

## 7<sup>th</sup> International HEPPA-SOLARIS Workshop, 11-14 June 2018, Roanoke, Virginia, USA

- All talks will be at the **Wilson Conference Room** at the Hotel Roanoke and Conference Center.
- **All** Poster will be on display Monday through Wednesday at the **Harrison-Tyler Conference Room**. This room also serves as a break-out room
- Contributed talks = 20 + 5 minutes, Invited talks = 30 + 5 minutes

### Monday, 11 June 2018

8:30 – 9:00	<b>Registration Breakfast (Lower Lounge – Conference Level)</b>	
9:00 – 9:10	Welcome and Opening Remarks	Scott Bailey
<b>Session 1: Solar and Precipitating Particle Variability</b>		
9:10 – 9:45	A model providing long-term datasets of energetic electron precipitation including zonal dependence ( <b>Invited</b> )	Max van de Kamp
9:45 – 10:10	Towards Better Understanding of Bremsstrahlung X-rays during Energetic Electron Precipitation	Wei Xu
10:10 – 10:35	Estimating Energetic Electron Precipitation Fluxes from Subionospheric Very-Low-Frequency Transmitter Signals	Robert Marshall
10:35 – 11:00	<b>Break and Refreshments (Lower Lounge)</b>	
11:00 – 11:35	Coordinated observations with the ground-based instruments and satellites to study energetic electron precipitation and auroral morphology at the substorm recovery phase ( <b>Invited</b> )	Shin-ichiro Oyama
11:35 – 12:00	Inter-comparison of the POES/MEPED Loss Cone Electron fluxes with the CMIP6 Parametrization	Hilde Nesse Tyssoy
12:00 – 12:25	Incoherent Scatter Radar Observations of Energetic Particle Precipitation in Conjunction with Satellite Observations.	Steven Kaeppler
12:30 – 2:00	<b>Lunch (Regency Overlook)</b>	
<b>Session 2: Solar Photon and Particle Effects on the Stratosphere and Above</b>		
2:25 – 3:00	SuperDARN radar measurements of HF radio attenuation during the September 2017 solar proton events ( <b>Invited</b> )	Emma Bland



3:00 – 3:25	Estimates of impacts on atmospheric chemistry from radiation belt electrons using observations from FIREBIRD and the Van Allen Probes	Katharine Duderstadt
3:25 – 3:50	Chemically produced infrared emissions from Nitric Oxide: Energy loss rate and Efficiencies	Karthik Venkataramani
3:50 – 4:20	<b>Break and Refreshments (Lower Lounge)</b>	
4:20 – 4:55	Nitric oxide response to the April 2010 electron precipitation event ( <b>Invited</b> )	Christine Smith-Johnsen
4:55 – 5:20	A revised model for NO equilibrium in the Thermosphere	Justin Yonker
5:20 – 5:30	Overflow / Science Discussion	All

## Tuesday, 12 June 2018

8:30 – 9:00	<b>Breakfast (Lower Lounge – Conference Level)</b>	
9:00 – 9:35	Solar Flares and Energetic Electron Precipitation in WACCM ( <b>Invited</b> )	Josh Pettit
9:35 – 10:00	The stratospheric reactive nitrogen budget: what is the role of energetic particle precipitation?	Bernd Funke
10:00 – 10:35	Effects of Energetic Particles in Thermospheric Nitric Oxide Cooling during Shock-led Storms ( <b>Invited</b> )	Cissi Lin
10:35 – 11:00	<b>Break and Refreshments (Lower Lounge)</b>	
11:00 – 11:20	Empirical model of nitric oxide in the mesosphere from SCIAMACHY/Envisat satellite observations	Stefan Bender
<b>Session 3: Dynamical Processes Influencing the Coupling of Altitude Regions</b>		
11:20 – 11:45	Northern Hemisphere Stratospheric Ozone and the Polar Vortex	Michael Denton
11:45 – 12:10	Gravity wave variability in terms of polar vortex position and its effect on ozone	Brentha Thuraiajah
12:10 – 12:35	Connection between descending odd nitrogen, stratospheric ozone, short-wave heating, and temperature from 147 years of WACCM simulations	Pekka Verronen
12:35 – 2:00	<b>Lunch (Regency Overlook)</b>	

2:00 – 2:25	Observed Responses of Mesospheric Water Vapor to Solar Cycle and Dynamical Forcings	Ellis Remsberg
2:25 – 2:50	Response of the Atmosphere to Impulsive Solar Events	Cora Randall
2:50 – 3:15	Transport of polar winter lower-thermospheric Nitric Oxide to the Stratosphere	Scott Bailey
3:15 – 3:30	<b>Break and Refreshments (Lower Lounge)</b>	
3:30 – 5:00	<b>Poster Session 1</b>	
	Quantifying the Energetic Particle Precipitation Influences on the Budgets of Stratospheric NO <sub>y</sub> and Ozone using a new ‘tagging’ scheme in the Whole Atmosphere Community Climate Model (S2)	Daniel Marsh
	Production and transport mechanisms of polar MLT region NO in AIM/SOFIE observations and SD-WACCM simulations (S3)	Koen Hendrickx
	Modelling the chemical impact of particle precipitation in the middle atmosphere and comparison with observations (S3)	Thomas Reddmann
	Dynamical response of the middle atmosphere to geomagnetic forcing in three coupled chemistry-climate models (S3)	Miriam Sinnhuber

### Wednesday, 13 June 2018

8:30 – 9:00	<b>Breakfast (Lower Lounge – Conference Level)</b>	
9:00 – 9:25	New Simulations of the 2003 Halloween Solar Storms Using WACCM-X	Charles Bardeen
9:25 – 9:50	Players in the Long-term Thermospheric Energy Budget: Nitric Oxide and Gravity Waves	Cissi Lin
<b>Session 4: Solar and Particle Effects on the Troposphere and Climate System Including Atmosphere and Ocean-Atmosphere Coupling</b>		
9:50 – 10:25	A SOLARIS-HEPPA analysis of solar signatures in the CCM1 simulations (Invited)	Katja Matthes
10:25 – 11:00	<b>Break and Refreshments (Lower Lounge)</b>	
11:00 – 11:35	Solar cycle modulation of the North Atlantic Oscillation: The role of Rossby wave breaking, internal wave reflection and critical layer instability (Invited)	Hua Lu

11:35 – 12:00	Comparing solar irradiance and auroral effects on climate	Katja Matthes
12:00 – 12:30	Science Discussion/ Outstanding questions	All
12:30 – 2:00	<b>Lunch (Regency Overlook)</b>	
2:00 – 3:30	<b>Poster Session 2</b>	
	Decadal variability in the Northern Hemisphere winter circulation: Role of internal and external drivers (S4)	Kalevi Mursula
	Potential Influence of Elevated Stratopause Events on the Lower Atmospheric Circulation in MRI-ESM ((S4)	Shunsuke Noguchi
	A statistical study on the effects of Forbush Decreases on the climate at different latitudes (S4)	Williamary Portugal
<b>Session 5: Tools for Assessing Solar and Precipitating Particle Influences including Measurements, Models and Techniques</b>		
3:30 – 3:55	New Emerging Data of Atmospheric Forcing by Relativistic Electron Precipitation from the EISCAT_3D Incoherent Scatter Facility and its Complementary Research Infrastructure.	Esa Turunen
3:55 – 4:20	The Energetic Particle Precipitation Impacts and Coupling (EPPIC) Mission	Scott Bailey
4:20 – 5:00	Discussion of Future Collaborations and Meetings	
6:00 – 8:00	<b>Reception and Dinner (Crystal Ballroom AB)</b>	

### Thursday, 14 June 2018

10:00 – 4:00\* Excursion: networking, team-building, science discussion and for fun! (Boxed lunch and transportation provided at no cost)

\* Approximate times; weather permitting

#### **Excursion**

- 1) Hike to Cascade Falls (<http://virginiasmtnplayground.com/cascades/>)  
(or)
- 2) Trip to Mountain Lake ([https://en.wikipedia.org/wiki/Mountain\\_Lake\\_\(Virginia\)](https://en.wikipedia.org/wiki/Mountain_Lake_(Virginia)))  
(or)
- 3) Explore Downtown Roanoke (<https://www.virginia.org/Cities/Roanoke/>)

