

1 PhD or 1 PostDoc position in Düsseldorf, Germany

The position is in the context of the project “Spontaneous brain activity in healthy subjects and Parkinson's disease” funded by the Volkswagen foundation. The project aims at providing a characterization of the neurophysiological basis of the brain's resting state networks (RSNs) by determining how communication between and within RSNs is mediated, using electro-/magnetoencephalographic (E/MEG) data from healthy participants. For this aim, method developments are needed to inform electrophysiological connectivity analysis with anatomical information. In the second part of the project the characterization of RSN electrophysiology will be used to improve our understanding of the pathophysiology of Parkinson's disease. A particular focus will be on tracing out the electrophysiological mechanisms underlying the effectiveness of dopamine treatment and deep brain stimulation.

The PhD will be primarily concerned with methods developments/implementation, but also data collection and experimental design. It is expected to present findings at conferences and to prepare scientific publications. Preferable candidates will have a strong background and Master's degree in physics, neuroscience, electrophysiology, biology, computer science or related fields. Knowledge of MEG/EEG biophysics, data acquisition and analysis, biostatistics, and signal processing or the willingness and capability to quickly acquire this knowledge are essential.

Both positions are available as soon as possible. The initial appointment is for 3 years for the PhD and 2 years for the PostDoc. The salary is based on 65% (PhD) / 100% (PostDoc) of TVL-13 and including employer contributions to mandatory health insurance and pension plan contributions.

1 PhD Position in Düsseldorf, Germany

The research is carried out within the framework of subproject S01 of the supra-regional Collaborative Research Center TRR 295, “Retuning dynamic motor network disorders using neuromodulation,” supported by Charité – Universitätsmedizin Berlin and the University Hospital Würzburg (<https://sfb-retune.de/>). The place of work is the University of Düsseldorf. The position is in the context of the project “MEG based markers of optimized STN-DBS” within the collaborative research center “RETUNE” funded by the DFG. The project aims at identifying markers from MEG recordings, which could help clinicians programming the deep brain stimulator of Parkinson patients. The PhD will be primarily concerned with data collection and the analysis of these acquired data. This also includes methods developments/implementation of new analysis strategies for the data. Preferable candidates will have a strong background and Master's degree in physics, neuroscience, electrophysiology, biology, computer science or related fields. Knowledge of MEG/EEG biophysics, data acquisition and analysis, biostatistics, and signal processing or the willingness and capability to quickly acquire this knowledge are essential.

This position is available from the 1st of January 2023. The initial appointment is for 1.5 years. The salary is based on 65% of TVL-13 and including employer contributions to mandatory health insurance and pension plan contributions.

Qualities we are looking for:

- Good scientific programming and data processing skills
- Familiarity with Matlab
- Solid knowledge of descriptive and inductive statistics and time series analysis
- Previous exposure to M/EEG source estimation, Brainstorm, DTI and fMRI resting state analysis are considered a plus
- Strong motivation to carry out neuroimaging studies utilizing MEG and to perform source and connectivity analysis
- Knowledge of neuroscience concepts

- Good interpersonal and communication skills, particularly in the interaction with subjects and patients (beneficial: knowledge of German)
- Excellent skills in written and spoken English
- Proven track record of academic excellence

What we offer:

This group is part of the collaborative research center “Retune” and thus offers a high degree of interaction with the other groups of this Research Center. In addition this CRC has an active early-career network.

In more local aspects the group is part of the Institute for Clinical Neuroscience and Medical Psychology at Heinrich-Heine University, Düsseldorf, located in the capital of Germany’s biggest state. The institute hosts a state-of-the-art 306 channel MEG-system and a 128 channel EEG system as well as a 3T MRI. The Heinrich-Heine University (HHU) is part of the Neuroscience Network Düsseldorf, a collaborative effort jointly with the Research Centre Jülich and the IUF - Leibniz Research Institute for Environmental Medicine Düsseldorf. A particular focus of this network is the investigation of disease-associated pathomechanisms such as the one of Parkinson's disease. At the HHU Düsseldorf the graduate school iBrain has been established and enables graduate students to obtain further formal qualifications in neuroscience.

The contract will be affiliated with Heinrich-Heine University Düsseldorf.

Female candidates are encouraged to apply; they will be given preference in cases of equal aptitude, ability, and professional achievements unless there are exceptional reasons for choosing another applicant.

Applications from suitably qualified severely disabled persons or disabled persons regarded as being of equal status according to Book IX of the German Social Legal Code (SGB – Soziales Gesetzbuch) are encouraged to apply. Disabled applicants will be given preferential consideration in the case of equal aptitude.

More information about this vacancy?

Please contact Prof. Dr. Esther Florin: esther.florin@hhu.de

Are you interested?

Applications are accepted until the positions is filled. You can inquire about the status of the positions at esther.florin@hhu.de .

The application package should include the following items within one pdf:

- short (one page) application letter
- your CV, incl. a list of publications and the names and contact details of two scientists who can provide references
- copies of your degrees (including transcripts)
- writing sample
- one-page summary of your research