



SACHSEN-ANHALT



EUROPÄISCHE UNION

**ESIF**

Europäische Struktur- und  
Investitionsfonds

## PhD student position in human neuroimaging (up to 4.5 years) - ABINEP module 4

### Characterizing functional brain networks with fMRI and TMS/TDCS (Noesselt/Hinrichs)

Human functional imaging can reveal which brain areas are related to perceptual and cognitive tasks. However, while fMRI results provide information about brain areas sufficient for solving a task, it cannot answer, whether their involvement is necessary. This shortcoming restricts the results from imaging for the development of adequate theoretical approaches and clinical applications.

In the present project, we aim to combine functional magnetic resonance imaging and transcranial magnetic stimulation/direct current stimulation (TMS/TDCS) to investigate the relationship between correlative fMRI-results and interventional TMS/TDCS in humans. fMRI will be used to identify brain areas involved in cognitive tasks and to characterize their interregional connectivity with psychophysiological interactions and dynamic causal modelling. With TMS/TDCS, we aim to investigate changes in local processing of brain regions and changes in interregional transfer and to compare the outcomes with fMRI-driven models.

The position will be based at the Departments of Biological Psychology and Neurology and is part of the ABINEP graduate school at our university. ABINEP aims at educating excellent international PhD student candidates in four modules, organised by topics. ABINEP module 4 is dedicated to the analysis of human brain function in health and disease.

General Information about Module 4 can be found [here](#).

For more information on this project please contact Prof. Dr. [Toemme Noesselt](#)