

## Job announcement (Phy 06/2019)

The Department Physical Oceanography and Instrumentation of the Leibniz-Institute for Baltic Sea Research Warnemünde (IOW) is offering a full time position (3 years) as

### Postdoctoral Research Scientist

starting at the next convenient date. The position is placed in the working group of “Estuarine and coastal ocean processes” (<https://www.io-warnemuende.de/ecop.html>). Remuneration is paid depending on the individual qualification and in accordance with the TV-L salary scale at level EG 13 monthly gross salary (40 hours/week). The position may be covered in part-time with at least 30 working hours per week.

The IOW is an independent institute of the Leibniz Association, which focuses on coastal marginal seas, notably the Baltic Sea is investigated. The scientists inside of the four sections (Physical Oceanography and Instrumentation, Marine Chemistry, Biological Oceanography and Marine Geology) work together within the framework of a joint research program.

#### Job description

The position is financed by the BMBF funded project “Model based assessment of interactions between mean sea level changes, storm surges and morphodynamics in the Wadden Sea (MoMSie)”. In the German Bight, non-linear increases in the extreme sea levels have been observed, also exceeding the observed rates of the mean sea level mostly attributable to non-linear dynamics of the tidal water level component. A feature neglected so far is, however, the ongoing but complex morphodynamic adjustment of the coastal bathymetry, which may cause both, increasing and decreasing future water levels.

Based on current-wave coupled numerical models, we aim to investigate the interaction between mean sea level changes, storm surges and morphodynamic along the German North Sea coast. Furthermore, we will try to quantify the underlying uncertainties. The work is organised in close cooperation with the University Siegen.

The successful candidate will work with a partially existing multi-level nested setup reaching from the Atlantic to the North Frisian Wadden Sea. The used hydrodynamic model will be GETM (General Estuarine Transport Model). WaveWatch3 will cover the wave dynamics. Based on multi-decadal hindcasts,

the morphological development and extreme water levels in the Wadden Sea should be reproduced. In a next step, based on an atmospheric forcing ensemble, the uncertainty in the morphological development and the changes in storm surge levels will be quantified. Finally, based on selected scenarios, the impact of a changing mean sea level on the morphological developments and the potential changes in the surge levels will be assessed.

A further aim of the project is to investigate in detail the coupling of the wave field and the morphological development. Of importance is here the comparison of the time scales of changes in the wave climate, caused by mean sea level rise, and the response time scale of the bathymetry.

### Qualification

Applicants must have a PhD (at least “good”) in physical oceanography, or a related natural or geoscientific discipline with pronounced physical-mathematical components. Good knowledge of physical oceanography and proven experience in the application of numerical ocean and wave models, data handling and processing, and analysis of environmental data are expected. Furthermore, experiences in the use of supercomputers, Linux/Unix, Fortran, and graphical analysis programs such as Matlab, Python or R are required as well as the ability to work in a team and good knowledge of the English language

Applicants are asked to send their complete applications (CV, publication list, copies of certificates, references) quoting the code: **Phy-06/2019** until **1. October 2019** to:

[bewerbung.physik@io-warnemuende.de](mailto:bewerbung.physik@io-warnemuende.de)

or

Leibniz-Institute for Baltic Sea Research (IOW)  
Dept. Human Resources  
Seestraße 15  
D-18119 Warnemünde

Applications of disabled persons with same professional and personal qualification will be treated preferentially. Please indicate a handicap in the cover letter and enclose the relevant certificate.

The job advertisement is aimed at all persons regardless of their gender. The IOW promotes equal opportunities and was awarded the Total Equality Award (TEQ) regularly since 2013. An overview of our measures to equal opportunities and to improve the compatibility of work and family can be found at <https://www.io-warnemuende.de/equal-opportunity.html>. Our family office, equipped with computer workstation and toys, offers parents the opportunity to take children to the IOW for shorter time periods.

Applications of female candidates are particularly encouraged and will be treated preferentially in case of equal qualifications and suitability, as the post to be filled belongs to a structural unit in which women are underrepresented.

The Leibniz Institute for Baltic Sea Research offers a varied work in the immediate vicinity of the Baltic Sea. Interdisciplinary research topics on the Baltic Sea ecosystem, broad in-house expertise in physical, chemical and biological oceanography, and marine geology, state-of-the-art-laboratory equipment and infrastructure together with modern facilities provide an excellent framework for best research conditions.

Application and travel costs cannot be reimbursed unfortunately.

For further information, please contact:

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