

ISSI International Team #23-580

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

Second meeting 18 – 22 November 2024

Participants on-site:

Alexander Kozlovsky
Renata Lukianova
Hervé Lamy (Mon-Thu)
Johan Kero
Gunter Stober
Diego Janches
Maria Hajdukova
Veerle Sterken
Joachim Balis (Mon-Thu, early-career scientist)
Jie Zeng (early-career scientist)

Remotely:

Alan Liu
Liliana Macotela
Satorori Nozawa
Wen Yi

ECS, not included on original team list:

Guochun Shi (University of Bern)
Johannes Laur (Royal Belgian Institute for Space Aeronomy, Brussels, Belgium, remote)
Martin Lu (University of Science and Technology of China, remote)

Agenda

Monday 18 Nov

10:00 – Welcome, introduction of new participants, and practical issues (Alexander)
10:30 – Aims of the team, first results, and coming issues (Renata and Alexander, free discussion)
11:00 – Meteor trails and aurora (Alexander)
11:30 – Radio emissions of aurora detected by the BRAMS network at 49.97 MHz on 10-11 May (Herve)
12:00 – Lunch
13:30 – Height profile of the meteor echo decay times and atmospheric density variations in the polar mesosphere (Renata)
14:30 – Seasonal and local time variation in the observed peak of the meteor altitude distributions by meteor radars (Diego)
15:00 – Coffee break
15:30 – Starlink re-entry: free discussion
14:15 - Fresnel holography with CMOR for fragmentation detection and speed measurements. Possible extension to BRAMS for speed determination (Joachim)
17:00 – End of sessions

Tuesday 19 Nov

09:00 – Continue: Fresnel holography with CMOR for fragmentation detection and speed measurements. Possible extension to BRAMS for speed determination (Joachim)

09:30 - Meteor radar temperature estimating during meteor showers (Alexander) + free discussion
10:30 – Coffee
11:00 – Very strong sporadic Es detected by the BRAMS network and ionosondes on 27 August
(Herve)
12:00 – Lunch
13:30 – Extension the global network of meteor radars (Diego)
14:30 – Coffee
15:00 – The Meteor Astronomy program for the last 15 years in Argentina (Diego)
15:30 – AGW and TID: October anomaly + “Momentum flux” (Alexander)
17:00 – End of sessions

Wednesday 20 Nov

09:00 – ISSI presentation on possible funding (Mark Sargent)
10:00 – Possible ionospheric structure observed using in SAR data (Liliana, remote)
10:30 – Coffee
11:00 - Uncertainty quantification on trajectories and speeds from the BRAMS network using Monte-Carlo methods (Joachim)
12:00 – Lunch
13:30 – Meteors – Scattering and Radar cross-section (Gunter)
14:30 – Coffee
15:00 – Atmospheric waves (Gunter)
15:45 – SAAMER upgrade with the multistatic stations (Diego)
16:00 – Planetary scale waves during magnetic storm (Renata)
17:00 – End of sessions

Thursday 21 Nov

09:00 – Comparison results of the MLT 3-dimensional wind retrieval methods (newly developed VVP and 3DVAR) and their direct extraction of vertical wind tides (Jie)
09:45 – Meteor radar construction plan for 2025 (Wen, remote)
10:00 – EISCAT_3D and meteor radar observations (Johan)
11:00 - Influence of meteor parameters on the resulting meteoroid orbit (Maria)
12:00 – Lunch
13:30 - The radiative effects of atmospheric compositions to tidal changes in the mesosphere-lower thermosphere during major SSW events (Guochun&Gunter)
14:00 – Long-lived non-specular meteor trails (Alexander)
14:30 – Coffee
15:00 – The CNEOS 2014 fireball (Maria, Gunter, Veerle)
16:00 – Updates from CONDOR (Alan, remote)
17:00 – End of sessions

Friday 22 Nov

09:00 – Dust in space and detecting interstellar dust (Veerle)
10:00 – Summary and plans for coming activity (free discussion)
12:00 – End of the meeting