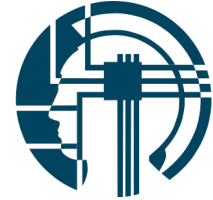# MAX PLANCK INSTITUTE
FOR BIOLOGICAL CYBERNETICS

PhD position
in layer-fMRI of the frontoparietal cortex at 9.4T

The newly established **Cognitive Neuroscience & Neurotechnology group** led by **Dr. Romy Lorenz** is looking for an enthusiastic PhD student (m/f/d) to join our growing team at the [Max Planck Institute for Biological Cybernetics](#) in Tübingen, Germany.

Our lab focuses on advancing our understanding of the frontoparietal brain network mechanisms that underpin high-level cognition and adaptive behaviour. For this, we pursue an interdisciplinary research programme that allows studying this brain system at multiple levels of granularity. Our methodology involves subject-specific brain-computer interface technology, fMRI at 3T and ultrahigh (i.e., 7T and 9.4T) magnetic field strengths (for resolving cortical layers), EEG, non-invasive brain stimulation as well as machine learning. You can find out more about our work at: https://www.kyb.tuebingen.mpg.de/711763/cognitive-neuroscience-neurotechnology

We are seeking an ambitious PhD student who will work on the exciting field of ultrahigh resolution fMRI that allows to investigate the human cortex at the scale of layers and columns. You will investigate the precise extent and topography of the frontoparietal network within individual healthy volunteers using dense-sampling protocols and understand how the topography of the frontoparietal network is affected by layer-specific connectivity. The position will involve data acquisition in healthy volunteers with different fMRI sequences (e.g., GE-BOLD, VASO, bSSFP) and the development of novel data analytical techniques.

The ideal candidate should have a master's degree in cognitive (neuro)science, psychology, computer science, biomedical or electrical engineering, physics, or related disciplines. A strong background in fMRI data analysis (e.g., FSL, Freesurfer, ANTS) and very good programming skills in Bash on Linux, Matlab and/or Python are required. Prior experience in MRI data acquisition and experience with ultrahigh resolution fMRI (e.g., at 7T) is desirable but not necessary. Equally, experience with machine learning-methods, code sharing platforms (e.g. GitHub) and high-performance computing clusters are highly desirable.

The Max Planck Institute for Biological Cybernetics offers a world-leading research environment with access to the latest cutting-edge MRI hardware (including a Siemens 9.4T and Prisma 3T for humans as well as a 14.2T small animal system) and other excellent research facilities (EEG, eye-tracking, fMRI-TMS). The PhD student will receive generous support for professional travel and research needs (~2500€/year). Additionally, the student will have the opportunity to become part of the Graduate Training Centre of Neuroscience that provides training courses, summer schools and conferences to further educate doctoral students. Further, the Institute is part of the TübingenNeuroCampus (with more than 100 active groups), offering a vibrant community of international researchers and enriching environment of collaboration.

The position is available from **May 2024** on and remains open until filled. The salary is paid in accordance with the collective agreement for the public sector (65% TVL-E13, [amounting to ~2000€ net per month](#)). The Max Planck Society seeks to employ more handicapped people and strongly encourages them to apply. Furthermore, we actively support the compatibility of work and family life. The Max Planck Society strives for gender equality and diversity.

To apply, please send your application containing a personal statement describing your personal qualifications, research interests and motivation (max. 2 pages), CV including publication list, academic certificates/transcript of records, names and contact details of 3 referees, and desired starting date as a single PDF file with the subject line **"Application for PhD-1: Spatial specification"** to Dr. Romy Lorenz (**romy.lorenz@tuebingen.mpg.de)**. Applications will be assessed on a rolling basis and considered until the position is filled.

Zertifikat seit 2006
audit berufundfamilie