

Computational Cardiovascular Mechanics Modeling And Applications In Heart Failure

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Both fiction and non-fiction are covered, spanning different genres (e.g. science fiction, fantasy, thrillers, romance) and types (e.g. novels, comics, essays, textbooks).

Computational Cardiovascular Mechanics Modeling And

Computational Cardiovascular Mechanics provides a cohesive guide to creating mathematical models for the mechanics of diseased hearts to simulate the effects of current treatments for heart failure. Clearly organized in a two part structure, this volume discusses various areas of computational modeling of cardiovascular mechanics (finite element modeling of ventricular mechanics, fluid dynamics) in addition to a description an analysis of the current applications used (solid FE modeling, CFD).

Computational Cardiovascular Mechanics: Modeling and ...

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Computational Cardiovascular Mechanics: Modeling and ...

Computational Methods for Cardiovascular Modeling Image Segmentation Patient specific models are typically constructed from medical image data, allowing for a customized 3D anatomic model for individual patients.

Computational Methods for Cardiovascular Modeling ...

Computational Cardiovascular Mechanics promotes the application of patient-specific cardiovascular mechanics models to clinical medicine, which aid medical diagnosis and enhance treatment for cardiovascular disease.

Computational Cardiovascular Mechanics: Modeling and ...

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Computational Cardiovascular Mechanics: Modeling And ...

Introduction. Computational Cardiovascular Mechanics promotes the application of patient-specific cardiovascular mechanics models to clinical medicine, which aid medical diagnosis and enhance treatment for cardiovascular disease. Organized in a two-part structure, this volume presents a comprehensive overview of computational modeling from both solid mechanics and fluid dynamics perspectives.

Computational Cardiovascular Mechanics | SpringerLink

Patient-Specific Cardiovascular Computational Modeling: Diversity of Personalization and Challenges. Patient-specific computer models have been developed representing a variety of aspects of the cardiovascular system spanning the disciplines of electrophysiology, electromechanics, solid mechanics, and fluid dynamics.

Patient-Specific Cardiovascular Computational Modeling ...

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Computational Cardiovascular Mechanics : Modeling and ...

Experimental methods, especially magnetic resonance imaging techniques can be used to noninvasively quantify blood flow for diagnosing cardiovascular disease, researching disease mechanisms, and validating assumptions and predictions of mathematical models.

EXPERIMENTAL AND COMPUTATIONAL METHODS IN CARDIOVASCULAR ...

The combination of computational models and biophysical simulations can help to interpret an array of experimental data and contribute to the understanding, diagnosis and treatment of complex diseases such as cardiac arrhythmias. For this reason, three-dimensional (3D) cardiac computational modelling is currently a rising field of research.

Three-dimensional cardiac computational modelling: methods ...

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Computational cardiovascular mechanics: Modeling and ...

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Clearly organized in a two part structure, this volume discusses various areas of computational modeling of cardiovascular mechanics (finite element modeling of ventricular mechanics, fluid dynamics) in addition to a description an analysis of the current applications used (solid FE modeling, CFD). Edited by experts in the field, researchers involved with biomedical and mechanical engineering will find Computational Cardiovascular Mechanics a valuable reference.

Computational Cardiovascular Mechanics - eBooks.com

Personalized Computational Hemodynamics: Models, Methods, and Applications for Vascular Surgery and Antitumor Therapy offers practices and advances surrounding the multiscale modeling of hemodynamics and their personalization with conventional clinical data. Focusing on three physiological disciplines, readers will learn how to derive a suitable mathematical model and personalize its parameters to account for pathologies and diseases.

Personalized Computational Hemodynamics | ScienceDirect

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Computational cardiovascular mechanics : modeling and ...

General Aspects of Computational Cardiovascular Mechanics.- 1.1 Computational Mechanical Model Studies in the Cardiovascular System.- 1.2 Inelastic Constitutive Models of Blood Vessels in Physiological Conditions.- 1.3 Stress and Strain Analyses of Blood Vessels in Physiological and Pathological Conditions.- 1.4 Development of Interactive Modeling System for the Computational Biomechanics Simulation Using Medical Imaging Data.- 1.5 A Modeling System of 3-Dimensional Blood Vessel ...

Clinical Application of Computational Mechanics to the ...

• Computational fluid modeling has potential to emulate dynamic physical and physiological properties of cardiac pathophysiology. • Application of AI has potential for patient-specific anatomic replica procedural simulation training.