

SIOS's Online Conference on "Earth Observation (EO) and Remote Sensing (RS) applications in Svalbard"

Inviting abstracts from the Svalbard science community working on applications using Earth Observation (EO), Remote Sensing (RS), and Geoinformation (GI)

We are pleased to announce SIOS's Online conference on "Earth Observation (EO) and Remote Sensing (RS) applications in Svalbard". This online conference is being organized and coordinated by the SIOS-KC, Remote Sensing Working Group (RSWG), and guest editors of SIOS's special issue on EO/RS/GI. This online conference is being organized to:

- to promote the work of PhD students, postdocs, researchers, senior scientists, and academics who are actively contributing to the science of Svalbard.
- review the state-of-the-art EO and RS applications in Svalbard and;
- provide social experience to the Svalbard scientific community during the pandemic time.

Significance of online conference for the Svalbard scientific community:

This online conference will attract EO/RS/GI based contributions from projects supported by the SIOS ACCESS program, relevant studies from SIOS-SESS reports (2019, 2020, and 2021), outcomes from recently concluded SIOS's multidisciplinary snow workshop, SIOS-InfraNor, relevant projects supported by Norwegian Space Agency (NoSA) and Research Council of Norway (RCN), applications based on airborne data derived from SIOS-NORCE research aircraft, relevant follow-up studies presented in Svalbard Science Conference 2017 and 2019, related studies from Ny Ålesund Flagship programmes, outcomes of scientific projects under SIOS-InfraNor initiative, EO/RS/ based projects from Research in Svalbard (RiS) database of Svalbard Science Forum (SSF), outcomes from national and international projects such as cryosphere virtual lab (CVL), regional and Svalbard-wide RS activities being conducted at SIOS infrastructures by its member institutes and of course wider international scientific researcher community working in Svalbard.

Timeline of the online conference:

Opening of call: 15th April 2021

Deadline to submit abstracts: 15th May 2021.

Decision on submission: One week after the deadline.

Conference dates: 08-10 June 2021 (14:00 – 18:00 CEST)

Online conference platform: Zoom (<https://zoom.us/>)

Registration fees: Free (registration to Zoom meeting will be announced on our website)

Abstract submission:

Submit your abstract here: https://sios-svalbard.org/online_conference_abstract_submission_2020

*Please note that you need to sign up for the SIOS account to view and fill the abstract submission form. Therefore, we encourage you to start the process of abstract submission sooner than later.

Scope of the online conference:

The Svalbard Integrated Arctic Earth Observing System (SIOS) is an international observing system for long-term in situ and remotely sensed measurements in and around Svalbard addressing Earth System Science (ESS) questions. SIOS research infrastructures (RI) are distributed all over Svalbard for collection of long-term in situ measurements. These in situ measurements are useful for various current and future satellite missions for calibration and validation (cal/val) activities. Eventually, integration of in situ and satellite-based measurements would benefit the entire ESS community to

address broader scientific questions. Over the past three decades, tremendous developments in EO satellites have made significant contributions to the spatial–spectral–temporal sampling and subsequent extraction of geoinformation (GI) from the Arctic. Svalbard is probably the region in the Arctic with the most in situ measurements; still, there are massive gaps. Such data gaps can be filled using frequent satellite-based acquisitions, new product generation using remote sensing (RS), and integration of in situ data with satellite-based information. This conference will provide a broad platform for various regional and Svalbard-wide studies that are being conducted using EO/RS/GI to present their work. For this conference, we seek abstracts focusing on, but not limited to:

- Modelling studies in Svalbard and associated waters
- Ground-, space-, and airborne platform-based studies in Svalbard;
- EO/RS techniques relevant for field campaigns, modelling, and long-term monitoring programmes;
- Optical (e.g., Sentinel-2-3), Microwave (e.g., scatterometers, SAR) and Lidar (e.g., ICESat) applications in Svalbard;
- Terrestrial, marine, atmospheric, cryospheric, and cross-disciplinary applications of EO and RS in Svalbard and associated waters;
- Remote sensing of the marine cryosphere and its interactions with ocean, land, and atmosphere;
- Integration of remote sensing, in situ and previously published geoinformation to gain new knowledge about Svalbard;
- Cal/val activities for satellite missions that are being conducted in Svalbard, e.g., Pandora installation in Ny Ålesund, cal/val of snow parameters from satellite, cal/val activities using moorings;
- Machine learning, deep learning, neural networks and cloud computing (e.g., Google Earth Engine) based applications in Svalbard;
- Broader reviews on EO and RS driven research activities in Svalbard (e.g., review on monitoring calving events in Svalbard);
- Svalbard wide geoinformation extraction/product generation and operationalization using EO/RS;
- Derivation of geophysical and biophysical parameters using satellites (e.g., sea ice drift and type, chlorophyll concentration, phytoplankton blooms);
- Remote sensing applications in glaciological studies in Svalbard (geodetic mass balance, snow cover and snow properties, surface elevation changes, etc);
- Remote sensing of sea ice, icebergs, snow/firn/ice, ground ice, snow on sea ice, avalanche activities, permafrost subsidence studies using InSAR
- Methods for characterizing the terrestrial vegetation, mapping abundance and extent, growing season, primary productivity, and time series analysis;
- Applications of new technologies such as AUVs, robots, drones, mapping using Surface from Motion, terrestrial LiDAR;
- Very high resolution (VHR) satellite remote sensing in Svalbard including applications using airborne imagery and hyperspectral data acquired by SIOS-NORCE research aircraft and drones;
- Applications of UAVs in various studies in Svalbard
- Remote sensing data management and current status
- Grand Challenge Initiative (GCI) cusp rocket missions in Svalbard and their relevance to atmospheric studies
- Relevant research studies supported by the SIOS-ACCESS, SIOS-SESS, and SIOS-InfraNor initiative.

We encourage contributors to provide access of data and products generated as a part of your study via the SIOS data management system (SDMS).

Sessions of the online conference:

Submitted abstracts will be categorised into broad sessions during the review phase. Selected members from RSWG, SIOS-KC, and special issue guest editors will act as convenors for the sessions. All the sessions of the conference will be recorded and will be made available on SIOS YouTube channel after the conference for the wider scientific community.

Awards for Early Career Researchers:

We are planning to organise one dedicated session for presentations from ECRs (Bachelors, Masters, PhD, postdocs, within 7 years after PhD). Top 5 presentations presented by ECRs will be invited to contribute these as full papers to SIOS's special issue in the Remote Sensing Journal. In addition to existing discounts on Article processing charge (APC) provided by the Remote Sensing journal, SIOS will cover the rest of the APC cost for these top 5 papers, making it completely free for authors of these publications. An award committee will be established for selecting top-5 presentations.

Existing benefits by the journal: The article processing charges (APC) for the journal is about 2000 CHF per manuscript. Manuscripts from SIOS activities e.g. SIOS-InfraNor, SIOS-SESS, SIOS-ACCESS are eligible to avail **50% discount** on APC for each manuscript. Manuscripts invited by guest editors, manuscripts submitted by authors from SIOS Member institutes (at least one author from SIOS member institute), manuscripts submitted by any PhD student as a first or corresponding author (from SIOS member and non-member institutes) are eligible to avail **30% discount on APC** for each manuscript submission.

In-kind contribution of participating authors and co-authors from SIOS member institutes:

Contribution from lead author of an abstract, keynote speaker, and session chair/convenor from SIOS member institutes will be counted as an in-kind contribution.

Contact details:

If you have any question or would like to know more, please contact SIOS Remote Sensing Officer <https://sios-svalbard.org/Staff#RemoteSensingOfficer>