



The Arctic Science Summit Week (ASSW) **2024 21 March 2024 - 29 March 2024, Edinburgh, UK**

<https://www.assw.info/>

Arena for the gap analysis of the existing Arctic Science Co-Operations (AASCO)

Session description

The "Arena for the gap analysis of the existing Arctic Science Co-Operations" (AASCO) project is coordinated by the INAR at the University of Helsinki. Scientific partners are SAON-ROADS, University of Arctic, SIOS, WMO-GAW, CBAS and UNESCO-UNITAR. The project is funded by the Foundation Prince Albert II de Monaco for two periods: 2020-2022 and 2023-2025. The AASCO project is dedicated to understanding the feedback and interactions between land, ocean, and atmosphere in the Arctic-boreal context under changing climate.

To effectively address these challenges, we recognize the need for a coordinated framework that considers the various perspectives from different disciplines. Currently, observations from different systems are conducted independently. Given the urgent global challenges, particularly climate change in the Arctic, a comprehensive and multidisciplinary approach is essential. This involves better integration, improved information and data flows, and the ability to derive science-based synthesis and predictions from existing information through platforms and data services.

The goal of the AASCO meeting at ASSW is to strengthen connections among existing research communities interested in feedback research. Additionally, the aim is to formulate a science-based message directed at Arctic research policymakers and funding agencies. This will help consolidate efforts and contribute to a more effective and coordinated approach in addressing environmental challenges in the Arctic. AASCO sessions at ASSW24 discusses

I AASCO session on Sat 23.3.

- What are the Essential Variables for land-atmosphere-ocean feedback & interactions research in the Arctic context? or are the EV already well covered by the current approach?
- Which are the relevant networks and communities whom could contribute to the identification of these EVs?

II AASCO session on Sun 24.3

- How much data is available in the Arctic now?
- What are opportunities and challenges about using AI to fill in missing data?
- In what ways can AI be helpful in combining different sets of data (data fusion)?

Tentative agenda & schedules (v22.Jan.24)

**) Coffee breaks will be from 10:00 - 10:30 and 15:30 - 16:00 //Lunch break will be from 12:30 – 13:30*

SATURDAY 23.March

Arctic Feedback & Interactions - Research & Essential Variables /Shared Arctic Variables (SAVs)

1st part of the AASCO session 11:00-12:30 UK time

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| 11:00 | AASCO introduction & aims, Hanna Lappalainen INAR University of Helsinki |
| 11:10 | Climate - AQ interactions, Tuukka Petäjä INAR University of Helsinki |
| 11:30 | Role of sea ice and snow in the polar and global climate system, NN |
| 11:45 | SAON ROADS process for the Shared Arctic Variables, Sandy Starkweather |
| 12:00 | Identification of key variables for the feedback analysis - discussion
e.g. comments by the AASCO partners: |
- Key variables and space EO data products for the cold region operations, Yubao Qiu
 - Networks and communities whom could contribute to the identification of these EVs / U-Arctic Thematic networks, Kirsi Latola, UArctic Vice-President Networks, Thule Institute, University of Oulu

12:30 end of the 1st AASCO session (continues Sun 24.03)

Lunch break from 12:30 - 13:30

SAON ROADS 13:30 - 17:00 UK time

- AASCO presentation tbc

SUNDAY 24.March

Arctic Feedbacks & Interactions - Data fusion & Data needs

The 2nd part of AASCO session 11:00-12:30 UK time

- 11:00 AASCO opening, Hanna Lappalainen, Tuukka Petäjä, INAR University of Helsinki
- 11:00 AI to fill in missing or incomplete information in datasets, EVE NN / B.Stevens MaxPlanck Inst
- 11:30 "Integrating models and observations for improved understanding of the Arctic climate system: CRiceS approach to multidisciplinary research", Risto Makkonen INAR University of Helsinki & Jennie Thomas Université Grenoble Alpes
- 11:50 Arctic data availability discussion
e.g. comments by the AASCO partners:
- SIOS, Ilkka Maatero
 - WMO GAW in situ data, Alexander Baklanov
 - in situ data and geopolitical situation, Paul Berkmann
 - Updates from HiMAC2023 Workshop Summary, Yubao Qiu
- 12:10 conclusions, message for stakeholders, next steps e.g. EU Commission Horizon 2020
- 12:30 end of the 2nd AASCO session

Lunch break from 12:30 – 13:30 UK time

SAON Board meeting 13:30 - 17:00 UK time

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