

The DFG-funded Collaborative Research Center SFB 1294 “Data Assimilation – The Seamless Integration of Data and Models”, hosted at the University of Potsdam jointly with its partner Institutions HU Berlin, TU Berlin, WIAS Berlin, GFZ Potsdam, and TU Ilmenau invites applications for a postdoctoral researcher position.

Our vision. The assimilation of time-dependent data sets into complex evolution models leads to unique mathematical and computational challenges. These challenges which provide the central theme of the SFB 1294. Data assimilation constitutes a rapidly expanding field at the confluence of several established research areas in mathematics, statistics, and machine learning, on the one hand and applications from the natural sciences and other disciplines. Our vision is to establish a rigorous mathematical underpinning of data assimilation, to develop principled computational methodologies, and to apply these methodologies to newly emerging application fields in the geosciences, neurosciences, pharmacology, and biophysics. The SFB 1294 provides an excellent research infrastructure including a large interdisciplinary network of researchers and its own graduate school, as well as funding opportunities for conference visits, summer schools, and hosting international experts etc.

The position. We seek applicants for a postdoctoral position (TVL - E13) within Project B03: “Parameter inference and model comparison in dynamical cognitive models” from February 2024 (at the earliest) to June 2025 (PIs: Ralf Engbert / Sebastian Reich). Applications will be accepted until the position is filled.

This project studies dynamical models of eye-movement control. Since the human visual system is foveated (i.e., with high-resolution vision limited to a tiny region around the current gaze position), several gaze shifts per second (scan paths) are needed for visual information processing (active perception). We established the first examples for data assimilation of scan path models in scene viewing (<https://doi.org/10.1038/s42003-020-01429-8>) and reading (<https://doi.org/10.1037/rev0000268>). The next challenges are related to a broader range of model comparisons, to hierarchical modelling of interindividual differences, and to efficient algorithms for robust inference in cognitive models.

The ideal candidate has a Ph.D. in cognitive psychology, cognitive science, computer science, or related disciplines with a strong interest in cognitive modelling. Applicants should have excellent knowledge of statistics and numerical methods in combination with experience in scientific programming. The candidate must be able to communicate effectively in both written and spoken English. Workplace will be at the Department of Psychology at the University of Potsdam.

For more information about the CRC, please see our website: www.sfb1294.de. Please send your application (letter of motivation, CV, publication list; compiled in one PDF file) to sfb1294@uni-potsdam.de. For specific queries on the position please contact Ralf Engbert (email: ralf.engbert@uni-potsdam.de).