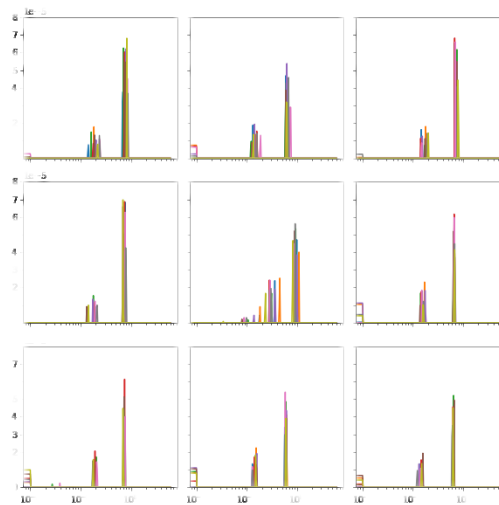
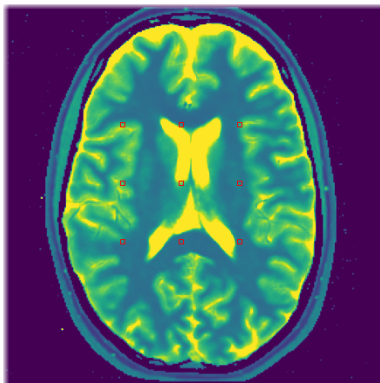


Master's Thesis: Reconstruction with Multi-Compartment Models for Quantitative MRI

Overview

The MRI signal measured in a voxel is the superposition of signals from different tissue compartments. The fractional abundance of these compartments, such as the Myelin water fraction, are investigated as biomarkers for various neurological diseases. Moreover, simplifications as approximating the signal as a single compartment can lead to wrong estimates of the tissue properties. The goal of this thesis is to develop and implement model-based reconstruction algorithms for multi-compartment models.



Specific tasks

- Extensive literature review on multi compartment reconstruction
- Data acquisition (potentially sequence development)
- Integration of multi-compartment models into existing reconstruction software
- Documentation and illustration of the results

Recommended Knowledge

- Basic C/C++ programming experience
- Knowledge on MRI reconstruction and MRI physics
- Basic knowledge on optimization

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