

Arctic changes – processes and feedbacks in climate, ocean and cryosphere

Dear participants in EGU 2020 session CL4.14,

Thanks you all for your various contributions to this session and for participating in the live chat. As this is a new form, we probably all wonder how well it will work, but we are also excited about trying out this new way of discussing our science!

None of the co-conveners have any experience in chats – and not the least managing them, so please accept our apologies if not everything will go as smoothly as we will like.

Introduction to subject:

The Arctic is highly sensitive to the ongoing rapid climate changes with warming seen particular in the atmosphere and varying degrees of ocean warming depending on geographical region. However, in particular the fate of the cryosphere, including Arctic sea ice, glaciers and ice caps, is a source of concern. Sea ice variations impact the radiative energy budget, thus playing a role in Arctic amplification, and the Greenland Ice Sheet retreat contributes to global sea level rise.

The change in the Arctic realm may also modify the atmospheric and ocean circulation at regional to global scales, the freshwater budget of the ocean and deep-water formation as well as the marine and terrestrial ecosystems.

The processes and feedbacks involved operate on all time scales and thus require several types of information: satellite and instrumental data, climate models, and reconstructions based on geological archives.

In this session, we have received a number of exciting contributions focused on a better understanding of mechanisms and feedbacks on short to long time scales that drive Arctic and subarctic changes and their impact on climate, ocean and environmental conditions, at regional to global scales, including possible links to weather and climate outside the Arctic. We are very pleased about the many excellent contributions and look forward to discuss the various findings.

Process for the chat session:

Hopefully, you have all succeeded in uploading any display that you wish. However, also those who have chosen not to add any further material will still have the option to discuss your research based on your abstracts and any addition information that you can tell us.

Note: This chat is not recorded or stored. Only abstracts and further displays will be available after this session. This provides more freedom to discuss.

Also: All discussion will be in writing via the chat.

To best organize the chat session, we will carry out the chat for one presentation (display) at the time.

We (the conveners) will start up by writing the number of the display in the chat and invite the presenter to give a short introduction. *Presenter: It would be advisable if you have a short text ready that you can upload in the chat box. Do not expect to give a full presentation, just give a SHORT introduction and highlight the main points.* So, make it short, as we have many displays and people need time to read the chat messages. Do not just copy the entire abstract, as all session participants have had the possibility to read these prior to the chat session

After this short introduction to the presentation, the floor is now open for comments.

If no comments arrive within 30 seconds to 1 minute, we will move to the next display. Also, if no presenter is present for a display, we will also move on to the next display. One minute is a short time to write a detailed question, so it could be a good idea to prepare some comments beforehand.

Timing: We have up to 1h45min available for the session. With 27 presentations, this gives 3-4 minutes for each presentation. We did not succeed in getting a full overview of, who among the presenters, would like to discuss their result. Thus, currently we do not know how many presenters will be present or how much discussion each presentation will cause. Therefore, we need to keep a tight schedule but we will still try to be flexible, if there is a lively discussion. As there are some among the conveners who have indicated that they will likely not join the session, there should be some additional time, which at the first instance will be allocated to those, who have uploaded material in addition to abstracts – you will get 5 min for the discussion. Should there be time in the end after the full round of presentations/discussions, we can always return to discuss.

The chat session ends either when our time runs out or if the discussion ends.

All the best and keep safe,

Marit-Solveig Seidenkrantz, Anne de Vernal, Michal Kucera, Mimmi Oksman & Henrieka Detlef