

CLIVAR/CliC Northern Oceans Region Panel

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Panel overview

NORP serves as an international forum for coordinating and strategizing activities on the role of the Arctic Ocean in the context of the global climate system from a coupled perspective. NORP facilitates progress in the development of tools and methods to monitor and assess climate variability and change, and evaluate climate predictability of the ocean-atmosphere-ice system in the Arctic and Subarctic Ocean. NORP coordinates efforts to enhance the ability to monitor the coupled system, understand the driving mechanisms of the system change from a coupled process perspective, and predict the evolution of the emerging New Arctic climate. NORP plays a central role in coordinating, monitoring, and evaluating the progress of such activities during and beyond the Year of Polar Prediction.

Achievements for 2021-2022

- Workshops/Meetings
 - [NORP-SORP workshop on polar fresh water](#): Sources, Pathways and Impacts of fresh water in northern and southern Polar oceans and seas (SPICE UP), Online, 19/20/21 Sep (3 half-days), 2022. Meeting report for publication in BAMS currently in preparation.
 - [Arctic Processes in CMIP6 Bootcamp](#), 11-21 October, 2022, Søminestationen, Denmark
 - Online meetings to discuss the workshop organization and panel business.
- Scientific results from activities
 - From the CMIP6 Bootcamp there are several projects were initiated:
 1. WAFFLES: Western Arctic Freshwater Fluxes
 2. Fables: Fates of the Beaufort Gyre: Location, Extent and Strength
 3. Mosaic data in CMIP6-focused on sea ice thickness and snow on sea ice
 4. Exchanges: Arctic - North Atlantic Exchanges
 4. Greenland precipitation signals
 6. PAMIP
 7. BALS: Boundary Atmospheric Layer over Sea Ice
- Scientific capacity building and career support
 - The Arctic Processes in CMIP6 Bootcamp was specially designed for young scientists and PhD students, and was a great success.
- Knowledge exchange
 - The NORP/SORP SPICE-UP workshop brought together 150 scientists with expertise in processes of the northern or southern high-latitude oceans to review the role and evolution of polar fresh water (hereafter

termed FW) and compare and contrast the two polar oceans. The workshop connected different communities: observationalists, modelers, remote sensing experts and those carrying out data assimilation with the aim of providing a holistic overview of polar FW and its projected future evolution.

Plans for 2023 and beyond

- In-person panel meeting, alongside the IUGG meeting, July 9-10, 2023, Berlin, Germany. Most members will be rotating off this year so the panel meeting in Berlin will define objective and activities for the panel going forward.

Articles published in 2021/22 as part of panel activities (if any)

- The SPICE-UP BAMS article will be published in 2023

Budget and other needs for 2023 (in CHF)

- NORP requests 5000 CHF for the in-person panel meeting NORP-3, see appendix A

Annex A

Proforma for CLIVAR Panel requests for SSG approval for meetings

1. **Panel name:** Northern Oceans Region Panel
2. **Title of meeting or workshop:** NORP 3rd In-Person Panel Meeting (NORP-3)
3. **Proposed venue (Or indicate if online):** Berlin, Germany
4. **Proposed dates:** July 9-10, 2023
5. **Proposed attendees, including likely number:** 15 panel members plus guests
6. **Rationale, motivation and justification, including: relevance to CLIVAR science & WCRP Strategic Plan and Lighthouse Activities, and any cross-panel/research foci links and interactions involved:** This will be the third NORP in-person meeting since its establishment. NORP accomplished the majority of the planned activities 2020-2022; paper on Arctic freshwater, NORP/SORP workshop on polar freshwater, CMIP6 bootcamp. This meeting will be an opportunity for the panel, which will be composed of primarily new members, to define new priorities and discuss NORP future plans.
7. **Specific objectives and key agenda items:** This panel meeting will bring together experts researching the role of the Arctic Ocean in climate to assess the current state-of-knowledge, identify research gaps and observational uncertainty and needs, and map out a strategy for progress.
8. **Anticipated outcomes (deliverables):** NORP-3 report, and a review paper on “Arctic Ocean heat transport and storage in models and observations”.
9. **Format:** NORP-3 will be a side meeting of the 2023 IUGG meeting.
10. **Science Organizing Committee (if relevant)**
11. **Proposed funding sources and anticipated funding requested from WCRP:** NORP requests support for members to participate in the third face-to-face panel meeting to be held in Berlin, Germany in conjunction IUGG 2023. We request 5000 CHF to support travel to/from the meeting.