PhD position in Computational Neuroscience

A position for a PhD student is available at the newly established interdisciplinary institute “Brain Structure-Function Relationships” (INM-10) at the Research Centre Jülich in Germany. The student will investigate network effects of acetylcholine in neocortex using modeling and simulation approaches. Acetylcholine is a neurotransmitter and neuromodulator involved in regulating attention, motivation, memory, and arousal. While the effects of acetylcholine on single neurons have been investigated in some detail, the mechanisms underlying its network-level effects are still poorly understood. The research will be performed in close collaboration with experimentalists in the same institute. The modeling work is expected to yield proposals for new experiments, leading to an interactive loop between modeling and experiments.

For this position, we are looking for a candidate with a Master’s degree or equivalent in physics, mathematics, or computer science with an interest in experimental approaches. We expect a good command of English and an excellent background in mathematics or programming.

The INM-10 is a joint institute of the Jülich-Aachen Research Alliance (JARA) led by three directors: Prof. Frank Schneider (University Hospital Aachen), Prof. Ute Habel (School of Medicine, RWTH Aachen University), and Prof. Markus Diesmann (INM-6, Computational and Systems Neuroscience, Research Centre Jülich). The present project will mainly be embedded in the INM-6, but will involve a close collaboration with the group of Prof. Dirk Feldmeyer (‘Function of Cortical Microcircuit’s group, INM-2, Forschungszentrum Jülich).

We offer participation in a young, dynamic, and internationally connected team, performing cutting-edge research. A structured program guides the doctoral researcher through the PhD work. Candidates receive advanced education in all competence fields required for computational neuroscience: neurobiology, theory of neuronal networks, data analytics, and simulation science. The student will have the opportunity to attend lecture courses on computational neuroscience at RWTH Aachen University organized by the INM-6. In addition, introductions are provided into good scientific practice and key competences like scientific writing. Researchers have access to the best possible equipment for communication, computing, and making coffee.

To apply, send a motivation letter, CV, and copies of school and university certificates as a single PDF email attachment (max. 10 MB) to: Prof. Markus Diesmann (diesmann@fz-juelich.de).