LEIBNIZ-INSTITUT FÜR OSTSEEFORSCHUNG WARNEMÜNDE

Job announcement (Geo 03/2021)

The Department Marine Geology (working group Marine Geophysics) at the Leibniz Institute for Baltic Sea Research Warnemuende (IOW) is offering a part-time (20 hrs/week) position of a

Research Scientist

starting at the earliest possible date and limited until September 30th 2024. Remuneration is paid depending on the individual qualification and in accordance with the TV-L EG 13.

The IOW is an independent institute of the Leibniz Association, engaged in system analysis of coastal and marginal seas, with regional focus on the Baltic Sea. The scientists of the four departments (Marine Geology, Physical Oceanography and Instrumentation, Marine Chemistry, and Biological Oceanography) cooperate within the framework of a joint research program.

Job description

The advertised position is part of the BMBF-funded future cluster "Rostock Ocean Technology Campus" (OTC). The goal of the research project "OTC-Rostock: Automatic localization and measurement of stones in acoustic data sets with neural networks (OTC-Stone)" is to make the mapping of individual stones on the seafloor effective and objective in order to obtain a reliable and reproducible data basis for various economic, administrative and ecological questions. Together with our project partners, the German Federal Maritime and Hydrographic Agency (BSH) and Subsea Europe Services GmbH, we aim to develop operationally deployable software that automatically locates and measures stones in hydroacoustic datasets through integrated processing of bathymetric data and acoustic backscatter intensities based on neural networks.

TOTAL E-QUALITY

Your tasks in the research project consist in the further development of the underlying model, the creation of training data sets of different acoustic methods and the training of neural networks.

The tasks include in detail:

- Creation of representative datasets of different acoustic methods for a training of neural networks: collecting acoustic input data; processing of the IOW archive data; if necessary, re-processing of the data to increase the resolution; annotation of the data in a geographic information system; conversion into suitable formats for different network architectures
- Development and training of models for boulder detection: extension of the underlying model to handle different, complementary input data and characteristics; model development and ranking for boulder detection in backscatter data, bathymetric grids and combined multidimensional data
- Establishment of the method in expert panels

Necessary qualification of the candidate

- Completed scientific university education (master, diplom) in the fields of computer science or geoinformatics or a comparable discipline
- Very good programming skills in Python or another high-level language
- Profound knowledge in software design

Preferable additional qualifications

- Advanced knowledge of neural networks
- Advanced knowledge in geospatial data processing
- Special competence in the development and implementation of procedures

- Conceptual work
- Ability to analyze, logical thinking
- Very good knowledge of English

Applicants are requested to send their complete application documents (cover letter, curriculum vitae, copies of certificates, description of relevant activities and experience, certificates or references), quoting the keyword **Geo 03/2021, by 07.11.2021** to:

bewerbung.geologie@io-warnemuende.de (as a bundled PDF file) or

Leibniz Institute for Baltic Sea Research Warnemuende
Dept. Human Resources
Seestrasse 15
18119 Rostock
Germany

We would like to point out that at the Federal Maritime and Hydrographic Agency (BSH) offers currently also a vacancy in the project "OTC-Stone" as Scientific Assistant in the field of computer science or geoinformatics with 50% of the regular weekly working time. Both positions complement each other.

Applications of disabled persons with the 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. Applications of female candidates are particularly encouraged and will be treated preferentially in case of equal qualifications and suitability.

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.

The Leibniz Institute for Baltic Sea Research offers a varied workplace 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, as well as state-of-the-art- laboratories and a very good infrastructure provide the framework for the best research conditions.

Unfortunately, application and travel costs cannot be reimbursed.

For further information, please contact Dr. Svenja Papenmeier (svenja.papenmeier@io-warnemuende.de) and visit our website: www.io-warnemuende.de

Personal data is only passed on to the members of the staffing commission who are involved in the selection process. Furthermore, an external, pre-determined person is also part of the commission to represent one of our project partners (BSH).

For further information on data protection in the context of application procedures, please visit www.io-warnemuende.de/stellenstipendienpreise.html.