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Nota di contenuto	1 Daniele Boffi, Lucia Gastaldi, and Luca Heltai, A distributed Lagrange formulation of the Finite Element Immersed Boundary Method for fluids interacting with compressible solids -- 2 Jessica Cervi and Raymond J. Spiteri, High-Order Operator-Splitting Methods for the Bidomain and Monodomain Models -- 3 Piero Colli Franzone, Luca F. Pavarino, and Simone Scacchi, Electro-mechanical modeling and simulation of reentry phenomena in the presence of myocardial infarction -- 4 Lorenzo Fassina, Marisa Cornacchione, Maria Evelina Mognaschi, Giovanni Magenes, and Fabio Naro, Ergotropic effect in cardiac tissue after electromagnetic and beta-adrenergic stimulus -- 5 Emilio Macchi, Ezio Musso, and Stefano Rossi, Role of electrotonic current in excitable cells -- 6 Andrea Manzoni, Diana Bonomi, and Alfio Quarteroni, Reduced order modeling for cardiac electrophysiology and mechanics: new

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Sommario/riassunto

The book comprises contributions by some of the most respected scientists in the field of mathematical modeling and numerical simulation of the human cardiocirculatory system. It covers a wide range of topics, from the assimilation of clinical data to the development of mathematical and computational models, including with parameters, as well as their efficient numerical solution, and both in-vivo and in-vitro validation. It also considers applications of relevant clinical interest. This book is intended for graduate students and researchers in the field of bioengineering, applied mathematics, computer, computational and data science, and medicine wishing to become involved in the highly fascinating task of modeling the cardiovascular system.
