



INTERNATIONAL GLACIOLOGICAL SOCIETY

International Symposium on
Sea Ice across Temporal and Spatial Scales



Bremerhaven, Germany
4–9 June 2023

Co-sponsored by:

❄ Alfred Wegener Institute,
Helmholtz Institute for Polar and Marine Research (AWI)
❄ University of Bremen

SECOND CIRCULAR

January 2023

https://www.igsoc.org/event/bremerhaven_2021

<https://igs2023.awi.de>



The International Glaciological Society, the Alfred Wegener Institute, Helmholtz Institute for Polar and Marine Research (AWI) and the University of Bremen will hold the next **International Symposium on Sea Ice** in Bremerhaven, Germany, on 4–9 June 2023.

THEME

Sea Ice across Temporal and Spatial Scales. Sea ice is an important component of the Earth's climate system and strongly affects marine ecosystems and human activities in both hemispheres. Sea ice is changing rapidly on various temporal and spatial scales, and systematic observations and modeling across these scales is required to better understand underlying processes and interactions, and to predict the ice's future fate. This symposium will invite contributions by the international sea ice research community to exchange recent findings and advances in observations, process understanding, and modeling of sea ice worldwide. While the focus of the symposium will be on the physical ocean–ice–atmosphere system, cross-cutting interdisciplinary contributions are invited from fields such as sea ice ecology and biogeochemistry, ice engineering, human use of the sea ice environment, and others.

SESSIONS AND TOPICS

We seek papers and presentations on any timely topic related to sea ice across temporal and spatial scales, ranging from case studies to year-round investigations as during MOSAiC. All contributions may include and/or combine observational, numerical, theoretical, laboratory or conceptual approaches. Proposed session topics are:

- Sea ice in the regional and global climate
- Antarctic sea ice – present and future
- Sea ice processes and ocean–ice–atmosphere interaction





- Snow on sea ice
- Sea ice thickness
- New technologies and methodological advances for sea ice observations
- Physical properties of sea ice
- Sea ice biogeochemistry and ice-associated ecosystems
- Sea ice remote sensing
- Climate data records of sea ice: what's next?
- Multidisciplinary Arctic system studies – Tribute to David Barber
- Human use and sea ice services
- Arctic and Antarctic land-fast ice
- Sea ice deformation, leads, and ridges on temporal and spatial scales

Detailed session descriptions may be found on the local website,
<https://igs2023.awi.de/>

PROGRAM AND REMOTE PARTICIPATION

The symposium will include oral and poster sessions and will be a friendly and intellectually stimulating environment to facilitate face-to-face interactions and networking. On some days there will be invited keynote sessions or panel discussions in the morning. Additional activities will include an opening reception, a banquet dinner, and a mid-symposium afternoon excursion. A public talk (in German) is included in the symposium program to reach out to people interested in sea ice topics in Bremerhaven and around.

Remote participation will be possible, with some limitations. All oral sessions will be provided as video streams to registered participants, including a chat function for questions to the speakers. Remote oral presentations can be





realized for selected cases if none of the co-authors is available on site. Poster presentations will only be available on site. The design and timing of all sessions and events during the symposium is illustrated in a diagram at <https://igs2023.awi.de/programme/week-at-a-glance/>.

SIDE MEETINGS

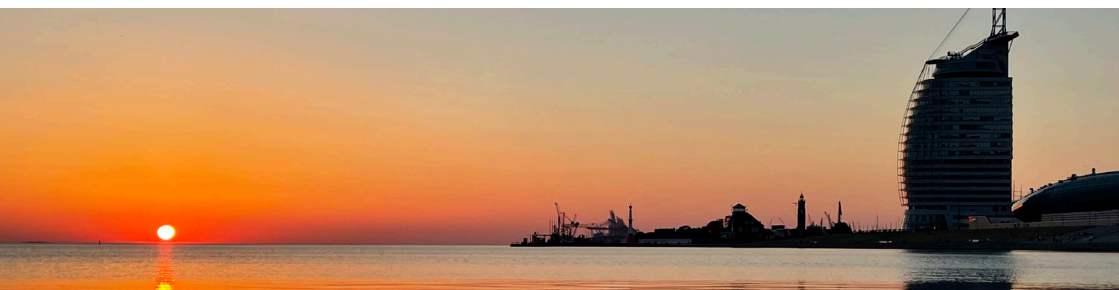
The organizing committee welcomes requests from groups and organizations for meeting spaces to host side meetings. Side meetings can take place in seminar rooms at the Alfred Wegener Institute in Bremerhaven on the weekends before (3 and 4 June) and the weekend after (10 and 11 June) the symposium. Please send your requests to igs2023@awi.de. Please include information on the main contact, expected number of participants, timing, and a short (few sentences) description of the topic/content. Scheduled side meetings will be listed on the conference web site once available.

VENUE

The symposium will take place in the waterfront hotel Atlantic Hotel Sail City in Bremerhaven, Germany. The hotel is centrally located at the Weser River waterfront and near the city center, and next to many of Bremerhaven's renown tourist attractions like the Climate House, the 'Deutsches Auswandererhaus' (Museum of Emigration), the German Maritime Museum, the U-Boot Museum, Bremerhaven Zoo by the Sea, and the New Harbor Havenwelten. There are numerous eating venues, markets, and shops nearby. The Hanseatic City of Bremen with its medieval city center is less than an hour away.

For all questions about the venue and travel to Bremerhaven, please contact igs2023@awi.de.

A map with all sites of the IGS2023 symposium on sea ice is available at <https://bit.ly/402KOoX>.





REGISTRATION FEES

All fees are in Euros, €

Early registration until 28 March 2023

– Participant on site (IGS member):	€690
– Participant on site (not IGS member):	€775
– Remote participant (IGS member):	€500
– Remote participant (not IGS member):	€585
– Student or retired (IGS member):	€415
– Student or retired (not IGS member):	€500
– Accompanying person (≥12):	€175
– Accompanying person (<12):	€100
– Accompanying person (≤6):	Free

Surcharges

- | | |
|-------------------------------------|------------------|
| – Registration after 28 March 2023: | add €40 |
| – Registration after 7 May 2023: | add further €100 |

All prices will be charged in UK£ equivalent at the exchange rate valid near the date of transaction.

The fees include:

- **Participants:** the Icebreaker, the midweek excursion, the Banquet, light refreshments during all breaks at the venue and all lunches.
- **Accompanying persons:** The accompanying person's registration fee includes the Icebreaker, the midweek excursion and the banquet.
It does not include attendance at the presentation sessions nor the refreshments and lunches during the week.

Non-member registration includes a year's membership of the IGS.





Please register for the symposium at https://www.igsoc.org/event/bremerhaven_2021. If you need assistance, please contact the IGS via igsoc@igsoc.org. If payment by credit card is not possible, contact igsoc@igsoc.org to arrange bank transfer.

The maximum number of on-site attendees is capped at 300 to ensure a more intimate and interactive symposium. Please check whether you will require a visa or letters of invitation. In both cases, please contact the IGS office at igsoc@igsoc.org. Proof of registration is required for an invitation letter. The sooner you do this, the more likely it is that your visa will be processed in time.

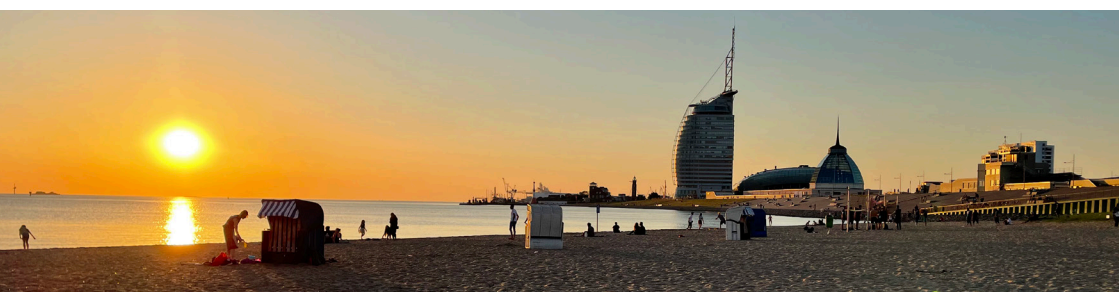
To request a refund, send an e-mail to igsoc@igsoc.org.

EARLY CAREER SUPPORT

We are currently raising funds to support early career scientist travels. The call and further details will be published on the local web site, <https://igs2023.awi.de/> and will be distributed through the conference's mailing list. Notifications of funding will be sent to all applicants prior to the deadline for early registration (see below).

ABSTRACT AND PAPER PUBLICATION

Participants who wish to present a paper (oral or poster) at the Symposium will be required to submit an abstract through the IGS website by 17 February 2023. Accepted abstracts will be posted on the Symposium's website. The Council of the IGS will publish a thematic issue of the *Annals of Glaciology* on topics consistent with the Symposium themes. Participants and nonparticipants alike are encouraged to submit manuscripts for this *Annals* volume.





ACCOMMODATION

Bremerhaven is a tourist destination and hotels are usually fairly full, especially during June. Please make sure to book your accommodation early. Several hotels are providing group rates for the IGS symposium between 4 and 10 June 2023. All hotels listed are located within walking distance of the conference venue. When making your reservation use the promo code: IGS2023. Detail on prices and conditions are summarized on the IGS web site.

- Atlantic Hotel Sail City: <https://www.atlantic-hotels.de/hotel-sail-city-bremerhaven/>
- Hotel Amaris <https://www.hotel-amaris.de/>
- Hotel Adena <https://www.hotel-adena.de/>
- Nordseehotel Bremerhaven <https://www.nordseehotels.com/city/de/willkommen>
- The Liberty Hotel <https://www.liberty-bremerhaven.com/>
- Hotel Haverkamp <https://hotel-haverkamp.de/>
- Schulschiff Deutschland <https://schulschiff-deutschland.de/>

An interactive map with all hotels that have a contingent for participants is available at <https://bit.ly/3YbguXN>.

SOCIAL PROGRAM

The scientific symposium will incorporate a social program to increase interaction and networking of participants as well as to allow them to become more familiar with Bremerhaven, Bremen and its surroundings on the German North Sea coast.





ICEBREAKER

The symposium will start with an icebreaker reception on the sailing ship *Segelschulschiff Deutschland* in Bremerhaven harbor next to the main venue ('Neuer Hafen') on Sunday 4 June from 18:00 to 21:00. Please note that the reception will take place on the deck of the vessel (in the open air) and dress according to the weather conditions.

BANQUET

The symposium banquet will be held as a barbeque at the beach of the River Weser (restaurant 'Sandbank') on Thursday 8 June starting at 19:00. The banquet will include the awards ceremony.

MID-WEEK EXCURSIONS

On Wednesday 7 June, the scientific program will be paused at lunchtime. The afternoon will be used for guided trips in and around the cities of Bremerhaven and Bremen. You will be able to select your three top choices during the general registration process. All excursions will commence at around 13:00 from the Sail City Hotel in Bremerhaven by bus or on foot. All excursions will have food options for dinner, but these are not included in the conference fee and must be paid individually in the restaurant. We will update the excursion descriptions on the IGS symposium web site over time. Here are your options:

BHV01 – Fishing harbour 'Fischereihafen': The first Bremerhaven excursion starts with a short bus-trip to the famous fishing-harbour area of the city. The 100-year-old area around the so-called 'Show Window Fishery Harbour' is unique in northern Germany and hosts a wide range of gastronomy, accommodation and small local shops. As part of the excursion, you will board a small tour-boat ('Barkasse') that will get you in the right mood for fish, drinks and more in the evening hours, before heading back to the city centre.





BHV02 – ‘Klimahaus’ museum & tour-boat: The second Bremerhaven excursion is in direct proximity to the conference hotel – a visit to the Klimahaus (‘Climate house’) museum that will take you around the different climatic zones of the earth within just a few hours. You will even have the possibility of a short visit to our German overwintering base in Antarctica, Neumayer Station III – so cool, literally. Afterwards, you will board a small tour-boat in the new harbour area to explore this newer part of the city with a whiff of sea-air in your nose.

BHV03 – ‘Auswandererhaus’ Museum& tour-boat: The third Bremerhaven is also in direct proximity to the conference hotel – a visit to the distinguished German Emigration Centre (‘Deutsches Auswandererhaus’), recognizing Bremerhaven’s important role as a main European emigration hub to the New World. Follow in their renewed and extended exhibition of unknown life stories from Europe and the world. You can even trace and explore the emigrant routes of your own family! Discover the everyday life of emigrants: in the country of arrival and the history of the Federal Republic through the eyes of immigrants. Afterwards, you will board a small tour-boat in the new harbor area to explore this newer part of the city with a whiff of sea-air in your nose.

BHV04 – Canoe on the Geeste: This excursion is for the sporty among you. Pack your dry clothes and get into the canoe! The entrance is a short bus ride away – at the Schiffdorf lock. From there you can explore the reeds, small channels and green fields of the area on a 2–3-hour tour. Pure nature!

BRE01 – Bremen hangar of Polar 5 and 6 research aircrafts and city of Bremen tour: We will visit the hangar at the Bremen airport where the AWI Basler BT-67 Polar 5 & 6 aircrafts are parked and maintained when not on a flight campaign. The tour will guide you through the hangar and aircraft





and give details about their main research missions. The visit to the hangar is followed by a guided tour through the old downtown of Bremen. You will see the famous town musicians as well as the impressive town hall, parts of the UNESCO world heritage site. The tour also takes you along the Weser River and into the oldest quarter of Bremen, called Schnoor.

BRE02 – Bremen Drop Tower and city of Bremen tour: The Drop Tower is probably the most prominent building on the University of Bremen campus. Here microgravity experiments are conducted in the fields of astrophysics, biology, chemistry and more by dropping a capsule from 120 m height and thereby creating 4.74 seconds of zero gravity (or more precisely microgravity). The visit to the Drop Tower is followed by a guided tour through the old downtown of Bremen. You will see the famous town musicians as well as the impressive town hall, parts of the UNESCO world heritage site. The tour also takes you along the Weser River and into the oldest quarter of Bremen, called Schnoor.

CUX01 – Climbing Forest Cuxhaven: This is high! An approximately 45-minute bus ride takes us to the North Sea coast. And once again, this excursion will be unique and sporty at the same time: The high ropes course in Cuxhaven is the only one in the world directly on the Wadden Sea World Heritage Site. Fasten your climbing harness - and off you go on one of the seven courses through the treetops. Not for those who are afraid of heights! Afterwards we come back down to earth – and follow the mud worms in the surrounding mudflats of the Wadden Sea when the tide is low in the evening hours. A very special experience – for which a towel is a necessity!

CUX02 – Coastal pasture Cuxhaven: However, the North Sea coast can also be a little quieter, as we will learn on our second tour in the region. A guided tour through the coastal pasture including exciting stories about the





breath-taking nature will quickly immerse us deeply here. Afterwards we will join the previous group and follow the mudworms in the surrounding mudflats of the Wadden Sea, when the tide is low in the evening hours. A very special experience – for which a towel is a necessity!

WORPS01 – Torfkutter: A bus-ride of approximately 1 hour will take you to the beautiful small town of Worpswede – a place of art, culture and traditional crafts situated in the Teufelsmoor, northeast of Bremen. Over 130 artists and craftsmen call or called this place their home. In Worpswede, you will enjoy a guided tour through the surrounding nature on one of the traditional peat boats. Afterwards, you will have plenty of time to explore the town with its famous art exhibitions, ateliers, cafés and restaurants.

SYMPOSIUM ORGANIZATION

Magnús Már Magnússon (International Glaciological Society)

SCIENCE STEERING COMMITTEE

Christian Haas (Chair), Marcel Nicolaus, Gunnar Spreen, Feiyue Wang (past Co-chair), David Babb, Sinead Farrell, Alexander Fraser, Mats Granskog, Jari Haapala, Polona Itkin, Alexandra Jahn, Thomas Lavergne, Ruibo Lei, Klaus Meiners, Wolfgang Rack, Randy Scharien, Axel J. Schweiger, Julianne Stroeve, Letizia Tedesco, Takenobu Toyota, Melinda Webster

LOCAL ORGANIZING COMMITTEE

Marcel Nicolaus (Chair), Gunnar Spreen, Christian Haas, Lilian Schubert, Stephanie Carstensen, Marietta Weigelt plus numerous representatives of AWI's senior and junior, interdisciplinary sea ice research community.





FURTHER INFORMATION

If you wish to attend the symposium, please register online at
https://www.igsoc.org/event/bremerhaven_2021/

Information will also be updated on the local website:
<https://igs2023.awi.de>

IMPORTANT DATES

Sea Ice across Temporal and Spatial Scales

Opening of online abstract submission:	25 January 2023
Abstracts due:	17 February 2023
Notification of abstract acceptance:	3 March 2023
Opening of online registration:	19 February 2023
Early registration deadline:	28 March 2023
Deadline for full refund:	21 April 2023
Deadline for refund on a sliding scale:	7 May 2023
Late registration surcharge starts:	7 May 2023
Symposium starts:	4 June 2023

Annals of Glaciology volume 65

Papers due:	31 October 2023
Final revised papers:	31 March 2024

The Call for Papers for the *Annals of Glaciology* is posted on
https://www.igsoc.org/annals/call_4_papers/. Accepted papers will be published as soon as authors have returned their proofs and all corrections have been made.

Publication of this *Annals* issue is scheduled for 2024.