

29th International Polar Conference
Dynamic Poles and High Mountain Environments
16. – 20. September 2024, Mesnerhaus Rauris, Austria

Sunday, 15. September 2024

17:00 – 19:00 APECS (Gemeindeamt)

Monday, 16. September 2024

08:30 – 09:00 Registration, Mesnerhaus

09:00 – 10:30 Opening and Honors

10:30 – 11:00 **Coffee break, Hotel Platzwirt**

Mass balance and evolution of glacier systems in a changing climate

11:00 – 11:15 *Daniel Binder (Institute for Geosciences, Potsdam University) et al.*
Timing and trigger(s) of a periodic Jökulhlaup at Zackenberg,
NE-Greenland

11:15 – 11:30 *Alexandra M. Zuhr (University of Tübingen) et al.*
Investigating recent surface mass balance changes in Dronning Maud
Land using airborne radar data

11:30 – 11:45 *Yuting Dong (Alfred-Wegener-Institute Helmholtz Center for Polar and
Marine Research) et al.*
Geodetic mass balance estimation and future evolution projection
of glaciers flowing into Wordie Bay on the West Antarctic Peninsula

11:45 – 12:00 *Jan Erik Arndt (Universidad de Concepción/ Universität für Bodenkultur)*
The decline of a caldera-filling glacier at Volcán Sollipulli, Chile

12:00 – 12:15 *Frank Wilhelms (Alfred-Wegener-Institute Helmholtz Center for Polar and
Marine Research) et al.*
Towards the Beyond Epica – Oldest Ice – Little Dome C (beldc) 1.5 ma
ice core record

12:15 – 12:30 *Andrea Securo (University of Venice) et al.*
Area, Volume and ELA changes of West Greenland local glaciers and ice
caps over the last 35 years

Integrating social and natural sciences: collaborative and inclusive approaches beyond traditional boundaries

- 12:30 – 12:45 *Andreas Trügler (University of Graz) et al.*
Sermilik research station in East Greenland
- 12:45 – 13:00 *Peter Schweitzer (University of Vienna) et al.*
Arctic transport infrastructures and local communities: What works and what doesn't
- 13:00 – 13:15 *Ria-Maria Adams (University of Vienna/ University of Lapland)*
Temporalities of Arctic Tourism in Finnish Lapland: Infrastructural Perspectives
- 13:15 – 14:30 **Lunch, Hotel Platzwirt**

History and future of international cooperation in polar regions

- 14:30 – 14:45 *Alexander Jost (Salzburg University)*
Conceiving the Arctic in middle period China
- 14:45 – 15:00 *Erki Tammiksaar (Estonian University of Life Sciences and University Tartu, Abteilung für Geografie, Tartu, Estland), Cornelia Lüdecke (Universität Hamburg)*
From a frozen ocean to a continent - about the discovery of Antarctica
- 15:00 – 15:15 *Ursula Rack (Gateway Antarctica, University of Canterbury, New Zealand)*
History from the freezer: historical maps and satellite imagery compared
- 15:15 – 15:30 *Barbara Schennerlein (Independent researcher)*
German polar research in the 1920s as reflected in international relations
- 15:30 – 15:45 *Evgen Dykyi, Andrii Fedchuk (National Antarctic Scientific Center, Kyiv, Ukraine)*
The contribution of Ukraine's key Antarctic infrastructure facilities to international scientific cooperation
- 15:45 – 16:00 *Gerlis Fugmann (International Arctic Science Committee ASC)*
Defining priorities for Arctic research and international cooperation for the next decade: from ICARP IV to IPY 5
- 16:00 – 16:30 **Coffee break, Hotel Platzwirt**
- 16:30 – 18:00 **Poster session, Hotel Platzwirt**
- 18:00 **Opening of the Art Exhibition**
Welcome reception, Hotel Platzwirt

Tuesday, 17. September 2024

08:30 – 09:00 Registration, Mesnerhaus

DFG SPP 1158 Antarctic research: report colloquium

09:00 – 09:30 *Stefanie Arndt (Alfred-Wegener-Institute Helmholtz Center for Polar and Marine Research/ Universität Hamburg) et al.*
Implications of inherent snow property variability on the Antarctic Sea ice mass budget

09:30 - 09:45 *Carolin Mehlmann, Saskia Kahl (Otto-von-Guericke Universität Magdeburg) et al.*
A hybrid ice model based on particle and continuum methods

09:45 – 10:00 *Nina Maaß, Stefanie Arndt (Alfred-Wegener-Institute Helmholtz Center for Polar and Marine Research)*
Snow cover evolution on sea ice in the Weddell Sea from autonomous measurements and 1-D model simulations

10:00 – 10:15 *Silvia Henning (TROPOS) et al.*
Antarctic cloud condensation NUCLEI (CCN) and ice nucleating particles (INP) Neumayer Station III

10:15 – 10:30 *Ying Ye (Alfred-Wegener-Institute Helmholtz Center for Polar and Marine Research) et al.*
How can we learn from an iron fertilisation experiment about the marine biological carbon pump?

10:30 – 11:00 Coffee break, Hotel Platzwirt

11:00 – 11:30 *Johann Klages (Alfred-Wegener-Institute Helmholtz Center for Polar and Marine Research)*
Evolution of the Antarctic ice sheet since its inception 34 million years ago and using this knowledge for advancing numerical model simulations

11:30 – 11:45 *Daniela Roehnert (University of Bremen) et al.*
Above or below? Delving into the foundations of the Transantarctic Mountains

11:45 – 12:00 *Nina-Marie Lešić (MARUM - Center for Marine Environmental Sciences, University of Bremen) et al.*
Late Pleistocene and Holocene sediments around South Georgia: Archives for climate-induced signals in sub-Antarctica since the last glaciation

12:00 – 12:15 *Clara Henry (Stockholm University) et al.*
The dynamics of Antarctic pinning points

12:15 – 12:30 *Denise Kulhanek (Kiel University) et al.*
Sediment records from the Siple Coast below the Ross Ice Shelf: Update from the first season of the SWAIS-2C project

Permafrost in a warming world: impacts and consequences

- 12:30 – 12:45 *Jan Beutel (University of Innsbruck) et al.*
The Matterhorn Cryosphere Observatory: Long-term monitoring of steep-bedrock, high-altitude mountain permafrost
- 12:45 – 13:00 *Susanna Gartler (Universität Wien) et al.*
Local risks from Arctic permafrost thaw – A transdisciplinary, comparative analysis
- 13:00 – 13:15 *Helena Bergstedt (b.geos) et al.*
High-salinity liquid water as a source of uncertainty in bedfast lake ice mapping
- 13:15 – 14:30 **Lunch, Hotel Platzwirt**

The Anthropocene and climate change in polar and mountain regions

- 14:30 – 14:45 *Sandip Tanu Mandal (Mobius Foundation, New Delhi, India / Jawaharlal Nehru University) et al.*
Impacts of climate change on the glaciers of high-altitude cold desert of Lahaul in the western Himalayas, India
- 14:45 – 15:00 *Mia Hurst (University of St Andrews) et al.*
The ecological impacts of productive polynyas responding to future climate change
- 15:00 – 15:15 *Gunther Seckmeyer (Leibniz University of Hannover, Institute of meteorology) et al.*
Measuring the sky spectral radiance within seconds in polar and mountainous regions
- 15:15 - 15:30 *Thorsten Bauersachs (RWTH Aachen University) et al.*
Heterocyte glycolipids: Novel organic proxies to reconstruct climate change in polar regions

Integrating social and natural sciences: collaborative and inclusive approaches beyond traditional boundaries

- 15:30 – 15:45 *Albert van Wijngaarden (University of Cambridge)*
Lessons from the inter-polar conference (September 2023) about commonalities between social and legal science issues in the arctic and third pole regions
- 15:45 – 16:00 *Vera Solovyeva (Arctic Studies Center, George Mason University) et al.*
Challenges in developing decolonial research methods. Modeling the sustainable indigenous community in the Sakha Republic (Russia)
- 16:00 – 16:30 **Coffee break, Hotel Platzwirt**
- 16:30 – 16:45 *Thierry Rodon (Université Laval) et al.*
Arctic people double exposure: energy transition and climate change

- 16:45 – 17:00 *Olga Povoroznyuk (University of Vienna) et al.*
Arctic coastal communities: infrastructure for a sustainable future?
- 17:00 – 17:15 *Jerbelle Elomina (BOKU University) et al.*
Economic development and socio-cultural impacts in the European Arctic: perspectives and comparative insights with Alpine regions
- Snow as an interdisciplinary field of research (Waalem Polar Cluster)**
- 17:15 – 17:30 *Svetlana Stuefer (University of Alaska Fairbanks, College of Engineering and Mines) et al.*
Overview of NASA SNOWEX Alaska field campaigns in 2022-2023
- 17:30 – 17:45 *Helene Hoffmann (University of Tübingen) et al.*
The Cryosity Project - Artistical preservation of snow crystals and glacier ice samples
- 17:45 – 18:00 *Birgit Sattler (University of Innsbruck/ Austrian Polar Research Institute) et al.*
The Waalem Polar Cluster (the future lack of) snow and how to deal with it – or not
- 18:00 – 19:00 **Side meeting A, Gemeindeamt Rauris**
- 19:00 Klemens Weisleitner (University of Innsbruck): Einblicke in die abenteuerliche Welt der wissenschaftlichen Polarexpeditionen und was wir daraus lernen können, Schulzentrum Rauris

Wednesday, 18. September 2024

- 08:30 – 09:00 Registration, Mesnerhaus
- Atmospheric, sea-ice and ocean system dynamics**
- 09:00 – 09:15 *Jens Hölemann (Alfred-Wegener-Institute Helmholtz Center for Polar and Marine Research) et al.*
Water mass transformation in the northern Barents and Kara Seas: Is the system changing?
- 09:15 – 09:30 *Felix Müller (Deutsches Geodätisches Forschungsinstitut der Technischen Universität München) et al.*
Improving the representation of the Arctic Sea level, ocean currents and tides using multi-mission satellite altimetry
- 09:30 – 09:45 *Maria Osińska (University of Gdańsk)*
Impact of westerly winds on Antarctic Bay circulation, glacial water spreading and formation of feeding hotspots
- 09:45 – 10:00 *Marcel Nicolaus (Alfred-Wegener-Institute Helmholtz Center for Polar and Marine Research) et al.*
Characteristics and composition of sea ice in the Central Arctic Ocean

10:00 – 10:15 *Océane Hames (WSL Institute for Snow and Avalanche Research SLF) et al.*
Numerically predicting drifting snow deposition around icebergs, polar buildings and solar power plants

10:15 – 10:30 *Karl Kortum (German Aerospace Center DLR e.V.) et al.*
Towards Pan-Arctic Sea ice freeboard maps at 100 m resolution

10:30 – 11:00 Coffee break, Hotel Platzwirt

DFG SPP 1158 Antarctic research: Report colloquium

11:00 – 11:30 *Rolf Gradinger (UiT The Arctic University of Norway)*
Arctic and Antarctic marine ecosystem – responses to environmental change

11:30 – 11:45 *Helena Herr (Universität Hamburg)*
SPP1158 project: Recovery status and ecology of fin whales at the Western Antarctic Peninsula

11:45 – 12:00 *Heike Link (University of Rostock) et al.*
Role of meio- and macrofauna in benthic ecosystem functioning: testing effects of different ice cover regimes

12:00 – 12:15 *Doris Ilicic (Leibniz-Institute für Gewässerökologie und Binnenfischerei IGB) et al.*
Exploring the unseen: chytrid fungi in Arctic and Antarctic microphytobenthic communities

12:15 – 12:30 *Judith Piontek (Leibniz Institute for Baltic Sea Research Warnemünde) et al.*
Bacterial transformations of dimethylsulfoniopropionate in the Weddell Sea

Atmospheric, sea-ice and ocean system dynamics

12:30 – 12:45 *Renato R. Colucci (Institute of Polar Sciences - National Research Council of Italy) et al.*
The impact of an atmospheric river triggers debris and slush flows on Disko Island, West Greenland

12:45 – 13:00 *Florina Schalamon (University of Graz) et al.*
Exploring the influence of large-scale atmospheric patterns on Greenland air temperature: a century-long analysis focused on warming periods

13:00 – 13:15 *Günther Heinemann (University of Trier, Germany)*
A case study of a wintertime low-level jet associated with a downslope wind event at the Tiksi observatory (Laptev Sea, Siberia) using the regional climate model CCLM

13:15 – 14:30 Lunch, Hotel Platzwirt

- 14:30 – 14:45 *Doyeon Kim, Patrick C. Taylor (NASA Langley Research Center, Hampton, Virginia)*
What factors explain the current Arctic Albedo and its future change?
- 14:45 – 15:00 *Tereza Uhlíková (Finnish Meteorological Institute, Helsinki, Finland/ Institute for Atmospheric and Earth System Research, University of Helsinki, Finland) et al.*
Effects of Arctic sea-ice concentration on turbulent and radiative surface fluxes in four atmospheric reanalyses

Polar Earth Sciences

- 15:00 - 15:15 *Frank Lamy (Alfred-Wegener-Institute Helmholtz Center for Polar and Marine Research), Gisela Winckler (Lamont-Doherty Earth Observatory, Columbia University)*
Five million years of Antarctic circumpolar current strength variability
- 15:15 – 15:30 *Bernhard Diekmann (Alfred-Wegener-Institute Helmholtz Center for Polar and Marine Research) et al.*
Natural Heritage of Lake Wiyashakimi, Subarctic Canada
- 15:30 – 15:45 *Mirko Scheinert (Technische Universität Dresden) et al.*
The surveying of Gaussberg, East Antarctica
- 15:45 – 16:00 *Karsten Gohl (Alfred-Wegener-Institute Helmholtz Center for Polar and Marine Research) et al.*
Past dynamics of the West Antarctic Ice Sheet from marine seismic data and drill records: What have we learned?
- 16:00 – 16:30 **Coffee break, Hotel Platzwirt**

Cool Classes – Polar Educators

- 16:30 – 16:45 *Rainer Lehmann, Franziska Warringsholz (Europa-Universität Flensburg)*
Cool Classes in Antarktika (CIA)
- 16:45 – 17:00 *Kamilla Oliver (Independent scholar)*
Greenlandic immersion
- 17:00 – 18:00 **DGP General meeting**
- 18:00 – 19:00 **Side meeting B, Gemeindeamt Rauris**
- 19:00 **Conference dinner, Hotel Platzwirt**

Thursday, 19. September 2024

08:30 – 09:00 Registration, Mesnerhaus

Polar Earth Sciences

- 09:00 – 09:15 *Kenichi Matsuoka (Norwegian Polar Institute) et al.*
Quantarctica 4 - Looking beyond our own disciplines with an updated version of the interdisciplinary mapping tool for Antarctic research
- 09:15 – 09:30 *Frank Lisker (Universität Bremen) et al.*
Meander intrusion in the Mountaineer Range: Local igneous pulse with global climate impact
- 09:30 – 09:45 *Cornelia Spiegel (Institut für Geowissenschaften, Universität Bremen) et al.*
Past landscape evolution and tectonics of West Antarctica
- 09:45 – 10:00 *Katrin Meier (University of Bremen) et al.*
The Eureka Orogeny and the De Geer fracture zone from the North Greenland perspective
- 10:00 – 10:15 *Andreas Läufer (Bundesanstalt für Geowissenschaften und Rohstoffe) et al.*
Trust the thrust? Ross-orogenic versus post-Ross tectonics in northern Victoria Land, Transantarctic Mountains
- 10:15 – 10:30 *Antonia Ruppel (Bundesanstalt für Geowissenschaften und Rohstoffe) et al.*
A glance beneath Antarctica's glaciers - what can we learn from potential field data about the Transantarctic Mountains?

10:30 – 11:00 Coffee break, Hotel Platzwirt

Biology and biogeography in polar environments

- 11:00 – 11:15 *Luisa Federwisch (Alfred-Wegener-Institute Helmholtz Center for Polar and Marine Research) et al.*
Microbial abundance, richness and community composition in Antarctic deep-water sponges are related to host histology
- 11:15 – 11:30 *Miao Fan (Alfred-Wegener-Institute Helmholtz Center for Polar and Marine Research) et al.*
3D Photogrammetry and ROV acoustic data for ultra-high resolution benthic habitat mapping in Powell Basin
- 11:30 – 11:45 *Friederike Weith (University of Rostock) et al.*
Polychaete community distribution: The challenge of identifying functional and taxonomic patterns using bioregionalization approaches
- 11:45 – 12:00 *Ulf Karsten (University of Rostock, Institute of Biological Sciences)*
Dark survival mechanisms in polar benthic diatoms

- 12:00 – 12:15 *Cora Hörstmann (Alfred-Wegener-Institute Helmholtz Center for Polar and Marine Research) et al.*
Picoplankton connectivity pattern indicates increasing dominance of Prokaryotes in warmer Arctic Fjords
- 12:15 – 12:30 *Fritz Hertel (Umweltbundesamt) et al.*
First ASPA initiated by Germany protects the largest Adélie penguin population of the Antarctic Peninsula
- 12:30 – 12:45 *Marie-Charlott Rümmler (ThINK – Thuringian Institute of Sustainability and Climate Protection GmbH, Jena, Germany) et al.*
Survey of a snow petrel nesting site to inform designation of an Antarctic specially protected area

Physical processes of glaciers and ice sheets in their environment

- 12:45 – 13:00 *Sarah Elise Sapper (University of Copenhagen) et al.*
Methane emissions from the meltwater of the Greenland ice sheet and mountain glaciers – occurrences, temporal dynamics and how to measure them
- 13:00 – 13:15 *Kornelia Wójcik-Długoborska (Institute of Biochemistry and Biophysics Polish Academy of Sciences) et al.*
A 10-years satellite study of glacial meltwater plumes in the South Shetland Islands
- 13:15 – 14:30 **Lunch, Hotel Platzwirt**
- 14:30 – 14:45 *Lea Hartl (University of Alaska Fairbanks) et al.*
Air- and spaceborne remote sensing reveals glacier runoff driven sediment plumes in Kachemak Bay, Alaska
- 14:45 – 15:00 *Helmut Rott (ENVEO IT) et al.*
Response of Antarctic Peninsula outlet glaciers to changes in atmospheric and oceanic forcing
- 15:00 – 15:15 *Sindhu Ramanath Tarekere (German Aerospace Center DLR) et al.*
Investigation of tidal grounding line migration using SAR line-of-sight offset time series
- 15:15 – 15:30 *Johanna Kerch (Geoscience Centre, University of Göttingen) et al.*
Variability of crystal-preferred orientation in high-resolution data from EGRIP ice core
- 15:30 – 15:45 *Sonja Berg (University of Cologne) et al.*
East Antarctic ice sheet instabilities – field work in un-glaciated coastal areas during the RV Polarstern voyages EASI 1 - 3
- 15:45 – 16:00 **Closing Ceremony**

16:00 – 16:30	Coffee break, Hotel Platzwirt
16:30 – 18:00	Poster session, Hotel Platzwirt
18:00 – 19:00	Side meeting C, Gemeindeamt Rauris

Friday, 20. September 2024

Excursions

- From Sonnblick to the Arctic: A science hike covering topics such as gold mining, climate and glacier history, and research at the Sonnblick observatory.
- Vanishing Ice: An excursion to Austria's largest glacier, the Pasterze, focusing on glacier and climate history and the results of recent interdisciplinary research.
- Kings of the Skies: A guided tour along the Kruml valley, offering explanations on the vulture project funded by the WWF.