

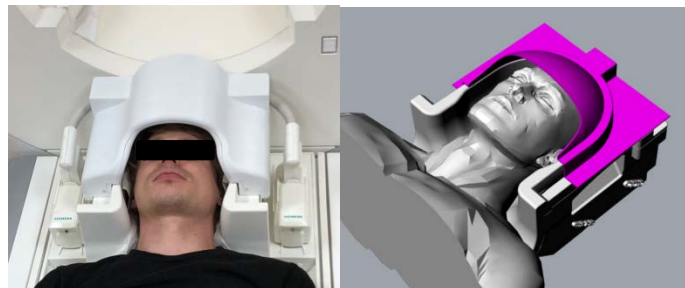


Master Thesis

„OpenFace – a new head coils for advanced functional MR brain research”

Project description

Current coils for functional MR imaging studies in the human brain cover not only the back of the head, but also the face. Depending on the design of the coil, only the eyes and small subparts of the face can be seen from the distance. This makes it difficult to record the whole face of the subject, e.g. with a camera during the imaging session, which in turn is of special interest in experiments studying facial expressions during communication tasks. In order to facilitate an OpenFace situation in the MR scanner, a modified head coil was developed. The task in the project will be to evaluate the signal and in particular the image quality of this modified MR head coil (see images) against the standard version, which covers most of the facial area. Thus, the project comprises operating the MR scanner, performing phantom and volunteer scans as well as statistical image evaluation (signal-to noise, contrast-to-noise).



Place of work

Medical Physics Group
Institute for Diagnostic and Interventional Radiology
University Hospital Jena
Philosophenweg 3
07743 Jena
www.mrt.uni-jena.de

Your profile

- B.Sc. degree in physics, computer science, mathematics, biomedical engineering or related fields
- Interest in medical imaging, image processing and analysis
- Strong computer skills, programming for scripts/automation is desired
- Ability to study scientific literature

Working environment

The Medical Physics Group in the Institute for Diagnostic and Interventional Radiology (IDIR) at the University Hospital Jena conducts interdisciplinary research in tomographic imaging methods, especially MRI. The group consists of a multi-disciplinary team of ambitious young scientists from the fields of physics, engineering and biology. The aim of our research activities is the development and provision of new methods to qualitatively and, where possible, quantitatively assess morphologic and functional parameters and thereby contribute to improved diagnostics and therapy.

You will be working at our MRI research center with a state-of-the-art 3T whole-body clinical MRI system and our high performance computation system.

Project leader

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Group leader

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