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	Nota di contenuto	Advanced Normalization Tools for Cardiac Motion Correction -- Deformable Image Registration and Intensity Correction of Cardiac Perfusion MRI -- Comparison of Linear and Non-linear 2D+T Registration Methods for DE-MRI Cardiac Perfusion Studies -- Motion Correction for Dynamic Contrast-Enhanced CMR Perfusion Images Using a Consecutive Finite Element Model Warping -- Deformable and Rigid Model-Based Image Registration for Quantitative Cardiac

Perfusion -- Automatic Perfusion Analysis Using Phase-Based Registration and Object-Based Image Analysis -- LV Mechanics Challenge -- Left Ventricular Diastolic and Systolic Material Property Estimation from Image Data -- Evaluation of Personalised Canine Electromechanical Models -- Connection Forms for Beating the Heart: LV Mechanics Challenge (Methods) -- Patient–Specific Parameter Estimation for a Transversely Isotropic Active Strain Model of Left Ventricular Mechanics -- Estimation of Diastolic Biomarkers: Sensitivity to Fibre Orientation -- Fully-Coupled Electromechanical Simulations of the LV Dog Anatomy Using HPC: Model Testing and Verification -- STACOM Challenge: Simulating Left Ventricular Mechanics in the Canine Heart -- Identifying Myocardial Mechanical Properties from MRI Using an Orthotropic Constitutive Model -- Evaluating Local Contractions from Large Deformations Using Affine Invariant Spectral Geometry -- Image-Based View-Angle Independent Cardiorespiratory Motion Gating for X-ray-Guided Interventional Electrophysiology Procedures -- Analysis of Mitral Valve Motion in 4D Transesophageal Echocardiography for Transcatheter Aortic Valve Implantation -- Structural Abnormality Detection of ARVC Patients via Localised Distance-to-Average Mapping -- Joint Myocardial Motion and Contraction Phase Estimation from Cine MRI Using Variational Data Assimilation -- Segmentation of the Aortic Valve Apparatus in 3D Echocardiographic Images: Deformable Modeling of a Branching Medial Structure -- Estimation of Regional Electrical Properties of the Heart from 12-Lead ECG and Images -- Multi-source Motion Decoupling Ablation Catheter Guidance for Electrophysiology Procedures -- Statistical Model of Paroxysmal Atrial Fibrillation Catheter Ablation Targets for Pulmonary Vein Isolation -- Factors Affecting Optical Flow Performance in Tagging Magnetic Resonance Imaging -- Multi-modal Validation Framework of Mitral Valve Geometry and Functional Computational Models -- Robust Detection of Mitral Papillary Muscle from 4D Transesophageal Echocardiography -- Reusability of Statistical Shape Models for the Segmentation of Severely Abnormal Hearts -- Registration of Real-Time and Prior Imaging Data with Applications to MR Guided Cardiac Interventions -- Restoration of Phase-Contrast Cardiovascular MRI for the Construction of Cardiac Contractility Atlases -- Manifold Learning for Cardiac Modeling and Estimation Framework.

Sommario/riassunto

This book constitutes the thoroughly refereed post-conference proceedings of the 5th International Workshop on Statistical Atlases and Computational Models of the Heart: Imaging and Modelling Challenges, STACOM 2014, held in conjunction with MICCAI 2014, in Boston, MA, USA, in September 2014. The 30 revised full papers were carefully reviewed and selected from numerous submissions. The papers cover a wide range of topics such as sections on cardiac image processing; atlas construction; statistical modelling of cardiac function across different patient populations; cardiac mapping; cardiac computational physiology; model customization; atlas based functional analysis; ontological schemata for data and results; integrated functional and structural analyses; as well as the pre-clinical and clinical applicability of these methods.