



Welcome to the eleventh ICBM Alumni Newsletter

Dear ICBM Alumni

The last few months have not been easy for many, especially for those who have had to face new challenges in the midst of the Corona crisis. In the past nine months, we, like many others, have gained experience in various online conferences, online teaching or online counselling and have made progress. Working in home office was a new experience for many of us at ICBM, but it also revealed new possibilities and limits. Online formats cannot replace personal proximity and direct contact with students, doctoral candidates and colleagues. Let's hope that this will be possible again in the new year 2021.

In the eleventh issue, we report on the founding of a task force for remote sensing of marine debris, on digitalisation projects under ICBM leadership and on the ICBM exhibition container, which some of you will surely remember. We have also adapted the offers for PhD students to the current situation. ICBM PhD students would be pleased to get insight from you into career paths outside academia. If you are interested just send me an email.

We wish you a wonderful Christmas time and all the best for the New Year. Stay healthy!

Kind regards

Your Ferdinand Esser

LAUNCH OF INTERNATIONAL TASK FORCE FOR REMOTE SENSING OF MARINE DEBRIS

[How can remote sensing technologies support monitoring strategies to better understand the spread and distribution of plastic litter and debris in the global oceans?](#)

How can remote sensing technologies such as drones, airplanes and satellites support monitoring strategies to better understand the spread and distribution of plastic litter and debris in the global oceans? This question will be addressed by a new task force set up by Dr. Shungudzemwoyo Garaba of the University of Oldenburg's Institute for Chemistry and Biology of the Marine Environment (ICBM) and other experts under the auspices of the International Ocean-Colour Coordinating Group (IOCCG). The task force, titled "Remote Sensing of Marine Litter and Debris", will be led by Garaba as scientific chair as well as four other chairs from international space agencies. The team of scientists plans to work with international experts to develop a roadmap on innovative remote sensing technologies and techniques that can be used to monitor plastic litter and debris in all aquatic environments. Garaba and his colleagues will start with an assessment of the current capability of drones, aircraft and satellites to gather essential variables to detect, quantify, characterize and track aggregated aquatic plastic litter and debris. The objective is to develop new algorithms and sensor technologies that make it easier to detect floating plastic litter and monitor its distribution. In a study published in the scientific journal *Environmental Science and Technology* in 2018, a research team led by Garaba reported that floating and submerged ocean plastics could be identified using state-of-the-art remote sensing tools on a Hercules C-130 aircraft. The study showed that the infrared light reflected by plastic particles floating on the ocean surface differs significantly from light reflected by algae or breaking waves, for example. Garaba concluded from this that remote sensing of floating plastic litter is possible and can be useful for monitoring its spread and for planning dedicated clean-up efforts. (SR)



Institute for Chemistry and
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Environment (ICBM)

TOPICS OF THE ISSUE

- Launch of international task force for remote sensing of marine debris
- Digitalisation projects under ICBM leadership
- New life for ICBM container
- News from the field of junior researchers at ICBM



Only a small fraction of plastic litter floating in the seas ends up on the shores, as to be seen here at Unalau Bay, Hawaii. In future, scientists want to trace marine plastic litter by means of remote sensing to selectively organise clean-ups, e.g. [Image: Sarah-Jeanne Royer]

Introduction of professional fields

[Career insights online](#) took place successfully for the 5th time. Over 50 doctoral students from cooperating graduate institutions took part in each event. PhD students were able to get in touch with alumni online and learn about different professional fields and career paths. The event series will also be continued in 2021. The doctoral students would be very interested in gaining further insights into companies, institutions or authorities and learning more about your career paths. **If you are interested in participating in the format, [Ferdinand Esser](#) would be happy to hear from you.** [FE]

If you have comments:

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

Join the ICBM-Alumni-Network: www.icbm.de/alumni/

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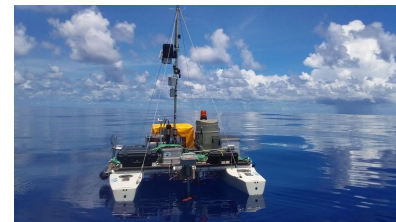
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MINISTRY APPROVES FOUR DIGITALISATION PROJECTS UNDER ICBM LEADERSHIP

[AI processes, machine learning and automatic data analysis are at the centre of the projects](#)

The Lower Saxony Ministry of Science (MWK) is funding no fewer than four ICBM-led projects in the "Digitisation in the Natural Sciences" programme. The ICBM at the University of Oldenburg is thus particularly successful in this year's round of calls for proposals for the funds from the Lower Saxony Advance of the Volkswagen Foundation. Together with partners, the marine researchers at the ICBM want to develop, for example, systems to automatically evaluate data from satellites or environmental sensors with the help of artificial intelligence (AI) methods. Project partners for three of the projects include the Lower Saxony Laboratory of the German Research Centre for Artificial Intelligence (DFKI).

ICBM marine scientists Dr Thomas Badewien, Prof Dr Thorsten Dittmar, Prof Dr Oliver Wurl and Prof Dr Oliver Zielinski are the main applicants for the four funded projects. Dittmar is head of the ICBM-MPI Marine Geochemistry Bridge Group, Badewien is part of the Marine Sensor Systems Group at the ICBM's Centre for Marine Sensor Systems (ZfMarS), which is headed by Oliver Zielinski, and Wurl is head of the Processes and



Remote-controlled catamaran: With the help of machine learning, data obtained at the sea surface, for example, should improve the accuracy of satellite data in the future [Photo: Oliver Wurl, ICBM].

NEW LIFE FOR ICBM CONTAINER

[Permanent measuring station replica becomes scientific control room](#)

The former ICBM show container has now been set up near the outdoor pools at the ICBM Wilhelmshaven site. Previously, one of the basins had been roofed over to allow experiments to be carried out there regardless of the weather. Here, the container will house sensitive data loggers and computers for real-time measurements in the basin and thus become the control room - initially for scientific sprinkling experiments - of the Centre for Marine Sensor Systems (ZfMarS) at ICBM.

In the end, however, due to the cost and personnel-intensive operations, there were only a few occasions when the bright yellow showroom was used. Reuse options were in demand. In the meantime, we had even considered selling the container to interested parties, but now the opportunity arose for a "second life" for the show container, which is equipped with two doors, a large three-light window, a heating system, EDP lines, ceiling lighting and hydraulic stamps for height adjustment. One of the outdoor pools had recently been fitted with an opening pool canopy, which also allows experiments to be carried out regardless of the weather. (SR)



The yellow display container is the future control centre for real-time measurements in the ICBM's covered outdoor basin [Photo: H. Nicolai, ICBM]

NEWS FROM THE FIELD OF JUNIOR RESEARCH AT ICBM

[ICBM PhDs Connected](#) and election of new [PhD representatives](#)

Due to the current situation, PhD days in presence were impossible, which meant that PhD students from both ICBM locations (Oldenburg and Wilhelmshaven) had hardly any opportunity to meet, exchange and network. Without further ado, the ICBM PhDs: Connected doctoral colloquium was created, which has been offered



monthly by PhDs for PhDs since May 2020. This has created a platform that helps to exchange information on current topics or to present project ideas. Another new feature is the election of ICBM doctoral representatives as an important interface between the doctoral students on the one hand and the ICBM directorate, the ICBM committees and the scientific coordinator for the promotion of young researchers on the other. (FE)

PhD representatives Alica Ohnesorge (Alica Ohnesorge (Marine Molecular Ecology focus group, 2nd year, HIFMB OL), Isabel Goßmann (Organic Geochemistry group, 1st year, ICBM OL) Pedro Carrasco (Biodiversity Theory group, 1st year, HIFMB OL)