# ZMT — LEIBNIZ-ZENTRUM für Marine Tropenforschung

The Leibniz Centre for Tropical Marine Research GmbH (www.leibniz-zmt.de) is an independent research and teaching institute that provides scientific knowledge for the protection and sustainable use of tropical coastal ecosystems. To this end, we work in an inter- and transdisciplinary manner with our partners in the tropics. The ZMT is a member of the Leibniz Association.

The strategic extension of ZMT entitled 'Modelling socio-economic dimensions across Tropical Coastal Ecosystems and the Earth System – TropEcS' aims to link the existing research capacities of ZMT in the fields of socioeconomics, marine ecology, physical oceanography and biogeochemistry with Earth system modeling. The overarching goal is to better understand and predict the impacts of global change on tropical coasts and to assess consequences of changes along tropical coasts for the Earth system. The strategic extension is integrated into the interdisciplinary ZMT Programme Areas. It will enhance ZMT's modelling capabilities, contributing to its overall research programme and strategy.

As part of TropEcS ZMT is offering various positions on different career levels. Amongst them, in total three Senior Scientist (gn) positions. There will be a professorial position (W2 level) with whom all successful candidates are expected to collaborate intensively on the shared advancement of an Earth system model for tropical coastal ecosystems. It is expected that each successful candidate will develop a succinct modelling approach on a related sub-area. This may include downscaling coastal modules of Earth system models to high-resolution regional and local levels, and/or developing regional and sub-regional models, and upscale findings to refine global models using coastal typologies.

ZMT invites applications on the following (subject to release of funds)

# 3 Senior Scientists positions (Working group leaders) (gn)
### (Reference: 5-STB-AGL)

## Position 1: 'Modelling the sustainable use of marine tropical resources'

This position will be located in and contributing to the ZMT Programme Area 1 Coastal Resources and Sustainable Blue Economy. This Programme Area focuses on knowledge production for societies on their way towards a sustainable blue economy, based on a better fundamental understanding of coastal resources, their sustainable use and their conservation.

**Key Responsibilities and Expectations:**
- Address the sustainable use of marine tropical living resources through a modelling approach, including the resources themselves (e.g. fish stocks, marine food), as well as the ecological, social and economic contexts in which they are embedded
- Advance modelling by integrating interdisciplinary data, including socio-economic factors, from international databases and case studies
- Contribute to modelling approaches on strategies for a blue economy and marine biodiversity and their integration within the broader TropEcS model

## Position 2: 'Modelling of land-ocean material fluxes'

This position will be located in and contributing to the ZMT Programme Area 3 [Land-Ocean Fluxes and Transformation](). Offering a synthesis of biophysical, biogeochemical and social sciences, the focus of this Programme Area lies on analysing land-ocean material fluxes, their management and their consequences for tropical coasts as zones of complex transformation processes.

**Key Responsibilities and Expectations:**
- Conduct and lead interdisciplinary research on land-ocean fluxes: Analyze those fluxes based on biogeochemical codes (i.e. sediment transport and dissolved components), their natural and anthropogenic drivers and their consequences for the environment and communities/societies through a modelling approach.
- Integrate and model active transformation processes with soft-linking into the broader TropEcS model.
- Develop a research perspective on innovative modelling approaches for integrating:
  a) Socioeconomic drivers of material fluxes, including tourism, hinterland and coastal land use change, coastal development and urbanization, related social data
  b) Investigate local and regional blue carbon accounting and associated co-benefits
  c) Assess the impacts of drivers and blue carbon strategies on coastal stability/resilience (i.e. coastal erosion, salinization of groundwater), element cycles, ecosystem health, coastal governance, prosperity and livelihoods.

## Position 3: 'Ecosystem modelling'

This position will be located in and contributing to the ZMT Programme Area 4 [Ecosystem Co-Design towards a Sustainable Anthropocene](). This Programme Area works towards more resilient tropical coasts under the conditions of the Anthropocene and thereby actively advances the innovative emerging research agenda of Ecosystem Co-Design.

**Key Responsibilities and Expectations:**
- Ecosystem modelling with a focus on functional ecology coastal dynamics, in particular mangrove forests and land cover, including biodiversity and ecosystem services
- Develop a research perspective on advancing ecosystem modeling approaches, integrating physical, biological, and social systems, and drivers
- Develop a research perspective on scenarios to assess potential futures for coastal systems under changing environmental and societal conditions in alignment with ongoing work on nature-based and hybrid solutions, with interest in innovative techniques, such as assisted evolution and ecological engineering, to enhance coastal resilience.
- Develop a perspective on linking ecosystem processes to morphological and socioeconomic dynamics and incorporate them into the broader TropEcS model.

## General requirements for each of the positions:
A doctoral degree in a ZMT-relevant field, post-doctoral experience and publications in reputed journals are required. The successful candidate should have strong expertise in modeling (in particular numerical modelling) and a robust publication record fitting to the key responsibilities and expectations for each single position. Candidates with a quantitative social science/economics focus are encouraged too, especially for position 1 and position 2 with potential background in complex network modelling, agent-based modelling, game theory; macro-economic modelling perspectives with ocean accounts and coastal prosperity are welcome. Emphasis on approaches suited for data-scarce environments is expected, reflecting the contexts in which the ZMT often operates. Success in acquiring third-party funding rounds off the applicant's profile. Fieldwork in one or more tropical coastal regions is desirable. The candidate should also demonstrate a commitment to interdisciplinary research and a collaborative spirit with in-house researchers, tropical partners, and the coastal communities for whom the models are being developed. This includes strong contributions to the profile of the Programme Area in which each position is located. Experience of work with non-academic stakeholders and media is desirable.

**Details for each of the positions:**
The three positions are full-time positions. The positions are available for part-time (not less than 75% of a full-time position). Salary will be paid according to the German TV-L (EG 14). Each position can be filled on a permanent contract with a senior person (3+ years postdoc experience) or with a more junior person that aims to supervise doctoral candidates and early career researchers. In the latter case, a tenure-track procedure will be established. Employment is starting at the earliest convenience.

ZMT is an equal opportunity employer. Applicants with a migration background are welcome. Persons with severe disabilities are given special consideration if they have the same professional and personal qualifications. ZMT values its diverse workforce and pursues the goal of providing equal opportunity, which incorporates gender neutrality (gn). We will be happy to accept your documents without a photo.

**Further information:**
For questions, please contact Dr. Claudia Schüller, email: claudia.schueller@leibniz-zmt.de or PD Dr. Tim Rixen, email: tim.rixen@leibniz-zmt.de

**We offer:**
- Possibilities for each of the positions to negotiate a core-budget funded position attached to this Senior Scientist position.
- A challenging and varied job in an international, dynamic and interdisciplinary research environment
- A motivated and committed team from different countries and cultures
- An open and cooperative working atmosphere
- Opportunities for personal and professional development
- Interesting, varied and challenging tasks and family-friendly working conditions
- Company pension plan (VBL)
- Company health promotion and the opportunity to participate in company fitness with EGYM Wellpass

**Submission of application:**
Please submit a cover letter with your motivation and expectations (1-2 p.), a perspective paper on the proposed modelling approach, your CV, a summary of your doctoral dissertation (plus previous postdoctoral experiences 1-2 p.), and the names of two referees; letters of recommendation are also welcome. Please let us know in your application whether you are applying for position 1, 2 or 3. Please submit your application **by 20 February 2025 as a single pdf file** with the reference number "**5-STB-AGL**" to Ms. Carina Seemann, email: bewerbung@leibniz-zmt.de.

We are excited to welcome a new team member who is passionate about making a meaningful impact, and encourage contacting Dr. Claudia Schüller (claudia.schueller@leibniz-zmt.de) or PD Dr. Tim Rixen (tim.rixen@leibniz-zmt.de) to obtain a copy of the approved 'TropEcS' funding proposal and to set-up an informal talk beforehand. Interviews are expected to take place between 11 and 20 March 2025 in Bremen.

Leibniz Centre for Tropical Marine Research, Fahrenheitstraße 6, D-28359 Bremen.

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Gemeinschaft

Zertifikat seit 2018
audit berufundfamilie