Job posting (Che 03/2025)

The Leibniz Institute for Baltic Sea Research Warnemünde (IOW) has a temporary vacancy starting September 1st 2025 for a

PhD position with the topic: "The role of benthic-pelagic coupling on N_2O production and emissions in shallow coastal ecosystems of the Baltic Sea"

in the working group Trace Gas Biogeochemistry within the Department of Marine Chemistry. The position is set for a period of 3 years and a percentage of 75% (30 h/week). Remuneration is paid in accordance with the *Tarifvertrag für den öffentlichen Dienst der Länder* (TV-L , Federal States Public Sector Collective Agreement) salary scale at level 13.

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 departments: Physical Oceanography, Marine Chemistry, Biological Oceanography, Marine Geology and Marine Observation works interdisciplinary within a joint research programme.

What will be your tasks?

This position will be embedded in the overarching programme "STB - Shallow Water Processes and Transitions to the Baltic Scale" of IOW (https://www.io-warnemuende.de/stb-shallow-water-processes.html), in which physical, chemical and biological oceanographers collaborate to achieve a holistic understanding of shallow (0–10 m depth) near-coastal systems, in which sediment-water interactions are particularly intense.

The PhD project will directly contribute to Work package 3 "Benthic-pelagic coupling" and its focus will be the quantification of nitrous oxide (N_2O) fluxes across the sediment-water-air interfaces, as well as achieving a quantitative understanding of how physical changes at the sediment-water interface affect the production of N_2O. To this end, you will use state-of-the-art approaches to conduct repeated (seasonal) surveys in several coastal shallow water sites of the Baltic Sea. Such approaches include continuous measurements in surface waters and overlying atmosphere, high-resolution profiling throughout the water column and near-bottom water sampling. Moreover, you will conduct multifactorial incubation experiments with sediment cores to assess the role of temperature, as well as oxygen and nutrient concentrations as drivers of N_2O cycling within upper sediments and at the sediment-water interface.

N$_2$O measurements in surface waters and water column will be complemented by measurements of carbon system parameters (pCO$_2$, DIC, TA) in order to address the overall greenhouse gas balance in shallow coastal systems of the Baltic Sea. To this end, the work during this PhD position is also closely linked with another PhD position focused on CH$_4$ dynamics, which is being advertised simultaneously. Close collaboration with other work packages of the STB, as well as national (e.g. SeaStore; https://www.seegraswiesen.de/en/) and international partners (e.g. CoastClim;, https://www.coastclim.org/) is also foreseen. The results of the work will be presented at conferences and published in scientific articles.

What do we expect from you?
A good to very good MSc degree in chemical oceanography, marine biogeochemistry, environmental sciences or a related field is required. Good methodological (theory) knowledge of analytical approaches for measurements of climate-relevant trace gases is required. Knowledge of biogeochemistry of trace gases such as N$_2$O in the Ocean is advantageous. Experience with different methods for trace gas measurements (e.g. chromatography, spectroscopic absorption analysers), as well as willingness to take part in the organisation and execution of field expeditions at sea are required. Experiences with data processing and visualization are advantageous. We expect very good English language skills, and good scientific presentation, writing, and communication skills are also an advantage. Due to the interdisciplinary character of the project, ability and eagerness to work in a team during field, laboratory and data analysis activities is required.

What does the IOW offer?
 The IOW offers you a varied workplace in the immediate vicinity of the Baltic Sea (Work at sea) with flexible working arrangements, e.g. the possibility of working from home or remotely. A very good infrastructure with modern laboratory and office equipment, including on 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.). 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 send us your application documents with cover letter, CV, copies of your certificates, description of relevant activities and experiences as well as two references.

We look forward to receiving your application, quoting the keyword: **Che 03/2025** by **August 8th 2025**.

to:
bewerbung.chemie@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 on **October 16th 2025.**

Unfortunately, we cannot cover your application and travel costs.

For further information, please contact:
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