

# Observatory Days 2024

10.-12. January 2024

Sodankylä Geophysical Observatory

## Programme

**Wednesday, 10th January, morning**

### ARRIVAL

10:30	N. Thomas	Welcome & Practicalities
10:45	E. Tanskanen	Opening Observatory Days: Early years of Sodankylä Geophysical Observatory

### Session 1 – CHAMOS (Chair E. Tanskanen)

11:00	K. Nilsen	Time-varying trends from Arctic ozonesonde time series in the years 1994 to 2022
11:15	P. T. Verronen	About EPP-Driven Variability of Upper Atmospheric Nitric Oxide Over the Syowa Station in Antarctica
11:30	A. Kero	Ground truth validation of energetic particle precipitation forcing used in of the CMIP climate models

11:45	<b>DISCUSSION</b>
-------	-------------------

12:00	<b>LUNCH</b> (included)
-------	-------------------------



# Observatory Days 2024

10.-12. January 2024

Sodankylä Geophysical Observatory

## Programme

**Wednesday, 10th January, afternoon**

### **Special online session (Chair A. Aikio)**

(By joining online streaming of ESA meeting)

13:30 ESA Director of Science: Scientific Opportunities in ESA programme

### **Session 2 – EISCAT\_3D (Chair A. Aikio)**

14:00 T. Ulich Preparing for EISCAT\_3D  
14:15 I. Virtanen Measurement error modelling for EISCAT3D  
14:30 S. M Hatch\* e3doubt and ISgeometry: Tools for EISCAT\_3D experiment design and uncertainty analysis

14:45 **DISCUSSION**

15:00 **COFFEE**

### **Session 3 – Ionospheric Topics (Chair T. Ulich)**

15:30 R. C. Moore Recent Results of D-Region Heating Experiments at HAARP  
15:45 N. Thomas Incoherent scatter radar measurements of ion-to-neutral collision frequencies and neutral temperatures in the D region ionosphere  
16:00 M. Yamauchi\* Auroral events in 2023 observed by Kiruna all sky camera  
16:15 Y. Katsuyama\* Improvement of ASC auroral index by correcting the exposure time and its correlation with the geomagnetic variation  
16:30 E. Bruus Skywarden: 12 years of citizen science in Finland

16:45 **DISCUSSION**

17:00 End of Session

18:30 **CONFERENCE DINNER** (included)

\* Online Participation



# Observatory Days 2024

10.-12. January 2024

Sodankylä Geophysical Observatory

## Programme

### Thursday, 11th January, morning

#### Session 4 – Science-1 (Chair I. Virtanen)

- |       |                |   |
|-------|----------------|---|
| 08:30 | A. Kozlovsky   | Atmospheric Gravity Waves and Atmosphere–Ionosphere–Magnetosphere Coupling                            |
| 08:45 | H. Vanhamäki*  | Auroral Joule heating and its effects on thermosphere   |
| 09:00 | R. Sherstyukov | Deep-learning for ionogram parameters scaling   |
| 09:15 | S. Moges       | Seasonal behaviour of MSTIDs at high latitudes using a Rapid-run Sodankylä Ionosonde                  |
| 09:30 | H. W. Tesfaw   | Statistical characteristics of auroral electron precipitation at geomagnetic latitude 67° over Tromsø |

09:45                      **DISCUSSION**

10:00                      **COFFEE**

#### Session 5 – Guest Instruments at SGO-1 (Chair T. Raita) (Invited Talks)

- |       |              |  |
|-------|--------------|--|
| 10:30 | M. Clilverd* | Results from VLF measurements SGO has made with the British Antarctic Survey over past 20 years. |
| 10:50 | C. Martinez* | Why two are better than one: combined results from VLF receivers at Oulujarvi and Kannuslehto    |
| 11:10 | K. Nicoll*   | Observations of the atmospheric electric field at Sodankyla                                      |

11:30                      **DISCUSSION**

11:50                      **Group Photo**

12:00                      **LUNCH** (included)

\* Online Participation



# Observatory Days 2024

10.-12. January 2024

Sodankylä Geophysical Observatory

## Programme

### Thursday, 11th January, afternoon

#### Session 6 – Cosmic Rays (Chair P. Verronen)

13:30	I. Usoskin	Multi-proxy estimate of the long-term flux of solar energetic particles
13:45	A. Mishev	Testing the updated CRAC and CRAC:DOMO model on GLE #60 (15-Apr-2001)
14:00	S. Koldobskiy	SGO-Luulin flight in 2021: data analysis and comparison with model results
14:15	N. Larsen	Investigating the relationship between radiation doses at aviation altitudes and real-time neutron monitor data during ground-level enhancements
14:30	S. Poluianov	Multiplicity measured with DOMC during GLE #73 and a Forbush decrease
14:45		<b>DISCUSSION</b>
15:00		<b>COFFEE</b>

#### Session 7 – Science-2 (Chair A. Kero)

15:30	J. A. Laitinen	A Combined effect of the Earth's magnetic dipole tilt and IMF By in controlling auroral electron precipitation
15:45	M. N. Pedersen	Response of auroral currents to geomagnetic storms driven by HSS/SIR, sheaths and MCs
16:00	R. Hynönen	Investigating the effect of time scale on the relationship between solar wind and ground-based ultra-low frequency power at auroral latitude
16:30		<b>DISCUSSION</b>
17:00		End of Session
18:30		<b>DINNER</b> (optional, own cost)

\* Online Participation

### Friday, 12th January, morning



# Observatory Days 2024

10.-12. January 2024

Sodankylä Geophysical Observatory

## Programme

### Session 8 – Observatory Business (Chair J. Manninen)

08:30	E. Tanskanen	Highlights of Solstice, FLEX-EPOS and E2S-industry projects
08:45	H. Silvennoinen	News of SGO's observations in 2023
09:00	I. Usoskin	Status Report of the Oulu Cosmic Ray station for 2023
09:15	T. Raita	Sodankylä Geomagnetic Observatory 110 years
09:30	K. Mursula*	Transition to a weaker Sun: A dramatic change in solar parameters at the decay of the Modern Maximum

09:45 **DISCUSSION**

10:00 **COFFEE**

### Session 9 – Guest Instruments at SGO-2 (Chair I. Usoskin) (Invited Talks)

10:30	S. Oyama*	Observation activities with passive optical and radio wave instruments in Fennoscandia by Japanese team
10:50	A. L. Aruliah*	Long-term monitoring by FPIs of the thermosphere coupling with the ionosphere in preparation for EISCAT_3D
11:10	A. Kvammen*	NOIRE-Net – A convolutional neural network for automatic classification and scaling of high-latitude ionograms

11:30 **DISCUSSION AND CONCLUSION**  
**END of MEETING!**

12:00 **LUNCH** (optional, own cost)

\* Online Participation

