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LONG ELVIS

Symmetry, Phase Modulation and
Nonlinear Waves World Scientific

The book describes models of aquatic ecosystems, ranging from lakes to estuaries to the deep ocean. It provides a background in the physical and biological processes, numerical methods and elementary ecosystem models. It describes two of the most widely used hydrodynamic models and presents a number of case studies. The practice of modelling in management is discussed.

SIMHYDRO 2012 - New Frontiers of Simulation World Scientific

Hydroinformatics addresses cross-disciplinary issues ranging from technological and sociological to more general environmental concerns, including an ethical perspective. It covers the application of information technology in the widest sense to problems of the aquatic environment.

This two-volume publication contains about 250 high quality papers contributed by authors from over 50 countries. The proceedings present many exciting new findings in the emerging subjects, as well as their applications, such as: data mining, data assimilation, artificial neural networks, fuzzy logic, genetic algorithms and genetic programming, chaos theory and support vector machines, geographic information systems and virtual imaging, decision support and management systems, Internet-based technologies. This book provides an excellent reference to researchers, graduate students, practitioners, and all those interested in the field of hydroinformatics. Contents: .: Vol. I: Keynote Addresses; Numerical Methods;

Hydrodynamics, Ecology and Water Quality Modelling; Experiences with Modelling Systems; Data Acquisition and Management; Geographic Information Systems and Virtual Imaging; Optimization and Evolutionary Algorithms; Vol. II: Decision Support and Management Systems; Forecasting and Data Assimilation; Artificial Neural Networks; Fuzzy Logic; Chaos Theory and Support Vector Machines; Data Mining and Knowledge Discovery; Uncertainty and Risk Analysis; Integration of Technologies and Systems; Internet-Based Technologies and Applications. Readership: Graduate students, academics, researchers and practitioners in civil engineering, artificial intelligence, optimization, and probability and statistics

Hydrobiological Modelling Cambridge University Press

Stormwater Modeling presents the fundamentals of deterministic, parametric, and stochastic stormwater modeling. It is assumed that the reader or student will have a basic background in science or engineering; however, the authors are of the opinion that one can comfortably read and understand this treatise with a fundamental knowledge of calculus and differential equations. The book has been written with the intent of reaching an audience concerned primarily with evaluating the effects of land use on stormwater for the purpose of doing feasibility studies, planning, and/or design work. The book is organized into five parts. Part I discusses various modeling concepts

such as the definition of a mathematical model, the systems approach to model building, examples of parametric and deterministic modeling, and stormwater model optimization. Part II on deterministic modeling covers the modeling of overland and open channel flow; kinematic flow approximation; and estimation of time of concentration using kinematic wave theory. Part III covers parametric modeling and includes chapters on model optimization; analysis of the effects of urbanization and logging on stormwater; and evaluation of the effects of strip coal mining on watershed hydrologic response. Parts IV and V deal with stochastic stormwater modeling and stormwater quality modeling, respectively.

Rivers - Physical, Fluvial and Environmental Processes Elsevier

This graduate/upper-division undergraduate textbook provides a solid grounding in the theory underlying the design and analysis of hydraulic structures, including spillways, energy dissipators, culverts, flow measuring structures and others. It describes well-established theory and procedures, as well as recent developments gleaned from the research literature, with a design-oriented perspective. Professor James provides all of the necessary detail for many practical design applications, while retaining a concise presentation, with ample references to many comprehensive supplementary design guides. Appropriate for upper-level undergraduate and graduate civil

engineering student and practitioners in the field, the book fosters an understanding of and competence in applying basic theoretical concepts. Focuses on the hydraulic rather than structural aspects of hydraulic structures with an extensive review of relevant basic hydraulic theory; Explains clearly the concept of hydraulic control and how controls govern the behavior of different structures; Reinforces concepts presented with exercise problems set at the ends of chapters; Provides an extensive review of relevant basic hydraulic theory along with comprehensive references to primary sources and detailed design guides; Illustrates applications with topical worked examples.
Singapore, 21-24 June 2004 Springer

Nature

Open Channel Flow, 2nd edition is written for senior-level undergraduate and graduate courses on steady and unsteady open-channel flow. The book is comprised of two parts: Part I covers steady flow and Part II describes unsteady flow. The second edition features considerable emphasis on the presentation of modern methods for computer analyses; full coverage of unsteady flow; inclusion of typical computer programs; new problem sets and a complete solution manual for instructors.

Flow Measurement in Open Channels and Closed Conduits Lulu.com

Primarily intended as a textbook for the undergraduate and postgraduate students of civil engineering, this book

provides a comprehensive knowledge in open channel flow. The book starts with the concept of open channel flow, types of forces acting on the flow, types of channel flow, velocity distribution and coefficients, and basic continuity in 1D and 3D. Then it moves on to steady gradually varied flow, its differential equation, hydraulics of alluvial channel, design of channel and hydraulic jump. Finally, the text concludes with Saint-Venant equations and its solutions by few numerical methods in flood routing and dam-break situations. KEY FEATURES : Includes computer programs for steady gradually varied flow Provides various numerical methods of solving the equations Explains dam-break problem in detail Contains numerous solved examples

Flow in Open Channels Open Channel Flow

Open Channel Flow Pearson College Division

U.S. Geological Survey Circular Pearson College Division

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Water Resources System Operation

Elsevier

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support vector machines, geographic information systems and virtual imaging, decision support and management systems, Internet-based technologies. This book provides an excellent reference to researchers, graduate students, practitioners, and all those interested in the field of hydroinformatics.

Flow Measurement for Engineers and Scientists Springer

Advances in Hydrosience, Volume 14-1986 covers topics on the frontiers of hydrosience, including urban hydrology, remote sensing, sewer hydraulics, and computational hydraulics. The book presents articles on state-of-the-art theory and practice in sewer hydraulics and the passive microwave remote sensing of soil moisture. An article on

the numerical modeling of unsteady open-channel flow is also encompassed. Hydraulic engineers, hydrologists, earth scientists, agricultural engineers, soil scientists, environmental engineers, and urban designers and planners will find the text invaluable.

An Introduction CRC Press

Basic concepts of fluid flow;the energy principle in open channel flow;the momentum principle in open channel flow;flow resistance;flow resistance, nonuniform flow computations;channel controls;channel transitions;unsteady flow;flood routing;sediment transport;similitud and models.

Full Equations Utilities (FEQUTL) Model for the Approximation of Hydraulic Characteristics of Open Channels and Control Structures During Unsteady Flow

Springer Science & Business Media
This book discusses instrumentation and experimental methods for obtaining detailed information on the structure of various types of flows as well as standard process flow instrumentation suitable for industrial control applications. It assists research-oriented and process engineering personnel.

River Flow 2004 Springer Science & Business Media

Written by 6 professors, each with a Ph.D. in Civil Engineering; A detailed description of the examination and suggestions on how to prepare for it; 195 exam, essay, and multiple-choice problems with a total of 510 individual questions; A complete 24-problem sample exam; A detailed step-by-step solution for every problem in the book;

This book may be used as a separate, stand-alone volume or in conjunction with Civil Engineering License Review, 14th Edition (0-79318-546-7). Its chapter topics match those of the License Review book. All of the problems have been reproduced for each chapter, followed by detailed step-by-step solutions. Similarly, the 24-problem sample exam (12 essay and 12 multiple-choice problems) is given, followed by step-by-step solutions to the exam. Engineers looking for a CE/PE review with problems and solutions will buy both books. Those who want only an elaborate set of exam problems, a sample exam, and detailed solutions to every problem will purchase this book. 100% problems and solutions.
Advances in Hydroinformatics Dearborn

Trade Publishing

This book provides essential information on the higher mathematical level of approximation over the gradually varied flow theory, also referred to as the Boussinesq-type theory. In this context, it presents higher order flow equations, together with their applications in a broad range of pertinent engineering and environmental problems, including open channel, groundwater, and granular material flows.

Open Channel Flow Springer Science & Business Media

Practitioners in water engineering rely on a thorough understanding of shallow water flows in order to safeguard our habitat, while at the same time sustaining the water environment. This book proposes a unified theoretical

framework for the different types of shallow flow, providing a coherent approach to interpret the behaviour of such flows, and highlighting the similarities and differences. Every major topic in the book is accompanied by worked examples illustrating the theoretical concepts. Practical examples, showcasing inspiring research and engineering applications from the past and present, provide insight into how the theory developed. The book is also supplemented by a range of online resources, available at www.cambridge.org/battjes, including problem sets and computer codes. A solutions manual is available for instructors. This book is intended for students and professionals working in environmental water systems, in areas

such as coasts, rivers, harbours, drainage, and irrigation canals.

Geological Survey Professional Paper
CRC Press

What is the progress in hydraulic research? What are the new methods used in modeling of transport of momentum, matter and heat in both open and conduit channels? What new experimental methods, instruments, measurement techniques, and data analysis routines are used in top class laboratory and field hydro-environment studies? How to link novel findings in fundamental hydraulics with the investigations of environmental issues? The consecutive 32nd International School of Hydraulics that took place in Łochów, Poland brought together eminent modelers, theoreticians and

experimentalists as well as beginners in the field of hydraulics to consider these and other questions about the recent advances in hydraulic research all over the world. This volume reports key findings of the scientists that took part in the meeting. Both state of the art papers as well as detailed reports from various recent investigations are included in the book

Stormwater Modeling PHI Learning Pvt. Ltd.

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environment. This two-volume publication contains about 250 high quality papers contributed by authors from over 50 countries. The proceedings present many exciting new findings in the emerging subjects, as well as their applications, such as: data mining, data assimilation, artificial neural networks, fuzzy logic, genetic algorithms and genetic programming, chaos theory and support vector machines, geographic information systems and virtual imaging, decision support and management systems, Internet-based technologies. This book provides an excellent reference to researchers, graduate students, practitioners, and all those interested in the field of hydroinformatics.

Hydraulics of Levee Overtopping

Springer Nature

This book presents the theory and computation of open channel flows, using detailed analytical, numerical and experimental results. The fundamental equations of open channel flows are derived by means of a rigorous vertical integration of the RANS equations for turbulent flow. In turn, the hydrostatic pressure hypothesis, which forms the core of many shallow water hydraulic models, is scrutinized by analyzing its underlying assumptions. The book's main focus is on one-dimensional models, including detailed treatments of unsteady and steady flows. The use of modern shock capturing finite difference and finite volume methods is described in detail, and the quality of solutions is carefully assessed on the basis of

analytical and experimental results. The book's unique features include:

- Rigorous derivation of the hydrostatic-based shallow water hydraulic models
- Detailed treatment of steady open channel flows, including the computation of transcritical flow profiles
- General analysis of gate maneuvers as the solution of a Riemann problem
- Presents modern shock capturing finite volume methods for the computation of unsteady free surface flows
- Introduces readers to movable bed and sediment transport in shallow water models
- Includes numerical solutions of shallow water hydraulic models for non-hydrostatic steady and unsteady free surface flows

This book is suitable for both undergraduate and graduate level students, given that the theory and

numerical methods are progressively introduced starting with the basics. As supporting material, a collection of source codes written in Visual Basic and inserted as macros in Microsoft Excel® is available. The theory is implemented step-by-step in the codes, and the resulting programs are used throughout the book to produce the respective solutions.

Open Channel Flow Springer

Water in its different forms has always been a source of wonder, curiosity and practical concern for humans everywhere. Hydrology: An Introduction presents a coherent introduction to the fundamental principles of hydrology, based on the course that Wilfried Brutsaert has taught at Cornell University for the last thirty years.

Hydrologic phenomena are dealt with at spatial and temporal scales at which they occur in nature. The physics and mathematics necessary to describe these phenomena are introduced and developed, and readers will require a working knowledge of calculus and basic fluid mechanics. The book will be invaluable as a textbook for entry-level courses in hydrology directed at advanced seniors and graduate students in physical science and engineering. In addition, the book will be more broadly of interest to professional scientists and engineers in hydrology, environmental science, meteorology, agronomy, geology, climatology, oceanology, glaciology and other earth sciences. Hydraulic Structures Tata McGraw-Hill Education

Open channel hydraulics has always been a very interesting domain of scientific and engineering activity because of the great importance of water for human living. The free surface flow, which takes place in the oceans, seas and rivers, can be still regarded as one of the most complex physical processes in the environment. The first source of difficulties is the proper recognition of physical flow processes and their mathematical description. The second one is related to the solution of the derived equations. The equations arising in hydrodynamics are rather complicated and, except some much idealized cases, their solution requires application of the numerical methods. For this reason the great progress in open channel flow modeling that took place during last 40

years paralleled the progress in computer technique, informatics and numerical methods. It is well known that even typical hydraulic engineering problems need applications of computer codes. Thus, we witness a rapid development of ready-made packages, which are widely disseminated and offered for engineers. However, it seems necessary for their users to be familiar with some fundamentals of numerical methods and computational techniques applied for solving the problems of interest. This is helpful for many reasons. The ready-made packages can be effectively and safely applied on condition that the users know their possibilities and limitations. For instance, such knowledge is indispensable to distinguish in the obtained solutions the

effects coming from the considered

physical processes and those caused by numerical artifacts.