

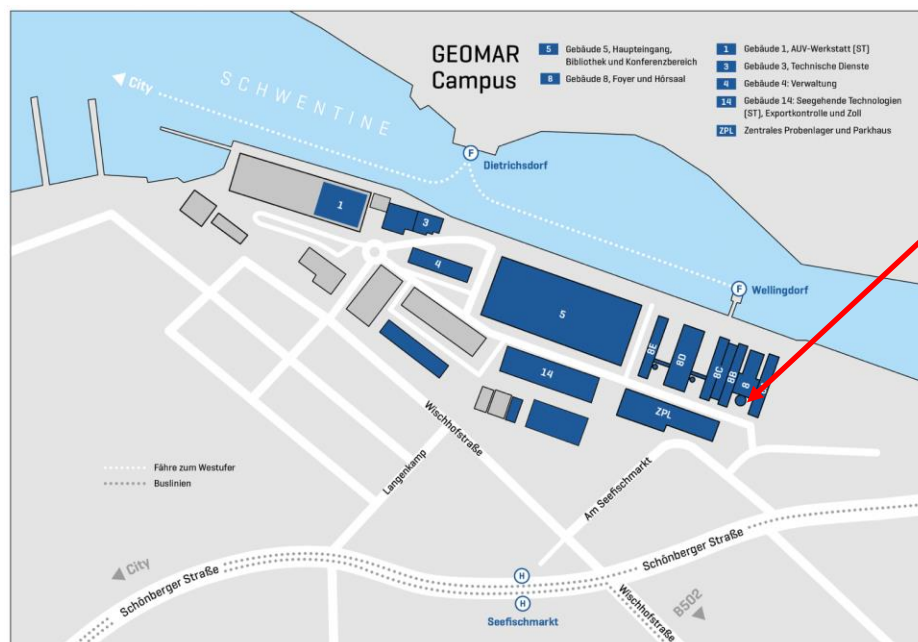
MarDATA Retreat

06 & 07 Oct 2025, GEOMAR

Final Participant Guide

MarDATA | Helmholtz School for Marine Data Science

We are delighted to welcome you to the annual **MarDATA Retreat**, a forum for showcasing cutting-edge research in marine data science and fostering interdisciplinary collaboration.



Venue:

GEOMAR

Lecture Hall

Wischhofstr. 1-3, Building 8
24148 Kiel

Directions by train or bus

From the main train station / central bus station (ZOB): By taxi or by bus (lines 11, 60S, 100, 200/201). Bus stops in front of the main station (west exit/Sophienblatt). Lines 60S and 200/201 are express lines (15 min.). Exit at bus stop "Seefischmarkt" and follow the signs to "GEOMAR".

Monday, October 06, 2025



11:30 *Arrival & light lunch*

12:30 **Welcome**

13:00 **Project Updates** (*open to public*)

"Intelligent Underwater Monitoring Systems Combining Distributed Underwater Sensor Networks with Cloud-based Digital Twins" **Lukas Schattenhofer, GEOMAR**

"OceanFuse - Fusion of Physics, Biology, and Computing" **Federico Scarscelli, GEOMAR**

"Digital Ice-Cores - Paleo-Climate Reconstruction Using Bayesian Modeling"
Kshema Shaju, AWI

14:30 *Coffee Break*

15:00 **Project Updates** (*open to public*)

"Drivers and Predictability of Antarctic Sea Ice Extremes - A Machine Learning Approach"
Nina Öhlckers, AWI

"Employing Spectral Radiation for Enhanced Modeling of Biogeochemistry and Carbon Cycling"
Anna Broschke, AWI

"AqQua - The Aquatic Life Foundation Project" **Christina Hübers, MDC & GEOMAR**

16:30 *Coffee Break*

17:00 **KEYNOTE Talk**

"The Challenges of Ethical AI" **Dr. Amelia Fiske, MESH / TUM**

AI comes with great promises, but more critically, it comes with demonstrated harms, from racial and gender bias, to discrimination, wrongful arrests, defamation, surveillance, or the extractive labour and practices required for its creation. In response to growing concerns about AI's adverse effects, many high-level experts, private companies, research institutions and public sector organizations have turned to principle-based ethical approaches. In this talk, I introduce the core ethical challenges of AI, including questions of autonomy, beneficence, transparency, responsibility, privacy, bias, impact on social systems, equity, and sustainability. I close by providing some examples of how researchers might engage meaningfully with these ethical imperatives.

18:00 **Poster Session & Social**

Tuesday, October 07, 2025

09:00 **DISCUSSION: Standards on Data Availability for MarDATA Proposals** (MarDATA members only)

10:30 *Coffee Break & Group Picture*

11:00 **Project Updates** (open to public)

"Data-based Probabilistic Parameter Estimation for Ocean and Earth System Models"
Rajka Juhrbandt, GEOMAR

"Quantitative Risk Assessment of Climate Extremes" **Widad Kchikach, AWI**

"NSYST – Innovative, Intelligent Coastal Water Monitoring Using Artificial Intelligence"
Naina Said, CAU

12:30 *Lunch*

13:30 **Project Updates** (open to public)

"MIMO - Real-time Autonomous Hydroacoustic Object Detection" **Christian Kanarski, GEOMAR**

"Neural Network augmented stabilized Finite Element Methods for Convection Diffusion Equations"
Hannah Scherer, CAU

"Employing Data-Science Methods for Mapping Sea Ice Surface Change on Decadal Time Scales"
Lena Happ, AWI

15:00 **Farewell**

Key Reminders

Dear colleagues,

To help ensure a smooth and productive experience for everyone, please take a moment to review the following key reminders:

! Ongoing Work by MarDATA Doctoral Researchers

- MarDATAs will present parts of their *ongoing* work.
- Please keep in mind that this work is in progress and may still be developing.
- Respectful, constructive engagement is essential.
- MarDATA is highly interdisciplinary, with many doctoral researchers coming from computer science backgrounds - please keep this in mind during discussions

! Discussion Contributions

- All participants are encouraged to bring in questions, insights, and discussion points.
- Active participation will make the retreat more rewarding for everyone.

! Respect and Support

- A supportive environment helps everyone feel comfortable sharing their work and perspectives.
- Please be mindful in your feedback and contributions.

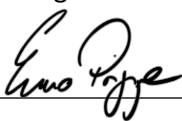
! Travel Cost Reimbursement

- Remember to submit your reimbursement requests shortly after the retreat.
- Delays risk missing administrative deadlines, which may prevent costs from being reimbursed.

! Catering

- All catering will be fully vegan.
- Due to internal catering guidelines, the availability of soft drinks and similar beverages will unfortunately be limited.
- Bringing a reusable water bottle is recommended.

Thank you for your attention to these points. We are excited to share this time with you and look forward to stimulating discussions and an enriching retreat together!



Enno Prigge, MarDATA Scientific Coordinator