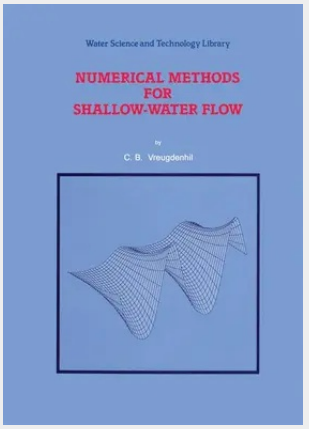
Vreugdenhil

Numerical Methods for Shallow-Water Flow



A wide variety of problems are associated with the flow of shallow water, such as atmospheric flows, tides, storm surges, river and coastal flows, lake flows, tsunamis. Numerical simulation is an effective tool in solving them and a great variety of numerical methods are available. The first part of the book summarizes the basic physics of shallow-water flow needed to use numerical methods under various conditions. The second part gives an overview of possible numerical methods, together with their stability and accuracy properties as well as with an assessment of their performance under various conditions. This enables the reader to select a method for particular applications. Correct treatment of boundary conditions (often neglected) is emphasized. The major part of the book is about two-dimensional shallow-water equations but a discussion of the 3-D form is included.
The book is intended for researchers and users of shallow-water models in oceanographic and meteorological institutes, hydraulic engineering and consulting. It also provides a major source of information for applied and numerical mathematicians.

A wide variety of problems are associated with the flow of shallow water, such as atmospheric flows, tides, storm surges, river and coastal flows, lake flows, tsunamis. Numerical simulation is an effective tool in solving them and a great variety of numerical methods are available. The first part of the book summarizes the basic physics of shallow-water flow needed to use numerical methods under various conditions. The second part gives an overview of possible numerical methods, together with their stability and accuracy properties as well as with an assessment of their performance under various conditions. This enables the reader to select a method for particular applications. Correct treatment of boundary conditions (often neglected) is emphasized. The major part of the book is about two-dimensional shallow-water equations but a discussion of the 3-D form is included. The book is intended for researchers and users of shallow-water models in oceanographic and meteorological institutes, hydraulic engineering and consulting. It also provides a major source of information for applied and numerical mathematicians.

106,99 €
99,99 € (zzgl. MwSt.)

Lieferfrist: bis zu 10 Tage

Artikelnummer: 9780792331643
Medium: Buch
ISBN: 978-0-7923-3164-3
Verlag: Springer
Erscheinungstermin: 31.10.1994
Sprache(n): Englisch
Auflage: 1. Auflage 1994
Serie: Water Science and Technology Library
Produktform: Gebunden
Gewicht: 1250 g
Seiten: 262
Format (B x H): 215 x 303 mm

Kundenservice Verlag Dr. Otto Schmidt KG
Neumannstraße 10, 40235 Düsseldorf | kundenservice@otto-schmidt.de | 0221-93738-997 (Inland)