PhD Fellowship

Acquisition and post-processing methods of infant brain MRI

This PhD aims to develop MRI methods to perform longitudinal anatomical and diffusion MRI follow-up of the infant brain. The PhD candidate will be involved in the design of the MRI pulse sequences, the acquisition and processing of the longitudinal data, as well as in the writing of scientific papers. Brain imaging of infants without anesthesia remains a significant challenge due to head movements during imaging. A new technology that detects and compensates for head movements in real time will be used in this project.

Methodological developments and data acquisition will be performed on the Lyon medical imaging platform (CERMEP) using a state-of-the-art 3T PRISMA MRI scanner equipped with the Tracoline system for real-time detection and correction of head movements. An IT infrastructure dedicated to the reconstruction and post-processing of massive medical imaging data will be used in this project.

The ideal candidate will possess:

- Knowledge of medical brain imaging or closely related fields.
- Skills in MRI and/or MRI data processing will be highly appreciated.
- Programming skills (Matlab, Python ....).
- Disposition to teamwork and strong motivation.
- Fluency in written English.

The scientific environment

The PhD candidate will join the brain MRI methodology group led by Dr. Bassem HIBA. Candidates interested in developing their experience in MRI sequences and MRI data processing are encouraged to apply.

This project is funded by a European Research Council grant (ERC-MOBETA) coordinated by Dr James BONAIUTO. The research project of this thesis will be carried out in collaboration with Siemens Healthineers and with the team of Dr. Andre Van Der Kouwe (Massachusetts General Hospital). The candidate will work in a multidisciplinary environment in close collaboration with the team of Dr. James BONAIUTO (Decision, Action, and Neural Computation Lab).

The project is carried out at the CNRS Institute of Cognitive Sciences Marc Jeannerod (ISC-MJ) in Lyon, a dynamic research center hosting teams working in different fields of neuroscience. The laboratory encourages interaction and collaboration between teams, with weekly seminars, several social activities and recurrent workshops. The scientific reputation and the level of its research work make the ISC-MJ a center of excellence for research and student training.Pour postuler

To apply

Please send your curriculum vitae, a cover letter, and contact information for two references by email to Dr. Bassem Hiba (bassem.hiba@isc.cnrs.fr). The ideal start date is September 1, 2021, with some flexibility.