



## PhD Program between the Freie Universität Berlin (FUB) and the China Scholarship Council (CSC)

### Open PhD position at FUB for CSC scholarship candidates 2018

*Please note: the PhD position is only offered to Chinese PhD candidates for application in the framework of the FUB-CSC PhD Program.*

<b><u>Department/Institute:</u></b>	Department of Education and Psychology / Center for Cognitive Neuroscience Berlin
<b><u>Subject area:</u></b>	Computational Cognitive Neuroscience
<b><u>Name of Supervisor:</u></b>	Prof. Dr. Dirk Ostwald
<b><u>Number of open PhD positions:</u></b>	1
<b><u>Type of the PhD Study:</u></b>	Full-time
<b><u>Project title:</u></b>	Computational Modelling of Multimodal Neuroimaging Data

#### **PhD Project description:**

Electroencephalography (EEG) and functional magnetic resonance imaging (fMRI) are two complementary techniques for the non-invasive monitoring of neural dynamics that underlie human cognition. In brief, EEG has high temporal, but rather low spatial resolution, while fMRI has low temporal, but high spatial resolution. To achieve both high temporal and spatial resolution in the characterization of neurocognitive dynamics, EEG and fMRI data can be recorded simultaneously. However, so far no coherent computational framework exists that enables the estimation of latent neural dynamics from combined EEG-fMRI data. The aim of this PhD project is to exploit recent advances in the Bayesian estimation of delay differential equation systems to develop such a framework, and to empirically validate it based on EEG-fMRI data acquired during a decision making task.

#### **Language requirements:**

German: TestDaf: 16 oder DSH 2 **OR** English: IELTS: 6,5 oder TOEFL: 95 ibt.

#### **Academic requirements:**

The PhD position is suited for candidates with strong computational and analytical skills, having obtained a BSc or MSc in mathematics, physics, engineering, computer science, psychology, neuroscience, or a related field. Programming experience (C++, Matlab) is essential and an interest in the biological underpinnings of cognitive processes is desirable.

#### **Information of the professor or research group leader:**

For information about the research group, please see [http://www.ewi-psy.fu-berlin.de/einrichtungen/arbeitsbereiche/computational\\_cogni\\_neurosc/index.html](http://www.ewi-psy.fu-berlin.de/einrichtungen/arbeitsbereiche/computational_cogni_neurosc/index.html)  
For information about cognitive neuroscience research at FUB, please see <http://www.ewi-psy.fu-berlin.de/ccnb>

**Please note:** In a first step, the complete application must be submitted to the Beijing Office for evaluation by January 4<sup>th</sup>, 2018. Please do not contact the professor before. He/She will get in contact with you after having received the complete application via the Beijing Office in January.