

Specialty area: Cardiac function, perfusion and tissue characterization

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Highlights

- Overview on technical approaches for parametric mapping of the heart
- Confounding factors when measuring relaxation times in the heart
- State-of-the-art in 2014

Parametric mapping

- Target audience
CMR scientists who would like to establish or optimize parametric mapping at their site
- Outcome/ Objectives
Learners should be able to
 - select the most appropriate mapping techniques for their individual purposes by understanding the pros and cons of existing methods
 - understand the limitations of parametric mapping in terms of accuracy and precision
- Purpose
To give an overview on existing mapping approaches with their respective pros and cons
- Topics
 - Basic concepts of parametric mapping: T1, T2, T2*
 - Specific requirements in cardiac applications
 - Acquisition – postprocessing – analysis
 - Genealogy of mapping techniques
 - Specific characteristics of popular mapping techniques (e.g. MOLLI – ShMOLLI – SASHA)
 - Confounding factors (heart rate etc.)
 - Accuracy vs. precision in parametric mapping
 - Current state-of-the-art (pulse sequences, acquisition protocols, postprocessing, analysis)
- Conclusion
Existing mapping techniques can provide robust information on myocardial tissue properties when applied appropriately.
- References
[Myocardial T1 mapping and extracellular volume quantification: a Society for Cardiovascular Magnetic Resonance \(SCMR\) and CMR Working Group of the European Society of Cardiology consensus statement.](#)
Moon JC, Messroghli DR, Kellman P, Piechnik SK, Robson MD, Ugander M, Gatehouse PD, Arai AE, Friedrich MG, Neubauer S, Schulz-Menger J, Schelbert EB. J Cardiovasc Magn Reson. 2013 Oct 14;15:92.

[Advances in parametric mapping with CMR imaging.](#)

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JACC Cardiovasc Imaging. 2013 Jul;6(7):806-22.