

# IMD NEWS

INDIA METEOROLOGICAL DEPARTMENT  
(Ministry of Earth Sciences)

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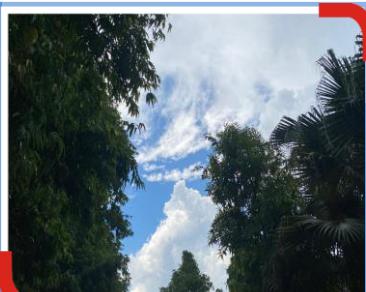
OCT– DEC 2025

Number 4



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### Published by

India Meteorological Department,  
MausamBhawan, Lodi Road,  
New Delhi - 110 003

Tel. : 011- 24344298  
Telefax : 91-11-24699216 &  
91-11- 24623220  
<https://mausam.imd.gov.in>  
email : [mausam.imd@imd.gov.in](mailto:mausam.imd@imd.gov.in)

### Edited by

Dr.V. K. Soni  
Mr. Sunny Chug

### Compiled by

Staff of Editorial Office

## IMD LAUNCHES THREE MAJOR INITIATIVES: C-BAND DOPPLER WEATHER RADARS, SOLAR POWER SYSTEM AND METEOROLOGICAL MUSEUM

Union Minister of State (Independent Charge) for Science & Technology; Minister of State for Earth Sciences; and Minister of State in the Prime Minister's Office, Personnel, Public Grievances, Pensions, Atomic Energy and Space, Dr. Jitendra Singh, on 27<sup>th</sup> November 2025, inaugurated **three major initiatives of the India Meteorological Department (IMD)**. These included the commissioning of **two state-of-the-art Doppler Weather Radars (DWRs)** at Raipur and Mangaluru, the launch of a **Solar Power System at Mausam Bhawan**, and the opening of a **Meteorological Museum** aimed at promoting weather and climate awareness among students and young learners.



Hon'ble Union Minister Dr. Jitendra Singh, on 27th November 2025, inaugurated three major initiatives of the India Meteorological Department

### Dr. MRUTYUNJAY MOHAPATRA RECEIVES SIR GILBERT WALKER AWARD-2025

Dr. Mrutyunjay Mohapatra, Director General of Meteorology, India Meteorological Department, has been awarded the "Sir Gilbert Walker Award" by Indian Meteorological Society (IMS) for his exceptional contributions to science & technology, research & innovation and their applications in weather forecasting and severe weather warnings, especially with respect to cyclones and monsoonal low-pressure systems. The Sir Gilbert Walker Gold Medal is awarded by the IMS to recognize outstanding and pioneering contributions in the field of meteorology and related areas. The award honours lifetime contributions towards the discovery of new phenomena, understanding atmospheric processes, and developing meteorological services for societal benefits.



Dr. Mrutyunjay Mohapatra, Director General of Meteorology, India Meteorological Department, receives Sir Gilbert Walker Award-2025

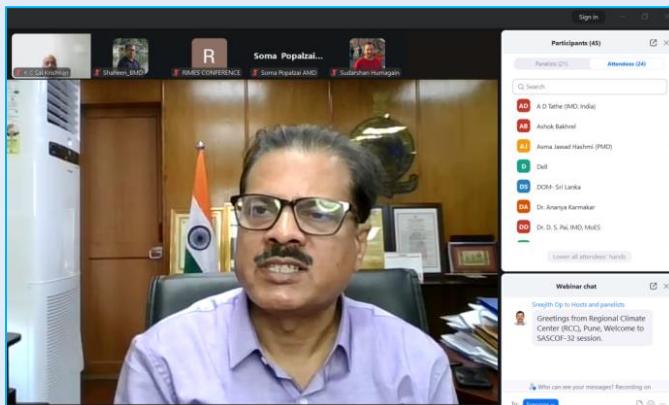


## Significant Events

### Regional Climate Centre (RCC) Activities during October to December 2025

The CRS office of IMD, Pune is recognized as the World Meteorological Organization (WMO) **Regional Climate Centre (RCC)** for South Asia. Presently the MMCFS is used for the RCC long range forecasting activities.

Climate Services User Forum (CSUF) associated with **SASCOF-32** for ensuing OND Season (October to December 2025) took place online through video conferencing on 3<sup>rd</sup> October 2025. The SASCOF-32 session was hosted by Regional Climate Centre (RCC), India Meteorological Department (IMD), Pune in collaboration with World Meteorological Organization (WMO), UK Met. Office (UKMO), Regional Integrated Multi-Hazard Early Warning System for Africa and Asia (RIMES), Bangkok and The United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) and summarized that the rainfall during coming winter season is likely to be normal to above normal.



Dr. M. Mohapatra, DG, IMD during SASCOF- 32 & CSUF Online Session

India Meteorological Department (IMD) organised National Plastic Reduction Programme under the "Swachhata Hi Sewa" campaign on 3<sup>rd</sup> October, 2025. On this occasion, Dr. M. Mohapatra, Director General of Meteorology, IMD, addressed the staff of IMD and emphasized the importance of environmental cleanliness and sustainable waste management practices. He urged all officers and employees to actively participate in the campaign by reducing the use of single-use plastics and adopting eco-friendly alternatives in their day-to-day activities.

**Dr. M. Mohapatra**, DG IMD had been on deputation to WMO Geneva to participate in the Extraordinary Session of the World Meteorological Congress (Cg.- Ext.2025) and Executive Council (EC-Ext. 2025) at WMO, Geneva during 20-24 October, 2025. The major events during his visit include following:

(i) **Mr. António Guterres**, Secretary-General of the United Nations, visited the World Meteorological Organization (WMO) headquarters to engage in an Interactive Dialogue with Members of the World Meteorological Congress on 22<sup>nd</sup> October, 2025, during the WMO Extraordinary Session of Congress (Cg-Ext (2025)). **Dr. M. Mohapatra**, DG, IMD, and 3<sup>rd</sup> Vice-President of WMO welcomed the UNSG on the dais.



Dr. M. Mohapatra, DGM, IMD, and 3rd Vice-President of WMO welcomed the UNSG on the dais

(ii) During his visit **Dr. Mohapatra** chaired a session on election and appointment procedures, including the WMO Code of Conduct, on 22- 23 October, 2025.



Dr. M. Mohapatra, chaired a session on election and appointment procedures

**Dr. Abdulla Al Mandous**, President of the World Meteorological Organization (WMO) and Permanent Representative of the United Arab Emirates with WMO, visited the CRS Office on 1<sup>st</sup> November, 2025 and interacted with the scientists working at the CRS Office.



Dr. Abdulla Al Mandous, visited the CRS Office and interacted with the scientists

33<sup>rd</sup> Session of **South Asian Climate Outlook Forum (SASCOF-33)** for the ensuing Winter Season (December to February 2025/26) took place online through video conferencing on 27<sup>th</sup> November, 2025. The **SASCOF-33** session was organized by Regional Climate Centre (RCC), India Meteorological Department (IMD), Pune in collaboration with World Meteorological Organization (WMO), UK Met. Office (UKMO) and Regional Integrated Multi-Hazard Early Warning System for Africa and Asia (RIMES), Bangkok and The United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP). Experts from National Meteorological and Hydrological Service (NMHS) from nine south Asian countries participated in the Forum and discussed the outlook for rainfall and temperature during upcoming Winter season DJF 2025/26.

**A delegation from African Centre for Meteorological Applications (ACMAD)** including Director General of ACMAD visited CRS, IMD, Pune on 27<sup>th</sup> November, 2025 to strengthen the collaboration between ACMAD and MoES in the field of Climate Service and capacity Development in weather/ climate forecast and had interaction meeting with Senior officials of IMD, Pune at CR&S, IMD, Pune on 28<sup>th</sup> November, 2025.



Delegation from African Centre for Meteorological Applications (ACMAD)

## ESSO REVIEW MEETING AT SHILLONG DURING 18-19 DECEMBER 2025

MoES hosted the **Earth System Science Organization (ESSO) Review Meeting** at IMD Shillong under the chairmanship of **Dr. M. Ravichandran**, Secretary, MoES, with participation from the Director General of Meteorology and Heads and Directors of MoES institutions. The meeting focused on reviewing progress, identifying scientific & technological gaps, strengthening inter-institutional collaboration, addressing administrative and financial issues, and aligning ESSO's roadmap with India's Vision 2047 across weather, climate, ocean, and earth system sciences.



ESSO Review Meeting Held at Shillong During 18-19 December 2025

## Memorandum of Understanding (MoU)

**Indian Coast Guard** and **IMD** signed a Memorandum of Understanding for enhanced cooperation and collaboration between the two organisations on 5<sup>th</sup> December, 2025.



Indian Coast Guard and IMD signed a Memorandum of Understanding

## Human Resource Development Activities

### WORKSHOPS

**Shri Upendra Srivastava**, Met-B participated in the e-workshop organized in the Hindi Section of IMD HQ on 6<sup>th</sup> October, 2025. Officials of MC Sri Vijaya Puram also attended the e-workshop.

**Dr. Kripan Ghosh**, Sc. 'F' participated in One-day workshop "To refine / finalise Crop Weather Calendar (CWC) for major crops of different districts under the jurisdiction of MPKV, Rahuri" at Department of Agricultural Meteorology, College of Agriculture, Pune on 15<sup>th</sup> October, 2025.

**Dr. Sanjeev Dwivedi**, Sc. 'D' attended a Stakeholder Consultation Workshop on "Assessment of Pest Risks and Gendered Socio-Economic Impacts of Crop Loss in Rice Farming Systems of Odisha" at Hotel Mayfair, Bhubaneswar organized by CRRI and CABI on 4<sup>th</sup> November, 2025.

**Dr. Divesh Choudhary**, Sc. 'D', **Dr. Sourish Bandyopadhyay**, Sc. 'D' and **Dr. Anwesa Bhattacharya**, Sc. 'C' attended virtually a National Training Workshop on 'Nowcasting of High-Impact Weather Events 2025' from 11- 14 November, 2025.

**National Training Workshop** on Nowcasting of High-Impact Weather Events 2025 attended by **Sh. Amrit Tirkey**, SO-I, **Sh. Vinod Sharma**, Met-B, **Sh. Akash Sen**, SA and **Sh. Shekhar Jha**, SA, MC Sri Vijaya Puram from 11- 14 November, 2025.

**Dr. Manorama Mohanty**, Sc. 'F' attended Workshop on 'Utilization of GPU & CPU on Weather Forecasting over India (UGCWF)' at Shovana Hall, Trident Academy of Technology, Bhubaneswar on 27<sup>th</sup> November, 2025.

**Dr. Mrutyunjay Mohapatra**, DG, IMD participated as the Guest of Honour in the **National Workshop on “Weather and Climate Forecasting over the Indian Himalaya: Tools, Trends and Technologies”** organized by Defence Geoinformatics Research Establishment, Chandigarh at DGRE, on 8<sup>th</sup> December, 2025.

**Dr. Ashutosh Misra**, Sc. ‘E’ participated in the **Content Review Committee (CRC)** workshop organised by the Department of Agriculture, Maharashtra, to review on going work and align on key deliverables on 15<sup>th</sup> December, 2025 in virtual mode.

## MEETINGS

**Sh. Uday K. Shende**, Sc. ‘F’ attended the review meeting on **indigenous development of surface meteorological instruments** which was chaired & reviewed the status of autographic/recording instruments & their deployment across India by the DG, IMD on 9<sup>th</sup> October, 2025.

**Captain A. Vidyasagar**, Head IMAC, Indian Navy visited IMD on for familiarisation on the **Decision Support System** of IMD for weather forecasting on 10<sup>th</sup> October. **Dr. M. Mohapatra**, DG IMD chaired the meeting.

**Dr. Ashutosh Misra**, Sc. ‘E’, attended an online meeting under the chairmanship of Commissioner of Agriculture, Maharashtra regarding **“The WINDS project implementation”** with officials from Maharashtra State Agriculture Department and Agriculture Universities on 14<sup>th</sup> October, 2025.

**Shri K. C. Sai Krishnan**, Sc. ‘G’, attended an Expert Committee meeting to review the proposal for the **Climate Reference Station network** held on the 17<sup>th</sup> of October, 2025 at IITM, Pune.

**Dr. Manorama Mohanty**, Sc. ‘F’, MC Bhubaneswar attended review meeting with Hon’ble Minister, Revenue and Disaster Management and with Special Relief Commissioner, Revenue and Disaster Management regarding preparedness for ensuing Cyclone system over Bay of Bengal through OSWAN VC from the SEOC Conference Hall, Bhubaneswar on 25<sup>th</sup> and 26<sup>th</sup> October, 2025 respectively.

**Dr. M. Mohapatra**, DG, IMD participated in the Joint Collaborative Board of WMO and Intergovernmental Oceanographic Commission (IOC), **Annual Review Meeting-2025** on 27-28 October through video conferencing.

**Dr. R. K. Giri**, Sc. ‘F’ virtually attended the International Conference Steering Committee (ICSC) Meeting, **Asia-Oceania Meteorological Satellites Users’ Conference (AOMSUC-15)** on 28<sup>th</sup> October, 2025.

**Dr. M. Mohapatra**, DG, IMD participated in the review meeting chaired by Home Secretary to normalize the responsibilities especially with regard to cloudburst, flooding with Western Himalayas and Northeast States at PM Office, South Block on 14<sup>th</sup> November, 2025.

**Dr. M. Mohapatra**, DGM IMD participated in the **Regional Expert Group Meeting (ReG)** of the APDIM at Vigyan Bhawan New Delhi and made a presentation on **Multi Hazard Analytics and Impact-Based Forecasting for Inclusive Risk Data Governance** on 20<sup>th</sup> November, 2025.

**Sh. Rahul Saxena**, Sc. ‘G’ and **Sh. S. K. Manik**, Sc. ‘D’ attended NDSA Meeting for supplying the data for development of Design Flood Estimation Tool and to convene a meeting on the subject matter on 26<sup>th</sup> November, 2025.

**Dr. A. K. Mitra**, Sc. ‘F’ attended a high-level official meeting chaired by HMoES on 27<sup>th</sup> November, 2025 to review the progress of **Mission Mausam**, and emphasized expediting the timelines as per the initiative of the Hon’ble Prime Minister, **Shri Narendra Modi**.

**Dr. M. Mohapatra**, DG, IMD participated in the joint meeting of the Secretary Ministry of Agriculture & Farmers Welfare with Secretary, Ministry of Earth Sciences and Secretary, Department of Space to discuss the feasibility of AI-based weather advisories and farm-level yield estimation at Room No. 142, Krishi Bhawan, New Delhi on 2<sup>nd</sup> December, 2025.

**Dr. M. Mohapatra**, DG, IMD participated in the inception meeting between the delegation from ASEAN Humanitarian Assistance Centre (AHA Centre) and officials from Indian Stakeholders at ICR-ER Conference Hall, 4<sup>th</sup> Floor, NDCC-II Building, Jai Singh Road, MHA on 4<sup>th</sup> December, 2025. Thereafter the team visited IMD. **Mrs. Monica Sharma**, Sc. ‘E’ gave a presentation on the international responsibilities of IMD.

A meeting on Stakeholders Consultation on Condition Assessment & Management Plan (CAMP) for Mahanadi river basin & State Specific Action Plan (SSAP) for water was held on 4<sup>th</sup> December, 2025. The meeting was attended by **Ms. Samanti Sarkar**, Sc. ‘F’, and **Dr. Gayatri Vani Kanchibhotla**, Sc. ‘C’. IMD being key stakeholder, inputs on climatology of the region and extreme weather events were discussed. The stake holders were also informed of the services being provided by the office of MC Raipur and our intention to work closely with other departments towards a common goal.

**Dr. M. Mohapatra**, DG, IMD participated in the **Joint Collaborative Board (JCB)** meeting of World Meteorological Organisation (WMO) and **Intergovernmental Oceanographic Commission (IOC)** Meeting through VC on 9<sup>th</sup> December, 2025. **Mrs. Monica Sharma**, Sc. ‘E’ made a presentation on **“National collaboration between Ocean & Meteorological Agencies for Services and Capacity Development: A Success Story in India”** during the meeting.

**Dr. A. K. Mitra**, Sc. ‘F’ attended the **ESSO Council Meeting** held in Guwahati on 19-20 December, 2025. The meeting focused on New activities/programs included in the next Financial Cycle (2026-2031) pertaining to innovation and technology development, Programs on Science, Technology and Innovation-based entrepreneurship, promotion of start-ups, location-specific technologies for sustainable livelihoods, women’s empowerment,

and advancement of gender parity and pending administrative and financial matters.

**Dr. R.K. Giri**, Sc. 'F' attended a meeting organized by Niti Ayog regarding evaluation of the High Performance Computing (HPC) and Multi-Mission Data Receiving and Processing System (MMDRPS) held at Niti Bhawan, New Delhi on 15<sup>th</sup> December, 2025.

**Dr. M. Mohapatra**, DG, IMD participated in a meeting chaired by Hon'ble Chief Minister of Tripura at Agartala in connection of establishment of DWR and AWS in the state on 31<sup>st</sup> December, 2025.

## CONFERENCE

**Dr. M. Mohapatra**, DG IMD, participated as a panellist in the National Conference on "Digital India Land Record Modernization Program (DILRMP) & Disaster Management" organized by Government of Gujarat in collaboration with Department Land Resources, Ministry of Rural Development, Govt. of India and GSDMA, Gujarat on 3<sup>rd</sup> October, 2025.

**Shri Rahul Saxena**, Sc. 'G' attended Regional Policy Dialogue on Flood Emergency Response organised at Thailand, Bangkok on 13 -16 October, 2025.

**Sh. Debabrata Bandyopadhyay**, S.O-I participated in a VC organized by FLOOD MET UNIT HYDROLOGY for the discussion on "Performance of Operational QPF verification" issued by 16 FMOs during 2025" on 29<sup>th</sup> October, 2025.

**Dr. M. Mohapatra**, DGM IMD, participated as the Guest of Honour during the Inaugural event of 11<sup>th</sup> WMO Scientific Conference on weather modification at IITM Pune on 1<sup>st</sup> November, 2025.

**Dr. M. Mohapatra**, DG, IMD, participated in the inaugural ceremony of the Emerging Science, Technology & Innovation Conclave (ESTIC-2025) organized by DST at Bharat Mandapam, Pragati Maidan with the vision "Pioneering Sustainable Innovation, Technological Advancement and Empowerment" for "Viksit Bharat 2047" on 3<sup>rd</sup> November, 2025.

**Dr. M. Mohapatra**, DG, IMD participated in the Valedictory session of South Asian Institute for Advanced Research and Development (SAIARD) International River Congress, at India International Centre on 6<sup>th</sup> November, 2025.

**Shri K. C. Sai Krishnan**, Sc. 'G' participated 7<sup>th</sup> National conference on Coastal, Harbour and Ocean Engineering on 6<sup>th</sup> November, 2025 at CWPRS Khadakwasla Pune.

**Sh. Abhimanyu Chauhan**, Sc. 'C' attended a VC on topic "Instructions Regarding the Newly Developed Web-Based Application for Polar Diagram Generation" organized by CAMD, New Delhi on 17<sup>th</sup> November 2025.

**International Tropical Meteorology Symposium (INTROMET-2025) on "Advances in Tropical Weather, Ocean, and Monsoon Climate Research for a Sustainable Future"** was organised during 18-20 November 2025 at IITM, Pune in which Scientists from IMD participated and presented.

**Dr. S. I. Laskar**, Sc. 'F', participated International Symposium on Tropical Meteorology (INTROMET-2025), organized by the Indian Meteorological Society at the Indian Institute of Tropical Meteorology (IITM), Pune during 18-20 November, 2025 on the theme "Advances in Tropical Weather, Ocean, and Monsoon Climate Research for a Sustainable Future" as a Convenor of National Organizing Committee and Chair a Technical session on the topic "Weather & Climate Science for Sustainable Agriculture". **Dr. Kripa Ghosh**, Sc. 'F' delivered an invited lecture on "Science to Services: Agromet Advisory Services for Climate-Resilient Agriculture" during the workshop on 20<sup>th</sup> November, 2025. **Dr. Gargi Rakshit**, Sc. 'C' delivered an oral presentation at the symposium. **Sh. Pradeep Sharma**, Sc. 'D' also presented his paper. **Dr. Sudeep Kumar B.L. Sc. 'D'**, presented a poster on the topic "Understanding the long-term trends in thermodynamic instability indices and their optimum values for thunderstorm prediction over India".

**Dr. M. Mohapatra**, DG, IMD participated in the Session 2 entitled Technology-enhanced Surveillance, Panel Discussion 3 in the One Health Mission Workshop to be held at Bharat Mandapam, New Delhi on 20<sup>th</sup> November, 2025.

**Dr. M. Mohapatra**, DG, IMD participated as a distinguished Panelist at Technical Panel I of the SaGAA VIII Conference at India International Centre, New Delhi on 24<sup>th</sup> November, 2025.

**IMD organized a Brainstorming Session** on "Cloudburst Events: Challenges in its Monitoring & Forecasting and Way Forward" at New Delhi on 28<sup>th</sup> November, 2025.

**Dr. A. K. Mitra**, Sc. 'F' took part in a one-day Brainstorming Session on "Cloudburst Events: Challenges of Monitoring & Forecasting and the Way Forward", organized by IMD on 28<sup>th</sup> November 2025 at ARNAV Hall, Prithvi Bhawan.

**Dr. M. Mohapatra**, DG, IMD participated in the 4<sup>th</sup> Session of the Third Pole Climate Forum (TPCF-4) through VC on 1<sup>st</sup> December, 2025.

**Dr. Manorama Mohanty**, Sc. 'F', **Dr. Gopi Nath Raha**, Sc. 'F', **Shri Ashis Kumar**, Sc. 'D', and **Shri S. P. Singh**, Sc. 'D' attended the Brainstorming Session on Aviation Meteorological Services at Ministry of Earth Science, New Delhi, on 15<sup>th</sup> December, 2025.

**Dr. A.K. Mitra**, Sc. 'F' attended the 2<sup>nd</sup> National Conference on Geospatial Education on 5<sup>th</sup> December, 2025 organised by Delhi Technological University, Delhi. The conference aimed to establish a national platform for dialogue and collaboration among Government, Academia, and Industry on key issues shaping India's Geospatial Education landscape in its journey towards Global Geospatial Leader.

## TRAININGS

**Dr. Praveen Kumar, Sc. 'C' and Shri Avinash Tarodekar, Met. 'B'** both, as Master Trainers from RMC, Nagpur conducted 1-Day Rashtriya Karmayogi Training Program at RMC Nagpur in the capacity of 77 Officials each on 3<sup>rd</sup> October, 2025, 14<sup>th</sup> October, 2025 & 17<sup>th</sup> December, 2025 respectively.



Official from RMC Nagpur, participated in Rashtriya Karmayogi Program

Customized Basic Observation Course on Meteorology was inaugurated under the chairmanship of **Dr. Suryachandra Rao, Director, IITM** on 27<sup>th</sup> October, 2025 at MTI, which was attended by senior officers of IMD Pune. The training commenced from 27<sup>th</sup> October, 2025 with 10 Maldives participants and concluded on 1<sup>st</sup> November, 2025.

**Meteorological Instrument Familiarization Training** was conducted for eight naval officers from the School of Naval Oceanography and Meteorology, Kochi, during their visit to the AWS Lab, IMD Pune, on 29<sup>th</sup> October 2025 and for the Maldives Met trainee officers during their visit to the SID Pashan Laboratory, IMD Pune, on 31<sup>st</sup> October 2025. Proud moment for IMD—sharing expertise, fostering learning, and building future meteorologists. Strengthening collaboration between science and Defence for better weather preparedness.



Naval officers from the School of Naval Oceanography and Meteorology, Kochi, during their visit to AWS Lab, IMD Pune



Maldives Met trainee officers during their visit to the SID Pashan Laboratory, IMD Pune

**Regional SAR Exercise and training by Coast Guard attended by Sh. O.K. Priyadarshi, Met. 'A' and Sh. Akash Sen, S. A. on 27-28 November, 2025.**

**In-Person Radiation Training Programme** for all 47 Solar Radiation Stations (SRS) conducted at Central Radiation Laboratory, Pune in two batches during 2-4 December 2025, and 9-11, December 2025.



In-Person Radiation Training Programme at Central Radiation Laboratory, Pune

## LECTURES

**Shri B. Sudarsan Patro, Sc. 'E'** Pune conducted a science outreach activity at Cusrow Wadia Institute of Technology Pune, one of the pioneering diploma institutes in Maharashtra, on 6<sup>th</sup> October, 2025. The session was organized for third-year Electronics and Telecommunication (E&TC) students on the topic "Advancing Weather Monitoring: Current Trends, Future Innovations, and Embedded System Applications in Automatic Weather Stations".



Shri B. Sudarsan Patro conducted a science outreach activity at Cusrow Wadia Institute of Technology Pune

**Dr. H.R. Biswas, Sc. 'F'** delivered a lecture on the subject "From Forecast to Field: Leveraging IMD Alerts for Worker Safety in Organized and Unorganized Sectors" in the "Strategic Workshop on Workers' Safety and Health in Changing Climate" at All India Institute of Hygiene and Public Health, Bidhan Nagar Campus, Kolkata on 9<sup>th</sup> October, 2025.

**Dr. Ashok Kumar Das, Sc. 'F'** delivered a lecture on 'SEA AREA BULLETIN' in the 'Pre-cyclone season familiarization training for forecasters' during 15-16 October, 2025 and **Shri Ramashray Yadav, Sc. 'D'** and **Shri Pradeep Sharma, Sc. 'D'** and CWC staff attended the meeting (Hybrid Mode).

**Sh. Uday K. Shende**, Sc. 'F', was nominated as a course coordinator faculty for "Surface Instruments Refresher Course" by ICITC, HQ, New Delhi for the session held from 27-31 October, 2025. In this course lectures were delivered by **Sh. Uday K. Shende**, Sc. 'F' and **Ms. Shahenaz Mulla**, Met. 'B' covering installation, operation and routine maintenance of key surface instruments.

**Dr. Ashutosh Misra**, Sc. 'E' delivered a lecture on "Agromet Advisory Services in India and Impact-Based Forecasting for Agriculture" Maldives trainees of "Customized Basic observation Course" organised by MTI, Pashan, Pune on 29<sup>th</sup> October, 2025.

**Dr. Jaya Dhami Parihar**, Sc. 'D' delivered a lecture on "Operational activities of Agrimet Division" to final year B.Sc. (Hons.) Agriculture students of Institute of Agriculture Research & Technology (IART), NMV University, Tamil Nadu on 29<sup>th</sup> October, 2025.

**Dr. H.R. Biswas**, Sc. 'F' delivered a lecture on "Basic Meteorology & Marine Weather Services" in the training on Level-1 AtoN Manager course at MNTI, Kolkata, on 29<sup>th</sup> October, 2025.

Regional Meteorological Center (RMC) Chennai conducted "Regional Northeast Monsoon Forum for Southern States" on 7<sup>th</sup> November 2025 in collaboration with the World Food Program (WFP), and State government Tamil Nadu. **Dr. O. P. Sreejith**, Sc. 'F' attended the meeting and gave presentation on "Review of the climate for States in South India".

**Dr. Rizwan Ahmed**, Sc. 'D' presented talk on the "Climate change & LFTCs" during the International Symposium on Tropical Meteorology (INTROMET-2025). **Dr. S.D. Sanap**, Sc. 'D' also delivered a talk on the, "Spring time dipole in the heat wave pattern over the Indian region" at the event and evaluated the posters at the INTROMET for the award of the best poster.

**Ms. Anahit Hovsepyan**, WMO official visited CRS Pune office and delivered lecture on "World Meteorological Organization's Perspectives on Climate Services" on 21<sup>st</sup> November, 2025 at Map Discussion Hall, CRS Pune.

**Dr. Manorama Mohanty**, Sc. 'F', M.C Bhubaneswar joined ATAL Online Faculty Development Programme and delivered a lecture on "Weather Forecasting, Climate Variability Impacts and Remedies" On 27<sup>th</sup> November, 2025.

**Dr. Rizwan Ahmed**, Sc. 'D' delivered the welcome address during the celebration of the India International Science Festival (IISF) organized by RMC Nagpur on 2<sup>nd</sup> December, 2025.

**Dr. H.R. Biswas**, Sc. 'F' delivered speech on "Weather Climate and Energy Conservation" on the occasion of Energy Conservation Day in All India Radio, on 14<sup>th</sup> December, 2025.

## AWARENESS PROGRAM

**Dr. Habibur Rahaman Biswas**, Sc. 'F' administered the celebration of Samvidhan Diwas (Constitution Day) with reading of the Preamble to the constitution at RMC Kolkata, on 26<sup>th</sup> November, 2025. Samvidhan Diwas was also celebrated at MWO Kolkata and other sub offices.



Samvidhan Diwas (Constitution Day) was celebrated on 26<sup>th</sup> November, 2025 at all IMD offices



Samvidhan Diwas (Constitution Day) was celebrated on 26<sup>th</sup> November, 2025 at all IMD offices

## CURTAIN RAISER EVENT OF THE INDIA INTERNATIONAL SCIENCE FESTIVAL (IISF) -2025

**Dr. M. Mohapatra**, DG IMD participated in the Curtain Raiser ceremony of India International Science Festival (IISF)-2025 inaugurated by Hon'ble Minister of Earth Sciences Dr Jitendra Singh at National Media Centre, New Delhi on 17<sup>th</sup> October, 2025.

**MC Patna**, organized the curtain raiser event of the India International Science Festival (IISF) 2025 on 30<sup>th</sup> November, 2025, under the national theme "Science for Prosperity: For a Self-Reliant India". Students from various schools, with teachers, participated in the event. The objective of the event was to introduce young students to IISF 2025 and make them aware of the opportunities available for participation in national-level scientific activities. **Mr. Ashish Kumar**, Sc. 'D' delivered a lecture on Science-Based Development. He highlighted the important role of the India Meteorological Department (IMD) in strengthening national disaster resilience. Other scientists also gave an

introduction to IISF and its objectives, a description of the services provided by IMD, and a special presentation on "Understanding Weather and Climate Change".

**Curtain Raiser Ceremony** for India International Science Festival (IISF) 2025 held at RMC Office Kolkata on 25<sup>th</sup> November, 2025. Dr. H. R. Biswas, Sc. 'F' presided over the event.



Curtain Raiser Ceremony for India International Science Festival (IISF) 2025 held at RMC Office Kolkata, on 25<sup>th</sup> November, 2025

MC Patna, organized the curtain raiser event 2<sup>nd</sup> December, 2025. Mr. Jayant Das, In-charge Training, Data Centre, Water Resource Department, was invited as the chief guest, alongside Smt. Samanti Sarkar, Sc. 'F' who presided over the event. An audio-visual presentation on IISF-2025 was displayed to the students along with an open house exhibition set up for the participating students wherein the officials of Meteorological Centre, Raipur demonstrated the operation and functioning of various instruments and equipment that play an important role in forecasting and gathering weather related information.

**Curtain Raiser Programme** was arranged by Meteorological Center Ahmedabad on 28 November, 2025. More than 200 school children & teachers from reputed schools attended the Programme followed by media briefing for wide publicity of the IISF-2025.



School children & teachers from reputed schools in MC Ahmedabad

RMC Kolkata participated in the exhibition "ISG-ISRS National Symposium- Geomatics and Space Innovations towards Atmanirbhar Bharat: Insights and Frontiers and Annual Conventions" organized by The Indian Society of Geomatics (ISG) and Indian Society of Remote Sensing (ISRS) at IIT Kharagpur Research Park, New Town, Kolkata, during 25–27 November, 2025, represented by Shri Milan Kanti Das, Met-A, Shri Angshuman Kundu, Met-A.



RMC Kolkata participated in the exhibition, highlighting its key Initiatives and services



RMC Kolkata participated in the exhibition, highlighting its key Initiatives and services

**Dr. M. Mohapatra**, DGM IMD participated in the 11<sup>th</sup> Edition of India International Science Festival (IISF)-2025 at Panjab University, Panchkula, Haryana on 8th December and Chaired the session “**Strengthening Triple Helix Model-R & D Industry, Academia, Collaborations under Vision Sansad**” during IISF 2025 at Dussehra Ground, Panchkula on 8<sup>th</sup> December, 2025.

**RMC Kolkata** has participated in “**20th Science Exhibition cum Environmental Awareness Fair**” (Paribesh Mela) held at Netaji Subhas Maidan, Madhyamgram Chowmatha, North 24 Parganas, represented by **Shri Indranil Talukdar**, Met-B, **Shri Sushil Singh**, **Ms. Romita Marik**, SA, and **Shri Amit Roy**, MTS, from 24- 28 December,2025.



“20th Science Exhibition cum Environmental Awareness Fair” (Paribesh Mela)

## ACHIEVEMENTS/AWARDS

**Shri B. Sudarsan Patro**, Sc. ‘E’ received a Certificate of Appreciation from the Journal of Agrometeorology, Association of Agrometeorologists, Anand, Gujarat, India and Dept. of Computer Science& Engineering, ABV-IIIT, Gwalior in recognition of his outstanding contribution in peer reviewing research articles towards the quality of publication of the Journal of Agrometeorology and IEEE International Conference on Recent Advancement in Computing and Systems during 2025 respectively. He also received a certificate of appreciation from the head of the institute for conducting a science outreach activity at Kalam Institute of Technology, Odisha, on 7<sup>th</sup> November 2025.



Shri B. Sudarsan Patro, Scientist-E, IMD Pune, received a certificate of appreciation

**Shri Raja Acharya**, Met. ‘B’ received Appreciation from the Intergovernmental Oceanographic Commission dated 12<sup>th</sup> December, 2025 in connection with participation of the Nineteenth Session of ICG-NEAMTWS (Intergovernmental Coordination Group for the Tsunami Early Warning and Mitigation System in the North-eastern Atlantic, the Mediterranean and Connected Seas) held through hybrid mode.

RMC Kolkata organized the prize distribution ceremony on 17<sup>th</sup> December, 2025, for the ‘**Hackathon**’ competition for the celebration of 150 Years of IMD.



Shri Gaurab Dey, 3rd Prize winner in Poem competition, and Shri Adarsha Majumdar, 3rd Prize winner in the Souvenir Design contest

## मौसम केंद्र अहमदाबाद को वर्ष 2024-25 के लिए राजभाषा कार्यान्वयन के सर्वश्रेष्ठ कार्य-निष्पादन हेतु प्रथम पुरस्कार

दिनांक 19 दिसंबर, 2025 को सैक, इसरो अहमदाबाद में आयोजित ‘नगर राजभाषा कार्यान्वयन समिति (नराकास) (अहमदाबाद की 85वीं बैठक में मौसम केंद्र अहमदाबाद को वर्ष 2024-25 के लिए राजभाषा कार्यान्वयन के सर्वश्रेष्ठ कार्य-निष्पादन हेतु प्रथम पुरस्कार से अलंकृत’ किया गया।

मौसम केंद्र अहमदाबाद से यह पुरस्कार कार्यालय प्रमुख श्री डॉ .अशोक कुमार दास, वैज्ञानिक- एफ ने ग्रहण किया।



मौसम केंद्र अहमदाबाद को वर्ष 2024-25 के लिए राजभाषा कार्यालयन के सर्वश्रेष्ठ कार्य-निष्पादन हेतु प्रथम पुरस्कार

RMC Kolkata has represented the Ministry of Earth Sciences, in 29<sup>th</sup> Sundarban Kristi Mela O Loko Sanskriti Utsav, held at Kultali Narayantala, participated by Shri Milan Kanti Das, Met-A, Shri Dulal Roy, Met-A, and Shri Pushpendu Naskar, MTS, during 20-29 December, 2025.



MoES pavilion has been awarded with the trophy of the 2nd prize among all the participating pavilions in the exhibition

#### Parliamentary Official Language (Hindi) committee inspection certificate

On 29<sup>th</sup> December, 2025 Meteorological Centre, Raipur was inspected by Parliamentary Official Language (Hindi) committee

to ascertain the efficacy of usage of official language in official day to day work. The inspection involved display of MC Raipur Stall at the venue where various articles related to usage of official language in office were exhibited. The event was attended by Dr. Jagveer Singh, Sc-'G', MoES, Dr. Mrityunjay Mohapatra, DG, IMD, Mr. R. Balasubramanian, Sc. 'F', Ms. Samanti Sarkar, Sc. 'F' , Dr. Gayatri Vani Kanchibhotla, Sc. 'C' and Mr. Kandan Murmu, S.O.-I. and official language implementing officials from DGM, HQ. The office was awarded inspection certificate for satisfactory usage and execution of official language in the office of MC Raipur for the inspection year 2024 to 2025.



Meteorological Centre, Raipur was inspected by Parliamentary Official Language (Hindi) committee

#### Research & Publications

Twenty (21) research articles have been published in Special Issue on "National Symposium on 75 years of Accomplishments of Mausam" Vol. 76 No. 4 (2025):

##### Research papers by IMD officials published in Mausam:

1. Kumar, Amit; Kumar, Naresh; Jenamani, R. K., "Decoding the dynamics: interaction of western disturbances and easterly troughs driving extreme weather over India", *Mausam*, 76, 4, 1315-1324, DOI:10.54302/mausam.v76i4.7061.
2. Srivastava, Akhil; Kumar, Naresh; Mohapatra, M.; Sulekh, Kunal, "Tropical cyclone 'Biparjoy': a blessing in disguise for the disastrous heat wave event of June 2023 over India", *Mausam*, 76, 4, 1063-1078, DOI::10.54302/mausam.v76i4.7221.
3. Bansal, Prashant; Nath, Sankar, "Role of Common Alert Protocol-Based Warning Dissemination System and Effective Dissemination Methodology", *Mausam*, 76, 4, 1341-1346, DOI:10.54302/mausam.v76i4.7118.
4. Ranalkar, M.; Patro, B. Sudarsan; Anjan, Anjali; Shende, Uday; Zacharia, S. ; Trivedi, P. C.; Raju, D. K. Ashwin; Hosalikar, K. S., "Celebrating 150 Years of Imd: A Chronicle of Weather Guardians and Technological Marvels", *Mausam*, 76, 4, 1325-1340, DOI:10.54302/mausam.v76i4.6654.

5. **Muppa, Shravan Kumar; Kumar, Rohan; Kumar, Jitendra; Manik, Swapankumar; Saxena, Rahul; Mohapatra, M.**, "Decadal variation of southwest monsoon season rainfall over Central India under global warming", *Mausam*, 76, 4, 1285-1296, DOI:10.54302/mausam.v76i4.7104.

6. **Osuri, Krishna; Borah, Jharna; Koushik, K.; Nekkali, Srinivas; Nadimpalli, Raghu; Soni, Vijay Kumar**, "Potential impacts of mesoscale assimilation of non-conventional data on rainfall characteristics of monsoon depressions during Southwest monsoon", *Mausam*, 76, 4, 1207-1222, DOI:10.54302/mausam.v76i4.7093.

7. **Nagalakshmi, K.; Joseph, Susmitha; Sripathi, G.; Dharma, A.; Mohapatra, M.; Suneetha, P; Kumar, S. V. J.; Kant, Shashi; Babji, S. H.**, "Key factors behind super cyclone Gonu (1-7 June 2007) over the Arabian Sea", *Mausam*, 76, 4, 1035-1046, DOI:10.54302/mausam.v76i4.7095.

8. **Mohanty, U. C.; Nadimpalli, Raghu; Osuri, Krishna k; Sinha, Palash; Nayak, H. P.; Routray, Ashish; Pattanayak, Sujata; Karrevula, N. R.; Mohanty, Shyama; Swain, Madhusmita; Boyaj, A ; Prasad, S. kiran; Das, A. K.; Joseph, Sudheer; Islam, Sahidul; Khare, M.; Gopalakrishnan, S. G.; Niyogi, D.; Mohapatra, M.**, "A 3-decade advancements in prediction of tropical cyclones and other severe weather over India: a recap", *Mausam*, 76, 4, 1013-1034, DOI:10.54302/mausam.v76i4.7271.

9. **Lenka, Smritishree; Gouda, K. C.; Mohan, T. S.; Devi, Rani; Prasad, V. S.**, "Assessing the dynamics and thermodynamics of monsoon onset: the impact of ENSO", *Mausam*, 76, 4, 1193-1206, DOI:10.54302/mausam.v76i4.7064.

## Research papers by IMD officials published in Extra Departmental (National/ International) Journals

1. **Dharavath, Nagaraju; Goroshi, Sheshakumar**, "Decoding vegetation resilience: NDVI trends and climate impacts in Indian agriculture", *Environmental Monitoring and Assessment*, 198, 1, DOI:10.1007/s10661-025-14794-w.

2. **Kumar, Amit; Mohapatra, Mrutyunjay; Dixit, Mohit**, "Doppler weather radar-based 5-year climatology of winter storms over the National Capital Region of India", *Theoretical and Applied Climatology*, 156, 12, DOI:10.1007/s00704-025-05855-8.

3. **Arun, S. H.; Anshul, C.; Mahesh, R.; Suman, G.; Brajesh, K.; Singh, S.; Rakesh, K.**, "A novel approach for thunderstorm detection, monitoring and prediction using satellite data; a case study over the IGI Airport, New Delhi", *Remote Sensing Letters*, 16, 10, 1057-1065, DOI:10.1080/2150704X.2025.2534202.

4. **Shukla, Krishna Kumar; Kumar, Gajendra; Mishra, Anoop Kumar; Adhikary, Sourav; Singh, Neeti; Ranalkar, Manish R.; Sharma, Radheshyam; Rai, Manish; Shankar, Anand**, "Characteristic dissimilarities in the cloud base height over Indo-Gangetic plain airports during withdrawal phase of southwest

monsoon", *Meteorology and Atmospheric Physics*, 138, 1, DOI:10.1007/s00703-025-01110-x.

5. **Shukla, Krishna Kumar; Mishra, Anoop Kumar; Kumar, Gajendra**, "On the Variability of Cumulonimbus Clouds over Indo-Gangetic Plain Region and Their Thermodynamical Linkage", *Journal of the Indian Society of Remote Sensing*, 53, 11, 3543-3550, DOI:10.1007/s12524-025-02159-2.

6. **Singh, Neeti; Sharma, Kalash; Parihar, Shailesh; Giri, R. K.**, "Analysis of Fog Occurrence During Night time Over the Indo-Gangetic Plain with INSAT-3DR Data Channel Difference Method", *Journal of the Indian Society of Remote Sensing*, DOI:10.1007/s12524-025-02285-x.

7. **Velusamy, Guhan; Akasapu, Dharma Raju; Kopparthi, Nagaratna**, "Integrating Machine Learning and Trend Analysis for Rainfall Forecasting: Insights From DBSCAN, Spectral Clustering, and Climate Variability Assessments Over Major Cities in India", *International Journal of Climatology*, DOI:10.1002/joc.70239.

8. **Ravindren, Shambu; Nair, Sushma; Roy, Soma Sen**, "Hailstorm climatology over Maharashtra with associated impacts and risk assessment", *Natural Hazards*, 121, 18, 21935-21965, DOI:10.1007/s11069-025-07672-8.

9. **Patro, Bagati Sudarsan; Bartakke, Prashant P.**, "Collaborative Station Learning for Rainfall Forecasting", *Atmosphere*, 16, DOI:10.3390/atmos16101197.

10. **Yadav, Jaya; Mitra, Ashim Kumar; Tiwari, Kailash Chandra**, "Overview of BrihatSamhita rainfall prediction methodology over the Indian region and its utilization by machine learning technique", *Journal of Earth System Science*, 134, 4, DOI:10.1007/s12040-025-02672-5.

11. **Rakshit, Gargi; Chakravarty, Kaustav; Mitra, Ashim Kumar; Giri, Ram Kumar**, "Unprecedented winter precipitation over Delhi NCR, India (December 2024): a multi-Sensor perspective", *Theoretical and Applied Climatology*, 156, 12, DOI:10.1007/s00704-025-05898-x.

12. **Marathe, Shamal; Swapna, P.; Sandeep, N. ; Aswale, Ajinkya ; Rohini, P.; Sreejith, O. P.**, "North Atlantic fingerprint on severe heatwaves over the Indian region", *Quarterly Journal of the Royal Meteorological Society*, DOI:10.1002/qj.70061.

13. **Lakshmi, S.; Saraswathi, S.; Pai, D. S.; Agnihotri, Geeta**, "Decadal Evolution and Multi-Scale Climate Teleconnections of Heatwaves Over Tamil Nadu, India (1981-2020): Trends, Spatial Expansion and Atmospheric Drivers", *International Journal of Climatology*, DOI:10.1002/joc.70205.

14. **Kumar, Vivek; Kumar, Rahul; Rao, B. Padma; Singh, Anand K.; Saini, Shailendra; Soni, Vijay K.**, "Atmospheric pressure waves and seismic signatures of the Hunga Tonga-HungaHa'apai eruption in Antarctica", *Polar Science*, 46, DOI:10.1016/j.polar.2025.101233.

15. **Laskar, S. I.; Baisya, H.; Das, S.; Sandeep, A. ; Mohapatra, M.; Mohan, K. N.**, "Analysis of Two Heavy Rainfall Episodes in

May 2022 and June 2022 in Southern Parts of Assam, Northeast India", *Pure and Applied Geophysics*, **182**, 11, 4805-4824, DOI:10.1007/s00024-025-03848-2.

16. **Shankar, Anand**; Sahana, Bikash Chandra; **Kumar, Ashish**, "Visibility challenges: characterizing fog events in the Indo-Gangetic plain for enhanced aviation operations", *Meteorology and Atmospheric Physics*, **138**, 1, DOI:10.1007/s00703-025-01115-6.

17. **Sharma, Jyoti**; **Rastogi, Arpita**; **Verma, Shikha**; **Kumar, Gajendra**; Choudhary, Arti, "Assessing the accuracy of different Z-R relationships for Doppler Weather Radar based rainfall estimation: A comparative study for the Delhi region", *Physics and Chemistry of the Earth*, **141**, 2, DOI:10.1016/j.pce.2025.104182.

18. **Lakshmi**; **Soni, Vijay Kumar**; Kumar, Adarsh, "Digisonde based inter-analysis of ionospheric TEC during the major solar eclipse of 8 April 2024 over North/South American sites", *Advances in Space Research*, **76**, 7, 3893-3913, DOI:10.1016/j.asr.2024.12.040.

19. **Mahla, Subhkaran**; **Sharma, Radheshyam**; **Sharma, Himanshu**; Prakash, Jai; Kumar, Gajendra, "Variability of heatwave and meteorological features associated with exceptionally hot summer 2022 over Rajasthan, India", *Theoretical and Applied Climatology*, **156**, 11, DOI:10.1007/s00704-025-05862-9.

20. **Lakshmi**; Deshwal, Rashmi; **Soni, Vijay Kumar**; Kumar, Adarsh, "Long term (2003-2023) analysis of Black Carbon aerosols and its impact on cloud characteristics over a highly polluted Delhi mega city of India", *Atmospheric Environment*, **363**, DOI:10.1016/j.atmosenv.2025.121585.

21. **Jana, Soumyajyoti**; **Rakshit, Gargi**; Sarkar, Sahadat; **Balakrishnan, Shibin**; Ganai, Malay; Chakravarty, Kaustav; Krishnan, K. C. Sai; Mukhopadhyay, Parthasarathi, "Unraveling the July 2023 extreme rainfall in New Delhi: microphysical insights and large-scale atmospheric drivers", *Climate Dynamics*, **63**, 10, DOI:10.1007/s00382-025-07910-6.

22. **Sharma, Vineet**; **Singh, Gauravendra P.**; Chakraborty, Arun, "Variabilities in onset and withdrawal characteristics of Indian summer monsoon after 1998 climate shift: dynamical role of somali jet", *Theoretical and Applied Climatology*, **156**, 10, DOI:10.1007/s00704-025-05760-0.

23. **Yalla, Vyshnavi Sai**; Satyanarayana, A. N. V.; **Murty, P. L. N.**; Srinivas, K. Siva, "Influence of land use and cover on storm surge induced coastal flooding in the sundarbans during cyclone Amphan", *Natural Hazards*, **121**, 18, 21531-21549, DOI:10.1007/s11069-025-07653-x.

24. **Pagire, Arvind**; **Ratna, Satyban B.**; Cherchi, Annalisa; **Sanap, S. D.**; **Sreejith, O. P.**, "ENSO-MJO Interaction and Its Association With Monsoon Extreme Rainfall Events Over the Indian Region", *International Journal of Climatology*, **45**, 14, DOI:10.1002/joc.70093.

25. **Lakshman, Kesireddy**; **Nekkali, YerniSrinivas**; **Nadimpalli, Raghu**; Islam, Sahidul; Osuri, Krishna K., "Evaluating the Impact of the Planetary Boundary Layer on Dynamics of Urban Thunderstorms Over the Eastern Indian Region", *Meteorological Applications*, **32**, 6, DOI:10.1002/met.70123.

26. **Choudhary, Arti**; Mehrotra, Bharat Ji; Srivastava, Atul K.; Kumar, Pradeep; **Soni, V. K.**; Srivastava, Manoj K., "Spatiotemporal trends in sunshine hours over India during three decades from 1988 to 2018", *Scientific Reports*, **15**, 1, DOI:10.1038/s41598-025-17251-3.

27. **Pillai, Aiswarya S.**; **Mahato, Somnath**; Goswami, Mrinal; Roy, Niladri; Panda, Bibekananda; Kundu, Surajit, "Galileo Visibility Analysis and Availability Over India", *Journal of the Indian Society of Remote Sensing*, **53**, 11, 3619-3633, DOI:10.1007/s12524-025-02204-0.

28. **Govande, Amitabha**; Attada, Raju; **Shukla, Krishna Kumar**; Muralidharan, SoumyaKunchala, Ravi Kumar; Chilukoti, Nagaraju; Kaushik, Garima, "Analyzing and predicting ventilation coefficient over India using long-term reanalysis datasets and hybrid machine learning approach", *Theoretical and Applied Climatology*, **156**, 11, DOI:10.1007/s00704-025-05845-w.

29. **Mishra, Manoranjan**; Guria, Rajkumar; **Das, Umasankar**; Santos, Celso Augusto Guimaraes; da Silva, Richard Marques, "Geospatial analysis of lightning-related deaths in a single day induced by extreme weather: are these fatalities avoidable?", *Natural Hazards*, **121**, 17, 19837-19862, DOI:10.1007/s11069-025-07594-5.

30. **Banik, Trisanu**; Fierro, Alexandre O.; Mansell, Edward R.; Gogoi, RekhaBharali; Kundu, ShyamSundar; **Pattanaik, D. R.**; **Das, A. K.**; Raju, P. L. N.; Kundu, Arundhati; **Johny, C. J.**; Guha, Anirban, "Lightning Forecasting Using EWR Model Over North-Eastern India: Preliminary Results", *Earth and Space Science*, **12**, 12, DOI:10.1029/2024EA004109.

31. **Nadimpalli, Raghu**; **Nekkali, YerniSrinivas**; Osuri, Krishna K.; **Mohapatra, M.**; Niyogi, Dev, "Understanding the Role of Antecedent Land Conditions on Rapid Intensity Changes in Landfalling Tropical Cyclones Over the Bay of Bengal", *Meteorological Applications*, **32**, 6, DOI:10.1002/met.70134.

32. **Devi, Mamta**; Mishra, Sumit Kumar; Pandey, Kartika; Kaur, Supreet; **Kumar, Anikender**; **Soni, Vijay Kumar**; Singh, Amarendra; Srivastva, Atul Kumar, "Deciphering Long-Term Variation of Aerosol Characteristics and Their Climatic Implication over the World's Wettest Place: Mawsynram", *Journal of the Indian Society of Remote Sensing*, DOI:10.1007/s12524-025-02374-x.

33. **Yadav, Prafull P.**; **Jat, Rajmal**; Ghude, Sachin D.; Govardhan, Gaurav; Kumar, Rajesh; Debnath, Sreyashi; **Kalita, Gayatri**; **Jena, Chinmay**; **Soni, V. K.**; Jayakumar, A.; Anurose, T. J.; Bhati, Shweta; Sayeed, Alqamah; Seo, Junhyeon; Gupta, Pawan; Bhattacharjee, Partha S.; Flemming, Johannes; Ray, Kamaljit; Atri, S. D., "Evaluating the Performance of Regional and Global Forecasting

**Models for Accurate PM2.5 Prediction and Air Quality Index Assessment in Delhi, India", Journal of Geophysical Research-Atmospheres, 130, 19, DOI:10.1029/2025JD043719.**

34. Johnson, Leah; Tandon, Amit; Lee, Craig; Kumar, T. Srinivasa; **Mohapatra, Mrutyunjay**; Rao, Suryachandra A.; Chen, Sue; Fernando, Harindra J. S.; Goes, Joaquim, "A Collaborative Effort toward Understanding the Air-Sea Transition Zone during the Indian Summer Monsoon", *Bulletin of the American Meteorological Society*, 106, 12, E2509-E2518, DOI:10.1175/BAMS-D-24-0239.1.

## Infrastructure Development & Installations

The implementation of **Phase 2 of the Meteorological Data Submission System (MOSS)** has been successfully completed. The upgraded version 02.2025 of MOSS is now operational across various Aerodrome Meteorological Offices (AMOs) and Aeronautical Meteorological Stations (AMSS) throughout the country with effect from 15<sup>th</sup> October, 2025.

**Dr. M. Mohapatra**, DG, IMD visited CAgMO observatory and reviewed the progress of replacement of mercury thermometer and development of digital instruments for the surface observatories on 1<sup>st</sup> November, 2025.

**Surface Instrument Division, CRS Pune & MC Jammu** jointly installed a Heliport Automated Weather Observing systems (HAWOS) at **Sanji Chhat Helipad, Shri Mata Vaishno Devi Shrine Board, Katra, Jammu** on 26<sup>th</sup> November 2025.



**Heliport Automated Weather Observing systems (HAWOS) at Sanji Chhat Helipad, Shri Mata Vaishno Devi Shrine Board, Katra, Jammu**

## INAUGURATION OF THE STATE-OF-THE-ART C-BAND DOPPLER WEATHER RADAR AT MANGALURU

The state-of-the-art C-Band Doppler Weather Radar at Mangaluru was inaugurated on 27<sup>th</sup> November 2025 by the Honorable Minister of Earth Sciences, **Shri Jitendra Singh**, through virtual mode. This advanced radar system marks a significant enhancement in the regional weather monitoring and forecasting capabilities of the India Meteorological Department (IMD).

The inauguration ceremony was graced by several distinguished dignitaries, including **Shri Dr. M. Ravichandran**, Secretary, Ministry of Earth Sciences (MoES); **Dr. M. Mohapatra**, DG, IMD; **Dr. Amudha**, Sc. 'F', **Dr. S. S. Puvirasan**, Sc. 'G'; **Shri R. Sajeev**, Sc. 'D'. Senior scientists of IMD, staff members, media representatives, and a limited number of public attendees participated in the function, marking the successful commissioning of this critical infrastructure.

The newly inaugurated C-Band Doppler Weather Radar is expected to significantly improve real-time monitoring of severe weather events such as thunderstorms, heavy rainfall, cyclones, and localized convective systems, thereby strengthening early warning services for the coastal and adjoining regions.

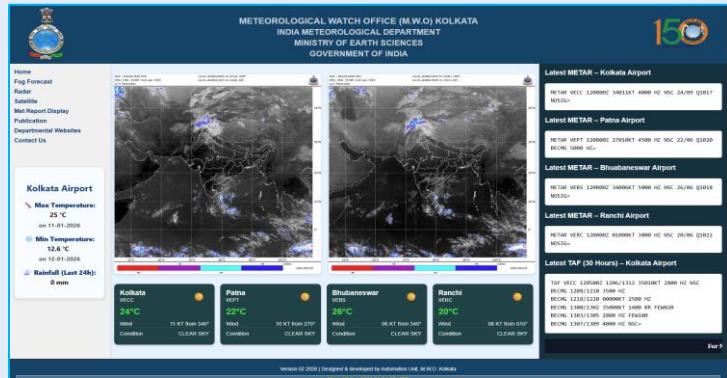


**The state-of-the-art C-Band Doppler Weather Radar at Mangaluru was inaugurated on 27 November 2025 by the Honorable Minister of Earth Sciences, Shri Jitendra Singh, through virtual mode**

New website (<https://mwokolkata.imd.gov.in>) of MWO Kolkata, developed by Automation Unit, MWO Kolkata, has been launched on 16<sup>th</sup> December, 2025. The website is live for all sub-offices and stakeholders of MWO Kolkata. This website is facilitating the stakeholders and other sub-offices with MET Report Display of Airports (More than 65 Active Airports across India), Fog Forecast, Radar images of Kolkata & Patna, Present weather condition of

major airports, Maximum, Minimum and Rainfall (24 Hours) of Kolkata Airport etc.

**Automation Unit:** **Shri Sunny Chug, Sc. 'D', Shri Chiranjit Chakraborty, Met. 'A', Shri Rajdip Saha, S. A., Shri Sourav Pan, S. A.**



New website (<https://mwokolkata.imd.gov.in>) of MWO Kolkata, developed by Automation Unit, MWO Kolkata

**Dr. M. Mohapatra, DG, IMD** reviewed the progress of replacement of mercury based instruments as part of national policy of removal of Hazardous material in the workplace. He also reviewed the progress of automation and modernization of the surface Meteorological Observatory. **Shri. Sai Krishnan**, Head CRS, **Dr. O. P. Sreejith, Sc. 'F'** and **Dr. Shijo Zacharia, Sc. 'D'** presented the activities.



Dr. M. Mohapatra, DGM IMD reviewed the progress of replacement of mercury based instruments

**MWO Palam** under the guidance of SID Pune has installed the following instruments at Noida airport: DCWIS and FSM at RWYs 10 and 28 and FSM at RWY 28 MID.

**Navi Mumbai International Airport operations commenced on 25<sup>th</sup> December, 2025:** MWO Mumbai issues aviation weather forecasts and warnings along with Current weather observations taken from AMS Navi Mumbai.

## MEDIA INTERACTION

IMD organised Press Conference on the monthly outlook of outlook of rainfall and temperature for the month of December,

2025 on 1<sup>st</sup> December. **Dr. Mrutyunjay Mohapatra, DG, IMD** addressed the media online.

The salient features of the monthly outlook are given below:

- During the upcoming winter season (December 2025 to February 2026) normal to below-normal minimum temperatures are likely over most parts of central India and adjoining peninsular and Northwest India. Above normal minimum temperatures are likely over the remaining parts of the country. During the season, maximum temperatures are expected to be normal to below normal across most parts of the country. However, some regions, including parts of Northwest India, Northeast India, and areas along the foothills of the Himalayas are likely to experience above-normal maximum temperatures.
- During the upcoming winter season (December 2025 to February 2026), parts of central India, as well as some regions in northwest and northeast India, are likely to experience above-normal occurrences of cold wave days.
- During December 2025, Normal to below-normal monthly minimum temperatures are likely over most parts of central and northwest India, northern parts of peninsular India. Above normal minimum temperatures are likely over the remaining parts of the country. The maximum temperatures during December 2025 are likely to be above normal over most parts of the country except many areas of central India and adjoining northwest and peninsular India, where normal to below maximum temperatures are likely.
- The occurrence of cold waves during December 2025 is likely to be above normal over parts of northwest, central and northeast India. e) Monthly rainfall for December 2025 over South Peninsular India consisting of five meteorological subdivisions (Tamil Nadu, Puducherry & Karaikkal, Coastal Andhra Pradesh & Yanam, Rayalaseema, Kerala & Mahe and South Interior Karnataka) is most likely to be normal (69-131% of Long Period Average (LPA)). Monthly rainfall over the country as a whole during December 2025 is most likely to be normal (79- 121 % of the long-period average (LPA)). Above-normal rainfall is expected over many areas of peninsular India and west-central India, as well as parts of east-central and northeast India. The below normal rainfall is likely over remaining parts of the country.
- [https://internal.imd.gov.in/press\\_release/20251201\\_pr\\_4517.pdf](https://internal.imd.gov.in/press_release/20251201_pr_4517.pdf).

## VISITORS

**Medical students from Sri Balaji Institute of Medical Sciences** visited the Meteorological Centre, Raipur on 29 October 2025. During their visit, they were given an overview of the Centre's operations and were introduced to a range of meteorological instruments used in weather observations and data collection. The students also gained valuable insights into various weather phenomena and were explained by the officers about the methodologies and processes involved in state-level weather forecasting.



Medical students from Sri Balaji Institute of Medical Sciences at MC, Raipur

**Dr. R. K. Giri, Sc. 'F'**, briefed Navy officials on the various activities and functions of the SATMET Division on 4<sup>th</sup> November, 2025.

**Sh. Chinmay Khadke, Sc. 'D'** and **Dr. Gargi Rakshit, Sc. 'C'**, briefed officials of the National Institute of Disaster Management (NIDM) on the activities of the SATMET Division on 5<sup>th</sup> November, 2025.

**Commodore Abhinav Barve** from Indian Navy, Naval Oceanography and Meteorology, New Delhi visited the CRS, IMD, Pune office on 19<sup>th</sup> November, 2025 to strengthen the collaboration between Indian Navy and IMD in the field of instrumentation, capacity building and climate service.

54 students along with 02 faculty member from AAU Jabugam, ChotaUdeipur visited M.C. Ahmedabad for educational purpose on 21<sup>st</sup> November, 2025.

## WEATHER INFORMATION

### OPERATIONAL LONG-RANGE FORECASTS DURING OCTOBER TO DECEMBER, 2025

#### Long Range Forecast for Rainfall and Temperature for November 2025

**Rainfall:** Monthly rainfall for November 2025 over South Peninsular India consisting of five meteorological subdivisions (Tamil Nadu, Puducherry & Karaikkal, Coastal Andhra Pradesh & Yanam, Rayalaseema, Kerala & Mahe and South Interior Karnataka) is most likely to be normal (77-123% of Long Period Average (LPA)).

Normal to above-normal rainfall is likely over most parts of the country except for some areas in northwest India and South peninsular India, where below-normal rainfall is likely during November 2025 is shown in Fig.1.

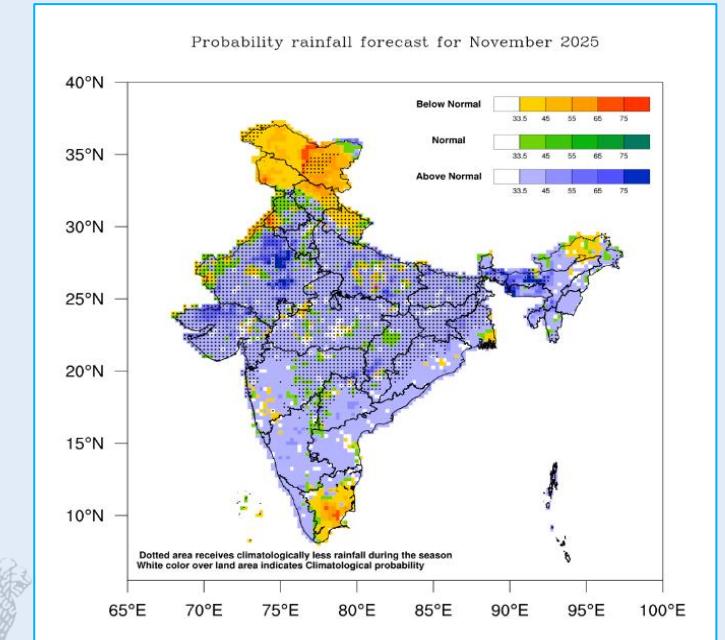


Fig.1: Probability forecast of tercile categories\* (below normal, normal and above normal) for the rainfall over India during November 2025

**Temperature:** Normal to below-normal maximum temperatures are likely over most parts of the country except most parts of northeast India, some parts of northwest & southern peninsular India and the foothills of the Himalayas, where above-normal maximum temperatures are likely is shown in Fig.2a.

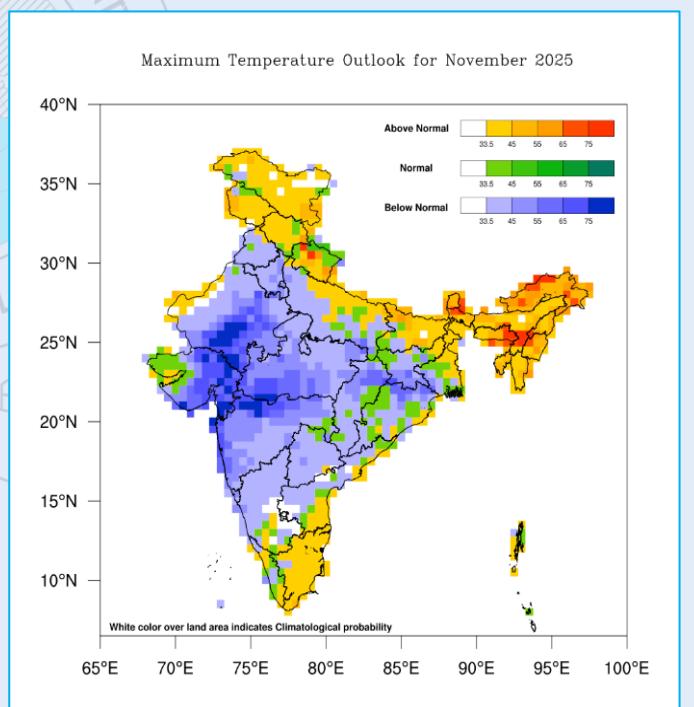


Fig. 2a: Probability forecast of tercile categories\* (below normal, normal and above normal) for the Maximum Temperature over India during November 2025

Above-normal minimum temperatures are likely over most parts of the country except some areas of northwest India, where normal to below-normal minimum temperatures are likely is shown in Fig.2b.

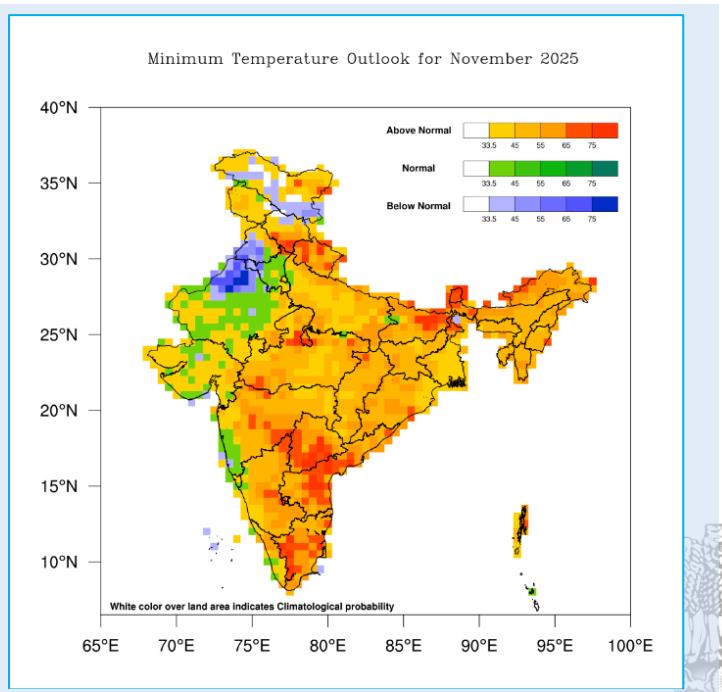


Fig. 2b: Probability forecast of tercile categories\* (below normal, normal and above normal) for the Minimum Temperature over India during November 2025

#### Outlook for the Temperatures during Winter Season (Dec.2025-Feb.2026) and Forecast for the Rainfall and Temperatures during December 2025:

**Rainfall:** Monthly rainfall for December 2025 over South Peninsular India consisting of five meteorological subdivisions (Tamil Nadu, Puducherry & Karaikkal, Coastal Andhra Pradesh & Yanam, Rayalaseema, Kerala & Mahe and South Interior Karnataka) is most likely to be normal (69-131% of Long Period Average (LPA)). The LPA of rainfall over South Peninsular India during December, based on data from 1971 to 2020, is about 43.0 mm. Monthly rainfall over the country as a whole during December 2025 is most likely to be normal (79-121 % of the long-period average (LPA)). The LPA of rainfall over the country as a whole during the month of December, based on data from 1971 to 2020, is about 15.9 mm.

The probabilistic forecast of tercile rainfall categories (above normal, normal, and below normal) over the country for the month of December 2025 is shown in Fig.3. Normal to above normal rainfall is expected over many areas of peninsular India and west-central India, as well as parts of east-central and northeast India. The below-normal rainfall is likely over remaining parts of the country. In the map, dotted areas represent areas that receive climatologically very less rainfall during December. There is no signal by the model over the white-shaded areas within the land region of the country.

**Temperature:** Fig.4a and Fig.4b show the probability forecast during December 2025 to February 2026 (DJF 2025/26) season for the minimum and maximum temperatures, respectively. It indicates that during the upcoming winter season (December 2025 to February 2026), normal to below normal minimum temperatures are likely over most parts of central India and adjoining peninsular and Northwest India. Above normal minimum temperatures are likely over the remaining parts of the country (Fig.4a). During the season, maximum temperatures are

expected to be normal to below normal across most parts of the country. However, some regions, including parts of Northwest India, Northeast India, and areas along the foothills of the Himalayas, are likely to experience above-normal maximum temperatures (Fig.4b).

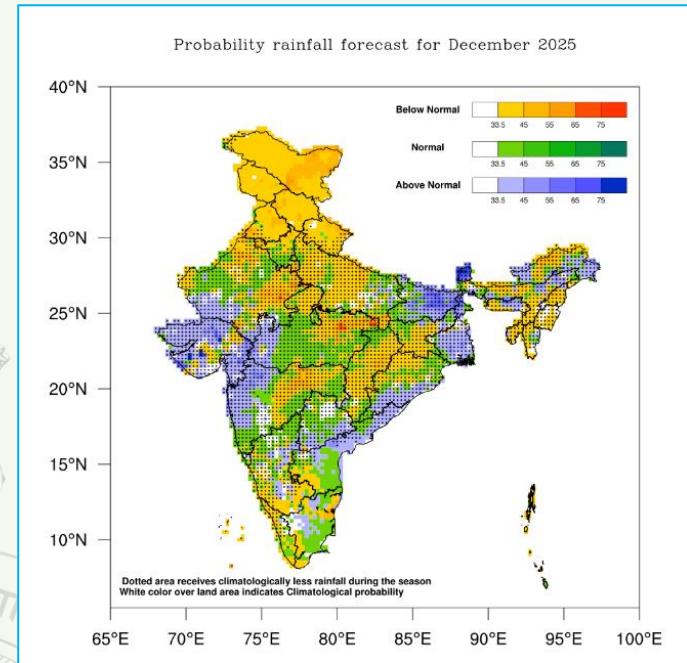


Fig. 3: Probability forecast of tercile categories\* (below normal, normal and above normal) for the rainfall over India during December 2025

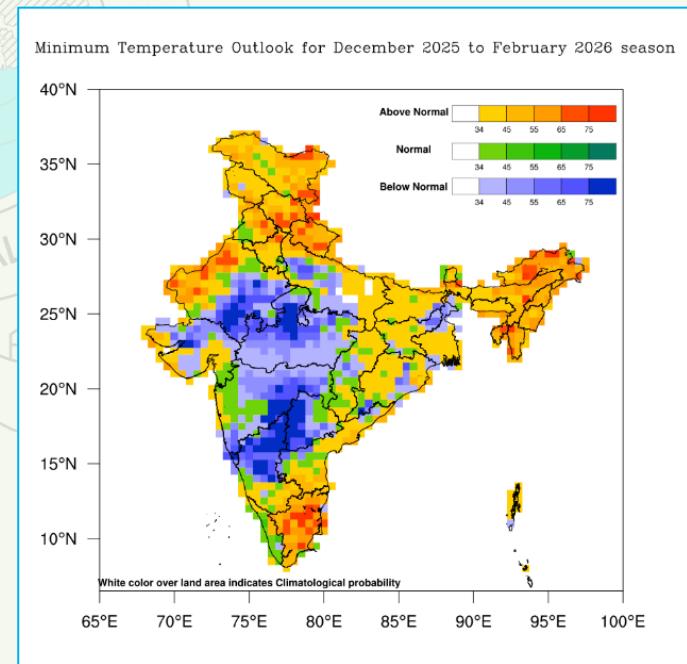


Fig. 4a: Probability forecast of Minimum Temperature for December 2025 to February 2026

Fig. 5a and Fig. 5b show the probability forecast for the minimum and maximum temperatures, respectively during December 2025. Normal to below-normal monthly minimum temperatures are likely over most parts of central and northwest India, northern parts of peninsular India. Above normal minimum temperatures are likely over the remaining parts of the country (Fig. 5a). The maximum temperatures (Fig. 5b) during December 2025 are likely to be above normal over most parts of the country except many

areas of central India and adjoining northwest and peninsular India, where normal to below maximum temperatures are likely.

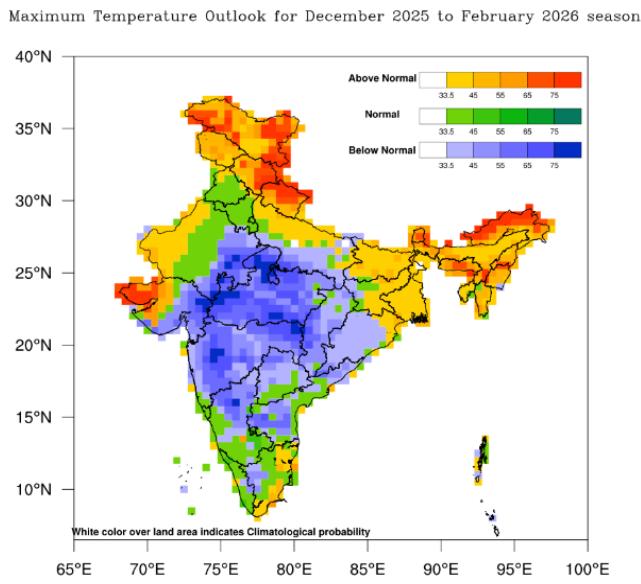


Fig. 4b: Probability forecast of Maximum Temperature for December 2025 to February 2026

**Coldwave:** The forecast for the number of coldwave days compared to the normal number of coldwave days in the country for the December 2025 to February 2026 season is presented in Figure 6. The above normal cold wave days are likely over parts of central India, as well as some regions in northwest and northeast India during the upcoming winter season (December 2025 to February 2026).

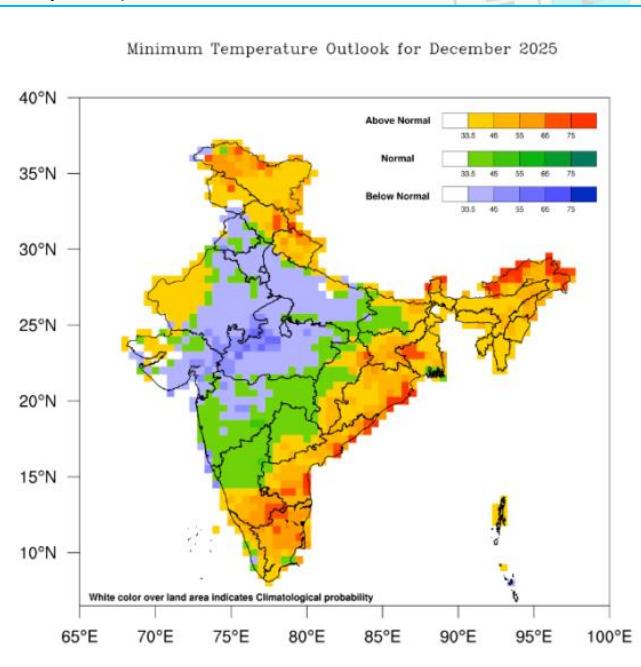


Fig. 5a: Probability forecast of Minimum Temperature for December 2025

Above-normal cold wave conditions may increase health risks for vulnerable groups, including senior citizens, children, and individuals with underlying medical conditions. Early morning fog could reduce visibility and disrupt road, rail, and air transportation, while stagnant atmospheric conditions may

further deteriorate air quality in some urban areas. A rise in heating demand is also anticipated. Weather-sensitive sectors—such as agriculture, horticulture, and daily-wage labour—may face operational challenges during extended cold spells. Authorities are advised to maintain heightened preparedness, and the public should adopt essential safety measures and follow local advisories. Both the public and concerned agencies are encouraged to regularly monitor the Impact-Based Forecast (IBF) issued through IMD's daily early-warning services for timely updates.

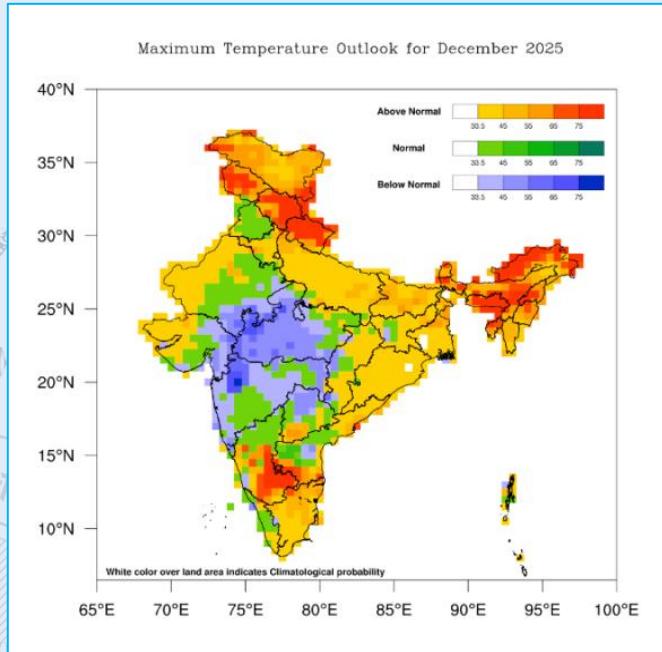


Fig. 5b: Probability forecast of Maximum Temperature for December 2025

The forecast for the number of cold wave days compared to the normal number of cold wave days in the country for December 2025 is presented in Figure 7. The occurrence of cold waves during December 2025 is likely to be above normal over parts of northwest, central and northeast India.

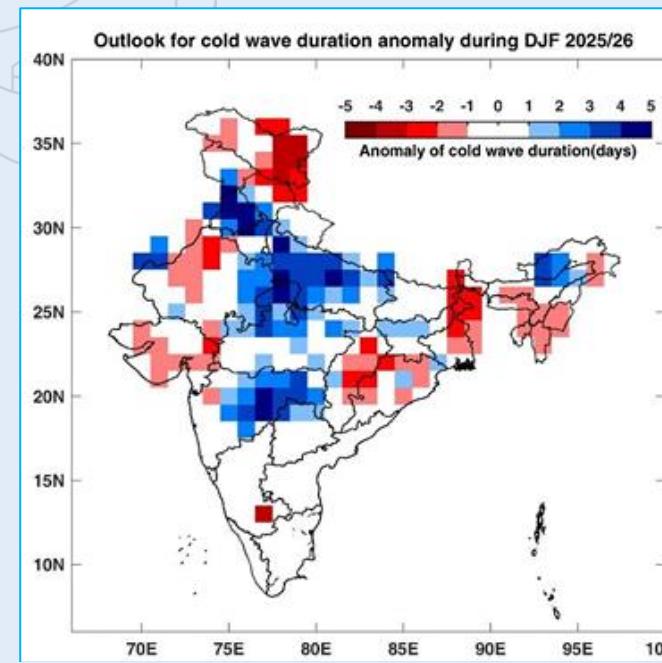


Fig. 6: The forecast for the number of cold wave days compared to the normal number of coldwave days in the country for December 2025 to February 2026

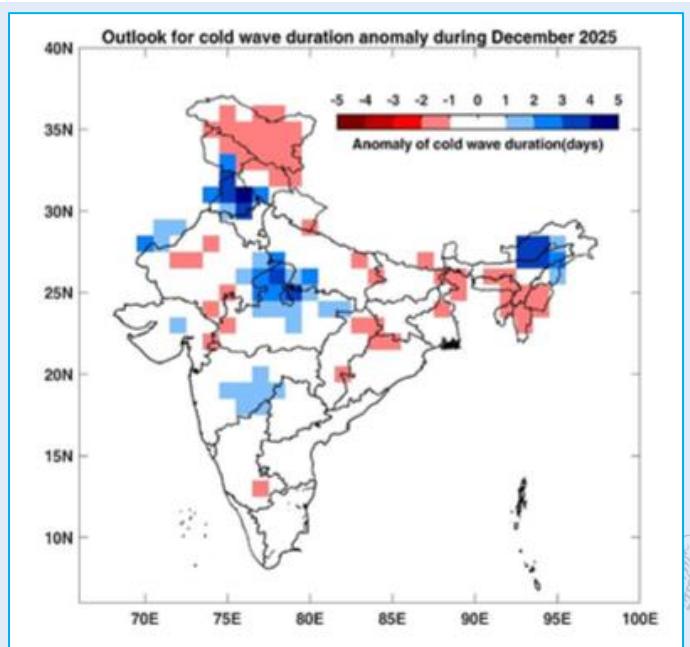


Fig. 7: The forecast for the number of coldwave days compared to the normal number of coldwave days in the country for December 2025

**Low-pressure systems:** In the month of October, a total of 4 numbers of low pressure systems (of Depression and above) formed over North Indian ocean against normal of total of 2. One Severe Cyclonic Storm namely "Montha" (25 - 30 October) and one Deep Depression (1 - 3 October) formed over Bay of Bengal. Over Arabian sea, one Severe Cyclonic Storm namely "Shakhti" (1 - 7 October) and one Depression (22 Oct - 1 Nov) formed. Tracks of these system are shown in Fig. 8.

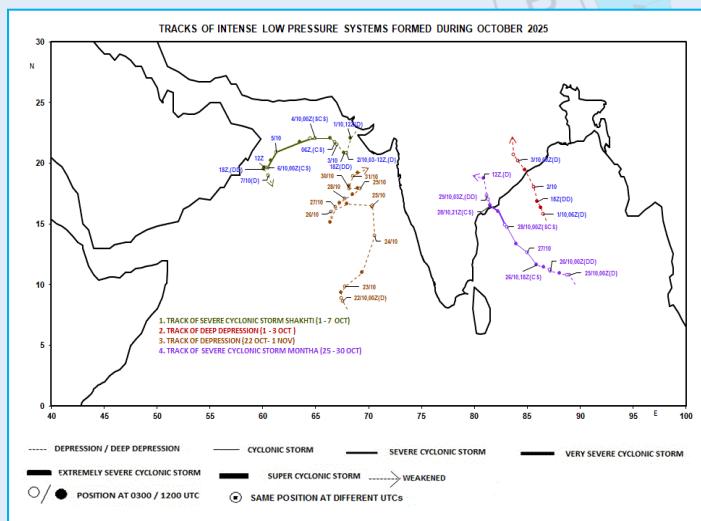


Fig. 8. Observed tracks of intense low-pressure systems formed during October

**Western Disturbance:** During October 2025 there were five western disturbances affected the country during 3- 5 Oct, 6- 9 Oct, 10 - 12 Oct, 22- 23 Oct and 27- 30 Oct.

#### Cyclonic Storm "Senyar" (25-27 November, 2025)

A low-pressure area developed over Strait of Malacca and adjoining South Andaman Sea in the forenoon (0830 hours IST) of 22<sup>nd</sup> November, 2025. It lay as a well-marked low pressure area

over the same region in the forenoon (0830 hours IST) of 23rd Nov. It concentrated into a depression over the Strait of Malacca in the forenoon (0830 hours IST) of 25th Nov. It intensified into a deep depression over Malacca Strait in the midnight (2330 hours IST) of 25th Nov. and into the Cyclonic Storm Senyar over Strait of Malacca and adjoining Northeast Indonesia in the early morning (0530 hours IST) of 26th Nov. It moved west-southwestwards and crossed Northeast Indonesia near 4.9°N/97.75°E in the forenoon (during 0830 to 0930 hours IST) of 26th November, 2025. It gradually recurved southeastwards & emerged back into Malacca Strait in the early hours (0030-0130 hours IST) of 26th Nov. as a cyclonic storm.

Thereafter, while moving nearly eastwards, it weakened into a deep depression during early morning (0530 hrs IST) and into a depression around noon (1130 hrs IST) of 27th Nov. over Malacca Strait. Continuing to move eastwards, it maintained the intensity of depression till evening (1730 hrs IST) of 27th Nov. and weakened into a well-marked low pressure area over Malacca Strait and adjoining coastal areas of Malaysia in the midnight (2330 hrs IST) of 27<sup>th</sup> November. Thereafter, it moved across Malaysia and into Northwest Pacific & adjoining Equatorial Pacific & weakened gradually.

It was a unique system, as cyclogenesis in lower latitudes is very rare and development of a cyclonic storm in Malacca strait is also quite rare. It was the first cyclone in that region as per IMD's recorded history since 1891. Its track was also unique. It moved initially westwards followed by south-eastwards and then eastwards recurvature. The observed track of the system is presented in Fig. 9. As per media reports, it caused unprecedented rainfall and landslides in Indonesia and Malaysia. However, no significant weather was observed due to this system over the Indian region.



Fig. 9: Observed track of cyclonic storm "Senyar" over Strait of Malacca

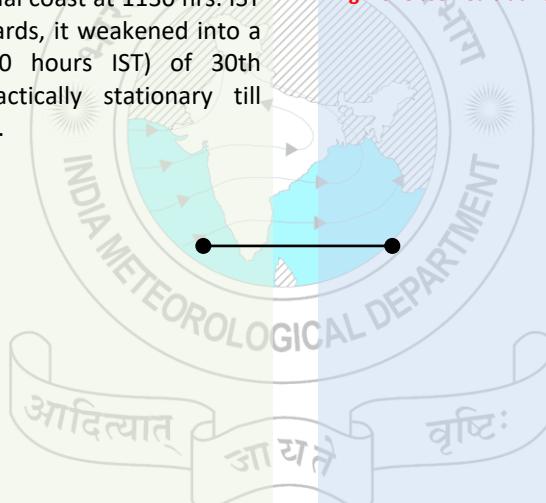
#### Cyclonic Storm "Ditwah" Southwest Bay of Bengal

A low pressure area formed over Comorin and adjoining Southwest Bay of Bengal (BoB) & Sri Lanka in the early morning (0530 hrs IST) of 25th November, 2025. It lay as well marked low pressure area over southwest Bay of Bengal and adjoining areas

of Southeast Sri Lanka & Equatorial Indian Ocean in the early morning (0530 hrs IST) of 26th November, 2025. It concentrated into a depression over southwest BoB and adjoining Sri Lanka in the midnight (2330 hrs. IST) of 26th November, 2025. It moved north-northwestwards and intensified into a deep depression over the same region in the early morning (0530 hours IST) and into the cyclonic storm "DITWAH" over the same region in the noon (1130 hours IST) of 27th November. Continuing to move to north-northwestwards, it crossed Sri Lanka coast around noon (between 1130 to 1230 hrs. IST) of 27th November as a Cyclonic Storm with the wind speed of 60 to 70 gusting to 80 kmph. Thereafter, it continued to move slowly north-northwestwards across coastal Sri Lanka & southwest BoB maintaining the intensity of 60 to 70 gusting to 80 kmph till night of 27th November (2030 hrs. IST) and increased marginally becoming 65-75 gusting to 85 kmph during 27th midnight (2330 hrs. IST) to early morning of 29th November (0530 hrs. IST). It then emerged into southwest BoB and adjoining North Sri Lanka coasts in the early morning (0530 hrs. IST) of 29th November.

Thereafter, it moved nearly northwards and intensified slightly by reaching the maximum sustained wind speed of 70-80 gusting to 90 kmph during 0830 hrs. IST of 29th to 0530 hrs. IST of 30th November and lay centered about 50 km east of Chennai. Continuing to move further northwards over southwest BoB and adjoining Tamil Nadu-Puducherry coast, it lay about 70km east of north Tamil Nadu- Puducherry coast at 0830 hrs. IST of 30th November and about 30km east of Chennai coast at 1130 hrs. IST of 01st December. While moving northwards, it weakened into a deep depression in the evening (1730 hours IST) of 30th November. Thereafter, it remains practically stationary till midnight (2330 hrs. IST) of 01st December.

Then it gradually recurved south-southwestwards & weakened into a depression in the early morning (0530 hrs. IST) of 2nd December with its centre about 25 km away from North Tamil Nadu coast and into a well marked low pressure area over North Tamil Nadu-Puducherry coasts and neighbourhood in the early morning (0530 hrs IST) of 3rd December. The observed track of the system is presented in Fig.10.





भारत मौसम विज्ञान विभाग  
INDIA METEOROLOGICAL DEPARTMENT

पृथ्वी विज्ञान मंत्रालय, भारत सरकार

Ministry of Earth Sciences, Govt. of India

