

1. Record Nr.	UNINA9910830396303321
Titolo	Multi-modality cardiac imaging : processing and analysis // edited by Patrick Clarysse, Denis Friboulet
Pubbl/distr/stampa	London, England ; ; Hoboken, New Jersey : , : ISTE : , : Wiley, , 2015 ©2015
ISBN	1-118-57446-X 1-118-57442-7
Descrizione fisica	1 online resource (313 p.)
Collana	Digital Signal and Image Processing Series
Disciplina	616.120757
Soggetti	Heart - Imaging Cardiovascular system - Imaging Chest - Imaging
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	Table of Contents; Title; Copyright; Preface; Acknowledgements; Introduction; PART 1: Methodological Bases; 1 Extraction and Segmentation of Structures in Image Sequences; 1.1 Problematics; 1.2 Overview of segmentation methods; 1.3. Summary of the different classes of deformable models; 1.4. Deformable templates; 1.5. Variational active contours; 1.6. Integration of a priori constraints in the formalism of variational contours; 1.7. Implementation examples in cardiac imaging; 1.8. Conclusion; 1.9. Bibliography; 2 Motion Estimation and Analysis; 2.1. Problematics; 2.2. Problem formulation 2.3. Transport methods2.4. Probabilistic approaches; 2.5. Image registration; 2.6. Local methods; 2.7. Hybrid methods; 2.8. Phase-based methods; 2.9. Registration and motion estimation in a sequence of images; 2.10. Evaluation of motion estimation methods; 2.11. Conclusion; 2.12. Bibliography; 3 Post-processing and Analysis of Dynamic Magnetic Resonance Images for Myocardial Perfusion Quantification; 3.1. Introduction; 3.2. Dynamic measurement of perfusion with contrast agents: reminder about the MRI sequences and the different contrast agents used

3.3. Motion correction and contour segmentation of the myocardium: important preprocessing prior to quantitative analysis

3.4. Semi-quantitative perfusion analysis: calculation of relative parameters depending on the injection of the contrast medium; 3.5. Absolute parameters independent of the contrast agent injection (taking account of the arterial input): pharmacokinetic modeling; 3.6. Conclusion; 3.7. Bibliography;

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6 Phase-based Heart Motion Estimation in Multimodality Cardiac Imaging; 6.1. Phase images; 6.2. Optical flow motion estimation on the phase of the two single-orthant analytic signals and using a deformable mesh: application to cardiac MRI sequences; 6.3. Motion estimation by optical flow from the monogenic phase using a local affine model and multiscale analysis - application to ultrasonic cardiac sequences; 6.4. Bibliography;

7 Cardiac Motion Analysis in Tagged MRI; 7.1. Motion quantification by the SinMod method

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