

## Post-doctoral fellowship at Ifremer - France

### Study of the Arctic sea ice variability, understanding the relative contributions of the atmospheric forcings using satellite observation and model data

Over the past decade, the Arctic Basin has been undergoing major transformations, including a significant decline of the sea ice cover. Part of this decline is thought to be related to an earlier start of the melting season every year. The sea ice pack goes through different phases over the year: Sea ice formation occurs in winter, followed by a decrease in extent and volume in spring and summer, due to both local melting and sea ice drift and export outside of the Arctic Basin through Fram Strait.

In this study, we plan to examine the spatial and temporal variability of the Arctic sea ice pack, with a focus on the sea ice volume using new satellite observations of the sea ice thickness.

We will determine and quantify the relative contributions of the different atmospheric forcing (dynamic and thermodynamic) to the sea ice pack variations over the last decade. Using multiple datasets (including the satellite observations available at IFREMER through the CERSAT archive data center and data from model reanalysis), we aim to better understand the physical mechanisms at play for the sea ice volume variability. This approach will first require to analyze and understand the limitations, uncertainties and errors associated with the different datasets, including the newly available sea ice thickness observations from the satellite missions Cryosat, EnviSAT and SMOS. Comparing datasets from various sources should allow us to highlight the consistency (or the lack of) between the different parameters (sea ice concentration, sea ice extent, sea ice drift, sea ice categories, sea ice thickness, atmospheric forcing) provided in the different datasets.

**Key words :** Sea ice, Arctic, satellite sensors, model, ocean, sea ice motion, thickness

#### **Main collaborators :**

- Dr Fanny Girard-Ardhuin, Laboratoire d'Océanographie Spatiale

<http://cersat.ifremer.fr/>

- Dr Camille Lique, Laboratoire de Physique des Océans <http://wwz.ifremer.fr/lpo>

#### **Suitable expertise and skills**

Applicants must have completed a PhD in oceanography, meteorology, physics or Earth Sciences by the start of project. Solid understanding of ocean/atmospheric physics, knowledge and experience in data analysis methodologies. Experience in satellite remote sensing would be an asset. Self-motivated candidates with a deep interest in polar sciences. Team spirit.

#### **Start date**

Postdoctoral position will begin from the 1st of November, 2015.

#### **Location**

The candidate will work in the Ifremer Brest Center in Plouzané (29280), France.

## Procedure to apply to the IFREMER call

Ifremer offers post-doctoral positions to young French or foreign scientists who have completed their PhD. and are motivated by development and innovation in various fields of Marine Sciences : technology and ecotechnology, aquaculture, fisheries, environment, risks analysis, physics of oceans, etc. ..

Postdoctoral positions are contracted for a duration of 12 months, possibly renewable for a non-renewable 6-month period.

Interested applicants should send :

1. A letter including the specific skills and competence for the postdoctoral position
2. A detailed curriculum vitae
3. A summary of work previously done, with the date of submission of the thesis,
4. A list of publications and communications / symposia
5. Two letters of recommendation

These documents should be e-mailed to [fanny.ardhuin@ifremer.fr](mailto:fanny.ardhuin@ifremer.fr)

**The deadline for application is September 10, 2015.**

The criteria for selecting candidates are the following :

1. The Curriculum Vitae of the nominee must be consistent with the proposal regarding the post-doctoral position
2. The candidate must be under 35 years old at December 31, 2014.
3. The candidate has not previously performed post-doctoral research at Ifremer
4. The candidate has spent a majority of his/her doctoral position out of Ifremer

### Contacts

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