



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, geochemistry and geophysics thus allowing multidisciplinary approaches to scientific goals.

The department of Climate Science, section of Sea Ice Physics, located on **Bremerhaven**, invites applications for the position as

PhD student

to following topic: “An energy balance at the atmosphere-snow ice boundary study combining measurements and modelling”.

Background and tasks:

The PhD theme is a combination of field activity and modeling work aiming to understand and quantify the impacts of impurities on the radiative properties of the sea-ice snow cover.

Field work in the Arctic is planned to describe the stratigraphy of snow physical properties by using different systems like IceCube and SnowMicroPen and to quantify the Black Carbon (BC) impurity content from snow sample analysis. You will use the snowpack model SURFEX/Crocus driven by observed snow properties and meteorological conditions, to model the temporal evolution of snow on Arctic sea ice. Studies will focus on impacts of BC impurities on the radiation balance of a snowpack and consequences on snow grain growth and melt onset. It is anticipated to improve the model's coupled (atmosphere and snow) radiative transfer schemes in order to represent interactions between snow reflectance and atmospheric layers of clouds and aerosol (incl. BC).

Finally, your study will be able to evaluate the local radiative forcing of Arctic BC, focusing on the impact of snow darkening and atmospheric feedbacks on the melting rate of snow cover overlaying the sea ice. The PhD theme will be realized in strong collaboration with the Meteo France -CRNS, CNRM, CEN Grenoble (Marie Dumont).

Requirements:

We are looking for enthusiastic, outstanding young researchers, who enjoy working in a team and have good English communication skills. You should hold a Diploma/Master or equivalent degree preferably in Chemistry, Physics, Meteorology, Geophysics, or a related field. Experience in programming and modeling is required.

For further information please use the following links: [Vionnet et al., 2012](#); [Tuzet et al., 2017](#) or contact **Dr. Andreas Herber** (Andreas.Herber@awi.de) or **Dr. Marco Zanatta** (Marco.Zanatta@awi.de).

The position is limited to 3 years and advertised subject to availability of funding. 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**, temporary stay at MeteoFrance Grenoble is planned.

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. 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”.

As Ph.D. student at AWI you will be member of the Helmholtz Graduate School for Polar and Marine Research ‘POLMAR’ (<http://polmar.awi.de>) or another graduate school.

Please forward your applications with the standard documentation (CV, degree certificates, a statement of research interests copies of certificates, publications and two references) by **October 18th, 2017** referencing code **143/G/Kli** to: **Alfred-Wegener-Institut für Polar- und Meeresforschung, Personalabteilung (human resources), Postfach 12 01 61, 27515 Bremerhaven/Germany** or by e-mail (all documents merged into one PDF file) to: **personal@awi.de**.