Job posting (PHY 08/2025)

The Leibniz Institute for Baltic Sea Research Warnemünde (IOW) has a temporary vacancy starting as soon as possible (but latest on April 1st, 2026) for a

Doctoral student position in regional ocean climate modeling

in the Department of Physical Oceanography for three years and a percentage of 75% (30h/week), subject to the funding of the project.

Remuneration is paid in accordance with the Tarifvertrag für den öffentlichen Dienst der Länder (TV-L, Public Sector Collective Agreement on Länder) salary scale at level 13.

About the project

This position is part of the CoastalFutures II project (Scenarios to Promote Sustainable Futures of Contested Marine Areas), see https://www.coastalfutures.de/.

We will conduct and analyze climate simulations to contribute to the sustainable development of marine and coastal areas. Based on the developments of phase I of the CoastalFutures project, future scenarios for 2050 will be simulated using a coastal model system for the Baltic Sea. The scenarios will be compared with the current climate in order to quantify potential future climate changes and compare them with other stressors such as fishing, eutrophication, or the expansion of offshore wind farms. We will focus in particular on marine protected areas and develop proposals for where these should be located in the future in order to achieve the greatest possible protective effect for habitats and biodiversity. The three-dimensional circulation, its variability and systematic changes will be investigated using model and observation data, as well as the dispersion of Lagrangian particles. The principle of connectivity between different marine areas will be taken into account. We will also investigate future potential changes in estuarine vertical circulation in the projections and possible tipping points. Due to climate-induced changes in winds over the Baltic Sea region and in freshwater inflow from the large Baltic Sea catchment area, changes in current patterns and connectivity between marine areas are to be expected, which we will investigate. With the help of an ensemble of many climate simulations, the uncertainties of future scenarios will be estimated.

Who are we?

The IOW is an independent research institute of the Leibniz Association for which equal opportunities, family friendliness and work-life balance are very important. Our research focus is on the coastal and marginal seas, especially the Baltic Sea. The staff of the five sections Physical Oceanography, Marine Chemistry, Biological Oceanography, Marine Geosciences, and Marine Observations works interdisciplinary within a joint research program.

What will be your tasks?

The successful candidate will work closely with scientists, postdoctoral researchers, and doctoral students within the department, as well as external researchers, focusing on regional ocean climate predictions and projections.

The primary objective of this doctoral student position is to disentangle natural climate variability and projected anthropogenic climate changes by analyzing large ensembles of climate model simulations for the Baltic Sea. These model-based projections include changes in physical variables such as water temperature, salinity, currents, and sea level.

Your primary responsibilities will include:

- Analysis of extensive ensembles of multidecadal climate simulations for past and future climate trends with a focus on the Baltic Sea
- Assessment of the effects of climate change on circulation, particle dispersion, and connectivity of marine areas in the Baltic Sea
- Identification of suitable marine protected areas
- Estimation of changes in extreme events such as storms
- Quantification of natural variability and assessment of uncertainties in projections

What do we expect from you?

We seek a scientifically curious doctoral student who is eager to study climate variability and the marine environment. You should hold a master's degree (or equivalent diploma) in meteorology, oceanography, or a related natural or geoscientific discipline with significant physical and mathematical components. It is essential that you demonstrate enthusiasm for collaborating in a team and for contributing to the innovative IOW research program (2024–2033), see https://www.io-warnemuende.de/research-programme-2024-2033.html. Your primary involvement will focus on Research Area 2 (Coastal seas in transition).

Required qualifications:

- Familiarity with the climate of the Earth system and, in particular, the climate of the Baltic Sea region

- Familiarity with physical processes of semi-enclosed coastal seas such as the Baltic Sea
- Competency in visualizing and analyzing large-scale datasets using software tools like Python
- Familiarity with operating systems such as Linux/Unix
- Good programming skills, preferably in Fortran and/or Python
- Good command of written and spoken English
- Willingness to actively engage in interdisciplinary and international collaborations

What does the IOW offer?

The IOW offers you a varied workplace in the immediate vicinity of the Baltic Sea with flexible working arrangements, e.g. the possibility of working from home or remotely, and qualification opportunities for the English/German language. A very good infrastructure with modern laboratory and office equipment, including our own research vessel, form the framework for the best working conditions.

How do we promote equal opportunities?

Our job offers are aimed at all people regardless of their gender. Research benefits from a diverse working environment, which is why we have signed the Diversity Charter.
IOW aims to specifically promote women in areas where they are underrepresented. For this purpose, the institute has given itself a plan to promote equality (plan for the equal opportunities committee at the IOW) and has repeatedly been awarded the Total E-Quality award for its commitment (website TOTAL E-QUALITY e. V.) Female applicants are given preference in the case of equal qualifications and suitability, as the position belongs to a working group in which women are underrepresented. You can find an overview of our measures for equal opportunities and for improving the compatibility of work and family on our website.

We give preference to applications from disabled persons with equal professional and personal suitability. Please mention the disability or equality in your letter of application and enclose a copy of the relevant certificate.

How to apply?

Please submit your complete application, including a cover letter describing your motivation and qualifications and a current CV highlighting relevant experience and publications. Combine all application documents into **a single PDF file** and send them to IOW **until August 31st, 2025**, quoting the keyword: **PHY 08/2025** to:

bewerbung.physik@io-warnemuende.de

or:

Leibniz Institute for Baltic Sea Research Warnemünde
Human Resources Department
Seestraße 15
18119 Rostock
Germany

The interviews are expected to take place online (via Zoom) on **October 10th and/or 13th, 2025.**

Unfortunately, we cannot cover your application and travel costs.

For further information please contact:

Prof. Dr. Markus Meier, markus.meier@io-warnemuende.de or visit our website: www.io-warnemuende.de.