

POST-DOCTORAL POSITION IN GLOBAL OCEAN MODELLING

Organization	Sorbonne Université, France
Location	Laboratoire d'Océanographie de Villefranche (LOV), France
Research field	Global ocean modeling
Type of contract	2-year postdoctoral position
Researcher profile	First stage researcher (R1) Recognized researcher (R2)
Application deadline	30/09/2021
Position start date	01/01/2022

PRESENTATION

In the framework of the ANR research program EFFICACY (<http://www.sb-roscoff.fr/fr/project-efficacy/presentation>), we are offering a two-year postdoctoral position for an experimented modeler. This project focuses on the cyanobacterium *Synechococcus*, the second most abundant member of the marine phytoplankton community and one of the rare organisms that can be studied at all scales of organization, from the genes to the global ocean. The EFFICACY project aims at studying the fitness advantage conferred by the capacity that a large proportion of the *Synechococcus* population has to reversibly modify its pigment content in response to changes in ambient light color from blue to green, as compared to *Synechococcus* cells that have a 'fixed' pigmentation.

Using data from several global expeditions and from two ongoing time series (in the English channel and in the Mediterranean Sea), and data from mono- and co-cultures of the different *Synechococcus* pigment types grown in various light conditions, the postdoctoral fellow will use a numerical model to simulate the global distribution of the different *Synechococcus* pigment types and their seasonal changes, and to predict the effect of global change on the *Synechococcus* population structure over the forthcoming decades. The goal is to integrate this *Synechococcus* multi-type component into the MIT's powerful global ocean Darwin model (<http://darwinproject.mit.edu/research>) that couples a radiative transfer component with a marine biogeochemical–ecosystem component in a dynamic 3-D global physical framework (Dutkiewicz et al. 2015¹ ; Dutkiewicz et al. 2019²).

POSITION

The position will be shared between four laboratories: two belong to Sorbonne Université (France), the Laboratory of Oceanography of Villefranche (LOV) and the Biological Station of Roscoff (SBR), and the other two are the University of Southampton and the Massachusetts Institute of Technology (MIT). The main location of the postdoctoral fellow will be the LOV (<https://lov.imev->

¹ Dutkiewicz, S. and Hickman, A. E. and Jahn, O. and Gregg, W. W. and Mouw, C. B. and Follows, M. J. (2015). Capturing optically important constituents and properties in a marine biogeochemical and ecosystem model, *Biogeosciences*, doi: 10.5194/bg-12-4447-2015.

² Dutkiewicz, S., A.E. Hickman, O. Jahn, S. Henson, C. Beaulieu, and E. Moneir (2019). Ocean colour signature of climate change, *Nature Communications*, doi:10.1038/s41467-019-08457-x.

[mer.fr/](#)) but he/she will also travel to and actively exchange with the three other partner labs. This position will start on January 1, 2022. This is a two-year funding from the French research funding agency (ANR).

QUALIFICATIONS

- PhD required, preferably in oceanography or related fields
- Experience in developing and using numerical models
- Good computational skills, and proficient in R, Python, Matlab (or similar)
- Familiarity with computer language, preferably Fortran
- Strong ability to work independently
- Good communication skills in both written and spoken English are essential
- Experience and knowledge in physical and biological oceanography is also desirable

APPLICATION

Interested candidates should send their application (CV including list of publications, motivation letter and names of at least two referees) to:

Dr. Julia Uitz [julia.uitz@imev-mer.fr], Laboratoire d'Océanographie de Villefranche (LOV), UMR 7093 Sorbonne Université & CNRS, <https://lov.imev-mer.fr/web/member/julia-uitz/>

Dr. Frédéric Partensky [frederic.partensky@sb-roscoff.fr], Station Biologique de Roscoff, UMR 7144 Sorbonne Université & CNRS, http://www.sb-roscoff.fr/en/partensky-frederic/353?lab_id=117&group_id=3144

Dr. Laurence Garczarek [laurence.garczarek@sb-roscoff.fr], Station Biologique de Roscoff, UMR 7144 Sorbonne Université & CNRS, http://www.sb-roscoff.fr/en/garczarek-laurence/43?lab_id=117&group_id=3144

The work will be performed in close collaboration with:

Dr. Anna Hickman, University of Southampton, UK

Dr. Stephanie Dutkiewicz, MIT, Cambridge, Ma, USA