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Nota di contenuto	Chapter 1. The impact of patches on blood flow disorders in carotid artery -- Chapter 2. Numerical study of carotid bifurcation angle effect on blood flow disorders -- Chapter 3. Evaluating the effect of tissue anisotropy on brain tumor growth using a mechanically-coupled reaction-diffusion model -- Chapter 4. Prediction of stress and strain patterns from load rearrangement in human osteoarthritic femur head: finite element study with the integration of muscular forces and friction contact -- Chapter 5. Numerical simulation of the deployment process of a new stent produced by ultrasonic-microcasting: the role of the

balloon's constitutive modeling -- Chapter 6. New techniques for combined FEM-multibody anatomical simulation -- Chapter 7. Computational cell-based modelling and visualization of cancer development and progression -- Chapter 8. Estimation of 6 degree of freedom accelerations from head impact telemetry system outputs for computational modeling -- Chapter 9. Physiological Cybernetics: methods and applications -- Chapter 10. New computational solution to compute the uptake index from 99mTc-MDP bone scintigraphy images. .

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## Sommario/riassunto

This book gathers selected, extended and revised contributions to the 15th International Symposium on Computer Methods in Biomechanics and Biomedical Engineering (CMBBE2018), and the 3rd Conference on Imaging and Visualization, which took place on 26-29 March, 2018, in Lisbon, Portugal. The respective chapters highlight cutting-edge methods, e.g. new algorithms, image analysis techniques, and multibody modeling methods; and new findings obtained by applying them in biological and/or medical contexts. Original numerical studies, Monte Carlo simulations, FEM analyses and reaction-diffusion models are described in detail, together with intriguing new applications. The book offers a timely source of information for biologists, engineers, applied mathematicians and clinical researchers working on multidisciplinary projects, and is also intended to foster closer collaboration between these groups.

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