

Postdoctoral Position in Functional and Metabolic MRI NeuroSpin, Paris, France

We are seeking a postdoctoral fellow who will be responsible for the development, implementation and optimization of fMRI and metabolic MRI (chemical exchange saturation transfer, CEST) techniques on the 7T human scanner at NeuroSpin-CEA (located 20 km south of Paris): http://joliot.cea.fr/drf/joliot/Pages/Entites_de_recherche/NeuroSpin.aspx

The postdoc will develop and improve upon advances in MRI pulse sequence, image reconstruction and parallel transmission technology (pTx) in order to develop a new MRI-based method for functional metabolic imaging using the chemical exchange properties of brain metabolites. This method, chemical exchange saturation transfer functional MRI (CEST fMRI), will be implemented on clinical scanners and used to obtain glucose concentration maps at rest and glucose activation patterns during a cognitive task in Alzheimer's patients and healthy volunteers. The results obtained will be corroborated with glucose utilization levels obtained using functional 2-[18F] fluoro-deoxyglucose positron emission tomography (FDG-PET) as well as with cognitive clinical biomarkers in order to assess the potential of CEST-fMRI as clinical diagnostic tool for brain diseases. The postdoc will have a particular focus on the 7T scanner but will also work on the 3T PET/MRI scanner at Service Hospitalier Frédéric Joliot (SHFJ): http://joliot.cea.fr/drf/joliot/Pages/Entites_de_recherche/SHFJ.aspx, which is located 5 km away from NeuroSpin. The transfer of the developed protocols to the human 11.7T scanner is also envisioned.

The successful candidate is required to hold a PhD in physics or engineering using MRI and have experience in MRI sequence development and image processing, ideally for neuroimaging. It is also essential that she/he has programming experience, including but not limited to C/C++, Matlab/Python and UNIX scripting. Excellent oral and written communication skills are imperative. Experience in fMRI and/or parallel transmission at high or ultra-high magnetic fields is desirable. Knowledge of Siemens pulse programming would be a strong asset.

The position is available starting September 1st, 2020. The post is offered on a two-year fixed term contract and the salary is commensurate with education and experience. Healthcare benefits are included.

To apply please send your CV, a letter of motivation and the names and contact information of two referees to Drs. Luisa Ciobanu (luisa.ciobanu@cea.fr) and Nicolas Boulant (nicolas.boulant@cea.fr). Application deadline: May 16th, 2020.