

ISSI International Team #23-580

“Meteors and phenomena at the boundary between Earth's atmosphere and outer space”

First meeting 29 Jan – 2 Feb 2024

Participants on-site:

Alexander Kozlovsky

Hervé Lamy (29-31 Jan)

Renata Lukianova

Alan Liu

Johan Kero

Masaki Tsutsumi

Gunter Stober

Jie Zeng (early-career scientist)

Remotely:

Diego Janches

Mark Lester

Liliana Macotella

Satonori Nozava

Wen Yi

As a rule, the team's members give presentations on selected topics with no certain time limits. The presentations are followed by free discussions.

Agenda

Monday 29 Jan

10:00 – Welcome, introduction of participants, and practical issues (Alexander)

10:30 – Introductory presentation on ISSI (Mark Sargent)

11:00 – Aims of the team: science on the base of meteor radars' techniques (Renata and Alexander, free discussion)

11:30 – Effects of the Tonga volcano eruption (Alan)

12:00 – Lunch

13:30 – The CONDOR system for novel techniques, such as 3DVAR (Alan)

14:30 – How to use the BRAMS network to characterize meteoroid trajectory, speed, deceleration and ionisation (Herve)

15:00 – Coffee break

16:00 – Multi-instrumental observations of meteors trails at SGO (Alexander)

17:00 – Welcome reception in ISSI

Tuesday 30 Jan

09:00 – Meteor radar technique: 3DVAR+DIV retrievals (Gunter) + free discussion

10:30 – Coffee

11:00 – Observation of MLT Winds, Tides, Temperatures, Relative Densities by the USTC Mengcheng Meteor Radar (Wen)

12:00 – Lunch

13:30 – The propagation of very low frequency (VLF:3-30 kHz) radio waves inside the Earth-ionosphere waveguide (Liliana)

14:30 – Coffee

15:00 – Diffusion of meteor trails (Masaki)

15:20 – Full wave scattering results (polarization) Implications for diffusion measurements (Gunter)
17:00 – End of sessions

Wednesday 31 Jan

09:00 – 3DVAR+DIV and a revised Volume Velocity Processing using Chinese data (Jie)
10:00 – A statistical study of static and dynamic instabilities between 80 and 100 km at high latitude MLT region above Tromsø (Satonori)
11:00 – Coffee
11:30 – SOD-KIR update, NED echoes (Johan, Alexander)
12:30 – Lunch
14:00 – Dust effects (Alexander)
15:00 – Overview of SAAMER capabilities and new methodology to estimate meteor masses (Diego)
17:00 – End of sessions

Thursday 1 Feb

09:00 – The interactions of gravity waves and planetary waves (Alan)
10:00 – Wave activity in the mesosphere during the formation of the polar vortex (Renata)
10:30 – Coffee
11:00 – Signatures of the atmosphere-on-magnetosphere effects in the orientation of auroral arcs (Alexander)
12:00 – Collocated AGW and TID observation at SGO (Alexander)
12:30 – Lunch
14:00 – High-altitude meteors detected by the interferometric MU radar - analysis of ambiguities in radar echo direction of arrival (Johan)
15:30 – Coffee
16:00 – Temperature from meteor radars (Masaki, Alexander, Renata, Gunter)
17:00 – End of sessions

Friday 2 Feb

09:00 – Polarization of auroral emissions (Herve)
10:00 – Plans for coming activity (free discussion)
12:00 – End of the meeting