Tenure job opportunity

**Job title:** 3T, 7T and 11.7T Human MRI sequence engineer

**Location:** NeuroSpin, CEA Saclay, Gif-Sur-Yvette, France.

**Job type:** tenure position.

**Start date:** Autumn 2018, application due before May 30th, 2018.

**Salary:** Based on education and experience. Healthcare benefits included.

**Contact:** Please send application to Dr. Alexandre Vignaud (alexandre.vignaud@cea.fr) and Dr. Nicolas Boulant (nicolas.boulant@cea.fr) with CV, research statement and recommendation letters.

**Context:** NeuroSpin is one of the greatest Magnetic Resonance Imaging centers in the world. It is equipped with a 7T, 11.7T and 17T for preclinical studies and a 3T, 7T and soon the first whole-body 11.7T MRI dedicated to human neuroimaging. Within this context, two important transversal projects have been identified in the department: the first, to access the brain cyto-architecture and the second, to achieve 500 µm isotropic resolution functional MR images with the objective to identify singularities of the human species. The upcoming 11.7T commissioning fuels large expectations to pursue and to reach these ambitions, but also involves important technical challenges. The MRI sequence engineer aims at completing the physicists team in the key area of acquisition sequence development, namely functional imaging, which is at the heart of the department's strategy.

**Job description:** The METRIC team brings together NeuroSpin researchers in charge of methodological developments in the field of human UHF MRI acquisitions. These researchers promote the emergence of new concepts and technologies that can benefit both clinical research and neuroscience. The proposed position will be assigned to this team. The recruited engineer will develop innovative ideas for Magnetom (Siemens Healthineers) MRI sequences. The successful candidate will focus on transforming the relevant prototype sequences into reliable tools, for fMRI research on large cohorts, and ergonomic, for non-expert end-users. He/she will interface the acquisition sequences with monitoring devices, e.g. for field and/or motion correction, in particular by the introduction of feedback loops between these devices and the sequences.

**Desired profile:** The candidate will have a strong background in MRI physics, concrete programming experience and a strong interest in computer science. He/she will have a PhD in the field of MRI physics, signal processing or neuroscience. Vast experience, including a post-doctoral fellowship will be particularly appreciated. His/her field of expertise will cover the development of functional imaging sequences in 2D or 3D. A great knowledge of the “SMS” (Simultaneous Multi-Slices or Multiband) technique will be highly recommended. Neuroscience and pedagogical skills for the application, promotion and sharing of research will be strongly appreciated. Knowledge of Matlab, Python and C++ programming languages and in particular experience in the Siemens Healthineers IDEA programming environment (SDE for sequences, ICE for reconstruction) are essential. A great ability to work in team and fluency in English are also a necessity.