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PhD Position (m/f/d)

**at the Cognitive Neurophysiology Lab of the Department
of Child and Adolescent Psychiatry and Psychotherapy**

The main focus of the research group "Cognitive Neurophysiology" (head: Prof. Dr. rer. nat. Christian Beste) at the Department of Child and Adolescent Psychiatry and Psychotherapy at the Faculty of Medicine, TU Dresden is the investigation of neurobiological basics of cognitive control and executive functions using modern experimental psychological, neurophysiological and neurobiological methods in healthy people and neuropsychiatric diseases.

The position is to be filled in cognitive neuroscience, human EEG, and adaptive neurotechnology. The position is fixed-term for 1 year and is to be filled as of 1 November 2026. However, in line with the further development of your individual professional interests, we would be pleased to explore the possibility of longer-term collaboration. Remuneration will be based on the provisions of the collective agreement for the public service of the German federal states (TV-L). Subject to the fulfilment of the personal requirements, classification in salary group E13 is possible; the position is remunerated at 65%.

We are looking for a highly motivated doctoral researcher who wants to understand how the human brain dynamically coordinates perception, action, and cognitive control. The project will investigate how neural oscillations interact across time and frequency, how information flows between brain regions, and how transient EEG brain states support adaptive behaviour. The position is ideal for candidates who are excited by the interface of experimental psychology, cognitive neuroscience, computational EEG analysis, and translational neurotechnology. The project asks, which dynamic EEG states are meaningful markers of cognitive control, and how could such markers inform future adaptive neurofeedback, neuromodulation, or closed-loop brain-state monitoring? The PhD project will examine this using human EEG and advanced signal-analysis approaches. The successful candidate will study how oscillatory coupling and directed information flow change across cognitive-control demands and how such dynamics relate to behaviour, variability, and adaptive performance. Depending on the candidate's interests, the project may also include a translational component, for example in

relation to ADHD, cognitive-control instability, neurofeedback, or adaptive neuromodulation. The project is therefore well suited for candidates who want to combine deep mechanistic questions about human cognition with modern computational EEG methods and translational perspectives on adaptive neurotechnology.

Your Responsibilities:

- Investigation of the neuronal mechanisms of cognitive control using EEG data
- Analysis of dynamic EEG states as markers of adaptive behavior
- Exploration of the interplay between neuronal oscillations across time and frequency domains
- Investigation of directed information flow between brain regions
- Application of modern methods in computational EEG signal processing and data analysis
- Analysis of the relationships between neuronal dynamics, behavior, and performance variability
- Development and evaluation of potential biomarkers for cognitive control
- Contribution to the advancement of translational approaches, e.g., in the fields of neurofeedback, adaptive neuromodulation, or closed-loop systems
- Opportunity to address translational research questions, for instance in the context of ADHD or cognitive control instability
- Presentation and publication of scientific findings at national and international conferences and in peer-reviewed journals

Your Profil:

- a master's degree or equivalent in psychology, neuroscience, cognitive science, biomedical sciences, computational neuroscience, data science, or a related discipline
- curiosity, motivation, scientific creativity, and the willingness to learn advanced methods in a collaborative environment
- strong interest in human cognitive neuroscience and brain dynamics

- Strong interest in human cognition, cognitive control, action control, or neurotechnology
- Interest in EEG, neural oscillations, and brain-signal analysis
- Good programming skills or strong motivation to develop them, for example in Python, MATLAB, or R
- Ability to work independently and as part of an interdisciplinary team
- Very good English communication skills
- Experience with EEG, time-frequency analysis, cross-frequency coupling, source analysis is advantageous but not mandatory

We Offer:

We offer an intellectually stimulating and supportive research environment at the interface of cognitive neuroscience, clinical neuroscience, and neural technology. The successful candidate will join an active research group with strong expertise in human action control, EEG, neural oscillations, cognitive control, neurodevelopmental and clinical neuroscience, and advanced analysis of brain dynamics.

- **Doctorate:** Opportunity to pursue a doctorate (Dr. rer. nat. or PhD)
- **Projects:** A clearly defined PhD project with scope for individual scientific development
- **Training:** Training in state-of-the-art methods of EEG analysis and computational neuroscience; Supervision in an internationally visible cognitive-neuroscience environment
- **Network:** Integration into local, national, and international research networks
- **Compensation:** Based on the TV-L collective bargaining agreement in pay grade [E13](#), plus an annual bonus, provided you meet the personal requirements
- **Vacation:** 30 days of paid vacation
- **Professional Development:** Extensive internal and external training and development opportunities to continuously strengthen your skills; Career-oriented training and professional development opportunities, including individual career planning and support in developing a future-oriented professional profile
- **Company Culture:** Work in a leading clinical and research institution with an innovative and interdisciplinary working environment; A collaborative, friendly, and intellectually open research culture

- **Mobility:** A subsidy for a job ticket to make your commute eco-friendly and convenient
- **Health:** We promote your well-being with modern fitness and exercise programs at our health center, mental health programs, and a comprehensive workplace health management program
- **Shopping benefits:** Take advantage of employee discounts at our clinic pharmacy, exclusive corporate benefits, and other shopping portals
- **Work-life balance:** Our Family Office supports you with questions regarding daycare spots, vacation programs, retirement provision, and caring for family members. We also offer flexible working hours to support a genuine balance between family and professional life

For further information, please contact Prof. Christian Beste via e-mail: KJPBewerbungen@uniklinikum-dresden.de

Your contact in the HR Directorate

Antonia Schulz

Tel: 0351-458 77306

Severely disabled applicants are expressly encouraged to apply and will be given preferential consideration if equally qualified.

We kindly ask you to apply preferably via our online form to make the selection process faster and more effective. Of course, we also consider your written application without any disadvantages.

To ensure the best possible health protection for our patients and employees, we require proof of measles vaccination (a medical certificate) in accordance with the Infection Protection Act. Further proof of vaccination status must be presented before starting work.