

## CLIVAR/CliC/SCAR Southern Ocean Region Panel (SORP)

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### Panel overview

The Southern Ocean Region Panel (SORP) is co-sponsored by the World Climate Research Programme's core projects the Climate and Ocean: Variability, Predictability and Change (CLIVAR) and the Climate and Cryosphere (CliC), and the Scientific Committee on Antarctic Research (SCAR). The SORP serves as a forum for the discussion and communication of scientific advances in the understanding of climate variability and change in the Southern Ocean. It advises CLIVAR, CliC, and SCAR on progress, achievements, new opportunities and impediments in internationally-coordinated Southern Ocean research.

The panel has significantly increased its activity maintaining momentum created during the SORP-14 business meeting held online in fall 2021 over several days. Since then, **five task teams** have been established: **(i) the Southern Ocean Freshwater-release model experiment Initiative (SOFIA)** has drawn greater attention by the respective modelling community and now includes 20 members representing 8 different participating models, **(ii) a second task team** has actively contributed to initiating and shaping **the Southern Ocean decade** as part of the UN Ocean Decade including co-authoring the SO action plan, **(iii)**, together with NORP an online **workshop on polar freshwater (SPICE-UP)** was organized testing very successfully new discussion formats and particular focus on bi-polar exchange of knowledge **(iv)**, contributions for a **CLIVAR Exchange issue** are being collected highlighting both science by newly emerging Antarctic programs and life-stories of researchers from the “global south”, and **(v)** a new task just emerged in support of an initiative for an **internationally coordinated effort for year-round observations** by field campaigns, and remote as well as autonomous instruments between 2027 and 2030 under the umbrella of the UN Ocean Decade.

Activities during 2022 were still overshadowed by the COVID-19 pandemic. Most workshops and even major meetings, such as the Ocean Science Meeting, took place online. While this was an improvement to previous years when meetings got postponed, there is a deep felt lack of in-person interaction among panel members as well as the Southern Ocean science community. There are still travel restrictions in place or travel has become too expensive and travel funds were cut, respectively, resulting in too little personal interaction. On the positive side, observational programs started again and measurements around Antarctica were possible though sometimes required creative solutions or significantly enhanced planning both yielding a larger work load on sea-going and specifically on leading scientists.

SORP is meeting every month by telecon for discussing both, business and scientific topics, and so are the task teams.

## Achievements for 2021-2022

- Workshops/Meetings
  - Session at Ocean Sciences Meeting 2022: [HL16 Sources and consequences of Southern Ocean freshening: Toward synthesising observations and modelling](#)
  - Session at EGU GA 2022: [OS1.11 Under cover: The Southern Ocean's connection to sea ice and ice shelves](#)
  - Co-organization of and panelist for the session [From the Southern Ocean to the Arctic – a Call to Action via the UN Ocean Decade](#) held in conjunction with the UN Ocean Science Conference, held in Lisbon, Portugal, 2022.
  - [NORP-SORP workshop on polar fresh water](#): Sources, Pathways and Impacts of freshwater 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.
- Scientific results from activities
  - SORP members co-edited a **special volume** in Frontiers in Marine Science on interbasin exchange between the Southern Ocean and South Atlantic
- Scientific capacity building and career support
  - The SOFIA task team includes a number of early career scientists involved in Southern Ocean modelling. To them, the team is a very active platform to learn about and discuss climate models, joint experiments and the role of freshwater in the Southern Ocean and climate system.
- Knowledge exchange
  - SORP members actively participated in the development of the action plan for the Southern Ocean as part of the United Nations Decade of Ocean Science for Sustainable Development. The Southern Ocean is one of nine ocean basins designated and endorsed by the UN for an individual action plan. As part of this effort coordinated by SCAR the Southern Ocean Task Force was set up to develop the Southern Ocean Action Plan, which was published in 2022 including SORP members as co-authors (<https://www.sodecade.org/action-plan/>). SORP continued to work with other members, many from affiliated committees (<https://www.sodecade.org/about/>) on the seven working groups aligned with the seven outcomes of the Ocean Decade (<https://www.sodecade.org/working-groups/>). These working groups identified research challenges, logistical and technical challenges and actions needed to address these challenges.

- Co-organized a virtual workshop on polar freshwater with NORP (see above), a publication synthesizing the workshop discussion is in preparation
- Monthly SOFIA meetings are growing to become a notable exchange platform for ocean and climate modelers including discussions of ice-ocean interaction, in particular ocean-driven melt of the Antarctic Ice Sheet

### **Plans for 2023 and beyond**

- SOFIA / freshwater task team: submitting scientific paper reviewing Southern Ocean freshwater-release experiments and introducing SOFIA; apply for SOFIA to become an official CLIVAR task team
- Planning of joint summer school on polar freshwater together with NORP building on the successful workshop held together in 2022
- Run a CLIVAR Exchanges issue on research and diversity from less developed Antarctic programs
- Remain involved in UN Ocean Decade efforts
- Support planning of a Southern Ocean year as a UN Ocean Decade action (SORP members lead and are involved in this effort); related session chaired at SOOS symposium in Aug. 2023)

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

- none

### **Budget and other needs for 2023 (in CHF)**

- SORP requests 5000 CHF for the in-person panel meeting SORP-15, see appendix A

## Annex A

### Proforma for CLIVAR Research Focus requests for SSG approval for meetings

***Note: If your group has approved funds in 2022 that were not used because of Covid19 and any other unexpected issues, and you propose to use them in 2023, they should be included again in this request, in addition to any new request.***

1. **RF name:** Southern Ocean Region Panel
2. **Title of meeting or workshop:**  
The 15<sup>th</sup> session of Southern Ocean Region Panel
3. **Proposed venue (or indicate if online):**  
TBD We have several good options that we are weighing. One possibility is the SOOS Symposium that will be held in Hobart Australia in August 2023
4. **Proposed dates:**  
The panel meeting will be attached to a major conference or meeting with Southern Ocean focus. SORP is still discussing with the members for the best option anticipating added value, if the gathering for SORP-15 would also allow in-person communication with other panels and groups of the SO science community.
5. **Proposed attendees, including likely number:**  
SORP members, currently 14, maybe including members of the SOFIA task team (+4), and liaisons with other SO groups (+2), i.e. about 20 participants in total.
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 is the first in-person meeting since the breakout of the pandemic. Most of the members have never seen each other face to face. The panel meeting will discuss current and future SORP business, the future science direction of SORP and how to best match the recently developed task team activities with the WCRP Strategic Plan and Lighthouse Activities.
7. **Specific objectives and key agenda items:**  
The panel business and future panel activities will be discussed during the panel meeting.
8. **Anticipated outcomes (deliverables):**
9. **Format:**  
In-person meeting with hybrid option for members joining remotely.
10. **Science Organizing Committee (if relevant)**

**11. Local Organizing Committee (if relevant)**

TBD

**Proposed funding sources and anticipated funding requested from WCRP:**

We request 5000 CHF to support the accommodation and the traveling of the panel members, and hope the money can also be used for the expenditure of the meeting room, if necessary.