



## Computational Hemodynamics - Theory, Modelling and Applications (Paperback)

By Jiyuan Tu, Kiao Inthavong, Kelvin Kian Loong Wong

Springer, Netherlands, 2016. Paperback. Condition: New. Language: English . Brand New Book \*\*\*\*\* Print on Demand \*\*\*\*\*.This book discusses geometric and mathematical models that can be used to study fluid and structural mechanics in the cardiovascular system. Where traditional research methodologies in the human cardiovascular system are challenging due to its invasive nature, several recent advances in medical imaging and computational fluid and solid mechanics modelling now provide new and exciting research opportunities. This emerging field of study is multi-disciplinary, involving numerical methods, computational science, fluid and structural mechanics, and biomedical engineering. Certainly any new student or researcher in this field may feel overwhelmed by the wide range of disciplines that need to be understood. This unique book is one of the first to bring together knowledge from multiple disciplines, providing a starting point to each of the individual disciplines involved, attempting to ease the steep learning curve. This book presents elementary knowledge on the physiology of the cardiovascular system; basic knowledge and techniques on reconstructing geometric models from medical imaging; mathematics that describe fluid and structural mechanics, and corresponding numerical/computational methods to solve its equations and problems. Many practical examples and case studies are presented to reinforce best practice guidelines for...



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