

Scientific Committee on Antarctic Research

Connecting and Building Antarctic Research

www.scar.org



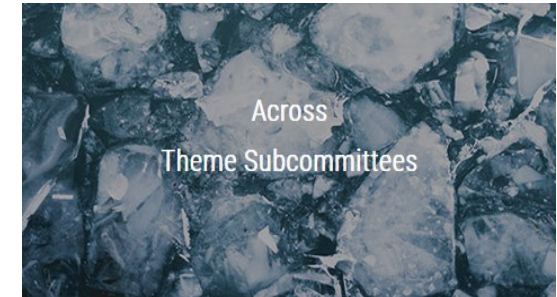
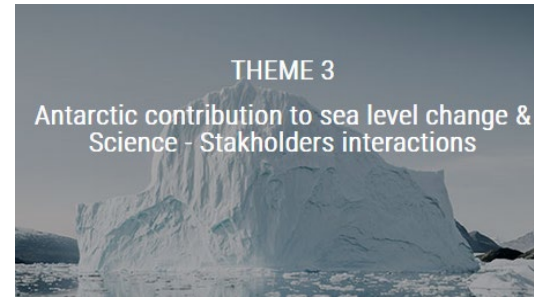
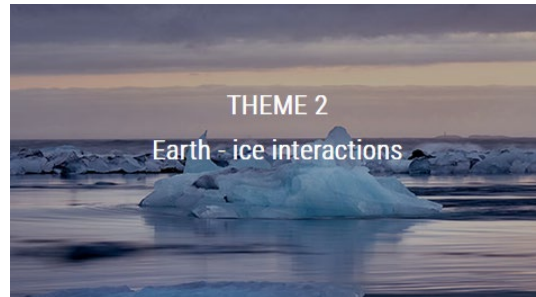
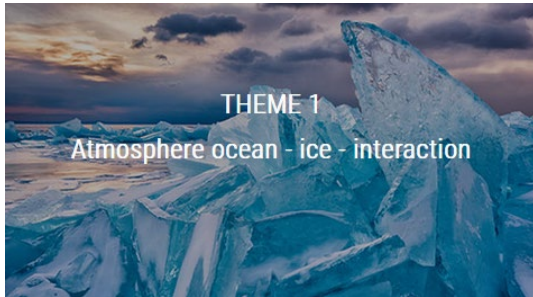


Scientific Research Programmes (SRPs)



INSTabilities and Thresholds in ANTarctica (INSTANT)

INSTANT aims to quantify the Antarctic ice sheet's contribution to past and future global sea-level change, from improved understanding of climate, ocean and solid Earth interactions and feedbacks with the ice, so that decision-makers can better anticipate and assess the risk in order to manage and adapt to sea-level rise and evaluate mitigation pathways. www.scar-instant.org



Research Themes:

- Climate-Ice sheet Processes in Antarctica (CLIP-Ant)
- High Resolution Seasonal to Decadal Records
- Southern Ocean- Antarctic Chronology and Environmental proxies (SOACEP)
- Southern Ocean Antarctic Interactions

Research Themes:

- Antarctic Geothermal Heat Flux
- Probing Solid Earth and its Implications
- Earth -Ice -Sea Level
- Antarctic Geological Boundary Conditions

Research Themes:

- Data-Modelling Integration Hub

Research Themes:

- Inter-Ice Sheet Model Design
- Antarctic Sea Level Fingerprint



Scientific Research Programmes (SRPs)



INSTabilities and
Thresholds in
ANTarctica
(INSTANT)

Recent Highlights

- Research conceived and supported by INSTANT was published in *Science* in late 2023 and provides the first empirical evidence that the tipping point of the West Antarctic Ice Sheet could be reached even under the Paris Agreement targets of limiting warming to 1.5 – 2°C

<https://www.science.org/doi/10.1126/science.ade0664>

Contact:

Tim Naish (timothy.naish@vuw.ac.nz)

Florence Colleoni (fcolleoni@inogs.it)



Scientific Research Programmes (SRPs)

Near-term Variability and Prediction of the Antarctic Climate System (AntClim^{now})

AntClim^{now} aims to answer fundamental science questions, relating to Antarctic climate variability. The programme aims to take a regional approach to observing and modelling the Antarctic environment, but taking an integrated approach that will consider the Antarctic as a whole.

The five main themes for AntClim^{now} are:

- Theme 1. Antarctic climate variability and its linkages to the global climate system
- Theme 2. Understanding present-day climate trends in Antarctica
- Theme 3. Predictability of the Antarctic climate system
- Theme 4. Global and regional cross-disciplinary impacts
- Theme 5. Communication of results to stakeholders

Latest News:

- Development of 'Antarctic Climate Indicators' to track and communicate the state of the Antarctic Climate System
- Fellowship scheme for AntClimNow on dataset development and stewardship

Contact:

Clare Eayrs clare.eayrs@kopri.re.kr ;
Rachel Cavanagh rcav@bas.ac.uk



Scientific Research Programmes (SRPs)

Integrated Science to Inform Antarctic and Southern Ocean Conservation (Ant-ICON)

Ant-ICON aims to answer fundamental science questions, relating to the conservation and management of Antarctica and the Southern Ocean. It focus on research to drive and inform international decision-making and policy change.

The four main themes for Ant-ICON are:

- Integrated forecasting of future change
- Environmental sustainability of human activities in Antarctica
- Antarctic conservation in a global context
- Socio-ecological approaches to the management and conservation of the Antarctic.

Highlights

- Jointly with SCAR's Standing Committee on the Antarctic Treaty System (SC-ATS), Ant-ICON supports a science-policy fellowship that enables early-to-mid career researchers to gain experience at the science-policy interface.
- Ant-ICON is a project partner on recently funded ANT-MICI Netherlands grant to examine the cumulative impacts of human activities (PT-REPAIR (Dutch Antarctic Tourism Research Programme))

Contact: Jilda Caccavo (ergo@jildacaccavo.com)



→ **If you are interested in joining Ant-ICON,** subscribe to the mailing list. (available at the SCAR website)

Ant-ICON is also on social media:

- Twitter handle: @AntICON_SCAR
- Instagram: @anticon_scar
- Facebook: AntICON.SCAR (the name of the page)
- YouTube: Ant-ICON Playlist



Scientific Research Programmes (SRPs)

Antarctic Geospace and Atmosphere Research (AGATA)

AGATA will contribute to answering these outstanding questions:

- 1. How are different atmospheric layers coupled in the Antarctic?
- 2. How does the Antarctic upper polar atmosphere respond to increased geomagnetic activity, including energy transfer from space?
- 3. How does the whole polar atmosphere impact short- and long-term climate variations?

Contact: Lucilla Alfonsi
lucilla.alfonsi@ingv.it

AGATA will contribute to answering the outstanding scientific questions related to the whole-atmosphere interactions, including coupling between atmospheric layers and between the neutral and ionized parts of the atmosphere, space weather and magnetospheric influences, and the whole atmosphere's role in climate variations.

AGATA will have implications for the understanding of processes in the Antarctic atmosphere, but it will also greatly improve our understanding of the atmospheric dynamics in the polar regions and globally, thus contributing to the development of large-scale whole atmosphere and climate models.



Changes in Circumpolar Antarctic Gradients in Ecosystems (C-CAGE) Programme Planning Group

- Climate change represents a major threat to the stability and health of Antarctic ecosystems.
- Understanding the fate of the organisms that call the land, water, ice and ocean of Antarctica home requires an understanding of how they will respond to these environmental changes.
- C-CAGE aims to use the natural environmental gradients in temperature, ice cover, and other physical drivers that exist in different parts of Antarctica and the sub-Antarctic (with latitude, longitude, altitude and depth) to better predict the likely outcomes for life as the region's habitats change.
- Contact Huw Griffiths hjg@bas.ac.uk



2024 SCAR Delegates Meeting: Key Outcomes I

- INSTANT, AntClimNOW and AntICON approved for 4 more years
- Approved AGATA as new Scientific Research Programme
- Approved Changes in Circumpolar Antarctic Gradients in Ecosystems (C-CAGE) and Antarctic Geological Evolution (AGE) as new Programme Planning Groups
- New Action groups:
 - SCARFISH Action Group
 - Diseases in Wildlife Action Group (current focus on HPAI)
 - Climate Action Group
 - Groundwater Action Group



2024 SCAR Delegates Meeting: Key Outcomes II

- Approved creation of Action Group on carbon reduction and commissioning of an audit of SCAR's direct emissions
- Election of new leadership
 - President – Gary Wilson (New Zealand)
 - Vice President – Carlota Escutia (Spain)
 - Vice President – Takuji Nakamura (Japan)join Marcelo Leppe (Chile) and Burcu Özsoy (Türkiye) as Directors



5th International Polar Year 2032-33

Concept note published
October 2023

- The IPY is an opportunity for targeted attention and globally-coordinated action to enable polar researchers, knowledge holders, rights holders and stakeholders to:
 - achieve major breakthroughs in the knowledge required to protect the global environment
 - develop effective national and local strategies to mitigate and adapt to environmental changes
 - accelerate progress towards achieving the UN Sustainable Development Goals.
- International Arctic Science Committee (IASC) and SCAR have kicked off preparatory work alongside many other partner organisations



5th International Polar Year 2032-33

Preparations for a fifth International Polar Year

- SCAR, IASC and many partners including EPB, WMO and ISC are leading early planning for IPY5 which provides a unique opportunity to
 - achieve major breakthroughs in the knowledge required to protect the global environment
 - develop effective national and local strategies to mitigate and adapt to environmental changes
 - accelerate progress towards achieving the UN Sustainable Development Goals.
- SCAR, EPB and partners recently organized a successful IPY 5 discussion at SCAR OSC in Pucón, that highlighted the importance of working closely with key initiatives such as Antarctica InSync (a UN Decade Action)



5th International Polar Year 2032-33

Next steps:

- Agree long term governance and leadership of the IPY, as well as funding to support a programme office
- Stakeholder engagement through **IPY planning group** (recent call for partners)
- Prepare a more detailed planning document setting out a way forward
- Set up Task Groups to work on specific issues including:
 - 1) Vision and Priorities for IPY;
 - 2) IPY Indigenous Leadership and Involvement Coordination;
 - 3) Country and Funders Involvement;
 - 4) Capacity Building and Early Career Coordination

The **IPY Planning Group** is inviting regional or international organisations to join on a rolling basis



UN Decade of Ocean Science



United Nations Decade
of Ocean Science
2021-2030

Vision: The science we need for the ocean we want.

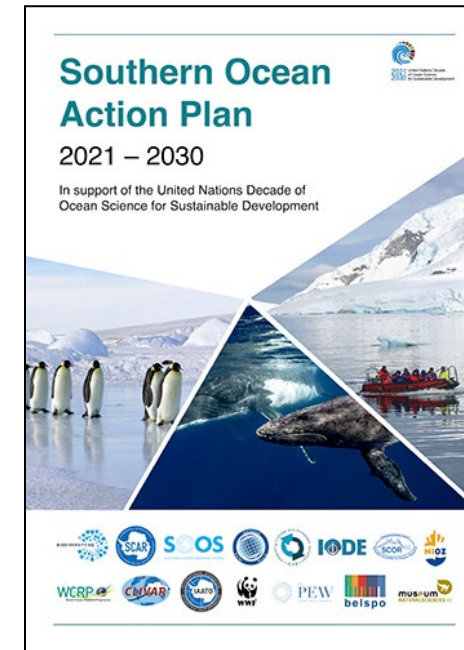
Mission: Transformative ocean science solutions for sustainable development, connecting people and our ocean

SCAR coordinates the Southern Ocean Task Force www.sodecade.org and created the Southern Ocean Action Plan.



As of June 2023, SCAR leads the Decade Collaborative Centre for the Southern Ocean which aims to:

- Coordinate existing Decade Actions for the region
- Catalyse new initiatives
- Lead targeted communications and outreach
- Mobilise resources for the region



Keep in touch!



- Email info@scar.org with any questions or to sign up to the SCAR mailing list
- Follow SCAR news and learn about SCAR via our website www.scar.org
- Follow SCAR on X @scar_tweets

