



Modeling Methods for Marine Science

By David M. Glover, William J. Jenkins, Scott C. Doney



Modeling Methods for Marine Science By David M. Glover, William J. Jenkins, Scott C. Doney

This advanced textbook on modeling, data analysis and numerical techniques for marine science has been developed from a course taught by the authors for many years at the Woods Hole Oceanographic Institute. The first part covers statistics: singular value decomposition, error propagation, least squares regression, principal component analysis, time series analysis and objective interpolation. The second part deals with modeling techniques: finite differences, stability analysis and optimization. The third part describes case studies of actual ocean models of ever increasing dimensionality and complexity, starting with zero-dimensional models and finishing with three-dimensional general circulation models. Throughout the book hands-on computational examples are introduced using the MATLAB programming language and the principles of scientific visualization are emphasised. Ideal as a textbook for advanced students of oceanography on courses in data analysis and numerical modeling, the book is also an invaluable resource for a broad range of scientists undertaking modeling in chemical, biological, geological and physical oceanography.

 [Download Modeling Methods for Marine Science ...pdf](#)

 [Read Online Modeling Methods for Marine Science ...pdf](#)

Modeling Methods for Marine Science

By David M. Glover, William J. Jenkins, Scott C. Doney

Modeling Methods for Marine Science By David M. Glover, William J. Jenkins, Scott C. Doney

This advanced textbook on modeling, data analysis and numerical techniques for marine science has been developed from a course taught by the authors for many years at the Woods Hole Oceanographic Institute. The first part covers statistics: singular value decomposition, error propagation, least squares regression, principal component analysis, time series analysis and objective interpolation. The second part deals with modeling techniques: finite differences, stability analysis and optimization. The third part describes case studies of actual ocean models of ever increasing dimensionality and complexity, starting with zero-dimensional models and finishing with three-dimensional general circulation models. Throughout the book hands-on computational examples are introduced using the MATLAB programming language and the principles of scientific visualization are emphasised. Ideal as a textbook for advanced students of oceanography on courses in data analysis and numerical modeling, the book is also an invaluable resource for a broad range of scientists undertaking modeling in chemical, biological, geological and physical oceanography.

Modeling Methods for Marine Science By David M. Glover, William J. Jenkins, Scott C. Doney

Bibliography

- Rank: #645891 in eBooks
- Published on: 2011-06-02
- Released on: 2013-09-02
- Format: Kindle eBook

 [Download Modeling Methods for Marine Science ...pdf](#)

 [Read Online Modeling Methods for Marine Science ...pdf](#)

Download and Read Free Online Modeling Methods for Marine Science By David M. Glover, William J. Jenkins, Scott C. Doney

Editorial Review

Review

"This textbook can be considered as a reference in data analysis and numerical modeling. For readers who are interested in the numerical side of marine science, this book presents lots of methods and provides numerous useful tools...Its readability makes it an excellent manual that I would definitely recommend around me, both for students and for researchers" - Virginie Raybaud, Limnology and Oceanography Bulletin

"I learned some new things from this book, especially about geochemistry..I believe that no other book covers the same topics as this book does, so in that sense it is unique...I very highly recommend this book for use in courses that cover modeling methods in oceanography or geophysics, and to researchers." - Peter Gent, Bulletin of the American Meteorological Society, July 2012

About the Author

David Glover is a Senior Research Specialist in the Department of Marine Chemistry and Geochemistry at Woods Hole Oceanographic Institution. He is the author or co-author of 67 published articles, book chapters and abstracts. Dr Glover's research uses satellite data, model results and shipboard data to elucidate the mechanisms and processes by which the oceans play a major role in the maintenance of the global climate.

William J. Jenkins is a Senior Scientist in the Department of Marine Chemistry and Geochemistry at Woods Hole Oceanographic Institution. He has published 84 peer-reviewed journal and book articles. Dr Jenkins is the Director of the National Ocean Sciences Accelerator Mass Spectrometry Facility (NOSAMS). In 1983 he received the Rosenstiel Award in Oceanographic Science from the University of Miami and in 1997 he received the Henry Bryant Bigelow Award in Oceanography from the Woods Hole Oceanographic Institution. Dr Jenkins' interests include studying tracers as applied to oceanic physical, chemical, biological and geological processes; air-sea and ice-water exchange of gases; ocean biological productivity and its controls; radiogenic and primordial noble gas isotopes in the sea, atmosphere, lakes, ground waters, sediments and rocks; climatic changes in the ocean and its effects on biogeochemical systems; and radiocarbon and the global carbon cycle in the last 60,000 years.

Scott C. Doney is a Senior Scientist in the Department of Marine Chemistry and Geochemistry at Woods Hole Oceanographic Institution. He has authored or co-authored more than 160 peer-reviewed journal and book articles. He was awarded the James B. Macelwane Medal from the American Geophysical Union in 2000 and an Aldo Leopold Leadership Program Fellowship in 2004. He has travelled extensively, lending his expertise to a number of national and international science programs, most recently as inaugural chair of the Ocean Carbon and Biogeochemistry (OCB) program. He has also testified before both the US House of Representatives and the US Senate. His research interests include marine biogeochemistry and ecosystem dynamics, ocean acidification, the global carbon cycle, climate change, and the intersection of science and policy.

Users Review

From reader reviews:

Levi Ryan:

As people who live in the modest era should be upgrade about what going on or details even knowledge to make these individuals keep up with the era which is always change and progress. Some of you maybe will update themselves by examining books. It is a good choice for you but the problems coming to a person is you don't know what kind you should start with. This Modeling Methods for Marine Science is our recommendation to cause you to keep up with the world. Why, since this book serves what you want and need in this era.

Roberta Nieves:

Reading a reserve can be one of a lot of activity that everyone in the world adores. Do you like reading book thus. There are a lot of reasons why people enjoy it. First reading a book will give you a lot of new info. When you read a book you will get new information because book is one of several ways to share the information or even their idea. Second, examining a book will make you more imaginative. When you studying a book especially fictional works book the author will bring you to definitely imagine the story how the character types do it anything. Third, you are able to share your knowledge to some others. When you read this Modeling Methods for Marine Science, it is possible to tells your family, friends as well as soon about yours guide. Your knowledge can inspire the mediocre, make them reading a reserve.

Hector Duggan:

Spent a free time for you to be fun activity to do! A lot of people spent their free time with their family, or their own friends. Usually they carrying out activity like watching television, gonna beach, or picnic from the park. They actually doing same every week. Do you feel it? Will you something different to fill your own free time/ holiday? Could possibly be reading a book may be option to fill your totally free time/ holiday. The first thing that you'll ask may be what kinds of guide that you should read. If you want to consider look for book, may be the guide untitled Modeling Methods for Marine Science can be excellent book to read. May be it could be best activity to you.

Kerstin Torres:

What is your hobby? Have you heard this question when you got learners? We believe that that concern was given by teacher to the students. Many kinds of hobby, Everybody has different hobby. Therefore you know that little person including reading or as reading become their hobby. You should know that reading is very important along with book as to be the thing. Book is important thing to incorporate you knowledge, except your current teacher or lecturer. You find good news or update in relation to something by book. A substantial number of sorts of books that can you go onto be your object. One of them is actually Modeling Methods for Marine Science.

**Download and Read Online Modeling Methods for Marine Science
By David M. Glover, William J. Jenkins, Scott C. Doney
#1PUZ3ABTL9Q**

Read Modeling Methods for Marine Science By David M. Glover, William J. Jenkins, Scott C. Doney for online ebook

Modeling Methods for Marine Science By David M. Glover, William J. Jenkins, Scott C. Doney Free PDF d0wnl0ad, audio books, books to read, good books to read, cheap books, good books, online books, books online, book reviews epub, read books online, books to read online, online library, greatbooks to read, PDF best books to read, top books to read Modeling Methods for Marine Science By David M. Glover, William J. Jenkins, Scott C. Doney books to read online.

Online Modeling Methods for Marine Science By David M. Glover, William J. Jenkins, Scott C. Doney ebook PDF download

Modeling Methods for Marine Science By David M. Glover, William J. Jenkins, Scott C. Doney Doc

Modeling Methods for Marine Science By David M. Glover, William J. Jenkins, Scott C. Doney Mobipocket

Modeling Methods for Marine Science By David M. Glover, William J. Jenkins, Scott C. Doney EPub