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| Descrizione fisica      | 1 online resource (XII, 220 p.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
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| Altri autori (Persone)  | HardersMatthias<br>SzekelyGabor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Disciplina              | 610.1/1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Soggetti                | Computer simulation<br>Computer vision<br>Computer graphics<br>Medical informatics<br>Radiology<br>Computer Modelling<br>Computer Vision<br>Computer Graphics<br>Health Informatics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Lingua di pubblicazione | Inglese                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
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| Nota di bibliografia    | Includes bibliographical references and index.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Nota di contenuto       | Simulation of Biophysical Processes -- Computer Prediction of Friction in Balloon Angioplasty and Stent Implantation -- Real Time Simulation of Organ Motions Induced by Breathing: First Evaluation on Patient Data -- Efficient 3D Finite Element Modeling of a Muscle-Activated Tongue -- A 3-D Computational Model for Multicellular Tissue Growth -- Hierarchical Multi-resolution Finite Element Model for Soft Body Simulation -- Simulation of the Retroglossal Fluid-Structure Interaction During Obstructive Sleep Apnea -- Image Based Musculoskeletal Modeling Allows Personalized Biomechanical Analysis of Gait -- Real-Time Simulation for Global Deformation of Soft Tissue Using Deformable Centerline and Medial Representation -- The Framework for Real-Time Simulation of Deformable Soft-Tissue Using a Hybrid |

Elastic Model -- Systems and Applications -- A Flexible Framework for Highly-Modular Surgical Simulation Systems -- An Introduction to GPU Accelerated Surgical Simulation -- Simulation of Cardiac Activation Patterns for Checking Suggestions About the Suitability of Multi-lead ECG Electrode Arrays -- Simulation of the Continuous Curvilinear Capsulorhexis Procedure -- Annotated Surgical Manipulation for Simulator-Based Surgical Skill-Transfer Using SiRE -- Simulation Record Editor -- Real-Time Area-Based Haptic Rendering for a Palpation Simulator -- New Methods for Video-Based Tracking of Laparoscopic Tools -- Anatomical Modeling and Tissue Properties -- Mechanical Characterization of the Liver Capsule and Parenchyma -- Parameter Optimisation of a Linear Tetrahedral Mass Tensor Model for a Maxillofacial Soft Tissue Simulator -- An Integrated Dynamic Jaw and Laryngeal Model Constructed from CT Data -- Simulation of Stomach Specimens Generation Based on Deformation of Preoperative CT Images -- 3DCylindrical B-Spline Segmentation of Carotid Arteries from MRI Images -- Simulation of Soft-Tissue Deformations for Breast Augmentation Planning -- Local Mesh Adaptation for Soft Tissue Simulation.

## Sommario/riassunto

This book contains the written contributions to the Third International Symposium on Biomedical Simulation (ISBMS), which was held in Zurich, Switzerland, on July 10-11, 2006. The manuscripts are organized around three thematic sections which cover several of the major aspects of our rapidly growing field: anatomical modeling and tissue properties, simulation of biophysical processes, as well as systems and applications. The symposium provided an international forum for researchers interested in using biomedical simulation technology for the improvement of patient care. It was held in the spirit and continuation of the symposia on Surgical Simulation and Soft Tissue Modeling (IS4TM) organized in 2003 by INRIA, and on Medical Simulation (ISMS) in 2004 by CIMIT. We received 37 submissions from 13 different countries. Each was evaluated by three members of the scientific committee. Based on these reviews, 12 manuscripts were selected for oral presentation and 11 for poster presentation. All accepted manuscripts were allowed a written contribution of equal length and were presented at the meeting in single track. The geographical breakdown of the different institutions presenting their research was: Austria, Belgium, Canada, China, Denmark, France, Germany, Japan, Korea, Netherlands, Spain, and Switzerland. The quality of the contributions indicates that the symposium is an important milestone in our rapidly growing research area at the confluence of several related disciplines. It was a great pleasure hosting this successful event, and we hope that all attendees enjoyed the intense and stimulating symposium.