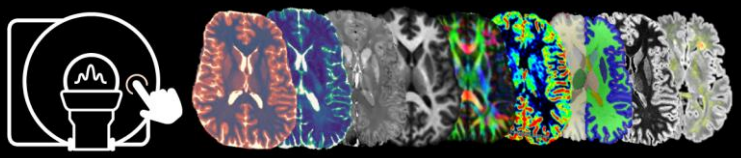
NormaBRAIN Project

Master Internship in Quantitative Neuroimaging



# Intra- and inter-site reproducibility of a quantitative multiparametric MRI protocol compared to a normative database

## Context

Quantitative Magnetic Resonance Imaging (qMRI) provides accurate information on physiological processes in healthy and pathological tissues, making it a preferred technology in precision medicine. However, despite this strong potential and the multitude of quantitative biomarkers it provides, qMRI in is not yet established into conventional radiological practice in neurology. The NormaBRAIN ANR project aims to deliver fast and reproducible qMRI sequences, together with automatic processing and reporting pipelines. The objective is to enrich conventional qualitative MRI by providing quantitative standards to promote the adoption of qMRI at the individual level in neurology.

## Internship objectives

The main objective of this internship is to study intra- and inter-individual variability of the quantitative protocol at 3 Tesla. In a multicenter approach, the second objective of this internship is to analyze inter-site variability on Siemens Healthineers MRI scanners used by partners of the NormaBRAIN project (the CRMBM and CHU de la Timone in Marseille and the neuroradiology department at CHU de Montpellier). The successful candidate will supervise experiments and data collection on phantoms and healthy volunteers. He/she will also be responsible for processing and quantifying data by adapting the automated pipeline already in place in the laboratory. Finally, these measurement variability data will be statistically compared to the normative database obtained from the healthy population.

## Requirements

We are looking for a motivated, team-oriented candidate currently following a Master's/Engineer's degree in mathematics or applied computer science, with experience in signal and image processing, numerical methods, or related fields. Prior knowledge of MRI and/or biophysical modeling would be advantageous but is not mandatory. Strong coding skills (Python, MATLAB, bash, or C++) are required, as well as good writing and communication skills in English.

## Internship duration & Continuation

The position is available starting in 2026 and is expected to last 5 to 6 months. The successful candidate will be supervised by MRI physicists and computer scientists from the CRMBM and Siemens Healthineers.

## Location

The project is part of an active collaboration between Siemens Healthineers and the CRMBM laboratory focusing on developing fully automatized quantitative MRI tools and pushing them to the clinic. The internship will take place at CRMBM (www.crmbm.univ-amu.fr), located in the center of the lively Marseille city, within La Timone University Hospital.

**To apply**: Should you be interested, please submit your CV and a cover letter by email to:

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https://jobs.siemens-healthineers.com/fr_FR/searchjobs/JobDetail/481564