Stockholm University

Bolin Centre for Climate Research

A collaboration between Stockholm University, KTH and SMHI

Week 23, 2021

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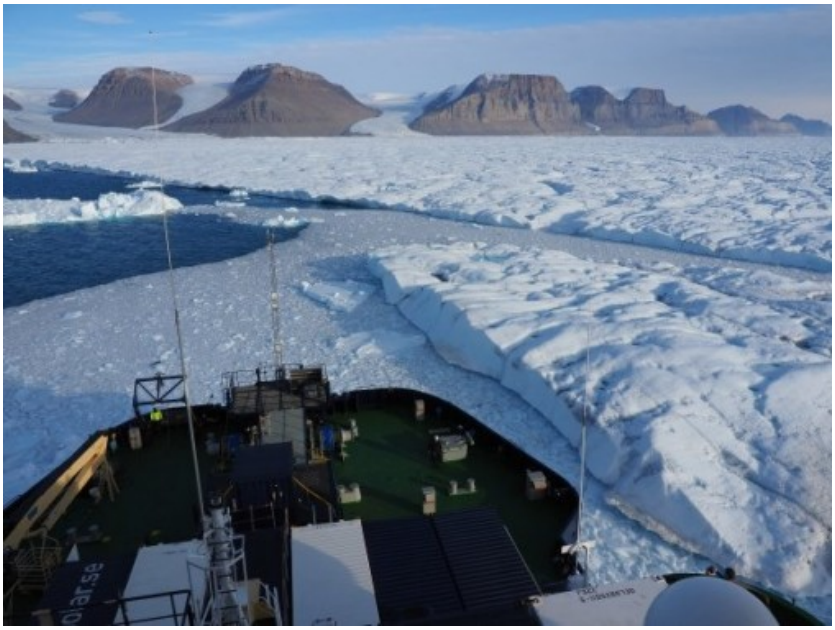
The Bolin Centre is a multi-disciplinary consortium of over 400 scientists in Sweden that conducts research and graduate education related to the Earth´s climate.

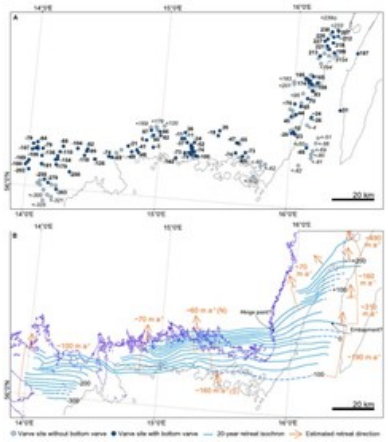


The rocky road to accurate sea-level predictions – dirt and water under Greenland control future sea-level rise

The type of material present under glaciers has a big impact on how fast they slide towards the ocean. Scientists face a challenging task to acquire data of this under-ice landscape, let alone how to represent it accurately in models of future sea-level rise. "Choosing the wrong equations for the under-ice landscape can have the same effect on the predicted contribution to sea-level rise as a warming of several degrees," says Henning Åkesson, who led a new published study on Petermann Glacier in Greenland.

Read more on Bolin Centre's website »

Study maps out how fast the ice retreated in the region Skåne-Småland-Öland during 725 years



By using newly collected cores of sediments from the sea-bottom in the region between Öland and the Swedish mainland, new onshore samples in Blekinge and Skåne, and digitizing unpublished varve data from 1900-1985, researchers have mapped out how fast the ice retreated during the last ice age. The results suggest rapid ice retreat around 15000 years ago. The retreat was 3-5 times faster offshore compared to onshore.

Read more on Bolin Centre´s website »

New research centre brings marine and climate researchers together for more accurate climate models

A major research funding initiative from the Jane and Aatos Erkko Foundation will enable Finnish and Swedish climate and marine researchers to bring together their expertise and infrastructure. Within CoastClim, the aim is to find out more about ocean–atmosphere interaction and its effects on the climate.

Read more on Baltic Sea Centre's website »

Synoptic Arctic Survey, a biology-focused research expedition to unexplored parts of the Arctic

The marine ecosystem in the ice-covered area between Greenland and the North Pole is unexplored, but there is an urgency to find out how it works. The Arctic sea ice is melting, which will radically change the ecosystem.

This summer, a research expedition on board the Swedish icebreaker Oden will explore one of the world's most inaccessible places. "Nobody has ever performed these measurements there before, we are first in this giant area," says the expedition's Chief Scientist Pauline Snoeijs Leijonmalm.

Some of the equipment onboard is financed by the Bolin Centre and several of the

Centre's researchers participate. The picture shows preparations by Helen Coxall and Flor Vermassen, who will examine planktonic foraminifera.

Read article on Stockholm University's website »

Ledigt jobb på Stockholms universitet som Datakoordinator/Data Steward

Stockholms universitet söker en Datakoordinator/Data steward inom området naturvetenskap, med anställning vid universitetsbiblioteket. Sista ansökningsdag: 2021-06-30.

Den nya data stewarden kommer att arbeta med att utbilda och stödja forskare i deras arbete med forskningsdatahantering. Anställningen kan vara intressant för personer vid Bolincentret som, förutom vetenskaplig ämneskompetens och förståelse för forskningens villkor, har kunskaper inom t.ex. programmering, databaser och implementering av FAIR-principerna för tillgängliggörande av forskningsdata. Eftersom Bolincentrets databas samarbetar med universitetsbiblioteket om hantering av forskningsdata är det möjligt att den nya data stewarden kan komma att samarbeta med Bolincentrets databas.

Bolincentrets databas vill därför uppmuntra intresserade forskare inom centret att söka jobbet eller hjälpa till med att sprida information till andra lämpliga kandidater.

Läs annonsen på Stockholms universitets webbplats »

Recent Bolin Centre publications
On bolin.su.se/publications you'll find a list of scientific journal publications by Bolin Centre scientists. Here are the most recent ones we have published on the website.

- Åkesson, H., Morlighem, M., O'Regan, M., & Jakobsson, M. 2021. Future projections of Petermann Glacier under ocean warming depend strongly on friction law. Journal of Geophysical Research: Earth Surface, 126, e2020JF005921. https://doi.org/10.1029/2020JF005921
- Zhang, Z., Fluet-Chouinard, E., Jensen, K., McDonald, K., Hugelius, G., Gumbricht, T., Carroll, M., Prigent, C., Bartsch, A., and Poulter, B., 2021. Development of the global dataset of Wetland Area and Dynamics for Methane Modeling (WAD2M). Earth Syst. Sci. Data: 13, 2001–2023. https://doi.org/10.5194/essd-13-2001-2021
- Herzon, I., Raatikainen, K. J., Wehn, S., Rūsiņa, S., Helm, A., Cousins, S.A.O., and Rašomavičius, V., 2021. Semi-natural habitats in boreal Europe: a rise of a social-ecological research agenda. Ecology and Society: 26(2),13. https://doi.org/10.5751/ES-12313-260213
- Büntgen, U., Allen, K., Anchukaitis, K., Arseneault, D., Boucher, E., Bräuning, A., Chatterjee, S., Cherubini, P., Churakova, (Sidorova), O.V., Corona, C., Gennaretti, F., Grießinger, J., Guillet, S., Guiot, J., Gunnarson, B., Helama, S., Hochreuther, P., Hughes, M.K., Huybers, P.S, Kirdyanov, A.V., Krusic, P.J., Ludescher, J., Meier, W.J.-H., Myglan, V.S., Nicolussi, K., Oppenheimer, C., Reinig, F., Salzer, M.W., Seftigen, K., Stine, A.R., Stoffel, M., St. George, S., Tejedor, E., Aleyda Trevino, A., Trouet, V., Wang, J., Wilson, R., Yang, B., Xu, G., & Esper, J., 2021. The influence of decision-making in tree ring-based climate reconstructions. Nature communication: 12, 3411. DOI 10.1038/s41467-021-23627-6
- Treat, C.C., Jones, M.C., Alder, J., Sannel, A.B.K., Camill, P., Frolking, S., 2021. Predicted vulnerability of carbon in permafrost peatlands with future climate change and permafrost thaw in Canada. Journal of Geophysical Research – Biogeosciences. doi:10.1029/2020JG005872

Please send your newly published publication to bolin@su.se »

AI-powered Knowledge Integration to Carbon-Neutral Cities

This is a Stockholm University project funded by Formas within their strategic innovation program: Smart Built Environment. It includes collaboration between researchers Department of Physical Geography (leading the project) and Chinese and U.S. partners, and has the overarching aim to develop a replicable and adaptable artificial intelligence-based decision support system (AI-DSS) for handling complex socio-physical interactions and implications for development of carbon-neutral cities.

The work will improve understanding of and planning and decision-making capability for complex built environment systems and their relationship to climate change and

its impacts. The project budget is 4 MSEK for the years 2021-2025. The research group includes Bolin researchers Zahra Kalantari and Gia Destouni from Dep't of Physical Geography, and participants from University of Illinois at Urbana-Champaign (UIUC, a strategic SU partner university), Shanghai Jiao Tong University (SJTU), and representatives from Region Stockholm (for regional planning, TRF) and private-sector company WSP.

Source: Dep't of Physical Geography's newsletter.

Watch Bolin Centre Seminar

Did you miss RA5's Bolin Centre Seminar titled "Global warming, or global cooling, in the last 10000 years? The Holocene temperature conundrum"?

You can view the seminar with speaker Zhengyu Liu, Professor of Climate Dynamics, Ohio State University, on Bolin Centre's youtube channel »

eScience course for current and prospective PhD students

The course "eScience Tools in Climate Science: Linking Observations with Modelling" will be held in November. Application deadline: 31st of August. There will be funding from the Bolin Centre for students to join the course.

Read more on Dep't of Environmental Sciences website »

Training course on Hyperspectral Remote Sensing in Svalbard

This autumn, Svalbard Integrated Arctic Earth Observing System (SIOS) offers a training course on how to effectively use hyperspectral remote sensing data acquired from satellites, from airborne campaigns and from the ground, and their associated tools and software in the context of research in Svalbard. The course is intended for scientists, master/Ph.D. students and technicians with no or little experience with hyperspectral remote sensing techniques. The training will be delivered by remote sensing experts from SIOS member institutions, international researchers, and experts from industry.

Time: 6 September - 10 September 2021
Location: Online (Zoom platform)
Application deadline: 30 June

Read more on SIOS' website »

OFFICE STAFF - BOLIN CENTRE AT CAMPUS

Due to COVID-19, the Bolin Centre Office will be irregular staffed at the University. Like many of you, we work from home. Don't hesitate to get in touch with us via mobile or e-mail.

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The **Bolin Centre Weekly News** provides you with a selection of our current activities and latest news and is sent to all members of the Bolin Centre. If you have suggestions that you would like to include or **research that you would like to share** in coming Weekly News, please contact bolin@su.se.

Editor: Magnus Atterfors
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