



Bolin Centre for Climate Research

A collaboration between Stockholm University, KTH and SMHI

June 2023

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Bolin Climate Lecture 2023 by Professor Trude Storelvmo. Photo: Maria Basova

Bolin Centre Newsletter # 6

Dear Bolin Centre members,

The summer is here, and with it comes the rush to tie up loose ends before the vacation period begins. As we navigate through this busy time, we want to extend our sincere gratitude to all the members of the Bolin Centre who took the time to participate in the events held on May 23-24, including the highly expected Bert Bolin Climate Lecture 2023. Your active engagement truly made these events standout.

We are pleased to report that the Climate Lecture 2023, "The Big Unknown in Future Climate Projections," was a success. The lecture, presented by Professor Trude Storelvmo from the University of Oslo, attracted a diverse audience of over 100 participants, both in person and online.

During her lecture, Professor Storelvmo delved into the fascinating link between microscale cloud physics and large-scale climate change. She explored the interactions between cloud droplets and ice crystals in mixed-phase clouds, emphasizing their significant influence on the rate of warming under various greenhouse gas emission scenarios. Her expertise, backed by experiences in aircraft cloud measurements, high-resolution model experiments, satellite remote sensing, and Earth System Modelling, truly showcased the forefront of climate research. Once again, we extend our big thanks to all the attendees for your enthusiasm and active participation.

We are pleased to announce that the Bolin Centre's strategic plan for the years 2023-2027 has been finalized. After hundreds of emails, months of discussions, and collaboration, we have reached the finish line. The strategic plan establishes a clear path for our future actions, outlining the key objectives and initiatives that will drive progress at the Bolin Centre in the coming years.

We would like to thank you all of your valuable contributions throughout this process. It has been a collective effort, and we are truly proud of what we have accomplished together. You will find the final version of the plan attached to this newsletter.

We also want to take this opportunity to inform you that there will be no further newsletters during the summer. However, we will resume in the early fall to keep you updated with the latest news and developments.

We strive to make the Bolin Centre Newsletter a valuable source of information, inspiration, and research exchange, but we need your help. Don't forget to share any information you would like us to publish in the upcoming Newsletter. You can send it to <u>bolin@su.se</u>.

Thank you for your continued support, and we look forward to seeing you at our upcoming events.

Aerosol demasking enhances climate warming over South Asia – a potential climate overshoot process

In a new publication, observational constraints showed that removing aerosol air pollution led to climate warming (from Greenhouse Gases, GHG) over South Asia (aerosol demasking of climate warming).

The international team, led by ACES Prof. Örjan Gustafsson and with PhD student Hari Nair as first author, used the COVID shutdown over India as a large-scale geophysical perturbation experiment (decreases in short-lived aerosols, <1% decrease in GHG loadings).

This and forthcoming (intended) mitigation is likely to give cleaner skies yet also measurable increases in heating when the net cooling aerosols are removed. Upon mitigation, we can thus expect some transient decades of increased warming before the effect of decreasing GHG also kicks in.

This can lead to climate overshoot – that climate targets and thresholds are crossed. The study combined ground-based multi-year measurements at the Maldives Climate Observatory with large-scale remote sensing products and modelling.

The article was published in npj Climate and Atmospheric Science.

Read the whole article here

Microbes key to sequestering carbon in soil

Microbes, bacteria and fungi, are by far the most important factor in determining how much carbon is stored in the soil, according to a new study in Nature with two co-authors from Stockholm University. This has implications for both mitigating climate change and improving soil health for agriculture and food production. The research is the first to leverage a global soil carbon database with state-of-the-art mathematical models to measure the relative importance of microbial processes in the soil carbon cycle at a global scale. <u>Read more</u>

Read the whole article here



Soils like this contain the bacteria and fungi that are the most important factor when it comes to how much carbon is stored in the soil. Photo: Stefano Manzoni.



Photo: Maria Basova

Bolin Centre is bridging the gap between Climate Science and Policy

The panel discussion held on the 23rd of May highlighted the importance of enhancing communication and collaboration between scientists and policymakers. It emphasized the need for policymakers to actively engage with climate science and research to make informed decisions. Building trust, managing expectations, and demonstrating effective leadership were identified as crucial elements of policy-making.

The discussion referenced the significant impact of the "Stockholm congestion charging trial in 2006." This trial demonstrated the positive effects of a time-differentiated urban road toll scheme, leading to a change in public attitudes and the subsequent implementation of a permanent system. This case highlighted the role of public perception in driving policy change.

The panelists also stressed the need for a more structured approach, including increased involvement of scientists in policy discussions. They emphasized the benefits of diverse perspectives and the importance of personal exposure between scientists and policymakers.

The discussion underscored the intensive and sometimes challenging process of reaching agreements between scientists and politicians. Effective communication, collaboration, and shared responsibility were identified as key factors in achieving meaningful outcomes.

The panel discussion provided valuable insights into the challenges and opportunities in bridging the gap between climate science and policy. It emphasized the importance of effective communication, diverse perspectives, providing good examples and collaborative efforts in driving positive change.

The Bolin Centre sees its important role in keeping up this dialogue and will continue organizing similar events in the future.

Study shows increased intensity of the atmospheric hydrological cycle in the Southern Ocean



Photo: Camille Akhoudas

Researchers have used a 30-year time series to analyze how surface salinity in the Southern Ocean has changed. By studying changes in ocean surfaces properties the researchers were able to trace back to the processes behind salinity changes.

Read more



Photo: Michael Tjernström

Report from ARTofMELT

We have now been at the same ice floe around N80° W1.5° since late on Monday 15 May. This is farther south and west than we would have liked to be, but the ice has been very tough to brake through even with Oden, forcing us more west than north from the last report when we had just reached the ice.

Now we're moored to this floe and slowly drift south with the ice. Last Sunday, a storm passed with winds gusting well above 25 m/s and heavy (sideways) snowfall. But neither anything nor anyone broke and our measurements on board keep working all the time.

These last few days we have had very sunny weather although the temperatures have been between around -10° C.

Read more here

OPPORTUNITIES

Bolin post-doctoral fellows

New closing date: 11 August 2023.

Bolin Centre is pleased to announce new opportunities as part of "Bolin post-doctoral fellow" program. The call is broad, and candidates can freely choose a research theme within the Centre. We encourage applications that involve several departments and interdisciplinary activities.

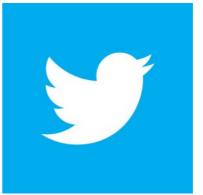
Read more and apply here

Bolin Centre's Twitter

let us know.

We are currently seeking a new volunteer to manage the Bolin Centre's Twitter account.

We are calling for interested PhD students within the Bolin Centre to take over for a period of 2-3 months. If you know anyone who might be interested or have any suggestions, please



Twitter logo

External opporunities

A cluster of 20 PhD positions in oceanography and related fields available in Italy:

https://www.unibo.it/en/teaching/phd/2023-2024/attachments/39-pnrr-phd-programme-tablefuture-earth-climate-change-and-societal-challenges/@@download /file/39_PNRR_PhD%20Programme%20Table_FutureEarthClimateChangeSocietalChallenges.pdf

More details and contact:

https://www.unibo.it/en/teaching/phd/2023-2024/future-earth-climate-change-and-societalchallenges

Application deadline: Jun 20, 2023 at 11:59 PM

On **June 12**, CIVIS universities will host an **online infoday** to present the opportunities offered by the **Marie Sklodowska-Curie Doctoral Networks** program to the CIVIS community.

The objective of Doctoral Networks is to implement doctoral programmes by partnerships of organisations from different sectors across Europe and beyond to train highly skilled doctoral candidates, stimulate their creativity, enhance their innovation capacities and boost their employability in the long-term.

Doctoral Networks are open to international consortia of universities, research institutions, businesses, SMEs and other non-academic organisations and all areas of research may be funded for four years maximum. Each beneficiary of a DN project must recruit at least one doctoral candidate and can also organise secondments for them anywhere in the world.

To register for the infoday, please fill out the **online form** by 12th June The programme of the infoday is on <u>the CIVIS website</u>.

Two open postdoc positions in our research group. Both about synergies and trade-offs between biodiversity conservation and climate change considerations, with different profiles, embedded in a cross-disciplinary environment.

https://lu.varbi.com/en/what:job/jobID:630953/type:job/where:4/apply:1 https://lu.varbi.com/en/what:job/jobID:632189/type:job/where:4/apply:1

CALENDAR - BOLIN CENTRE'S EVENTS

RT3 | Seminar: Green Sahara Riddles



11 INF

Time:, 14:00 - 15:00 **Venue:** Högbom lecture hall, Geoscience building, SU Speaker: Martin Claussen, Professor emeritus of Physical Meteorology at Universität Hamburg and former Director at the Max Planck Institute for Meteorology (MPI-M) in Hamburg, Germany

OPEN LECTURE: Challenges in climate research: from Asia's brown clouds to Arctic permafrost

Date: Wednesday 14 June 2023 Time: 18.00 - 19.00

Open lecture with Professor Örjan Gustafsson 14 June at the Royal Swedish Academy of Sciences. Time: 18:00 - 19:00 Address: Lilla Frescativägen 4 A, Stockholm <u>Register here</u>

Save the date: Symposium on climate and health

The Health Committee of the Royal Swedish Academy of Sciences, in collaboration with Bolin Centre for Climate Research, Chalmers University of Technology, Karolinska University Hospital, Stockholm Trio and Umeå University, organises a symposium on the topic of climate and health.

The open symposium will bring together experts from different fields relevant for understanding the interactions, challenges and co-benefits related to climate and health. The aim of the symposium is to summarise the state of the science, stimulate discussion, and relate to relevant ongoing and future policy processes.

The symposium will be held in English.

29-30

NOVEMBER

SAVE THE DATE! Bolin Days 2023

Place: Aula Magna, SU

<u>To Bolin Centre calendar</u> →

PARTNERS' EVENTS



PUBLICATIONS

Bolin Centre publications

As part of our ongoing efforts to keep our community updated and informed, we encourage you to share your recent publications with us. By doing so, we can ensure that our list of scientific journal publications remains comprehensive and up to date.

Here you will find the list of recent publications at **bolin.su.se/publications**

News from the Climate Research School (CRS)

As a follow-up to our previous announcement, we would like to provide you with more information about the new initiative proposed by the Bolin Centre. The aim of this initiative is to explore the integration of a gender perspective into the climate-related research conducted by early career researchers like yourself at the Centre.

To kickstart this initiative, a Baseline Questionnaire was sent out. This is a friendly reminder regarding it. We appreciate the valuable insights that many of you have already shared, and we would like to encourage those who haven't completed the questionnaire to do so by June 15, 2023.

For any further information, please feel free to contact the coordinator of the Climate Research School, Carmen Prieto, at <u>carmen.prieto@natgeo.su.se</u>.

Thank you for your participation in this initiative.

Book "En varmare värld" (A Warmer World) by Naturvårdsverket

We want to announce that the third edition of "En varmare värld" (A Warmer World) by Naturvårdsverket is now available at the Bolin Centre as a printed copy in Swedish. This is a great opportunity to get the book about fundamental processes and for those who want to understand the complex issue of climate change and its consequences.

You can get the book by contacting bolin@su.se.

ForskarFredag 2023

Bolin Centre is planning to participate in ForskarFredag 2023, which will take place on **September 30th**, and this year's theme is "The Human, Health, and Water."

ForskarFredag aims to promote interest in science among children and young people. We are planning to cooperate with Vetenskapenshuset on the practical aspects of organization.

If you would like to be part of this event or get more information about it, please email your interest to <u>maria.basova@aces.su.se</u>



En del av European Researchers' Night ForskarFredag logo

Collaborate with ForskarFredag's citizen science project: Call for researchers

Every year, ForskarFredag arranges a citizen science project that involves the public, often with a focus on school students. The organizers are now looking for researchers who want to collaborate for the coming year.

The mass experiments have dealt with a variety of topics and often receive a lot of attention in the media.

Do you have your own idea or do you know a researcher or research group that might be interested? Please send proposals no later than June 8, 2023!

Contact Julia Brink, project manager for ForskarFredag, or email massexperiment@forskarfredag.se. <u>Read more here</u>



En del av European Researchers' Night

Promotional material

The field trip period is coming up! If you need promotional material featuring the Bolin Centre logos for your upcoming field trip or work, please don't hesitate to contact us. We have T-shirts, bags, buffs, and limited sizes of hoodies.

To make a request, kindly reach out to Maria Basova at <u>bolin@su.se</u>, and we will be more than happy to assist you.

All members of the Bolin Centre receive the Bolin Centre Newsletter, which showcases our current activities and latest news.

If you have suggestions or research that you would like to share in upcoming newsletters, please contact <u>bolin@su.se</u>. Please note that the newsletter is typically sent once a month.

Editor: Maria Basova (Coordination) Bolin Centre for Climate Research Contact: <u>bolin@su.se</u>

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