

## Postdoctoral position in human brain electrophysiology

Bern University Hospital, Switzerland

A postdoctoral position in human brain electrophysiology is available at the University of Bern, Switzerland under the co-supervision of Prof. Maxime Baud (<https://www.neuro-elab.com/>, computational and experimental neuroscience, sleep, epilepsy) and Prof. Athina Tzovarra (<https://neuro.inf.unibe.ch/>, computational and cognitive neuroscience, audition, sleep, coma). Over the next four years, we will investigate the connectivity within the human brain underpinning cognition. We will advantageously rely on intracranial EEG recordings directly taken from neurosurgical patients at our hospital. We are looking to hire a passionate post-doc to set up a closed-loop recording-stimulation system with real-time EEG monitoring for the control of physiological and pathological brain oscillations. This advanced brain electrophysiology project requires strong notions of neuroscience, software-hardware interface engineering and advanced computational skills.

**Start of project Q3-4 2025**, at the University of Bern. Yearly, renewable contract (currently up to 4 years) with Swiss salary in compliance with guidelines of the University.

Required qualifications.

- Applicant must hold a PhD in any engineering field, physics, or neuroscience and have published scientific literature as a first author.
- Strong abilities in computer programming (Python and/or Matlab), ideally also in C/C++
- Prior experience with advanced signal analysis of EEG timeseries and machine-learning.
- Strong interpersonal communication skills in English and good written English.
- Curiosity, critical thinking, problem-solving abilities attested by a reference.

Advantageous qualifications.

- Hands-on experience with human intracranial EEG recordings.
- Hands-on experience with brain-computer interfaces / neurofeedback, control engineering.

Your tasks

- The deliverable is **a benchtop system for the control of brain dynamics (software)**.
- Formulate a roadmap and derisk the project from an engineering angle.
- Learn the details of existing hardware in detail (Neuralynx). Establish computationally efficient pipelines for signal analysis and machine learning on vast amounts of EEG data.
- Increase knowledge in physiology through participation in weekly meetings and reading.

To apply, please send a one-page motivation letter dedicated to this specific project, your CV, your papers, your PhD thesis, and contact information for 2-3 references to Prof. Maxime Baud (maxime.baud.neuro (at) gmail.com).

Screening of applications starts in May 2025 and will continue until the position is filled.

Posted May 2025.