Bachelor's Thesis:
Systematic Spoiling of Unwanted Signals in Magnetic Resonance Imaging Using Ferro-Magnetic Materials

Institute of
Biomedical Imaging
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Overview

Magnetic resonance imaging is a very flexible and versatile imaging technique that allows imaging of arbitrary cross-sectional slices. In some cases, unwanted signal from outside the field of view can lead to artifacts. The aim of this bachelor thesis is to investigate options for systematically spoiling such unwanted signals without affecting the image by placing ferro-magnetic markers close to the acquired object.

Specific Tasks

- Literature review
- Identifiy suitable materials
- Learn to print metal-based materials on our FDM 3D printer
- Learn to operate an MRI scanner
- Evaluation of the spoiling effects on the image for different materials and geometries
- Documentation and illustration of the results

Recommended Knowledge

- Python
- Command-line experience on Linux
- Creation of 3D models
- Experience with FDM printers

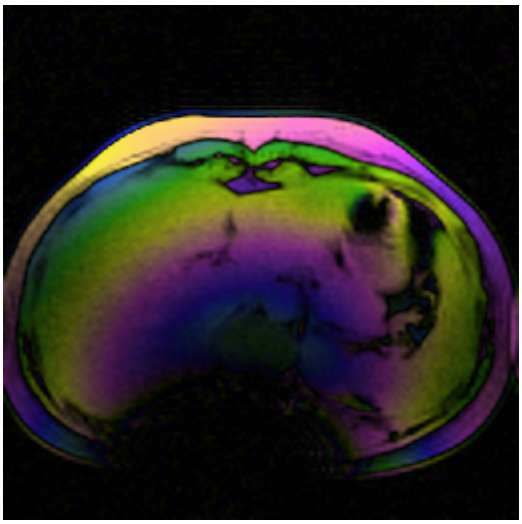

Figure: Accidental spoiling of MRI signal by a ferro-magnetic object

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