

# List of Topic 2 Talks 2020/21

## for Fridays Seminar at 11am

**27. November 2020: Mosaic: First results and questions, C. Haas (AWI)**

**29. January 2021: Ocean modelling at GEOMAR and AWI,**  
A. Biastoch (GEOMAR) and S. Danilov (AWI)

**26 February 2021: Solid Earth and Ice Sheets**

1. The solid earth in the earth system, Volker Klemann (GFZ)
2. Evaluating ice sheet history for the past 80,000 years - are marine oxygen isotopes a reliable indicator of sea level? Evan Gowan (AWI)

**26 March 2021: Observing the Atlantic Ocean Circulation from pole-to-pole: GEOMAR and AWI perspectives, T. Kanzow (AWI) and P. Brandt (GEOMAR)**

**07 May 2021: Observing Mass Change in System Earth with current and future Gravity Field Missions, F. Flechtner (GFZ) and I. Sasgen (AWI)**

**28 May 2021: The international GEOTRACES programme: Reliable trace element distributions in a changing ocean for reconstructing the past (part I) and for discovering future trends (part II), W. Geibert (AWI) and M. Frank (GEOMAR)**

**25 June 2021: Abrupt climate change**

1. Abrupt Climate and Weather Changes Across Time Scales, G. Lohmann (AWI)
2. Decadal Atlantic Meridional Overturning Circulation (AMOC) slowing events in a climate model, M. Latif (GEOMAR)

**24 September 2021: Digital Twins, T. Jung (AWI) and M. Visbeck (GEOMAR)**

**29 October 2021: Artificial Intelligence for Earth System Sciences**

1. AI & Earth System Models - Hybrid AI- and physical based simulation models for improving process understanding, C. Irrgang (GFZ)
2. AI & Data Analysis and Prediction for Marine Big Data, W. Rath (GEOMAR)
3. AI Enablement - Cross-compartment data analytics for the AWIPEV observatory - a use case for Enabling AI, S. Frickenhaus (AWI)

# List of Topic 2 Talks 2022

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## 28 January 2022: The glacial Arctic Ocean as a freshwater basin - a controversial issue

- Glacial episodes of a freshwater Arctic Ocean covered by a thick ice shelf (W. Geibert, AWI)  
Original Nature Publication: <https://doi.org/10.1038/s41586-021-03186-y>
- No freshwater-filled glacial Arctic Ocean (R. Spielhagen, GEOMAR)  
*Reply to Geibert, Matters arising, Nature:* <https://rdcu.be/cGeGU>  
*Reply to Spielhagen, Matters arising, Nature:* <https://rdcu.be/cGeHn>

## 25 February 2022: Arctic and Tropical Atlantic Climate Variability and Linkages to the Mid-latitudes

- Changes in atmospheric circulation regimes over the North-Atlantic-Eurasian region and Arctic-midlatitude linkages (D. Handorf, AWI)
- AMOC Impact on the Tropical Atlantic and Tropical Atlantic Climate Variability (J. Lübbecke, GEOMAR)

## 25 March 2022: Remote Sensing

- Ice from Above: Satellite Remote Sensing - from Ice sheets to the Ocean (A. Humbert, AWI)
- Water from Above: Radar Altimetry - from High Mountains to the Ocean (T. Schöne, GFZ)

## 20 May 2022: Land-ocean transport of organic carbon

- What happens in natural river landscapes and under human interventions? (D. Sachse, GFZ)
- What happens at the land-ocean interface and the sea-floor? (G. Mollenhauer, AWI)

## 24 June 2022: From science to society: examples of knowledge transfer in PoV IV:

- klimafit - a science based knowledge transfer project to build climate competence at citizen level (Klaus Grosfeld, Renate Treffeisen, AWI)
- RASMUS - from ocean modelling to ship route optimisation (Arne Biastoch, GEOMAR)

## 07 October 2022: Changing Arctic Ocean circulation and transport pathways

- Large-scale hydrographic variability of the upper Arctic Ocean (M. Vredenburg, AWI)
- Elucidating advective pathways using chemical provenance tracers (G. Laukert, GEOMAR)

## 25 November 2022: Generation, transport and fate of water mass sourcing and sea ice signals in Southern Ocean sediments - and their exploitation for paleo reconstructions

- Weddell Sea water mass tagging with neodymium isotopes today and the challenges of signal preservation in Southern Ocean sediments (M. Gutjahr, GEOMAR)
- What molecular fossils tell us about past sea ice dynamics - and what they don't (J. Müller, AWI)

# List of Topic 2 Talks 2023

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**27 January 2023 (#80): Pushing the boundaries of high-resolution proxy records** with two talks on:

- .... using analytical advances (E. Hathorne, Geomar)
- .... using statistical proxy understanding (T. Laepple, AWI)

**24 February 2023 (#84): Physical and biological ocean carbon pumps**

- How do we observe changing ocean carbon fluxes and what are driving processes?* (T. Tanhua, GEOMAR)
- How do we model the changing ocean carbon fluxes and what are the roles of physics versus biology?* (J. Hauck, AWI)

**24 March 2023 (#82): „Innool project SCENIC: Storylines of European extremes in warmer climates“** with four talks on:

- 1. *How are 7 Helmholtz Centres joining forces to push climate storylines to the next level?* (H. Goessling, AWI)
- 2. *Greenland meltwater experiments and AMOC weakening: implications for atmosphere-ocean coupling, sea level* (T. Martin, GEOMAR)
- 3. *... and European weather and extremes in new climate model simulations* (Q. Ma, AWI)
- 4. *Can we use neural networks as a shortcut from climate storylines to societal impacts?* (R. Schachtschneider, GFZ)

**21. April 2023 (#71): Why do we need to drill up to 1.5 million years old ice in Antarctica? - Perspectives from paleoclimatology, Southern Ocean paleoceanography, and ice-core research"** with three talks on:

1. The mid-Pleistocene Transition (P. Köhler, AWI)
2. Dynamics of the Pacific Antarctic Circumpolar Current over the past five million years (IODP Expedition 383 - DYNAPACC) (F. Lamy, AWI)
3. Beyond EPICA oldest ice core – 800 m towards 1.5 million years (F. Wilhelms, AWI)

**23. Juni 2023 (#75): Polar Fresh Water: Northern and Southern perspectives"** by Torge Martin (GEOMAR) and Benjamin Rabe (AWI)

Recent publication: DOI: <https://doi.org/10.1175/BAMS-D-23-0046.1>