

Preliminary Programme

6 – 10 May 2024

Monday morning: Climate Change and Atmospheric Trends

09:30-10:00 Registration

10:00-10:30 Opening & Welcome

10:30-11:00 Scenario of trends in the stratosphere-mesosphere-thermosphere-ionosphere system (Jan Laštovička) - Invited -

11:30-11:50 Advances In Linkages Of Climate Change And Mesospheric Temperature Trends (Gufran Beig)

11:50-12:10 Long-term Evolution of Equatorial Mesospheric and Stratospheric Quasi-biennial Oscillation: New Insights (Karanam Kishore Kumar)

12:10-12:30 Effects of Differential Long-Term Evolution in the Solar Atmosphere During the Decay of the Modern Maximum on the Thermosphere and Ionosphere System (Liyang Qian)

Monday afternoon: Thermospheric Studies and Space Climate Change Effects

14:30-15:00 Long-term trends in the thermospheric composition ratio O/N₂ measured by TIMED GUVI in 2002-2023 (Shung-Rong Zhang) - Invited -

15:00-15:20 Future thermospheric neutral density reductions from WACCM-X, and their impact on the space debris environment (Matthew Brown)

15:20-15:40 On near long term geomagnetic field variations and the dynamics of the equatorial ionosphere over East Africa (George Erick Omondi)

15:40-16:00 Response of thermospheric hydrogen to increases in greenhouse gases and to changes in solar activity (Susan Nossal)

16:00- 17:30 Poster Session 1

Tuesday morning: Ionospheric Studies and Geomagnetic Storms

10:00-10:30 Evolution of the Ionosphere and Thermosphere During the Holocene (Xinan Yue) - Invited -

10:30-10:50 The influence of the secular change of Earth's magnetic field and greenhouse gas concentration on the climatology of the thermosphere and ionosphere system (Wenbin Wang)

10:50-11:10 Impact of selection of optimum solar activity proxy on trends in midlatitude foF2 (Jan Laštovička)

11:40-12:10 Ionospheric F2-region long-term trends (Ana G. Elías) - Invited -

12:10-12:30 How does the dayside ionospheric electron density react to the changing long-term relation between solar activity parameters? (Kalevi Mursula)

12:30-12:50 Long-term trends in the total electron content (TEC) (Jan Laštovička)

12:50-13:10 Long term trend in D-region electron density variation and its dependence on various parameters (Ajeet Kumar Maurya)

Tuesday afternoon: Stratospheric and Mesospheric Research I

14:30-15:00 Long-term changes from SABER observations (Martin M. Mlynčzak) - Invited -

15:00-15:20 Observations and trends of the structure and dynamical properties of the stratosphere under climate change (Juan A. Añel)

15:20-15:40 Upper Stratospheric Temperature Trends: New Results from OSIRIS (Kimberlee Dubé)

16:10-16:40 Variability and trends of ozone and temperature profiles in the middle atmosphere: overview of recent results (Viktorija Sofieva) - Invited -

16:40-17:00 Disentangling the advective Brewer-Dobson circulation trends (Radek Zajíček)

17:00-17:20 Climatology, long-term variability and trend of gravity wave drag in the stratosphere revealed by ERA5 (Petr Šácha)

17:20-17:50 The long-term variability of middle atmosphere water vapor revealed from merged HALOE and SABER datasets (Tao Li) - Invited -

Wednesday morning: Stratospheric and Mesospheric Research II

10:00-10:30 Trends of short lived chemicals (Alfonso Saiz López) - Invited -

10:30-10:50 Quantifying the sources of increasing stratospheric H₂O concentrations in the 21st century (Patrick Sheese)

10:50-11:10 The future of noctilucent clouds (Franz-Josef Luebken)

11:40-12:10 Trends and Variability in Stratospheric NO_x (Kimberlee Dubé) - Invited -

12:10-12:30 Comparison of different stratospheric parameters from reanalysis and satellite data (Laura de la Torre)

12:30-12:50 Temperature Trends and Solar Irradiance Effects in the Mesosphere (Liyang Qian)

FIELD TRIP

Thursday morning: Solar Activity and its Impact on the Atmosphere

10:00-10:30 Korea Ancient Aurora Record and Implications (Yong Wei) - Invited -

10:30-10:50 Solar Flux Effects on the Variations of Equatorial Electrojet (EEJ) and Counter-Electrojet (CEJ) Current across the Different Longitudinal Sectors during Low and High Solar Activity (Alemayehu Mengesha Cherkos)

10:50-11:10 Long-term solar activity impact on ionospheric ionization (Norbert Jakowski)

11:40-12:00 A change in solar radio spectrum and UV vs. sunspot relation during the decay of the Modern Maximum (Kalevi Mursula)

12:00-12:20 Combining solar EUV proxies to create new solar indices (Bruno Zossi)

12:20- 13:30 Posters Session 2

Thursday afternoon: Solar Cycle Variability and its Broader Impacts

14:30-15:00 Solar Cycle and Long-Term Trends in the Observed Peak of the Meteor Altitude Distributions by Meteor Radars (Erin C. M. Dawkins) - Invited -

15:20-15:40 Multi-index analysis of ionospheric irregularities observed during solar cycle 24-25 over South America (Giorgio Arlan da Silva Picanço)

16:10-16:30 TRENDS in D-region ionospheric parameters over the solar cycle 24 during solar flare events (Ashutosh K. Singh)

16:30-16:50 Long-term changes in the dependence of NmF2 on solar flux at Juliusruh (Maria Gloria Tan Jun Rios)

16:50-17:10 Investigating the influence of solar cycle and greenhouse gases on decadal variability in the polar summer mesosphere (Aimee Merkel)

17:10-17:30 Comparing IRI-2020 Modelled hmF2 with Ionosonde Observation During Minimum and Maximum Solar Cycle 24 in the Southern African Region (Emmanuel D. Sulungu)

Friday morning: Observational Studies and Long-term Atmospheric Monitoring

10:00-10:30 Long-term Variability and Tendencies in Mesosphere and Lower Thermosphere Winds and Tides from Meteor Radar Observations and WACCM Simulations Over Esrange (67.9°N, 21.1°E) (Karanam Ramesh) - Invited -

10:30-10:50 Long-term trends in the ionospheric equivalent slab thickness: Some evidences by Working Team #1 within IAGA WGII-F (Ana G. Elías)

10:50-11:10 Long-term trends in NmF2 related to secular variation of Earth's main magnetic field (Dupinder Singh)

11:40-12:00 Long-term Trends in the ionosphere over the Indian Region: A perspective of five decades in the Equatorial and Equatorial Ionization Anomaly location (Som Sharma)

12:00-12:20 Investigation of the long-term variation of gravity waves over South America using empirical orthogonal function analysis (Toyese Tunde Ayorinde)

12:20-12:40 Unraveling Seasonal and Diurnal Variability in F2-Region Peak Height Trends Driven by Greenhouse Gas Concentrations and Geomagnetic Field Shifts (Trinidad Durán)

12:40-13:00 Long-term trends at the geomagnetic equator: New results from Jicamarca Radio Observatory (Meyer Merino)

13:00-13:20 15-Year Tidal Trends of Longitudinal Variability in Global Temperature and Density in the Mesosphere, Thermosphere,

and Ionosphere (Sovit Khadka)

13:20-13:40 Design Considerations for the Future Geospace System Observatory (Martin M. Mlynczak)

13:40 - 14:00 Final Remarks and Workshop Closing

Posters

P1. Upper stratospheric trends in JRA-3Q vs JRA-55 (Celia Pérez-Souto)

P2. Compiling a global rocketsonde database for middle and upper atmospheric research (Juan A. Añel)

P3. Investigating the Long-Term Effects of Dust Particle Dynamics on Middle and Upper Atmosphere Variations and Satellite Navigation (Mohamad Essam Abdelaal)

P4. Coupling of Long-Term Trends of Zonal Winds Between the Mesopause and Stratosphere in Southern Winter (Byeong-Gwon Song)

P5. Rescued searchlight stratospheric aerosol extinction observations from 1963 to 1976 to complement the ones from December 1963 to December 1964 (Juan C. Antuña-Marrero)

P6. Searchlight stratospheric density observations during 1950 and 1952 rescued and digitized (Juan C. Antuña-Marrero)

P7. Long Term Variability of Aerosol Concentrations and Optical Properties over South Asia (Muhammad Zeeshaan Shahid)

P8. Evolution of Ozone above Togo during the 1979–2020 Period (Koffi Ayassou)

P9. Occurrence of Ionospheric irregularities over Brazil and Africa during the 2019 Antarctic minor sudden stratospheric warming (Ebenezer Agyei-Yeboah)

P10. The Variations of Regional Precipitation Under Extreme Solar Activity (Yuqi Wang)

P11. A Study Of Tropical Cyclones Over India (Bay Of Bengal And Arabian Sea) And Solar Influence On It (Dhruba Banerjee)

P12. A study of solar flare effects on the geomagnetic field elements during solar cycles 23 and 24 (Grodji Oswald Didier Franck)

P13. The influence of solar activity like sunspot number, solar flux F10.7, Total Solar Irradiance (TSI) and Lyman-Alpha flux over the Tropical Cyclones and Atlantic Hurricanes during 1979 to 2018 (Dhruba Banerjee)

P14. Impact of Anthropogenic Emission Changes on the Occurrence of Equatorial Plasma Bubbles (Xu Zhou)

P15. Crustal magnetic fields' effect on the day-night transportation process in the Martian ionosphere (Kai Fan)

P16. Long-Term Trends in Extreme Weather Events in South Asia: Linkage to Atmospheric Changes (Syed Ahsan Ali Bokhari)

P17. Long term Trend and Changes in the atmospheric temperature, water vapour, ozone, methane and carbon-monoxide over the Indian region (Som K Sharma)

P18. Examining Trends in Atmospheric Cloud Characteristics over the semi-arid Western-Indian Region (Dharmendra Kumar Kamat)

P19. Regional aspects of the long-term trends in the Western Mediterranean (Diego Campos Díaz)

- P20. Measurement of aerosols, clouds and surface temperature at the Antarctic bases Marambio and Juan Carlos I (Abel Calle)
- P21. Characterizing Ionospheric TEC Gradients over Nigerian Longitudes for Satellite-based Applications During the High solar Activity of Solar Cycle #24 (Abe, O. E.)
- P22. Responses of the Indian Equatorial Ionization Anomaly to two CME-induced geomagnetic storms during the peak phase of solar cycle 24 (K.G Simi)
- P23. Ionospheric responses in the low-latitude region of Africa during the geomagnetic storm of 27 August 2021 (Chukwuma Anoruo)
- P24. Ionospheric anomalies before large earthquakes (Uma Pandey)
- P25. Prediction of Ionospheric Disturbance over North Africa Using Machine Learning with Integration of Space and Ground-based GNSS Observations (Hassan Nooreldeen)
- P26. Revealing the Occurrence of Equatorial Plasma Bubbles from Multi-frequency GNSS Observations at a Low-latitude location in India (Sampad Kumar Panda)
- P27. Observation of 3-4 days oscillations in the southern Hemisphere crest of Equatorial Ionization Anomaly (Solomon Otoo Lomotey)