

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 Physical Oceanography

in the area of Physical Oceanography in the framework of project HB-05: *Transport variability of volume, heat, and salinity from the subtropics and its impact on basal glacial melt*

The warm and saline water flowing from the subtropical gyre into the subpolar North Atlantic – dubbed North Atlantic Current (NAC) - and further into the Nordic Seas and the Arctic ocean is instrumental maintain ice free water at the Norwegian coast. The NAC also provides the energy for basal melt of the Greenland Ice sheets. The fast acceleration of the Greenland Ice sheet melt rates in the last 20 years is among other processes attributed to the arrival of warmer water from the subtropics. Another important issue is the salt transport from the evaporation dominated subtropical regions into the precipitation dominated subpolar environment and its influence on the vertical stabilisation of the water column. It could potentially counteract the effect of melt increase on formation of intermediate and deep water masses and drive a dynamic response. To understand the involved processes and mechanisms and to improve the simulation of trends and variability of the volume and heat transport of the NAC under global warming, continuous observational time series, altimeter data and results from high resolution ocean models are combined. The methods used will encompass PIES / altimetry derived time series of volume, heat, and salt transport variability combined with estimates of surface velocities from altimeter data as well as modelled times series of volume and heat transports to improve understanding of the mechanisms that cause fluctuations in the NAC transports and circulation and in density stratification, and study the potential impact on the interaction with the Greenland Ice sheets. 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:

- Completed MSc or equivalent degree 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 large-scale oceanographic data sets and scientific computation will be advantageous
- Applicants should have excellent English language skills 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 earliest starting date is October 1st, 2016. Salary corresponds to 2/3 TV-L E13.

Applicants should submit under the reference number **A86/16 (HB-5/2)** 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 coordinator, Gabriella Wehr (gwehr@marum.de). The call is open until the position is filled. The review of applications will commence on June 1st 2016.

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.

Further enquiries can be addressed to
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