

<b>Thesis Title</b>	The QUANTitative 3D imaging for infaunal microscopic benthic diversity and iMPact studies (QUANTUM)
<b>Contract type</b>	PhD thesis
<b>Departement</b>	Département Ressources physiques et Écosystèmes de fond de Mer (REM)
<b>Duty station</b>	Brest, France
<b>Doctoral School Thesis supervisor Co-supervisors</b>	Ecole Doctorale Sciences de la Mer et du Littoral (EDSML) Daniela Zeppilli et Jozée Sarrazin (Ifremer-Brest) Colomban de Vargas (Station Biologique de Roscoff), Pedro Martinez Arbizu (Senckenberg Institute, Allemagne)

### The Institute and the recruiting department

Pioneer in ocean science, IFREMER's cutting-edge research is grounded in sustainable development and open science. The Department of Physical Resources and Deep-sea Ecosystems (REM) tackles scientific and technological challenges. Its research involves the study of the seafloor and sub-seafloor, the geological evolution of continental shelves, past climate variation, geological risks, biodiversity and the dynamics of deep-sea ecosystems and the interactions between the biosphere and the geosphere on scales ranging from bacteria to the glacial cycles.

### Summary

The QUANTUM project aims to find new methods and technologies to revolutionize the way we discover and monitor our benthic domain. The QUANTUM PhD will test and develop 3D-imaging for microscopic infaunal organisms allowing for quantitative and functional data of benthic communities necessary for impact studies. It will contribute in building a reference training dataset based on processed images combined with visual and manual image analysis for machine-learning method development. This PhD will also define the key-species and functional traits necessary to understand changes in the marine environment, focusing on different impacted marine ecosystems from shallow water to the deep sea. In the framework of the project BLUEREVOLUTION (<https://wwz.ifremer.fr/bluerevolution/>), the student will profit of the top international experts in the field and he/she will be co-supervised by C De Vargas (SBR, France) and P Martinez Arbizu (Senckenberg Institute, Germany). The PhD QUANTUM will develop multidisciplinary and cross disciplinary skills, by gaining expertise on the morphology of infauna, high-resolution microscopy for species identification as well as on cutting-edge techniques linked to artificial intelligence.

### Key words

Biodiversity, benthic infauna, impact studies, functional traits

### Expected profil

Strong background in marine ecology and biology. Basic knowledge on marine benthos, as well as strong skills in microscopy required. Good relational capacities to work in a collaborative a multidisciplinary context. Good level in English (spoken, written).

### Specific working conditions

- The PhD student will be mainly based at Ifremer in Brest and he/she will be also hosted by the Station Biologique in Roscoff
- The PhD student will spend 3 months at the Senckenberg Institute in Germany
- The PhD student will participate in sampling activities (shallow water ecosystems and possibly one oceanographic cruise)

Phd is a real opportunity to work on Ifremer's scientific and technological priority themes. It entitle the holder to a gross monthly salary of 1900 euros for a period of 3 years, which cannot be combined with other scholarships.

### How to apply for this position?

Your application file must include:

- a curriculum vitae
- a covering letter
- a reference letter
- an academic transcript (Bachelor + Master 1 and first semester Master 2)

Your application must be **compiled into 2 PDF files, up to 1.5 MB for each file** on this site-web:

<http://www.jobs.net/j/JOEYjHyN?idpartenaire=20004&jobdetails=true>

In case of any problem in attaching your documents, please upload your CV on this page (this step is mandatory for your application to be considered) and send all the documents to the thesis supervisor: [daniela.zepilli@ifremer.fr](mailto:daniela.zepilli@ifremer.fr) and [jozee.sarrazin@ifremer.fr](mailto:jozee.sarrazin@ifremer.fr)

The deadline for applications is 02/05/2021. Nevertheless, we strongly urge you to let us know as soon as possible of your intention to apply, by contacting the subject supervisor.

Doctoral students' contracts will start as of October 1st, 2021, subject to the submission of administrative documents authorizing Ifremer to recruit the doctoral student (certificate of completion of the Master 2 or engineering degree + visa for foreign doctoral students outside the EU).

Our job offers on the website /Ifremer careers /Jobs and Internships, or Offres d'emploi/stage (French version)

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