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Titolo	Computational Biomechanics for Medicine : New Approaches and New Applications // edited by Barry Doyle, Karol Miller, Adam Wittek, Poul M.F. Nielsen
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Nota di contenuto	Preface -- New Approaches -- Vademecums for Real-Time Computational Surgery -- Data-Guided Growth and Remodeling Model of Abdominal Aortic Aneurysm Accounting for the Bio-Chemical Effects of Intraluminal Thrombus -- A Computer Simulation for 3D Vasculature-Based Oxygen Distribution and Tumor Growth -- Numerical Algorithm for Simulation of Soft Tissue Swelling and

Shrinking in a Total Lagrangian Explicit Dynamics Framework -- Spatially Weighted Objective Function to Solve the Inverse Problem in Elasticity Iteratively -- Implementation of a Modified Moving Least Squares Approximation for Predicting Soft Tissue Deformation Using a Meshless Method -- New Applications -- Automatic Landmark Detection Using a Statistical Shape Modeling and Template Matching -- Mechanical Properties of Brain-Skull Interface in Compression -- Modeling the Deformation of the Human Cornea Produced by a Forced Air Pulse -- Biomechanical Modeling of the Respiratory System: Human Diaphragm and Thorax -- A Collective Approach for Reconstructing 3D Fiber Arrangements in Virtual Musculoskeletal Soft Tissue Models -- Optimization of Acetabulum Reorientation in a Periacetabular Osteotomy (PAO) by Finite Element Simulation: a Preliminary Study.

Sommario/riassunto

The Computational Biomechanics for Medicine titles provide an opportunity for specialists in computational biomechanics to present their latest methodologies and advancements. This volume comprises twelve of the newest approaches and applications of computational biomechanics, from researchers in Australia, New Zealand, USA, France, Spain and Switzerland. Some of the interesting topics discussed are: real-time simulations; growth and remodelling of soft tissues; inverse and meshless solutions; medical image analysis; and patient-specific solid mechanics simulations. One of the greatest challenges facing the computational engineering community is to extend the success of computational mechanics to fields outside traditional engineering, in particular to biology, the biomedical sciences, and medicine. We hope the research presented within this book series will contribute to overcoming this grand challenge.
