The Leibniz Centre for Tropical Marine Research (www.leibniz-zmt.de) in Bremen is a member of the Leibniz Association, which is supported by the German Federal and State Governments. Through its research, ZMT contributes to developing science-based strategies for sustainable use of tropical coastal systems.

The workgroup Complexity & Climate is looking for a

**Doctoral candidate (f/m/d)**

(Reference number: 177)

**ERC-funded PhD fellowship on tropical convective self-organization**

We are seeking a motivated PhD student who will study the self-organization of convective cloud over the tropical oceans and continents using observations and modeling. The position is funded through the ERC project “Cloud-cloud interaction in convective precipitation” (INTERACTION).

**Job tasks:**

A particular focus will be on the emergence of mesoscale convective systems (MCSs), which have been recognized as a substantial contribution to tropical rainfall. Yet, the mechanistic origin of MCSs is far from settled. An emphasis of this PhD project will be on the land-sea contrast, and how convection over one of the two surfaces communicates with that over the other – which could, e.g., be explored by using tropical islands as case-study regions. A known, but incompletely understood, organizing mechanism are convectively generated cold pools, their sharply-defined updrafts and broader buoyancy anomalies.

Measuring and simulating cold pool properties is an incompletely explored, yet timely, topic, which will be addressed within this thesis. The thesis will give the student the opportunity to follow an international collaboration, between the Niels Bohr Institute, University of Copenhagen, Copenhagen, Denmark, and the Leibniz Centre for Tropical Marine Research (ZMT), Bremen, Germany. The student will be based within the group “Complexity and Climate” at ZMT, but carry out graduate course work at Niels Bohr Institute during the first year alongside research and be able to collaborate with the Atmospheric Complexity team there throughout the PhD (atmospheric-complexity.nbi.ku.dk). The Ph.D. degree will be awarded by the Niels Bohr Institute.

Simulations will include cloud-resolving and large-eddy simulations, but may also make use of existing global high-resolution simulations. Observations will be taken from satellite, radar and surface-based measurements. The option of an observational field study will be explored.

**Requirements:**

Candidates with a background in physics, mathematics, meteorology/atmospheric science or engineering are especially encouraged to apply. Candidates should have completed the equivalent of a M.Sc. degree, or be close to its completion. Working experience with an efficient programing language (e.g. fortran, python, c/c++, or similar) is expected. Curiosity and creativity for building conceptual, simplified mathematical models is crucial. Some familiarity with atmospheric dynamics and thermodynamics, or ocean-atmosphere interaction will be beneficial, but is not critical. Enthusiasm to both work within a team and alone are expected. Besides keen theoretical enthusiasm, potential interest in field work could be of benefit.
Additionally desirable:

- Team spirit
- Interdisciplinary, intercultural and international experience
- Interest in the tropics and potential collaboration with partners in the tropics

Details of the position:

The candidate will be on a part-time position (66%) on a 36-month contract; starting in November 2020, or as soon as possible thereafter. Salary will be paid according to the German TV-L EG 13.

We offer:

- An exciting working environment in an interdisciplinary and internationally oriented institute,
- Possibilities to build and extend an international professional network and participate in a research field of high public and scientific interest,
- A family-friendly working environment.

ZMT is an equal opportunity employer. Applicants with a migration background are welcome. Disabled persons with comparable qualification receive preferential status.

For additional information please contact Jan O. Haerter at jan.haerter@leibniz-zmt.de or haerter@nbi.ku.dk.

Submission of application: Please send your application, including a 1,000-word motivation letter, copies of degrees (M.Sc. or equivalent) and course transcripts (including grades, if available), a complete CV with a list of publications (if any) and skills, names with email addresses and telephone numbers of two personal references, by Sept. 3, 2020 as a single pdf file with the reference number “177 phd” to Ms. Lena Oehlmann, email: bewerbung@leibniz-zmt.de,

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