



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-05: **Water mass ventilation and its impact on the climate relevant circulation in the subpolar North Atlantic.**

One of the key regions for the climate relevant Atlantic meridional overturning circulation (AMOC) is the Labrador Sea. Here, buoyancy loss in winter leads to sufficient increase in surface density to initiate convection and to form Labrador Sea Water (LSW), a main component of the AMOC. Changes in LSW formation has repercussions for the AMOC: in most ocean-ice and climate models, a stronger LSW ventilation is related to larger than normal air-sea heat flux anomalies over the subpolar North Atlantic and to an increased AMOC transport. This project will test this hypothesis. Time series of LSW production (1997 – 2005) have been calculated from temporal changes of the transient tracers chlorofluorocarbons (CFCs) in the subpolar North Atlantic. The tracer data that will be used here has been collected in ArcTrain, and tracers taken in the framework of other programmes will be added. The objectives are to quantify the LSW formation rates for 2006-2018, together with the water mass ventilation and circulation variability in the subpolar North Atlantic. Methods encompass the interpretation of observations and the results from high resolution ocean-ice models.

We are searching for a highly motivated and committed researcher with a strong interest in oceanography. The PhD student will be part of the Physical Oceanography group under the supervision of Prof. Dr. Monika Rhein. A research stay is envisaged at the University of Alberta, Edmonton, Canada.

Requirements:

- MSc or equivalent qualification in physical oceanography, meteorology, geosciences, physics, applied mathematics, environmental sciences or related fields
- Basic knowledge of physical processes related to ocean circulation and water mass formation
- Experience in analysing oceanographic data sets and scientific computation 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 1st October 2019. Salary corresponds to 2/3 TV-L E13.

Applicants should submit under the reference number **A108/19 (HB-05/3)** 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. The call is open until the position is filled. The review of applications will commence on May 24th 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 **Prof. Dr. Monika Rhein** (mrhein@physik.uni-bremen.de).