

## Monday 13 June:

8:30-09:00: Registration

09:00-09:10: Welcome and practical information

09:10-09:40: Gabriel Chiodo (Invited): In memory of William Ball

### **Session 1: Solar and Particle Variability**

09:40-10:10: Allison Jaynes (Invited): The contribution of high-energy pulsating aurora to the total energetic particle precipitation content

10:10-10:30: Noora Partamies: Ground-based observations of auroral electron precipitation

Coffee break 10:30-10:50

10:50-11:10: Eldho Midhun Babu: Determining the latitudinal extent of energetic electron precipitation using MEPED on-board NOAA POES

11:10-11:30: Emma Bland: Spatial evolution of the substorm energetic electron precipitation region

11:30-11:50: Gang Li: Solar energetic Particles and its solar cycle dependence

11:50-12:00: Two minutes poster teasers/1 slide:

Haakon Dahl Eide: What is the flux of low energy electron precipitation in the lower thermosphere?

Pelin Erdemir: Studying relationship between MHD model Joule heating and ICME parameters

Ezgi Gülay: Investigation of Ionospheric and Ground Level Effects of Space Weather Over Turkey

Lunch break including poster session: 12:00-13:40

13:45-14:05: Josephine Salice: Solar Wind Structures and their Effects on the High-Energy Tail of the Precipitating Energetic Electron Spectrum

14:05-14:25: Hilde Nesse Tyssøy: The predictive capabilities of the Auroral Electrojet index for Medium Energy Electron Precipitation

### **Session 2/3: Solar Photon and Particle Effects on the Stratosphere and above/ Dynamical Processes Influencing the Coupling of Altitude Regions**

14:25-14:45: Miriam Sinnhuber: The HEPPA III intercomparison experiment on electron precipitation impacts

14:45-15:05: Kenneth Nilsen: Impact of the Solar Proton Event of November 2001 on Middle Atmospheric Ozone

15:05-15:25: Ville Maliniemi: Influence of energetic particle precipitation on Antarctic stratospheric chlorine and ozone over the 20th century

Coffee break 15:25-16:00

16:00-16:20: Niilo Kalakoski: Total ozone anomalies following extreme Solar proton events

16:20-16:40: Thomas Reddmann: The Impact of a Solar Extreme Event in the Middle Atmosphere, a Case Study

16:40-17:00: Timofei Sukhodolov: Exceptional middle latitude electron precipitation detected by balloon observations: implications for atmospheric composition

## Tuesday, 14. June

- 09:00-09:30: Lynn Harvey (Invited): The role of the polar vortex in Sun-Earth coupling via the descent of EPP-produced NO<sub>x</sub>
- 09:30-09:50: Timo Asikainen: How planetary waves control the dynamical response of polar vortex to energetic particle precipitation
- 09:50-10:10: Patrick Espy: Role of tides in the downward transport of NO<sub>x</sub>
- 10:10-10:30: Hector Daniel Zuniga Lopez: The medium energy electron direct effect on mesospheric dynamics during a sudden stratospheric warming event

Coffee break 10:30-10:50

10:50-11:10: Jia Jia: Bromine species response to particle precipitation-preliminary results

### **Session 4: Solar and Particle Effects on the Troposphere and Climate System Including Atmosphere and Ocean-Atmosphere Coupling**

- 11:10-11:40: Hanli Liu (Invited talk): Robust climate responses to extreme solar minimum forcing and their hemispheric differences
- 11:30-12:00: Wenjuan Huo: How can we understand the transfer of the solar signal from the stratosphere to the troposphere?
- 12:00-12:10: Two minutes poster teasers/1 slide:  
Miriam Sinnhuber: Impact of an extreme solar particle event on atmospheric composition, stratospheric dynamics, and surface temperatures  
Mikhail Vokhmianin: Long-term prediction of Sudden Stratospheric Warmings  
Antti Salminen: Planetary waves and the effect of energetic electron precipitation on the northern polar vortex  
Ingrid Mann: Investigating Polar Mesospheric Echoes during nighttime late summer conditions

Lunch break including poster session: 12:10-14:00

- 14:00-14:30: Tobias Spiegel (Invited): Twenty-First-Century Climate Change Hot Spots in the Light of a Weakening Sun
- 14:30-15:00: Annika Drews (Invited): The Sun's Role for Decadal Climate Predictability in the North Atlantic

Coffee break 15:00-15:30

- 15:30-15:50: Chaim Garfinkel: Transient Extratropical Response to Solar Ultraviolet Radiation in the Northern Hemisphere Winter: unraveling how the top-down mechanism works
- 15:50-16:10: Jan Sedlacek: Influence of solar irradiance on future climate
- 16:10-16:15: Practical information regarding the boat trip dinner

Dinner including a boat trip. The boat will depart at 6 pm (18:00) from "Dreggekaien, Skur 8", vis a vis Radisson Blu and Clarion Collection Hotel Havnekontoret

## Wednesday, June 15:

- 09:00-09:20: Lon Hood: QBO/Solar Influences on the Tropical Madden-Julian Oscillation: A Mechanism Based on Extratropical Wave Forcing in Late Fall and Early Winter

- 09:20-09:50: Gabriel Chiodo: Revisiting the Influence of Solar Variability on North Atlantic Winter Climate
- 09:50-10:10: Jose Tacza: Energetic particle effects on the atmospheric electric field in fair-weather regions
- 10:10-10:30: Jone Edvartsen: The Mansurov effect: Statistical significance and the role of autocorrelation

Coffee break 10:30-10:50

**Session 5: Tools for Assessing Solar and Particle Influences, Including Measurements, Models, and Techniques**

- 10:50-11:20: Yoshizumi Miyoshi (Invited): Relativistic electron precipitations associated with pulsating aurora: Arase-EISCAT coordinate observations
- 11:20-11:50: Ales Kuchar (Invited): Attribution of solar activity in the stratosphere and above
- 11:50-12:00: Two minutes poster teasers/1 slide:
  - Tobias Spiegl: The sensitivity of the tropical Pacific decadal climate variability to anthropogenic and solar forcing in a chemistry-climate model ensemble
  - Bernd Funke: Towards a quantitative understanding of space weather impacts on stratospheric ozone and natural climate variability: expected contributions of Earth Explorer 11 candidate mission CAIRT
  - Tuomas Häkkinen: Atmospheric impact of auroral electrons: first WACCM-D simulations with eVlasiator input
  - Zheyi Ding: Modelling the 2020 November 29 solar energetic particle event using the EUHFORIA and the iPATH model
  - Hilde Nesse Tyssøy: HEPPA III intercomparison experiment on electron precipitation impacts: Estimated ionization rates during a geomagnetic active period in April 2010

Lunch break including poster session: 12:00-14:00

- 14:00-14:20: Toralf Renkowitz: Variability of polar D region ionization near the solar minimum of cycles 24/25
- 14:20-14:40: Tarkan Bilge: Generalised Additive Models for Investigating Signals of Solar Influence
- 14:40-15:00: Maryam Ramezani Ziarani: Ozone and net radiative heating changes induced by energetic particle precipitation and ultraviolet solar variability in ICON-ART-LINOZ

15:00-15:30: Coffee break

- 15:30-15:50: Robert Marshall/Grant Berland: Imaging Energetic Particle Precipitation from Above: The AEPEX CubeSat Mission
- 15:10-16:10: Grant Berland: Turning Bremsstrahlung Photon Counts into Energetic Electron Precipitation Data Products through Low Earth Orbit Measurements and Precipitation Forward Modeling
- 16:10-16:30: Charlotte van Hazendonk: Cutoff Latitudes of Solar Proton Events Measured by GPS Satellites
- 16:30-16:50: Stefan Bender: Empirical modelling of SSUSI derived auroral ionization rates
- 16:50-17:00: Hilde and Bernd: Practical information for the working group meetings

Invited talk – 30 minutes

Solicited talk – 20 minutes