

CLIVAR/CliC/SCAR Southern Ocean Region Panel SORP-12: 29-30 June 2017

National activities report

Country__Finland____

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Date__13 June 2017_____

Receipt of material prior to 15 June 2017 will ensure inclusion in meeting discussion. Receipt of material prior to 15 July 2017 will ensure inclusion in meeting report and contribute to future SORP discussions, as well as input to the SOOS and other CLIVAR/CliC/SCAR activities. All reports will be posted on the SORP website.

Purpose of material gathered for the SORP: To build an overview of
- observational, modeling, ocean reanalysis and state estimation initiatives relevant to the SORP

(This can include a list of activities, maps showing where work has been done, major international project involvement, etc.)

Please refer to SORP's terms of reference (also given at the end of this template) for guidance on scope: <http://www.clivar.org/clivar-panels/southern>

Note: Biological topics such as marine ecology and marine ecology research, for example, are not within the scope of SORP's terms of reference and are therefore not required in these reports. However, SOOS has an interest in such research, so National Representatives are welcome to include summaries of such research as separate sections.

Note: The Southern Ocean is not explicitly defined in SORP's terms of reference, so please note what the limit used for your national report is (e.g., research on regions only beyond an oceanographic boundary like "south of the Polar Front", or research contained within latitudinal limits like "south of 50°S").

A. Recent and ongoing activities

Does your country have a national committee tasked with oversight of Southern Ocean climate science (e.g., like US CLIVAR)? If yes, please give the name of the committee.
No

What major activities have been carried out in the last several years or are in progress now? Contact information for the projects would be useful (e.g., Principal Investigators and Associate Investigators).

1. Observational? *Sea ice thickness measurements by an EM instruments have been collected and postprocessed onboard MS Agulhas, used for model validation as a part of Finnish Meteorological Institute activities and funded by the Academy of Finland ANTLOAD project. FMI also installed an ice radar instrument onboard*

Australian RV Aurora Australis. Results were presented in CLIVAR 2017 OSC in Qingdao, China. Contact person; Dr. Mikko Lensu.

FMI is analysing Antarctic snow and ice thickness from Cryosat-2 satellite. Contact person: Dr. Eero Rinne.

2. Modeling?

We have completed an assessment of Southern Ocean hydrography, circulation and Antarctic sea ice in the latest version of NEMO-LIM3 ocean-ice model (Uotila et al. 2017).

3. Ocean reanalysis and state estimation?

Ongoing work on assessing the performance of polar ocean reanalysis products in the Polar ORA-IP project supported by the COST EOS action and endorsed by YOPP.

Uotila, P., Iovino, D., Vancoppenolle, M., Lensu, M., and Rousset, C.: Comparing sea ice, hydrography and circulation between NEMO3.6 LIM3 and LIM2, Geosci. Model Dev., 10, 1009-1031, doi:10.5194/gmd-10-1009-2017, 2017.

B. Planned activities

What major activities are planned or likely to occur during the next several years?

Contact information for the projects would be useful (e.g., Principal Investigators and Associate Investigators).

1. Observational? *Finnish Environmental Institute plans to collaborate with some South Africans to study Southern Ocean biogeochemistry. The contact point is Dr. Letizia Tedesco, who is also in the SG of IASC/SCAR/Clic WG BEPSII (<https://sites.google.com/site/bepsiiwg140/members>). FMI plans to continue and maintain automatic sea ice measurements onboard MS Agulhas and RV Aurora Australis.*

2. Modeling?

As an active member of the EC-Earth climate model consortium, Uotila will continue the assessment of Antarctic sea ice and Southern Ocean hydrography, circulation and sea ice as the consortium is preparing to complete CMIP6 model simulations for the next IPCC report.

3. Ocean reanalysis and state estimation?

In the coming months the Polar ORA-IP team (which PI is Uotila) will complete and submit the manuscript assessing the performance of ten ocean reanalysis products in the Southern Ocean. They will also actively present results in relevant workshops and conferences.

SORP terms of reference <http://www.clivar.org/clivar-panels/southern>

"To serve as a forum for the discussion and communication of scientific advances in the understanding of climate variability and change in the Southern Ocean. To advise CLIVAR, [CliC](#), and [SCAR](#) on progress, achievements, new opportunities and impediments in internationally-coordinated Southern Ocean research."

Specific Activities:

1. Facilitate progress in the development of tools and methods required to assess climate variability, climate change and climate predictability of the ocean-atmosphere-ice system in the Southern Ocean.
2. Identify opportunities and coordinated strategies to implement these methods, spanning observations, models, experiments, and process studies.
3. Provide scientific and technical input into international research coordination, collaborating as required with other relevant programs, including the [Southern Ocean Observing System \(SOOS\)](#).
4. Monitor and evaluate progress in Southern Ocean research, and identify gaps.
5. Enhance interaction between the meteorology, oceanography, cryosphere, geology, biogeochemistry and paleoclimate communities with an interest in the climate of the Southern Ocean.
6. Work with relevant agencies on the standardization, distribution and archiving of Southern Ocean observations.