

# National Space Science Symposium

## 2026

# PS-1

**Space-Based Meteorology, Oceanography,  
Geosphere–Biosphere Interactions, and  
Climate Change**

### Daily Schedule

Chairperson: **Dr. S. Suresh Babu**, SPL, VSSC, Trivandrum;

Convener: **Dr. D. Jagadheesha**, ISRO HQ, Bangalore;

Co-convener: **Dr. Mukunda M. Gogoi**, SPL, VSSC, Trivandrum;

Rapporteur: **Dr. Arup Borgohain**, NESAC, Shillong

## Day-1

(23.02.2026 Monday)

### Technical Session- PS1-01 (14:15 - 16:00 Hrs)

### Theme: Innovative Retrieval Techniques & Radiative Transfer

Chair: Prof. P K Bhuyan, Professor (Retd), DU

Co-Chair: Dr. Mukunda Gogoi, SPL

### Oral Presentations (PS1-01)

| SN | Abstract ID    | Title of Abstract   | First Author              |
|----|----------------|---|---------------------------|
| 1  | NSSS2026ABS560 | Retrieval of Aerosol Optical Depth from Ocean Color Monitor-3: Refinement using SCAT-3 ocean surface winds                              | S. S. Prijith             |
| 2  | NSSS2026ABS854 | A Hybrid PINN-Transformer Model for Near Real-Time 3D Reconstruction of Ocean State from Satellite Imagery                              | Siddhartha Mahesha Pundit |
| 3  | NSSS2026ABS622 | Column CO <sub>2</sub> a priori estimation for upcoming EnSAC on-board G20 mission  | Imran A. Girach           |
| 4  | NSSS2026ABS395 | Retrieval of High-Precision Columnar Greenhouse Gases from the Ground-based Remote Sensing FTIR Spectrometer data over Hyderabad, India | Alla SaiKrishna           |
| 5  | NSSS2026ABS866 | Estimates of Aerosol Emission Fluxes from Crop Residue Burning in North-west India Using Bayesian Inversion Model                       | H. S. Gadhavi             |
| 6  | NSSS2026ABS486 | Retrieval of Sub-Hourly Aerosol Optical Depth from INSAT-3DR Geostationary Satellite using a Fusion-Enhanced Machine Learning Framework | Chakradhar Rao Tandule    |
| 7  | NSSS2026ABS338 | Estimation of Surface Particulate Matter Concentration over Indian region using Statistical Model                                       | Nilanjana Sengupta        |
| 8  | NSSS2026ABS730 | 3D line-by-line radiative transfer over Polyhedron multi-scale meshes   | Amit P Kesarkar           |
| 9  | NSSS2026ABS459 | Reliable satellite link via data relay transponder payload for meteorological data from automatic weather stations                      | Mynam Harinath            |
| 10 | NSSS2026ABS824 | A Spatially Coherent Sparse Unmixing Approach for Next-Generation Trace Gas Retrieval from TROPOMI Level-1B Data                        | Touseef Ahmad             |
| 11 | NSSS2026ABS209 | Nowcasting Cloud Motion and Detecting Extreme Weather Anomalies using Enhanced U-Net, Diffusion Models, and Self Supervised Retraining  | Heli Shah                 |

### Short-Oral Presentations (PS1-01)

| SN | Abstract ID    | Title of Abstract   | First Author          |
|----|----------------|---|-----------------------|
| 1  | NSSS2026ABS118 | Design, Development, and Launching techniques for Small Scientific Balloons in Atmospheric Science Research   | B S Mallikarjuna      |
| 2  | NSSS2026ABS425 | Detection of Methane Emissions over India Using EnMAP-A Hyperspectral Imaging Sensor  | Sathyaseelan M        |
| 3  | NSSS2026ABS502 | Impact of INSAT-3DR sounder data assimilation in predicting thunderstorms over North-east India   | Arundhati Kundu       |
| 4  | NSSS2026ABS566 | Synergistic Fusion of Aerosol Optical Depth from Satellite and Ground based Observations using Machine Learning Enhanced Geo-statistics   | Shiba Shankar Gouda   |
| 5  | NSSS2026ABS576 | Detection of Smoke Aerosols Using HARP2/PACE Polarization Measurements  | C. B. Lima            |
| 6  | NSSS2026ABS610 | Application of Multi-Satellite Data Observations for Identifying Meteorological Conditions in Transitioning Black Carbon Aerosols   | Karthik V             |
| 7  | NSSS2026ABS651 | Hybrid Approach: Combining Physical and CNN-Based Cloud Fraction Parametrizations for Enhanced NWP Performance  | Subhrajit Rath        |
| 8  | NSSS2026ABS700 | Radiative Fluxes Over the Himalayan Region: Evaluating Parameterization Schemes and Exploring the Potential of the XGBoost Machine Learning Algorithm for Downward Longwave Radiation | Mayank Kumar Chauhan  |
| 9  | NSSS2026ABS721 | INSAR Data Analysis and Usage Software (INDUS) - A Containerized GUI based Software Application for Interferometric Synthetic Aperture Radar (InSAR) Analysis                         | Wasim Akram           |
| 10 | NSSS2026ABS778 | LinearSVR Technique for Retrieving High Resolution 3D Wind Field from Single Doppler Weather Radar  | Vaibhav Tyagi         |
| 11 | NSSS2026ABS530 | Development of a UAV based Pollution Sensing System   | Lakshya Rasaprolu     |
| 12 | NSSS2026ABS657 | Hybrid Radiative Transfer–Machine Learning Framework for Estimating Vegetation Biophysical Variables from TRISHNA Estimating Vegetation Biophysical                                   | Dr. Anand S Sahadevan |
| 13 | NSSS2026ABS719 | MODIS Satellite Data for Aerosols Measurements  | Dr A N Satyanarayana  |

### Poster Presentations (PS1-01 & 02) | 16:00-17:30 Hrs

| SN            | Abstract ID    | Title of Abstract  | First Author     |
|---------------|----------------|--|------------------|
| <b>PS1-01</b> |                |  |                  |
| 1             | NSSS2026ABS118 | Design, Development, and Launching techniques for Small Scientific Balloons in Atmospheric Science | B S Mallikarjuna |

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| 2  | NSSS2026ABS425 | Detection of Methane Emissions over India Using EnMAP-A Hyperspectral Imaging Sensor  | Sathyaseelan M        |
| 3  | NSSS2026ABS502 | Impact of INSAT-3DR sounder data assimilation in predicting thunderstorms over North-east India   | Arundhati Kundu       |
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| 12 | NSSS2026ABS719 | MODIS Satellite Data for Aerosols Measurements  | Dr A N Satyanarayana  |
| 13 | NSSS2026ABS778 | LinearSVR Technique for Retrieving High Resolution 3D Wind Field from Single Doppler Weather Radar  | Vaibhav Tyagi         |

## PS1-02

|    |                |  |                       |
|----|----------------|--|-----------------------|
| 16 | NSSS2026ABS454 | Estimating Background PM2.5 Concentrations Using a Wavelet-Based Convolution Framework   | Vikas and Jyoti Bhave |
| 17 | NSSS2026ABS456 | Long-Term Columnar and Near-Surface Air Pollution over Hyderabad, India: A 17-Year Multi-Platform Assessment of Urban Urban-Regional Air Quality | Jayachandran V        |
| 18 | NSSS2026ABS490 | Global Aerosol Classification Machine Learning vs Non machine learning approaches  | Swagata Mukhopadhyay  |
| 19 | NSSS2026ABS505 | Two decades of aerosol optical depth change over India's million-plus cities: disentangling emissions growth from meteorology (2005-2024)        | Sukanya Bhattacharya  |
| 20 | NSSS2026ABS343 | Aerosol physical optical and radiative properties over central India from Atmospheric Research Testbed and satellite observations                | Shravani Banerjee     |

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| 21 | NSSS2026ABS666 | Evaluation of aerosol scattering coefficient using an Integrating Nephelometer and a Cavity attenuated phase shift-based (CAPS) extinction monitor. | Bhavesh Kuli    |
| 22 | NSSS2026ABS725 | Satellite-Based Short-Lead Severe-Weather Nowcasting and Monitoring over India  | Abhishek Chhari |

## Day-2

(24.02.2026 Tuesday)

### Technical Session- PS1-02 (11:45 - 13:15 Hrs)

### Theme: Spaceborne Observations of Aerosols and Trace Gases

Chair: Dr. M. Venkat Ratnam, NARL

Co-Chair: Dr. D. Jagadheesha, ISRO HQ

### Oral Presentations (PS1-02)

| SN | Abstract ID    | Title of Abstract   | First Author                |
|----|----------------|---|-----------------------------|
| 1  | NSSS2026ABS233 | Understanding the Chemical Sensitivity of Ozone and Particulate Nitrate using Multi-Satellite Observations and Ground observation over Delhi                                | Vikrant Tomar               |
| 2  | NSSS2026ABS057 | AI-Powered CubeSat Constellation for Microplastic Detection and Classification Using Sentinel-1 SAR and Sentinel-2 Multispectral Imagery                                    | Shambhavi Shukla            |
| 3  | NSSS2026ABS431 | Balloon-Borne measurement of aerosol particle size: B-Maps  | V. Ravi Kiran               |
| 4  | NSSS2026ABS827 | Aerosol-Cloud-Radiative Interactions over the Central Himalayas: Insights from Decadal Trends   | Priyanka Srivastava         |
| 5  | NSSS2026ABS242 | Effect of CO and CH <sub>4</sub> on O <sub>3</sub> near surface air temperature and Surface skin temperature, and their relation with relative humidity in Alwar, Rajasthan | Pranjal Joshi               |
| 6  | NSSS2026ABS424 | Geospatial-Based Web Framework for Real-Time Monitoring of Environmental Air Pollution and AQI over India   | Mahesh P                    |
| 7  | NSSS2026ABS205 | Satellite Based Insights into Cloud-Aerosol Coupling and Global SST Feedbacks Driving Monsoon Drying over the Gangetic Plains   | Amita Prabhu                |
| 8  | NSSS2026ABS819 | Study of the vertical distribution and optical-physical properties of aerosols over Delhi during the Pre-Monsoon season using Raman Lidar                                   | Vasundhara Sharma           |
| 9  | NSSS2026ABS422 | Global Aerosol Classification Using Particle Linear Depolarization Ratio Data from AERONET  | Shantikumar Singh Ningombam |
| 10 | NSSS2026ABS543 | Adjusted Optical Design for Sunphotometer   | Malaidevan P                |

### Short Oral Presentations (PS1-02)

| SN | Abstract ID    | Title of Abstract  | First Author          |
|----|----------------|--|-----------------------|
| 1  | NSSS2026ABS454 | Estimating Background PM <sub>2.5</sub> Concentrations Using a Wavelet-Based Convolution Framework | Vikas and Jyoti Bhate |
| 2  | NSSS2026ABS456 | Long-Term Columnar and Near-Surface Air Pollution  | Jayachandran V        |

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| 3 | NSSS2026ABS490 | Global Aerosol Classification Machine Learning vs Non machine learning approaches   | Swagata Mukhopadhyay |
| 4 | NSSS2026ABS505 | Two decades of aerosol optical depth change over India's million-plus cities: disentangling emissions growth from meteorology (2005-2024)           | Sukanya Bhattacharya |
| 5 | NSSS2026ABS343 | Aerosol physical optical and radiative properties over central India from Atmospheric Research Testbed and satellite observations                   | Shravani Banerjee    |
| 6 | NSSS2026ABS666 | Evaluation of aerosol scattering coefficient using an Integrating Nephelometer and a Cavity attenuated phase shift-based (CAPS) extinction monitor. | Bhavesh Kuli         |
| 7 | NSSS2026ABS725 | Satellite-Based Short-Lead Severe-Weather Nowcasting and Monitoring over India  | Abhishek Chhari      |

**Technical Session- PS1-03 (14:15 - 16:00 Hrs)**  
**Theme: Aerosols, Trace gases and Climate: Observations and Modelling**

**Chair: Dr. Som Kumar Sharma, PRL**

**Co-Chair: Dr. Imran A. Girach, SAC**

**Oral Presentations (PS1-03)**

| SN | Abstract ID    | Title of Abstract   | First Author                                       |
|----|----------------|---|--|
| 1  | NSSS2026ABS108 | Sources and photochemical processes of reactive trace gases over the Indian subcontinent and northern Indian Ocean: Aspects of chemistry-climate interactions | L. K. Sahu   |
| 2  | NSSS2026ABS554 | Future Climate Influence on PM2.5 Levels in India using WRF-Chem under CMIP6 Pathway SSP3-7.0   | Vaishnavi  |
| 3  | NSSS2026ABS538 | Molecular-Level Understanding of PAH Transformation and their effect on Biosphere: Structural and Toxicity Analysis of Pyrene and Benzo-e-pyrene              | Dhyani Vadgama                                     |
| 4  | NSSS2026ABS830 | Inferring baseline atmospheric composition and regional influences over the Indian Subcontinent through model simulations                                     | N. Ojha  |
| 5  | NSSS2026ABS614 | A Hybrid Deep-Learning Framework for Regional Air Quality Modeling over the Indian Subcontinent   | S. Harithasree                                     |
| 6  | NSSS2026ABS412 | Quantification of aerosol-induced radiative perturbations and their influence on non-radiative fluxes over Indo-Gangetic Plain                                | Anas Ibnu Basheer/VS Nair (presenting Author)      |
| 7  | NSSS2026ABS814 | Leveraging a Network of Low-Cost Sensors for Air Quality Monitoring and Modeling over India   | Aditya Vaishya /S. Harithasree (presenting Author) |

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| 8  | NSSS2026ABS319 | Long-Term Assessment of Meteorological Influences on PM10 Concentrations over the Central Himalayan Region and Indo-Gangetic Plain of India | Preeti Tiwari       |
| 9  | NSSS2026ABS208 | Long term comparative study of Aerosol Radiative Forcing between Indus, Ganges and Brahmaputra river basins                                 | Manoj K. Srivastava |
| 10 | NSSS2026ABS201 | Influence of Aerosol Mixing State on Hygroscopic Growth and Fog Formation in New Delhi: Insights from HTDMA Measurements                    | Chaitrali Shinde    |
| 11 | NSSS2026ABS018 | Polarizability Affecting Nucleation of Water Vapour Condensation in Presence of External Electric Field                                     | Mukesh Chandra      |

### Short Oral Presentations (PS1-03)

| SN | Abstract ID    | Title of Abstract   | First Author              |
|----|----------------|---|---------------------------|
| 1  | NSSS2026ABS269 | Temporal and Seasonal Variations of Fine-mode Absorbing Aerosols over Gorakhpur in the Central Indo-Gangetic Plain during 2021-2025 | Ayush Singh               |
| 2  | NSSS2026ABS399 | Comparative Rainwater Chemistry during Southwest and Northeast Monsoons at a Tropical Rural Site                                    | Sanjana Mukherjee         |
| 3  | NSSS2026ABS550 | Assessment of Atmospheric Aerosols : Concentrations and Emission Sources in a Rapidly Urbanizing Environment                        | Pragya Parmita Konwar     |
| 4  | NSSS2026ABS607 | Seasonal Trends, Health Risks, and Ozone Formation Potential of Benzene, Toluene, and Xylene in Agra (2020–2024)                    | Richa Bhardwaj            |
| 5  | NSSS2026ABS609 | Hygroscopicity of Dicarboxylic Acids and Sugars as Drivers of Cloud Condensation Nuclei Activity: Insights from Climate Change      | Muskan Agarwal            |
| 6  | NSSS2026ABS617 | Urbanization, Air Pollution, and Local Climate Shifts: Evidence from a Five-Year Study in Agra                                      | Neha                      |
| 7  | NSSS2026ABS619 | Physicochemical Properties of Atmospheric Aerosols in a Semi-Arid Region of Southern India.   | Shaik Fasiha Begum        |
| 8  | NSSS2026ABS621 | Local and Non-Local Sources of Black Carbon and the Role of Meteorology in a Tropical Semi-Arid Region of India                     | Annareddy Ramanjula Reddy |
| 9  | NSSS2026ABS681 | Insights into the Dynamics of the Atmospheric Boundary Layer over Delhi during Severe Air Pollution and Fog Conditions              | Dharmendra Kumar Kamat    |
| 10 | NSSS2026ABS781 | Black Carbon Dynamics and Middle-Atmosphere Coupling over the Indo-Gangetic Basin: Implications for Regional Climate Change         | Vaishnav Bartaria         |
| 11 | NSSS2026ABS817 | Drivers of Urban Ozone Variability in Semi-Arid Western India   | Tapaswini Sarangi         |
| 12 | NSSS2026ABS836 | Assessment of Diwali Associated Air Pollution Using APCB Monitoring Data from Various Locations of Guwahati in North East India     | Chinmoy Patar             |

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| 13 | NSSS2026ABS840 | Influence of Meteorological Parameters on Seasonal Ozone Variation over a low latitude region of Rajasthan                                   | Vimal Saraswat       |
| 14 | NSSS2026ABS157 | Chemistry of southwest monsoon rainfall at a high-altitude site in Western Ghats, India  | Vinayak Waghmare     |
| 15 | NSSS2026ABS202 | CCN Activity and Aerosols Chemical Composition During Fog and Haze Episodes in New Delhi, India.   | Mrunal Naik          |
| 16 | NSSS2026ABS206 | A Comprehensive Assessment of PM2.5 in the Central Himalayan Region: Observations, trends and Modeling, using a unique CUPI sensor network   | Vikas Rawat          |
| 17 | NSSS2026ABS217 | Impact of two distinct types of crop residue burning emissions on ambient black carbon over the Northwestern IGP                             | Vaneet Kumar         |
| 18 | NSSS2026ABS281 | Measurements of Size-Resolved Activation Properties of Aerosol Particles and Three Possible Pathways of Activation in Urban Fog.             | Sandeep Wagh         |
| 19 | NSSS2026ABS313 | A study on Aerosol volatility under varying environmental conditions over an high altitude Site in Western Ghat India, HACPL, Mahabaleshwar. | M.Y. Aslam           |
| 20 | NSSS2026ABS333 | Assessing the Impact of Climate Variability on Rainfed Sorghum Productivity in the Western Vidarbha Central Plateau Agroclimatic Zone        | Mrinalini Srivastava |
| 21 | NSSS2026ABS352 | Role of Local and Adverted Aerosols on Cloud Microphysics in the Western Ghats, India  | Arindam Das          |
| 22 | NSSS2026ABS393 | Disentangling Meteorological and Emission Drivers of PM2.5 Variability in Kolkata Using Explainable Machine Learning                         | Bijoy Krishna Gayen  |
| 23 | NSSS2026ABS480 | Long term estimation of the net ecosystem exchange over India using model simulations  | S Akshay             |
| 24 | NSSS2026ABS537 | Impact of Monoterpenes Ozonolysis at an Indian Urban Site  | Dibyani Singh        |
| 25 | NSSS2026ABS563 | Assessing Seasonal and Annual Impacts of Aerosols on Radiative Forcing in Two Distinct Urban Climates of India                               | Kankana Ghosh        |
| 26 | NSSS2026ABS588 | Implications of Sea Breeze Circulation on the Atmospheric Aerosol Environment in the Houston Coastal Region                                  | Tamanna Subba        |
| 27 | NSSS2026ABS613 | Seasonal Variability in Ultrafine PM1 Pollution the northwestern Indian Himalayan Region: Ground monitoring and Machine Learning             | Anil Singh Salal     |
| 28 | NSSS2026ABS627 | Impact of Atmospheric Parameters on PM2.5 and Black Carbon Variability in Delhi  | Anjali Rana          |
| 29 | NSSS2026ABS628 | Physicochemical Properties of Atmospheric Aerosols in a Semi-Arid Region of Southern India   | Shaik Fasiha Begum   |
| 30 | NSSS2026ABS689 | A pathway to improve CCN activity by synergic approach of observation, laboratory experiment, numerical simulations                          | Avishek Ray          |
| 31 | NSSS2026ABS706 | Lidar-Based Characterization of atmospheric properties variability during a Dust Event Over the  | Shishir Kumar Singh  |

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|    |                | complex terrain of central Himalayan region  |                 |
| 32 | NSSS2026ABS744 | Temporal Evolution of Atmospheric Trace Gases Driven by Boundary Layer Dynamics                            | Pranami Mahanta |
| 33 | NSSS2026ABS746 | Winter Emissions vs. Summer Photochemistry: Seasonal Variability of Particle-Bound Oxy-PAHs in Agra, India | Simran Bamola   |
| 34 | NSSS2026ABS783 | Sustainable Synthesis of Bio-Waste-Derived Graphene for Bioaerosol Mitigation in Ambient Air               | Mohammad Ikbal  |
| 35 | NSSS2026ABS860 | Predicting atmospheric Black Carbon using Machine Learning Models at a Forested Himalayan Site             | Archana Bawari  |
| 36 | NSSS2026ABS869 | Observational evidence of anomalous cloud response during South Asian winter                               | Aakash Kumar    |

### Poster Presentations (PS1-03 & 04) | 16:00 – 17:30 Hrs

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|---------------|----------------|---|---------------------------|
| <b>PS1-03</b> |                |   |                           |
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**PS1-04**

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|----|----------------|--|----------------------|
| 37 | NSSS2026ABS102 | Cloud Base Distribution over a Tropical Urban Region, Hyderabad, India   | H. Z. Vanlalrochana  |
| 38 | NSSS2026ABS443 | Atmospheric boundary layer and elevated aerosol layer characteristics over a valley and a mountainous location of North-East India                                 | Partha Jyoti Sahu    |
| 39 | NSSS2026ABS452 | Investigating the influence of Vertically Integrated Moisture Flux Divergence and Evapotranspiration on Precipitation Variability in North-East India              | Anindita Borah       |
| 40 | NSSS2026ABS511 | Atmospheric Boundary Layer Dynamics over Agartala, a North-Eastern Indian Location: Insights from Ground-based Lidar Observations and Reanalysis Datasets          | Sukanya Bhattacharya |
| 41 | NSSS2026ABS599 | Land surface feedback and rainfall bias in the dynamical models with different physical parametrizations   | Pratibha Gautam      |
| 42 | NSSS2026ABS606 | Cloud and Boundary Layer Dynamics in Response to a Dust Storm during May 2025 over Western India   | Aniket               |
| 43 | NSSS2026ABS867 | Vertical Coupling and Momentum Transportation during Mesoscale Convective Systems over the Complex Terrain of Northeast India: Insights from ST Radar Observations | Samiran Patgiri      |
| 44 | NSSS2026ABS812 | Asymptotic Drag Laws in the Truly Neutral Atmospheric Boundary Layer   | Abhishek Gupta       |
| 45 | NSSS2026ABS865 | Eddy Covariance Measurements of Surface Energy Budget Components Over a Coastal Station in Southwest Peninsular India  | Sandhya K Nair       |
| 46 | NSSS2026ABS161 | Impact of Lightning Activity on Atmospheric Boundary Layer Parameters and their consequences over Pune, India and its surrounding region                           | Aditi Yadav          |
| 47 | NSSS2026ABS185 | Variation in surface latent heat flux and surface temperature during high magnitude earthquakes  | Ananna Bardhan       |
| 48 | NSSS2026ABS200 | LES Simulated Turbulence Characteristics During Winter Fog Events: A WiFEX case study over IGI Airport, New Delhi.   | Priyangshu Choudhury |
| 49 | NSSS2026ABS223 | Unravelling The Spectral Variability Of Equivalent Temperature Over Chennai  | Athira Sasikumar     |

|    |                |   |                               |
|----|----------------|---|-------------------------------|
| 50 | NSSS2026ABS389 | Declining trends of Atmospheric Boundary Layer Height over India: Relation and Implications on Surface temperature, fluxes and aerosols | Ghouse Basha                  |
| 51 | NSSS2026ABS400 | Convective Transport of Lower-Atmospheric Pollutants to the UTLS: Insights into ATAL Formation from Rainwater and Aerosol Chemistry     | Chaithanya D. Jain            |
| 52 | NSSS2026ABS682 | Application of aerial LiDAR mapping for characterizing meter-scale turbulence in the ABL.   | Harish Varma                  |
| 53 | NSSS2026ABS797 | Parameter estimation for vadose–zone and surface–layer interface solver over polyhedron meshes  | Jyoti Bhate and Amit Kesarkar |

**Day-3**  
(25.02.2026 Wednesday)

**Technical Session- PS1-04 (11:45 - 13:15 Hrs)**  
**Theme: ABL Process, Stratosphere-troposphere exchange and TTL dynamics**

**Chair: Dr. Narendra Ojha, PRL**

**Co-Chair: Dr. Binita Pathak, DU**

**Oral Presentations (PS1-04)**

| <b>SN</b> | <b>Abstract ID</b> | <b>Title of Abstract</b>  | <b>First Author</b> |
|-----------|--------------------|---|---------------------|
| 1         | NSSS2026ABS390     | Balloon borne measurement campaigns of Asian Tropopause Aerosol Layer, BATAL, Insights from a decade of observations                | M. Venkat Ratnam    |
| 2         | NSSS2026ABS716     | Investigations of Atmospheric Clouds and Boundary Layer Dynamics over the Indian Region using PRL's Indian Lidar Network (ILIN)     | Som Kumar Sharma    |
| 3         | NSSS2026ABS148     | Assessment of Diurnally Evolving Atmospheric Boundary Layer over the Central India under the Influence of Extreme Heat Waves        | Adarsh Jain         |
| 4         | NSSS2026ABS598     | Leveraging gridded datasets to assess atmospheric boundary layer height over North-East Indian region                               | Rohit Gautam        |
| 5         | NSSS2026ABS308     | Investigating the role of water vapor and ozone in the formation of tropopause inversion layer                                      | K. P. Aathira       |
| 6         | NSSS2026ABS391     | Shortwave radiative impacts of the asian tropopause aerosol layer from in situ balloon measurements and regional satellite analyses | B.L. Madhavan       |
| 7         | NSSS2026ABS769     | Long-Term Trends and Driving Mechanisms of Atmospheric Boundary Layer Height over Northeast India: A Reanalysis Data Assessment.    | Manasi Gogoi        |
| 8         | NSSS2026ABS795     | Convective moistening of the upper troposphere as inferred from INSAT-3D imager observations  | Mata Mahakur        |

**Short Oral Presentations (PS1-04)**

| <b>SN</b> | <b>Abstract ID</b> | <b>Title of Abstract</b>  | <b>First Author</b> |
|-----------|--------------------|---|---------------------|
| 1         | NSSS2026ABS102     | Cloud Base Distribution over a Tropical Urban Region, Hyderabad, India  | H. Z. Vanlalrochana |
| 2         | NSSS2026ABS443     | Atmospheric boundary layer and elevated aerosol layer characteristics over a valley and a mountainous location of North-East India                    | Partha Jyoti Sahu   |
| 3         | NSSS2026ABS452     | Investigating the influence of Vertically Integrated Moisture Flux Divergence and Evapotranspiration on Precipitation Variability in North-East India | Anindita Borah      |

|    |                |  |                      |
|----|----------------|--|----------------------|
| 4  | NSSS2026ABS511 | Atmospheric Boundary Layer Dynamics over Agartala, a North-Eastern Indian Location: Insights from Ground-based Lidar Observations and Reanalysis Datasets          | Sukanya Bhattacharya |
| 5  | NSSS2026ABS599 | Land surface feedback and rainfall bias in the dynamical models with different physical parametrizations   | Pratibha Gautam      |
| 6  | NSSS2026ABS606 | Cloud and Boundary Layer Dynamics in Response to a Dust Storm during May 2025 over Western India   | Aniket               |
| 7  | NSSS2026ABS867 | Vertical Coupling and Momentum Transportation during Mesoscale Convective Systems over the Complex Terrain of Northeast India: Insights from ST Radar Observations | Samiran Patgiri      |
| 8  | NSSS2026ABS161 | Impact of Lightning Activity on Atmospheric Boundary Layer Parameters and their consequences over Pune, India and its surrounding region                           | Aditi Yadav          |
| 9  | NSSS2026ABS185 | Variation in surface latent heat flux and surface temperature during high magnitude earthquakes  | Ananna Bardhan       |
| 10 | NSSS2026ABS200 | LES Simulated Turbulence Characteristics During Winter Fog Events: A WiFEX case study over IGI Airport, New Delhi.   | Priyangshu Choudhury |
| 11 | NSSS2026ABS223 | Unravelling The Spectral Variability Of Equivalent Temperature Over Chennai  | Athira Sasikumar     |
| 12 | NSSS2026ABS389 | Declining trends of Atmospheric Boundary Layer Height over India: Relation and Implications on Surface temperature, fluxes and aerosols                            | Ghouse Basha         |
| 13 | NSSS2026ABS400 | Convective Transport of Lower-Atmospheric Pollutants to the UTLS: Insights into ATAL Formation from Rainwater and Aerosol Chemistry                                | Chaithanya D. Jain   |
| 14 | NSSS2026ABS682 | Application of aerial LiDAR mapping for characterizing meter-scale turbulence in the ABL.  | Harish Varma         |
| 15 | NSSS2026ABS797 | Parameter estimation for vadose–zone and surface-layer interface solver over polyhedron meshes   | Jyoti Bhate          |
| 16 | NSSS2026ABS812 | Asymptotic Drag Laws in the Truly Neutral Atmospheric Boundary Layer   | Abhishek Gupta       |
| 17 | NSSS2026ABS865 | Eddy Covariance Measurements of Surface Energy Budget Components Over a Coastal Station in Southwest Peninsular India  | Sandhya K Nair       |

**Technical Session- PS1-05 (14:15 - 16:00 Hrs)**  
**Theme: Understanding clouds from space-borne observations**

**Chair: Dr. Amit P Kesarkar, NARL**

**Co-Chair: Dr. Prijith S. S., SPL**

**Oral Presentations (PS1-05)**

| <b>SN</b> | <b>Abstract ID</b> | <b>Title of Abstract</b>   | <b>First Author</b>   |
|-----------|--------------------|--|-----------------------|
| 1         | NSSS2026ABS392     | Aerosol-cloud interaction observed in the mixed-phase cloud using ground-based, in-situ, and satellite observations  | Trishna Bhattacharyya |
| 2         | NSSS2026ABS564     | Monsoonal Cloud Microphysics over the Eastern Himalayan Region: Insights from EarthCARE Cloud Profiling Radar  | Arban Shongdor Youroi |
| 3         | NSSS2026ABS676     | A Multi-Platform Approach to Investigate Orographic Clouds and Rainfall Variability over the Indian Himalayan Region   | Ruchita Shah          |
| 4         | NSSS2026ABS546     | Clouds characterization over an Extreme easternmost valley location of India: First-time results   | Binita Pathak         |
| 5         | NSSS2026ABS323     | Evolving Patterns of Lightning Activity in Indian Lightning Hotspots   | CK Unnikrishnan       |
| 6         | NSSS2026ABS491     | The Indian Lightning Detection Network (ILDN): A Citizen Science Framework for Lightning Nowcasting and Hazard Mitigation                                    | Anirban Guha          |
| 7         | NSSS2026ABS078     | Roll Clouds and Closed Convective Cloud Cells - Lesser-known monsoon clouds  | Swathi .B             |
| 8         | NSSS2026ABS685     | Investigation of Seasonal Dynamics of Clouds over the Northwestern Region of Himalayas using Ground-Based Lidar, Satellite, and Reanalysis                   | Ankit Tandon          |
| 9         | NSSS2026ABS831     | Impact of non-precipitating clouds on surface radiation components based on high-resolution in situ data over tropical station in southeast peninsular India | Bonu Koteswara Rao    |
| 10        | NSSS2026ABS779     | Impact of lead time in the simulation of an MCS event during 15-17 September 2023  | Parvathy Thankachy P  |

**Short Oral Presentations (PS1-05)**

| <b>SN</b> | <b>Abstract ID</b> | <b>Title of Abstract</b>   | <b>First Author</b>  |
|-----------|--------------------|--|----------------------|
| 1         | NSSS2026ABS312     | Investigation of Cloud Properties over Gorakhpur using ground-based and satellite measurements                       | Minakshi Singh       |
| 2         | NSSS2026ABS314     | Understanding Lightning Activity over Southern India: Evidence from the Indian Lightning Location Network            | Abhinav Kumar Shukla |
| 3         | NSSS2026ABS394     | Diurnal Variations of Cirrus Cloud Properties observed Using Micro Pulse Lidar Observations over a tropical latitude | P. Riya Mol          |

|    |                |   |                     |
|----|----------------|---|---------------------|
| 4  | NSSS2026ABS405 | A Machine Learning Framework For Identification Of Factors Influencing Cloud Condensation Nuclei  | V. Ravi Kiran       |
| 5  | NSSS2026ABS519 | Characteristics and Dynamics of Atmospheric Clouds over a Northeastern Indian Region Agartala: Insights from Ground-based Lidar, Satellite, and Reanalysis Datasets | Dipanjana De        |
| 6  | NSSS2026ABS534 | Key Atmospheric Drivers of Monsoon Lightning: Insights from Machine Learning and Deep Learning Models   | Mili Ghosh Nee Lala |
| 7  | NSSS2026ABS595 | Urban Heat Island Influence on Lightning Activity Across Indian Cities during Pre-Monsoon and Monsoon (2022–2025)   | Dipanjana De        |
| 8  | NSSS2026ABS620 | Cloud Characteristics over the Indian Oceanic Regions using Machine Learning Frameworks: A Comprehensive Study of Data-Driven Approaches                            | Niyati Mevadaa      |
| 9  | NSSS2026ABS638 | Study of the Atmospheric Clouds and Boundary Layer Dynamics over the Indian Western Ghats using Lidar, Satellites and Reanalysis Data                               | Aniket              |
| 10 | NSSS2026ABS653 | Mesoscale Convective Systems and Associated Lightning Activity over Southern India  | Amrutha K U         |
| 11 | NSSS2026ABS055 | The study of lightning activity in association with aerosols over Indian region   | Swapnil S Potdar    |
| 12 | NSSS2026ABS079 | Evaluation of suitable microphysics schemes for lightning prediction over complex terrain of Western Himalaya region, Uttarakhand India                             | Sanjeev Kumar       |
| 13 | NSSS2026ABS153 | Aerosol's effects on lightning and cloud microphysics across North-East and North-West India  | Deen Mani Lal       |
| 14 | NSSS2026ABS506 | Understanding the cloud microphysical processes during extreme rainfall over southern peninsular India in the NE-monsoon using satellite observations               | Jeni N Victor       |
| 15 | NSSS2026ABS648 | Characterization of cloud properties governing lightning activity over the Indian region  | Goriparthi Pavani   |
| 16 | NSSS2026ABS683 | A Study on Cloud Characteristics and Variability over Central India   | Dizna James         |
| 17 | NSSS2026ABS870 | Improved estimates of mass absorption cross-section of Black carbon in New Delhi in the Indo-Gangetic Plain   | S. S. Pasupuleti    |

### Poster Presentations (PS1-05 & 06) | 16:00 - 17:30 Hrs

| SN            | Abstract ID    | Title of Abstract   | First Author         |
|---------------|----------------|---|----------------------|
| <b>PS1-05</b> |                |   |                      |
| 1             | NSSS2026ABS312 | Investigation of Cloud Properties over Gorakhpur using ground-based and satellite measurements            | Minakshi Singh       |
| 2             | NSSS2026ABS314 | Understanding Lightning Activity over Southern India: Evidence from the Indian Lightning Location Network | Abhinav Kumar Shukla |

|    |                |   |                     |
|----|----------------|---|---------------------|
| 3  | NSSS2026ABS394 | Diurnal Variations of Cirrus Cloud Properties observed Using Micro Pulse Lidar Observations over a tropical latitude  | P. Riya Mol         |
| 4  | NSSS2026ABS405 | A Machine Learning Framework For Identification Of Factors Influencing Cloud Condensation Nuclei  | V. Ravi Kiran       |
| 5  | NSSS2026ABS519 | Characteristics and Dynamics of Atmospheric Clouds over a Northeastern Indian Region Agartala: Insights from Ground-based Lidar, Satellite, and Reanalysis Datasets | Dipanjana De        |
| 6  | NSSS2026ABS534 | Key Atmospheric Drivers of Monsoon Lightning: Insights from Machine Learning and Deep Learning Models   | Mili Ghosh Nee Lala |
| 7  | NSSS2026ABS595 | Urban Heat Island Influence on Lightning Activity Across Indian Cities during Pre-Monsoon and Monsoon (2022–2025)   | Dipanjana De        |
| 8  | NSSS2026ABS620 | Cloud Characteristics over the Indian Oceanic Regions using Machine Learning Frameworks: A Comprehensive Study of Data-Driven Approaches                            | Niyati Mevadaa      |
| 9  | NSSS2026ABS638 | Study of the Atmospheric Clouds and Boundary Layer Dynamics over the Indian Western Ghats using Lidar, Satellites and Reanalysis Data                               | Aniket              |
| 10 | NSSS2026ABS653 | Mesoscale Convective Systems and Associated Lightning Activity over Southern India  | Amrutha K U         |
| 11 | NSSS2026ABS079 | Evaluation of suitable microphysics schemes for lightning prediction over complex terrain of Western Himalaya region, Uttarakhand India                             | Sanjeev Kumar       |
| 12 | NSSS2026ABS055 | The study of lightning activity in association with aerosols over Indian region   | Swapnil S Potdar    |
| 13 | NSSS2026ABS153 | Aerosol's effects on lightning and cloud microphysics across North-East and North-West India  | Deen Mani Lal       |
| 14 | NSSS2026ABS506 | Understanding the cloud microphysical processes during extreme rainfall over southern peninsular India in the NE-monsoon using satellite observations               | Jeni N Victor       |
| 15 | NSSS2026ABS648 | Characterization of cloud properties governing lightning activity over the Indian region  | Goriparthi Pavani   |
| 16 | NSSS2026ABS683 | A Study on Cloud Characteristics and Variability over Central India   | Dizna James         |
| 17 | NSSS2026ABS870 | Improved estimates of mass absorption cross-section of Black carbon in New Delhi in the Indo-Gangetic Plain   | S. S. Pasupuleti    |

### PS1-06

|    |                |  |                       |
|----|----------------|--|-----------------------|
| 18 | NSSS2026ABS125 | Intercomparison of Atmospheric Turbulence obtained by X-band DWR and MST Radar   | Ramyakrishna Enugonda |
| 19 | NSSS2026ABS336 | Rising Trend of Catastrophic Positive Cloud-to-Ground Lightning in Maharashtra: Climate Change and Its Relation to Long-Range Dust Transport | Abhijeet Gangane      |
| 20 | NSSS2026ABS429 | Landslide Early Warning System for North East India using Radar Rainfall and Soil Water  | Sumon Kumar Mondal    |

|    |                |  |                      |
|----|----------------|--|----------------------|
| 21 | NSSS2026ABS528 | Impact of Orography on Extreme Rainfall Event in Thoothukudi, Tamil Nadu, December 2023  | K.L. Arunkumar       |
| 22 | NSSS2026ABS597 | Microphysical features of Rainfall over Dibrugarh using Laser-Optical Disdrometer  | Uday Bhattacharjee   |
| 23 | NSSS2026ABS754 | Effect of Raindrop Size Distribution on Radar Rainfall Estimation in Rain Shadow Region: A Dual-Polarization Composite Framework for C-DWR   | Nitig Singh          |
| 24 | NSSS2026ABS107 | Lightning Polarity and Thermodynamic Fingerprints of Indian Hailstorms: A Multi-Satellite Comparison with Non-Hail Thunderstorms             | Akshay Patil         |
| 25 | NSSS2026ABS218 | Integrated Remote Sensing of MCSs in the Monsoon Core Zone: 3D Structure and Evolution via Satellite, Polarimetric Radar, and Lightning Data | Sachin M. Deshpande  |
| 26 | NSSS2026ABS359 | Rainfall characteristics over the Lakshadweep Islands using satellite and disdrometer observations   | Ambuj K Jha          |
| 27 | NSSS2026ABS539 | Observational studies of Atmospheric Electric Field Effects on the Drop Size Distribution and Rainfall Rate of thunderstorms                 | Lapynsuk Thabah      |
| 28 | NSSS2026ABS578 | Interpretable Machine Learning for Rainfall Forecasting: A ClimateChange Perspective in Meghalaya, India                                     | Abinaya Devi N       |
| 29 | NSSS2026ABS637 | Tracking and Statistics of Mesoscale Convective Cells during the Indian Summer Monsoon   | Alok Sharma          |
| 30 | NSSS2026ABS686 | Characterizing Diurnal Rainfall Variability in Monsoon-Controlled Oceanic Domains: Bay of Bengal vs Arabian Sea                              | Patita Kalyana Sahoo |
| 31 | NSSS2026ABS690 | Potential Role of Eurasian Soil Moisture in Shaping Recent ISMR Trends: A Satellite and Reanalysis Perspective                               | Nishant Gautam       |
| 32 | NSSS2026ABS640 | Tracking and Statistics of Mesoscale Convective Cells during the Indian Summer Monsoon   | Alok Sharma          |

## Day-4

(26.02.2026 Thursday)

### Technical Session- PS1-06 (11:45 - 13:15 Hrs)

### Theme: RADAR meteorology: Precipitation and hydrologycal cycles

Chair: Dr. Anirban Guha, TU

Co-Chair: Dr. Prince Prakash, NCPOR

### Oral Presentations (PS1-06)

| SN | Abstract ID    | Title of Abstract  | First Author                                   |
|----|----------------|--|--|
| 1  | NSSS2026ABS401 | First Insights from NISAR L- and S-Band Dual-Frequency SAR Data in Characterising Ocean Surface Features   | Swapna M                                       |
| 2  | NSSS2026ABS457 | From Sea Surface Anomalies to Mountain Floods: Dynamics of the July 2024 Mesoscale Convective Complex Over the Western Ghats                     | Subin Jose/ Jayachandran V (presenting Author) |
| 3  | NSSS2026ABS612 | Integrated satellite observations and a modelling approach for the identification of cloudburst events   | Debojit Sarkar                                 |
| 4  | NSSS2026ABS586 | Vertical and horizontal characteristics of precipitation during active and break spells over South Asia using multiple space based radar         | Shailendra Kumar                               |
| 5  | NSSS2026ABS756 | Temperature Dependence and Sub-seasonal Modulation of Indian Monsoon Hourly Rainfall Extremes  | Bijit Kumar Banerjee                           |
| 6  | NSSS2026ABS433 | From Space to Resilience: AI-Driven Flood Hazard Mapping Using SAR-Optical Fusion and Optimization Techniques                                    | Rahul Das                                      |
| 7  | NSSS2026ABS851 | Indian Precipitation Experiment (IPEx): First Results from the 2025 Pilot Study on Contrasting Microphysical Features of Indian Monsoon Rainfall | Kaustav Chakravarty                            |

### Short Oral Presentations (PS1-06)

| SN | Abstract ID    | Title of Abstract  | First Author          |
|----|----------------|--|-----------------------|
| 1  | NSSS2026ABS125 | Intercomparison of Atmospheric Turbulence obtained by X-band DWR and MST Radar   | Ramyakrishna Enugonda |
| 2  | NSSS2026ABS336 | Rising Trend of Catastrophic Positive Cloud-to-Ground Lightning in Maharashtra: Climate Change and Its Relation to Long-Range Dust Transport | Abhijeet Gangane      |
| 3  | NSSS2026ABS429 | Landslide Early Warning System for North East India using Radar Rainfall and Soil Water  | Sumon Kumar Mondal    |
| 4  | NSSS2026ABS528 | Impact of Orography on Extreme Rainfall Event in   | K.L. Arunkumar        |

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|----|----------------|--|----------------------|
|    |                | Thoothukudi, Tamil Nadu, December 2023   |                      |
| 5  | NSSS2026ABS597 | Microphysical features of Rainfall over Dibrugarh using Laser-Optical Disdrometer  | Uday Bhattacharjee   |
| 6  | NSSS2026ABS754 | Effect of Raindrop Size Distribution on Radar Rainfall Estimation in Rain Shadow Region: A Dual-Polarization Composite Framework for C-DWR   | Nitig Singh          |
| 7  | NSSS2026ABS107 | Lightning Polarity and Thermodynamic Fingerprints of Indian Hailstorms: A Multi-Satellite Comparison with Non-Hail Thunderstorms             | Akshay Patil         |
| 8  | NSSS2026ABS218 | Integrated Remote Sensing of MCSs in the Monsoon Core Zone: 3D Structure and Evolution via Satellite, Polarimetric Radar, and Lightning Data | Sachin M. Deshpande  |
| 9  | NSSS2026ABS359 | Rainfall characteristics over the Lakshadweep Islands using satellite and disdrometer observations   | Ambuj K Jha          |
| 10 | NSSS2026ABS539 | Observational studies of Atmospheric Electric Field Effects on the Drop Size Distribution and Rainfall Rate of thunderstorms                 | Lapynsuk Thabah      |
| 11 | NSSS2026ABS578 | Interpretable Machine Learning for Rainfall Forecasting: A ClimateChange Perspective in Meghalaya, India                                     | Abinaya Devi N       |
| 12 | NSSS2026ABS637 | Tracking and Statistics of Mesoscale Convective Cells during the Indian Summer Monsoon   | Alok Sharma          |
| 13 | NSSS2026ABS686 | Characterizing Diurnal Rainfall Variability in Monsoon-Controlled Oceanic Domains: Bay of Bengal vs Arabian Sea                              | Patita Kalyana Sahoo |
| 14 | NSSS2026ABS690 | Potential Role of Eurasian Soil Moisture in Shaping Recent ISMR Trends: A Satellite and Reanalysis Perspective                               | Nishant Gautam       |
| 15 | NSSS2026ABS640 | Tracking and Statistics of Mesoscale Convective Cells during the Indian Summer Monsoon   | Alok Sharma          |

**Technical Session- PS1-07 (14:15 - 16:00 Hrs)**  
**Theme: Space based Meteorology and Monsoon**

**Chair: Dr. Harish Gadhavi, PRL**

**Co-Chair: Dr. C. K. Unnikrishnan, NCESS**

**Oral Presentations (PS1-07)**

| SN | Abstract ID    | Title of Abstract  | First Author           |
|----|----------------|--|------------------------|
| 1  | NSSS2026ABS052 | Inferring cyclone landfall from outgoing longwave radiation  | Deveerappa Jagadheesha |
| 2  | NSSS2026ABS601 | Recent Intensification of the Asian Summer Monsoon Anticyclone and Its Coupling to Rainfall Shifts over South and East Asia                | V. N. Santhosh         |
| 3  | NSSS2026ABS256 | Characterizing Rain Effects on Surface Wind Retrievals from the Newly Launched EOS-06 OSCAT-3 Scatterometer over the Indian Summer Monsoon | Vaibhav Tyag           |

|   |                | Region   |                   |
|---|----------------|--|-------------------|
| 4 | NSSS2026ABS340 | Flood monitoring using RISAT 1A MRS SAR-EOS 4 data: A cases study on 2025 western Punjab flood, India  | Pradip Sarkar     |
| 5 | NSSS2026ABS421 | Tibetan Plateau Amplification and Its Contrasting Impacts on Indian Summer Monsoon Rainfall: Insights from Satellite Observations of 2022 and 2023 | Shreyasi Upadhyay |
| 6 | NSSS2026ABS473 | Changing Northeast India Summer Monsoon Onset Dynamics in a Warming World  | Simanta Das       |
| 7 | NSSS2026ABS028 | Impact of DWR Data Assimilation in the NCUM-R 4D-VAR system on Lightning and Rainfall forecast   | Joydeb Saha       |
| 8 | NSSS2026ABS070 | Analysis of tropical cyclone evolution related to its impact on aviation at two coastal airports   | Arpita Munsi      |

### Short Oral Presentations (PS1-07 & 08)

| SN            | Abstract ID    | Title of Abstract  | First Author            |
|---------------|----------------|--|-------------------------|
| <b>PS1-07</b> |                |  |                         |
| 1             | NSSS2026ABS069 | A Comparative Analysis of Environmental Factors and Vortex Structure in Developing and Non-Developing Tropical Disturbances over the Bay of Bengal                         | Arpita Munsi            |
| 2             | NSSS2026ABS089 | AI use technology based on satellite used in flood mechanism   | Dr. Rakesh Kumar Mishra |
| <b>PS1-08</b> |                |  |                         |
| 3             | NSSS2026ABS040 | Miyawaki Plantation for Sustainable Urban Greening- A Case Study on Soil Physicochemical Improvement at IESD BHU Varanasi.   | Isha Singh              |
| 4             | NSSS2026ABS224 | An Investigation on the Geophysical Drivers and Biophysical Responses to the 2022 Flood over the Morigaon-Nagaon Districts of Assam in North-East India                    | Aniket Chakraborty      |
| 5             | NSSS2026ABS261 | Spatiotemporal analysis of Land Use Land Cover changes over Dibrugarh, Sibsagar, and Charaideo Districts of Upper Assam  | Himashree Das           |
| 6             | NSSS2026ABS455 | Characterizing Recent Decade of Arctic Sea Ice Dynamics: Application of Validated SARAL-AltiKa Data to Uncover Dominant Modes of Variability and their Climatic Precursors | Chungkham Thombson      |
| 7             | NSSS2026ABS462 | A Tale of Four Cities: Remote Sensing Analysis of the Dual Impact of Urbanization on Temperature and Vegetation in Central India   | Dr. Mrunmayee Lokhande  |
| 8             | NSSS2026ABS468 | Spatiotemporal Analysis of the Biophysical Parameters on Primary Productivity in the North Indian Ocean  | Anju Kumari             |
| 9             | NSSS2026ABS596 | Long-term climate characteristics of Sea Breeze phenomena over Sriharikota using Met-tower observations and ERA-5 reanalysis dataset                                       | K K Amal                |
| 10            | NSSS2026ABS646 | Integrated Multi-Model Framework for multi hazard and  | Balaramdas K R          |

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|----|----------------|--|--------------------------------|
|    |                | its impact on forest Carbon under Climate change Scenarios   |                                |
| 11 | NSSS2026ABS664 | Assessing the Influence of Land Use/Land Cover on Regional Meteorology over the Tropical Inland Urban City of Hyderabad                            | T.V Ramesh Reddy               |
| 12 | NSSS2026ABS722 | High-resolution UAV survey and thermal baseline of the Luna crater, Kutch, India.  | Nitesh Vinodbhai Pandey        |
| 13 | NSSS2026ABS767 | Exploring Gross Primary Productivity variability and its environmental drivers in Meghalaya using Microwave Remote Sensing and Regional Reanalysis | Anusuya Gogoi                  |
| 14 | NSSS2026ABS768 | Snow-to-Rain Transition: Microphysical and Atmospheric Insights from the Arctic  | Lekhraj Saini                  |
| 15 | NSSS2026ABS016 | Performance Analysis of a Solar-Electric High-Altitude UAV for Climate Monitoring in Polar Regions   | Adwait Agnihotri               |
| 16 | NSSS2026ABS027 | Biomass and carbon sequestration modelling through optical and SAR data for dry deciduous forests of UK district, Karnataka India                  | A.G.Koppad                     |
| 17 | NSSS2026ABS051 | Climate and agricultural nexus in semi-arid regions of Nashik district Maharashtra   | Rajaram A Jadhav               |
| 18 | NSSS2026ABS166 | Millennial Scale Exhumation Rates of Western Himalayas: Constraints from Luminescence Thermochronology   | Malika Singhal                 |
| 19 | NSSS2026ABS197 | Satellite Meteorology of the Cryosphere: Linking Arctic Sea Ice Decline to Precipitation and Snow Variability over the Hindu Kush-Himalaya         | Siddhant Arya                  |
| 20 | NSSS2026ABS305 | Evaluating Climatic Variability and Land Atmosphere Feedbacks in the Western Himalayan Ecosystem   | Rahul Jaiswal                  |
| 21 | NSSS2026ABS326 | Digital soil mapping of Soil Organic Carbon stocks in West Bengal: A Climate Change Perspective  | Progya Mukherjee               |
| 22 | NSSS2026ABS329 | Comparative Assessment of BiLSTM and GRU for High-Resolution Downscaling of Tmin Across India  | Manisha Chaturvedi             |
| 23 | NSSS2026ABS375 | Urban Heat Mitigation through Green Infrastructure: A Coupling Coordination Analysis of Bengaluru Urban Growth                                     | Rupam Singh                    |
| 24 | NSSS2026ABS451 | Geospatial assessment of space-based AWIFS derived NDVI pattern with respect to ground-based IMD rainfall data over Assam, India                   | Sudip Kumar Kundu              |
| 25 | NSSS2026ABS503 | Utilisation of Machine learning to predict the air temperature and Relative Humidity at a glacier site (Yala) of Eastern Himalaya                  | Dr Nilamoni Barman             |
| 26 | NSSS2026ABS509 | Assessing Precipitation Extremes in the Arctic: Observations, Reanalysis, and PGW Experiments over Ny-Alesund                                      | R. Athulya and Nuncio Murukesh |
| 27 | NSSS2026ABS535 | Unraveling Snow Cover Dynamics and Responses to Climate Change in the Indian Himalayan Region  | Khushboo                       |
| 28 | NSSS2026ABS574 | Influence of Atmospheric aerosols on ET at locations having different soil moisture  | J. Murmu R                     |
| 29 | NSSS2026ABS626 | Basin-Scale Reorganization Of Climate-Phytoplankton Linkages In The Indian Ocean: Enso Emergence And Iod Retreat                                   | Haritha M                      |

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| 30 | NSSS2026ABS688 | Spatio-Temporal Dynamics of Net Ecosystem Productivity over India during 2001-2024.                                | Lipsa Shibu |
| 31 | NSSS2026ABS696 | Impact of cloud datasets on Solar Radiation Estimates: An RTM-Based Case Study Over Shillong                       | Manasa M    |
| 32 | NSSS2026ABS728 | Assessing the Methodological Differences in the Estimation of Cropland NPP across Indian States                    | Umayal S    |
| 33 | NSSS2026ABS801 | Effects of Monsoonal Dynamics on Phytoplankton Photosynthetic Performance in the Sundarbans Using Fast Fluorometry | Abhinav G   |

### Poster Presentations (PS1-07 & 08) | 1600 - 1730 Hrs

| SN            | Abstract ID    | Title of Abstract  | First Author            |
|---------------|----------------|--|-------------------------|
| <b>PS1-07</b> |                |  |                         |
| 1             | NSSS2026ABS052 | Inferring cyclone landfall from outgoing longwave radiation  | Deveerappa Jagadheesha  |
| 2             | NSSS2026ABS601 | Recent Intensification of the Asian Summer Monsoon Anticyclone and Its Coupling to Rainfall Shifts over South and East Asia  | V. N. Santhosh          |
| 3             | NSSS2026ABS069 | A Comparative Analysis of Environmental Factors and Vortex Structure in Developing and Non-Developing Tropical Disturbances over the Bay of Bengal                         | Arpita Munsi            |
| 4             | NSSS2026ABS089 | AI use technology based on satellite used in flood mechanism   | Dr. Rakesh Kumar Mishra |
| <b>PS1-08</b> |                |  |                         |
| 5             | NSSS2026ABS040 | Miyawaki Plantation for Sustainable Urban Greening- A Case Study on Soil Physicochemical Improvement at IESD BHU Varanasi.   | Isha Singh              |
| 6             | NSSS2026ABS224 | An Investigation on the Geophysical Drivers and Biophysical Responses to the 2022 Flood over the Morigaon-Nagaon Districts of Assam in North-East India                    | Aniket Chakraborty      |
| 7             | NSSS2026ABS261 | Spatiotemporal analysis of Land Use Land Cover changes over Dibrugarh, Sibsagar, and Charaideo Districts of Upper Assam  | Himashree Das           |
| 8             | NSSS2026ABS455 | Characterizing Recent Decade of Arctic Sea Ice Dynamics: Application of Validated SARAL-AltiKa Data to Uncover Dominant Modes of Variability and their Climatic Precursors | Chungkham Thombson      |
| 9             | NSSS2026ABS462 | A Tale of Four Cities: Remote Sensing Analysis of the Dual Impact of Urbanization on Temperature and Vegetation in Central India   | Dr. Mrunmayee Lokhande  |
| 10            | NSSS2026ABS468 | Spatiotemporal Analysis of the Biophysical Parameters on Primary Productivity in the North Indian Ocean  | Anju Kumari             |
| 11            | NSSS2026ABS596 | Long-term climate characteristics of Sea Breeze phenomena over Sriharikota using Met-tower observations and ERA-5 reanalysis dataset                                       | K K Amal                |

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|----|----------------|--|--------------------------------|
| 12 | NSSS2026ABS646 | Integrated Multi-Model Framework for multi hazard and its impact on forest Carbon under Climate change Scenarios                                   | Balaramdas K R                 |
| 13 | NSSS2026ABS664 | Assessing the Influence of Land Use/Land Cover on Regional Meteorology over the Tropical Inland Urban City of Hyderabad                            | T.V Ramesh Reddy               |
| 14 | NSSS2026ABS722 | High-resolution UAV survey and thermal baseline of the Luna crater, Kutch, India.  | Nitesh Vinodbhai Pandey        |
| 15 | NSSS2026ABS767 | Exploring Gross Primary Productivity variability and its environmental drivers in Meghalaya using Microwave Remote Sensing and Regional Reanalysis | Anusuya Gogoi                  |
| 16 | NSSS2026ABS768 | Snow-to-Rain Transition: Microphysical and Atmospheric Insights from the Arctic  | Lekhraj Saini                  |
| 17 | NSSS2026ABS016 | Performance Analysis of a Solar-Electric High-Altitude UAV for Climate Monitoring in Polar Regions   | Adwait Agnihotri               |
| 18 | NSSS2026ABS027 | Biomass and carbon sequestration modelling through optical and SAR data for dry deciduous forests of UK district, Karnataka India                  | A.G.Koppad                     |
| 19 | NSSS2026ABS051 | Climate and agricultural nexus in semi-arid regions of Nashik district Maharashtra   | Rajaram A Jadhav               |
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| 29 | NSSS2026ABS535 | Unraveling Snow Cover Dynamics and Responses to Climate Change in the Indian Himalayan Region  | Khushboo                       |
| 30 | NSSS2026ABS574 | Influence of Atmospheric aerosols on ET at locations having different soil moisture  | J. Murmu R. Latha M. Kumar     |
| 31 | NSSS2026ABS626 | Basin-Scale Reorganization Of Climate-Phytoplankton Linkages In The Indian Ocean: Enso Emergence And   | Haritha M                      |

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|    |                | Iod Retreat  |             |
| 32 | NSSS2026ABS688 | Spatio-Temporal Dynamics of Net Ecosystem Productivity over India during 2001-2024.                                | Lipsa Shibu |
| 33 | NSSS2026ABS696 | Impact of cloud datasets on Solar Radiation Estimates: An RTM-Based Case Study Over Shillong                       | Manasa M    |
| 34 | NSSS2026ABS728 | Assessing the Methodological Differences in the Estimation of Cropland NPP across Indian States                    | Umayal S    |
| 35 | NSSS2026ABS801 | Effects of Monsoonal Dynamics on Phytoplankton Photosynthetic Performance in the Sundarbans Using Fast Fluorometry | Abhinav G   |

## Day-5

(27.02.2026 Friday)

### Technical Session- PS1-08 (11:45 - 13:15 Hrs)

**Theme: Space based monitoring of ocean cryosphere, geosphere and biosphere**

**Chair: Dr. Vijayakumar S. Nair, SPL**

**Co-Chair: Dr. Rahul Mahanta, CU**

### Oral Presentations (PS1-08)

| SN | Abstract ID    | Title of Abstract  | First Author            |
|----|----------------|--|-------------------------|
| 1  | NSSS2026ABS181 | Two Decades from Space: Tracking Phytoplankton Variability in the Antarctic Marginal Ice Zone  | Prince Prakash          |
| 2  | NSSS2026ABS674 | AI-Driven Assessment of Liquefaction Probability in Shillong City Using Remote Sensing Data Inputs   | Sananda Mondal          |
| 3  | NSSS2026ABS742 | Growth of UHI Intensity over Delhi using MODIS Observations from 2000–2025   | Disha B. Kardani        |
| 4  | NSSS2026ABS026 | Understanding the Interactions between Biosphere and Atmosphere in India by Synthesising the Carbon, Water, and Energy Fluxes across its Dominant Ecosystems | Pramit Kumar Deb Burman |
| 5  | NSSS2026ABS793 | Estimates of Realizable Wind and Solar Power Potential over India  | S.V.S. Sai Krishna      |
| 6  | NSSS2026ABS448 | Deciphering the variability of Urban Heat Island effect over a tropical metro region of Hyderabad using dense ground network of observations                 | Satheesh Kumar Shekata  |
| 7  | NSSS2026ABS764 | Predictive Modelling of Arctic Microbial Communities for finding Biohydrogen producers Using Geosphere Indicators  | Shwetakshi Mishra       |
| 8  | NSSS2026ABS034 | Satellite-Based AI Natural Disaster Impact Mapping For Coastal Regions.  | Amlan Upadhyaya         |
| 9  | NSSS2026ABS460 | Tracking the changes in tropical forests using time-series Synthetic Aperture Radar Data   | Umesh Khati             |
| 10 | NSSS2026ABS298 | Validation And Performance Analysis Of OCM-3 Sensor For Chlorophyll-a Detection In Coastal And Offshore Waters Of Southwest Bay Of Bengal                    | Alexkirubakaran A       |
| 11 | NSSS2026ABS376 | Impact Assessment of the Haryana Pond and Wastewater Management Authority HPWWMA A Geosphere Biosphere Social Perspective on Groundwater Management          | Kanika Chowdhary        |