24 Months Engineer/Post-Doctoral Fellowship

in low field MRI & Radiotherapy on MR-linac

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Gradients corrections on a 0.35 T MR-linac for faster imaging based on robust non-Cartesian trajectories

Collaboration

The research project will be conducted on a 0.35 T MR-Linac (Viewray MRIdian) at the CGFL that is embedded in an active research and clinical radiotherapy department. The CGFL is a leading center in the UNICANCER national consortium of hospitals dedicated to cancer treatment. Located in Dijon, it boasts a central position within a region rich from its wine legacy at the crossroads of major French and Swiss cities. The research group is a team of medical physicists, radiotherapist, and engineering investigators who are leading ambitious research in radiotherapy, with a focus on MR-Linac developments and translating them into clinical practice. A strong collaboration with the MRI research lab CRMBM in Marseille will drive the supervision and support technical developments.

Application deadline

September 2022

To apply

Motivated candidates should send a cover letter describing previous experience, interest and future career goals and an up-to date CV to:

Dr. Igor BESSIERES, Medical Physicist at CGFL, Dijon ibessieres@cgfl.fr

Dr. Stanislas RAPACCHI, Researcher at CRMBM, Marseille stanislas.rapacchi@univ-amu.fr

Project

A postdoctoral position is available to work on a low-field MR-LINAC at the Cancer Centre Georges-François Leclerc (CGFL) in Dijon, France, in collaboration with the Center for Magnetic Resonance in Biology and Medicine (CRMBM) in Marseille, France. The complexity of this device, i.e. the linac components and split gradient coils design, induces specific gradient imperfections. Thus, the research focuses on the development of novel gradient corrections needed to non-Cartesian MRI acquisition and reconstruction with applications including real-time imaging for radiotherapy adaptive treatments, quantitative multi-parametric mapping, and motion-resolved 3D imaging.

Requirement and preferred experience

- Strong teamwork, pro-active learning, interdisciplinary thinking skills, high level of initiative and commitments
- PhD in medical imaging, biomedicine, physics, engineering, or related field
- Advanced technical skills in either sequence programming, signal processing or image reconstruction
- Strong programming skills in at least one of these languages: Python, Matlab or C++
- Basic knowledge of cancer related topics, experience in radiotherapy is a plus
- Practical experience in acquiring and analyzing MRI data
- Excellent communication skills, both written and verbal
- Speaking French is not a requirement but will benefit the integration of the candidate. French classes can be provided to support integration.

We offer

- Full-time commitment in a pleasant working environment
- Dynamic and excellent supervision
- Incentive salary based on experience
- Interdisciplinary research at the interface of medical, biomedical research, physics, and data science
- National, European, and international networks with universities and research institutes