions provided. It will be ideal for intermediate to advanced students in meteorology, hydrology, soil science, environmental sciences and biology who are studying the atmosphere-vegetation-soil continuum, as well as researchers and professionals interested in the observation and modelling of atmosphere-vegetation-soil interactions.

Essentials of the Earth's Climate System



By Roger G. Barry and
Eileen A. Hall-McKim

CAMBRIDGE UNIVERSITY
PRESS

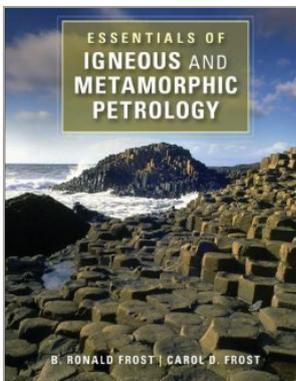
271 pages | Paperback
1st edition | March 2014
ISBN 9781107620490

Price: £35 (~€43)

Publisher's summary (abridged)

This [concise introduction](#) to modern climatology covers the key topics for intermediate undergraduate students on one-semester courses. The treatment of topics is non-mathematical wherever possible, instead focusing on physical processes to allow students to grasp concepts more easily. Full-colour illustrations support the text and supplementary topics are covered in boxes, enabling students to further increase their knowledge and awareness. A historical perspective of climatology is woven throughout, providing students with an insight into key scientists and technological developments. Each chapter concludes with a summary of the main points and a mixture of review and discussion questions, encouraging students to check their understanding and think critically. A list of key web links to data and other resources, and solutions and hints to answers to the student questions (password-protected for instructors) are provided online to complete the teaching package.

Essentials of Igneous and Metamorphic Petrology



By B. Ronald Frost and Carol
D. Frost

CAMBRIDGE UNIVERSITY
PRESS

314 pages | Paperback
1st edition | January 2014
ISBN 9781107011502

Price: £35 (~€43)

Publisher's summary (abridged)

All geoscience students need to understand the origins, environments and basic processes that produce igneous and metamorphic rocks. This concise [textbook](#), written specifically for one-semester undergraduate courses, provides students with the key information they need to understand these processes. Topics are organised around the types of rocks to expect in a given tectonic environment, rather than around rock classifications: this is much more interesting and engaging for students, as it applies petrology to real geologic environments. This textbook includes over 250 illustrations and photos, and is supplemented by additional colour photomicrographs made freely available online. Application boxes throughout the text encourage students to consider how petrology connects to wider aspects of geology, including economic geology, geologic hazards and geophysics. End-of-chapter exercises allow students to apply the concepts they have learnt and practice interpreting petrologic data.

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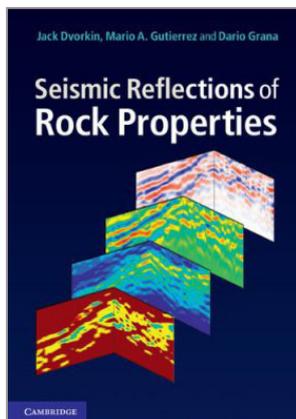
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Seismic Reflections of Rock Properties



By Jack Dvorkin, Mario A. Gutierrez and Dario Grana

CAMBRIDGE UNIVERSITY PRESS

338 pages | Hardback
1st edition | March 2014
ISBN 9780521899192

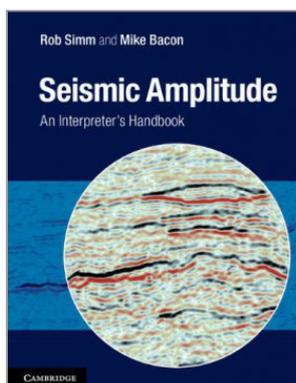
Price: £45 (~€56)

Publisher's summary

This [book](#) provides an accessible guide to using the rock physics-based forward modelling approach for mapping the subsurface, systematically linking rock properties to seismic amplitude. Providing practical workflows, the book shows how to methodically vary lithology, porosity, rock type, and pore fluids and reservoir geometry, calculate the corresponding elastic properties, and then generate synthetic seismic traces. These synthetic traces can then be compared to actual seismic traces from the field: a similar actual seismic response implies similar rock properties in the subsurface. The book catalogs various cases, including clastic sediments, carbonates, time-lapse seismic monitoring, and discusses the effect of attenuation on seismic reflections. It shows how to build earth models (pseudo-wells) using deterministic and statistical approaches, and includes case studies based on real well data. A vital guide for researchers and petroleum geologists, in industry and academia, providing sample catalogs of synthetic seismic reflections from a variety of realistic reservoir models.

Seismic Amplitude

An Interpreter's Handbook



By Rob Simm and Mike Bacon

CAMBRIDGE UNIVERSITY PRESS

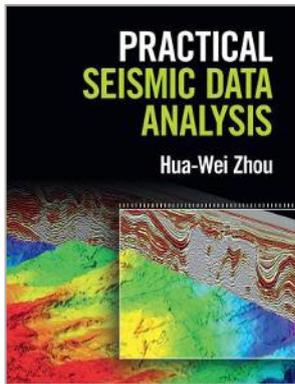
279 pages | Hardback
1st edition | April 2014
ISBN 9781107011502

Price: £45 (~€56)

Publisher's summary

Seismic amplitudes yield key information on lithology and fluid fill, enabling interpretation of reservoir quality and likelihood of hydrocarbon presence. The modern seismic interpreter must be able to deploy a range of sophisticated geophysical techniques, such as seismic inversion, AVO (amplitude variation with offset), and rock physics modelling, as well as integrating information from other geophysical techniques and well data. This accessible, authoritative [book](#) provides a complete framework for seismic amplitude interpretation and analysis in a practical manner that allows easy application – independent of any commercial software products. Deriving from the authors' extensive industry expertise and experience of delivering practical courses on the subject, it guides the interpreter through each step, introducing techniques with practical observations and helping to evaluate interpretation confidence. Seismic Amplitude is an invaluable day-to-day tool for graduate students and industry professionals in geology, geophysics, petrophysics, reservoir engineering, and all subsurface disciplines making regular use of seismic data.

Practical Seismic Data Analysis



By Hua-Wei Zhou

CAMBRIDGE UNIVERSITY PRESS

496 pages | Hardback
1st edition | January 2014
ISBN 9780521199100

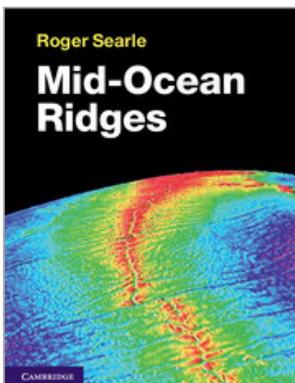
Price: £45 (~€56)

[Publisher's summary \(abridged\)](#)

This [modern introduction](#) to seismic data processing in both exploration and global geophysics demonstrates practical applications through real data and tutorial examples. The underlying physics and mathematics of the various seismic analysis methods are presented, giving students an appreciation of their limitations and potential for creating models of the sub-surface. Designed for a one-semester course, this textbook discusses key techniques within the context of the world's ever increasing need for petroleum and mineral resources – equipping upper undergraduate and graduate students with the tools they need for a career in industry. Examples presented throughout the text allow students to compare different methods and can be used in demonstrations with the instructor's software of choice.

Mid-Ocean Ridges

A book review



By Roger Searle

CAMBRIDGE UNIVERSITY PRESS

330 pages | Hardback
1st edition | September 2013
ISBN 9781107017528

Price: £45 (~€56)

Within each chapter, Searle builds up from the foundations of the topic to the latest research in the area, rapidly equipping the reader with the necessary background and building on this basic knowledge to give them a deeper understanding of the subject. This makes the book accessible to, and appropriate for, researchers at any level, from undergraduate students to senior scientists. Furthermore, each chapter is broken down into bite-sized segments with summary of key points to complete the package, making it an excellent reference text. The book concludes with a thorough synthesis of MOR dynamics, which ties together the topics covered in each chapter.

Mid-Ocean Ridges is richly illustrated with maps, charts, diagrams and data that support the text and detail the current understanding of MOR systems. Such figures are invaluable when comprehending a system so far from sight. In addition, you can find a directory of MORs and related features around the world, as well as an extensive glossary to support students and scientists who may be unfamiliar with MOR terminology in the final pages. The book also includes a carefully selected reference list that serves as a superb starting point for research in this field.

If I could ask for one thing more from this book, it would be an overview of the fauna associated with ridge systems, but this topic alone could be another volume in itself. In covering the dynamic processes associated with MORs, this book is an excellent resource. It is not only suitable for the geoscientists engaged in this area of research, but also the volcanologists and oceanographers whose work is coupled to these dynamic systems.

Mid-ocean ridges (MORs) span some 65,000 km across the sea floor and are the critical point at which new crust is formed on the planet. As such, they are a crucial area of study for any geoscientist. In his recently published [book](#), Roger Searle provides a fantastic overview of these continent-forming ranges that split the Earth's underwater crust. After opening with a brief history of MOR study and the techniques used to investigate these features, Searle launches into the fundamentals of MOR dynamics. The volume covers the oceanic lithosphere, the structure and composition of the crust, the volcanic, hydrothermal and tectonic processes associated with MORs and their role in plate boundary formation.

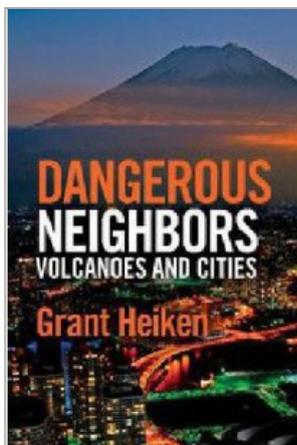
Each chapter is a self-contained package of information, so the reader can tackle a particular topic, say, hydrothermal processes associated with MOR systems, without prior knowledge of mid-ocean ridges, or without reading the book cover to cover. That said, anyone who were to read it cover to cover, would not be disappointed. Searle details the dynamic aspects of the world's mid-ocean ridges with incredible clarity, delving into their history, composition, structure and processes, and incorporating some of the latest research in the field.

Sara Mynott

EGU Communications Officer

Dangerous Neighbours: Volcanoes and Cities

A book review



By Grant Heiken

CAMBRIDGE UNIVERSITY PRESS

196 pages | Hardback
1st edition | October 2013
ISBN 9781107039230

Price: £19.99 (~€25)

[Dangerous Neighbours: Volcanoes and Cities](#) is an accessible and informative book covering risk and mitigation of volcanic hazards in major global cities. It has been written by volcanologist and urban-studies expert Grant Heiken, whose credentials include being a geology instructor for NASA's Apollo programme, researching geothermal development and urban planning at Los Alamos National Laboratory, and presiding over the International Association of Volcanology and Chemistry of the Earth's Interior between 1995 and 1999. Much of the case studies in the book stem from his personal experience, which is apparent in the way he discusses the locations, and this provides a very topical, relevant and personal reading experience.

Heiken has written the book in language that can be easily understood by the non-scientist. It is written in a conversational tone, and every scientific term is explained. The target audience spans from interested members of the public to professionals who are involved in urban planning and civil protection. For the volcanologist, the book provides excellent examples of how various cities around the world can and do respond to volcanic hazards.

The introduction covers some basic questions – such as 'Why do people live near high-risk volcanoes?' – and also gives a brief overview of some past eruptions in various parts of the world, to provide context for the gravity of such situations.

The subsequent eight chapters each deal with volcanic hazards near big cities in different parts of the world. Naples, in Italy, is discussed in the first chapter. The second chapter tackles a range of volcanic hazards in Mexico City. The third chapter looks at two volcanoes near Quito, Ecuador. The fourth looks at Manila in the Philippines, and the many volcanoes that surround it. The fifth has a number of big-city case studies from Japan, and the sixth examines Auckland in New Zealand, which is host to a massive fifty volcanoes! The seventh chapter takes us to the northwest sector of the United States, specifically Seattle and Portland. In the eighth

chapter, a comparison is made between the islands of Santorini, Greece, and Montserrat, in the Caribbean.

As can be seen from the above, there is a lot of data to chew over, but what is good about the examples given in this book is that, due to the way they are written, they are easy to bring up in conversation with non-scientists when trying to communicate risk.

The final chapter asks the question 'How should a city respond?' This provides a closing overview of the state of science and hazard mitigation today, and discusses potential ramifications of not taking volcanic risk in such locations seriously.

In all, the book tackles some major questions in the fields of volcanology and urban studies, and encourages the reader to think across the boundaries of these fields, all the while putting human communities at the centre of discussion.

One problem that crops up time and time again is the retrofitting of evacuation routes and plans as big cities grow. Naples stands out as a particularly high risk area, due to its narrow and constrictive road design, increasing population and the infrequent recurrence time of eruptions from Mount Vesuvius. Kagoshima in Japan, on the other hand, approaches urban planning slightly differently due to the frequent eruptions of Sakurajima.

The book shows how both eruption frequency and level of activity from nearby volcanoes influences residents' ideas of risk. Generally, awareness is higher in more volcanically active areas. But in some cases, risk perception can, counterproductively, decrease near some constantly active volcanoes as they are considered a 'fact of life'. This brief discourse into the human psychology of such situations adds an extra layer of complexity to the issue of risk management.

The other point Heiken is keen to make is that volcanoes are volatile and large eruptions could disrupt life on a grand scale irrespective of current effective plans. This uncertainty is shown to be present in every case study discussed in the book, and in the last chapter the author makes a compelling case for pushing awareness of such issues, in very human terms.

This book is thoroughly recommended for anyone with an interest in volcanic hazards, and does not require any preexisting knowledge on the subject. It is easily digestible and will prove useful for the enthusiast and professional alike.

Holly Ferrie

*Geosciences Student, Department of Environment,
Earth and Ecosystems, Open University, UK*