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Carl von Ossietzky Universität Oldenburg

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Welcome to the twelfth ICBM Alumni Newsletter

Dear ICBM Alumni
With our latest ICBM Alumni Newsletter we would like to stay in touch with you and give you a brief overview of what is currently happening at ICBM.
In the twelfth issue of our newsletter, we report on an underground observatory, on marine coatings that have so far been underestimated as a source of microplastics, on training the next generation of climate researchers, on southern summer in a retort, as well as news from the ICBM board of directors and from the field of junior researchers at ICBM.
We wish you a good start into spring and a happy Easter. Stay healthy!

Best regards
Yours, Ferdinand Esser

Institute for Chemistry and Biology of the Marine Environment (ICBM)

TOPICS OF THE ISSUE

AN OBSERVATORY UNDERGROUND

Success for Oldenburg's environmental and marine researchers: DFG funds new research group with around five million euros

A wide range of chemical, geological and microbiological processes take place in the subsoil of wave-swept North Sea beaches, about which little is known so far. This dynamic underworld, where salt and fresh water mix and which is called "subterranean estuary" in technical jargon, is the focus of a new research group led by hydrogeologist Prof. Dr. Gudrun Massmann, who researches and teaches at the Institute of Biology and Environmental Sciences (IBU) and the Institute of Chemistry and Biology of the Sea (ICBM) at Oldenburg University. The German Research Foundation (DFG) is funding the project with up to five million euros over the next four years. The scientists' goal is to assess the significance of the processes in the subsurface for coastal ecosystems and global material cycles. To this end, the team wants to set up a subterranean online measuring field off the island of Spiekeroog, which will expand the existing infrastructure of the ICBM's Spiekeroog Coastal Observatory. The project, entitled DynaDeep ("The Dynamic Deep Subsurface of High-Energy Beaches"), primarily involves researchers from the ICBM in addition to Massmann's working group. They are joined by partners from the Alfred Wegener Institute, the Helmholtz Centre for Polar and Marine Research in Bremerhaven, the Max Planck Institute for Marine Microbiology in Bremen, the Leibniz Institute for Applied Geophysics in Hanover, the Federal Institute for Geosciences and Natural Resources in Hanover and Kiel University. (SR)

During a preliminary campaign on Spiekeroog, Oldenburg researchers determined groundwater flows below the beach. [Photo: Janis Ahrens ICBM]

MARINE COATINGS AS A SOURCE OF MICROPLASTICS UNDERESTIMATED SO FAR

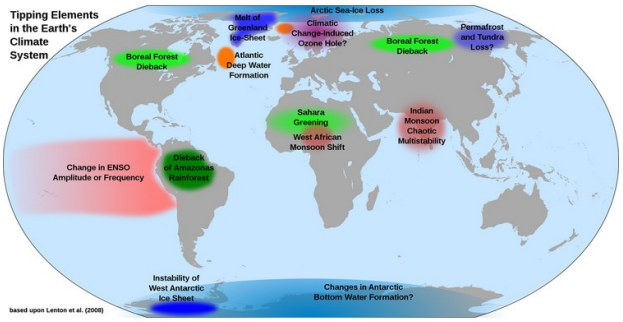
Oldenburg study: Microparticles in the southern North Sea come mainly from paints and varnishes

Shipping traffic can be a major source of tiny plastic particles floating in the sea, especially in the open ocean. Environmental chemists from the Institute for Chemistry and Biology of the Marine Environment at the University of Oldenburg led by Dr Barbara Scholz-Böttcher now provide the first overview of microplastic distribution in the North Sea in the journal Environmental Science & Technology. In water samples taken by the team near important shipping lanes in the German Bight, the researchers found mainly plastic particles originating from binders of ship paints. "We assume that ships leave a kind of 'skid mark' in the water, which has a similar significance as a source of microplastics as tyre abrasion from cars on land," says the researcher. (SR)

TRAINING THE NEXT GENERATION OF CLIMATE RESEARCHERS

ICBM participates in collaborative research project to help enhance understanding of climate tipping points

The Trans-European scientist training programme CriticalEarth is scheduled to start in March. At ICBM, the research group Theoretical Physics/Complex Systems, headed by Prof. Dr. Ulrike Feudel, participates in the international programme. It was initiated at the Niels Bohr Institute, University of Copenhagen.



Irreversible sea-level rise, dramatic weather events after passing certain tipping points? And the Earths surface temperatures, how much will they rise if the amount of CO2 in the atmosphere is doubled? Current computer models fail in predicting these abrupt, potentially non-reversible changes. [Graphics: tipping elements in the Earth's climate system, based upon Lenton et al. (2008) (CodeOne (blank map), DeWikiMan (additional elements), CC BY-SA 4.0 <https://creativecommons.org/licenses/by-sa/4.0>, via Wikimedia Commons)]

The application deadline for the PhD project at the ICBM ends on 7 March. The project will investigate, amongst others, why abrupt critical transitions at tipping points discovered for parts of the climate system often do not show up in large climate simulations, focusing on the question: what masks up these tipping points in computerised simulations. To what extent is this due to slowly varying driving forces of climate change, fluctuations of environmental variables or the spatial resolution of different processes in the climate system, limited by computer performance? To expose 15 international PhD students to the innovative mathematical approaches essential in modern climate research, 17 European research institutions have joined together to form the CriticalEarth network. The young scientists will address two extremely pressing issues in climate research. On the one hand this will be the prevailing insufficiencies in modelling of tipping phenomena. Equally challenging is an issue on the other hand, as science currently does not offer an answer to the question on how much the Earth's surface temperatures will rise if the amount of CO2 in the atmosphere is doubled. (SR)

SOUTHERN SUMMER IN A RETORT

First successful sexual reproduction of South Sea corals in Germany

'Staghorn coral' (Acropora millepora) at the age of a few weeks in a lab aquarium at the Wilhelmshaven site of ICBM [Image: Samuel Nietzer, ICBM]

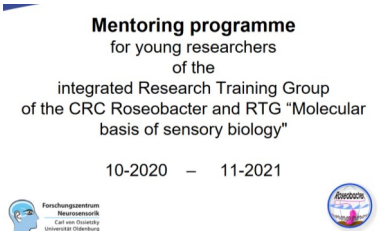
At the lab aquarium facility of the ICBM research group Environmental Biochemistry, headed by Prof. Dr. Peter Schupp, Dr. Samuel Nietzer and Matthew Jackson recently were the first in raising sexually reproduced offspring of stony corals in Germany. This marks a crucial step in their efforts for research on the conservation of reef corals. As one might say, in an alembic the investigators managed to mimic the environmental conditions of Australian coral reefs, thus prompting the polyps to spawn almost parallel to their South Sea siblings, enabling the researchers to obtain sexually reproduced coral offspring in their lab tanks. Up to now, scientists all around the world succeeded only a few times in doing so. (SR)

NEWS FROM THE ICBM DIRECTORATE

The term of office of the current Institute Director, Prof. Dr. Thorsten Dittmar, ends on 01.04. The Institute Council of the Institute for Chemistry and Biology of the Marine Environment elected Prof. Dr. Heinz Wilkes as the new Institute Director for the term of office until 31 March 2023. 1st Prof. Dr. Ralf Rabus and 2nd Prof. Dr. Thorsten Dittmar were elected as deputy directors. (FE)

NEWS FROM THE FIELD OF JUNIOR RESARECHS AT ICBM

Start of a new mentoring programme



Due to the current situation, we have started the new mentoring programme online. Mentoring is a proven and effective instrument for the targeted promotion of young talent and management development. Mentoring is based on the informal transfer of experience and knowledge and the individual support of a junior employee (mentee) by a professionally experienced specialist or manager (mentor). The mentors support the usually younger women and men in their professional self-discovery process, provide insights into their career path, advise them on career planning and give constructive feedback on their performance and skills. They impart important action knowledge about leadership requirements, structures and processes in science or business, explain unwritten "rules of the game" and facilitate access to career-relevant networks. We very much hope that we will be able to facilitate personal encounters in the summer so that the mentor-mentee relationship can be strengthened. If you are interested in participating as a mentor in the next mentoring programme, please contact Ferdinand Esser. (FE)

If you have comments:

Please contact us if you have questions or further suggestions: ferdinand.esser@uol.de or icbm-alumni@uol.de

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