

29 January, 2019

Protocol for the Bolin Centre Climate Research School (CRS) Advisory Board meeting

Date: Monday 28 January, 2019

Time: 10:00–12:00

Place: Tarfala room (T433), Geoscience building

Members *Alasdair Skelton, Co-Chair, Co-Director for the Bolin Centre*
Clare Bradshaw, Dept. of Ecology, Environment and Plant Sciences (DEEP)
Ann-Kristin Eriksson-Wiklund, Dept. of Environmental Sci. and Anal. Chemistry (ACES)
Karl Gotthard, Dept. of Zoology
Otto Hermelin, Dept. of Geological Sciences (IGV)
Karin Jonsell, Bolin Centre Coordinator & Communicator
Somya Joshi, Dept. of Computer and Systems Sciences (DSV)
Garry Peterson, Stockholm Resilience Centre (SRC)
Helle Skånes, Dept. of Physical Geography (NG)

Absent *Abdul Hannachi, Dept. of Meteorology (MISU)*
Nina Kirchner, Co-Chair, Co-Director for the Bolin Centre

Secretary *Karin Jonsell*

1. Meeting was opened	AS	
2. Appointment of protocol writer Karin Jonsell was appointed as writer of minutes	AS	
3. Appointment of protocol checker Karl Gotthard was selected as attester for this meeting	AS	
4. Approval of the agenda The agenda was approved with addition of § 11a, b, c.	AS	
5. Strategic plan for the Climate Research School The CRS Advisory Board has been requested by the Bolin Centre Board to produce a first draft of a strategic plan for the Bolin Centre Climate Research School. The deadline for this is May 10. The CRS Advisory Board advise as follows: <ul style="list-style-type: none"> • The CRS strategic plan should clarify the future role of the CRS in the Bolin Centre as well as its role in Masters education. • The CRS strategic plan should be considered within the framework of the strategic plan for the Bolin Centre (which will be revised soon) and the strategic plan for the Bolin Centre communication, see Appendix 1a, b. The CRS Advisory Board agreed to employ Viktoria Arwinge (VA), Head of Administration at the Department of Geological Sciences to help the CRS Advisory Board with the strategic plan during the spring of 2019. Cost: 70 000 kr. The CRS Advisory Board requests that VA	AS	App. 1a, b

Bolin Centre for Climate Research

<p>prepares a draft version of this strategic plan for review by the CRS Advisory Board after interviewing:</p> <ul style="list-style-type: none"> • CRS Advisory Board members • Björn Gunnarson • HC Hansson • PhD students and supervisors, selected via an open call • Heads of the Departments which participate in the Bolin Centre • A representative from the Environmental Humanities Research School 		
<p>6. Budget for 2019 Alasdair Skelton presented a possible large positive balance carried on from last year and a budget outline for 2019.</p> <p>The CRS Advisory Board discussed the courses and especially if the CRS should pay salaries for teachers. Ann-Kristin Eriksson-Wiklund informed the Advisory Board that Departments get HÅP:s for PhD students reading Masters courses, even if these PhD students are from outside of the EU provided that the course is entered in the student's study plan. Clare Bradshaw informed the Advisory Board that it is no longer possible to pay external teachers an "arvode" making it very expensive to employ them because the Department is obliged to pay social security costs.</p> <p>The CRS Advisory Board ask Alasdair Skelton to investigate the positive balance from 2018, and especially if Departments have any pending claims.</p> <p>The CRS Advisory Board approved the following budget items:</p> <ul style="list-style-type: none"> • <i>Historical perspectives</i>: 80 tSEK • <i>Scientific writing</i> specifically for Bolin Centre PhD students: 80 tSEK • <i>Proposal writing</i> with guest experts from e.g. the Swedish Research Council, Research Support Office at Stockholm University: 120 tSEK • A Bolin Centre Summer School: 200 tSEK • PhD support: 100 tSEK, with grants of up to 5000 SEK per person. • Other courses: 175 tSEK • Communication: 75 tSEK • Strategic plan: 70 tSEK 	AS	
<p>7. Recruitment of a Director of Studies Alasdair Skelton presented that for economic reasons, the position of Chair of the CRS Advisory Board will be taken on by the Co-Directors of the Bolin Centre Alasdair Skelton and Nina Kirchner.</p> <p>The position of Director of Studies, previously held by Björn Gunnarson, was previously a combined position with tasks including coordination of courses, teaching and communication. This was a 50 % position. The Bolin Centre Board has allocated funds equivalent to a 20 % Director of Studies to the CRS. The CRS Advisory Board is asked to send ideas concerning this position to Karin Jonsell so that the issue can be discussed further at the next CRS Advisory Board meeting.</p>	AS	
<p>8. Application for CRS support to Summer School on Ocean Waves & Abyssal Flow Jonas Nycander at the Department of Meteorology has applied for 45 000 SEK to fund a joint Summer School at Gullmarsfjorden in 2019, see Appendix 2.</p> <p>The CRS Advisory Board approved the application on the condition that the available spots for Bolin Centre PhD students will be advertised openly to the entire Bolin Centre.</p>	AS	App. 2a,b

<p>9. Application for CRS support to PhD Student traveling to the General Assembly of the European Geosciences Union The PhD student Ines Bulatovic has made an application for funding to travel to the conference EGU in 2019, see Appendix 3. The CRS Advisory Board approve the application and grant Ines Bilatovic 5 000 SEK.</p>	AS	App. 3a,b
<p>10. Information No information this time.</p>	AS	
<p>11. Any other business</p> <p>a. <i>Visualize your science</i> The CRS is asked to consider funding the course <i>Visualize your science</i>, see https://visualizeyourscience.com/vys_spring. This is an external course and a tender process may be required. Karin Jonsell is asked to find out how the CRS should proceed to be able to fund this course. Alasdair Skelton is asked to contact CEUL to ask if such a course can be given by them.</p> <p>b. Masters program <i>Klimatvetenskap</i> The CRS discussed the new Masters program <i>Klimatvetenskap</i>. This program was inspired by the CRS and is now a cross-departmental program. The CRS agreed to fund a ½ day co-creation workshop for all instructors, presently involved in this program and a possible teacher from DEEP or the Department of Zoology, who could be involved if a biology course was included. The purpose of this workshop is to better link between the program courses. Somya Joshi is asked to lead this workshop.</p> <p>c. Application from Maaria Nordman, NG Maaria Nordman has previously sent an application for a course on R to the CRS. She is asked to resend her application to the CRS with a budget.</p>	AS	
<p>12. Next meeting(s) The next meetings will be decided using a doodle.</p>	AS	

Karin Jonsell
Secretary

Karl Gotthard
Attester

Alasdair Skelton
Chair of CRS

Strategic Plan of the Bolin Centre for Climate Research

Prelude

This strategic plan is a statement of goals and principles which will guide the future long term development and organization of the Bolin Centre. It covers the period 2018-2020, and is decided upon by the Bolin Centre Board. The Strategic Plan is complemented by a Communication Strategy (2018-2020, also decided upon by the Bolin Centre Board). This can be found in Appendix 1. The by-laws and a brief history of the Bolin Centre for Climate Research can be found in Appendices 2 and 3.

Introduction

The Bolin Centre is an intra- and inter-disciplinary, synergetic collaboration of over 300 scientists in Sweden affiliated with six Departments¹ at Stockholm University, SMHI and KTH. The Bolin Centre focuses on extending and disseminating knowledge about the Earth's natural climate system, climate variations, climate impacting processes, climate modelling, human impact on the climate and climate impacts on ecosystems, biodiversity and human conditions as well as how society can minimize negative impacts. The Bolin Centre is recognized for excellence in research, graduate education, and outreach, and contributes to the knowledge-base for climate mitigation and adaption policies nationally and internationally.

The Bolin Centre for Climate Research is named in honour of Professor Bert Bolin of Stockholm University, a leader in climate and carbon cycle research and one of the founders of the Intergovernmental Panel on Climate Change (IPCC) which received the Nobel Peace Prize in 2007.

Vision

Our vision is the Bolin Centre as the nationally leading and internationally recognized centre for interdisciplinary climate research and a primary Swedish contact point for scientists, media and the public on issues relating to the past, present and future climate.

¹ Department of Geological Sciences (IGV) <http://www.geo.su.se/>; Department of Physical Geography (NG) <http://www.natgeo.su.se/>; Department of Environmental Science and Analytical Chemistry (ACES) <http://www.itm.su.se/>; Department of Meteorology (MISU) <http://www.misu.su.se/>; Department of Zoology (ZI) <http://www.zoology.su.se/>; Department of Ecology, Environment and Plant Sciences (DEEP) <http://www.su.se/deep/>.

Mission

The mission of the **Bolin Centre** is to create and communicate fundamental knowledge about climate and the Earth system as part of an evolving global effort to understand and adapt to the Earth's changing climate.

The ideas which guide our actions

The Bolin Centre exists for the production and communication of interdisciplinary climate and Earth system science. Furthermore, the Bolin Centre builds, through research, graduate education and outreach, the next generation of expertise and knowledge on past, present and future climates and climate-influencing processes, over a range of time scales, spatial scales and subsystems while addressing related societal issues. At its core are over three hundred scientists, spread across multiple disciplines. They are united by a common desire to understand climate and by the conviction that new directions in science result from the meeting of research excellence across natural science disciplines. Our operational philosophy is one of mutual respect and trust.

Strategic goals

To fulfil our mission, we outline the following strategic goals for the Bolin Centre. The goals listed in this plan are for the purpose of guiding our actions so as to ensure a future for the Bolin Centre as a **nationally leading** and **internationally recognised** centre engaged in creating and communicating fundamental climate science to scientists, educators, policy makers and society.

The strategic goals of the **Bolin Centre** are listed below. Goals i – iii are prioritised. All other goals have equal priority:

- i. carry out research that promotes further understanding of our climate.
- ii. communicate research findings generated by its members.
- iii. provide society with expertise on climate that is founded in scientific research.
- iv. encourage and support research training and undergraduate education in climate science.
- v. promote open access to scientific data.
- vi. create a network which is beneficial to and built by its members.
- vii. create a dynamic research environment that encourages collaboration between researchers.

- viii. encourage and support cross-faculty research initiatives focusing on climate.
- ix. encourage and support collaboration between SU, KTH and SMHI focusing on climate.
- x. create links with related national and international research and education endeavours.
- xi. create an environment for scientists to become scientific leaders.
- xii. promote shared leadership.
- xiii. promote equal opportunities in climate science.
- xiv. mentor young climate scientists.



Figure 1: Structure of the Bolin Centre

Structure

The Bolin Centre is structured (Figure 1) as follows:

- A **Board** which is comprised of a Chair, the Head of each Department at SU that participates in the Bolin Centre, representatives of the partner organizations KTH and SMHI, one external member and a student representative
- A **Directorate**, comprised of the Directors and Communicators, which together operatively lead the Bolin Centre, support the Board and are guided by the Science Advisory Group and the External Science Advisory Group (see below)
- Coordinator of **open access data**
- Coordinator of **modelling** activities
- Eight **research areas** (RAs) engaged in fundamental climate research, each of which is led by 2 or 3 co-leaders
- A **Science Advisory Group** (SAG) comprised of the RA co-leaders
- An **External Science Advisory Group** (ESAG) comprised of national and international experts on climate and Earth system science
- A **Climate Research School** (CRS)

Ensuring the future of the Bolin Centre

The structure of the Bolin Centre is optimised to create and communicate climate science. Its governance is designed to fulfil its mission (see above) while maintaining the Bolin Centre as Sweden's strongest centre for inter- and multidisciplinary climate research. The mandate and modus operandi of the entities of the Bolin Centre are defined in appendix 1. This contains the Bylaws of the Bolin Centre for Climate Research (by decision of the Vice-chancellor of Stockholm University on 2007-11-22 with revisions on 2012-12-20 and 2017-02-16). This strategic plan is supplemented by the communication plan which comprises appendix 2 (by decision of the Board of the Bolin Centre on 2018-02-12). The history of the Bolin Centre is presented in appendix 3.

Ensuring the future of the Bolin Centre for Climate Research secures Stockholm University, SMHI and KTH as a joint focal point for climate science in Sweden and internationally. This requires a combination of internal and external funding to create excellent climate research, to maintain a structure that supports and promotes science and science education, and that ensures collaboration across disciplines and between Stockholm University and its partners. The Board, the Departments, SMHI and KTH are strongly committed to the continuation of the Bolin Centre and will continue to use the strategic (SFO) funds to finance the Centre in order to ensure its future.

Appendix 1

Communication Strategy of the Bolin Centre for Climate Research

(by decision of the Board of the Bolin Centre on 2017-12-18)

Appendix 2

Bylaws of the Bolin Centre for Climate Research

(by decision of the Vice-chancellor of Stockholm University on 2007-11-22 with revisions on 2012-12-20 and 2017-02-16)

Appendix 3

History of the Bolin Centre for Climate Research



Communications strategy For the Bolin Centre for Climate Research 2018-2020





1. Introduction

The Bolin Centre is a research environment with more than 350 people engaged in research and education related to Earth's climate. The Centre functions as a platform where scientists can meet, pursue new knowledge, disseminate research results, educate new researchers and find new collaborations. The Centre includes a research school and research database. It also serves as a resource for society concerning matters that require expertise within climate research. The research community constituting today's Bolin Centre was established in 2006 at Stockholm University and since 2010 its work has been carried out in collaboration with the Royal Institute of Technology (KTH) and the Swedish Meteorological and Hydrological Institute (SMHI).

The Bolin Centre's communications strategy is based on the [Bolin Centre's strategy](#). The communications strategy comprises the Centre's internal and external communications and states the long-term communication policies. Because the Bolin Centre's economic and administrative home is Stockholm University, the communications strategy primarily relates to [Stockholm University's communications policy](#), which provides a framework for all the communication within the University's operations.

The communications strategy is in effect for three years, from 2018 to 2020, and is decided on by the Bolin Centre board. The strategy is supplemented with an operational communications plan, which is updated annually and delineates the communication activities to be prioritised in the coming year. The two directors decide on the communications plan.

2. Bolin Centre's core values

In conformity with Stockholm University's communications policy, the following core values characterise the work at the Bolin Centre (not in ranked order):

- Openness – the research is available to the surrounding community
- Innovation – the research leads to new knowledge
- Crossing borders – the Centre promotes both intradisciplinary and interdisciplinary research

3. Purpose of communication

Through targeted and goal-oriented internal and external communication, communication at the Bolin Centre should constitute a strategic and operational tool used to facilitate and develop the Centre's work. Communication should promote the strategic objectives listed below. The objectives are numbered for ease of reference, but they are not ranked internally.



Strategic objectives;

1. The Bolin Centre conducts intradisciplinary and interdisciplinary research that is important for increasing the understanding of Earth's climate
2. The Bolin Centre communicates research results generated by the Centre's members
3. The Bolin Centre is a resource for society in matters that require expertise in climate research
4. The Bolin Centre is a network of members who see the benefit of the Bolin Centre and contribute to its content
5. The Bolin Centre is a dynamic climate research environment that supports collaboration between researchers

4. Communication and trust

Information that comes from the Bolin Centre should be reliable. The Bolin Centre's graphical profile should be used for all communications wherever possible and appropriate. Whether communication is internal or external, all communications within the Bolin Centre (without internal ranking) should be:

- Relevant
- Correct
- Available
- Clear
- Appropriate to the target audience
- Uniform

5. Bolin Centre's key messages

The Bolin Centre's key messages are listed below (not in ranked order):

- The Bolin Centre is an intradisciplinary and interdisciplinary climate research environment
- The Bolin Centre is a platform for basic and applied climate research
- Research at the Bolin Centre is important for understanding the Earth's climate and is needed to meet the challenges that result from climate change

6. Objectives of communication

A statement of the objectives of communication at the Bolin Centre, divided into objectives for internal and for external communication, is given below.

6.1 Objectives of internal communication

The objectives are numbered for ease of reference, but they are not ranked internally. The internal communication should:



1. Create conditions for and facilitate collaboration between researchers at the Bolin Centre
2. Contribute to an open and inclusive research environment where members are regularly informed about current news such as publications, grants that can be applied for through the Bolin Centre, announcement of services, conferences and seminars as well as information from external communities that may be of interest to the Centre's members
3. Increase members' engagement and create a cohesive centre

6.2 Objectives of external communication

The objectives are numbered for ease of reference, but they are not ranked internally. The external communication should:

1. Confirm the Bolin Center as an intradisciplinary and interdisciplinary climate research environment
2. Communicate the Bolin Center's climate research to the public, decision makers and researchers
3. Contribute to good conditions that generates research grants to the members of the Bolin Center
4. Attract committed students to the research school
5. Information about activities that the Bolin Center arranges, possible funding that can be applied for by the center members and calls for services within the center's network
6. Make data from the Bolin Center researchers available

7. Target groups for communication

All the target groups for the Bolin Centre's internal and external communication are listed below. Researchers within and outside the Bolin Centre constitute the primary target groups. The remaining groups are listed without internal ranking.

Internt	Externt
<ul style="list-style-type: none"> • Bolin Centre members (researchers, professors, PhD students etc.) • Bolin Centre's board • Bolin Centre's internal and external science advisory groups (SAG and ESAG) • Students and employees at Stockholm University, KTH and 	<ul style="list-style-type: none"> • Other researchers (other universities, centres of learning, and institutes) • Collaborators • Decision makers • Media • General public (students, teachers, citizens etc.) • Research funding agencies



SMHI	
• Bolin Centre's directorate	

8. Communication channels

The communication channels to be used within the Bolin Centre are listed below. An updated website has the highest priority because it conveys current information of interest to Bolin Centre members and external audiences. The remaining channels are not ranked internally.

- Website with database
- E-mail lists
- Newsletters
- Message boards
- Press releases
- Media contacts
- Seminars
- Promotional products and printed material
- Social media with focus on:
 - Twitter
 - Facebook
- Bolin Centre Annual Report

9. Support functions for communication efforts

An overall account is given below of how roles are distributed for support functions within the Bolin Centre concerning communication efforts.

9.1 The Board

The Board is responsible for the Bolin Centre's comprehensive communication policies and decides on the Bolin Centre's communications strategy.

9.2 Directors

The directors are responsible for ongoing operations and decide on communication activities that are included in the annual communications plan. The directors also allocate responsibility for responding to external questions of fact and referral requests.

9.3 Science Advisory Group (SAG)

The Science Advisory Group (SAG) consists of an advisory body within the Bolin Centre, which acts as a platform for strategic and operational issues of communication. The Group assists in answering external questions of fact and referral requests by consulting scientists at the Bolin Centre with the appropriate knowledge. SAG also share important



information with the research areas and with the Bolin Centre's leadership. This can be a matter of funding that the Centre's members are eligible to apply for and upcoming/ongoing seminars, education opportunities, collaborations and other activities.

9.4 Administration

The administration consists of two employees who handle coordination and communication for the Bolin Centre. The administrators coordinate prioritised activities that the directors decide on, such as the Bolin Days. The administration is also responsible for the following activities: proposing updates of the Centre's existing communications strategy on behalf of the Board, proposing communication activities in a communications plan that will apply in the coming calendar year and being responsible for their implementation together with the directors, communicating news to the Centre's members via e-mail, newsletters and the website, and supporting clear writing in central communications from the Bolin Centre. The administration also offers general communication support to the Centre's members. For example, this might concern evaluating how topics/news can be spread through various communication channels and whether a topic/news item is suitable for a press release. The administration also offers assistance through the development of generic templates that can facilitate the communication of research results.

9.5 Bolin Centre's research network

One of the strengths of a research network is that the members can support each other, even in matters of communication. Among the researchers at the Bolin Centre, there is broad experience in determining the suitability of research results for a press release and the most effective channels and formats for reaching different target groups. This network should be used where possible and appropriate. The Bolin Centre members can thus provide complementary communication support.

9.6 Bolin Centre's database

The Bolin Centre's database is a resource through which the Centre's researchers can share their research data with the outside world. Data and metadata are made available on the database's website, <http://bolin.su.se/data/>. The database staff can provide support and advice to the Centre's researchers about how and where they can share their data, regardless of whether they choose to do so via the Bolin Centre's database or in other databases, depending on what is best suited to the individual researcher. The database's website and its staff also contribute to disseminating general information about the handling, storage, publication and preservation of research data that apply at Stockholm University.



9.7 Climate Research School (CRS)

Climate Research School (CRS) activities reach across the doctoral programmes of the departments with a common introductory course in climate science and several practical courses in programming, statistics and other analytical tools. CRS has also organised and supported international summer schools and has a comprehensive programme to support and enable students to participate in international conferences and courses at other universities. In addition, CRS offers students the opportunity to apply for funding of small independent research projects as part of a course in writing research proposals but also in administering research projects. CRS has a members' home page for affiliated doctoral students where their projects are summarised.

Appendix

Department for Collaboration at Stockholm University

The Department for Collaboration at Stockholm University offers various types of support for communication efforts. The department consists of three sections: the Section for Communications, the Section for External Relations and the Section for Relations and Events. They provide support for core research and education through building of relationships, networking, hosting, meeting places and communications.

More information is available at <https://www.su.se/om-oss/organisation/universitetsf%C3%B6rvaltning/samverkansavdelningen-1.236226>.

Section for Communications

The Section for Communications can assist with:

- **Disseminating research news in the media**

The press and editorial work group provides some support to individual researchers who would like to spread their research results in the media or highlight their research projects. It is recommended that the researcher contact the Bolin Centre's administration first to discuss whether the topic/news will be of interest to the media, for example, in the form of a press release or news announcement. If it is of interest, the press and editorial work group can give the researcher advice and support in the process, edit the researcher's draft and give suggestions for choice of channels. If the topic is considered also to be of interest to an international audience, assistance with translation and dissemination is available. The work group can also be consulted for advice about contact with the media, concerning both disseminating research news and handling critical questions from journalists. Contact: press@su.se. telephone 08-16 40 90.

- **Visual identity**

Employees can find information concerning the logo, joint profile, font etc. within the framework for the University's visual identity. The University's tools for visual identity include a media bank with images and templates, a web-based production tool for simple graphic production and an e-mail tool for digital dissemination. Contact: visuellidentitet@su.se



- **Communications advice**
The advisers can offer help, for example, with strategic advice concerning large events, branding and communication of major projects and the process of making changes. Contact: komrad.su.se
- **Communicating on the web and social media**
The marketing communications work group has special skills, for example, within social media, marketing/advertising, web publishing and guidance for creation of websites. Contact: webbsu@su.se
- **Filming events and producing videos**
Employees can receive help from this group if they wish to stream and/or record events. The media production group can also plan and carry out productions, for example, in the form of reports, documentaries and information videos. Contact: medieproduktion@su.se

Section for External Relations

The Section for External Relations develops and supports broad collaboration with the surrounding community, assists in external contacts and provides advice and practical support in matters of innovation. Contact:

Collaboration support: samverkansstod@su.se

Innovation support: innovation@su.se

Section for Relations and Events

The Section for Relations and Events supports the work with existing external partnerships and the establishment of new ones. Advice and practical support is given for alumni activities and planning and implementation of major conferences/events. Questions concerning the University's art collections and academic ceremonies can be referred to this section. Contact:

Advice and support for planning of events: evenemang@su.se

Conference rooms and locales: konferensservice@su.se

Advice and support for alumni relations: alumn@su.se

Questions concerning the University's art collections: konstsamlingarna@su.se

190117

Alasdair Skelton
Bolincentret

Ansökan om medel för sommarskola

Under somrarna 2017 och 2018 har en sommarskola arrangerats av institutioner för meteorologi, oceanografi eller geofysik på fyra olika universitet: SU, Köpenhamns univ., Univ. i Oslo och Univ. i Hamburg. En ny omgång planeras till 2019. Den äger rum på en före detta oceanografisk forskningsstation på Bornö vid Gullmarsfjorden på västkusten. Upp till 12 deltagare studerar grundläggande geofysisk strömningslära (d v s grunden för meteorologi och oceanografi) under två veckor. På förmiddagarna är det teoriföreläsningar, och på eftermiddagarna tillämpar man teorin med numeriska simuleringar. (Jag bifogar schemat från i somras.) De flesta deltagare är doktorander på de fyra institutionerna, och lärarna är professorer från de fyra institutionerna (hittills har det varit jag från SU). Det finns tre platser för doktorander från Bolincentret (eventuellt fler, om de övriga institutionerna inte fyller sina platser).

Kostnaderna består av lokalhyra och mat (inga löne-medel), totalt ungefär 130 000 DKK. Andelen för SU är en fjärdedel av detta, vilket blir ungefär 45 000 SEK med dagens valutakurs. Inga deltagaravgifter tas ut. Hittills har sommarskolan finansierats med olika egna medel, men nu börjar det bli svårt.

Kan forskarskolan bidra med finansiering? Jag skulle vilja ha ett besked i mitten av februari.

Hälsningar,
Jonas Nycander, MISU

Meteorologiska institutionen

Ocean Waves & Abyssal Flow, Borneo 2018

<u>time</u>	<u>topic</u>	<u>teacher</u>
Mon 30.7 9-12am	time series analysis	Markus
1-4pm	build slow FT	Brian
Tue 31.7 9-12am	surface w. / discrete eq.	Markus
1-4pm	build 1-d SW model	Brian
Wed 1.8 9-12am	finish surface waves	Carsten
1-4pm	test dispersion relation	Mads
Thu 2.8. 9-12am	Rossby adjustment	Carsten
1-4pm	build 2-d SW model	Mads
Fri 3.8. 9-12am	Kelvin & Poincare wave	Markus
1-4pm	add Coriolis & friction	Dion
Sat 4.8. 9-12am	Rossby wave	Carsten
1-4pm	add beta / test theory	Dion
	Sunday Mass	
Mon 6.8 9-12am	topographic waves	Pal Erik
1-4pm	test dispersion relation	Eigil
Tue 7.8 9-12am	tides	Pal Erik
1-4pm	open boundary & tides	Eigil
Wed 8.8 9-12am	equatorial waves	Jonas
1-4pm	domain across equator	Eigil
Thu 9.8. 9-12am	Gullmarsfjorden	Lars
1-4pm	build it	Eigil
Friday 10.8	discuss projects	Eigil, Jonas & Lars

Text: Pedlosky, Waves in the Ocean and Atmosphere

Ines Bulatovic

Department of Meteorology
Stockholm University
106 91 Stockholm, Sweden
Email: ines.bulatovic@misu.su.se
Phone: +468162411

To Dr Alasdair Skelton
Department of Geological Sciences
Stockholm University
106 91 Stockholm
Sweden

15/01/2019

Application for funding from the Climate Research School

Dear Alasdair,

hereby I would like to apply for funding from the Climate Research school. As a PhD student at the Department of Meteorology, I am a member of the Bolin Centre and Research Area 2 since the autumn 2016.

As every year, General Assembly of the European Geosciences Union (EGU) will be held during the spring in Vienna, Austria (<https://www.egu.eu/>). Therefore, I would be grateful to the CRS if I would be granted with the financial support to have an opportunity to participate in this conference, present my results and exchange experiences with other scientists.

I have submitted the abstract (see below) to the session AS1.40 - Clouds, Aerosols, Radiation and Precipitation (General Session) that can be very useful for my current and future research.

I look forward to hearing from you.

Best regards,
Ines Bulatovic

Title

Aerosol Indirect Effects in Marine Stratocumulus: The importance of explicitly predicting cloud droplet activation

Abstract

Climate models generally simulate a unidirectional, positive liquid water path (LWP) response to increasing aerosol number concentration. However, satellite observations and large-eddy simulations (LES) show that the LWP may either increase or decrease with increasing aerosol concentration, influencing the overall magnitude of the aerosol indirect effect (AIE). We use LES to investigate the LWP response of a marine stratocumulus cloud and its dependence on different parameterizations for obtaining cloud droplet number concentration (CDNC). The simulations confirm that the LWP response is not always positive – regardless of CDNC treatment. However, the AIE simulated with the model version with prescribed CDNC is almost three times larger compared to the version with prognostic CDNC. The reason is that the CDNC in the prognostic scheme varies in time due to supersaturation fluctuations, collection and other microphysical processes. A substantial spread in simulated AIE may thus arise simply due to the CDNC treatment.

Budget:

Total amount requested		8500sek
Travel	Flights	~ 3000sek
Accommodation	5 nights in Vienna	~ 5500sek

Reference

Prof. Dr Annica Ekman
Department of Meteorology
Stockholm University
106 91 Stockholm
Sweden

Email: annica@misu.su.se
Phone: +468162397

Academic relation: supervisor PhD

Stockholm January 17, 2019

To the Director of Studies of the Bolin Centre Climate Research School

I hereby give my support for PhD student Ines Bulatovic to apply for a research grant to attend the General Assembly of the European Geosciences Union in Vienna, 2019.

I believe that the conference will be a valuable experience for Ines as this is a meeting that gathers all international experts on the topic of her PhD studies. Ines will present results from her latest study ("Aerosol indirect effects in marine stratocumulus: The importance of explicitly predicting cloud droplet activation") in a poster session. Ines will have a chance to learn from world-leading experts in the field of aerosols, clouds and climate and can establish important contacts for her future research career.



Prof. Annica Ekman
Supervisor