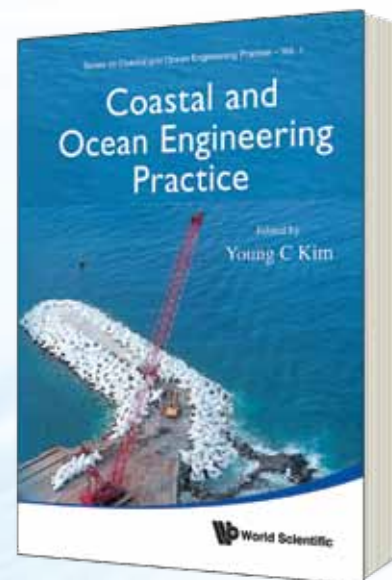
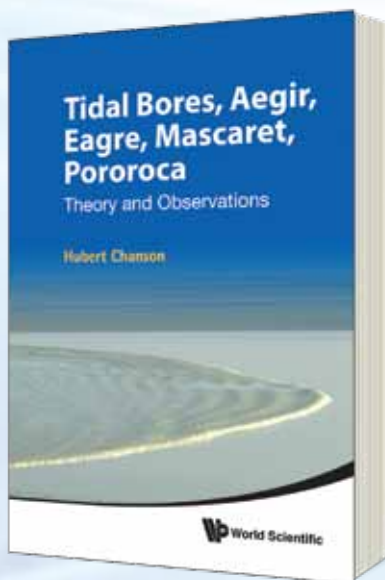
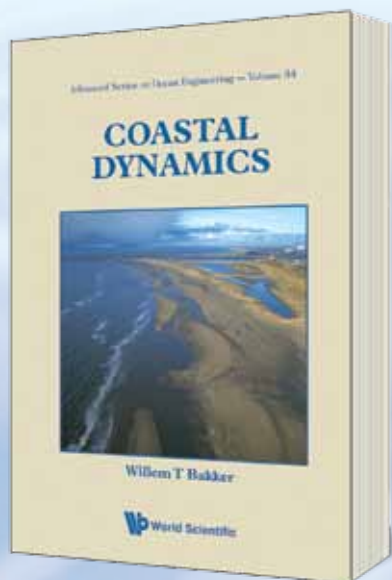


# New and Forthcoming Coastal & Ocean Engineering 2012



**New**

Advanced Series on Ocean Engineering  
**COASTAL DYNAMICS**

by **Willem T Bakker**  
*(Delft Hydraulics, Netherlands)*

Our world is constantly changing, governed by continuity, dynamic interactions and boundary conditions. For many coasts, the common denominators contributing to these changes are sand, waves, tides, salt gradients, and human interaction, all themes that are treated in this valuable textbook. Confining itself to essentials, the coverage reflects centuries of theoretical and practical knowledge of Dutch coastal engineers. Focussing, where applicable, on linear theory, the book shows how the essentials of local coastal behavior can be reproduced and predicted.

**Readership:** Graduate students and researchers in ocean and coastal engineering and management.

**600pp** **Jul 2011**  
**978-981-270-373-6** **US\$99** **£65**  
**978-981-281-423-4(ebook)** **US\$129**

**New**

**TIDAL BORES, AEGIR, EAGRE, MASCARET, POROROCA**

**Theory and Observations**  
by **Hubert Chanson**  
*(The University of Queensland, Australia)*

This book demystifies the physics of a tidal bore and it thoroughly documents the tidal bores on our planet with reliable and accurate information. It aims to cultivate a passion for a beautiful, but fragile geophysical process, with in-depth updated content and by over 190 illustrations and photographs.

**Readership:** Undergraduate and graduate students, researchers and general public interested in tidal bores.

**300pp** **Jul 2011**  
**978-981-4335-41-6** **US\$96** **£60**  
**978-981-4335-42-3(ebook)** **US\$125**

**New**

Series on Coastal and Ocean Engineering Practice

**COASTAL AND OCEAN ENGINEERING PRACTICE**

edited by **Young C Kim**  
*(California State University, Los Angeles, USA)*

This book focuses on the latest technology applied in design and construction, effective engineering methodology, unique projects and problems, design and construction challenges, and other lessons learned. In addition, unique practices in planning, design, construction, maintenance, and performance of coastal and ocean projects will be explored.

**Readership:** Graduates and researchers in coastal, ocean, civil and geotechnical engineering.

**400pp** **Oct 2011**  
**978-981-4360-56-2** **US\$128** **£84**  
**978-981-4360-57-9(ebook)** **US\$166**



## HIGHLIGHTS

Advances in Coastal and Ocean Engineering  
**A GUIDE TO MODELLING COASTAL MORPHOLOGY** Pg 2

by **JA Roelvink** (*UNESCO-IHE, The Netherlands*) & **A J H M Reniers** (*Univ. of Miami, USA & Delft Univ. of Tech., The Netherlands*)

Advanced Series on Ocean Engineering – Vol. 32  
**TSUNAMI** Pg 3

**To Survive from Tsunami**  
by **Susumu Murata** (*Coastal Development Inst. of Tech., Japan*), **Fumihiko Imamura** (*Tohoku Univ., Japan*), **Kazumasa Katoh** (*Musashi Inst. of Tech., Japan*), **Yoshiaki Kawata** (*Kyoto Univ., Japan*), **Shigeo Tahashi** (*Port and Airport Research Inst., Japan*), & **Tomotsuka Takayama** (*Kyoto Univ., Japan*)

Advanced Series on Ocean Engineering – Vol. 23  
**THEORY AND APPLICATIONS OF OCEAN SURFACE WAVES** Pg 5

**Part 1: Linear Aspects, Part 2: Nonlinear Aspects**  
by **Chiang C Mei & Dick K-P Yue** (*Massachusetts Inst. of Tech., USA*), **Michael Stiassnie** (*Technion-Israel Inst. of Tech., Israel*)

## Handbook

Advances in Coastal and Ocean Engineering

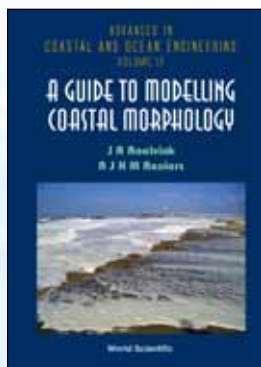
### A GUIDE TO MODELLING COASTAL MORPHOLOGY

by **J A Roelvink** (UNESCO-IHE, The Netherlands) & **A J H M Reniers**  
(University of Miami, USA & Delft University of Technology, The Netherlands)

Process-based morphodynamic modelling is one of the relatively new tools at the disposal of coastal scientists, engineers and managers. On paper, it offers the possibility to analyse morphological processes and to investigate the effects of various measures one might consider to alleviate some problems. For these to be applied in practice, a model should be relatively straightforward to set up. In a nutshell, this book provides an in-depth review of ways to model coastal processes, including many hands-on exercises.

**Readership:** Graduate students and professionals in ocean engineering, geology/earth science, and oceanography.

**250pp** **Oct 2011**  
**978-981-4304-25-2** **US\$112** **£77**  
**978-981-4304-26-9(ebook)** **US\$146**



### Advanced Series on Ocean Engineering SELECTED PAPERS OF MICHAEL LONGUET-HIGGINS ON THE DYNAMICS OF WATER WAVES; (Volumes 1–3)

edited by **S G Sajjadi**  
(Embry Riddle Aeronautical University, USA)

This is a three-volume selection of classical papers by Michael Longuet-Higgins, who for many years has been a leading researcher in the fast-developing field of physical oceanography. Some of these papers were first published in scientific journals or in conference proceedings that are now difficult to access. All the papers are characterized by the novelty of their content, and the clarity of their style and exposition. The papers are quite varied in their approach. They range from basic theory and new computational methods to laboratory experiments and field observations. An overall feature is the frequent comparison between theory and experiment and the constant attention to practical applications.

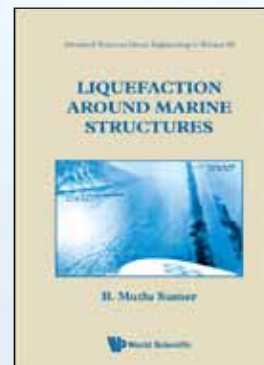
**Readership:** Graduate students and researchers in ocean engineering, fluid dynamicists and physical oceanographers.

**Set**  
**1950pp** **Apr 2012**  
**978-981-4322-51-5** **US\$440** **£303**

### Advanced Series on Ocean Engineering LIQUEFACTION AROUND MARINE STRUCTURES

by **Mutlu Sumer**  
(Technical University of Denmark, Denmark)

This book, whose primary aim is to describe liquefaction processes and their implications for marine structures such as pipelines, sea outfalls, quay walls and caisson breakwaters, discusses the subject of soil liquefaction in the marine environment. In addition, the physics of liquefaction (including examples illustrating the catastrophic consequences



of soil liquefaction with regard to marine structures) are described, and the mathematical modelling of liquefaction is treated in detail. Also, carefully selected numerical examples support the discussion of assessing liquefaction potential, and benchmark cases such as buried gas pipelines and their floatation, caisson breakwaters, cover stones and their interaction with liquefied soil along with counter measures are investigated.

**Readership:** Professionals and researchers in the area of coastal, ocean and marine civil engineering; graduate and post graduate students.

**300pp** **Sep 2013**  
**978-981-4329-31-6** **US\$95** **£59**  
**978-981-4335-10-2(ebook)** **US\$124**

## Highly Recommended

### COASTAL MANAGEMENT IN THE FACE OF CLIMATE CHANGE

by **Dominic Reeve** (University of Plymouth, UK)

This book highlights major concepts developed in the last 20 years or so for assessing the performance of coastal defences. The chapters comprehensively cover practical aspects of beach monitoring, estimating the nearshore wave conditions, quantifying the littoral drift environment, predicting changes in beach configuration, integrating the various components into a coherent management framework. Several examples of applications of the methods are given to illustrate the advantages and limitations of the different techniques, together with a case study from the south coast of the UK. It brings together in one book material that is currently dispersed across many sources which are not easy for the non-expert to access.

**Readership:** Graduate students, practitioners, and researchers in coastal engineering, civil engineering, environmental management and planning and environmental engineering.

**200pp** **Oct 2011**  
**978-1-84816-583-0** **US\$88** **£61**  
**978-1-84816-584-7(ebook)** **US\$114**

### Advanced Series on Ocean Engineering DYNAMICS OF FLOATING OFFSHORE STRUCTURES

by **Subrata K Chakrabarti** (Offshore Structure Analysis, Inc., USA)

This book will provide a complete coverage on the dynamics of floating offshore structures. Topics like random waves, wind and current, etc. will be developed from the fundamental principles and their applications to offshore structures will be discussed. The design aspect of the offshore structure, both for short-term and long-term response and structural fatigue, are important elements of the dynamic response and will be further elaborated upon in the text.

**Readership:** Senior undergraduate, graduates and researchers in offshore and ocean engineering.

**600pp** **Mar 2012**  
**978-981-4280-55-6** **US\$95** **£63**  
**978-981-4280-56-3(pbk)** **US\$55** **£36**



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Advanced Series on Ocean Engineering

## COASTAL AND ESTUARINE PROCESSES

by **Peter Nielsen** (*The University of Queensland, Australia*)



*"Whether it concerns waves, nearshore hydrodynamics or estuarine hydraulics Peter Nielsen has a personal, extremely instructive way to present solutions that provide practical insight for everyone interested in coastal and estuarine processes. The final chapter on ground water dynamics addresses an issue that receives too little attention. In short, this book should be within reach on your bookshelf."*

**Marcel Stive**, *Delft University of Technology, The Netherlands*

**Readership:** Undergraduate and graduate students, researchers and engineers in coastal, civil and environmental engineering.

<b>360pp</b>	<b>Apr 2009</b>	
<b>978-981-283-711-0</b>	<b>US\$93</b>	<b>£76</b>
<b>978-981-283-712-7(pbk)</b>	<b>US\$61</b>	<b>£51</b>

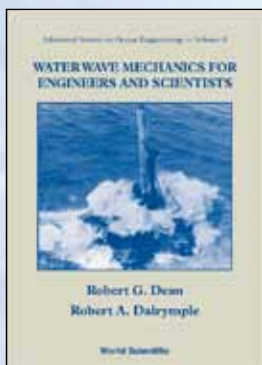
Advanced Series on Ocean Engineering

## WATER WAVE MECHANICS FOR ENGINEERS AND SCIENTISTS

by **Robert G Dean** (*University of Florida, USA*) & **Robert A Dalrymple** (*University of Delaware, USA*)



The book commences with a review of fluid mechanics and basic vector concepts. The formulation and solution of the governing boundary value problem for small amplitude waves are developed and the kinematic and pressure fields for short and long waves are explored. The transformation of waves due to variations in depth and their interactions with structures are derived.



**Readership:** Coastal and ocean engineers.

<b>368pp</b>	<b>Jan 1991</b>	
<b>978-981-02-0421-1(pbk)</b>	<b>US\$46</b>	<b>£31</b>
<b>978-981-238-551-2(ebook)</b>	<b>US\$125</b>	

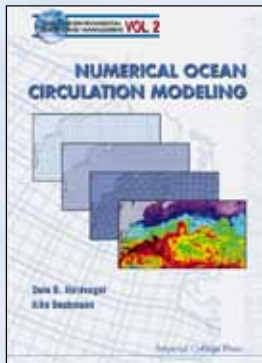
Series on Environmental Science and Management

## NUMERICAL OCEAN CIRCULATION MODELING

by **Dale B Haidvogel** (*Rutgers University, USA*) & **Aike Beckmann** (*Alfred Wegener Institute for Polar & Marine Research, Germany*)



This book offers a comprehensive overview of the models and methods employed in the rapidly advancing field of numerical ocean circulation modeling. For those new to the field, concise reviews of the equations of oceanic motion, sub-grid-scale parameterization, and numerical approximation techniques are presented and four specific numerical models, chosen to span the range of current practice, are described in detail. For more advanced users, a suite of model test problems is developed to illustrate the differences among models, and to serve as a first stage in the quantitative evaluation of future algorithms.



**Readership:** Oceanographers and geoscientists.

<b>344pp</b>	<b>Apr 1999</b>	
<b>978-1-86094-114-6</b>	<b>US\$119</b>	<b>£78</b>
<b>978-1-86094-393-5(ebook)</b>	<b>US\$155</b>	

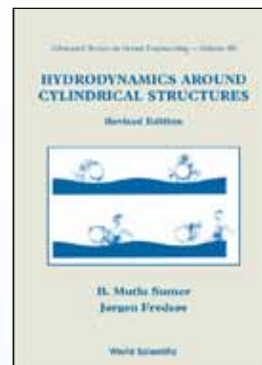
## HYDRODYNAMICS AROUND CYLINDRICAL STRUCTURES (Revised Edition)

by **B Mutlu Sumer** (*Technical University of Denmark, Denmark*) & **Jørgen Fredsøe** (*Technical University of Denmark, Denmark*)



The primary aim of the book is to describe the flow pattern and the resulting load which develops when waves or current meet a cylinder. Special attention is paid to circular cylinder. The development in the forces is related to the various flow patterns and is discussed in detail. Regular as well as irregular waves are considered, and special cases like wall proximities (pipelines) are also investigated.

**Readership:** PhD and MSc students with some experience in basic fluid mechanics, and consulting companies in the areas of marine, offshore, coastal and civil engineering.



<b>548pp</b>	<b>Sep 2006</b>	
<b>978-981-270-039-1</b>	<b>US\$184</b>	<b>£127</b>
<b>978-981-277-277-0(ebook)</b>	<b>US\$239</b>	

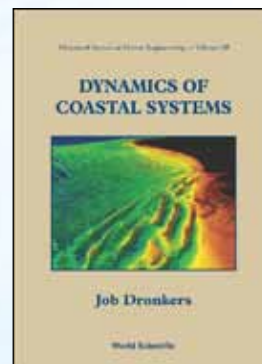
Advanced Series on Ocean Engineering

## DYNAMICS OF COASTAL SYSTEMS

by **Job Dronkers** (*Rijkswaterstaat, The Netherlands*)



*Dynamics of Coastal Systems* is about the dynamic interaction between water motion and seabed topography, which affects the natural response of coastal systems to change in external conditions and to human interventions — from the scale of seabed ripples up to the scale of entire barrier and delta systems. The book highlights major concepts developed during the past 50 years for the description of current-topography, tide-topography and wave-topography interactions. It provides simple analytical tools and models for diagnosing and predicting coastal response to change, with references to a great variety of coastal systems around the world. These concepts and tools are crucial for sustainable management of beaches, deltas and coastal wetlands.



**Readership:** Graduate students, engineers, researchers, academics, lecturers, practitioners, consultants and professionals.

<b>540pp</b>	<b>Aug 2005</b>	
<b>978-981-256-207-4</b>	<b>US\$171</b>	<b>£113</b>
<b>978-981-256-349-1(pbk)</b>	<b>US\$96</b>	<b>£63</b>
<b>978-981-277-525-2(ebook)</b>	<b>US\$222</b>	

Advanced Series on Ocean Engineering

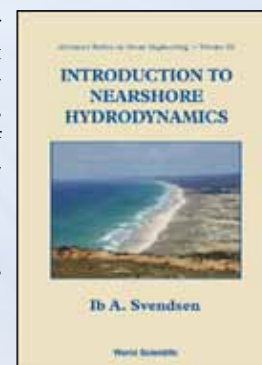
## INTRODUCTION TO NEARSHORE HYDRODYNAMICS

by **Ib A Svendsen** (*University of Delaware, USA*)



This book gives a description of the theories for wave and nearshore hydrodynamics. It is meant to de-mystify the topics and hence starts at a fairly basic level. It requires knowledge of fluid mechanics equivalent to a first year graduate level. At the end of each topic, an attempt is made to give an overview of the present stage of the scientific development in that area with numerous references for further studies.

**Readership:** Coastal engineering graduate students and scientists, and practicing engineers working with coastal engineering modeling.



<b>744pp</b>	<b>Dec 2005</b>	
<b>978-981-256-142-8</b>	<b>US\$141</b>	<b>£79</b>
<b>978-981-256-204-3(pbk)</b>	<b>US\$74</b>	<b>£43</b>
<b>978-981-270-612-6(ebook)</b>	<b>US\$183</b>	

Advanced Series on Ocean Engineering

## THEORY AND APPLICATIONS OF OCEAN SURFACE WAVES

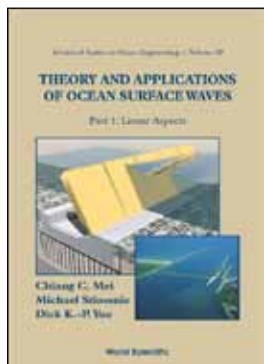


Part 1: Linear Aspects, Part 2: Nonlinear Aspects

by **Chiang C Mei** (Massachusetts Institute of Technology, USA),  
**Michael Stiassnie** (Technion-Israel Institute of Technology, Israel), &  
**Dick K-P Yue** (Massachusetts Institute of Technology, USA)

In this expanded version, three chapters on recent developments have been added. The first is on multiple scattering by periodic or random bathymetry. The second is on Zakharov's theory of nonlinear wave fields with broad spectra. The third is an extensive discussion of powerful numerical techniques for highly nonlinear waves. Other new topics include infragravity waves, upstream solitons, Venice storm gates, etc. In addition, there are many new exercises.

**Readership:** Graduate students and lecturers in coastal and ocean engineering, as well as theoretical engineers, applied mathematicians and geophysicists.



<b>1136pp (Set)</b>	<b>Jul 2005</b>	
<b>978-981-238-894-0(pbk)</b>	<b>US\$111</b>	<b>£64</b>
<b>978-981-256-919-6(ebook)</b>	<b>US\$212</b>	

Advanced Series on Ocean Engineering

## THE THEORY AND PRACTICE OF HYDRODYNAMICS AND VIBRATION



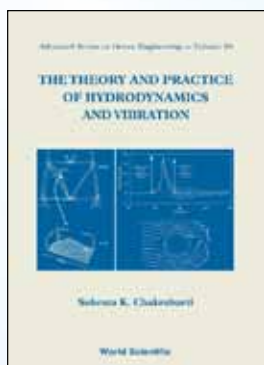
by **Subrata K Chakrabarti**

(Offshore Structure Analysis, Inc, Illinois, USA)

*"It is a useful text for a course in which the practical application of tools learned in other courses in an engineering curriculum is investigated. It is also useful for a first course on fluid-structure interaction... a textbook that provides a reasonably good overview of the fundamentals of engineering science and a discussion on how the fundamentals are applied to solve practical problems."*

*Journal of Offshore Mechanics and Arctic Engineering*

**Readership:** Upper level undergraduates, post-graduates, academics and practitioners in mechanical and civil engineering.



<b>484pp</b>	<b>Nov 2002</b>	
<b>978-981-02-4921-2</b>	<b>US\$92</b>	<b>£69</b>
<b>978-981-02-4922-9(pbk)</b>	<b>US\$52</b>	<b>£39</b>
<b>978-981-277-765-2(ebook)</b>	<b>US\$120</b>	

Advanced Series on Ocean Engineering

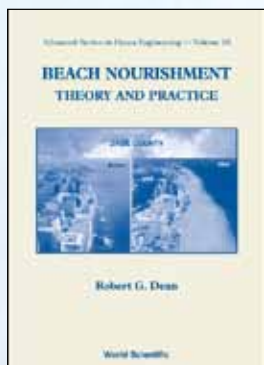
## BEACH NOURISHMENT

Theory and Practice

by **Robert G Dean** (University of Florida, USA)

This book is written for engineers, students of coastal processes and laypersons interested in beach nourishment, which consists of the placement of large quantities of good quality sediment on the beach to advance the shoreline seaward. The improvement of project performance through proper design and the predictability of performance are emphasized. The overall longevity of a project is addressed as are local erosional areas.

**Readership:** Engineers and geologists.



<b>420pp</b>	<b>Jan 2003</b>	
<b>978-981-02-1547-7</b>	<b>US\$108</b>	<b>£75</b>
<b>978-981-02-1548-4(pbk)</b>	<b>US\$54</b>	<b>£37</b>

Advanced Series on Ocean Engineering

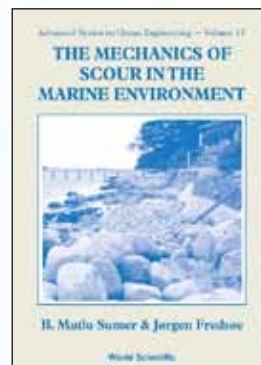
## THE MECHANICS OF SCOUR IN THE MARINE ENVIRONMENT



by **B Mutlu Sumer** (Technical University of Denmark) &  
**Jørgen Fredsøe** (Technical University of Denmark)

This book treats the subject of local scour around different kinds of marine structures, exposed to waves and/or currents. The first, major part of the book is devoted to *marine pipelines*, describing in detail all kinds of scour scenarios, and also making recommendations for scour protection. Other kinds of structures considered are *single piles* (slender or large), *groups of piles*, *complex subsea structures*, *breakwaters*, and *seawalls*. The scour due to ship propellers is also described.

**Readership:** MSc and PhD students as well as consulting engineers in ocean and environmental engineering.



<b>552pp</b>	<b>Apr 2002</b>	
<b>978-981-02-4930-4</b>	<b>US\$92</b>	<b>£69</b>
<b>978-981-277-760-7(ebook)</b>	<b>US\$120</b>	

Advanced Series on Ocean Engineering

## MECHANICS OF COASTAL SEDIMENT TRANSPORT



by **Jørgen Fredsøe** (Technical University of Denmark) &  
**Rolf Deigaard** (Technical University of Denmark)

The primary aim of the book is to describe the physical processes of sediment transport and how to represent them in mathematical models. The book can be divided in two main parts; in the first, the relevant hydrodynamic theory is described. The second part covers sediment transport and morphological development. The part on sediment transport introduces the basic concepts (critical bed shear stress, bed load, suspended load and sheet layer, near-bed concentration, effect of sloping bed); it treats suspended sediment in waves and current and in the surf zone, and current and wave-generated bed forms.

**Readership:** Ocean and electronics engineers, geologists, mathematical physicists and graduate students.

<b>392pp</b>	<b>Nov 1992</b>	
<b>978-981-02-0840-0</b>	<b>US\$96</b>	<b>£63</b>
<b>978-981-02-0841-7(pbk)</b>	<b>US\$46</b>	<b>£31</b>
<b>978-981-238-531-4(ebook)</b>	<b>US\$125</b>	

Advanced Series on Ocean Engineering

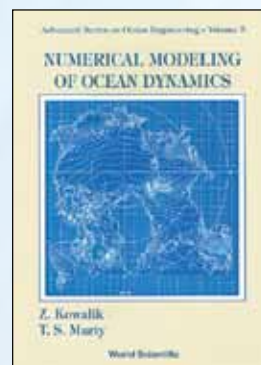
## NUMERICAL MODELING OF OCEAN DYNAMICS



by **Zygmunt Kowalik** (Univ. Alaska) &  
**T S Murty** (Inst. Ocean Scis.)

This monograph introduces the application of finite-difference methods to ocean dynamics as well as review other complex methods. The writers have chosen to focus on transport equations (diffusion and advection), shallow water phenomena — tides, storm surges and tsunamis, three-dimensional time dependent oceanic motion, natural oscillations, and steady state phenomena.

**Readership:** Oceanographers, coastal engineers and environment scientists.



<b>496pp</b>	<b>May 1993</b>	
<b>978-981-02-1333-6</b>	<b>US\$112</b>	<b>£74</b>
<b>978-981-279-599-1(ebook)</b>	<b>US\$146</b>	

