

Topic 2 Annual Meeting - 2023

Report of Contributions

Contribution ID: 1

Type: **not specified**

Opening

Tuesday 5 September 2023 13:00 (15 minutes)

Presenters: LOHMANN, Gerrit (AWI); BIASTOCH, Arne (GEOMAR)

Session Classification: Plenary

Contribution ID: 2

Type: **not specified**

Subtopic 2.1: Interhemispheric Connectivity of the Atlantic Meridional Overturning Circulation

Tuesday 5 September 2023 13:15 (15 minutes)

(12' min pres. + 3' min disc.)

Presenter: SCHULZKI, Tobias (GEOMAR)

Session Classification: Plenary

Contribution ID: 3

Type: **not specified**

Subtopic 2.2: Marine heatwaves: attribution and projections using climate storylines

Tuesday 5 September 2023 13:30 (15 minutes)

(12' min pres. + 3' min disc.)

Presenter: ATHANASE, Marylou (AWI)

Session Classification: Plenary

Contribution ID: 4

Type: **not specified**

Subtopic 2.3: Inversion of electromagnetic satellite data for oceanographic remote sensing

Tuesday 5 September 2023 13:45 (15 minutes)

(12' min pres. + 3' min disc.)

Presenter: HORNSCHILD, Aaron (GFZ)

Session Classification: Plenary

Contribution ID: 10

Type: **not specified**

Future perspectives in paleoceanographic research from high to low latitudes

Wednesday 6 September 2023 12:00 (10 minutes)

Short summary of the results of the breakout session.

Presenters: FRANK, Martin (GEOMAR); LAMY, Frank (AWI)

Session Classification: Plenary

Contribution ID: **11**

Type: **not specified**

Strategies on communication of tipping points

Wednesday 6 September 2023 12:20 (10 minutes)

Short summary of the results of the breakout session.

Presenters: HOERHOLD, Maria (AWI); SAYNISCH-WAGNER, Jan (GFZ)

Session Classification: Plenary

Contribution ID: **12**

Type: **not specified**

Marine Reference Records

Wednesday 6 September 2023 12:10 (10 minutes)

Short summary of the results of the breakout session.

Presenters: ADOLPHI, Florian (AWI); TJALLINGII, Rik (GFZ)

Session Classification: Plenary

Contribution ID: 13

Type: **not specified**

AMOC variability and North Atlantic sea level

Wednesday 6 September 2023 11:30 (10 minutes)

Short summary of the results of the breakout session.

Presenters: MARTIN, Torge (GEOMAR); KANZOW, Torsten (AWI); DOBSLAW, Henrik (GFZ)

Session Classification: Plenary

Contribution ID: 15

Type: **not specified**

Poster session

Tuesday 5 September 2023 17:00 (1h 15m)

Subtopic 2.1

- 1) Observations of the boundary currents and AMOC at 11°S - the TRACOS array - Rebecca Hummels (GEOMAR)
- 2) East Antarctic Ice Sheet: Instability and its interaction with changes in Southern Ocean Circulation –Tainã M. L. Pinho (AWI)
- 3) Variability of Antarctic Intermediate Water composition in the South Atlantic over the last 600,000 years - Oluwaseun Soaga (GEOMAR)
- 4) Pooling Resources to Investigate and Share Information on Sea Ice –The SEA ICE PORTAL - Renate Treffeisen (AWI)

Subtopic 2.2

- 5) Equatorial cold SST bias hampers a realistic simulation of ENSO dynamics and asymmetry in Climate Models - Tobias Bayr (GEOMAR)
- 6) North Atlantic for heat wave characteristics in Europe - Sabine Bischof (GEOMAR)
- 7) (Sub)-mesoscale dynamics in the Labrador Sea - Fehmi Dilmahamod (GEOMAR)
- 8) Important findings from the TephroMed project: The cryptotephra of the ICDP Dead Sea deep core during the last 130kya - Rebecca Kearney (GFZ)
- 9) Drivers and impact of the 2021 extreme warm event in the tropical Angolan upwelling system - Rodrigue Anicet Imbol Koungue (GEOMAR)
- 10) Southern Ocean warm bias and mesoscale dynamics as drivers of different ocean mean state dynamics - Mathias Zeller (GEOMAR)

Subtopic 2.3

- 11) Solid Earth component for coupled climate models - Meike Bagge (GFZ)
- 12) Downscaling Satellite Gravimetry Using Generative Adversarial Network - Forough Hassanibesheli (GFZ)
- 13) Inferring North Atlantic Deep Water Transports from Ocean Bottom Pressure at the Western Boundary - Linus Shihora (GFZ) / Henryk Dobslaw (GFZ)
- 14) Observing ice–ocean interaction –Extreme melting of 79°N Glacier, Greenland - Ole Zeising (AWI)

Subtopic 2.4

- 15) A cryocell for 2D-imaging of impurities by LA-ICP-MS in large ice-cores - Remy Dallmayr (AWI)
- 16) Untargeted mapping of polar organic compounds in suspended particulate organic matter off Cape Blanc, NW Africa - Hendrik Grotheer (AWI)
- 17) ITRF –the metric basis for quantification of sea level change and contributions from GFZ - Robert Heinkelmann (GFZ)
- 18) Ramped pyrolysis-oxidation-14CO₂: A versatile method to elucidate organic carbon reactivity in sediments - Laura Kattein (AWI)
- 19) Towards dating marine sediments using 26Al - Marleen Lausecker (AWI)
- 20) 10Be as synchronization tool in marine sediments - Julia Loftfield (AWI)
- 21) Governance of ocean-based negative emissions technologies - Lina Röschel (RIFS)
- 22) Tracing TEIs Sources and Water Mass Mixing in the South Pacific Ocean Using Neodymium Isotopes and Rare Earth Elements - Zhouling Zhang (GEOMAR)

=> Please also see the attached pdf with the abstracts of all posters!

Contribution ID: 27

Type: **not specified**

Subtopic 2.4: Development of the ^{10}Be -method in the Arctic

Tuesday 5 September 2023 14:00 (15 minutes)

(12' min pres. + 3' min disc.)

Presenter: NICOLAS, Arnaud (AWI)

Session Classification: Plenary

Contribution ID: **31**

Type: **not specified**

Closure

Wednesday 6 September 2023 12:30 (10 minutes)

Presenter: BIASTOCH, Arne (GEOMAR)

Session Classification: Plenary

Contribution ID: 32

Type: **not specified**

Can we get a coherent timeline of Late Quarternary events in the Arctic Ocean?

Wednesday 6 September 2023 11:40 (10 minutes)

Short summary of the results of the breakout session.

Presenters: GEIBERT, Walter (AWI); SPIELHAGEN, Robert (GEOMAR)

Session Classification: Plenary

Contribution ID: 34

Type: **not specified**

Research Institute for Sustainability - Helmholtz Centre Potsdam: Ocean and cryosphere research for environmental and societal change

Wednesday 6 September 2023 09:05 (20 minutes)

10' presentation plus 10' discussion

Presenter: NEUMANN, Barbara (RIFS)

Session Classification: Introduction

Contribution ID: 35

Type: **not specified**

Marine Reference Records

Tuesday 5 September 2023 15:00 (1h 15m)

In this breakout session we will discuss the potential Reference records proposed within subtopic 2.1 and 2.4. The aim is to define several reference records that also link with the warm climates topic (ST 2.1). We will discuss temporal/thematic foci, sampling, and synergies in order to maximize the benefit of these cores and the choices of sediment cores for the achievement of milestone M2.20-1/2 (ST2.4, marine reference core). Furthermore we will collect expressions of interest by scientists at AWI and GEOMAR and their potential contributions.

Presenters: ADOLPHI, Florian (AWI); TJALLINGII, Rik (GFZ)

Session Classification: Scientific breakout sessions

Contribution ID: 36

Type: **not specified**

Introduction to Scientific Breakout Sessions

Tuesday 5 September 2023 14:45 (15 minutes)

Flash-talks with 1-2 introductory slides by the chairs to introduce the breakout session.

Session Classification: Scientific breakout sessions

Contribution ID: 37

Type: **not specified**

Future perspectives in paleoceanographic research from high to low latitudes

Tuesday 5 September 2023 15:00 (1h 15m)

Discussion of ongoing and future paleoceanographic and paleoclimatic research foci with particular emphasis on collaborative research between the three centres including topics such as the importance of the Southern Ocean, high/low latitude teleconnections and land/ocean interaction. This will include joint sea going expeditions and any other collaborative efforts such as proxy development.

Presenters: FRANK, Martin (GEOMAR); LAMY, Frank (AWI)

Session Classification: Scientific breakout sessions

Contribution ID: 38

Type: **not specified**

Tipping Points - Communication and Research

Tuesday 5 September 2023 15:00 (1h 15m)

We recently observe scientific publications on “tipping points” going alongside with increasing attention by the public. The effect on the public assessment of the climate crisis is severe: Tipping points imply an emergency and a point of no return, but in the same time they imply a “safe point” in case of no tipping (neglecting the consequence due to linear changes). Both, the science and communication on tipping points require a scientifically sound and responsible approach. Should we as AWI/GFZ/GEOMAR (Helmholtz?) develop our own strategy on research and communication about tipping points?

Presenters: HOERHOLD, Maria (AWI); SAYNISCH-WAGNER, Jan (GFZ)

Session Classification: Scientific breakout sessions

Contribution ID: 39

Type: **not specified**

AMOC variability and North Atlantic sea level

Tuesday 5 September 2023 15:00 (1h 15m)

Sea level variations and future rise in the North Atlantic region are related to both freshwater inflow from Arctic regions and the Greenland ice sheet as well as salinity, heat and volume transport variations of the AMOC. This session aims at connecting activities in ST2.1 and 2.3 to find approaches of better estimating the competing (or additive) effects of norther ice melt vs. southern AMOC change.

Presenters: MARTIN, Torge (GEOMAR); KANZOW, Torsten (AWI); DOBSLAW, Henryk (GFZ)

Session Classification: Scientific breakout sessions

Contribution ID: 40

Type: **not specified**

Can we get a coherent timeline of Late Quarternary events in the Arctic Ocean?

Tuesday 5 September 2023 15:00 (1h 15m)

The reconstruction of conditions in the Arctic Ocean in past cold and warm periods is crucial to our understanding of the sensitivity of the climate system to external forcing. Significant contributions to the subject have come from both AWI and GEOMAR, amongst others. There is large disagreement on dating Arctic deposits, and the field is rapidly evolving with new evidence, new views and new methods. This breakout session would allow a collection of current viewpoints and discuss future collaborative work to identify and address open questions.

Presenters: GEIBERT, Walter (AWI); SPIELHAGEN, Robert (GEOMAR)

Session Classification: Scientific breakout sessions

Contribution ID: 42

Type: **not specified**

Explainable Artificial Intelligence

Tuesday 5 September 2023 15:00 (1h 15m)

We discuss novel methods for explaining the “what, why, and how” aspects of AI decisions.

Presenters: SIPS, Mike (GFZ); RATH, Willi (GEOMAR)

Session Classification: Scientific breakout sessions

Contribution ID: 44

Type: **not specified**

Explainable Artificial Intelligence

Wednesday 6 September 2023 11:50 (10 minutes)

Short summary of the results of the breakout session.

Presenters: SIPS, Mike (GFZ); RATH, Willi (GEOMAR)

Session Classification: Plenary