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Altri autori (Persone)	ChauviereArnaud PreziosiLuigi VerdierClaude <1962->
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Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Front cover; Part I: From Subcellular to Cellular Properties; Chapter 1. Microhenology of Living Cells at Different Time and Length Scales; Chapter 2. Actin-Based Propulsion: Intriguing Interplay between Material Properties and Growth Processes; Chapter 3. Cancer: Cell Motility and Tumor Suppressor Genes; Part II: Single Cell Migration Modeling; Chapter 4. Coupling of Cytoplasm and Adhesion Dynamics Determines Cell Polarization and Locomotion; Chapter 5. How Do Cells Move? Mathematical Modeling of Cytoskeleton Dynamic and Cell Migration Chapter 6. Computational Framework Integrating Cytoskeletal and Adhesion Dynamics for Modeling Cell MotilityPart III: Mechanical Effects of Environment on Cell Behavior; Chapter 7. History Dependence of Mocrobead Adhesion under Varying Shear Rate; Chapter 8. Understanding Adhesion Sites as Mechanosensitive Cellular Elements;

Chapter 9. Cancer Cell Migration on 2-D Deformable Substrates;  
Chapter 10. Single-Cell Imaging of Calcium in Response to Mechanical  
Stimulation; Part IV: From Cellular to Multicellular Models  
Chapter 11. Mathematical Framework to Model Migration of Cell  
Population in Extracellular MatrixChapter 12. Mathematical Modeling of  
Cell Adhesion and Its Applications to Developmental Biology and  
Cancer Invasion; Chapter 13. Bridging Cell and Tissue Behavior in  
Embryo Development; Chapter 14. Modeling Steps from Benign Tumor  
to Invasion Cancer: Examples of Intrinsically Multiscale Problems;  
Chapter 15. Delaunay Object Dynamics for Tissues Involving Highly  
Motile Cells; Index; Back cover

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**Sommario/riassunto**

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Ubiquitous and fundamental in cell mechanics, multiscale problems can arise in the growth of tumors, embryogenesis, tissue engineering, and more. This book discusses the tool of microrheology for investigating cell mechanical properties, and multiphysics and multiscale approaches for studying intracellular mechanisms in cell motility.

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