



**Government of India  
Ministry of Earth Sciences  
India Meteorological Department**

**Dr. D. R. Pattanaik  
Head  
Regional Specialised Meteorological Centre (RSMC)  
New Delhi**

Cordially invites you to the Inaugural Function of  
**21<sup>st</sup> Tropical Cyclone Forecasters Training  
on 14<sup>th</sup> July 2025**

**Time : 1000 hours IST**

**Venue : 2<sup>nd</sup> Floor ISSD's Conference Room  
India Meteorological Department  
Mausam Bhawan, Lodi Road  
New Delhi-110003**

**Dr. M. Mohapatra**  
Director General of Meteorology  
&  
3<sup>rd</sup> Vice President of the World Meteorological Organization  
**has kindly consented to be the Chief Guest**

## **21st Tropical Cyclone Forecasters Training**

### **Inaugural Ceremony**

**Date: 14<sup>th</sup> July, 2025**

**Time: 1000-1100 IST**

**Venue: 2nd Floor ISSD's Conference Room,  
India Meteorological Department  
Mausam Bhawan, Lodi Road  
New Delhi-110003**

### **Link for joining online**

**<https://cdotmeet.cdot.in/vmeet/rooms/q6w-kti-zc7-ac6/join>**

<b>Time (IST)</b>	<b>Time (UTC)</b>	<b>Minute to Minute</b>
<b>1000-1010</b>	<b>0430-0440</b>	<b>Welcome address by Dr. D R Pattanaik, Head, Regional Specialised Meteorological Centre (RSMC)  India Meteorological Department, New Delhi</b>
<b>1010-1020</b>	<b>0440-0450</b>	<b>Address by Dr. Cyrille Honore, Director, Disaster Risk Reduction, MHEWS Office and Public Services Branch, WMO</b>
<b>1020-1030</b>	<b>0450-0500</b>	<b>Address by Mr. Keran Wang, Chief DRR Division, UN ESCAP</b>
<b>1030-1050</b>	<b>0500-0520</b>	<b>Inaugural Address by Dr. M. Mohapatra, Director General of Meteorology, India Meteorological Department &amp; PR of India with WMO</b>
<b>1050-1055</b>	<b>0520-0525</b>	<b>Vote of Thanks by Dr. R.K. Giri, Scientist-F &amp; Head (Organisation), IMD</b>
<b>1055-1100</b>	<b>0525-0530</b>	<b>Group Photo</b>

**Followed by High Tea**

**21<sup>st</sup> RSMC New Delhi Attachment Training Schedule [14-25 July, 2025  
during 0400-1230 UTC (0930-1800 IST)]**

Time (UTC)	Time (IST)	14 <sup>th</sup> July: Day-1 (Monday)
0430-0530	1000-1100	<b>Inauguration</b>
0430-0435	1000-1005	Welcome address by Dr. D R Pattanaik, Sc. F & Head, RSMC
0435-0450	1005-1020	Address by Dr. Cyrille Honore, WMO
0450-0505	1020-1035	Address by Mr. Keran Wang, Chief DRR Division, UN ESCAP
0505-0525	1035-1055	Inaugural Address by Dr. M. Mohapatra, Director General of Meteorology, India Meteorological Department & PR of India with WMO
0525-0530	1055-1100	Vote of Thanks by Dr. R.K. Giri, Scientist-F & Head (Organisation), IMD
0530-0535	1100-1105	<b>Group photograph</b>
0535-0600	1105-1130	<b>Tea Break</b>
0600-0700	1130-1230	Operational responsibility of RSMC New Delhi by Dr. D R Pattanaik, Sc. F & Head RSMC New Delhi, IMD
0700-0800	1230-1330	Climatology of TCs over North Indian Ocean by Dr. A. K. Das, Scientist-F, IMD
0800-0900	1330-1430	<b>Lunch Break</b>
0900-1000	1430-1530	Demonstration of Web Atlas of India by Dr. B Geetha, Scientist- E, IMD
1000-1100	1530-1630	Hazard and Vulnerability Atlas of IMD by Dr. Satyabhan B Ratan, Sc E, IMD
1100-1130	1630-1700	<b>Tea Break</b>
1130-1230	1700-1800	Overview of Satellite Meteorology by Dr. A K Mitra, Sc. F
<b>15<sup>th</sup> July: Day-2 (Tuesday)</b>		
0400-0500	0930- 1030	Satellite products for TC monitoring by Dr. A K Mitra, Scientist- F, IMD
0500-0600	1030-1130	Dvorak technique for TC location & intensity determination by Mr. Chinmaya Khadke, Scientist-D, IMD
0600-0630	1130-1200	<b>Tea Break</b>
0630-0800	1200-1330	Application of Dvorak technique by Dr. Mr. Chinmaya Khadke, Scientist-D, IMD
0800-0900	1330-1430	<b>Lunch Break</b>
0900-1000	1430-1530	Practical on Dvorak technique by Dr. Satyaprakash, Scientist E and Mr. Chinmaya Khadke Scientist-D, IMD
1000-1100	1530-1630	Synoptic aspects of Cyclone Monitoring and Prediction by Dr AK Das, Scientist-F
1100-1130	1630-1700	<b>Tea Break</b>
1130-1230	1700-1800	Dynamical Aspects of Cyclones (Theory of formation, Balance of forces, Vorticity Advection Equation, Fujiwara Effect). Theory of Genesis, Track Intensity Structure by Dr. B Geetha, Scientist E, IMD

		<b>16<sup>th</sup> July: Day-3 (Wednesday)</b>
<b>0400-0500</b>	<b>0930- 1030</b>	Fundamentals on Radar Technology and radar products by Mrs. Arpita Rastogi, Sc. D, IMD
<b>0500-0600</b>	<b>1030-1130</b>	Radar input for Cyclone monitoring & prediction by Mr. B.A.M Kannan, Scientist-F, IMD
<b>0600-0630</b>	<b>1130-1200</b>	<b>Tea Break</b>
<b>0630-0800</b>	<b>1200-1330</b>	Practical on Radar applications: cyclone warning by Mr. B.A.M Kannan, Scientist F, IMD
<b>0800-0900</b>	<b>1330-1430</b>	<b>Lunch Break</b>
<b>0900-1000</b>	<b>1430-1530</b>	Short and Medium range Models for TC prediction by Dr. D R Pattanaik, Scientist-F, IMD
<b>1000-1100</b>	<b>1530-1630</b>	Extended range Models for TC prediction by Dr. D R Pattanaik, Scientist-F, IMD
<b>1100-1130</b>	<b>1630-1700</b>	<b>Tea Break</b>
<b>1130-1230</b>	<b>1700-1800</b>	Practical on identification of weather systems using NWP Models with examples of westerly trough, jet streams, ridges, anticyclonic circulation, cyclonic circulation etc. role in movement and intensification by Dr Naresh Kumar, Sc. F, IMD
		<b>17<sup>th</sup> July: Day-4 (Thursday)</b>
<b>0400-0500</b>	<b>0930- 1030</b>	HWRF Model for TC track & intensity prediction by Mr. Arun Sharma, Sc-D, IMD
<b>0500-0600</b>	<b>1030-1130</b>	NCMRWF deterministic model for TC prediction by Dr. Mohan Thota , Scientist F, NCMRWF
<b>0600-0630</b>	<b>1130-1200</b>	<b>Tea Break</b>
<b>0630-0730</b>	<b>1200-1300</b>	Ensemble Prediction System for TC prediction, by Anumeha Dube, Scientist F, NCMRWF
<b>0730-0900</b>	<b>1300-1430</b>	<b>Lunch Break</b>
<b>0900-1000</b>	<b>1430-1530</b>	IITM Models for TC track & intensity prediction by Shahadat Sarkar, Scientist D, IITM Pune
<b>1000-1100</b>	<b>1530-1630</b>	Statistical-dynamical modelling for TC forecasting by Dr. S.D. Kotal, Scientist-F, IMD
<b>1100-1130</b>	<b>1630-1700</b>	<b>Tea Break</b>
<b>1130-1230</b>	<b>1700-1800</b>	Multi Model Ensemble Technique by Sh. Arulalan T, Scientist-D, IMD
		<b>18<sup>th</sup> July: Day-5 (Friday)</b>
<b>0400-0500</b>	<b>0930- 1030</b>	Marine Weather Monitoring and Forecasting by Dr. Amit Bhardwaj, Scientist-D, IMD
<b>0500-0600</b>	<b>1030-1130</b>	Wave and Swell monitoring and forecasting by INCOIS by expert from INCOIS
<b>0600-0630</b>	<b>1130-1200</b>	<b>Tea Break</b>
<b>0630-0730</b>	<b>1200-1300</b>	Storm surge, coastal inundation and wave height monitoring and forecasting by Prof. AD Rao, Retd Prof IIT Delhi
<b>0730-0900</b>	<b>1300-1430</b>	<b>Lunch Break</b>
<b>0900-1000</b>	<b>1430-1530</b>	Practical on storm surge and coastal inundation monitoring and

		forecasting by Dr. P L N Murty, Scientist-E, IMD
<b>1000-1100</b>	<b>1530-1630</b>	Equatorial Waves Monitoring and Prediction by Dr .Amit Bhardwaj, Scientist D , IMD
<b>1100-1130</b>	<b>1630-1700</b>	<b>Tea Break</b>
<b>1130-1230</b>	<b>1700-1800</b>	Role of MJO & El Nino on Tropical Cyclones: Dr. D.R. Pattanaik, Scientist-F, IMD
		<b>19<sup>th</sup> July: Day-6 (Saturday)</b>
<b>0400-0500</b>	<b>0930- 1030</b>	Practical on Preparation of daily tropical Weather Outlook and Weekly Extended Range Forecast by Mrs Monica Sharma, Scientist-D, IMD
<b>0500-0600</b>	<b>1030-1130</b>	SWFP- South Asia by Dr. D.R. Pattanaik, Scientist-F, IMD
<b>0600-0630</b>	<b>1130-1200</b>	<b>Tea Break</b>
<b>0630-0730</b>	<b>1200-1300</b>	TC Structure Monitoring and Forecasting, by Mrs Monica Sharma, Scientist-D, IMD
<b>0730-0900</b>	<b>1300-1430</b>	<b>Lunch Break</b>
<b>0900-1000</b>	<b>1430-1530</b>	Operational cyclone track and intensity forecasting by Dr M Mohapatra, DGM, IMD and Mrs Monica Sharma, Scientist-D
<b>1000-1100</b>	<b>1530-1630</b>	Practical on TC genesis, location, intensity & structure monitoring and prediction by Dr. M. Mohapatra, DGM, IMD and Mrs Monica Sharma, Scientist-D
<b>1100-1130</b>	<b>1630-1700</b>	<b>Tea Break</b>
<b>1130-1230</b>	<b>1700-1800</b>	Characteristics of Heavy rainfall associated with cyclones by Dr. Satya Prakash, Scientist-D, IMD
		<b>21<sup>st</sup> July: Day-7 (Monday)</b>
<b>0400-0500</b>	<b>0930- 1030</b>	Multi-hazard Early warning system, interoperability, implementation progress by Miss. Monica Sharma, Scientist E, IMD
<b>0500-0600</b>	<b>1030-1130</b>	DSS(Decision support system for TC prediction) By Anshul Chauhan, Scientist C, IMD
<b>0600-0630</b>	<b>1130-1200</b>	<b>Tea Break</b>
<b>0630-0730</b>	<b>1200-1300</b>	Cyclone forecast verification: Mrs. Monica Sharma, Sc. E, IMD
<b>0730-0900</b>	<b>1300-1430</b>	<b>Lunch Break</b>
<b>0900-1000</b>	<b>1430-1530</b>	Visit to NWFC & ISSD (briefing) by Dr. Naresh Kumar & Dr Shankar Nath, Scientist-F, IMD
<b>1000-1100</b>	<b>1530-1630</b>	Visit to Satellite Division (briefing) by Dr. A K Mitra, Scientist-F, IMD
<b>1100-1130</b>	<b>1630-1700</b>	<b>Tea Break</b>
<b>1130-1230</b>	<b>1700-1800</b>	Practical on operational cyclone track and intensity forecasting by Dr. M. Mohapatra, DGM IMD.

		<b>22<sup>nd</sup> July: Day-8 (Tuesday)</b>
<b>0400-0500</b>	<b>0930- 1030</b>	Operational TC forecasting at RSMC Tokyo by Dr. Shunya Wakamastu, Senior Scientific officer, RSMC Tokyo
<b>0500-0600</b>	<b>1030-1130</b>	Preparation of user specific bulletins in India by Ms. Bharati Sabade, Sc.D, IMD
<b>0600-0630</b>	<b>1130-1200</b>	<b>Tea Break</b>
<b>0630-0730</b>	<b>1200-1300</b>	Characteristics of monsoon circulations over the RSMC region by Dr. O P Sreejith, Scientist-E, IMD

<b>0730-0900</b>	<b>1300-1430</b>	<b>Lunch Break</b>
<b>0900-1230</b>	<b>1430-1800</b>	<b>Visit to NCMRWF</b>
		<b>23<sup>rd</sup> July: Day-9 (Wednesday)</b>
<b>0400-0500</b>	<b>0930- 1030</b>	Impact based forecasting by Team UNESCAP
<b>0500-0600</b>	<b>1030-1130</b>	Impact based forecasting by Team UNESCAP
<b>0600-0630</b>	<b>1130-1200</b>	<b>Tea Break</b>
<b>0630-0730</b>	<b>1200-1300</b>	Flash flood guidance in India & South Asia by Rahul Saxena, Scientist-G and team, IMD
<b>0730-0900</b>	<b>1300-1430</b>	<b>Lunch Break</b>
<b>0900-1000</b>	<b>1430-1530</b>	TC hazard and impact forecasting: Mrs. Monica Sharma, Sc. E, IMD
<b>1000-1100</b>	<b>1530-1630</b>	Impact based forecasting of TCs with Web DCRA in India by Dr. A.K. Das, Scientist-F, IMD
<b>1100-1130</b>	<b>1630-1700</b>	<b>Tea Break</b>
<b>1130-1230</b>	<b>1700-1800</b>	Impact Based Forecast of heavy rainfall by Dr. R.K. Jenamani, Scientist-G, IMD
		<b>24<sup>th</sup> July: Day-10 (Thursday)</b>
<b>0400-0500</b>	<b>0930- 1030</b>	Tropical Cyclone Advisory for Civil Aviation: Role of TCAC New Delhi: Dr. Suresh Ram, Scientist-F
<b>0500-0600</b>	<b>1030-1130</b>	Preparedness and Pre-cyclone Exercise Meeting by Dr AK Das, Scientist F, IMD
<b>0600-0630</b>	<b>1130-1200</b>	<b>Tea Break</b>
<b>0630-0730</b>	<b>1200-1300</b>	Cyclone Warning dissemination methods including CAP demonstration by Dr. Sankar Nath, Scientist-F, ISSD
<b>0730-0900</b>	<b>1300-1430</b>	<b>Lunch Break</b>
<b>0900-1000</b>	<b>1430-1530</b>	RSMC Website: An overview by Mrs Monica Sharma, Scientist E, IMD
<b>1000-1100</b>	<b>1530-1630</b>	Countdown with disaster management agencies and public for cyclone management by Dr. M. Mohapatra, DGM IMD
<b>1100-1130</b>	<b>1630-1700</b>	<b>Tea Break</b>
<b>1130-1230</b>	<b>1700-1800</b>	Countdown with disaster management agencies and public for cyclone management by Dr. M. Mohapatra, DGM IMD (contd.)

		<b>25<sup>th</sup> July: Day-11 (Friday)</b>
<b>0400-0530</b>	<b>0930- 1100</b>	<b>Assessment Test</b>
<b>0530-0600</b>	<b>1100-1130</b>	<b>Tea Break</b>
<b>0600-0700</b>	<b>1130-1230</b>	Discussion under the Chairmanship of Dr M Mohapatra, DGM IMD
<b>0700-0800</b>	<b>1230-1330</b>	<b>Valedictory Function (Participants, Resource persons, DGM, Head RSMC, Head CWD and IMD Officers)</b>
<b>0800-0900</b>	<b>1330-1430</b>	Lunch Break

## List of Participants

S. No.	Name	Organisation
1	Jeewan Wickramanayaka Karunaratna (Offline)	Department of Meteorology, Sri Lanka
2	Thet Htar Aung (Online)	Department of Meteorology & Hydrology, Myanmar
3	Saleh Alsaedi (Online)	National Center for Meteorology, Saudi Arabia
4	Mr. Putchaphan Sirisap (Online)	Thai Meteorological Department
5	Nuthakit Singhaphet (Online)	Thai Meteorological Department
6	Ameena Salah A A Al-Mulla (Online)	Qatar Civil aviation authority
7	Bushra Alqubaisi (Online)	Qatar Civil aviation authority
8	S. K. Meher	India Meteorological Department
9	Gopinath Nayak	India Meteorological Department
10	Surya Kumar Banerjee	India Meteorological Department
11	G. Mahesh	India Meteorological Department
12	Nikul S. Darji	India Meteorological Department
13	P L Jamkhande	India Meteorological Department
14	Supriya Bhattacharyya	India Meteorological Department
15	Anup Pal	India Meteorological Department
16	V Gopa Kumar	India Meteorological Department
17	Menaka Gandhi. J	India Meteorological Department
18	Amit Bhardwaj	India Meteorological Department
19	Shankar Nath	India Meteorological Department
20	Iyyappan M	India Meteorological Department
21	CJ Johny	India Meteorological Department
22	Trisanu Banik	India Meteorological Department
23	Syam Shankar	India Meteorological Department
24	Swarnali Majumder	India Meteorological Department
25	M T Bushair	India Meteorological Department
26	T Arulalan	India Meteorological Department
27	Anshul Chauhan	India Meteorological Department
28	Harsha Soni	India Meteorological Department
29	K.C Brahma	India Meteorological Department
30	Santosh Singh	India Meteorological Department
31	Mukesh Kumar	India Meteorological Department
32	Vijay Kumar Singh	India Meteorological Department
33	Ashish Rawat	India Meteorological Department



34	Vishal Maurya	India Meteorological Department
35	Mohd Gulvez	India Meteorological Department
36	Gaurav Kumar Srivastav	India Meteorological Department
37	Yashasvi	India Meteorological Department
38	Vineeta Bhardwaj	India Meteorological Department
39	Neelam Meena	India Meteorological Department