



## **International Research Training Group ArcTrain: Processes and impacts of climate change in the North Atlantic Ocean and the Canadian Arctic**

The DFG-funded International Research Training Group ArcTrain, a collaborative project between the University of Bremen, the Alfred Wegener Institute, Helmholtz Centre for Polar and Marine Research, and a consortium of eight Canadian universities invites applications for a

### **PhD position**

in the area of physical oceanography in the framework of project HB-06: *Impact of varying sea-ice cover on input of wind energy, internal waves, and mixing.*

Internal waves redistribute energy in the oceans interior, provide the link between energy input by wind and tides, and maintain the oceans' stratification by vertical mixing. In the past, the sea ice covered areas of the Arctic Ocean had a quiescent internal wave climate, with a strong stratification and weak diapycnal mixing mainly maintained by tidal forcing. A changing climate implies a changed forcing for the internal wave field: with a retreating ice cover, there will be seasonally more open water for the wind stress to act on, and the frequency and intensity of storms might increase. In the Canada Basin, those factors have been shown to increase internal wave energy as the sea-ice coverage declines, with a local enhancement of near-inertial wave energy and mixing linked to storm activity in open water conditions. However, the stratification, namely the strong halocline, today still suppresses wind-driven mixing, and tides remain currently the main driver of mixing in the high Arctic. This project will use data from the MOSAiC campaign (<https://www.mosaic-expedition.org>) as well as process modelling to study the response of the internal wave field to changes in the ice coverage (opening leads, passing storms).

We are searching for an enthusiastic researcher with a keen interest in polar oceanography and small scale processes. The PhD student will be part of the Physical Oceanography group at the University of Bremen, working under the supervision of Dr. Maren Walter and Dr. Martin Losch (AWI). A research stay is envisaged at the University of Alberta in Edmonton, or at McGill University in Montréal.

### **Requirements:**

- MSc or equivalent qualification in oceanography, meteorology, geoscience or related fields
- Solid background in marine sciences, especially physical oceanography and fluid dynamics
- Experience in analysing oceanographic data and scientific computing with Matlab, Python, Fortran, or similar will be advantageous
- Applicants should be proficient in English, have excellent skills in scientific writing, and enjoy working in an international and interdisciplinary team.

The position is for a fixed term of 3 years. It is funded by the German Science Foundation (DFG). The position must be filled by 1<sup>st</sup> October 2019. Salary corresponds to 2/3 TV-L E13.

Applicants should submit under the reference number **A108/19 (HB-06/3)** their letter of motivation, a CV including copies of certificates, a publication list if applicable, and contact information of two referees. Documents should be submitted electronically as a PDF file (maximum size 2 MB) to [arctrain@marum.de](mailto:arctrain@marum.de). The call is open until the position is filled. The review of applications will commence on May 24<sup>th</sup> 2019.

The University of Bremen has received a number of awards for its gender and diversity policies and is particularly aiming to increase the number of female researchers. Applications from female candidates, international applications and applications of academics with a migration background are explicitly welcome. Disabled persons with the same professional and personal qualifications will be given preference.

For further information, please contact **Dr. Maren Walter** ([maren.walter@uni-bremen.de](mailto:maren.walter@uni-bremen.de)).