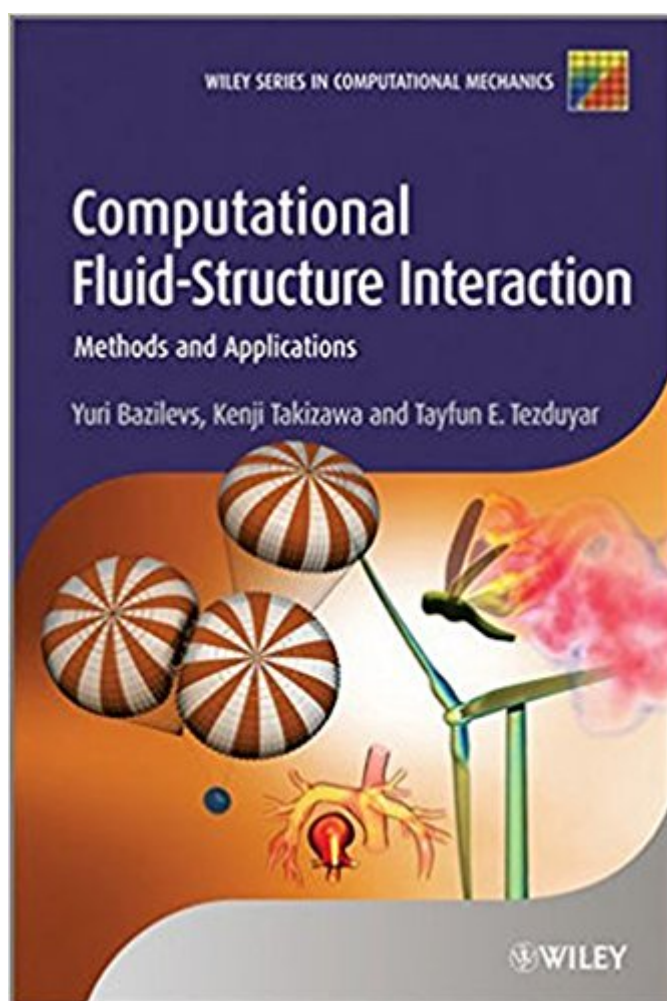


The book was found

Computational Fluid-Structure Interaction: Methods And Applications



Synopsis

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.

Book Information

Hardcover: 404 pages

Publisher: Wiley; 1 edition (February 11, 2013)

Language: English

ISBN-10: 0470978775

ISBN-13: 978-0470978771

Product Dimensions: 6.8 x 1 x 9.9 inches

Shipping Weight: 2 pounds (View shipping rates and policies)

Average Customer Review: Be the first to review this item

Best Sellers Rank: #741,538 in Books (See Top 100 in Books) #213 in Books > Engineering & Transportation > Engineering > Chemical > Fluid Dynamics #288 in Books > Engineering & Transportation > Engineering > Mechanical > Drafting & Mechanical Drawing #640 in Books > Science & Math > Physics > Dynamics

Customer Reviews

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. (Expofairs, 18 October 2013)

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.

[Download to continue reading...](#)

Computational Fluid-Structure Interaction: Methods and Applications Computational Fluid Mechanics and Heat Transfer, Third Edition (Series in Computational and Physical Processes in Mechanics and Thermal Sciences) Simulating Enzyme Reactivity: Computational Methods in Enzyme Catalysis (Theoretical and Computational Chemistry Series) Computational Approaches to Protein Dynamics: From Quantum to Coarse-Grained Methods (Series in Computational Biophysics) Health Professional and Patient Interaction, 8e (Health Professional & Patient Interaction (Purtilo)) Laser Interaction and Related Plasma Phenomena (Laser Interaction & Related Plasma Phenomena) Interaction Design: Beyond Human-Computer Interaction Theoretical Neuroscience: Computational and Mathematical Modeling of Neural Systems (Computational Neuroscience Series) The Power of Computational Thinking: Games, Magic and Puzzles to Help You Become a Computational Thinker Current Topics in Computational Molecular Biology (Computational Molecular Biology) Computational Fluid Mechanics and Heat Transfer, Second Edition (Series in Computational and Physical Processes in Mechanics and Thermal Sciences) Numerical Computation of Internal and External Flows: The Fundamentals of Computational Fluid Dynamics, Second Edition Computational Fluid Mechanics and Heat Transfer: 2nd (Second) edition The Finite Element Analysis of Shells - Fundamentals (Computational Fluid and Solid Mechanics) Computational Fluid Dynamics Simulation of Spray Dryers: An Engineer's Guide (Advances in Drying Science and Technology) Computational Fluid Dynamics Computational Fluid Dynamics, Second Edition: A Practical Approach Computational Transport Phenomena of Fluid-Particle Systems (Mechanical Engineering Series) Fluid, Electrolyte, and Acid-Base Disorders in Small Animal Practice, 4e (Fluid Therapy In Small Animal Practice) Introduction to Proteins: Structure, Function, and Motion (Chapman & Hall/CRC Mathematical and Computational Biology)

[Contact Us](#)

[DMCA](#)

[Privacy](#)

[FAQ & Help](#)