

1. Record Nr.	UNINA9910143871303321
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
Pubbl/distr/stampa	Berlin, Heidelberg : , : Springer Berlin Heidelberg : , : Imprint : Springer, , 2003
ISBN	3-540-44883-7
Edizione	[1st ed. 2003.]
Descrizione fisica	1 online resource (XI, 311 p.)
Collana	Lecture Notes in Computer Science, , 0302-9743 ; ; 2674
Disciplina	611/.12
Soggetti	Human anatomy Optical data processing Radiology Cardiology Artificial intelligence Computer simulation Anatomy Image Processing and Computer Vision Imaging / Radiology Artificial Intelligence Simulation and Modeling
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Bibliographic Level Mode of Issuance: Monograph
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: Electro-
 physiology, 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.
