



## Postdoctoral Research position at LOPS – Ifremer in Physical Oceanography

We seek a physical oceanographer to join the Laboratoire d'Océanographie Physique et Spatiale, Ifremer in Brest (France). The goal of the project is to investigate the variability of the Jan Mayen Current and the Greenland gyre. The work will be based on in situ observations mainly collected in 2015-2016 by the SHOM as part of their program 'Grand Nord', and in particular a set of 7 moorings. Satellite data (of ocean and sea ice), hydrological data (from previous campaigns or Argo floats) available for this region, as well as model outputs will be used in addition, in order to provide a wider spatio-temporal context to the mooring data.

**Location :** Laboratoire d'Océanographie Physique et Spatiale, Ifremer – Brest, France.

**Contract:** 18 months (Initial one-year contract, with an additional 6-month period contingent on mutual satisfaction.)

**Starting date:** As soon as possible

### **How to apply – Please make sure that you meet the criteria listed below**

Application (detailed CV, letter of motivation, list of publications, name/email of at least 2 referees) and/or informal enquiries should be sent to Camille Lique (camille.lique@ifremer.fr)

**Closing date: 20 April 2020**

### **Who can apply:**

A PhD in physical oceanography, meteorology, climate science, or geophysical fluid dynamics is required, with skills in observational data analysis. Knowledge in statistics, experience in programming with Matlab, Python... Experience in Polar research would be an asset. Motivated candidate, good capacity to work in a team. Ability to communicate and write in English.

Additionally, the candidate must fulfill the following criteria:

- The candidate must be within 6 years after their PhD defense.
- The candidate cannot have been awarded a previous postdoc fellowship from Ifremer.

## **Details on the project**

### *Variability of the Jan Mayen Current and the Greenland gyre*

The Greenland Sea is the site of key processes for the global ocean circulation and the equilibrium of our climate, since a large part of the dense waters constituting the deep branch of the MOC are formed by deep convection there. However, this region remains poorly observed and the ocean dynamics are poorly understood.

The goal of the postdoc project is to document the variability of the Jan Mayen Current and more generally of the Greenland gyre, their vertical and horizontal structures, and to identify the mechanisms responsible for this variability.

Specific questions addressed include:

- What is the seasonal cycle of the transports of volume, heat and salt associated with the JMC north of the Jan Mayen island? What are the key processes driving this variability?
- How much does the variability captured at this location reflect the variability of the Greenland gyre?
- What is the link between the variations of the JMC properties and the sea ice and atmospheric conditions?
- Can we infer a link between the variation of the JMC, the properties of the Greenland gyre and the convective activity in the center of the gyre?

To achieve these objectives, we will analyze the observations collected by the 7 moorings deployed by the SHOM between 2015 and 2016 north of the Jan Mayen island. This set of observation will be complemented by the hydrological observations collected during the SHOM cruises during the summers 2015 and 2016, as well as the available observations from the Argo program. Finally, satellite observations (providing sea level height, sea surface temperature and salinity, sea ice concentration and drift), atmospheric reanalyses as well as model outputs will be examined in order to put the local in situ observations from the mooring into a large spatial and temporal context.

#### **Context:**

This postdoc project is part of the project funded by SHOM (service hydrographique et océanographique de la Marine) over 2019-2022, which involves several scientists and engineers at LOPS. This will contribute to the development of axis of collaboration between Ifremer and SHOM. More particularly, the postdoc will work closely with Camille Lique, Nicolas Kolodziejczyk and Louis Marié.

The postdoc will be part of the group 'Ocean and Climate' at LOPS and will beneficiate from the strong expertise at LOPS and Ifremer regarding in situ observations and their processing. The postdoc will also be involved in the current initiative at LOPS to develop a new synergy amongst researchers involved in different polar research activities (remote sensing of sea ice, wave observations and modeling), through the implementation of "axe transverse – recherches polaires".