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Descrizione fisica	1 online resource (423 p.)
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Soggetti	Biophysics Biological physics Hepatology Fluid mechanics Fluids Biomathematics Biological and Medical Physics, Biophysics Engineering Fluid Dynamics Fluid- and Aerodynamics Mathematical and Computational Biology
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Note generali	Includes index.
Nota di contenuto	Introduction -- Mathematical Description of Fluid Flow -- Steady Flow in a Tube -- Basic Elements of Pulsatile Flow -- Pulsatile Flow in an Elastic Tube -- Wave Reflections -- Flow in Branching Tubes -- Dynamics of Pulsatile Blood Flow I -- Dynamics of Pulsatile Blood Flow II -- Dynamics of Pulsatile Blood Flow III -- Dynamic Pathologies -- Appendices -- Viscosity: A Story -- Poiseuille Flow: A Story.
Sommario/riassunto	Praise for Hemo-Dynamics: “This book provides an elegant and intuitive derivation of the fundamental mathematics underlying fluid flow, and then applies these in a straightforward way to pulsatile blood flow in all its complexity. One of the triumphs of the book is that Zamir succeeds in making essential concepts such as the Navier-Stokes equations completely accessible to any reader with a knowledge of basic calculus. The author succeeds in conveying both the beauty of his

subject matter, and his passion for the elegance and intricacies of fluid flow more generally.” Lindi Wahl, PhD, Professor of Applied Mathematics, The University of Western Ontario “Incredible, the figures alone are to die for… At first glance “Hemo-Dynamics” seems like a deep engineering and modeling dive into the mechanical properties of the cardiovascular system, blood, and how they interact to generate flow and pressure. However, the text is laid out in a stepwise manner and I was especially impressed in the way that the key conceptual figures illustrate the essential concepts. In keeping with the philosophical underpinnings of engineering, Professor Zamir has also constructed his book so that the format, text, equations and the figures are self-reinforcing. This is a book that will be of great use to those who seek to understand the cardiovascular system from a mechanical and modeling perspective.” Michael J. Joyner, MD, Professor of Anesthesiology, Mayo Clinic, Rochester, MN.