

VIRTUAL SYMPOSIUM  
**WEATHER AND CLIMATE SERVICES OVER MOUNTAINOUS REGIONS**

14 - 17 DECEMBER 2020

**Technical Program**

**TROPMET  
2020**

Organized by  
**Indian Meteorological Society**  
New Delhi



Hosted by

**North Eastern Space Applications Centre (NESAC)**

Dept of Space, Govt. of India, Umiam, Shillong, Meghalaya  
and

**Indian Meteorological Society – Shillong Chapter**

Shillong, Meghalaya

## DAY-1: 14 December, 2020

### INAUGURAL SESSION (10:00 – 11:15 Hrs)

#### PLENARY SESSION 1

11.30-13.15 Hrs Venue: Himalaya Hall		
Chairs: Prof S. K. Dube and Prof. U.C. Mohanty		
SN	Honorary Speakers	Topics
1	Dr. M. N. Rajeevan, Secretary, MoES	India's Monsoon Mission
2	Dr. M. Mohapatra, DG, IMD	Impact Based Forecasting & Risk Based Warning: Advancement & Challenges
3	Dr. Satish Shenoi, Former Director, INCOIS	Discovery of barotropic sea level variability in the tropical Indian Ocean driven by Madden–Julian Oscillation

#### TECHNICAL ORAL PRESENTATION

TS-1A: Lightning Physics and Forecasting (Theme-2)		
14:15 - 16:15 hrs		
Venue: Himalaya Hall		
Chair: Col Sanjay Srivastava, CROPC		
Co-Chair: Dr Sunil Pawar, IITM		
SN	Abstract ID	Title of the paper and Author
1.	Lead Talk (Invited)	Spatial and temporal change in lightning activity over India <b>DR SUNIL POWER, IITM</b>
2.	O-T02-202010004-01	Lightning characteristics in various phases of thunderstorm over north eastern India associated with Dual-Polarization Radar - A preliminary case study <b>A. SRIVASTAVA</b>
3.	O-T02-202010076-02	Study of lightning activity over Bengaluru <b>KAMSALI NAGARAJA</b>
4.	O-T02-202010095-03	Meteorological Studies of two very severe lightning strike cases on 25th February 2020 and 25th June 2020 over the State of Bihar, India. <b>ANAND SHANKAR</b>
5.	O-T02-202010147-04	Regional variation of electrical properties of deep convective systems during premonsoon and monsoon season over Eastern and North-Eastern region of India <b>GOUR PRASAD PRAMANIK</b>
6.	O-T02-202010159-05	Study of Lightning Activity during Different Stages of Life Cycle of Tropical Cyclones 'Vayu' And 'Fani' <b>SHREYA PANDIT</b>

7.	O-T02-202010214-06	Explicit lightning forecasting Over North Eastern India: Preliminary results <b>TRISANU BANIK</b>
8.	O-T02-202010230-07	Seasonality in power law scaling of convective and stratiform rainfall with lightning intensity over Indian monsoon regions <b>B.A. CHOUDHURY</b>
9.	O-T02-202010237-08	Sensitivity of physical schemes in WRF model on simulation of mesoscale convective system over South-east India <b>A. MADHULATHA</b>
10.	O-T02-202010237-09	Physical Mechanisms of Mesoscale Convective Systems over South-east India using collocated multi Observations <b>A. MADHULATHA</b>
11.	O-T02-202010258-10	Prediction of thunderstorms over southeast India using empirical methods <b>N. UMAKANTH</b>
12.	O-T02-202010413-11	Evaluate WRF-Based Lightning Potential Index (LPI) Lightning Parameterization Over Sri Lanka During Second Inter-Monsoon In 2018 <b>J.S. DARSHANA</b>

**TS-1B: Numerical weather prediction, data assimilation, and forecasting  
(Theme-3)**

**14:15-16:15 hrs**

**Venue: Brahmaputra Hall**

Chair: Prof Someshwar Das, Central University of Rajasthan  
Co-Chair: Ms Rekha B Gogoi, NESAC

<b>SN</b>	<b>Abstract ID</b>	<b>Title of the paper and Author</b>
1.	Lead Talk (O-T03-202010031-01)	An Ensemble-based Forecast Sensitivity Approach to Estimate the Impact of Satellite-derived Atmospheric Motion Vectors in a Limited Area Model <b>GOVINDAN KUTTY M</b>
2.	O-T03-202010036-02	Sensitivity Analysis of Two Extreme Rainfall Events over South western Coast of India using Ensemble Statistics <b>BABITHA GEORGE</b>
3.	O-T03-202010088-03	Numerical Simulation of a massive Biomass Burning Event over South Asia: Impact on meteorology and Air Quality <b>TANMOY MUKHERJEE</b>
4.	O-T03-202010133-05	Investigation of Air-Sea Interaction Processes in Tropical Cyclones over the Bay of Bengal Basin <b>TAPAJYOTI CHAKRABORTY</b>
5.	O-T03-202010142-06	A Technique to Forecast Visibility over Hindon Airport with WRF-ARW and Analyzing the Impact of Air Quality over Reduction in Visibility <b>KIRAN ARUN RANALE</b>
6.	O-T03-202010150-07	Convective Scale Data Assimilation of a thunderstorm events over a complex terrain <b>JYOTI BHATE</b>

7.	O-T03-202010225-08	Object-Based Diagnostics Evaluation of Super Cyclone Amphan <b>HARVIR SINGH</b>
8.	O-T03-202010235-09	Development of a high-resolution (400 m) operational air quality early warning system for Delhi, India through integrated chemical data assimilation <b>SACHIN D GHUDE</b>
9.	O-T03-202010255-10	UM Regional coupled Suite over India: Status and Future plans. <b>AKHILESH KUMAR MISHRA</b>
10.	O-T03-202010256-11	Performance of ensemble forecasts as compared to deterministic prediction for extreme rainfall events over complex terrains <b>PAROMITA CHAKRABORTY</b>
11.	O-T03-202010257-12	Contribution of Lagged Members to the Performance of a Global Ensemble Prediction System <b>GAURI SHANKER</b>

**TS-1C: Monsoon prediction and dynamics (Theme-4)**

**14:15-16:15 hrs**

**Venue: Ganga Hall**

Chair: Prof. P.V.S Raju, Amity University

Co-Chair: Dr. R. K. Giri, IMD

SN	Abstract ID	Title of the paper and Author
1.	Lead Talk (O-T04-202010286-05)	Indian Summer Monsoon - 2020 in NCEP Global and Forecasts System <b>Dr. P.V.S RAJU</b>
2.	O-T04-202010010-01	Swapping of the Pacific and Atlantic Niño influences on north central India summer monsoon <b>RAMESH KUMAR YADAV</b>
3.	O-T04-202010046-02	Features of upper tropospheric temperature fluctuations during drought years of Indian summer monsoon: results inferred from COSMIC observations <b>SUNEETH K V</b>
4.	O-T04-202010166-03	Investigation of Winter Precipitation Variability and Extreme Rainfall Events in North Indian Regions using multi-source climate datasets <b>NISCHAL SHARMA / RAJU ATTADA</b>
5.	O-T04-202010229-04	Changing teleconnection between Tropical South Atlantic and Indian Summer Monsoon Rainfall in a Warming Scenario <b>PUSHPA PANDEY</b>
6.	O-T04-202010290-06	Representation of process-based diagnostics in NCUM global and regional models <b>MOHANA S THOTA</b>
7.	O-T04-202010297-07	A Study on some dynamical aspects of Uttarakhand Heavy rainfall events <b>CHETANA PATIL</b>

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8.	O-T04-202010301-08	Quantile Mapping Bias Correction Methods in Support of NCMRWF Unified Model Operational Forecast for i-FLOWS Mumbai and Chennai <b>KONDAPALLI NIRANJAN KUMAR</b>
9.	O-T04-202010304-09	Verification of rainfall forecasts for MoES models during JJAS 2020 <b>SAGILI KARUNASAGAR</b>
10.	O-T04-202010322-10	Fidelity of Indian Summer Monsoon Circulation Indices in Representing Rainfall Variability and Teleconnections. <b>YASMIN ZAHAN</b>
11.	O-T04-202010360-11	Do the Hydration and Dehydration depend on the phases of Indian Summer Monsoon? <b>UMA KN</b>

### INDUSTRY PRESENTATION

<b>16:30-17:30 hrs</b>		
<b>Venue: Himalaya Hall</b>		
Chair: Dr P L N Raju, NESAC		
Co-Chair: Shri M Somorjit Singh		
1	Dr John de Denghy	Earth Networks

### DR S RAGHAVAN MEMORIAL LECTURE

<b>18.30-19.30 Hrs</b>	
<b>Venue: Himalaya Hall</b>	
Chairperson : Dr. N. Jayanthi	
<b>Radar Meteorology for Complex Terrain: Small Radar networks</b> <b>By</b>  <b>Dr. V. Chandrasekar</b> <b>University Distinguished Professor</b> <b>Colorado State University, USA</b>	

## DAY-2: 15 December, 2020

### PLENARY SESSION 2

10.00-11.30 Hrs Venue: Himalaya Hall		
Chairs: Prof S. K. Dash and Dr. K. J. Ramesh		
SN	Honorary Speakers	Topics
1	Dr. R. S. Nanjundiah, Director, IITM	Use of AI/ML in Weather and Climate Studies
2	Dr. R. Krishnan, Executive Director, CCCR, IITM	Understanding the recent observed changes in the activity of western disturbances over the Western Himalayas
3	A.K. Sahai, Scientist G, IITM	Sub-seasonal to Seasonal Prediction Initiatives and Progress

### TECHNICAL ORAL PRESENTATION

TS-2A: Dynamics and Physics of orographic clouds and precipitation (Theme-1)		
11:45-13:15 hrs		
Venue: Himalaya Hall		
Chair: Dr Som Kumar Sarma , PRL		
Co-Chair: Dr Rahul Mahanta, Cotton University		
SN	Abstract ID	Title of the paper and Author
1.	Lead Talk (Invited)	Investigations of Atmospheric Clouds and Boundary Layer over India using ground-based Lidar <b>DR SOM KUMAR SARMA, PRL</b>
2.	O-T01-202010001-01	Radar monitored Cloud vertical structure measurements over a complex terrain <b>KALAPUREDDY MADHU CHANDRA REDDY</b>
3.	O-T01-202010028-02	Diurnal evolution of the vertical structure of precipitating clouds over the southernmost part of the Western Ghats of India during summer and winter monsoons <b>Dr. KANDULA V SUBRAHMANYAM</b>
4.	O-T01-202010071-03	Extremely heavy rainfall episodes over North-East India during South West Monsoon 2020-A Case Study <b>SHASHI KANT</b>
5.	O-T01-202010091-04	Thermodynamic and dynamic structure of the atmosphere associated with Kerala flood during 2018 <b>C A BABU</b>
6.	O-T01-202010143-05	A study of regional variation of electrical properties of precipitating systems and associated rainfall during the premonsoon and monsoon seasons <b>IMLISUNUP</b>

7.	O-T01-202010189-06	A mathematical model for parameterizing the precipitation enhancement and momentum flux associated with airflow over mountainous region <b>SOMENATH DUTTA</b>
8.	O-T01-202010189-07	Orographic effect on the heavy to very heavy rainfall over Kerala in 2018 <b>SOMENATH DUTTA</b>
9.	O-T01-202010216-08	Seasonal precipitation projections using CORDEX-South Asia experiments in Northeastern Climatic Region of India (Eastern Himalaya) <b>S. MANDAL</b>
10.	O-T01-202010320-09	Raindrop Size Distribution Features of Pre-Monsoon and Monsoon Season over the Western Ghats <b>AMIT KUMAR</b>

**TS-2B: Boundary layers and turbulence (Theme-5)**

**11:45-13:15 hrs**

**Venue: Brahmaputra Hall**

Chair: Dr K Rajeev, SPL

Co-Chair: Dr Arup Borgohain NESAC

SN	Abstract ID	Title of the paper and Author
1.	Lead Talk (Invited)	Atmospheric Boundary Layers at Distinct Environments <b>DR K RAJEEV, SPL</b>
2.	O-T05-202010070-01	Assessment of wind pattern and turbulence associated with the boundary layer during Monsoon season over the Central Himalayan site using ARIES ST Radar and GPS Radiosonde <b>ADITYA JAISWAL</b>
3.	O-T05-202010116-02	On the Decreasing Trend in Atmospheric Boundary Layer Height over the West Coast of India <b>SUDEEPKUMAR B. L.</b>
4.	O-T05-202010120-03	Influence of urbanization and aerodynamic roughness on the Atmospheric Boundary Layer Characteristics and Rainfall over Chennai - a case study for 1 December 2015 using WRF <b>J. R. RAJESWARI</b>
5.	O-T05-202010121-04	Turbulence study over Cochin for consecutive three years <b>AHANA K K</b>
6.	O-T05-202010163-05	Evolution of optically thin ground fog into optically thick fog on the basis of turbulent kinetic energy observed during Winter Fog Field Experiment, New Delhi <b>NARENDRA G. DHANGAR</b>
7.	O-T05-202010236-06	Measurement of carbon dioxide in the atmospheric boundary layer over Pune and its Seasonal variation <b>M. N. PATIL</b>

8.	O-T05-202010395-07	Inter comparison of Planetary Boundary Layer characteristics derived from micro pulse Lidar and Radiosonde with WRF simulations using different parameterization schemes over Kattankulathur (12.83° N, 80.04° E) <b>T. V. RAMESH REDDY</b>
9.	O-T05-202010401-08	An approach to study the Planetary Boundary Layer Characteristics over North Eastern Region of India <b>MANASI GOGOI</b>

**TS-2C: Weather and climate services for farmers (Theme-9)**  
**&**  
**Impact of Climate Variability/Change on Agriculture (Theme-10)**

**11:45-13:15 hrs**  
**Venue: Ganga Hall**

Chair: Dr Prabhjot Kaur Sidhu, Punjab Agricultural University  
Co-Chair: Dr. Jonali Goswami, NESAC

SN	Abstract ID	Title of the paper and Author
1.	Lead Talk (Invited)	Adaptation Strategies for combating effect of Climate Change on Agriculture <b>DR PRABHJOT KAUR, PAU</b>
2.	O-T09-202010042-01	Recent Advances in Agro-meteorological Services for farmers in Uttar Pradesh <b>JAGDISH PRASADGUPTA</b>
3.	O-T09-202010232-02	An Exposition of Synthesized Astro-Met Weather Predictions for Telangana and Andhra Pradesh States in India <b>DR. G. V. RAMA</b>
4.	O-T10-202010053-01	Drying of North India during Indian Summer Monsoon <b>MONALISA SAHOO</b>
5.	O-T10-202010065-02	Detection of ozone stress using spectral reflectance <b>RAMYA A</b>
6.	O-T10-202010072-03	Simulating the impact of climate change on rice yield using DSSAT model <b>ANURAG SANADYA</b>
7.	O-T10-202010074-04	Preparation, characterization and performance of climate adaptive biochar as a biofertilizer in the nutrient management of paddy <b>KUMAR ABBHISHEK</b>
8.	O-T10-202010102-05	Influence of weather parameters and sowing windows on grain yield of wheat under lower Shivalik hills of NWPZ <b>DR. VIKAS GUPTA</b>
9.	O-T10-202010103-06	Effect of Non-Conventional Sources of Nutrients through Diverse Application Methods on Maize Productivity and Soil Health in the Rainfed Hinterlands of North-West Himalayas <b>DR. A.P.SINGH</b>
10.	O-T10-202010123-07	Performance evaluation of DSSAT (CERES) wheat model for Crop Production and climate change <b>SHRUTI V SINGH</b>



<b>TS-3A: Land-Ocean-Atmosphere Interactive Processes (Theme-8)</b> <b>14:15-16:15 hrs</b> <b>Venue: Himalaya Hall</b> Chair: Dr P C Joshi, Former SAC Co-Chair: Dr Satendra Bhandari, IMS NC		
SN	Abstract ID	Title of the paper and Author
1.	Lead Talk (Invited)	Seamless Coupled Modelling at NCMRWF for Prediction from Days-to-Season <b>DR. ASHIS K MITRA, NCMRWF</b>
2.	O-T08-202010044-01	Evolution of IOD Events and Associated Air-Sea Interaction Processes <b>BISWARUP DAS</b>
3.	O-T08-202010051-02	Impacts of various rainfall forcings on soil moisture distribution over India for a three year period using Land Information System <b>VIBIN JOSE</b>
4.	O-T08-202010056-03	TTL Transport and convective sources during active and break phase. <b>SIVAN C</b>
5.	O-T08-202010201-04	Rain isotope variability associated with Monsoon intra-seasonal oscillation and stratiform process: Results from the northern Bay of Bengal and their implication to process interpretation <b>SAIKAT SENGUPTA</b>
6.	O-T08-202010203-05	Impact of surface roughness parameterization on prediction of tropical cyclones using the coupled ocean atmospheric model <b>NELLIPUDI NANAJI RAO</b>
7.	O-T08-202010211-06	Flavours of El Niño and associated genesis with special emphasis to 2006-07 <b>KARREVULA NARAYANA REDDY</b>
8.	O-T08-202010226-07	Understanding the role of Land-Ocean-Atmosphere Interactive Processes in monsoon intraseasonal oscillations <b>PRATIBHA GAUTAM</b>
9.	O-T08-202010317-08	Analysis of TCMI features of three Very Severe Cyclonic Storms over the Bay of Bengal utilizing Brown Ocean Theory <b>DR. RISHIPARNA GUHA</b>
10.	O-T08-202010349-09	Thermodynamic wave train connection of monsoonal heating to the Canadian Arctic in NCMRWF Unified model (NCUM) forecasts <b>ANANYA KARMAKAR</b>

<b>TS-3B: Hydro-meteorological disasters and management (Theme-11)</b> <b>14:15-16:15 hrs</b> <b>Venue: Brahmaputra Hall</b> <b>Chair: Dr. HKV Durga Rao, NRSC</b> <b>Co-Chair: Shri Ranjit Das, NESAC</b>		
SN	Abstract ID	Title of the paper and Author
1.	Lead Talk (Invited)	Space Based Support for Floods and Cyclones in Disaster Risk Reduction <b>DR. HKV DURGA RAO</b>
2.	O-T11-202010077-01	Hydro-meteorological disasters and management <b>SH S. LAKSHMINARYANAN</b>
3.	O-T11-202010085-02	Understanding the development and progress of extremely severe cyclonic storm 'Fani' over the Bay of Bengal <b>PANKAJ BHARDWAJ</b>
4.	O-T11-202010104-03	Effect of anti-hail net on apple plants of wet temperate zone in Himachal Pradesh <b>MUSKAAN NEGI</b>
5.	O-T11-202010137-04	Satellite applications in the management of hydro-meteorological disasters <b>BALAKRISHNAN MANIKIAM</b>
6.	O-T11-202010254-05	Tropical cyclone risk analysis for India using Hotspot Analysis <b>RAJA BORAGAPU,</b>
7.	O-T11-202010268-06	Forecasting for i-FLOWS Mumbai using NCMRWF Unified Model <b>RAGHAVENDRA ASHRIT</b>
8.	O-T11-202010341-07	"A Hydro meteorological Analysis of a flash flood over the megacity of Bangalore: Assessing the forecast skill of the model and the impact of urbanization on flash flood <b>DR. SUMANA SARKAR</b>
9.	O-T11-202010347-08	Climatological interlink study of rapid urbanization and extreme rainfall events over megacities in India. <b>SMRATI PURWAR</b>
10.	O-T11-202010350-09	Impact of LULC in simulating river discharge and evapotranspiration Upper Jhelum river basin using SWAT <b>DHANANJAY KUMAR</b>
11.	O-T11-202010371-10	Estimation of Surface Runoff and Flood Topology in Thaukyegat Watershed, Bago Region, Myanmar <b>NILAR AYE</b>

**TS-3C: The Mountain Cryosphere (snowpack, glaciers, avalanches, etc.) (Theme 6)**  
**&**  
**Climate change and climate variability (Theme 7)**

**14:15-16:15 hrs**

**Venue: Ganga Hall**

**Chair: Dr. Sanjay O'Neill Shaw, RMC, Guwahati, IMD**

**Co-Chair: Dr. S. I. Laskar, IMD**

SN	Abstract ID	Title of the paper and Author
1.	Lead Talk (O-T07-202010313-22)	Spatial and temporal variation of maximum and minimum temperature over North-East Region of India <b>Dr. S.O. SHAW</b>
2.	O-T06-202010112-01	Monitoring of Extent and depth of Snow Packs and Glaciers and Prediction of Avalanches using Microwave Passive Sensors – onboard space craft <b>OPN CALLA</b>
3.	O-T06-202010307-02	High resolution satellite study of multiple stressors in arctic marine systems & correlation of ocean-atmosphere –cryosphere interactions with climate variability to develop arctic-ocean climate predicting models (aocpm) <b>PROF. (DR.) VIRENDRA GOSWAMI</b>
4.	O-T06-202010333-03	Spatial and Temporal Distribution of Snowfall over Western Himalayan Region <b>SANDHYA RAVIKIRAN</b>
5.	O-T07-202010027-01	Retrieval of the Hadley Cell Boundaries and Associated Dynamics at Regional Scales using Radio Occultation Measurements <b>ANJANA U</b>
6.	O-T07-202010032-02	Temperature and Rainfall trends over Meghalaya (1970-2019) <b>RAKESH KUMAR</b>
7.	O-T07-202010039-03	Analysis of temporal trend of rainfall, temperature and extreme events over Jharkhand <b>RADHESHYAM SHARMA</b>
8.	O-T07-202010047-04	Study the changes occurring in the climatic condition after COVID-19 lockdown in Maharashtra and Odisha <b>SANJAY SAMPAT SHELAR</b>
9.	O-T07-202010058-05	Changes in the relationship between El Niño Southern Oscillation and Indian summer monsoon rainfall in future decades <b>HRUDYA P H</b>
10.	O-T07-202010068-06	Effect of Climate change on various Rainfall events and its global Teleconnections over South Peninsular India during Northeast Monsoon <b>MALASALA MURALI NAGESWARA RAO</b>
11.	O-T07-202010098-07	Observing the past trend of climate change through principle component analysis <b>ASHEESH BHARGAWA</b>
12.	O-T07-202010099-08	Expected changes in the winter seasonal rainy days over IHR during 2020-2099 <b>SANDIPAN MUKHERJEE</b>



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**DR. G. B. PANT MEMORIAL LECTURE**

<p><b>16:30-17.30 Hrs</b> <b>Venue: Himalaya Hall</b></p> <p><b>Chairman: Dr P.C. Joshi, Former GD, SAC</b></p>
<p>"Understanding Climate and Climate Change over the Himalayas: Dr G.B. Pant's Legacy"</p> <p>by</p> <p>Dr. Rupa Kumar Kolli Executive Director International CLIVAR Monsoon Project Office (ICMPO), IITM</p>

**DAY-3: 16 December, 2020**

**PLENARY SESSION 3**

<b>10.00-11.30 Hrs</b>		
<b>Venue: Himalaya Hall</b>		
Chairs: Dr. R. K. Datta and Dr. L. S. Rathore		
<b>SN</b>	<b>Honorary Speakers</b>	<b>Topics</b>
1	Prof. B. N. Goswami, SERB Distinguished Fellow, Cotton University & Former Director, IITM	Looking Beyond TOGA for Prediction and Predictability of Indian Summer Monsoon Rainfall
2	Prof Sunil K Singh, Director, NIO	Ocean Circulation - Plate Tectonics - Climate Coupling
3	Dr. S. K Behera, Sr Scientist, JAMSTEC, Japan	A possible research framework to link weather and climate with COVID-19

**TECHNICAL ORAL PRESENTATION**

<b>TS-4A: Aerosol-cloud-precipitation interactions (Theme-14)</b>		
<b>11:45-13:15 hrs</b>		
<b>Venue: Himalaya Hall</b>		
Chair: Prof S Ramachandran, PRL Co-Chair: Dr Mukunda M Gogoi, SPL		
<b>SN</b>	<b>Abstract ID</b>	<b>Title of the paper and Author</b>
1.	Lead Talk (Invited)	Aerosols and Monsoon Rainfall <b>PROF S RAMACHANDRAN, PRL</b>
2.	O-T14-202010012-01	Elevated aerosol layer over South Asia worsens the Indian droughts <b>SUVARNA FADNAVIS</b>
3.	O-T14-202010016-02	Aerosol types induced changes in precipitation patterns over a tropical station Pune, India <b>ROHINI BHAWAR</b>
4.	O-T14-202010035-03	Effect of Pollution on North East Monsoon Clouds <b>MERCY VARGHESE</b>
5.	O-T14-202010067-04	Optical properties and radiative effects of aerosols in the Eastern Himalayas <b>B.S. ARUN</b>
6.	O-T14-202010084-05	Sensitivity of convection intensity to vertical velocity and buoyancy representation in cloud microphysical parameterization <b>DEBOJIT SARKAR</b>

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7.	O-T14-202010122-06	WRF Microphysics Sensitivity study to Rainfall estimation during Fukushima Dai-ichi release <b>S. KARMAKAR</b>
8.	O-T14-202010161-07	Insights from intensive long-term observations of carbon aerosols and trace gases at the Central Himalayas <b>PRIYANKA SRIVASTAVA</b>

**TS-4B: Numerical weather prediction, data assimilation, and forecasting (Theme-3)**

**11:45-13:15 hrs**

**Venue: Brahmaputra Hall**

Chair: Dr D R Pattnaik, IMD

Co-Chair: Dr. Anand K Das, IMD

SN	Abstract ID	Title of the paper and Author
1.	Lead Talk (Invited)	Operational Numerical Weather Prediction and Its Applications <b>DR D R PATTNAIK, IMD</b>
2.	O-T03-202010274-13	Improved Track and Intensity Prediction skill of up-graded NCUMG model: A case study of Super Cyclone Amphan <b>SUSHANT KUMAR</b>
3.	O-T03-202010283-14	Numerical modeling of Supercyclonic Storm AMPHAN using WRF-ARW model <b>S MADHU SAI</b>
4.	O-T03-202010285-15	Characteristics of Daily Sea Surface Temperature Analyses over the North Indian Ocean <b>REBA MARY RAJU</b>
5.	O-T03-202010300-16	A Geostatistical approach to generate weather information over the Northwest Himalayas at fine spatial grids <b>AKSHAY SINGHAL</b>
6.	O-T03-202010329-17	GNSSRO Platforms Operational at NCMRWF – Present Status & Quality Assessment <b>SURYAKANTI DUTTA</b>
7.	O-T03-202010389-18	Simulation of thunderstorm over NER of India by WRF model with direct and indirect assimilation of DWR data <b>REKHA B GOGOI</b>
8.	O-T03-202010391-19	The skill of maximum temperature forecasts for major cities of North-East region of India during summer 2020 <b>S.O. SHAW</b>
9.	O-T03-202010088-04	Understanding the 2016 Delhi Diwali Pollution Episode: A numerical modelling perspective <b>T. MUKHERJEE</b>

**TS-4C: Indigenous instrumentation for atmospheric profiling (Radars, Sodars, Lidars, AWS, etc.) (Theme-16)**

**11:45-13:15 hrs**

**Venue: Ganga Hall**

Chair: Dr V K Anandan, ISTRAC

Co-Chair: Shri Ramani K Das, NESAC

SN	Abstract ID	Title of the paper and Author
1.	Lead Talk (Invited)	A new approach to atmospheric wind profiling with radars <b>DR V K ANANDAN, ISTRAC</b>
2.	O-T16-202010011-01	Twilight photometer a powerful tool for study of different atmospheric events <b>DR. PRATIBHA BHAGAVANRAO MANE</b>
3.	O-T16-202010032-02	Upgraded indigenously developed Digital Current Weather Instrument System for Airport Meteorological Services. <b>RAKESH KUMAR</b>
4.	O-T16-202010041-03	Assessment of stability of atmospheric data measurement by Pisharoty GPS-RS sonde as seen from the ascent and descent phases of the sonde over Bengaluru region <b>B V APPA RAO</b>
5.	O-T16-202010081-04	Estimation of tropopause height from GPS-RS observations <b>KAMESHWARY C A</b>
6.	O-T16-202010083-05	Technical implementation of first Central Himalayan VHF ST Radar at ARIES, Nainital <b>SAMARESH BHATTACHARJEE</b>
7.	O-T16-202010112-06	Details of Weather Radar and Automatic Weather Station. Indigenous Instrumentation. Indigenous Development of Passive Microwave Sensors for Atmospheric Profiling and weather Prediction <b>OPN CALLA</b>
8.	O-T16-202010138-07	VHF Radar observations and WRF model simulations of development and structure of Tropical Mesoscale Convective System (TMCS) over Cochin, India <b>SUJITHLAL SP</b>
9.	O-T16-202010241-08	Initial results of Phased Array Doppler SODAR installed at Kolhapur region <b>DR. RANI PANDURANG PAWAR</b>

**TS-5A: Artificial Intelligence, Machine Learning, & Deep learning in weather & climate research and services (Theme-12)**

**14:15-16:15 hrs**

**Venue: Himalaya Hall**

Chair: Dr. A. K. Sahai, IITM

Co-Chair: Dr Dibyajyoti Chutia, NESAC

SN	Abstract ID	Title of the paper and Author
1.	Lead Talk (O-T12-202010366-11)	On the Deep-Learning based Multi-Model Ensemble <b>NACHIKETA ACHARYA</b>

2.	O-T12-202010005-01	Integration of Machine Learning Technique in Short-Term Precipitation Forecast using Radar Data <b>ASISH SHAKYA</b>
3.	O-T12-202010028-02	Forecasting of time series of geophysical parameters using GPR and LSTM models <b>DR. KANDULA V SUBRAHMANYAM</b>
4.	O-T12-202010118-03	Tropical Cyclone Category using adaptive Neuro-computing over North Indian Ocean <b>JAYANTI PAL</b>
5.	O-T12-202010149-04	Meteorological Drought Prediction by Genetic Programming Approach with Uncertainty Analysis using Copula <b>AJAY UPENDRA CHAVADEKAR</b>
6.	O-T12-202010228-05	A simple multilayer Convolution Neural Network (CNN) model for classification of clouds from INSAT cloud imageries <b>DULAL CHAKRABARTI</b>
7.	O-T12-202010280-06	Forecasting pressure drop and maximum sustained wind speed associated with cyclonic systems over Bay of Bengal with Neuro – Computing <b>ISHITA SARKAR</b>
8.	O-T12-202010314-07	Use of Machine Learning in Drought Prediction in Indian Scenario <b>PREETI TAHLANI</b>
9.	O-T12-202010328-08	Assessment of Ground-level Fine Particulate Matter (PM2.5) from Artificial Neural Networks Using Satellite Data <b>AMARENDRA SINGH</b>
10.	O-T12-202010344-09	LULC classification using Convolutional Neural Network. <b>VENKATESH GOWDA P K</b>
11.	O-T12-202010351-10	Deep LSTM model for Indian Summer Monsoon Rainfall prediction using indices <b>KIRAN KUMAR V</b>

**TS-5B: Remote Sensing of Atmosphere, geophysical parameter retrieval, calibration, and validation (Theme-13)**

**14:15-16:15 hrs**

**Venue: Brahmaputra Hall**

Chair: Dr T Narayana Rao, NARL

Co-Chair: Dr Sanjib Dev, SAC

<b>SN</b>	<b>Abstract ID</b>	<b>Title of the paper and Author</b>
1.	Lead Talk (Invited)	Space-borne Precipitation Radars <b>Dr. T. Narayana Rao, NARL</b>
2.	O-T13-202010025-01	Spatial, Temporal, and interannual variability of Deep Convective Clouds over the Tropics using Multi-year Megha-Tropiques-SAPHIR Observations. <b>SISMA SAMUEL</b>
3.	O-T13-202010048-02	Remote Sensing of Atmospheric Aerosols Loading Using Twilight Technique <b>DIVYA DEEPAK KULKARNI</b>



4.	O-T13-202010049-03	Application of the Satellite Consensus (SATCON) algorithm to estimate TC intensity over North Indian Ocean (NIO) <b>RIZWAN AHMED</b>
5.	O-T13-202010062-04	Study of ionospheric parametric variation through Remote sensing and satellites navigation :a revolutionary measure in forecast of hazards. <b>UMESH PRASAD VERMA</b>
6.	O-T13-202010082-05	Radiance inter-calibration of INSAT-3D ozone channel with MSG-SEVIRI and successive improvements in ozone retrieval and validations <b>PRAJJWAL SINGH RAWAT</b>
7.	O-T13-202010086-06	Deep Convective Cloud Cores: Radiative flux, Upper tropospheric humidity and Latent heat <b>NIZY MATHEW</b>
8.	O-T13-202010096-07	INSAT-3D observation on Aerosols during COVID-19 Lockdown period over India <b>NILANJANA SENGUPTA</b>
9.	O-T13-202010136-09	On the Calibration of INSAT-3D Imager Visible Channel Data using Deep Convective Clouds <b>DANISH HUSSAIN</b>

**TS-5C: Climate change and climate variability (Theme-7)**

**14:15-16:15 hrs**

**Venue: Ganga Hall**

Chair: Prof A Karumuri, Hyderabad University

Co-Chair: Dr K K Sarma, NESAC

<b>SN</b>	<b>Abstract ID</b>	<b>Title of the paper and Author</b>
1.	Lead Talk (Invited)	Future climate change projections in northeastern India, and analogues in recent past <b>PROF A KARUMURI</b>
2.	O-T07-202010101-09	Future projection of Northeast Monsoon Rainfall over South Peninsular India and associated subdivisions using CORDEX-SA experiments <b>MOHAMMED CASSIM SANNAN</b>
3.	O-T07-202010129-10	Changes in the relationship between ENSO and summer monsoon rainfall and its association with circulation features <b>HAMZA VARIKODEN</b>
4.	O-T07-202010186-11	Analysis of extreme winter precipitation over north India <b>MIDHUNA.T.M</b>
5.	O-T07-202010192-12	Influence of several local meteorological parameters on surface ozone concentration over semi arid western tropical site, i.e. Udaipur (24.59° N, 73.12°E) <b>B.M. VYAS</b>
6.	O-T07-202010205-13	Variability and time series trend analysis of rainfall and temperature over Kolkata <b>SHREYA SRISHTY</b>

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7.	O-T07-202010215-14	Examining Temperature Extremes during pre- monsoon season and their relation to elevation and glacial areas in various parts of the Himalayas in the past two decades <b>RAHUL KASHYAP</b>
8.	O-T07-202010221-15	Trend in Monsoon Inversion and its Impact on Rainfall over Indian landmass <b>SANJEEV DWIVEDI</b>
9.	O-T07-202010265-16	Analysis of Trend in Extreme Climate Indices in Cherrapunji <b>RAJU KALITA</b>
10.	O-T07-202010270-17	Trends and variability of Indian summer monsoon rainfall over different homogenous regions <b>RESHMA T</b>
11.	O-T07-202010282-18	The Impact of Cumulus Convection in the evolution of the Indian Summer Monsoon for two contrasting years using a Regional Climate Model <b>ROSHMITHA PANDA</b>

**POPULAR TALK**

<p><b>16.30-17.30 Hrs</b>  <b>Venue: Himalaya Hall</b></p> <p>Recent Developments of Remote Sensing in Weather and Climate Applications</p> <p>By</p> <p>Dr. Shailesh Nayak, Director  National Institute of Advanced Studies (NIAS) &amp; Former Secretary, MoES</p>
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**DAY-4: 17 December, 2020**

**PLENARY SESSION 4**

10.00-11.30 Hrs Venue: Himalaya Hall Chairs: Dr. H. N. Srivastava and Prof. D.V. Bhaskar Rao		
SN	Honorary Speakers	Topics
1	Dr. V.K. Dadhwal, Director, IIST, ISRO	Understanding Biogeochemical Cycle of Carbon for India using earth observation data
2	Dr. Akhilesh Gupta, Adviser, DST	Climate Research in India : Recent Progress and Way Forward
3	Dr. Kalachand Sain, Director, Wadia Institute of Himalayan Geology	Climate Change Impact on Himalayan Glaciers

**TECHNICAL ORAL PRESENTATION**

TS-6A: Aerosol-cloud-precipitation interactions (Theme-14) 11:45-13:15 hrs Venue: Himalaya Hall Chair: Dr Suresh Babu, SPL Co-Chair: Dr. K. Satheesan, CUSAT, Cochin		
SN	Abstract ID	Title of the paper and Author
1.	Lead Talk (Invited)	Aerosol - cloud interaction in South Asian outflow <b>DR SURESH BABU</b>
2.	O-T14-202010220-08	Characterization of raindrop size distributions and its response to cloud microphysical properties <b>ABIN THOMAS</b>
3.	O-T14-202010222-09	Aerosol Properties and Radiative Effects Over Western Trans Himalayan Region <b>U. C. DUMKA</b>
4.	O-T14-202010245-10	Aerosol Classification Over a High Altitude Location In Central Himalayas During GVAX Campaign <b>RAHUL SHEORAN</b>
5.	O-T14-202010252-11	Long term (2003-2019) spatio-temporal MODIS (Aqua level 3) derived climatic variations of aerosol optical depth and cloud properties over Tibetan Plateau <b>ADITI SINGH</b>
6.	O-T14-202010299-12	Observation of sub-3nm particles and new particle formation in an urban location in Peninsular India <b>MATHEW SEBASTIAN</b>

7.	O-T14-202010374-13	Ubiquity of quasi-aerosol layers in the free troposphere: Results from multi year satellite - and balloon-borne observations <b>GAURAV KUMAR</b>
8.	O-T14-202010393-14	Covid-19 Pandemic related lockdown: Impact on aerosol radiative forcing at Varanasi <b>BHARAT JI MEHROTRA</b>
9.	O-T14-202010399-15	Analysis of new particle formation events with PCA method using air mobility measurement at Pune, India <b>JENI N. VICTOR</b>

**TS-6B: Remote Sensing of Atmosphere, geophysical parameter retrieval, calibration, and validation (Theme-13)**

**11:45-13:15 hrs**

**Venue: Brahmaputra Hall**

Chair: Dr K N Babu, SAC  
 Co-Chair: Dr Sunit Das, RMC-Ghy

<b>SN</b>	<b>Abstract ID</b>	<b>Title of the paper and Author</b>
1.	Lead Talk (O-T13-202010105-08)	Vicarious calibration of INSAT-3D, -3DR visible and SWIR channels over Desert site <b>K. N. BABU</b>
2.	O-T13-202010172-10	Examining the cloud microphysical properties from surface observations <b>ANSHUL SISODIYA</b>
3.	O-T13-202010177-11	On Understanding satellite perceived North-South gradient of atmospheric methane distribution over India <b>SMRATI GUPTA</b>
4.	O-T13-202010237-12	Simulation of all-sky radiance using multiple scattering radiative transfer model of Megha-Tropiques SAPHIR sensor for data assimilation applications <b>A. MADHULATHA</b>
5.	O-T13-202010259-13	Wind Speed Evaluation of RISAT-1 SAR over the Indian Ocean with Numerical Model generated Wind Speed <b>JAGDISH PRAJAPATI</b>
6.	O-T13-202010262-14	Study of Depolarization Phenomenon in Clouds Using Polarimetric Weather Radar to Differentiate Among Different Hydrometeors <b>HIMANSHU MAURYA</b>
7.	O-T13-202010337-15	GPS Meteorology: Ever Recorded Extreme Integrated Water Vapour associated with Extreme Rainfall – A case study <b>PUVIARASAN NARAYANASAMY</b>
8.	O-T13-202010346-16	Physical characteristics of atmospheric aerosols over central Indo-Gangetic Basin <b>VINEET PRATAP</b>
9.	O-T13-202010352-17	Heavy rainfall monitoring from Indian GNSS Network <b>RAMASHRAY YADAV</b>
10.	O-T13-202010378-18	Evaluation of Aerosol Optical Thickness and Columnar Water Vapour using space-borne remote sensing <b>NAVEEN R</b>

<b>TS-6C: Climate change and climate variability (Theme-7)</b>		
<b>11:45-13:15 hrs</b>		
<b>Venue: Ganga Hall</b>		
Chair: Dr. Nisha Mendiratta, DST Co-Chair: Dr Kasturi Chakraborty, NESAC		
<b>SN</b>	<b>Abstract ID</b>	<b>Title of the paper and Author</b>
1.	LeadTalk (Invited)	Need for the S & T based Information System and Climate Adaptation Plans for the Sustenance of Himalayan Ecosystem <b>DR. NISHA MENDIRATTA, DST</b>
2.	O-T07-202010289-19	Critical analysis for increase in number of cyclonic storms over Arabian sea during 2019 <b>P.R.ABHANG</b>
3.	O-T07-202010296-20	Numerical simulation of the Indian Monsoon system using WRF model <b>M. SAI VENKATA RAMANA</b>
4.	O-T07-202010312-21	An Investigation of diverse vegetation fires and its carbon dynamics in India -a Remote sensing approach <b>KARTHIK VENKATRAMAN</b>
5.	O-T07-202010322-23	Climate Change Impact on North-East India Summer monsoon rainfall <b>YASMIN ZAHAN</b>
6.	O-T07-202010348-24	Spatio-temporal variation of extreme rainfall events during the southwest monsoon period and their association with global forcing mechanisms <b>JAMSHADALI V. H</b>
7.	O-T07-202010383-25	Epochs/stages of rainfall variability in summer monsoon over all India and its homogeneous region in changing climate <b>ARCHANA MAURYA</b>
8.	O-T07-202010420-26	Institutional Capacity Building through networking of State level Academic and R&D institutions for addressing climate change in the Indian Himalayan Region <b>SUSHEELA NEGI</b>
9.	O-T07-202010421-27	DST's National Network Programme on Urban Climate: An emerging research area on Climate Change <b>RABINDRA PANIGRAHY</b>

<b>TS-7A: Severe weather and complex terrains (Theme-17)</b>		
<b>14:15-16:15 hrs</b>		
<b>Venue: Himalaya Hall</b>		
Chair: Shri Anand K Sharma, IMD Co-Chair: Smt. Samanti Sarkar, IMD		
<b>SN</b>	<b>Abstract ID</b>	<b>Title of the paper and Author</b>
1.	Lead Talk (O-T17-202010336-09)	Diurnal cycle of Rainfall over Mountainous complex terrain <b>D RAJAN</b>

2.	Lead Talk (Invited)	Severe weather monitoring and early warning over complex terrains (Heavy Rainfall, Cloudburst and Fog) <b>RAJENDRA KUMAR JENAMANI</b>
3.	O-T17-202010061-01	Rainfall extremes, warnings, associated systems and related IBF during Monsoon 2020 <b>JYOTI SONAR</b>
4.	O-T17-202010174-02	Seasonal Mean and Extreme rainfall events over Northwest India during Indian Summer Monsoon in an Indian Regional Reanalysis Framework <b>DEEPANSHU AGGARWAL</b>
5.	O-T17-202010179-03	A study on extremely heavy rainfall over some districts of Madhya Pradesh during 28-30 August 2020 <b>M L SAHU</b>
6.	O-T17-202010193-04	Spatio-Temporal distribution and Hazard Characteristics of Severe Local Convective Storms(SLCS) in Assam, India <b>RAHUL MAHANTA</b>
7.	O-T17-202010238-05	Use of Satellite Data and Products for Monitoring and Prediction of Thunderstorms and Tropical Cyclones <b>SUMAN GOYAL</b>
8.	O-T17-202010249-06	Estimation of roughness length, drag coefficient and turbulence during thunderstorms at hilly topographical region of Ranchi <b>POULOMI CHAKRAVARTY</b>
9.	O-T17-202010278-07	An Extensive Study on the Lightning Patterns over NE <b>PROLAY SAHA</b>
10.	O-T17-202010311-08	Study of Hail over northeast India using Significant Hail Parameter (SHIP) <b>G K SAWAISARJE</b>
11.	O-T17-202010384-10	Heavy rainfall forecasting for Dehradun capital city during monsoon season 2020 <b>ROHIT THAPLIYAL</b>
12.	O-T17-202010392-11	Generation and Evaluation of Thunderstorm Potential Index using simulated instability indices and atmospheric parameters for North Eastern Region of India <b>ABHISHEK CHHARI</b>

**TS-7B: Weather and Climate for human health (Theme-15)**

**14:15-16:15 hrs**

**Venue: Brahmaputra Hall**

Chair: Dr R.C. Dhiman ICMR

Co-Chair: Dr Jenita M Nongkynrih, NESAC

SN	Abstract ID	Title of the paper and Author
1.	LeadTalk (Invited)	Climate and human health with emphasis on Vector Borne diseases <b>DR R.C. DHIMAN</b>
2.	O-T15-202010057-01	Carbon sequestration process of a semi-deciduous forest in Northeast India <b>S. CHAKRABORTY</b>

3.	O-T15-202010115-02	Impact of Climate Change on Transmission Dynamics of Malaria in the KSA region using the Dynamical Model <b>RUCHI SINGH PARIHAR</b>
4.	O-T15-202010130-03	Affect of Weather, Environment and Wastes on Human Health <b>DR. SANJAY O'NEILL SHAW</b>
5.	O-T15-202010132-04	Inter-Spatial Vulnerability Assessment of Heat Hazards in Summer-2018 over Madhya Pradesh using Wind-chill and Discomfort (Thermal) Indices <b>ABHISHEK ANAND</b>
6.	O-T15-202010175-05	Warm-season human biometeorological index over Northern India: Climatology, Trends and Variability <b>ABHISHEK KUMAR</b>
7.	O-T15-202010200-06	Development of a probabilistic early health warning system based on meteorological parameters <b>A.K.SAHAI/ RAJU MANDAL</b>
8.	O-T15-202010219-07	A comparative study of Antarctic Ozone Hole and related parameters before and during lockdown <b>SAUMEN GHOSH</b>
9.	O-T15-202010223-08	Impact of COVID-19 lockdown on air quality over India with emphasis on the North East region of India <b>ARUNDHATI KUNDU</b>
10.	O-T15-202010266-09	Heat stress over the Indian Himalayan region <b>PYARIMOHAN MAHARANA</b>
11.	O-T15-202010316-10	Possible influence of radon and meteorological parameters during COVID-19 <b>KAMSALI NAGARAJA</b>

**TS-7C: Impact of Climate Variability/Change on Agriculture (Theme-10)**

**14:15-16:15 hrs**

**Venue: Ganga Hall**

Chair: Dr P P Nageswara Rao, Former Director, NESAC

Co-Chair: Dr Bijoy K Handique, NESAC

SN	Abstract ID	Title of the paper and Author
1.	Lead Talk (Invited)	Role of Geoinformatics in Assessing the Impact of Climate Variability/Change on Agriculture <b>DR P P NAGESWARA RAO</b>
2.	O-T10-202010126-08	Influence of Different In-Situ Soil Moisture Conservation Techniques in Maize under Rainfed Agro-Eco System of Jammu Region <b>DR. JAI KUMAR</b>
3.	O-T10-202010127-09	Adaptation to Climate Change and Its Impact on Smallholders' Income and Welfare: Estimation Using Matching <b>SHILADITYA DEY</b>
4.	O-T10-202010144-10	Value addition to climate forecasting: predictability of the Kharif Rice crop association with various Indo-Pacific climate drivers <b>HEMADRI BHUSAN AMAT</b>

5.	O-T10-202010155-11	Impact of changing behavior of microclimate on population dynamics of mustard aphid in Gangetic Bengal <b>SANU KUMAR SAHA</b>
6.	O-T10-202010168-12	Analysis of cropping systems under changing climatic conditions using geo-spatial techniques and crop simulation model in Southern Uttarakhand <b>LATA VISHNOI</b>
7.	O-T10-202010197-13	Simulating climate change impacts by free-air carbon dioxide enrichment on seed cotton yield using the CSM-CROPGRO-Cotton model in South-Western Punjab <b>RAJ KUMAR PAL</b>
8.	O-T10-202010202-14	Climate-optimized irrigation scheduling for Bt cotton hybrid ( <i>Gossypium hirsutum</i> ) and its evaluation using simulation and statistical relations <b>SANDEEP SINGH AULAKH</b>
9.	O-T10-202010246-15	Ensuring food security in the era of climate change: Addressing challenges of changing thermal and moisture regimes in agriculture <b>MANISHA TAMTA</b>
10.	O-T10-202010365-16	Impact of climate on paddy production over Koppala for the period of 1979-2018 and future projections under different climate scenarios up to 2100 using APSIM crop model <b>GURULINGAPPA</b>
11.	O-T10-202010381-17	Better Farm Management Data for precise impact assessment of climate change/climate variability <b>DR N SUBASH</b>
12.	O-T10-202010406-18	Agricultural Drought Area Mapping and Estimation using Sentinel 1 SAR Data <b>SENPAKAPRIYA V</b>

### SPECIAL LECTURE & VALEDICTORY SESSION

<b>16:30-18:30 hrs</b> <b>Venue: Himalaya Hall</b>
<b>Special Lecture</b>  <b>On</b>  <b>WMO - International Cooperation for Improved Weather and Climate Services for Mountain Regions</b>  <b>By</b>  Dr Elena Manaenkova Deputy Secretary-General, WMO.
<b>VALEDICTORY PROGRAM</b>



**TECHNICAL POSTER PRESENTATION**  
**Venue: E poster Hall**

S.No	Abstract ID	Title of the poster
1.	P-T01-202010034-01	Isotopic composition of daily precipitation from Kashmir Valley, NW Himalaya: Insights on the role of meteorological parameters and dual moisture transport pathways <b>AASIF MOHMAD LONE</b>
2.	P-T01-202010071-02	Impact of Western Disturbances (WDs) during January to April, 2020: A Case Study <b>SHASHI KANT</b>
3.	P-T01-202010093-03	Vertically integrated moisture transport and role of monsoon dynamics associated with the 2018 flood over Kerala <b>JAYAKRISHNAN P.R</b>
4.	P-T01-202010128-04	Intriguing aspects of Indian Summer Monsoon through cloud vertical structure over a complex and flat terrain of monsoon region <b>MEENU R NAIR</b>
5.	P-T01-202010139-05	Evolution of tropical clouds over Western Ghat using ground based Ka-band radar <b>SUKANYA PATRA</b>
6.	P-T01-202010146-06	Diurnal variability in rainfall events and associated vertical structure of precipitation over a high altitude site in the Western Ghats during the summer monsoon season <b>AMBUJ KUMAR JHA</b>
7.	P-T02-202010018-01	Dynamic Implications of Jump in 'Rate of Lightning' Prior to Tornadogenesis <b>P. KUMAR</b>
8.	P-T02-202010069-03	Lightning and electrical properties of severe thunderstorm on 25th June, 2020 over the Eastern part of India: A case study <b>DEBAJYOTI SAMANTA</b>
9.	P-T02-202010214-04	A study using three years of Lightning Data over the PAN India during 2017, 2018 and 2019. <b>TRISANU BANIK</b>
10.	P-T02-202010395-05	Comparative study of severe thunderstorm events of 25th/26th June 2020 and that of 3rd May 2009 <b>PRAJNA PRIYADARSHINI</b>
11.	P-T02-202010060-02	Preliminary evaluation of Indian Lightning Location Network (ILLN) performance across Lucknow using ordinary camera <b>A. SRIVASTAVA</b>
12.	P-T03-202010154-02	Numerical simulation of Sea breeze induced convective thunderstorms over southeast coast of India with different Microphysical parameterization <b>B.REVANTH REDDY</b>

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13.	P-T03-202010260-06	Study of TAF verification parameters for different MWO stations in India <b>DR. NEETI SINGH</b>
14.	P-T03-202010272-07	A case Study: WindSat winds impact in Global Forecast System. <b>M. SATEESH</b>
15.	P-T03-202010284-08	A study on the surface temperature and winds over India using IMDAA reanalysis <b>SRINIVAS DESAMSETTI</b>
16.	P-T03-202010298-09	Tropical Cyclone Track Prediction skill of GFS Model <b>DANGETI SRIDEVI</b>
17.	P-T03-202010310-11	Sensitivity of physics schemes on tropical cyclone simulations over Bay of Bengal using WRF-ARW model <b>MEENAKSHI SHENOY</b>
18.	P-T03-202010325-12	Spatial Verification of Rainfall from Ensemble Prediction System at NCMRWF <b>ANUMEHA DUBE</b>
19.	P-T03-202010125-01	Mesoscale Simulation of Helicity Evolution in Tropical Cyclone over North Indian Ocean <b>ARPITA MUNSI</b>
20.	P-T03-202010167-03	Observational aspects and numerical modelling of fog over the indo-gangetic plain <b>PRAKASH PITHANI</b>
21.	P-T03-202010248-05	A study of Retrieval and Assimilation of AMV from Polar Satellites <b>KAUSHAMBI JYOTI</b>
22.	P-T03-202010305-10	Identification of important rain gauges in Ganga river basin and their influence on the streamflow prediction <b>ANKIT SINGH</b>
23.	P-T03-202010237-04	Effect of Assimilation of Conventional and Satellite Radiance GTS Observations on Simulation of Mesoscale Convective System Over Southeast India Using WRF-3DVar <b>A. MADHULATHA</b>
24.	P-T04-202010108-02	Effect of cloud microphysical parameterizations in simulating Monsoon low pressure systems over the Indian region through composite analysis <b>VIVEKANANDA HAZRA</b>
25.	P-T04-202010242-06	Extreme events forecast study under the influence of Extratropical-Tropical interaction over the Himalayan region <b>MAHESH PRABHULING KALSHETTI</b>
26.	P-T04-202010326-07	Dusty Marine Aerosol variations over Indian Subcontinent during Indian Summer Monsoon <b>ADITI DESHPANDE</b>
27.	P-T04-202010112-03	Microwave Application for Prediction of Monsoon <b>OPN CALLA</b>
28.	P-T04-202010221-05	Spatio – Temporal indices in assessing impending Monsoon <b>SANJEEV DWIVEDI</b>

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29.	P-T04-202010050-01	Meteorological Information System (MIS) for Monitoring Monsoon and Extreme Rain Events across Subtropical Asia <b>ASHWINI RANADE</b>
30.	P-T04-202010166-04	Winter Precipitation Variability over North Indian Region in a state-of-the-art Indian high resolution reanalysis database <b>NISCHAL SHARMA</b>
31.	P-T05-202010079-01	Prediction of rainfall through measurements of radon activity near to the surface of earth during Nilam cyclone <b>CHARAN KUMAR K</b>
32.	P-T05-202010187-02	Planetary boundary layer characteristics over Odisha and its neighbourhood regions for contrasting monsoon years <b>S. S SATPATHY</b>
33.	P-T05-202010261-03	Study of wind pattern and dynamics of atmospheric boundary layer <b>KAMSALI NAGARAJA</b>
34.	P-T05-202010306-04	Effect of depression on 14th October 2020 on the surface layer meteorological parameters over Atigre (Kolhapur) <b>T. DHARMARAJ</b>
35.	P-T05-202010315-05	Trend and the seasonal variation of thermodynamic parameters at different pressure levels over Cochi <b>LINSHA C. L</b>
36.	P-T05-202010411-06	Influence of Solar Eclipse on meteorological parameters over Northwestern India <b>DIVYA PRAKASH</b>
37.	P-T06-202010045-01	Glacier Mass Changes observed over the Upper Indus Basin during 2000-2012 <b>TARIQ ABDULLAH</b>
38.	P-T06-202010405-02	Variations of Snow Cover Area of Dokriani Glacier Catchment, Garhwal Himalayas <b>ANUP UPADHYAYA</b>
39.	P-T07-202010160-08	Analysis of long-term rainfall variability over western agroclimatic zone of Haryana <b>HARSHANA</b>
40.	P-T07-202010180-10	Heat waves over India <b>DR. G. CHINA SATYANARAYANA</b>
41.	P-T07-202010243-13	Characterizing Warming Through Observed Changes In Temperature Extremes Over Himachal Pradesh And Punjab <b>DR. MANU RAJ SHARMA</b>
42.	P-T07-202010063-01	Decadal Analysis of Air Temperature Over East and West Coast of India <b>STEFY THOMAS</b>
43.	P-T07-202010111-02	Water quality and climate change perception study in the river satluj basin, north western himalaya <b>SHEETAL CHAUDHARY</b>
44.	P-T07-202010140-03	A study on the trend in southwest monsoon rainfall over Jammu & Kashmir <b>SREEKALA P P</b>

45.	P-T07-202010141-04	Assess and Forecasting the rainfall over the Himalayan region using statistical downscaling approach <b>ROHTASH</b>
46.	P-T07-202010156-05	Analysis of rainfall and temperature trends in Assam and the comparative study of climate of different regions of Assam <b>PANKAJ KUMAR DAS</b>
47.	P-T07-202010158-07	Correlating weather parameters with Forest Fire Fuel characters in mid-hills of Himachal Pradesh <b>DIVYA MEHTA</b>
48.	P-T07-202010165-09	Variations of Trace Gases at High Altitude Region of Western Ghats, Southern India <b>DHEVAGI P</b>
49.	P-T07-202010194-11	Human Comfort in Western Himalayas- Himachal Pradesh <b>MANMOHAN SINGH</b>
50.	P-T07-202010293-17	Statistical characteristics of heat waves over India <b>N.NAVEENA</b>
51.	P-T07-202010218-12	The transformation in Banni Grasslands <b>AMAN M JOSHI</b>
52.	P-T07-202010157-06	Variation of summer and winter diurnal temperature range over the subdivisions of India <b>MAHENDRA BENKE</b>
53.	P-T07-202010277-16	Long-term variability of climate parameters over major high altitude stations of North-East India <b>CHANDRIMA CHAKRABARTY</b>
54.	P-T07-202010273-14	Rain fall Variability in Hilly terrain of Jharkhand particularly in Damodar Valley area during pre monsoon, monsoon, post monsoon and Winter seasons in last 20 years <b>SUMAN CHATTOPADHYAY</b>
55.	P-T08-202010059-01	Influence of soil moisture on mean daily maximum and minimum temperatures over India <b>AMAL JOY</b>
56.	P-T08-202010092-02	Impact of rainfall on net ecosystem exchange of a Chir-Pine dominated vegetation of Western Himalaya <b>PRIYANKA LOHANI</b>
57.	P-T08-202010190-03	Study of heat low over North West India and its relation to all India summer monsoon rainfall <b>AMAR CHAVADANAVAR</b>
58.	P-T08-202010195-04	An analysis of the Tropical Cyclones and Atlantic Hurricanes during 1979 to 2018 with the variation of Sunspot number and the influence of solar flux F10.7 and other solar activities <b>DHRUBA BANERJEE</b>
59.	P-T08-202010342-05	Impact of Heat waves on vegetation cover and Ground water <b>NEETHU C</b>
60.	P-T09-202010209-02	Analysis of budget allocation, expenditure and corresponding improvement in services of India Meteorological Department during 2007-08 to 2019-20 <b>KIRAN JASWAL</b>

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62.	P-T09-202010112-01	Passive Microwave Sensors for Providing Services to the Farmers <b>OPN CALLA</b>
63.	P-T10-202010006-01	CropWeather Advisories at Block Level for Climate Resilient Agriculture from DAMU (District Agromet Unit) by IMD and ICAR <b>AMITH G</b>
64.	P-T10-202010026-03	Impact of both harsh environment and climatic changes on the agriculture of Sundarbans <b>ANUSMRITI NATH</b>
65.	P-T10-202010023-02	Impact of strict lockdown due to COVID-19 pandemic on air pollution over major locations of Uttar Pradesh <b>BAKHTAWAR HAMEED ABDULLAH</b>
66.	P-T10-202010089-04	Assessment of Weather Parameter Current and Future Agricultural Scenario <b>SHAHENAZ MULLA</b>
67.	P-T10-202010276-06	Indo-Pacific's large-scale circulation changes and its association with extreme flood over Kerala in 2018 <b>ROJA CHALUVADI</b>
68.	P-T10-202010353-07	Impact of climate on phenological changes in paddy over Koppala, Karnataka for the period 2002-2020 using remotely sensed multispectral Imagery <b>AISHWARYA PAMPAPATHI</b>
69.	P-T10-202010199-05	Changes observed in the seasonal rainfall and temperature over a tropical station, Punalur, Kerala <b>DIVYA E. SURENDRAN</b>
70.	P-T11-202010066-01	Assesment of some severe cyclones of Odisha coast and study of relationship of cyclone with global warming <b>CHINMAYA KUMAR SAHU</b>
71.	P-T11-202010188-03	Forest Management from Wildfires through Evapo-transpiration Mapping in Western Himalayas <b>DR PARMINDER KAUR BAWEJA</b>
72.	P-T11-202010247-04	Estimation of Maximum Daily rainfall for different Return periods over Kerala using Generalised Extreme Value (GEV) Analysis <b>ABHIJITH V</b>
73.	P-T11-202010372-05	River Flood Inundation Area and Monitoring Maps in the Bago River Basin, Myanmar <b>MIN MIN AYE THAN</b>
74.	P-T11-202010113-02	Vulnerable indicators and their impacts on forests a case study of northwestern Himalaya, India <b>NIDHI KANWAR</b>
75.	P-T12-202010090-01	Downscaling CMIP5 Model Outputs by Genetic Programming Approach to Capture Spatiotemporal Variations of Future Precipitation over Homogeneous Monsoon Regions of India <b>MRS. SHILPA SATISH MOTEGAONKAR</b>

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77.	P-T12-202010173-03	Solar Radiation estimation based on Artificial Neural Network approach for Agricultural Decision Support System <b>PRIYANKA SINGH</b>
78.	P-T12-202010309-04	An application of Machine Learning algorithm in the Aviation-weather forecasting <b>SEBIN JOHN</b>
79.	P-T12-202010319-05	Statistical downscaling of daily precipitation estimates in Narmada river basin using machine learning approaches <b>NIBEDITA SAMAL</b>
80.	P-T12-202010324-06	Machine-Learning based prediction of fog occurrence over Indian region using NWP forecasts <b>BHARTRHARI SRINIVASAN</b>
81.	P-T12-202010354-07	Shoreline Variability and Change along the Andhra Pradesh Coast using Deep Learning <b>MEGHANA KAVURI</b>
82.	P-T13-202010003-01	Evaluation of GPM-IMERG precipitation product in Heavy Rainfall event during Northeast monsoon season in 2015 over Tamil Nadu, India <b>VENKADESH SAMYKANNU</b>
83.	P-T13-202010021-03	Integrating Weather Model & Remote Sensing Indices for Wheat Yield Prediction In Haryana, India <b>MANJEET</b>
84.	P-T13-202010040-04	Land Use Land Cover Changes in Bhubaneswar Urban Area Post-Tropical Cyclone 'Fani' <b>BIJAYLAXMI SAHOO</b>
85.	P-T13-202010080-05	Land use and land cover classification over the West Coast of India using Landsat imagery <b>ROSHNY THERISA ANTONY</b>
86.	P-T13-202010183-06	Estimation of Atmospheric Particulate Pollution over Kashmir Himalaya Using Remote Sensing <b>MUDASIR AHMAD BHAT</b>
87.	P-T13-202010263-07	Study of Melting Layer Characteristics Using Polarimetric Weather Radar Products <b>NAVNEET RANJAN</b>
88.	P-T13-202010264-08	Quantitative variations of Aerosol Optical Depth (AOD) over some places of China and India <b>SILCHI S KASHYAP/ ADARSH KUMAR</b>
89.	P-T13-202010281-10	The impact of signal-to-noise ratio during the process of data analytics in Satellite Imagery <b>MR SHIVAMURTHY HIEMATH</b>
90.	P-T13-202010288-11	Investigation on relation between TCO and AOD using Microtops-II Ozonometer <b>DR. DADA PANDURANG NADE</b>
91.	P-T13-202010343-12	High resolution Land Surface Temperature estimation over Kosi river basin through multispectral data from Landsat8. <b>BANDESH</b>

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93.	P-T13-202010264-08	A study of the variations of aerosol optical depth (AOD) retrieved from MODIS satellite data products over North Eastern regions of India <b>SILCHI S KASHYAP</b>
94.	P-T14-202010013-02	Study of Aerosol Optical depth (AOD) using satellite approach over Indian region <b>RANJITKUMAR SOLANKI</b>
95.	P-T14-202010279-05	Aerosol Optical Properties over Jaipur During 2017-2020 <b>AKSHAY KULKARNI</b>
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97.	P-T14-202010073-04	Global variation in aerosol burden during COVID-19 imposed lockdown <b>S.D. SANAP</b>
98.	P-T14-202010114-04	Comparative study of Aerosol Optical Depth and Black Carbon in two different sites of Indian Himalayan Region <b>PRASHANT KUMAR CHAUHAN</b>
99.	P-T14-202010396-06	Aerosol Characteristics over High Altitude Western Ghats Location, Ooty, Tamil Nadu <b>JAYABALAKRISHNAN, R. M</b>
100.	P-T15-202010303-02	Heat index trends and climate change implications over some smart cities in India <b>PALLAVIPRABHU</b>
101.	P-T15-202010377-05	Seasonality analysis of relationship of PM2.5 and PM10 with micro-meteorological parameters over a complex terrain <b>BHARATI PAUL</b>
102.	P-T15-202010321-03	Reducing lightning injuries, deaths and property damage <b>MARY ANN COOPER</b>
103.	P-T15-202010175-01	Heat Stress and UTCI Variations in North Western India <b>ABHISHEK KUMAR</b>
104.	P-T15-202010342-04	Variability and change in human thermal comfort during heat waves over India <b>C NEETHU</b>
105.	P-T16-202010323-01	Global Lightning Occurrence and Impacts <b>RONALD L HOLLE</b>
106.	P-T16-202010386-02	Validation of GPM rainfall over sub-Himalayan stations of Arunachal Pradesh <b>VIJAY JAIN</b>
107.	P-T17-202010134-02	Simulating extreme rainfall over Indian region using WRF model during the presence of deep depression <b>DIVYAJA DHAIRYASINH LAWAND</b>
108.	P-T17-202010213-04	Prognostication on changing tidal environment due to climate change in estuarine parts of Sundarbans: a geographic approach <b>DR. JAYANTA GOUR</b>

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110.	P-T17-202010227-05	Widespread rainfall activity with isolated heavy spells of rain over Himachal Pradesh and Uttarakhand during 15-20 July 2014 <b>DR RAVINDRA SHARADCHANDRA AKRE</b>
111.	P-T17-202010250-06	Impact of SCS 'Nisarga' over parts of Maharashtra-usefulness of rainfall and wind warnings towards mitigation <b>SUNITA HARISH BHANDARI</b>
112.	P-T17-202010174-03	Extreme rainfall events over Northwest India during Indian Summer Monsoon <b>DEEPANSHU AGGARWAL</b>
113.	P-T17-202010404-07	Role of convective available potential energy (CAPE) and total total index (TTI) in the genesis of lightning during convective weather <b>M.SARMA</b>