



The Alfred Wegener Institute Helmholtz Centre for Polar and Marine Research (AWI) is a member of the Helmholtz Association (HGF) and funded by federal and state government. AWI focuses on polar and marine research in a variety of disciplines such as biology, oceanography, geology and geophysics thus allowing multidisciplinary approaches to scientific goals.

For the DFG-funded **International Research Training Group ArcTrain: Processes and impacts of climate change in the North Atlantic Ocean and the Canadian Arctic**, a collaborative project between the University of Bremen, the Alfred Wegener Institute, and a consortium of eight Canadian universities, the Climate Dynamics section invites applications for a

### Ph.D. Student

in the area of sea ice modeling and data assimilation within the framework of ArcTrain project HB-02 "Constraining sea ice models with observations and data assimilation methods: impact of rheology, resolution, and parameterizations on climate simulations". This PhD position is one of 12 to be filled within the international interdisciplinary ArcTrain program. Details and background information are available at <http://www.marum.de/en/ArcTrain.html>.

#### Background and tasks:

Sea ice is an important part of the climate system, as it modifies the momentum transfer and acts as a thermal insulator between polar oceans and the atmosphere. Sea ice is difficult to simulate numerically and sea ice models are typically based on many assumptions and parameterizations. Many standard parameterizations have been introduced based on physical reasoning, but details of the parameterizations and parameter choices often remain unclear and their impact on large scale aspects of numerical model solutions is largely unexplored.

In the project HB02 a general ocean circulation model with sea ice will be used to study the impact of improved parameterizations and grid resolution on the representation of ice distribution, deformation characteristics, export through Arctic flux gates, and their feedback to climate simulations in the context of available sea ice observations. Data assimilation techniques may serve to explore model sensitivities and to improve parameterizations, model simulations or sea ice predictability. We are searching for an enthusiastic and committed researcher with a keen interest in sea ice dynamics, numerical techniques, and data assimilation. The PhD-student will be part of the Climate Dynamics group at the AWI in Bremerhaven, working under the supervision of Dr. Martin Losch. A research stay is envisaged at the McGill University in Montréal.

#### Requirements:

- Completed MSc or equivalent in physical oceanography, meteorology, physics, applied mathematics or related fields
- Experience with numerical modeling, scientific computation (UNIX / LINUX, FORTRAN) and large data sets is advantageous
- Applicants should have excellent English skills and enjoy working in an international and interdisciplinary team.

The position is limited to 3 years. It is funded by the German Science Foundation (DFG). The earliest starting date is October 1st, 2016. The salary will be paid in accordance with the German Tarifvertrag des öffentlichen Dienstes (TVöD Bund), salary level 13 (66%). The place of employment will be **Bremerhaven**.

For further information, please contact **Dr. Martin Losch** ([Martin.Losch@awi.de](mailto:Martin.Losch@awi.de); +49(0)471-4831-1872).

We offer you a multi-disciplinary, international, and fascinating professional environment with flexible working hours, state-of-the-art research equipment, and a first-rate infrastructure. AWI aims to increase the number of women in the scientific staff. Female candidates are therefore especially asked to apply. Disabled applicants will be given preference when equal qualifications are present. The AWI fosters the compatibility of work and family through various means. Because of our engagement in the area of work-life compatibility we have been awarded the certificate "Career and Family".

Applications should be submitted under the reference number **68/D/Kli (HB-2/2)** a 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](mailto:gwehr@marum.de)). The call is open until the position is filled. The review of applications will commence on **June 1<sup>st</sup> 2016**.