

Propositions accompanying the thesis

Accelerated Quantitative MRI by Joint Reconstruction and Quantification

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1. In the design of quantitative MRI protocols, undersampling patterns, reconstruction algorithms and quantification methods need to be jointly considered. (this thesis, Chapter 2 & 3)
2. The L2-discrepancy of an undersampling pattern is a good indicator of time-efficiency in accelerated quantitative MRI. (this thesis, Chapter 3)
3. Modelling the difference between gradient echoes and spin echoes in a 3D-GRASE sequence is more effective for removing B0 inhomogeneities than placing both echoes in the same k-space. (this thesis, Chapter 4)
4. Joint reconstruction and estimation can only reduce qMRI scan time when there is enough redundancy to be exploited. (this thesis, Chapter 4)
5. By exploiting redundancy across contrasts, we can compensate for the increasing scan time of the MP-b-nSSFP sequence when converting it from 2D to 3D. (this thesis, Chapter 5)
6. Imaging quality degeneration due to k-space undersampling in accelerated MRI protocols is better predictable than image quality degeneration due to patient motion in long MRI protocols.
7. Quantitative MRI enhances the ability to conduct longitudinal studies.
8. A scientific experiment is not complete without detailed documentation for peer replication given the same experimental setup.
9. Decisions on accepting or rejecting papers during the review process should be made without knowledge of the results. (Inspired by Martijn Starmans)
10. Colleagues are as vital to work happiness as the work itself.
11. Working without expecting results fosters happiness and resilience, enabling perseverance in the face of repeated failures. (Inspired by the Bhagavad Gita)