Computational Modelling in Hydraulic and Coastal Engineering

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Combines More Than 40 Years of Expert Experience

Computational modelling and simulation methods have a wide range of applications in hydraulic and coastal engineering. **Computational Modelling in Hydraulic and Coastal Engineering** provides an introductory but comprehensive coverage of these methods. It emphasizes the use of the finite differences method with applications in reservoir management, closed-conduit hydraulics, free-surface channel and coastal domain flows, surface gravity waves, groundwater movement, and pollutant and sediment transport processes.

It focuses on applications rather than lengthy theories or derivations of complex formulas and is supported by a wealth of hands-on numerical examples and computer codes written in MATLAB but available also in BASIC. PowerPoint presentations and learning assignment projects/quizzes, along with learning assessment rubrics, are included.

A comprehensive study highlighting the infinite differences method, this book:

- Covers the fundamentals of flow in pressurized conduits
- Contains solutions for the classical Hardy Cross pipe network problem
- Designates the mathematical description of groundwater flow in confined and unconfined aquifers
- Provides numerical examples for one- and two-dimensional applications including saltwater intrusion
- Presents examples of transport of pollutants, sediment and air bubbles using Eulerian and Lagrangian solution methodologies
- Includes information on weighted residuals, the finite elements method, and the boundary integral method

Computational Modelling in Hydraulic and Coastal Engineering suits senior-level undergraduates and graduate students as well as practitioners such as coastal and maritime engineers, environmental engineers, civil engineers, computer modellers, and hydro-geologists.

From reader reviews:

John Tibbs:

Nowadays reading books be than want or need but also turn into a life style. This reading behavior give you lot of advantages. The benefits you got of course the knowledge even the information inside the book which improve your knowledge and information. The knowledge you get based on what kind of reserve you read, if you want attract knowledge just go with knowledge books but if you want truly feel happy read one together with theme for entertaining for instance comic or novel. Often the Computational Modelling in Hydraulic and Coastal Engineering is kind of reserve which is giving the reader unstable experience.

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