



Stockholm
University

Bolin Centre for Climate Research

A collaboration between Stockholm University, KTH and SMHI

Week 22, 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 complexity of Arctic wetland systems in a changing climate



A recent scientific paper published in the journal WIREs WATER investigates the structure and functioning of Arctic wetland systems in order to understand the process chains and feedback mechanisms caused by climate change.

[Read more on Bolin Centre's website »](#)



New project focuses on management, modelling and monitoring for European forest soils

Soils are increasingly recognised to have an important role, but there are significant knowledge gaps on forest soil processes and soil monitoring is not sufficiently harmonised, which limits the EU's ability to maintain soil-related ecosystem services and to reach climate policy targets.

[Read more on Dep't of Physical Geography's website »](#)

MISU Seminar: How to reduce global CO2 emissions

Time & venue: June 8, 11h15-12h15, Zoom <https://stockholmuniversity.zoom.us/j/69254828118>

Speaker: Jonas Nycander, Professor at MISU

It is much cheaper and technically easier to reduce CO2 emissions caused by industry than by individuals. The way to achieve this is to put a price on the emissions. The main obstacle is not resistance from voters, but that if a country does it alone, its heavy industry (and the emissions) would move abroad.

[Read more on Dep't om Meteorology's website »](#)

If you would like to be added to MISU's seminar list and receive invitations to future MISU seminars, [please email MISU](#).

PhD defence: Mid-Holocene mineral dust deposition in raised bogs in southern Sweden

Time & venue: June 4, 10h00-12h00, Zoom

Author: Jenny Sjöström, Department of Geological Sciences

Atmospheric mineral dust is a key component of the climate system, which affects insolation, brings nutrients to marine and terrestrial ecosystems, and acts as a cloud condensation nuclei. To reconstruct past patterns in terrestrial dust deposition natural archives may be utilized, such as loess, dunes, lakes, and peat bogs. Bogs became an established dust archive in the early 2000s, and the number of studies has since increased. However, most studies use single records to represent dust deposition, meaning that we have limited understanding of regional paleodust dynamics or about the representativeness of single bog records. This thesis aims to address these uncertainties by comparing paleodust deposition between bogs located on a 65 km transect.

[Read more on Dep't of Geological Sciences website »](#)

New datasets in the Bolin Centre Database



The following datasets have been published since the middle of March. The database staff would like to thank all scientists for their contributions. We look forward to publish more data and we wish you all a pleasant summer!

Giacomo DiTullio, Peter Lee, Nicole Schanke (2021). Dissolved nutrient concentrations from the Arctic Ocean 2018 expedition. Dataset version 1.0. Bolin Centre Database. <https://doi.org/10.17043/ao2018-dissolved-nutrient>

Giacomo DiTullio, Peter Lee, Nicole Schanke (2021). Algal pigment concentrations from the Arctic Ocean 2018 expedition. Dataset version 1.0. Bolin Centre Database. <https://doi.org/10.17043/ao2018-algal-pigment>

Jutta Vüllers, Peggy Achtert, Ian Brooks, Ryan Neely III, Barbara Brooks (2021). Cloudnet remote sensing retrievals of cloud properties during the Arctic Ocean 2018 expedition. Dataset version 4.0. Bolin Centre Database. <https://doi.org/10.17043/ao2018-cloudnet-4>

Julika Zinke, Emmy Nilsson, Luisa Ickes, Matthew Salter, Caroline Leck, Michael J. Lawler, Grace Porter, Michael Adams, Ian Brooks, Ben Murray, Paul Zieger (2021). Cloud water samples obtained in summertime during the Arctic Ocean 2018 expedition. Dataset version 1.0. Bolin Centre Database. <https://doi.org/10.17043/ao2018-cloud-water>

Jannik Martens, Evgeny Romankevich, Igor Semiletov, Birgit Wild, Bart van Dongen, Jorien Vonk, Tommaso Tesi, Natalia Shakhova, Oleg V. Dudarev, Denis Kosmach, Alexander Vetrov, Leopold Lobkovsky, Nikolay Belyaev, Robie Macdonald, Anna J. Pierzkowski, Timothy I. Eglinton, Negar Haghipour, Salve Dahle, Michael L. Carroll, Emmelie K.L. Åström, Jacqueline M. Grebmeier, Lee W. Cooper, Göran Possnert, Örjan Gustafsson (2021). The Circum-Arctic Sediment Carbon Database — CASCADE. Dataset version 2.0. Bolin Centre Database. <https://doi.org/10.17043/cascade-2>

Kira Lawrence, Helen Coxall, Sindia Sosdian, Margret Steinhorsdottir (2021). Miocene temperature portal. Dataset version 1.0. Bolin Centre Database. <https://doi.org/10.17043/miocene-temperature-portal-1>

John Prytherch, Michael Tjernström (2021). Weather data from MISU weather station during Ryder 2019 and Northwest passage 2019 expeditions. Dataset version 1.0.

Bolin Centre Database. <https://doi.org/10.17043/oden-ryder-2019-misu-weather>

John Prytherch, Michael Tjernström (2021). Micrometeorological data from icebreaker Oden's foremost during Ryder 2019 and Northwest passage 2019 expeditions. Dataset version 1.0. Bolin Centre Database. <https://doi.org/10.17043/oden-ryder-2019-micromet-oden>

Srinath Krishnan, Annica M. L. Ekman, Hans-Christen Hansson, Ilona Riipinen, Anna Lewinschal, Laura J. Wilcox, Tanja Dallafior (2021). Temperature and energy transport for idealized NorESM slab-ocean simulations for modified mid-latitude SO₂ aerosol emissions. Dataset version 1.0. Bolin Centre Database. <https://doi.org/10.17043/krishnan-2021-noresm>

Volker Brüchert, Xiaole Sun (2021). Porewater nutrients from sediments collected during the SWERUS-C3 expedition 2014 on the East Siberian shelf and slope. Dataset version 1.0. Bolin Centre Database. <https://doi.org/10.17043/oden-swerus-2014-porewater-nutrients-1>

Helen K. Coxall, Amy P. Jones, Tom Dunkley Jones, Paul N. Pearson (2021). Eocene-Oligocene age planktonic and benthic foraminifera oxygen and carbon stable isotopes from the NKK-1 borehole, central Java. Dataset version 1.0. Bolin Centre Database. <https://doi.org/10.17043/coxall-2021-java-1>

Antonio Martínez Cortizas, Olalla López Costas, Malin Kylander (2021). Standardized values of mid infrared absorbances of peat samples from Store Mosse, southern Sweden. Dataset version 1.0. Bolin Centre Database. <https://doi.org/10.17043/martinez-cortizas-2021-store-mosse>

Stefano Manzoni, Magnus Lindh, Stefanie Hoerber, Martin Weih (2021). Salix biomass and nitrogen content measured in a pot experiment, Uppsala, Sweden, 2018–2019. Dataset version 1.0. Bolin Centre Database. <https://doi.org/10.17043/manzoni-2021-salix-1>



Publications

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.

- Lena Frey, Friederike Höpner, Alf Kirkevåg and Frida Bender (2021) Absorbing aerosols over Asia – an inter-model and model-observation comparison study using CAM5.3-Oslo Tellus B, 73,1. <https://doi.org/10.1080/16000889.2021.1909815>
- Hagman, M., Svensson, G., & Angevine, W.M. (2021). Forecast of low clouds over a snow surface in the Arctic using WRF model, Monthly Weather Review (published online ahead of print 2021). <https://doi.org/10.1175/MWR-D-20-0396.1>
- X. Luan, R. Bommarco, A. Scaini and G. Vico, 2021: Combined heat and drought suppress rainfed maize and soybean yields and modify irrigation benefits in the USA. Environmental Research Letters. <https://iopscience.iop.org/article/10.1088/1748-9326/abfc76>
- Sun, L., Jaramillo, F., Cai, Y., Zhou, Y., Shi, S., Zhao, Y., Wang, W., Yi, Y., Yang, W., Yang, Z., Tan, Q., Gunnarson, B., 2021: Exploring the influence of reservoir impoundment on surrounding tree growth. Advances in Water Resources 103946. <https://doi.org/10.1016/j.advwatres.2021.103946>
- Karami, M.P., Myers, P.G., de Vernal, A., Tremblay, L.B., and Hu, X., 2021. The role of Arctic gateways on sea ice and circulation in the Arctic and North Atlantic Oceans: a sensitivity study with an ocean-sea-ice model. Climate Dynamics. <https://doi.org/10.1007/s00382-021-05798-6>
- Uribe, A., Vial, J., & Mauritsen, T., 2021. Sensitivity of tropical extreme precipitation to surface warming in aquaplanet experiments using a global nonhydrostatic model. Geophysical Research Letters: 48, e2020GL091371. <https://doi.org/10.1029/2020GL091371>
- Luan, X., Bommarco, R., Scaini, A., and Vico, G., 2021. Combined heat and drought suppress rainfed maize and soybean yields and modify irrigation benefits in the USA. Environmental Research Letters. <https://iopscience.iop.org/article/10.1088/1748-9326/abfc76>

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

BOLIN CENTRE EVENTS

JUNE

Time & venue: June 9 at 10h00, Zoom

Title: Protection of Permafrost Soils from Thawing by Increasing Herbivore Density

Speaker: Prof. Christian Beer, Heisenberg-Professor for dynamics of soil processes, Institute of Soil Science, University of Hamburg

[Read more »](#)

OTHER EVENTS

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JUNE

Titel: Jordens frysbox tinar upp

Time & venue: June 8 at 10h00-11h00, webinar

Under 2021 publicerar Arktiska rådet flera vetenskapliga rapporter med den senaste kunskapen om hur klimatförändringarna påverkar Arktis, med återverkningar för det globala klimatet.

Bland talarna: HC Hansson, Institutionen för miljövetenskap, Stockholms universitet.

Annica Ekman, Meteorologiska institutionen, Stockholms universitet.

Cynthia de Wit, Institutionen för miljövetenskap på Stockholms universitet.

[Läs mer och anmälan »](#)

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.

- Magnus: 076-695 70 78, magnus.atterfors@su.se (Communications)
- Annika: 072-148 91 49, annika.granebeck@su.se (Coordination)
- Laila: laila.islamovic@su.se (Communications & coordination during the spring)

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 »](#)

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

Foto: Martin Jakobsson, Seppo Leinonen

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