



Monday June 20, 2022

as at June 15, 2022

08:30 – 10:00 Opening Session

09:00 Welcome

09:10 Keynotes

H. Christian - Future Atmospheric Electricity and Lightning Research

Zev Levin - Gaps in understanding cloud electrification

10:00 – 10:30 Coffee Break

10:30 - 12:00 Oral Session 1

Thunderstorm Research, Cloud Microphysics and Meteorology I

Chair: C. Price

10:30 **R. Albrecht** - Lightning Activity Over Tropical Water Bodies (presented by S. Goodman)

10:45 **E. Williams** - A new model for proton transfer during ice particle collisions: application to thunderstorms

11:00 **K. Brunner** - Exploring the Microphysical Controls on Scattering of Lightning Emission Using Monte Carlo Methods

11:15 **V. Chmielewski** - Preliminary mobile Lightning Mapping Array Observations During the PERiLS Field Campaign (presented by J. Ringhausen)

12:00 –13:00 Poster session I - Thunderstorm Microphysics and Meteorology 1

13:00 – 14:00 – 13:30 Lunch Break

14:00 – 15:30 Poster session II - Thunderstorm microphysics and meteorology 2

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15:30 – 17:30 Oral Session 2

Fair Weather Electricity and the Global Electrical Circuit 1

Chair: **E. Williams**

15:30 **E. Mareev** - Land–Ocean Contrast in the Direct Current Global Electric Circuit

15:45 **N. Slyunyaev** - Influence of the El Niño—Southern Oscillation on the Global Electric Circuit

16:00 **T. Bozóki** - 19 Days of Global Lightning Activity As Inferred From Schumann Resonance Observations and Seen By Ground-Based Global Lightning Detection Networks

16:15 **M. Fullekrug** - Global Climatologies of Lightning, Earth-Ionosphere Cavity Resonances and Surface Temperatures (presented by X. Bai)

16:30 **N. Ilin** - Simulation of The Seasonal Variation of the Ionospheric Potential for 1980–2020

16:45 **C. Miller** - Combining Electrical and Optical Measurements to Analyze Fog

17:00 **R. Yaniv** - E-field Variations caused by Low, Mid- and High Altitude Clouds over Israel

17:15 **Y. Hobara** - Atmospheric Electric Field Anomaly Observed Immediately Before and After Earthquakes

Tuesday June 21, 2022

08:30 – 10:00 Oral Session 3

Thunderstorm research, cloud microphysics and meteorology II

Chair: **Y. Yair**

08:30 **R. Houel** - Electrical Properties of Regular Versus Anomalous Polarity Cells Observed with the SAETTA LMA Over the Corsican Island (Presented by E. Defer)

08:45 **X. Qie** - Observation on Lightning and Thunderstorm Over the Southeastern Tibetan Plateau [by Zoom]

09:00 **J. Saha** - Increasing Upper Tropospheric Water Vapor Over the Arctic Circle



09:15 **M. Stock** - Comparing Synthetic Global Thunder Hours Derived from TLN with Human-Observed Thunder Day Data (presented by E. DiGangi)

09:30 **C. Price** – Lightning, Biology and Evolution

09:45 **D. Rosenfeld** - Coarse Sea Spray Inhibits Lightning

10:00 – 10:30 Coffee Break

10:30 – 12:00 Oral Session 4

Thunderstorm research, cloud microphysics and meteorology III

Chair: **S. Behnke**

10:30 **V. Salinas** - Examining Lightning Activity as a Proxy for Cold-Pool Heterogeneity During the Perils Field Project: Introducing A QLCS Tracking and Sampling Method for Surface, Lightning, and Radar Measurements [presented by]

10:45 **J. Souza** - Geometric Effects on Hydrometeors Electrification In The Noninductive Relative Growth Rate Charging Mechanism

11:00 **O. Altaratz** - Pair-Difference Analysis of Lightning Strokes

11:15 **Y. Guan** - Research on Lightning Numerical Prediction

11:30 **S. Goodman** - Intercomparisons of Space-Based Optical and Ground-Based RF Global Observations of Lightning for Constructing a Lightning Climatology

12:00 – 13:30 Poster session III - Fair weather and GEC + Aerosols and Ions

13:30 – 14:30 Lunch Break

14:30 – 15:30 Poster session IV- Lightning Discharge Physics 1

15:30 – 17:30 Oral Session 5

Fair weather electricity and the Global Electrical Circuit 2 + Aerosols and Ions

Chair: **E. Mareev**



- 15:30 **B. Tinsley** - Response Of Clouds And Surface Pressure To Jz
- 15:45 **J. Tacza-Anaya** - Predominant Periodicities Observed In The Potential Gradient Recorded At Several Ground-Base Stations
- 16:00 **M. Kamogawa** - Interdisciplinary Research For Atmospheric Electricity At The Summit Of The Mt. Fuji, Japan
- 16:15 **J. Lax** - The Atmosphere as a Source of Electric Energy
- 16:30 **K. Aplin** - Atmospheric Measurements With A Modernized Programmable Ion Mobility Spectrometer (Presented By J. Bór)
- 16:45 **A. Buzás** - The Atmospheric Electric Potential Gradient at Nagycenk, Hungary 1962–2009 — A Dataset to Study Long Term Changes in The Global Electric Circuit

Wednesday June 22, 2022

08:30-10:15 Oral Session 6

Lightning Discharge Physics I

Chair: **Y. Hobara**

- 08:30 **U. Ebert** - News on Streamer Modeling in Air
- 08:45 **S. Cummer** - Source Mapping and Quantitative Measurements with Broadband VHF Lightning Interferometry
- 09:00 **M. Saba** - Close View of Downward Negative and Upward Positive Leader Connection in Two Cloud-To-Ground Lightning Flashes
- 09:15 **C. Da Silva** - Asymmetric Behavior of Positive and Negative Upward Lightning Leaders in Triggered Lightning
- 09:30 **J. Montanya** - Analysis of GLM detections of lightning flashes to tall towers
- 09:45 **M. Rubinstein** - A Self-Consistent Lightning Return Stroke Model Capable Of Predicting The Effect Of The Ground Conductivity And The Current Reflection At The Strike Point On The Lightning Currents And Electromagnetic Fields
- 10:00 **A. Sunjerga** - X-Rays Associated With Stepping Of The Dart Leader In Upward Negative Lightning Discharges At The Sântis Tower: Preliminary Results [presented by M. Rubinstein]



10:15 – 10:45 Coffee Break

10:45 – 12:30 Oral Session 7

Lightning Discharge Physics II and Lightning detection

Chair: **M. Stanley**

10:30 **D. Iudin** - Lightning Initiation Scenario: From Electron Avalanches To A Self-Propagating Hot Channel Segment

10:45 **A. Kostinsky** - Unusual Plasma Formations Produced By Positive Streamers Entering The Cloud Of Negatively Charged Water Droplets

11:00 **T. Tajiri** - Characteristic of Lightning Discharge with Extremely Long Channel in Winter Thunderstorm Season

11:15 **E. DiGangi** - Lightning Classification Improvements for the Earth Networks Total Lightning Network

11:30 **G. Marlton** - LEELA: The Met Offices Next Generation Lightning Location System

11:45 **J. Lapierre** - Earth Networks Lightning Processor Update

12:00 **M-A. Cooper** - ACLENet -- Leading the Developing World to Lightning Safety (presented by S. Schmitt)

12:15 **S. Schmitt** - Lightning detection in the service of public awareness

12:30 – 13:30 Poster Session V – Lightning Discharge Physics 2

13:30 – 14:00 Lunch Break

14:00 – Excursion to Jerusalem

Thursday June 23

08:30 - 10:00 Oral Session 8



High Energy Processes in Thunderstorms and TLEs I

Chair: **J. Montanya**

- 08:30 **E. Williams** - The Failed Search for Runaway Electrons in South Africa
- 08:45 **M. Stanley** - Dual Broadband VHF Interferometer Observations of TGFs Over the Telescope Array
- 09:00 **A. Chilingarian** - On the Nature of the Optical Emission During Intense Electron Fluxes in the Low Atmosphere [Recorded]
- 09:15 **Y. Wada** - Gamma-Ray Glows in Winter Thunderstorms: Catalog Analysis and Multi-Sensor Observation
- 09:30 **J. Ortberg** - Observation of Downward TGFs in Japan and their Distinct Radio Pulses

10:00 – 10:30 Coffee Break

10:30 – 12:00 Oral Session 9

High Energy Processes in Thunderstorms and TLEs II

Chair: **S. Soula**

- 10:30 **D. Smith** - TGF Observations From The Ground And Air With The New Terrestrial High-Energy Observations Of Radiation (THOR) Arrays
- 10:45 **Y. Yair** - First Results of Directed TLE Observations During the ILAN-ES Campaign on the International Space Station
- 11:00 **O. Van Der Velde** - 13 Years of Gigantic Jet Observation in The Southern Caribbean Sea and Colombia: What Have We Learned About Their Meteorological Conditions?
- 11:15 **E. Svechnikova** – Thunderstorm Conditions Required for Terrestrial Gamma-ray Flashes Production by Relativistic Runaway Electron Avalanches
- 11:30 **C. Haspel** - The Feasibility of a 3D Time-Dependent Model for Predicting the Area of Possible Sprite Inception in the Mesosphere Based on an Analytical Solution to Poisson's Equation
- 11:45 **A. Evtushenko** - Parameterization and Global Distribution of Sprites Based of the WWLLN data



12:00 – 13:00 Poster session VI

High Energy Processes in Thunderstorms and TLEs

13:00 – 14:00 Lunch Break

14:00 – 15:30 Poster session VII

Space Missions, Planetary Lightning and Lightning Detection and Protection

15:30 – 17:00 Oral Session 10

Space and Planetary Missions

Chair: **Y. Takahashi**

15:30 **S. Behnke** - CubeSpark-RF: Designing the Radio Frequency Payload for Space-Borne 3-D Observations of Lightning

15:45 **K. Virts** - Monte Carlo Simulations for Evaluating the accuracy of GLM detection efficiency and false alarm rate retrievals

16:00 **R. Lorenz** - Schumann Resonance on Titan: Huygens Reconsidered and prospects for the Dragonfly Mission

16:15 **Y. Takahashi** - Optical Flash Detection in Venus by AKATSUKI and Ground Telescope

16:30 **S. Soula** - Detection Efficiency of ISS/LIS in Different Conditions of Storm Development in Catalonia (Spain)

17:00 Closing ceremony + Team Dancing followed by dinner