

The Deutsches Geodätisches Forschungsinstitut (German Geodetic Research Institute) of the Technical University of Munich (DGFI-TUM) is accepting applications for

## Two PhD students in the research area **Satellite Altimetry**

The determination of water level changes of the ocean and inland waters (lakes, reservoirs, rivers and wetlands) via satellite altimetry has been a primary research goal of DGFI-TUM for many years. The institute's data base comprehends the complete observation record of all altimetry missions that have been launched until now. After consistent preprocessing and relative calibration, these data are available for the joint analysis (multi-mission altimetry) and for the investigation of various phenomena in the ocean and the continental hydrosphere.

We are looking for two PhD students for inland and ocean altimetry.

In the field of **inland altimetry**, the candidate shall investigate advanced approaches for the estimation of inland water levels in the frame of a project funded by the German Research Foundation (DFG) within the Research Unit *Understanding the global freshwater system by combining geodetic and remote sensing information with modeling using a calibration/data assimilation approach (GlobalCDA)*. The tasks include the automated classification of altimeter radar echoes (waveforms) on global scale, the estimation of precise water levels from the raw measurements using improved retracking methods, and the combination of different altimeter missions. Moreover, in order to provide reliable accuracy information along with the time series, robust error estimates shall be derived.

The focus in the field of **ocean altimetry** is on the exploitation of the satellite observations to determine wind and wave patterns in the context of a changing climate. This involves the design of specific estimation algorithms to fit radar signals and the interpretation of the results coming from different satellite missions, including pulse-limited as well as Delay-Doppler techniques. Moreover, the duties include the design of a validation scheme to evaluate different competing algorithms. The research is part of ESA's *Sea State Climate Change Initiative*, for which DGFI-TUM acts as leader of the Algorithm Development team.

### Your profile

- University degree (M.Sc.) in geodesy, engineering, mathematics, informatics, hydrology or related
- Skills in signal processing, data analysis, mathematical and statistical model development
- Ability for independent research as part of a team, interest in the presentation and publication of scientific results
- Advanced computer literacy and programming skills, preferably in Python
- Good command of the English language (speaking and writing)

### We offer

- Independent and challenging research in an internationally well connected team
- Flexible and family friendly working hours
- Fixed term contract for a period of initially 3 years, starting as soon as possible
- Salary according to employment category E13 (100%) of the collective labor contract TV-L
- Attractive office in the Residence of Munich at the Odeonsplatz

All PhD candidates of the TUM are obligated to participate in the TUM Graduate School (<http://www.gs.tum.de>) that offers attractive additional funds for research training, soft-skill programs and international mobility/stays abroad. The TUM aims to increase the number of women employees. Qualified women are therefore especially encouraged to apply. Handicapped applicants will be preferred if applicability and qualification are equivalent

### Interested?

Do not hesitate to contact us for questions regarding the position. We are looking forward to receiving your application with relevant documents per mail or email no later than **April 15, 2018** to:

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