Postdoctoral position in Developing Analysis Methods for Connectom MRI Diffusion Data

A postdoc position is available in the Department of Neurophysics (Director: N. Weiskopf) at the Max Planck Institute for Human Cognitive and Brain Sciences (MPI-CBS) in Leipzig, Germany. The project is funded by the ERC Consolidator Grant “Non-Invasive In-Vivo Histology in Health and Disease Using Magnetic Resonance Imaging”.

The successful candidate will be embedded in a unique world-leading research environment and be part of a team developing and applying methods for in-vivo histology of human brain microstructure using MRI, which is crucial for understanding the human brain in both health and disease.

The postdoc will focus on leveraging the potential of the 3T Connectom MRI scanner at our institute (300 mT/m maximum gradient amplitude, one of only three in the world for human imaging) for diffusion weighted imaging (DWI) of the microstructure of the human cortex. This will primarily include the development and application of novel post-processing and data analysis methods for DWI in the cortex, such as super-resolution reconstruction in real and q-space, and correction of image artifacts (e.g. eddy currents, physiological movement and susceptibility changes, gradient non-linearities). The postdoc will incorporate information from field camera devices (Skope) and an ultra-fast optical prospective motion correction system (Kineticor) to facilitate artifact correction.

Applicants must have a PhD in physics, computer science, mathematics, biomedical engineering, or a comparable subject. If not already held, the PhD must be obtained by the agreed start-date. A strong background in DWI processing methods development plus high-level programming languages (e.g. C/C++, Matlab, Python) is essential. Experience in MRI physics, pulse sequence programming or image reconstruction are desirable. Applicants must be specialists in at least one of the following areas: DWI modeling beyond DTI (e.g. multi-compartment models, diffusion kurtosis imaging); tractography; diffusion image processing toolboxes (e.g. MRtrix, FSL, ExploreDTI, DTI Studio); super-resolution imaging; computational neuroanatomy; SPM, FSL, or FreeSurfer; physiological noise correction; distortion correction; experience with field cameras or prospective motion correction; 3T Connectom MRI image processing or data acquisition. The applicant should be able to demonstrate a consistently outstanding academic record, including publications.

The position is available now and the starting date is as soon as possible. It is funded for two years. Salary depends on experience and is based on regulations of the Max Planck Society.

To apply, please include all documents in one PDF-file in the following order: CV, contact information for three references, a brief letter describing your personal qualifications, research interests and motivation for applying, copies of up to two of your publications. Please submit your application via our online system at http://www.cbs.mpg.de/vacancies (the subject heading is “PD 13/17”)

The deadline for application submission is 6 July 2017. Interviews of shortlisted candidates are planned between 19-21 July 2017.

Contact for informal enquiries regarding the post: Prof. Dr. Nikolaus Weiskopf (weiskopf@cbs.mpg.de). For more information: http://www.cbs.mpg.de/departments/neurophysics/

The Max Planck society is committed to increasing the number of individuals with disabilities in its workforce and therefore encourages applications from such qualified individuals.