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Energy Research Abstracts 1980 Semiannual, with semiannual and annual indexes. References to all scientific and technical literature coming from DOE, its laboratories, energy centers, and contractors. Includes all works deriving from DOE, other related government-sponsored information, and foreign nonnuclear information. Arranged under 39 categories, e.g., Biomedical sciences, basic studies; Biomedical sciences, applied studies; Health and safety; and Fusion energy. Entry gives bibliographical information and abstract. Corporate, author, subject, report number indexes.

Flow-Based Optimization of Products or Devices - Nils Tångefjord Basse 2020-11-13 Flow-based optimization of products and devices is an immature field compared to the corresponding topology optimization based on solid mechanics. However, it is an essential part of component development with both internal and/or external flow. The aim of this book is two-fold: (i) to provide state-of-the-art examples of flow-based optimization and (ii) to present a review of topology optimization for fluid-based problems.

Consulting Engineering 2002

Automation Equipment and Systems Wen Zhe Chen 2012-02-27 Volume is indexed by Thomson Reuters CPCI-S (WoS). The present volumes provide up-to-date, comprehensive and world-class state-of-the-art knowledge concerning manufacturing science and engineering, focusing on Automation

Equipment and Systems. The 633 peer-reviewed papers are grouped into 16 chapters: Material Section; Mechatronics; Industrial Robotics and Automation; Machine Vision; Sensor Technology; Measurement Control Technologies and Intelligent Systems; Transmission and Control of Fluids; Mechanical Control and Information Processing Technology; Embedded Systems; Advanced Forming Manufacturing and Equipment; NEMS/MEMS Technology and Equipment; Micro-Electronic Packaging Technology and Equipment; Advanced NC Techniques and Equipment; Power and Fluid Machinery; Energy Machinery and Equipment; Construction Machinery and Equipment.

Frontiers in Computational Fluid-Structure Interaction and Flow Simulation - Tayfun E. Tezduyar 2018-10-26

Computational fluid-structure interaction and flow simulation are challenging research areas that bring solution and analysis to many classes of problems in science, engineering, and technology. Young investigators under the age of 40 are conducting much of the frontier research in these areas, some of which is highlighted in this book. The first author of each chapter took the lead role in carrying out the research presented. The topics covered include Computational aerodynamic and FSI analysis of wind turbines, Simulating free-surface FSI and fatigue-damage in wind-turbine structural systems, Aorta flow analysis and heart valve flow and structure analysis, Interaction of multiphase fluids and solid structures, Computational analysis of tire aerodynamics with actual

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geometry and road contact, and A general-purpose NURBS mesh generation method for complex geometries. This book will be a valuable resource for early-career researchers and students — not only those interested in computational fluid-structure interaction and flow simulation, but also other fields of engineering and science, including fluid mechanics, solid mechanics and computational mathematics - as it will provide them with inspiration and guidance for conducting their own successful research. It will also be of interest to senior researchers looking to learn more about successful research led by those under 40 and possibly offer collaboration to these researchers.

The Finite Volume Method in Computational Fluid Dynamics - F. Moukalled 2015-08-13

This textbook explores both the theoretical foundation of the Finite Volume Method (FVM) and its applications in Computational Fluid Dynamics (CFD). Readers will discover a thorough explanation of the FVM numerics and algorithms used for the simulation of incompressible and compressible fluid flows, along with a detailed examination of the components needed for the development of a collocated unstructured pressure-based CFD solver. Two particular CFD codes are explored. The first is uFVM, a three-dimensional unstructured pressure-based finite volume academic CFD code, implemented within Matlab. The second is OpenFOAM®, an open source framework used in the development of a range of CFD programs for the simulation of industrial scale flow problems. With over 220 figures, numerous examples and more than one hundred exercise on FVM numerics, programming, and applications, this textbook is suitable for use in an introductory course on the FVM, in an advanced course on numerics, and as a reference for CFD programmers and researchers.

39th AIAA/ASME/SAE/ASEE Joint Propulsion Conference & Exhibit July 20-23, 2003, Huntsville, Alabama: 03-4950 - 03-4999 - 2003

Nucleonics - 1963

Monthly Catalog of United States Government

Publications 1993

Scientific and Technical Aerospace Reports - 1992

Aeronautical Engineering 1993

A selection of annotated references to unclassified reports and journal articles that were introduced into the NASA scientific and technical information system and announced in Scientific and technical aerospace reports (STAR) and International aerospace abstracts (IAA)

Fluid-Structure Interaction - Hans-Joachim Bungartz 2007-06-24

This volume in the series Lecture Notes in Computational Science and Engineering presents a collection of papers presented at the International Workshop on FSI, held in October 2005 in Hohenwart and organized by DFG's Research Unit 493 "FSI: Modeling, Simulation, and Optimization". The papers address partitioned and monolithic coupling approaches, methodical issues and applications, and discuss FSI from the mathematical, informatics, and engineering points of view.

U.S. Government Research Reports - 1962

Annual Index/Abstracts of SAE Technical Papers, 2006 - Society of Automotive Engineers 2007-03-30

Selected Water Resources Abstracts - 1976

Missiles and Rockets 1964

Issues for Oct. 1957-May 1958 include section, Missile electronics, v. 11, no. 1-7.

Applied Mechanics Reviews 1993

Proceedings of the Institution of Mechanical Engineers - 1994

Nuclear Safety - 1985

Gas (vapor) Liquid Systems N. N. Kulov 1996
Gas Vapor Liquid Systems

Fluid-Structure Interactions and Uncertainties Abdelkhalak El Hami 2017-02-07

This book is dedicated to the general study of fluid structure interaction with consideration of uncertainties. The fluid-structure interaction is

the study of the behavior of a solid in contact with a fluid, the response can be strongly affected by the action of the fluid. These phenomena are common and are sometimes the cause of the operation of certain systems, or otherwise manifest malfunction. The vibrations affect the integrity of structures and must be predicted to prevent accelerated wear of the system by material fatigue or even its destruction when the vibrations exceed a certain threshold.

eWork and eBusiness in Architecture, Engineering and Construction - Ardeshir Mahdavi 2014-08-21

In the last two decades, the biannual ECPPM (European Conference on Product and Process Modelling) conference series has provided a unique platform for the presentation and discussion of the most recent advances with regard to the ICT (Information and Communication Technology) applications in the AEC/FM (Architecture, Engineering, Construction and Facilities Management) domains. ECPPM 2014, the 10th European Conference on Product and Process Modelling, was hosted by the Department of Building Physics and Building Ecology of the Vienna University of Technology, Austria (17-19 September 2014). This book entails a substantial number of high-quality contributions that cover a large spectrum of topics pertaining to ICT deployment instances in AEC/FM, including: - BIM (Building Information Modelling) - ICT in Civil engineering & Infrastructure - Human requirements & factors - Computational decision support - Commissioning, monitoring & occupancy - Energy & management - Ontology, data models, and IFC (Industry Foundation Classes) - Energy modelling - Thermal performance simulation - Sustainable buildings - Micro climate modelling - Model calibration - Project & construction management - Data & information management As such, eWork and eBusiness in Architecture, Engineering and Construction 2014 represents a rich and comprehensive resource for academics and professionals working in the interdisciplinary areas of information technology applications in architecture, engineering, and construction.

Thomas Register of American Manufacturers and Thomas Register

Catalog File - 2003

Vols. for 1970-71 includes manufacturers' catalogs.

Troubleshooting Finite-Element Modeling with Abaqus - Raphael Jean Boulbes 2019-09-06

This book gives Abaqus users who make use of finite-element models in academic or practitioner-based research the in-depth program knowledge that allows them to debug a structural analysis model. The book provides many methods and guidelines for different analysis types and modes, that will help readers to solve problems that can arise with Abaqus if a structural model fails to converge to a solution. The use of Abaqus affords a general checklist approach to debugging analysis models, which can also be applied to structural analysis. The author uses step-by-step methods and detailed explanations of special features in order to identify the solutions to a variety of problems with finite-element models. The book promotes:

- a diagnostic mode of thinking concerning error messages;
- better material definition and the writing of user material subroutines;
- work with the Abaqus mesher and best practice in doing so;
- the writing of user element subroutines and contact features with convergence issues; and
- consideration of hardware and software issues and a Windows HPC cluster solution.

The methods and information provided facilitate job diagnostics and help to obtain converged solutions for finite-element models regarding structural component assemblies in static or dynamic analysis. The troubleshooting advice ensures that these solutions are both high-quality and cost-effective according to practical experience. The book offers an in-depth guide for students learning about Abaqus, as each problem and solution are complemented by examples and straightforward explanations. It is also useful for academics and structural engineers wishing to debug Abaqus models on the basis of error and warning messages that arise during finite-element modelling processing.

Thermal-hydraulic Problems, Sloshing, and Extreme Loads on Structures - Frederick J. Moody 2002

Annotation This collection of 33 papers from the August 2002 conference addresses thermal-hydraulic problems in vessels, piping, and components; sloshing and fluid-structure

interaction; and structures under extreme loading conditions. Among the topics are a case study of a valve failure due to condensation induced waterhammer, an evaluation of shutdown cooling transients using simplified models, the behavior of chimney walls when submitted to an internal explosion, and modeling of munitions fragmentation and interaction with shielding systems. No subject index. Annotation c. Book News, Inc., Portland, OR (booknews.com).

Worldwide Automatic Supplier Directory 2007

Computational Fluid-Structure Interaction - Yuri Bazilevs 2013-01-25

Computational Fluid-Structure Interaction: Methods and Applications takes the reader from the fundamentals of computational fluid and solid mechanics to the state-of-the-art in computational FSI methods, special FSI techniques, and solution of real-world problems. Leading experts in the field present the material using a unique approach that combines advanced methods, special techniques, and challenging applications. This book begins with the differential equations governing the fluid and solid mechanics, coupling conditions at the fluid-solid interface, and the basics of the finite element method. It continues with the ALE and space-time FSI methods, spatial discretization and time integration strategies for the coupled FSI equations, solution techniques for the fully-discretized coupled equations, and advanced FSI and space-time methods. It ends with special FSI techniques targeting cardiovascular FSI, parachute FSI, and wind-turbine aerodynamics and FSI. Key features: First book to address the state-of-the-art in computational FSI Combines the fundamentals of computational fluid and solid mechanics, the state-of-the-art in FSI methods, and special FSI techniques targeting challenging classes of real-world problems Covers modern computational mechanics techniques, including stabilized, variational multiscale, and space-time methods, isogeometric analysis, and advanced FSI coupling methods Is in full color, with diagrams illustrating the fundamental concepts and advanced methods and with insightful visualization illustrating the complexities of the problems that can be solved with the FSI

methods covered in the book. Authors are award winning, leading global experts in computational FSI, who are known for solving some of the most challenging FSI problems Computational Fluid-Structure Interaction: Methods and Applications is a comprehensive reference for researchers and practicing engineers who would like to advance their existing knowledge on these subjects. It is also an ideal text for graduate and senior-level undergraduate courses in computational fluid mechanics and computational FSI.

Monthly Catalogue, United States Public Documents - 1993

INIS Atomindex - 1985

Multiphysics Modeling: Numerical Methods and Engineering Applications - Qun Zhang 2015-12-15

Multiphysics Modeling: Numerical Methods and Engineering Applications: Tsinghua University Press Computational Mechanics Series describes the basic principles and methods for multiphysics modeling, covering related areas of physics such as structure mechanics, fluid dynamics, heat transfer, electromagnetic field, and noise. The book provides the latest information on basic numerical methods, also considering coupled problems spanning fluid-solid interaction, thermal-stress coupling, fluid-solid-thermal coupling, electromagnetic solid thermal fluid coupling, and structure-noise coupling. Users will find a comprehensive book that covers background theory, algorithms, key technologies, and applications for each coupling method. Presents a wealth of multiphysics modeling methods, issues, and worked examples in a single volume Provides a go-to resource for coupling and multiphysics problems Covers the multiphysics details not touched upon in broader numerical methods references, including load transfer between physics, element level strong coupling, and interface strong coupling, amongst others Discusses practical applications throughout and tackles real-life multiphysics problems across areas such as automotive, aerospace, and biomedical engineering *Advances in Energy Science and Equipment Engineering*- Shiquan Zhou 2015-11-05 Advances in Energy Equipment Science and

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Engineering contains selected papers from the 2015 International Conference on Energy Equipment Science and Engineering (ICEESE 2015, Guangzhou, China, 30-31 May 2015). The topics covered include:- Advanced design technology- Energy and chemical engineering- Energy and environmental engineering- Energy science

Machine Design - 2001

Future Space-Transport-System Components under High Thermal and Mechanical Loads - Nikolaus A. Adams
2021-10-27

This open access book presents the findings of Collaborative Research Center Transregio 40 (TRR40), initiated in July 2008 and funded by the German Research Foundation (DFG). Gathering innovative design concepts for thrust chambers and nozzles, as well as cutting-edge methods of aft-body flow control and propulsion-component cooling, it brings together fundamental research undertaken at universities, testing carried out at the German Aerospace Center (DLR) and industrial developments from the ArianeGroup. With a particular focus on heat transfer analyses and novel cooling concepts for thermally highly loaded structures, the book highlights the aft-body flow of the space transportation system and its interaction with the nozzle flow, which are especially critical during the early phase of atmospheric ascent. Moreover, it describes virtual demonstrators for combustion chambers and nozzles, and discusses their industrial applicability. As such, it is a timely resource for researchers, graduate students and practitioners.

Mechanical Engineering - 2005

Multi physics Modeling with Application to Biomedical Engineering. Yang 2020-07-23

The aim of this book is to introduce the simulation of various physical fields and their applications for biomedical engineering, which will provide a base for researchers in the biomedical field to conduct further investigation. The entire book is classified into three levels. It starts with the first level, which presents the single physical fields including structural analysis, fluid simulation, thermal analysis, and acoustic modeling. Then, the second level

consists of various couplings between two physical fields covering structural thermal coupling, porous media, fluid structural interaction (FSI), and acoustic FSI. The third level focuses on multi-coupling that coupling with more than two physical fields in the model. Each part in all levels is organized as the physical feature, finite element implementation, modeling procedure in ANSYS, and the specific applications for biomedical engineering like the FSI study of Abdominal Aortic Aneurysm (AAA), acoustic wave transmission in the ear, and heat generation of the breast tumor. The book should help for the researchers and graduate students conduct numerical simulation of various biomedical coupling problems. It should also provide all readers with a better understanding of various couplings.

Methods of Seawater Analysis - Klaus Grasshoff 2009-07-30

Since the book first appeared in 1976, Methods of Seawater Analysis has found widespread acceptance as a reliable and detailed source of information. Its second extended and revised edition published in 1983 reflected the rapid pace of instrumental and methodological evolution in the preceding years. The development has lost nothing of its momentum, and many methods and procedures still suffering their teething troubles then have now matured into dependable tools for the analyst. This is especially evident for trace and ultra-trace analyses of organic and inorganic seawater constituents which have diversified considerably and now require more space for their description than before. Methods to determine volatile halocarbons, dimethyl sulphide, photosynthetic pigments and natural radioactive tracers have been added as well as applications of X-ray fluorescence spectroscopy and various electrochemical methods for trace metal analysis. Another method not previously described deals with the determination of the partial pressure of carbon dioxide as part of standardised procedures to describe the marine CO₂ system.

Applied Computational Fluid Dynamics - Hyoung Woo Oh 2012-03-14

This book is served as a reference text to meet the needs of advanced scientists and research engineers who seek for their own computational

fluid dynamics (CFD) skills to solve a variety of fluid flow problems. Key Features: - Flow Modeling in Sedimentation Tank, - Greenhouse Environment, - Hypersonic Aerodynamics, - Cooling Systems Design, - Photochemical Reaction Engineering, - Atmospheric Reentry Problem, - Fluid-Structure Interaction (FSI), - Atomization, - Hydraulic Component Design, - Air Conditioning System, - Industrial Applications of CFD

The Mechanics of Adhesives in Composite and Metal Joints - Magd Abdel Wahab 2014-04-07
Scientific background and practical methods for modeling adhered joints Tools for analyzing stress, fracture, fatigue crack propagation, thermal, diffusion and coupled thermal-stress/diffusion-stress, as well as life prediction of joints Book includes access to downloadable macrofiles for ANSYS This text investigates the mechanics of adhesively bonded composite and metallic joints using finite element analysis, and more specifically, ANSYS, the basics of which are presented. The book provides engineers and scientists with the technical know-how to simulate a variety of adhesively bonded joints using ANSYS. It explains how to model stress, fracture, fatigue crack propagation, thermal, diffusion and coupled field analysis of the following: single lap, double lap, lap

strap/cracked lap shear, butt and cantilevered beam joints. Readers receive free digital access to a variety of input and program data, which can be downloaded as macrofiles for modeling with ANSYS.

Automated Solution of Differential Equations by the Finite Element Method -

Anders Logg 2012-02-24

This book is a tutorial written by researchers and developers behind the FEniCS Project and explores an advanced, expressive approach to the development of mathematical software. The presentation spans mathematical background, software design and the use of FEniCS in applications. Theoretical aspects are complemented with computer code which is available as free/open source software. The book begins with a special introductory tutorial for beginners. Following are chapters in Part I addressing fundamental aspects of the approach to automating the creation of finite element solvers. Chapters in Part II address the design and implementation of the FEniCS software. Chapters in Part III present the application of FEniCS to a wide range of applications, including fluid flow, solid mechanics, electromagnetics and geophysics.

Chemical Engineering Progress - 2007