

Scientific Committee on Antarctic Research

Connecting and Building Antarctic Research

www.scar.org



What is SCAR?

SCAR is an inter-disciplinary committee of the [International Science Council \(ISC\)](#) established in 1958 following International Geophysical Year

SCAR initiates, develops and coordinates high quality international scientific research in Antarctica and the Southern Ocean.

SCAR also provides objective, independent scientific advice to the [Antarctic Treaty Consultative Meetings](#) and engages with other international organizations including UN bodies

SCAR currently has 46 Member countries and 9 international unions

SCAR has over 40 subsidiary groups coordinating international research across the natural sciences, social sciences and humanities. **Scientific Research Programmes** are SCAR's flagship activities answering critical scientific questions.



SCAR will focus on seven main objectives over the next five years:



Promote SCAR's leadership in science by strengthening and expanding high-quality, collaborative, visionary and societally relevant research through international partnerships while addressing urgent global priorities including climate change and biodiversity.



Provide independent scientific advice to the Antarctic Treaty System (ATS) and other international bodies in response to science and knowledge needs identified by policymakers.



Encourage and facilitate unrestricted and free access to Antarctic research data and samples in support of all the above objectives.



Enhance and expand research capacity in SCAR's member countries, recruit new members, and encourage the support of research that addresses the above imperatives.



Increase public awareness and understanding of Antarctic issues and the essential roles Antarctica and the Southern Ocean play in the Earth's climate systems.



Ensure equality, diversity, and inclusion (EDI) principles are applied to all of SCAR's activities and actions, including SCAR's management, structure, and the realization of its missions and vision.



Reduce the carbon footprint of all SCAR activities.

Scientific Research Programmes (SRPs)

SRPs address major, priority, scientific issues of global or fundamental importance, at the cutting edge of the science, requiring substantial fieldwork and/or observations in the Antarctic.

INStabilities and
Thresholds in
ANTarctica
(INSTANT)

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

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

NEW - Antarctic
Geospace and
Atmosphere Research
(AGATA)

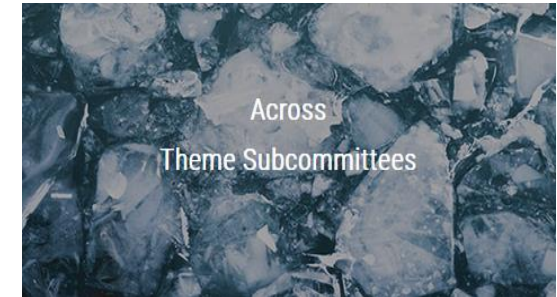
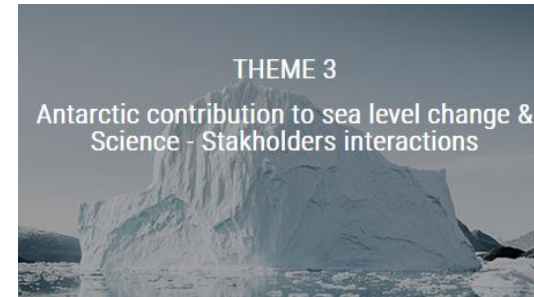
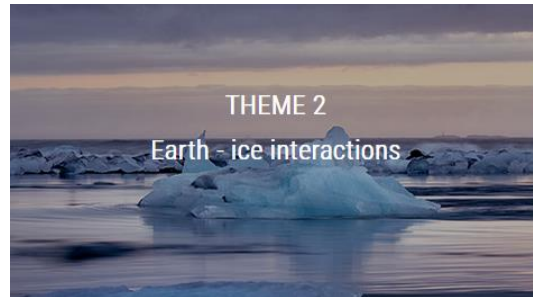


Scientific Research Programmes (SRPs)



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)

- 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
- INSTANT has made major contributions to SCAR input to the ATCM/CEP in 2023 including on Antarctic Climate Change and the Environment, and on sea-level change around Antarctica
- Major INSTANT conference in 2023
- Fellowships for Early Career Researchers

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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

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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.

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→ **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?

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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.



Programme Planning Groups

Programme Planning Groups are set up to develop new Scientific Research Programmes:

- **Changes in Circumpolar Antarctic Gradients in Ecosystems (C-CAGE):** The aim of C-CAGE is to use the natural environmental gradients in temperature, icecover, and other physical drivers that exist in different parts of Antarctica and the sub-Antarctic to better predict the likely outcomes for life as the region's habitats change
- **Antarctic Geological Evolution (AGE):** aim is to improve understanding of geological features and how these have contributed towards shaping Antarctica in both space and time



Antarctic Environments Portal environments.aq

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Linking Antarctic science and Antarctic policy

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Human Activities



Terrestrial



Cryosphere



Inland Aquatic
Environments



Atmosphere



All Publications

LINKING ANTARCTIC SCIENCE AND ANTARCTIC POLICY

Antarctic Environments Portal



Major international collaborations

- **UN Decade of Ocean Science:** SCAR coordinates the Decade Collaborative Centre for the Southern Ocean Region (DCC-SOR). The DCC-SOR will connect Southern Ocean science with global ocean science.
- **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 Pucon, that highlighted the importance of working closely with key initiatives such as Antarctica InSync (a UN Decade Action)

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



Equality, Diversity and Inclusion

- EDI is one of the pillars of SCAR's strategic plan 2023-28 and underpins all its activities
- SCAR Equality, Diversity, and Inclusion Action Group is tasked with broadly looking at how EDI issues can be effectively dealt with within SCAR, and what practical actions are relevant for the organization.
- Recent activities include development of a Code of Conduct (CoC) document that will serve as a guide for appropriate behavior within SCAR, as well as surveys, community events, and publications.



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 twitter @scar_tweets

