

A 4-YEAR PHD OR 2-YEAR POSTDOCTORAL POSITION (M/F/X)

“STOCHASTIC CLIMATE PROJECTIONS”

DEPARTMENT OF ASTROPHYSICS, GEOPHYSICS, AND OCEANOGRAPHY (AGO) / MAST (MODELING FOR AQUATIC SYSTEMS)

START DATE: AS EARLY AS POSSIBLE

DEADLINE: 30 APRIL 2026

Located in the French-speaking part of Belgium, the University of Liège welcomes nearly 27,000 students of 123 different nationalities in a dynamic, multicultural city less than an hour away from Brussels and Cologne, two hours from Paris and three hours from London and Amsterdam. ULiège is spread across 4 campuses and boasts over 5,700 staff members, including 3,600 teachers and researchers active in all areas of the humanities and social sciences, science and technology, and health sciences.

As a key player in social change and environmental awareness, ULiège promotes ethical, transdisciplinary and open science. It contributes to the socio-economic development of its region through numerous partnerships with several institutions, including the university hospital (CHU). Given its international orientation, the University participates [in the European University of Post-Industrial Cities \(UNIC\)](#) initiative and has one of the most extensive collaborative networks in the world.

ULiège offers attractive career prospects [in a high-quality working environment](#) where well-being, diversity and equality of opportunity are promoted. Since 2011, ULiège has been proud to display the European [Human resources strategy for researchers \(HRS4R\)](#) label, which reflects its commitment to open, transparent and merit-based procedures. In addition, it upholds quality and diversity in line with the recommendations of the [Coalition for Advancing Research Assessment \(CoARA\)](#). ULiège encourages its academic staff to travel internationally and welcomes international researchers through its EURAXESS center.

ABOUT THE RESEARCH PROJECT

A 4-year PhD or 2-year postdoctoral position (that can be extended up to three years if the candidate is in international mobility¹) is available at the [Liège University \(the Modelling for Aquatic Systems-MAST](#) group, Department of Astrophysics, Geophysics and Oceanography and the [laboratory of Climatology](#), Department of Geography) to project and understand the effect of climate change on the Black Sea's physics and biogeochemical cycles. A stochastic approach will be developed to assess the main sources of uncertainties of the modelling system and to analyse the predictability at seasonal, interannual and decadal time scales. The position is offered in the frame of the Horizon Europe [RIVIERADE](#) project on *Improving modelling methods*

to produce climate services for resilient European seas and coasts in a decadal to multi-decadal horizon. The work will be in collaboration with the University of Grenoble Alpes ([MEOM](#) group).

JOB DESCRIPTION

The research project aims at performing an ensemble of model simulations of the physical and biogeochemical state of the Black Sea over different scenarios of parameterization, initial and boundary conditions. The modelling system consists of a coupled (i.e. one way) atmosphere-ocean model. The atmospheric model is the regional atmospheric model (MAR), the oceanographic model couples the Nucleus for European Modelling of the Ocean ([NEMO](#)) hydrodynamical model and the Biogeochemical Model for Hypoxic and Benthic Influenced areas (BAMHBI). An ensemble configuration considering the uncertainties in optical parameters has already been developed and published ([Macé et al., 2025, Biogeosciences](#)). The different components of the modelling system are run at the Liège University in the frame of various European projects.

SPECIFIC DUTIES AND ACTIVITIES

- ▶ Starting from an existing ensemble configuration developed in [Macé et al., 2025, Biogeosciences](#) and in the frame of the [ODESSA research project](#), to develop an ensemble prediction system that considers sources of uncertainty from internal dynamics (e.g. initialization, parameterization) versus external forcings (atmospheric and lateral forcings).
- ▶ Run and analyse ensemble climate projections until the end of the century under two scenarios of climate changes, assess the uncertainties in the physics and biogeochemistry, in particular on the water masses physical characteristics, oxygen and hypoxia, pH and acidification, primary/export production and carbon sequestration.
- ▶ Make a predictability analysis, at seasonal up to decadal time scales, of the physical and biogeochemical state and indicators differentiating the influence of internal and forced variability, similar to what is done the Decadal Climate Prediction Project ([DCPP](#)).

In addition to the scientific project described here above, the successful candidate will have to:

- ▶ Travel to project and international scientific meetings.
- ▶ For the PhD candidate, to follow the Doctoral Formation mandatory for obtaining a PhD.
- ▶ To help in the supervision of master students and teaching activities performed by the group.

PROFILE

○ REQUIRED SKILLS :

- ▶ **For PhD candidate:** Applicants must have completed a master's degree in a field closely related to geosciences, physics, engineering, meteorology or equivalent.
- ▶ **For post-doc candidates:** **To be eligible for this postdoctoral fellowship, the candidate must meet an international mobility requirement, namely not having resided or carried out their main activity (work, studies, etc.) in Belgium for more than 24 months during the three years preceding the start of the fellowship. The candidate must also hold a PhD obtained less than 10 years before the start date of the fellowship.**
- ▶ Applicants must have a PhD in geoscience (ocean, atmosphere, climate), physics, mathematics or equivalent. Experience in (big) data analysis is an added value.
- ▶ Skill in programming in languages like Python, FORTRAN, is required.
- ▶ Good to very good written and verbal English communication skills are required.
- ▶ Good communication skills for communicating results to different audiences.

○ SOFT SKILLS :

- ▶ **Scientific autonomy:** the candidate must be able to work independently to lead, organize, and prioritize the various stages of the modeling project;
- ▶ **Analytical rigor and critical thinking:** the candidate must demonstrate analytical and critical thinking skills and a methodical approach to evaluating the quality of simulations, identifying uncertainties, and interpreting project results;
- ▶ **Ability to solve complex problems:** the candidate must be able to solve complex problems in a multidisciplinary numerical modeling environment;
- ▶ **Organizational skills:** the candidate must be able to simultaneously manage analyses, simulations, travel, and supervisory tasks;
- ▶ **Clear communication:** the candidate must be able to communicate clearly, particularly scientific results, to a variety of audiences (scientists, project partners, students);
- ▶ **Collaboration and teamwork:** the candidate must be able to work effectively in a team within European projects and in collaboration with different laboratories;
- ▶ **Flexibility and adaptability:** the candidate must be able to adapt quickly to changes in models, scenarios, tools, and project requirements;
- ▶ **Scientific curiosity:** the candidate must be motivated to explore and learn in order to understand ocean-atmosphere processes and contribute to international research projects.

TERMS OF EMPLOYMENT

- ▶ Type of contract : Full-Time

- ▶ Contract duration: 4 years (for doctoral studies) & 2 years (for postdoctoral studies)
- ▶ Expected start date: as soon as possible

OUR OFFER

- ▶ A 4-year (for the PhD) and 2-year (for the post-doc, possibly extended up to three years in mobility conditions) full time contract starting as early as possible.
- ▶ An attractive salary.
- ▶ The successful candidate will benefit from a dynamic working environment benefiting from the research projects of the groups in different fields of oceanography connecting modelled predictions with observations and end-users requirements (e.g., [Horizon Europe NECCTON](#), [the Copernicus Marine Service](#), [UN Decade GOOD program](#), [EU BioGeoSeaT](#)).
- ▶ Enjoyable living and working conditions. The Liège University offers comprehensive and innovative training programs, which enable early-career scientists to carry out their research in the best possible conditions, in compliance with the European Charter for Researchers.

HOW TO APPLY?

The candidate should send by e-mail his/her curriculum vitae, a covering letter of motivation, together with two references (name and email address), to [Marilaure Grégoire](#) (mgregoire@uliege.be) and [Xavier Fettweis](#) (Xavier.Fettweis@uliege.be) with copy to Mrs. Célia Norga (cnorga@uliege.be), specifying the reference number “SCP26”.

SELECTION PROCEDURE

A first selection will be made on the basis of the CV and motivation letter.

Practical arrangements will be communicated at a later stage by Ms Marilaure Grégoire and Mr Xavier Fettweis, who will also form the selection committee. The interview will be conducted in English, either in person or by videoconference, depending on the candidate's situation.

Our corporate policy is based on diversity and equal opportunity. We select candidates on the basis of their skills and do not discriminate on grounds of age, sexual orientation, origin, beliefs, disability or nationality.

CONTACT DETAILS

Informal inquiries about the project are welcome. Please feel free to contact Marilaure GREGOIRE (mgregoire@uliege.be) with a copy to Célia NORGGA (cnorga@uliege.be).

Release date: 06/03/2026

Privacy policy

Personal data collected following your application will be processed by Marilaure Grégoire of the University of Liege for the sole purpose of recruitment.

The data will be processed within the framework of pre-contractual measures (art. 6-1, b. of the General Data Protection Regulation) and kept for up to 9 months after the publication of the vacancy. Your personal data will not be passed on to any third parties.

In accordance with the provisions of the GDPR (EU 2016/679), you may exercise your data protection rights (right of access, rectification, erasure, restriction, and portability) by contacting ULiège Data Protection Officer (dpo@uliege.be - Mr. Data Protection Officer, Bât. B9 Cellule "GDPR", Quartier Village 3, Boulevard de Colonster 2, 4000 Liège, Belgium). You may also lodge a complaint with the Data Protection Authority (<https://www.autoriteprotectiondonnees.be> , contact@apd-gba.be).
