

Modelling Oceanographer/ Biogeochemist (W/M)

12 month fixed term contract –
Full time

How to apply :

Send your cover letter and detailed resume with the following reference 2022-07/00/ OBGGM to recruitment@mercator-ocean.fr

Deadline for applications: 09/09/2022

Date of publication : 04/07/2022

About the job :

As a member of the Innovation team in the Operational Oceanography department and in partnership with the ESM2025 research project, you will work on improving the ocean convection module. These improvements will be based on an improvement of the entrainment/detrainment parameters and on the surface boundary condition. You will perform sensitivity experiments, using the NEMO code, in order to evaluate the impact of your developments.

In particular, you will analyse the numerical stability and contribution of horizontal velocity convection to ocean dynamics and then to the dynamics of a planktonic ecosystem that is constrained to first order by vertical physics. You will propose adapted diagnostics. You will collaborate particularly with the CNRM teams of Météo-France and exchange the results produced with the other partners of the ESM2025 project as well as the ocean modelling community. You will participate in the writing of progress reports for the ESM2025 project and in the dissemination of results.

Your mission:

- You improve the existing parameterizations of the NEMO ocean convection module, particularly the sensitivity of convection to surface conditions.
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- You apply convection to the NEMO biogeochemistry module (PISCES) and adapt this parameterization to the new vertical physics.
- You produce 3D simulations of the ocean with NEMO_PISCES.
- You produce standard diagnostics and propose new ones in order to analyse the experiments and quantify the contribution of the developments made.
- You produce reports on the developments and experiments carried out.
- You valorise the results obtained by participating in the drafting of project documents and by presenting the results in workshops.

Assets for success:

- After five years of higher education or a PhD level in physical oceanography, in ocean modelling; you are familiar with the use of ocean models.
- You have developed solid skills in oceanography, marine biogeochemistry, scientific computing, programming languages (in particular Fortran, Python) and the use of supercomputers.
- Rigorous, used to working in a team, curious and open-minded, you wish to bring your contribution and ideas to ambitious projects and international collaborations to be developed.
- Your innovative skills and results are put to good use in teams to optimise the performance of methods and systems.
- You speak and write English fluently.

Who are we?

Mercator Ocean International has been developing operational oceanography activities for nearly 25 years, as part of its public interest mission to preserve the ocean.

Many scientific and societal challenges must be met to ensure a sustainable ocean, whether they concern the environment, biodiversity, climate change, the blue economy or education. To meet these challenges, Mercator Ocean designs, develops, operates and maintains state-of-the-art digital systems capable of describing, analysing and forecasting the state of the ocean in 3D, continuously and in real time. The

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scientific information is then translated to be accessible to all, whether they are public or commercial services, political decision makers, industrialists, associations, NGOs, teachers or citizens. Mercator Ocean International thus combines scientific excellence and social commitment on a daily basis.

As a non-profit company under multinational governance (ES, FR, GB, IT, NO), we work in a climate of trust with our ten shareholder partners, all key players in the development of European oceanography.