European Research Council

Postdoctoral position on the role of nested oscillations in brain communication

This position is available in Lyon, France, at the Lyon Neuroscience Research Center (CRNL, Dir. Olivier Bertrand), DYCOG Team under the direction of Mathilde Bonnefond, Ph.D.
The position is funded for two years by the European Research Council (ERC, n°716862). The position follows standard French salaries at University of Lyon, with a net salary between 1 800 and 2 800 € per month (depending on training, degree & experience) including social benefits and French health insurance.

Expected starting date: February 2018, but applications will be considered until the position is filled.

The project will aim at determining the role of brain oscillations at different frequencies in network communication (see Bonnefond et al., 2017).

This objective will be addressed using both Magnetoencephalography (MEG) and functional magnetic resonance imaging (fMRI, 3.0 T Siemens scanner) in healthy human volunteers.

The post-doctoral fellow will:
- develop and run an fMRI experiment aiming at optimizing the design used in MEG for each participant.
- develop and optimize the analysis of cortico-cortical functional connectivity applied to oscillatory activities by combining source-level analyses of MEG data (beamforming techniques) and cortical surface reconstructions from anatomical MRI data (in collaboration with Andrea Brovelli http://www.int.univ-amu.fr/BROVELLI-Andrea?lang=fr).
- synthesize results, write reports and scientific articles.

The postdoctoral fellow will work together with a research assistant.

The CRNL is a multidisciplinary research institute offering a vibrant working atmosphere in an international environment with multiple opportunities for seminars, workshops and methodological clubs. The postdoctoral fellow will more specifically join the DYCOG team, which has a long-standing expertise in the investigation of the role of oscillations in cognition based on electroencephalography, magnetoencephalography and intracranial recordings.

Required skills:
* [Mandatory] Ph.D. in Cognitive Neuroscience, Engineering or related field
* [Mandatory] Autonomy in programming in MATLAB, Python or C
* [Mandatory] Experience in building and running MEG and/or fMRI protocols and imaging analysis software (**Fieldtrip**, SPM, FSL, BrainVisa …)
* [Mandatory] Knowledge on brain oscillations
* Fluency and solid writing skills in English are expected. French is not a requirement.

Please send your application to Mathilde Bonnefond (mathilde.bonnefond@inserm.fr) with the following information:
- CV including a brief (1 page) summary of previous research

- Short letter of motivation describing research interests
- Name of two colleagues who could provide a recommendation

Please indicate **"Post-doc application Braindyn"** as the subject of your email.

Reference

Bonnefond M., Kastner S., Jensen O. (2017) Communication between brain areas based on nested oscillations. ENeuro, DOI: https://doi.org/10.1523/ENEURO.0153-16.2017