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Titolo	Functional Imaging and Modeling of the Heart : Second International Workshop, FIMH 2003, Lyon, France, June 5-6, 2003, Proceedings // edited by Isabelle E. Magnin, Johan Montagnat, Patrick Clarysse, Jukka Nenonen, Toivo Katila
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Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	Invited Speakers -- Tagged MRI-Based Studies of Cardiac Function -- A Novel Method for Quantifying the Contribution of Different Intracellular Mechanisms to Mechanically Induced Changes in Action Potential Characteristics -- Session 1: Anatomy Extraction and Description -- Automatic Construction of Biventricular Statistical Shape Models -- Visualising Cardiac Anatomy Using Constructive Volume Geometry -- Evaluation of a 3D Segmentation Software for the Coronary Characterization in Multi-slice Computed Tomography -- A Levelset Based Method for Segmenting the Heart in 3D+T Gated SPECT Images -- Session 2: Modeling of the Cardiac Mechanics and Functions -- Modeling of Electro-mechanical Coupling in Cardiac Myocytes:

Feedback Mechanisms and Cooperativity -- Simulating Cardiac Mechanoenergetics in the Left Ventricle -- Towards Patient Specific Models of Cardiac Mechanics: A Sensitivity Study -- Does the Collagen Network Contribute to Normal Systolic Left Ventricular Wall Thickening? A Theoretical Study in Continuum Mechanics -- Session 3: Electrophysiology, Electro-, and Magnetography -- Regularization in Cardiac Source Imaging -- On the Influence of a Volume Conductor on the Orientation of Currents in a Thin Cardiac issue -- First 36-Channel Magnetocardiographic Study of CAD Patients in an Unshielded Laboratory for Interventional and Intensive Cardiac Care -- Heterogeneous Sinoatrial Node of Rabbit Heart - Molecular and Electrical Mapping and Biophysical Reconstruction -- Session 4: Motion Estimation -- Construction of a Cardiac Motion Atlas from MR Using Non-rigid Registration -- Motion-Compensation of Cardiac Perfusion MRI Using a Statistical Texture Ensemble -- Measuring Myocardial Deformations in Tagged MR Image Sequences Using Informational Non-rigid Registration -- Parametric Analysis of Main Motion to Study the Regional Wall Motion of the Left Ventricle in Echocardiography -- Modeling and Tracking of the Cardiac Left Ventricular Motion by a State Space Harmonic Model in MRI Sequence -- Session 5: Image Registration and Image Analysis -- A Strategy to Quantitatively Evaluate MRI/PET Cardiac Rigid Registration Methods Using a Monte Carlo Simulator -- Spatio-temporal Alignment of 4D Cardiac MR Images -- Automatic Registration of MR First-Pass Myocardial Perfusion Images -- Evaluation and Comparison of Surface and Intensity Based Rigid Registration Methods for Thorax and Cardiac MR and PET Images -- Left Ventricular Flow Dynamics and Transmural Gradients in Myofiber Shortening with MRI-Tagging -- Intravascular Ultrasound Images Vessel Characterization Using AdaBoost -- Motion Analysis of 3D Ultrasound Texture Patterns -- Session 6: Data Acquisition, Experimental, and Modeling Studies -- Estimation of the Diastolic Intraventricular Relative Pressures Using MRI Acceleration Measurements -- Magnetic Resonance Fusion Imaging of Chronic Myocardial Ischemia -- The Relationship between Regional Integrated Backscatter Levels and Regional Strain in Normal, Acutely Ischemic, and Reperfused Myocardium -- Why Ischemic Hearts Respond Less to Cardiac Resynchronisation Therapy. A Modeling Study -- Finite Element Models for Mechanical Simulation of Coronary Arteries.

Sommario/riassunto

The first international conference on Functional Imaging and Modeling of the Heart (FIMH) was held in Helsinki, Finland, in November 2001, thanks to the strong scientific collaboration between France and Finland. This event was a first attempt to federate the heart imaging community and to encourage collaboration between scientists in signal and image processing, applied mathematics and physics, biomedical engineering and computer science, and experts in cardiology, radiology, biology, and physiology, in Europe and beyond. The conference has encountered considerable success. The outstanding research works presented have demonstrated a very active research field with complex modeling and image analysis problems to be solved. One of the outcomes was the special issue of the Medical Image Analysis journal based on a selection of the conference's best papers, to appear in the second half of 2003. The FIMH 2001 meeting was the starting point of a discussion for federating the European research effort in cardiac imaging, heart modeling, and cardiac image analysis. It was very successful, and a large coalition was created around the e-Heart proposal for a Network of Excellence in the European Sixth Framework Program. The e-Heart network has already gathered about 200 researchers from 100 institutes. A project proposal has been submitted

to the European Union. It was decided in the first meeting to organize a regular biennial conference.
