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Descrizione fisica	1 online resource (356 pages)
Collana	Biological and Medical Physics, Biomedical Engineering, , 1618-7210
Disciplina	616.804754 616.80475
Soggetti	Biophysics Biomedical engineering Nervous system - Surgery Biological and Medical Physics, Biophysics Biomedical Engineering and Bioengineering Neurosurgery
Lingua di pubblicazione	Inglese
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Note generali	Includes index.
Nota di contenuto	Chapter1. Introduction -- Chapter2. Introduction to brain anatomy -- Chapter3. Introduction to brain imaging -- Chapter4. Brain Tissue Mechanical Properties -- Chapter5. Modeling of the Brain for Injury Simulation and Prevention -- Chapter6. Biomechanical modelling of the brain for neurosurgical simulation and neuroimage registration -- chapter7. Biomechanical modelling of the brain for neuronavigation in epilepsy surgery -- Chapter8. Dynamics of Cerebrospinal Fluid. From Theoretical Models to Clinical Applications. Chapter9. Computational Fluid Dynamics for the Assessment of Cerebrospinal Fluid Flow and Its Coupling with Cerebral Blood Flow. Chapter10. Finite Element Algorithms for Computational Biomechanics of the Brain -- Chapter11. Meshless Algorithms for Computational Biomechanics of the Brain -- Chapter12. Intraoperative Measurement of Brain Deformation -- Chapter13. Computational biomechanics of the brain in the operating theatre.
Sommario/riassunto	This new edition presents an authoritative account of the current state of brain biomechanics research for engineers, scientists and medical

professionals. Since the first edition in 2011, this topic has unquestionably entered into the mainstream of biomechanical research. The book brings together leading scientists in the diverse fields of anatomy, neuroimaging, image-guided neurosurgery, brain injury, solid and fluid mechanics, mathematical modelling and computer simulation to paint an inclusive picture of the rapidly evolving field. Covering topics from brain anatomy and imaging to sophisticated methods of modeling brain injury and neurosurgery (including the most recent applications of biomechanics to treat epilepsy), to the cutting edge methods in analyzing cerebrospinal fluid and blood flow, this book is the comprehensive reference in the field. Experienced researchers as well as students will find this book useful.
