

EISCAT_3D Norway Newsletter

Newsletter Introduction

This newsletter is released every 3 months and covers recent space science contributions and developments involving the Norwegian EISCAT_3D community. Norwegian EISCAT news and contributions are also included. If you wish to be included in the mailing list for the newsletter distribution, please use the contact details at the bottom of the page. Previous newsletters are available on the EISCAT_3D Norway website.

Upcoming EISCAT_3D Norway Meeting

A meeting will be held this Autumn to discuss matters pertaining to the Norwegian EISCAT community. A survey will be sent out soon to select a date for the meeting.

International EISCAT Radar School

The International EISCAT Radar School was held August 14–18, 2023 in Kilpisjärvi, Finland and was hosted by Sodankylä Geophysical Observatory (SGO). Students and researchers affiliated with 9 different countries attended, for a total attendance of 27 without including instructors. Thank you SGO for hosting the excellent EISCAT School!

The next International EISCAT Radar School is planned to be held near the EISCAT Symposium dates. More details will be distributed to the EISCAT community in the near future.

INFRASTRUKTUR Project for EISCAT_3D

Proposal Writing: A project proposal for funding the Norwegian participation in EISCAT and EISCAT_3D will be prepared for the Research Council of Norway for the 15 November deadline. For more information and possible contributions, please contact one of the project board members.

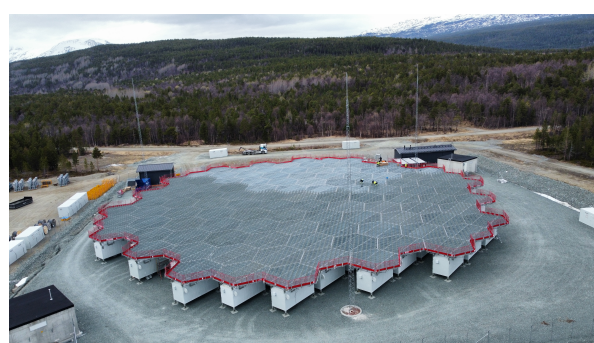
EISCAT_3D Update

EISCAT_3D construction is progressing well. The current schedule is to start EISCAT_3D operations in 2023/early 2024, first in the monostatic mode.

In parallel, EISCAT is planning to develop the legal status of the organisation in order to achieve long-term stability. The goal remains non-military scientific operations of the radar to study the Arctic upper atmosphere and ionosphere as well as geospace phenomena. Efforts will

be made to reduce any negative impact of these changes on the EISCAT user community, allowing uninterrupted use of the facilities. Follow the updates of EISCAT_3D on: <https://eiscat.se/category/eiscat3d/>

The picture below is of the Skibotn array, posted on May 10, 2023. Approximately 3/4 of the antennas are populated on the array. Since this picture the full antenna array has been installed, with electronics installations ongoing.



Credit: EISCAT

Upper Polar Atmosphere and Radar Courses

UNIS – Spring 2024

The application deadline for the two UNIS courses which run in the Spring semester 2024 is 15th October 2023. The courses are Masters / PhD level:

AGF304/804 – Radar Diagnostics of Space Physics:
<https://www.unis.no/courses/agf-304-radar-diagnostics-of-space-plasma/>

AGF301/801 – Upper Polar Atmosphere:
<https://www.unis.no/courses/agf-301-the-upper-polar-atmosphere/>

Instructions on how to apply:
<https://www.unis.no/studies/how-to-apply/>

Please pass this on to any relevant PhD or Masters student you feel would like to come to Svalbard for the courses and get hands on experience of the instrumentation at KHO and the EISCAT radar. Feel free to contact course responsible for further details (contact details can be found on the relevant course website)

Recent Space Physics Courses at UNIS

UNIS courses AGF-210 & AGF-223 visited the EISCAT Svalbard Radar (ESR) on Friday 1 September. A 2h experiment was run to observe what EISCAT data is, how it is analysed, and what it tells us about the ionosphere. It was also discussed how space weather changes show up in the radar data and what the different radar experiments are used for. After the experiment the transmitter hall was visited to discuss technical details about the radar signal generation. This experience was greatly appreciated by the students!



Science Case for New ISR on Svalbard

The Science case for a new ISR on Svalbard has been published. This is a first step on the road to ensuring the continuation of a facility on Svalbard into the next decade:

<https://link.springer.com/article/10.1186/s40645-023-00585-9>

Application Time on the EISCAT Radars

A reminder to people who have been awarded time on the radars (especially those who have experiments on the ESR) – please input your experiment into the online schedule (even if you think they might not be able to run due to problems with the dishes). It is VERY IMPORTANT you put the hours into the schedule anyway as they are then registered with EISCAT as experiments that the Norwegian community has been allocated time for.

Any questions contact the scheduling representative:
Lisa Baddeley, lisab@unis.no

Recent EISCAT Norway Publications

Baddeley, L., Lorentzen, D., Haaland, S. et al. Space and atmospheric physics on Svalbard: a case for continued incoherent scatter radar measurements under the cusp and in the polar cap boundary region. *Prog Earth Planet Sci* 10, 53 (2023). <https://doi.org/10.1186/s40645-023-00585-9>

Carter, J. A., Dunlop, M., Forsyth, C., Oksavik, K., Donovan, E., Kavanagh, A., Milan, S. E., Sergienko, T., Fear, R. C., ... Zhang, Q.-H. (2024). Ground-based and additional science support for SMILE. *Earth Planet. Phys.*, 8(1), 1–24. doi: 10.26464/epp2023055

Domben, E.S.; Sharma, P.; Mann, I. Using Deep Learning Methods for Segmenting Polar Mesospheric Summer Echoes. *Remote Sens.* 2023, 15, 4291. <https://doi.org/10.3390/rs15174291>

Hosokawa, K., Oyama, S.-I., Ogawa, Y., Miyoshi, Y., Kuriita, S., Teramoto, M., et al. (2023). A ground-based instrument suite for integrated high-time resolution measurements of pulsating aurora with Arase. *Journal of Geophysical Research: Space Physics*, 128, e2023JA031527. <https://doi.org/10.1029/2023JA031527>

Future International EISCAT 3D Meetings

Information about EISCAT and EISCAT_3D User Meetings is distributed via the mailing list moderated by EISCAT. To subscribe, email listmaster@eiscat.se. A Slack account is also organized for EISCAT_3D Discussions. To receive an invitation for the Slack channels, email channelmaster@eiscat.se.

Questions, Suggestions, Changes?

The next newsletter will be released in December, 2023. If there are any questions about EISCAT_3D, suggestions for the format of this newsletter, or changes that should be implemented, please let us know with the contact information at the bottom of the page. Thank you.