Earth System – Environmental Sciences

April 2015 updated catalog

forthcoming, new and backlist book titles

27-37 St George’s Road – London SW19 4EU — United Kingdom
Scientific Committee

Committee coordinator(s)

André Mariotti
Université Pierre et Marie Curie, Paris
andre.mariotti@upmc.fr

Jean-Marie Flaud, CNRS
Jeanne Garric, IRSTEA, Lyon-Villeurbanne
Yvan Lagadeuc, Université de Rennes
Sylvain Lamare, Université de La Rochelle
Hervé Le Treut, UPMC et Institut-Pierre-Simon Laplace, Paris

André Monaco, CNRS
Patrick Prouzet, Ifremer

 Topics covered

Atmosphere
Continental Environments
Critical Zone
Cryosphere
Oceanic and Coastal Environments
Pedosphere
Territories, Land Use Planning
Biogeochemistry
Climate
Earth Sciences
Ecotoxicology
Experimental Simulations
Geochemistry
Geological Waste Management
Geomorphology
Geophysics
Hydrogeology
Hydrology
Limnology
Multiscale Observations
Natural Hazards
Natural Resources
Numerical Modeling
Paleoclimates
Planetology
Pollutions
Soil Science
Forthcoming Sets

Anthropogenic Processes in Fluvial Landscapes coordinated by Aziz Ballouche Aziz, Karl Matthias Wantzen
Consumption and Sustainable Development coordinated by Bellini Béatrice
Ecotoxicology coordinated by Jeanne Garric and André Mariotti
Organic Waste Treatment coordinated by Hervé Boileau
Paleobiology and Paleoenvironments coordinated by Eric Buffetaut
Seas and Oceans coordinated by André Mariotti
Remote Sensing Observations of Continental Surfaces coordinated by André Mariotti
Resilience and Urban Engineering coordinated by Barroca Bruno
Water and Energy coordinated by Jean-Francois Bonnet

Forthcoming Titles

Bioclimatology of Tropical Areas by Morand Dominique, Nizinski Jerzy Jan
Ecological and Biogeographical Division of the World Ocean by Reygondeau Gabriel
Ecosystem Approaches and Environmental Governance by Sébastien L, Prouzet Patrick
Fossilization of Organisms by Neraudeau Didier
Infrared Earth’s Atmosphere Observation by Herbin Hervé, Dubuisson Philippe
Iron Cycle in Oceans by Blain Stéphane
Management of the Effects of Coastal Storms by Quevauviller Philippe et al.
Metrology in Marine Chemistry by Quevauviller Philippe
Silicon Cycle in Oceans by Quéguiner Bernard
The Innovation Biosphere by Mercier-Laurent Eunika

Sets – Forthcoming and published Titles

Seas and Oceans

Set coordinated by André Monaco and Patrick Prouzet
Université Pierre et Marie Curie, Paris

Ocean in the Earth System
The Land-Sea Interactions
Ecosystem Sustainability and Global Change
Vulnerability of Coastal Ecosystems and Adaptation
Development of Marine Resources
Value and Economy of Marine Resources
Ocean in the Earth System
Seas and Oceans Set – Volume 1
Edited by André Monaco, CNRS, Patrick Prouzet, Ifremer, France

Coordinated by André Mariotti

ISBN: 9781848217010 • 2014 • 290 pages • USD 145.00 • ISTE-WILEY

The authors of this book present the ocean system through its interactions with the geosphere, atmosphere and biosphere, at all spatio-temporal scales. Matter and energy exchanges as well as biogeochemical cycles are analyzed, along with the consequences of climate change on the acidification of the oceans and the biogeochemical cycles.

Contents
2. The Ocean and the Climate System.
3. Ocean–Atmosphere Interactions.
5. Ocean Acidification and its Consequences.

The Land–Sea Interactions
Seas and Oceans Set – Volume 2
Edited by André Monaco, CNRS, Patrick Prouzet, Ifremer, France

Coordinated by André Mariotti

ISBN: 9781848217027 • 2014 • 314 pages • USD 145.00 • ISTE-WILEY

The volume 2 of this set covers the hydrological and geochemical exchanges that maintain a natural land–sea system. The intensification of human pressures on this interface increasingly leads to physical and chemical disequilibria (radioactive pollution, plastic waste) and ecological malfunctions (eutrophication) which, along with climate change, are major components of global change.

Contents
2. Chemical Elements and Isotopes, Tracers of Land–Sea Exchanges.
4. Pollution by Marine Debris.
5. Radioactivity of Anthropic Origin in the Marine Environment.

Ecosystem Sustainability and Global Change
Seas and Oceans Set – Volume 3
Edited by André Monaco, CNRS, Patrick Prouzet, Ifremer, France

Coordinated by André Mariotti

ISBN: 9781848217034 • 2014 • 234 pages • USD 145.00 • ISTE-WILEY

This book analyzes the state and evolution of these resources, by defining some indicators as well as the effects and impacts of global change on the dynamics of the living exploited resources.

Contents
1. Ocean, Biodiversity and Resources.
2. Pelagic Marine Ecosystems and Biogeochemical Cycles.
3. Indicators.
4. The Impact of Global Change on the Dynamics of Marine Living Resources.
This book study the particular vulnerability of coastal ecosystems to climate and anthropogenic change from the viewpoint of various scenarios and concepts. This explains the development of original monitoring systems and adaptation strategies of natural environments and societies. Extreme events, marine submersions, chemical and biological risks, along with human perceptions are analyzed by the authors of this book.

Contents

1. Marine Ecosystems under Toxic Pressure.
4. Vulnerability, Impacts and Adaptation of Coastal Zones to Global Change.
6. From Vulnerability to Adaptation to Climate Change: Food for Thoughts in Social Sciences.
7. Anthropological Approach to Vulnerability and Major Hazards.

The diversity of goods and services provided by the ocean has proven to be indispensable to human communities. Use of these services and exploitation of goods will have to be developed in a responsible and sustainable manner. New approaches and scenarios based on the analysis of the aquaculture and fishing production chain are developed to ensure an Ecological Economy linked to the use of living marine resources.

Contents

1. The Services Provided by Marine Ecosystems: Economic Assessments and their Usages.
2. Fisheries and Aquaculture Sustainability.
Climate Change
Identification and Projections
Philippe de Larminat, Ecole-Centrale-Nantes, France

ISBN: 9781848217775 • 2014 • 150 pages • USD 75.00 • ISTE-WILEY

Under certain scenarios on the subject of CO2 emissions, by the end of the century the atmospheric concentration could triple its pre-industrial level. The very large numerical models intended to anticipate the corresponding climate evolutions are designed and quantified from the laws of physics. However, little is generally known about these: genesis of clouds, terms of the greenhouse effect, solar activity intervention, etc.

This book deals with the issue of climate modeling in a different way: using proven techniques for identifying black box-type models. Taking climate observations from throughout the millennia, the global models obtained are validated statistically and confirmed by the resulting simulations.

This book thus brings constructive elements that can be reproduced by anyone adept at numerical simulation, whether an expert climatologist or not. It is accessible to any reader interested in the issues of climate change.

Contents
1. Introduction.
2. Climatic Data.
4. Formulating an Energy Balance Model.
5. Presumed Parameters.
7. Partial Results.
8. Overall Results.
10. Long-Term Climate Projections.
11. Short-Term Predictions.
12. Conclusions.

Water on Earth
Physicochemical and Biological Properties
Christophe Lécuyer, Institut Universitaire de France and University of Lyon 1, France

ISBN: 9781848214774 • 2013 • 272 pages • USD 145.00 • ISTE-WILEY

The presence of water on Earth is discussed in this book using various theories about its origin as a basis. These theories include a massive degassing of the primitive parent bodies that built our planet as well as a late addition from comets that collided with the Earth’s surface.

The extraordinary physico-chemical properties of the water molecules, combined with its abundance and distribution over the Earth’s surface, have contributed to regulating the global climate and favoring species’ evolution for more than 4 billion years. The early emergence of life in the deep ocean and its further diversification were closely linked to the global water cycle whose dynamics result from the energy balance between solar radiation and the internal heat flux of the Earth.

Contents
2. Theories about the Origin of Water on Earth.
3. The Main Water Reservoirs on Earth and their Chemical Composition.
5. Water and Life.
Modeling Living Systems
From Cell to Ecosystem
Alain Pavé, Claude Bernard University Lyon 1, France

Coordinated by André Mariotti

ISBN: 9781848214231 • 2012 • 640 pages • USD 245.00 • ISTE-WILEY

An historical and general introduction informs the reader how mathematics and formal tools are used to solve biological problems at all levels of the organization of life.

The core of this book explains how this is done, based on practical examples coming, for the most part, from the author’s personal experience. In most cases, data are included so that the reader can follow the reasoning process and even reproduce calculus. The final chapter is devoted to essential concepts and current developments.

Magnetic Resonance Imaging for Groundwater
Anatoly Legchenko, IRD, Marseille, France

Coordinated by François Nicot

ISBN: 9781848215689 • 2013 • 176 pages • USD 95.00 • ISTE-WILEY

This book presents the basics of the non-invasive geophysical method for groundwater investigation, called Magnetic Resonance Sounding (MRS) or Surface Nuclear Magnetic Resonance (SNMR), and its practical application to the problems of groundwater localization and aquifer characterization.

This book contains an extensive bibliography, numerous practical and numerical examples as well as a detailed presentation of the nuts and bolts of the method based on the long-term experience of SNMR development and practical use.
Environmental Hydraulics Series
Edited by Jean-Michel Tanguy,
Ministry of Sustainable Development, France

Volume 1 – Physical Processes and Measurement Devices
9781848211537 • 2010 • 672 pages • USD 215.00

Volume 2 – Mathematical Models
9781848211544 • 2010 • 576 pages • USD 215.00

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9781848211551 • 2010 • 416 pages • USD 215.00

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E9781848211568 • 2010 • 432 pages • USD 215.00

Volume 5 – Modeling Software
9781848211575 • 2010 • 304 pages • USD 165.00
**ISTE Contacts**

Sami Ménascé, President and Managing Director – s.menasce@iste.co.uk
Raphaël Ménascé, Vice-President – +44 208 879 4588 – r.menasce@iste.co.uk

General Administration
Chantal Ménascé — +44 208 879 4582 – c.menasce@iste.co.uk

Editorial and Production
Rebecca Edge, Editorial Manager – +44 208 879 4585 – r.edge@iste.co.uk
Ludovic Moulard, Acquisition Editor – +44 208 879 4584 – l.moulard@iste.co.uk

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**Scientific Board Members**

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