



- **SAFAR School Flag Awareness Program on Air Quality**

First-of-its-kind this comprehensive program was launched on 9 July 2019 in association with Pune Municipal Corporation and regular air quality related information with advisories to reach out to 319 schools in Pune in line with SAFAR-Ahmedabad. This newly launched School Flags Awareness Initiative of SAFAR for Pune is an action based Early Warning System Translating Integrated Air Quality, Weather and Health Information into Advisory and alerts for action on the ground. It will help schools to create awareness about air quality, advisory, precautions, alerts and actions to minimise adverse impact of air pollution.



- **Launch of SAFAR School Flag Awareness Program in PCMC, Pune**

- Indian Institute of Tropical Meteorology, Pune along with Pimpri Chinchwad Municipal Cooperation (PCMC) have launched a noble initiative, known as Safar School Flag Awareness Program on Air Quality for PCMC city under SAFAR & ENVIS project on 7 September 2019 at SNBP School and Junior College, Pune. The objective of program is to educate and inculcate the feeling of belongingness among school students towards environmental protection. Aimed to help schools to create awareness about air quality, advisory, precautions, alerts and actions to minimise adverse impact of air pollution



- **Cloud Aerosol Interaction and Precipitation Enhancement Experiment:**

CAIPEEX 2019 airborne experiment started on 29th July 2019 at Solapur. The airborne experiment is using an instrumented research (Beechcraft B200) and a seeder (Beechcraft C90) aircraft for cloud seeding and its scientific evaluation and will last for 120 days and aircraft will investigate the randomized and physical evaluation of clouds after seeding.

- **New release: IITM film 2019**

Film on IITM showcasing a glimpse of major achievements of the institute during the last few years has been prepared and released during MoES Foundation day, 27th July 2019. Film is available online @ IITM YouTube channel.

<https://www.youtube.com/watch?v=Xnsip6pRpLs>

- **Atmospheric Research Testbed (ART) facility in central India:**

Madhya Pradesh Government has approved the land of ~100 acres in Silkhedha village, Sehore District, Madhya Pradesh (50 km from Bhopal City) in July 2019. The land will be acquired by IITM and basic infrastructure will be established.

- **Performance of a very high-resolution global forecast system model (GFS T1534) at 12.5 km over the Indian region during the 2016–2017 monsoon seasons**

A global forecast system model at a horizontal resolution of T1534 (~12.5 km) has been evaluated for the monsoon seasons of 2016 and 2017 over the Indian region. It is for the first time that such a high-resolution global model is being run operationally for monsoon weather forecast. The model shows fidelity in capturing the extremely heavy rainfall categories with shorter lead times. The model reasonably predicts the large-scale parameters associated with the Indian summer monsoon, particularly, the vertical profile of the moisture. The diurnal rainfall variability

forecasts in all lead times show certain biases over different land and oceanic regions and, particularly, over the north-west Indian region. Although the model has a reasonable fidelity in capturing the spatiotemporal variability of the monsoon rain, further development is needed to enhance the skill of forecast of a higher rain rate with a longer lead time. (Mukhopadhyay P., Prasad V.S., Krishna R.P.M., Deshpande M., Ganai M., Tirkey S., Sarkar S., Goswami T., Johny C.J., Roy K., Mahakur M., Durai V.R., M Rajeevan, Journal of Earth System Science, 128, August 2019, DOI:10.1007/s12040-019-1186-6, 1-18).

Departmental Academic Integrity Panel

- Savitribai Phule Pune University (SPPU), Pune has approved the Departmental Academic Integrity Panel (DAIP) (vide memorandum No. R&A52/02/2019 dated 18 February 2019) to check plagiarism at IITM. DAIP enables to check on plagiarism before submission of thesis/ research papers, book chapters etc leading to award of any form of degree. SPPU has provided access to Urkund Plagiarism software for this purpose.
- **Monsoon Mission**
- Revised sanction orders were issued to Dr. Anthony Whitbread and Dr. P. Vijaya Kumar.
- Under MM-I program, Ex-post facto approvals were obtained for re-allocation of funds.
- Under MM-II program, sanction orders for re-allocation of funds for the projects of Dr. N.V. Umamahesh and Dr. Rathish Kuma were prepared.
- MM-I project PIs have been asked to refund unspent balances and to submit project completion reports.
- Preparations are on for the sixth SRMC meeting to be held on 13 September 2019.
- Sixth Scientific Review and Monitoring Committee (SRMC) Meeting was held on 13 September 2019 at IITM, Pune.

Seasonal Prediction

- The operational seasonal forecast runs (using Monsoon Mission Climate Forecast System) are being carried out at IMD. The latest seasonal forecasts are made available at the link: http://www.imdpune.gov.in/Clim_Pred_LRF_New/Models.html. IITM researchers provided

necessary assistance to IMD scientists on this activity.

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Extended Range Prediction

- The extended range prediction products for research/scientific use based on 24th July 2019 initial condition have been made available at <http://www.tropmet.res.in/erpas/>. These forecast products are based on the real time weekly operational forecast generated by IMD using the Multi Model Extended Range Prediction System developed at IITM. Rainfall, Area average weekly rainfall over different homogeneous regions, Maximum & Minimum temperatures, MJO & MISO forecast, soil moisture (0-10 cm), Relative humidity, and Cyclogenesis predictions are also made available at the same link. The MME forecasts are prepared using CFS (T126 & T382) and GFS (T126 & T382). Each resolution of CFS and GFS is having 4 ensemble members. The IMD operational products are made available at http://nwp.imd.gov.in/erf_outlook.php.
- The extended range prediction products for research/scientific use based on 28th August 2019 initial condition have been made available at

<http://www.tropmet.res.in/erpas/>. These forecast products are based on the real time weekly operational forecast generated by IMD using the Multi Model Extended Range Prediction System developed at IITM. Rainfall, Area average weekly rainfall over different homogeneous regions, Maximum & Minimum temperatures, MJO & MISO forecast, soil moisture (0-10 cm), Relative humidity, and Cyclogenesis predictions are also made available at the same link. The MME forecasts are prepared using CFS (T126 & T382) and GFS (T126 & T382). Each resolution of CFS and GFS is having 4 ensemble members. The IMD operational products are made available at http://nwp.imd.gov.in/erf_outlook.php.

- The extended range prediction products for research/scientific use based on 25th September 2019 initial condition have been made available at

<http://www.tropmet.res.in/erpas/>. These forecast products are based on the real time weekly operational forecast generated by IMD using the Multi Model Extended Range Prediction System developed at IITM. Rainfall, Area average weekly rainfall over different homogeneous regions, Maximum & Minimum temperatures, MJO & MISO forecast, soil moisture (0-10 cm), Relative humidity, and Cyclogenesis predictions are also made available at the same link. The MME forecasts are prepared using CFS (T126 & T382) and GFS (T126 & T382). Each resolution of CFS and GFS is having 4 ensemble members. The IMD operational products are made available at http://nwp.imd.gov.in/erf_outlook.php.

Global Forecast System for Short Range Ensemble Forecast

- The forecast based on Global Ensemble Forecast System (GEFS) T1534 and Global Forecast System (GFS) T1534 is being continued operationally by IMD. Globally the highest resolution (12 km) Ensemble Prediction System (EPS) with 21 ensemble members for short range forecast system based on GEFS (T1534) has been made

available to IMD for operational implementation. IITM team assisted IMD forecasters by developing various new model diagnostics and products. Experimental forecast of rainfall probability for all the blocks were generated and the same were shared with IMD forecasters. Initiatives were taken to share the forecast with the Agrimet division of IMD for generating block level Agro Advisories.

- Probabilistic rainfall forecast for all the river basins of India has been developed and shared with IMD, New Delhi. It has been utilized by IMD's Flood Monitoring Office (FMOs) at different places.
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Program for Development of Skilled manpower in Earth System Sciences (DESK)

- Applications were invited for the MoES Research Fellow Program (MRFP). Total

2439 applications have been received. 836 applications (369 in person) were screened in for 10 institutions. Shortlisted candidate are called for Written Examination on 16 August 2019.

- Naval Meteorological Observers Training was arranged at IITM on 25 July 2019. Twenty one (21) Indian Naval Sailors from School of Naval Oceanology and Meteorology (SNOM) visited IITM.
- A written examination was conducted for the MoES Research Fellow Program (MRFP) on 16 August 2019. 40 candidates were shortlisted for the interviews. 23 candidates have been selected for MRFP.
- 18 Students from IITM-JRF 2019 Batch joined IITM on 6 August 2019.
- 23 candidates are selected for the MoES Research Fellow Program (MRFP). Total 20 students have joined the Program on 16 September 2019 and the classes have started from 23 September 2019. Total 7 faculties are involved in their teaching process.
- DESK Independent Review Committee Meeting was held at MoES, New Delhi on 16 September 2019.
- Certificates were issued to students who completed the Summer Interns program.
- One day workshop 'On Climate Across The Curriculum: Resources For Integrating Climate Topics In Discipline-Specific Teaching' at IITM on 17 September 2019. This workshop was in collaboration with IISER Pune and IITM.
- A Lecture was arranged on the topic "Bio-Physical Interactions and Feedbacks in The Tropics" delivered by **Prof. Raghu Murtugudde**, University of Maryland, USA on 26th September 2019.



Activities of IUKWC at IITM Pune

- Two Pump Priming Projects initiated in May 2019 under IUKWC by National Institute of Hydrology and Bidhan Candra Krishi Viswavidyalaya respectively are in progress. Both the project investigators have reported progress in the form of reports for completion of field work and plan for the next two months. All research exchanges under IUKWC have been completed for the year 2019. Report preparation and publication works for IUKWC activities for the year 2019 are in progress.

IITM Monsoon Discussion Forum (IMDF) 2019

- The Second IITM Monsoon discussion seminar with a focus on "Advance of Monsoon 2019" was organised on 18 July 2019 with the following talks by IITM Scientists:
 - Seasonal Prediction by Mr. Maheshwar Pradhan
 - Extended Range Prediction by Mr. Raju Mandal
 - Short Range Prediction by Dr. P. Mukhopadhyay
- The Third IITM Monsoon Discussion Forum with a focus on "Advance of Monsoon 2019" was organised on 28 August 2019 with the following talks by IITM Scientists:
 - Seasonal Prediction by Dr. Prasanth Pillai
 - Extended Range Prediction by Dr. Rajib Chattopadhyay
 - Short Range Prediction by Ms. Snehlata Tirkey

Important Events

- **Prof. R. Ananthakrishnan Seminar Series**, following talks were delivered by IITM scientists:
 - Case study of turbulence in the Nocturnal Boundary Layer during the Indian Summer

Monsoon by Mr. Pramit Kumar Debburman on 03 July 2019

- Widespread fog over the Indo-Gangetic plains and possible links to boreal winter teleconnections by Ms. Dipti Hingmire on 10 July 2019
- Non-monsoonal precipitation response over the Western Himalayas to climate change by Dr. T. P. Sabin on 17 July 2019.
- The documentary chronicles how traditional folk theater is used to communicate climate change to Ojapali (one of the oldest folk theater in Assam, India) performers and high school students (Documentary) by Dr. Nabanita Borah on 31 July 2019.
- On the precipitation susceptibility of monsoon clouds to aerosols using high altitude ground-based observations over Western Ghats, India by Dr. (Smt.) P. P. Leena on 06 August 2019.
- Potential predictability and actual skill of Boreal Summer Tropical SST and Indian summer monsoon rainfall in CFSv2-T382: Role of initial SST and teleconnections by Dr. Prashanth A. Pillai on 20 August 2019
- SMMR-SSM/I derived Greenland Sea ice variability: links with Indian and Korean Monsoons by Dr. (Smt.) Amita Prabhu on 28 August 2019.
- Evaluation of energy fluxes in the NCEP climate forecast system version 2.0 (CFSv2) by Mrs. Archana Rai on 04 September 2019.
- India's Ph.D. scholar outreach requirement by Sri Abhay S.D. Rajput on 11 September 2019.
- **SAFAR School Flag Awareness Program on Air Quality:** As part of Swachhta Pakhwara, IITM, Pune has unveiled the first-of-its-kind comprehensive SCHOOL FLAG AWARENESS PROGRAM ON AIR QUALITY for Pune city under SAFAR project to educate and protect students from adverse health impacts of air pollution. This program is

focusing to clean the air. It was launched by Mrs. Mukta Tilak, Mayor of Pune city in a glittering function organized at city based HHCP High School and Junior College, Huzurpaga, Pune by IITM. This new SAFAR initiative is a joint venture of IITM and PMC in collaboration with IIPHG, NRDC, CEE and CRF. An early warning system to notify the public of excessive pollution days. During the event, a short documentary was showcased on how to use SAFAR Air mobile App.



- **Inauguration of Mausam website & Film on IITM** on MoES Foundation Day. The *new Mausam website* <https://mausam.imd.gov.in> for IMD was **designed and developed at IITM Pune.** This was launched on MoES Foundation day (27 July 2019) by Dr. Harsh Vardhan, Hon'ble Minister of Science & Technology, Health and Family Welfare and Earth Sciences. The website design and development started in January 2019 with an objective to make it more interactive and user friendly so that common people can access the weather information easily, & compatible with smart phones. Major highlights of this newly developed website are: showcasing of the current weather at city level, sub-division wise and district wise warnings; now-cast information for district wise and station wise; latest satellite, radar & lightning information on front page. Various types of specialized forecasts are included in website such as Marine, Tourism, Pilgrimage, Air Quality, Thunderstorm prediction etc. Apart from these, other services: Rainfall information (Daily, Weekly, Monthly, Cumulative etc), Cyclone, Monsoon, Agromet Advisory etc, 7 days

advance forecast for prominent cities are also available.

- **Designed and Development of IMD Website:** IITM Project Scientist, IT Engineers were involved in this website development.

- ***Celebration of World Ozone Day***

This Year 'World Ozone Day' was celebrated with 'Swachhata Hi Seva' Campaign during 16-24 September 2019. On the occasion, SAFAR and ENVIS has conducted drawing competition in selected schools of PMC & PCMC for spreading awareness of ozone layer. The Theme for the Competition was 1) 'Ozone as Pollutant & Our Health' 2) 'Protection of Ozone layer' & 3) 'Plastic Waste Free India'. Approximately 250 students had participated in this event. Prizes (Trophy and Certificate) were distributed to the winners of the Competition on 24 September 2019.



- ***Orientation Programme of Emission Inventory, Pune***

The emission inventory campaign has been led by IITM-Environmental Information System (ENVIS) in association with researchers / experts from Environmental Science Department of Savitribai Phule Pune University, Utkal University, and from various colleges on 24 September 2019. Around 150 college students under the supervision of group of scientists are involved to map all possible local sources of air pollution.

The campaign is a Ground level activity in which data based on emissions from as many as 26 different sources of pollution will be collected throughout the city using click counters, low volume samplers and various

surveys. The collected data will be mapped and used in Geographical Information System (GIS)-based statistical model with inputs from remote sensing satellite images as well as commercially available live maps to develop the inventory of pollutants responsible for deteriorating the air quality of the city. This exercise will also tell us as to how much emission have increased during the past 6 years from 2013 to 2019.

Swachhata Pakwada

- As part of Swachh Bharat Mission, IITM observed Swachhata Pakhwada during 1-15 July 2019 as per the directions from MoES and Ministry of Drinking Water and Sanitation, Govt. of India. Director, IITM administered the Swachhata Pledge to IITM employees on 2 July 2019. As part of the campaign, all the officials including the Director took active part in the cleanliness drive at and around the campus.



- While observing Swachhata Pakhwada 2019, IITM collaborated with Nisarg NGO for their movement on making Wari procession plastic and thermocol free. IITM Director & employees contributed to distribute around 400 cloth bags among Palkhi Warkaris during the Pandharpur Wari on 01 July 2019.
- Cleanliness drive was arranged at Kendriya Vidyalaya, Ganeshkhind, Pune and at Municipal Hospital, Pashan, Pune as a part of the Swachhata Pakhwada celebrations.
- Tree plantation was organized in the Institute's premises at the hands of Hon'ble Secretary, MoES Dr. M. Rajeevan. IITM officials and senior scientists actively

participated in tree plantation programme.

- A lecture on the topic "Swachhata Abhiyan - Where to do & What we need to understand" by Dr. Rahul Mungikar, Assistant Director, Bombay Natural History Society (BNHS), Conservation Biologist and Member (Expert), High Level Monitoring Committee Mahabaleshwar-Panchgani ESZ was organised.



- IITM employees voluntarily participated in the cleanliness drive and cleaned the 200 mtrs stretch of Ram River in association with Pune Municipal Corporation. The drive was led by the Director, IITM and the Hon'ble Mayor, Pune City Mrs. Mukta Tilak and Hon'ble MLA Prof. Medha Kulkarni graced the occasion.
- As a part of Swachhata Pakhwada, the employees of the institute under the ambit of SAFAR Project, organised School Flag Awareness Program on Air Quality at HHCP High School & Junior College, Huzurpaga, Laxmi Road, Pune. Mayor Mrs. Mukta Tilak and the Guest of Honour Dr. Rajendra Shende (Former Director, UNEP, Paris, France) delivered speeches on the topics like 'Air-Quality Index' and 'avoiding of plastic in uses and its lethal effects and precautions to be taken by the common man'.
- Under Swachhata Pakhwada, IITM employees conducted an anti polythene campaign to remove hazardous polythene material out of the Institute's campus and IITM colony on 12 July 2019.
- On 13 July 2019, as a part of Swachhata Pakhwada, a drawing competition on the topic "Innovative Ideas for Swachhata" was organized for the children of the Institute's staff.

• **Swachhata Hi Seva (SHS) and Plastic Waste Free India Campaign**

As per the directions of the ministry, Swachhata Hi Seva (SHS) campaign and Plastic Waste Free India campaign was implemented in the Institute during the period from 11 September - 02 October 2019.

As part of the SHS awareness campaign all the employees of the IITM were requested to replace single use plastic like PET bottles, cups, folders, artificial flowers and other plastic materials by suitable alternatives. During the campaign, a plastic collection drive was organised at various places such as Aundh Hospital, Pune-Bangalore Highway, Pashan Hill, Pashan Lake and educational Institutes like schools and colleges. IITM employees volunteered with a maximum number to make the campaign a big success. In addition to this, an essay competition among the IITM employees and a drawing competition among IITM colony kids was organised.

• **Hindi Fortnight-2019**

Hindi Fortnight-2019 was celebrated at IITM during 13-27 September 2019. Director, IITM Shri Ravi S. Nanjundiah inaugurated the programme. During the fortnight many competitions for IITM employees were organized such as – essay competition, quiz, noting & drafting competition, solo-song competition etc. Many employees of the institute had participated in these competitions. A play named "Hamesha der kar deta hun main" was also arranged and was performed by Ambrosia Theater Group, Mumbai. The theme of the play was based on current problem of religion and separation in Kashmir. An 'Akhil Bhaarteeya Kavi Sammelan' was also organized on this occasion in which five poets of national repute were invited from different parts of the country to entertain the employees of the institute. The fortnight was concluded with a talk of the chief guest Shri Himanshu Shekhar, Director (Admin.) of DRDO-

ARDE. During the ceremony, prizes and gifts were distributed to all the winners and participants respectively



Ongoing Developmental Activity

High-Altitude Cloud Physics Laboratory (HACPL):

- Web-based Data portal (mumbairain.tropmet.res.in) is developed for archiving and disseminating rainfall data over Mumbai Metropolitan region.
- A discussion meeting with scientists from NCCR, NCMRWF, NIOT on development of “Coastal Flood warning System over Mumbai” was held at IITM on 19 July 2019.
- The sampler 2.5 & 10 were shipped to Himadri, Ny-Alusend, Arctic for carrying out the observation under the Arctic Project.
- A critical design review meeting for C-band Polarimetric radar (ART-CI site) was conducted at IITM on 9 September 2019 to discuss radar design along with performance parameters of the sub units and also to review project implementation schedule for radar installation and related deadlines.
- TROP ICSU workshop and scientific validation session titled “Climate across the curriculum: Resources for integrating climate topics in discipline-specific teaching” was held at IITM Pune on 17 September 2019.

• **Atmospheric Research Testbed (ART) facility in central India:**

Madhya Pradesh Government has approved the land of ~100 acres in Silkheda village, Sehore District, Madhya Pradesh (50 km from Bhopal City) in July 2019. The land will be acquired by IITM and basic infrastructure will be established. Basic instruments such as AWS, Boundary layer tower (75 m), Microwave radiometric profiler will be

installed and planning to start the facility by hiring the project scientists/engineers by March 2020. The purchase order for C-band radar is placed and will be commissioned in testbed site before June-2020. 200 MHz wind profiler procurement will be initiated.

- **National Facility for airborne Research (NFAR):** Establishment of a laboratory at IITM for the upcoming UAV activities is under progress.
- Designed and developed a mini (portable) Radiosonde reception system for field use. The system is under testing.
- Upgrading controller of mini datalogger for UAV is in process.
- **CAIPEEX Phase-IV campaign at Solapur and Tuljapur sites:** CAIPEEX 2019 airborne experiment has started on 29 July 2019 at Solapur. The airborne experiment is using an instrumented research (Beechcraft B200) and a seeder (Beechcraft C90) aircraft for cloud seeding and its scientific evaluation and will last for 120 days and aircraft will investigate the randomized and physical evaluation of clouds after seeding.
- The ground facility established at Solapur is operational and is making good progress in documenting the background data needed for this campaign of aerosol, clouds, precipitation, cloud condensation nuclei, ice nuclei, other dynamical and thermodynamical data. A daily forecast of seeding potential is also evaluated with the help of a numerical model for the region. Various data sets (both model and observations) were used for Daily Met briefing activity, to analyze prevailed weather conditions and to have forecast that helps in decision making for conducting airborne experiments of cloud seeding & research. RS41-SGP Radiosondes along with complementary items are transported to CAIPEEX Phase-IV Solapur site. New Radiosonde system MW41 has been installed at Solapur site on 27 July 2019. Radiosonde

launches with RS41-SGP payload have started with the new system.

• **CAIPEEX Phase-IV at Solapur and Tuljapur Sites:**

- Daily met brief sessions are being conducted both at Institute and Airport for planning the Aircraft measurements.
- Aircraft observations (Research and Seeder) of 200 hours of observations have been completed as on 1 October 2019.
- Ground based observations both in-situ and profiling of aerosols, clouds, winds and other parameters are in progress.
- RS41-SGP Radiosonde launches are smoothly operating from CAIPEEX-IV Solapur site.

• **Fluid Dynamics Laboratory (FDL):**

Spectral analysis of hotwire data has been initiated. Hardware and Software Upgrades for Particle Image Velocimetry (PIV) systems have been installed and are being tested. Preliminary PIV experiments on wall jet are in process.

- **Thunderstorm Dynamics:** New sensors for LLN have been installed at Raipur and Vijayawada and integrated with central processor at IITM, Pune.
- IITM is working for site selection for installation of lightning location network sensor at Kullu, Palampur and, Srinagar.
- New Lightning sensors were installed at Hyderabad, Pudhucherry, Nainital and Madhubani and integrated with the Central Processor at IITM, PUNE.
- **ICCP 2020 Conference:** Technical Evaluation Committee (TEC) meetings and Commercial Evaluation Committee (CEC) were held on 17, 19, 24 & 30 September 2019 respectively for the upcoming ICCP 2020 Conference.

IITM Participation in Important Meetings

- ASEAN Training for Weather Modification, Thailand, 22-23 July 2019.
- Stakeholders Consultation cum Brain Storming Meeting on Biodiversity Beyond National Jurisdiction (BBNJ), CMLRE, Kochi, 1-2 July 2019.

- Advisory Committee Meeting for the MetFlux India Project, Mousam Bhavan, New Delhi, 9 July 2019.
- Expert Panel Evaluation meeting for the 11th Indian Southern Ocean Expedition, NCPOR, 15 July 2019.
- Asian Oceania Geosciences Society (AOGS) 16th Annual Meeting during 28 July - 2 August 2019 at Singapore.
- Independent Review Committee (IRC) Meeting for evaluation of the ACROSS Umbrella Scheme, MoES, New Delhi, 7-8 August 2019.
- Third Lead Author Meeting (LAM3) of the IPCC 6th Assessment Working Group I, Toulouse, France, 26-30 August 2019.
- 20th WMO/IAEA Meeting on Carbon Dioxide, Other Greenhouse Gases, and Related Measurement Techniques and Meeting of the Scientific Advisory Group on Greenhouse Gases, Jeju, South Korea, 1-5 September 2019.
- Fifteenth Session of the South Asian Climate Outlook Forum (SASCOF-15), Climate Services User Forum (CSUF) on Water, Thiruvananthapuram, Kerala, 23-25 September 2019.
- Parliamentary Standing Committee Meeting, Parliament Library Hall, New Delhi, 26 September 2019.
- Sustainable Global Development 14 (SGD-14) meeting at NCCR, NIOT, Chennai on 27 September 2019.
- Governing Council Meeting of Central Water & Power Research Station (CWPRS), at Ministry of Jal Shakti; Department of Water Resources, River Development and Ganga Rejuvenation, Pune on 30 September 2019.

Field Campaigns/Tour

- SP2 (single particle soot photometer) instrument was installed at HACPL, Mahabaleshwar during 1-6 September 2019.
- Site selection for installation of lightning location network sensor during 11-19 September 2019 in Pudhucherry.
- CAIPEEX-2019 aircraft campaign observations were carried out at NBNSCoE, Solapur during 1-28 September 2019.
- RS-41 Radiosonde payloads were transported onsite on 23 September 2019.
- Rain water samples were collected during 5-27 September 2019 from New Delhi, Varanasi,

Kolkata, Pusa Samistapur, Haridwar, Srinagar & Ranichauri, Lukhnow & Hisar & Udaipur.

Deshpande, Prof. T. S. Ingle (External guide, NMU) on 17 September 2019.

Academic Cell Activities:

PhD synopsis and PhD proposal seminar were conducted for IITM research scholars and scientists pursuing PhD degrees from Universities:

- Observational and Modelling Aspects of Heat Waves over India by Mrs. Rohini P. (SPPU) under guidance of Dr. M. Rajeevan, MoES and Co-Guide: Dr. P. Mukhopadhyay, IITM on 06 July 2019
- Multi-decadal sea level variability in the Indian Ocean and its possible driving mechanism in a changing climate by Ms. Jyoti Jadhav (Andhra University) under guidance of Dr. Swapna Panickal and Dr. R. Krishnan, External Guide : Prof. C. V. Naidu on 02 August 2019.
- A study of Iodine Chemistry in the Indian Ocean and the Southern ocean marine boundary layer by Ms. Swaleha Inamdar (BHU) under guidance of Dr. Anoop Mahajan and Dr. Kripa Ram (BHU, Varanasi) on 14 August 2019.
- Role of subsurface ocean bias on simulated inter-annual variability in coupled models by Mrs. Shikha Singh (IIT-B) under guidance of Dr. Vinu Valsala, Prof. Sridhar Balasubramanian (IIT-B), Prof. Subimal Ghosh (co-guide, IIT-B) on 21 August 2019.
- Variability of Largescale circulation over Indo-Pacific region in relation with south Asian Monsoon under changing climate by Ms. Roja Chaluvadi (NMU) under guidance of Hamza V., Milind Mujumdar co-guide: Prof. S. T. Ingle, N.M.U., Jalgaon (External Supervisor) on 23 August 2019.
- Observation and modelling studies of Soil water dynamics for hydrological applications in Indian regions by Mr. Mangesh Goswami (KBC-NMU) under guidance of Prof. S.N. Patil (Guide, KBC-NMU) Milind Mujumdar and Dr. R. Krishnan (Co-Guide) on 17 September 2019.
- Pre-genesis Investigation of Tropical Cyclones over North Indian Ocean by Mr. Emmanuel Rongmie under guidance of Dr. Medha

Departmental Academics Integrity Panel

Savitribai Phule Pune University (SPPU), Pune has approved the Departmental Academic Integrity Panel (DAIP) (vide memorandum No. R&A52/02/2019 dated 18 February 2019) to check plagiarism at IITM. DAIP enables to check on plagiarism before submission of thesis/ research papers, book chapters etc leading to award of any form of degree. SPPU has provided access to Urkund Plagiarism software for this purpose. As per UGC circular dated 31st July 2018, 10% similarity match is acceptable for submission of these academic documents.

Degree Awarded

- **Shri Karumuri L.B.N. Krishna** was awarded the Ph.D degree from Mohanlal Sukhadia University, Udaipur in March 2019 for his thesis entitled "Linkages of Meteorology with fine particulate matters over two Metropolitan Environments under SAFAR - SYSTEM" under the guidance of Dr. G. Beig.
- **Ms. Anagha K.S.** has been selected for the 'Meritorious PG Dissertation Award in Marine Sciences for the year 2018-19' by Ocean Society of India for her thesis entitled "Study of inter-annual variability in the tropical Pacific salinity and the associated ocean processes using observations and ocean general circulation model" under the guidance of Dr. C. Gnanaseelan and Ms. J.S. Deepa.

Honors and Awards

- **Dr. R. Krishnan** elected as Fellow, **Indian National Science Academy (INSA)** (wef 1.1.2020).
- Invited as a Coordinating Lead Author (CLA) to participate in the Third Lead Author Meeting (LAM3) of IPCC Sixth Assessment Working Group I, held at Toulouse, France during the 25 to 31 August 2019.
- **Dr. G. Beig** was invited as a Guest of Honor and an Expert Panelist for Brain Storming

- Session of the 'International Symposium on Air Pollution- Causes, Mitigation & Strategic Planning', Organized by Amity University, Haryana and AUUP Lucknow Campus, Manesar, near Delhi during 19-21 September 2019.
- **Dr. A. Suryachandra Rao** was awarded “Dr. A.P.J. Abdul Kalam High Performance Computing Award” under researcher category for his contributions to coupled ocean atmosphere models for operational/experimental seasonal forecasts and Petascale HPC facility management.
 - **Dr. G. Pandithurai** was invited as an external expert/examiner at Defence Institute of Armament Technology (DIAT), Pune and SRM University, Chennai.
 - Invited as a subject expert for the Selection Committee Meeting for the post of Assistant Professor in the Interdisciplinary School of Science, SP Pune University, Pune on 27 August 2019.
 - **Dr S.D. Pawar** was invited as resource persons for the Faculty Development Programme of Air Force Administrative College, Coimbatore. during 18-19 September 2019.
 - **Dr. P. Mukhopadhyay** served as an expert panel member in the Panel Discussion on “Model Development” on 27 August 2019 at 8th NCEP Ensemble User's Workshop, NCEP, Maryland, USA.
 - **V. Gopalkrishnan** was invited as a resource person by the Kashmir University, Srinagar for the “Second National Seminar on Growth Points in Physics (GPP-II, 2019)” during 15-17 July 2019.
 - Invited as resource persons for the Faculty Development Programme of Air Force Administrative College, Coimbatore. during 18-19 September 2019.
 - **Dr. Suresh Tiwari** was invited as an expert and external examiner for Research Advisory Committee (RAC) and PhD Viva-voce respectively at Department of Environmental Science, IIS deemed University, Jaipur during 5-17 September 2019.
 - **Devendraa Siingh** was invited as Subject Expert for Selection Committee of Assistant Professor by Department of Physics, Shivaji University, Kolhapur on 22 July 2019.
 - **Dr. Milind Mujumdar** was invited as a chief guest for concluding session of Certificate Course on “Remote sensing (RS) and Geographic information system (GIS)”, School of Environmental and Earth Sciences, K.B.C. North Maharashtra University, Jalgaon (M.S.) on 26 September 2019.
 - **Dr. Roxy Mathew Koll** is selected as an Editorial Board Member of Scientific Reports, an open access journal from the Nature Publishing Group.
 - **Dr. Sreenivas Pentakota** has been selected as Associate of the Indian Academy of Sciences for the period July 2019 to December 2022.
 - **Dr. Anant Parekh** received Certificate of Reviewer Excellence 2018 Award in recognition of outstanding contribution as a reviewer for the Journal of Earth System Science.
 - **Dr. Atul Kumar Srivastava** received “Guest of Honor” from the HNB Garhwal Central University, Srinagar on 25 September, 2019 during the National workshop on “Recent Advancements in Atmospheric Science with Special Reference to Himalaya”.
 - **Ms. Swaleha Inamdar** received 'Young Scientist Award' by the National Conference on Polar Sciences-2019 organised by National Centre for Polar and Ocean Research (NCPOR), Goa during 20-22 August 2019 for her poster presentation entitled “Improving oceanic iodide parameterisation to understand atmospheric iodine chemistry in the Indian Ocean and Southern Ocean marine boundary layer”.
 - **MoES Annual Awards 2019 to IITM employees** were presented on the occasion of MoES Foundation Day celebrations held on 27th July 2019 at New Delhi.
 - **Dr. Anupam Hazra** was awarded the “Certificate of Merit” for the year 2018 for his outstanding contribution in the field of Atmospheric Science and Technology. The award carries a trophy, a citation and a cash prize.
 - **Smt Swati Uday Athale** under category 'Group B'

- **Shri. Yogesh S. Belgude** under category 'Group C'
- **Shri Kamalkar Maruti Kamble** under the category 'Multi Tasking Staff'

Visitors

- **90** students and 12 staff members from PICT Model School, Pune, visited IITM and Institute's Laboratories, 4 July 2019.
- **Dr. Ms. Ilene Carpenter**, Director, Earth Science Division CRAY Inc. USA visited and delivered a lecture on "Weather, Water and Climate with CRAY Systems", 5 July 2019.



- **Dr. Sutirtha Sengupta**, University of California, Santa Cruz, California, USA visited IITM and delivered a lecture on "Vorticity generation in rotating cylindrical shear flows", 12 July 2019
- **Prof. Peter Molnar**, Distinguished Professor, Geological Sciences, University of Colorado visited IITM during 22-23 July 2019 and delivered a lecture on "Late Cenozoic climate in Asia and its relationship to the growth of Tibet", 23 July 2019 .
- **21** Indian Naval Sailors undergoing PO 'Q' Met Course along with one instructor from School of Naval Oceanography and Meteorology (SNOM), Kochi, 25 July 2019
- **Dr. Duncan Axisa**, Director and Dr. Spencer Faber from Droplet Measurement Technologies, USA visited IITM on 26 July 2019.
- **100** students and 8 teachers from H.H.C.P High School for Girls (Hujurpaga), Pune visited IITM and Institute's Laboratories on 26 July 2019.
- **Dr. Aditya Konduri**, CDS, Indian Institute of Science (IISc), Bangalore, visited IITM during 29-30 August 2019 and delivered a

lecture on "Turbulence simulations: scalable methods and data analytics" on 29 August 2019.



- **150** Students and **8** Staff Members from VIBGYOR High School, Pune, 5 September 2019
- **166** Students and **4** Staff Members, Mar Ivanios Convent High School, Pune, 17 September 2019
- **25** Trainees of National Training Programme on "Recent Advances in Crop Micrometeorology", College of Agriculture, Pune, 19 September 2019.
- **60** Students and 5 Faculty Members, D.Y. Patil School of Engineering Academy, Pune 20 September 2019
- **20** Students and 4 Faculty Members, Bharati Vidyapeeth Deemed University College of Architecture, Pune
- **85** Students and 3 Faculty Members, G.S. Moze College of Engineering, Pune, 26 September 2019

Other Activities

- All the staff of the Institute took **Sadbhavana pledge** administered by the Director on 20 August 2019.





- **IMS Pune Chapter (IMSP)** organized a Special Lecture on “Monsoon variability” by Dr. K. J. Ramesh, Former Director General of IMD, on 14 August 2019, at IITM, Pune. The above lecture was followed by a brief felicitation function and the Annual General Body Meeting (AGM) of Indian Meteorological Society, Pune chapter (IMSP).
- One day workshop on “**Towards Exascale Computing with Intel MPI Library 2019**” on 22nd August, 2019. Total 39 people from IITM and C-DAC Pune attended this workshop.
- **TROP ICSU Workshop** and scientific validation session titled “Climate across the curriculum: Resources for integrating climate topics in discipline-specific teaching” was held at IITM Pune on 17 September 2019.
- **IMS Pune Chapter (IMSP)** organized a Special Lecture Special lecture on "Summer Monsoon of 2019: How and Why?" by **Prof. Sulochana Gadgil**, renowned Monsoon Meteorologist, Centre for Atmospheric and Oceanic Sciences (CAOS), on 23 September 2019, at IITM, Pune.

**Editorial Team**

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