

Topic 2 Annual Meeting - 2022

Report of Contributions

Contribution ID: 1

Type: **not specified**

Opening and introduction

Monday 5 September 2022 13:00 (10 minutes)

Presenter: Prof. LOHMANN, Gerrit (AWI)

Session Classification: Plenary

Contribution ID: 2

Type: **not specified**

Subtopic 2.1: Resolving past Southern Ocean circulation states using authigenic and detrital sedimentary Nd and Pb isotope information

Monday 5 September 2022 13:25 (15 minutes)

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

Presenter: Dr GUTJAHR, Marcus (GEOMAR)

Session Classification: Plenary

Contribution ID: 3

Type: **not specified**

Subtopic 2.2: Long-term evolution of ocean eddy activity in a warming world

Monday 5 September 2022 13:40 (15 minutes)

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

Presenter: Dr BEECH, Nathan (AWI)

Session Classification: Plenary

Contribution ID: 4

Type: **not specified**

Subtopic 2.3: What makes the North East Greenland ice stream flow?

Monday 5 September 2022 13:55 (15 minutes)

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

Presenter: Dr JANSEN, Daniela (AWI)

Session Classification: Plenary

Contribution ID: 10

Type: **not specified**

A1: Observing and Modelling the Atlantic Meridional Overturning Circulation (AMOC) (past/future 50 years)

Tuesday 6 September 2022 11:20 (10 minutes)

(5' min pres. + 5' disc.)

Presenters: Prof. BIASTOCH, Arne (GEOMAR); Prof. KANZOW, Torsten (AWI)

Session Classification: Plenary

Contribution ID: 11

Type: **not specified**

A3: Regional versus global: How to connect the polar regions to the global climate system - low and high-latitude linkages

Tuesday 6 September 2022 11:40 (10 minutes)

(5' min pres. + 5' disc.)

Presenters: Dr RABE, Benjamin (AWI); Dr MARTIN, Torge (GEOMAR)

Session Classification: Plenary

Contribution ID: 12

Type: **not specified**

A2: Land-Ocean interaction and high-resolution climate archives

Tuesday 6 September 2022 11:30 (10 minutes)

(5' min pres. + 5' disc.)

Presenters: Dr BLANCHET, Cécile (GFZ); Dr TJALLINGII, Rik (GFZ)

Session Classification: Plenary

Contribution ID: 13

Type: **not specified**

A4: Identifying major shortcomings in ESM: Where do we need to put our focus?

Tuesday 6 September 2022 11:50 (10 minutes)

(5' min pres. + 5' disc.)

Presenters: Dr KJELLSSON, Joakim (GEOMAR); Dr WAHL, Sebastian (GEOMAR)

Session Classification: Plenary

Contribution ID: 14

Type: **not specified**

Summary & outlook

Tuesday 6 September 2022 12:30 (20 minutes)

Presenter: Prof. LOHMANN, Gerrit (AWI)

Session Classification: Plenary

Contribution ID: 15

Type: **not specified**

TEDx Talk: "Journey to Polar Night"

Monday 5 September 2022 21:00 (30 minutes)

Presenter: HORVATH, Esther (AWI)

Contribution ID: 16

Type: **not specified**

B1: Earth System thresholds affecting globally relevant CO2 sinks and sources

Tuesday 6 September 2022 12:00 (10 minutes)

(5' min pres. + 5' disc.)

Presenters: Prof. MOLLENHAUER, Gesine (AWI); Prof. BIJMA, Jelle (AWI); Dr FERNÉNDEZ-MÉNDEZ, Mar (AWI)

Session Classification: Plenary

Contribution ID: 17

Type: **not specified**

Subtopic 2.1: MOSAiC: a physical drifting observatory in the Eurasian Arctic and multidisciplinary aspects

Monday 5 September 2022 13:10 (15 minutes)

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

Presenter: Dr RABE, Benjamin (AWI)

Session Classification: Plenary

Contribution ID: 18

Type: **not specified**

A1: Observing and Modelling the Atlantic Meridional Overturning Circulation (AMOC) (past/future 50 years)

Monday 5 September 2022 15:05 (1 hour)

We will discuss the current state of observing systems and modelling activities to study the AMOC, and evaluate the potential for joint analyses, publications and projects. The focus should be on the monitoring and understanding of the variability of the past 50 years and the projection of the next 50 years, in particular the detection of (anthropogenic) trends within the range of natural interannual-decadal climate variability.

Presenters: Prof. BIASTOCH, Arne (GEOMAR); Prof. KANZOW, Torsten (AWI)

Session Classification: Breakout session (A)

Contribution ID: 19

Type: **not specified**

A3: Regional versus global: How to connect the polar regions to the global climate system - low and high-latitude linkages

Monday 5 September 2022 15:05 (1 hour)

We aim to discuss advective pathways and consequences of increases in polar freshwater export (Arctic Ocean, Greenland and Antarctic ice sheets) under global warming. While typically discussed in a regional context, climate change in high latitude oceans will affect the global ocean circulation, deep as well as intermediate water formation, gyre-gyre interaction and thus interfere with internal variability of the subpolar to subtropical regions.

Presenters: RABE, Benjamin (AWI); Dr MARTIN, Torge (GEOMAR)

Session Classification: Breakout session (A)

Contribution ID: 20

Type: **not specified**

A2: Land-Ocean interaction and high-resolution climate archives

Monday 5 September 2022 15:05 (1 hour)

We will discuss the potential to build collaborative projects to explore the relationships between the terrestrial and marine realms. Some of the focuses for this breakout sessions will be, for instance, the linkages and feedback processes between sea surface temperatures, ocean circulation, rainfall, weathering and erosion during warm and cold periods of the Quaternary. It will be also of prime importance to determine how to exploit our modelling and proxy-data expertises in topic 2 to tackle these challenges. Time-scales and regions of interest can be defined in the group.

Presenters: Dr BLANCHET, Cécile (GFZ); Dr TJALLINGII, Rik (GFZ)

Session Classification: Breakout session (A)

Contribution ID: 21

Type: **not specified**

A4: Identifying major shortcomings in ESM: Where do we need to put our focus?

Monday 5 September 2022 15:05 (1 hour)

We will discuss ongoing work to identify biases in coupled models. Which processes or regions are poorly represented? Where has there been significant improvement and where do we need to focus our efforts in the near future? Higher resolution? More parametrizations? Better parametrizations?

Presenters: Prof. KJELLSSON, Joakim (GEOMAR); Dr WAHL, Sebastian (GEOMAR)

Session Classification: Breakout session (A)

Contribution ID: 22

Type: **not specified**

B3: Small-scale processes & upwelling in a changing world

Tuesday 6 September 2022 09:15 (1h 30m)

We want to discuss fine scale processes in the upper ocean and how information from in-situ observations, satellites, and models can be best combined. Particular focus will be on the mixed layer, frontal dynamics and upwelling processes.

Presenters: Dr KARSTENSEN, Johannes (GEOMAR); Dr LÜBBECKE, Joke (GEOMAR); Prof. KANZOW, Torsten (AWI)

Session Classification: Breakout session B:

Contribution ID: 23

Type: **not specified**

B2: Greenland ice-sheet retreat: reasons and consequences

Tuesday 6 September 2022 09:15 (1h 30m)

The Greenland ice sheet is increasingly losing mass. In our centers various activities are under way regarding the quantification of the causative processes (e.g., surface melt, ice-sheet dynamics, ocean-ice interaction) and the assessment of the multiple consequences, such as changes in sea level, ocean stratification and deep-water formation. Based on these activities the goal of this breakout session is to identify concrete opportunities to strengthen cross-center collaborations utilizing our complementary expertise, datasets and methods.

Presenters: Prof. THOMAS, Maik (GFZ); Dr MARTIN, Torge (GEOMAR)

Session Classification: Breakout session B:

Contribution ID: 24

Type: **not specified**

B1: Earth System thresholds affecting globally relevant CO2 sinks and sources

Tuesday 6 September 2022 09:15 (1h 30m)

Our Program lists the implementation of a Cross Topic Activity on “Earth System thresholds affecting globally relevant CO2 sinks and sources” as deliverable. Here we would like to discuss how this could be addressed:

- Which thresholds and tipping points will we focus on?
- Which experts should be brought together?
- Which expertise is missing?
- Which strategies are most effective to reduce carbon dioxide emissions at scale?
- Which land and ocean carbon dioxide removal approaches are effective and safe to implement at scale?

A goal of this discussion is to identify a responsible team and develop a strategy for a scoping workshop for the CTA.

Presenters: Prof. MOLLENHAUER, Gesine (AWI); Prof. BIJMA, Jelle (AWI); Dr FERNÁNDEZ-MÉNDEZ, Mar (AWI)

Session Classification: Breakout session B:

Contribution ID: 25

Type: **not specified**

B3: Small-scale processes & upwelling in a changing world

Tuesday 6 September 2022 12:20 (10 minutes)

(5' min pres. + 5' disc.)

Presenters: Dr KARSTENSEN, Johannes (GEOMAR); Dr LÜBBECKE, Joke (GEOMAR); KANZOW, Torsten (AWI)

Session Classification: Plenary

Contribution ID: 26

Type: **not specified**

B2: Greenland ice-sheet retreat: reasons and consequences

Tuesday 6 September 2022 12:10 (10 minutes)

(5' min pres. + 5' disc.)

Presenters: Prof. THOMAS, Maik (GFZ); Dr MARTIN, Torge (GEOMAR)

Session Classification: Plenary

Contribution ID: 27

Type: **not specified**

14C dating laboratory (MICADAS)

Monday 5 September 2022 16:25 (45 minutes)

Presenters: MOLLENHAUER, Gesine; Dr GENTZ, Torben (AWI)

Session Classification: Guided tour I

Contribution ID: 28

Type: **not specified**

ICP MS laboratory (Proxy Lab)

Monday 5 September 2022 16:25 (45 minutes)

Presenters: Dr BENTHIEN, Albert (AWI); Prof. BIJMA, Jelle (AWI)

Session Classification: Guided tour I

Contribution ID: 29

Type: **not specified**

Ice core laboratory

Monday 5 September 2022 16:25 (45 minutes)

Presenter: Prof. WEIKUSAT, Ilka (AWI)

Session Classification: Guided tour I

Contribution ID: 30

Type: **not specified**

Geological laboratory

Monday 5 September 2022 16:25 (45 minutes)

Presenters: Dr MATTHIESSEN, Jens (AWI); Dr ESPER, Oliver (AWI)

Session Classification: Guided tour I

Contribution ID: **31**

Type: **not specified**

Technikum

Monday 5 September 2022 16:25 (45 minutes)

Presenters: Dr MEYER HEYE, Bernhard (AWI); Dr LÖBL, Martina (AWI)

Session Classification: Guided tour I

Contribution ID: 32

Type: **not specified**

Getting to the guided tours

Monday 5 September 2022 16:20 (5 minutes)