



Access to EISCAT node

WP7: Access to PITHIA-NRF facilities



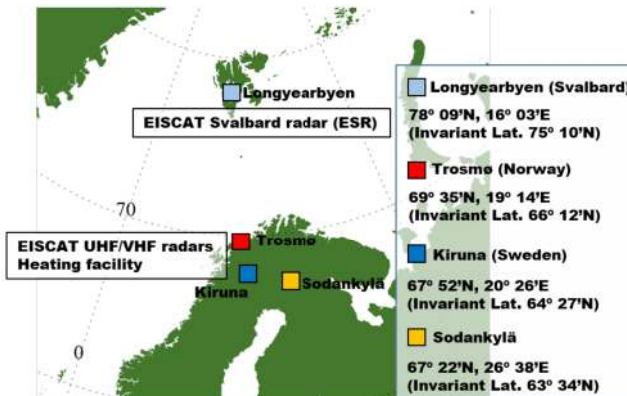
Description of the infrastructure

EISCAT Scientific Association (EISCAT) conducts upper atmosphere radar measurements, providing data for the research community.

The **incoherent scatter radar system** (ISR) is distributed on four sites in northern Scandinavia/Svalbard, with the addition of a **heating facility** and a **dynasonde** in Tromsø. A next-generation radar system **EISCAT_3D** is under development and construction.



The Longyearbyen/Svalbard ESR antennas.



Credit: NIPR, JP

Operating Sites:

- **Tromsø**
 - VHF transmitter/receiver 224 MHz
 - UHF transmitter/receiver 929 MHz
- **Dynasonde**
 - HF High power transmitter/receiver 4-8 MHz
- **Longyearbyen**
 - ESR double transmitter/receiver 500 MHz
- **Kiruna & Sodankylä**
 - VHF receivers



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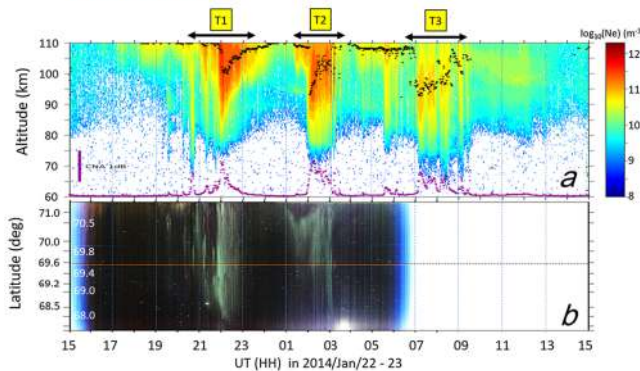
Products/models

Physical parameters:

ISR: Profiles of electron density, electron and ion temperature, ion drift velocity, ion composition, etc.

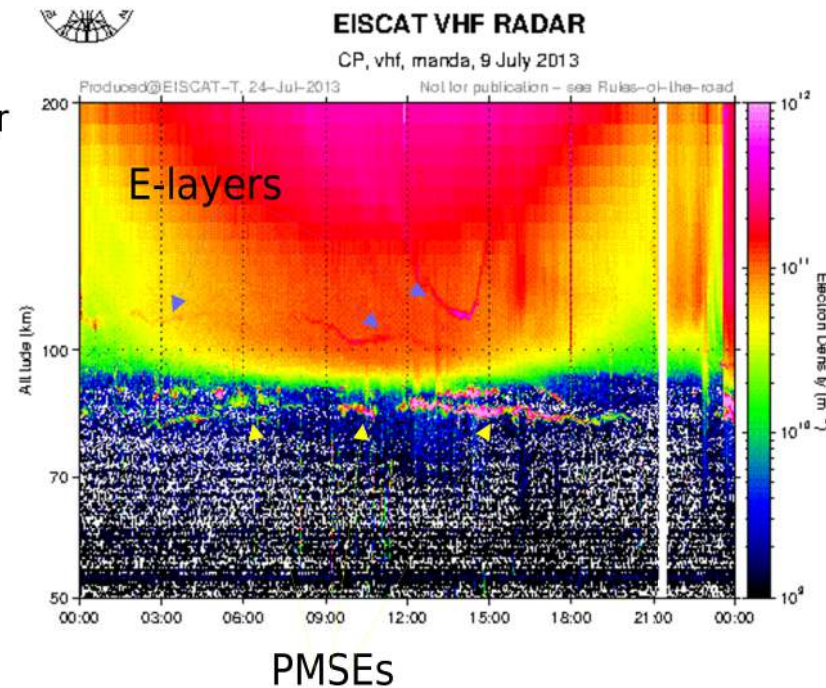
Dynasonde: Critical frequencies, electron density profiles, drift vector fields, angle of arrival, etc.

Aurora:



Oyama et al. 2017, doi:10.1002/2016JA023484.

Polar mesospheric summer echoes (PMSE) and induced E-layers:

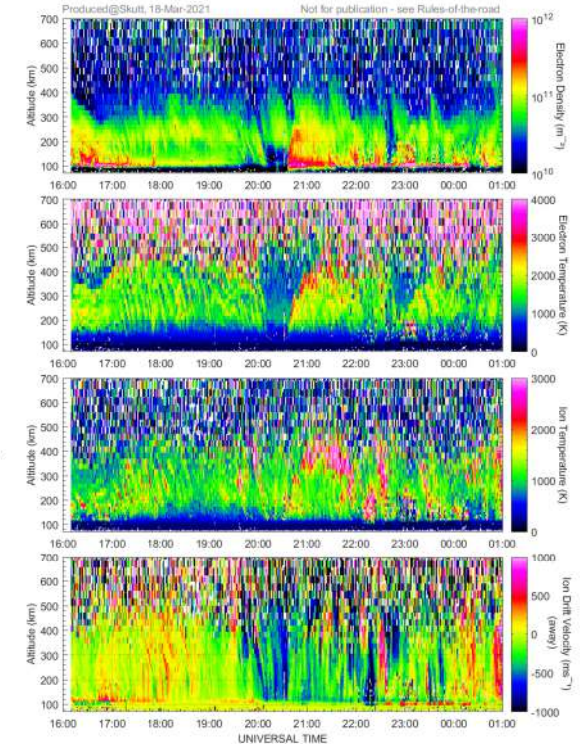


Polar cap dynamics:



EISCAT Scientific Association
EISCAT VHF RADAR

SP, vhf, bella, 21-22 November 2020





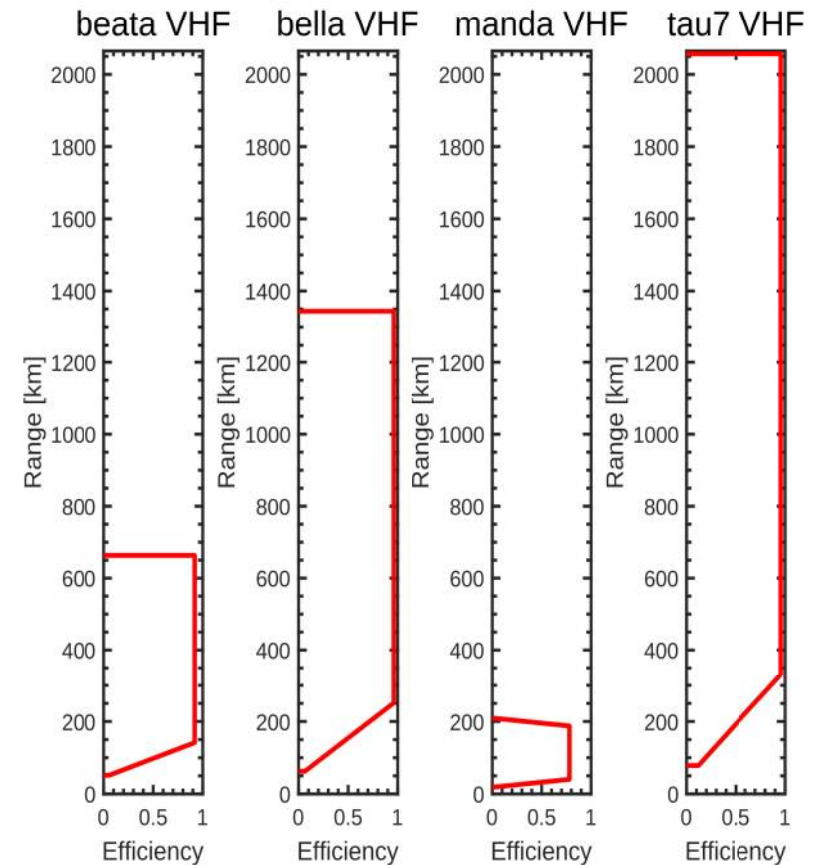
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EISCAT node is open to experiment proposals in the following fields:

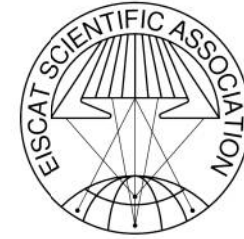
- Polar cap dynamics
- Ionospheric phenomena such as aurora, polar mesospheric clouds and summer echoes (PMC and PMSE), sporadic E-layers and naturally enhanced ion-acoustic lines (NEIAL)
- ISR/HF experiments
- Magnetosphere-ionosphere-atmosphere coupling
- Auroral electrodynamics statistical models
- Space environment-atmosphere coupling at the statistical southern edges of the polar vortex and the auroral oval
- Meteoroids, dust particles and near-Earth objects detection experiments
- Ionospheric 3D imaging





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Commitments for granted TNA projects

Node commitments:

- Physical access
 - Offer travel to the site location and one week of accommodation
- Remote access
 - Weekly scheduled interactions during one month
- Hands-on support and training at site for running experiments, analysing, database searching, etc.
- Remote support during the whole project

User commitments:

- Present scientific results and findings in a written report at end of project, maximum 6 months
- Submit an evaluation of the project experience.