



Research Highlights

- ***Understanding atmospheric methane sub seasonal variability over India:***

Atmospheric methane (CH_4) is considered to be one of the most important greenhouse gases due to its increasing atmospheric concentrations and the fact that it has a warming potential 28 times that of atmospheric carbon dioxide (CO_2). Over the Indian sub-continent, fluxes and transport both contribute towards CH_4 seasonal variability. Its intra-seasonal variability however is more complex as it is additionally influenced by monsoonal activity during the Asian Summer Monsoon (ASM) period. In this study, the intra-seasonal variability of atmospheric CH_4 is examined using ground-based observations at two sites located in the Southern Indian Peninsula, Sinhagad (SNG) and Cape Rama (CRD); and outputs from three different model simulations. Both the ground based observations and multi-model simulations show that the dominant spectral variability of CH_4 is coherent with 20–90 day oscillations in the dynamics of the monsoon (termed hereafter as Intra-Seasonal Oscillations, ISOs). The multi-model analysis revealed that CH_4 is heavily influenced by advection due to this intra-seasonal variability. The simulations also display a clear northward propagation of CH_4 anomalies over India. The co-evolution of CH_4 , outgoing long wave radiation (to represent convection) and OH radicals (proxy to CH_4 sinks) is presented. The study quantifies CH_4 variability at intra-seasonal timescales and also its spatial extent. The results suggest that the effect of ISOs on CH_4 needs to be considered along with the corresponding observations for future inverse modeling. (Tiwari Y.K, Guha T., Valsala V., *Atmospheric Environment*, Online, December 2019, DOI:10.1016/j.atmosenv.2019.117206, 1-10)

- IITM is continuously working on operational Seasonal forecast runs, Extended range prediction products (ERPAS) for research/scientific use, Global Forecast System for Short Range Forecast, System for

Thunderstorm Observation, Prediction and Monitoring (STORM), Air Quality Early warning system for Delhi NCR, Air quality forecast for SAFAR cities, etc, **even during the lockdown period of Covid-19** in India. All the products/information are being continuously made available to the researchers & public for wide dissemination through various platforms such as dedicated websites/Mobile Apps/ SAFAR LED Display Boards. Continuous ground based observations are also being carried out under various on-going Projects such as CAIPEEX, SAFAR, etc during this period.

- IITM Study during COVID-19 pandemic: Efforts are being made to study the impact of vehicular emissions on pollutant concentration during the lockdown period (March 2020) due to COVID-19 pandemic. Drastic reduction in the magnitude of NO_x and $\text{PM}_{2.5}$ observed at the four SAFAR cities. The impact is being simulated using WRF-Chem with options of corresponding reductions in emissions from suitable sources applicable during the lockdown period.

Monsoon Mission

- Monsoon Mission Discussion Meeting on “Water Resources Projects” was held on 10 January 2020.
- The First Year Annual Progress Reports of MM-II projects are uploaded on Monsoon Mission webpage.
- Seventh Scientific Review & Monitoring Committee (SRMC) meeting on Monsoon Mission - II was held at IITM, Pune on 5 March 2020.

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_LR_New/Models.html. IITM researchers provided necessary assistance to IMD scientists on this activity.

Extended Range Prediction

- The extended range prediction products for research/scientific use based 29th January, 26th February and 25th March 2020 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, Maximum & Minimum temperatures, MJO forecasts, 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 Forecast

- The forecast based on Global Ensemble Forecast System (GEFS) T1534 and Global Forecast System (GFS) T1534 is being continued operationally by IMD. Global 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. The high resolution short range EPS has been operationalized at IITM. The latest version 14 of GEFS has been implemented for operational forecast in IMD. GEFS probabilistic forecast based on 1200UTC initial condition has been initiated.
- The Probabilistic forecast for all the river basins of India have been developed and shared with IMD, New Delhi. It has been utilized by IMD's Flood Monitoring Offices (FMOs) at different places.

India UK Water Centre

- Preliminary Meetings were conducted with state level authorities including UP Water Resources and Irrigation Department (WRD), State Water Resources Agency (SWARA), Water and Land Management

Institute (WALMI), State Remote Sensing Applications Centre, amongst others, to discuss the scope of the upcoming User Engagement Initiative on water security in the Ganga basin. The meetings were held during 7-10 January 2020 at Lucknow.

Program for Development of Skilled manpower in Earth System Sciences (DESK)

- The 2nd semester for IITM-JRF classes was started in January 2020.

Academic Cell Activities

- PhD synopsis and PhD proposal seminars were conducted for IITM research scholars and scientists pursuing PhD degrees from different universities:

Ongoing Developmental Activities

- **National Facility for Airborne Research (NFAR)**
 - Technical Evaluation Committee meeting for the procurement of Instrumented Aircraft System (IAS) for atmospheric research was held at IITM on 6 January 2020 under the TEC chairmanship of Prof. G.S. Bhat, IISc, Bengaluru.
 - Unmanned Aerial System (UAS) for lower atmospheric research has been imported successfully and arrived IITM, Pune on 23 January 2020 with the permissions and approvals of Directorate General of Civil Aviation (DGCA).
 - Commercial bids for the procurement of Instrumented Aircraft System (IAS) for atmospheric research are opened at IITM on 27 February 2020 in the presence of Commercial Evaluation Committee (CEC) members.
 - In-house designed datalogger for radiation measurements is completed and is comparable with a Standard Kipp & Zonen (LogBox-SD) datalogger.
 - Commercial Evaluation Committee (CEC) meeting for the procurement of Instrumented Aircraft System (IAS) for atmospheric research was held on 4 March 2020 under the chairmanship of

Dr. Ravichandran, Director, NCPOR, Goa.

- Applications with all required documents have been successfully submitted to DGCA through Digital Sky Platform (DSP) for registering and obtaining Unique Identity Numbers (UIN) for the UAVs procured by IITM.
- Approvals from National Defence Academy (NDA), Pune were obtained to utilize NDA airfield for UAV operations. National Defence Academy (NDA), Pune accorded approvals in principal for UAV operations in NDA airfield. Flight plans and further procedures for operations are underway.
- Indigenously designed and developed a new equipment and coined as 'mini-RS' reception at the ground for obtaining the vertical profiles of the meteorological parameters such as T/RH/P using the radiosonde. This system also tracks the balloon. The equipment is tested, and data validation is under process.
- New technique/methodology has been developed and proposed to retrieve wintertime fog/aerosol/haze over IGB using high frequency surface measurements.
- **Centre for Climate Change Research**
 - IITM Earth System Model (IITM-ESM) Coupled Model Intercomparison Project (CMIP6) simulations have been completed and data dissemination started through IITM ESGF node: http://cccr.tropmet.res.in/home/esgf_node.jsp.

Physics and Dynamics of Tropical Clouds

- **High-Altitude Cloud Physics Laboratory**
 - Preliminary Design Review (PDR) meeting was conducted on 18 February 2020 for Supply, installation, commissioning and maintenance of Short-Range X-Band Polarimetric Scanning Doppler Weather Radar Network in Mumbai Metropolitan Region with an Integrated Rain Monitoring and Warning – Qty.04 Sets.
 - Technical Evaluation Committee (TEC)

meeting conducted on 24 February 2020 for 2D-Video Disdrometer and Optical Disdrometer.

- Preventive maintenance of Automatic Rain Gauges set up in Mumbai Metropolitan region has been completed.
- Developed a software for Automatic Weather System (AWS) module so as to send data to the com port of windows OS system, or to make parallel use to any putty software system for its online display.
- **Thunderstorm Dynamics**
 - Lightning Location sensors were installed at Dhanbad, Kullu and Palampur and integrated with the Central processor at IITM Pune.
 - A 3-axis sonic anemometer has been installed at a tower of 11m at Atmospheric Electric Observatory, IITM, Pune. Combined sensors for soil moisture and temperature at 6 levels have also been installed successfully. Data of zonal, meridional and vertical winds along with soil temperature and moisture are being collected for micro-meteorological studies.
 - Efforts are being made for site selection at Vishakhapatnam, Vijayawada and Anantapur for the installation of lightning location network sensor.
- **Atmospheric Research Testbed (ART):**
 - IITM signed a MoU with Central Public Works Department (CPWD) Bhopal on 4th March 2020 for development of civil and electrical infrastructure at the Atmospheric Research Testbed (ART) site.



- Technical Evaluation Committee (TEC) meetings were conducted to evaluate the bids of Ceilometer, micro rain radar, radiation sensor suite processed for Atmospheric Research Testbed site.
- **System for Air Quality & Weather Forecast & Research (SAFAR):**
 - Air quality forecast for SAFAR cities through SAFAR website and safar-air app are being continued during the lockdown period of Covid 19.
 - The impact of drastic reduction in vehicular emissions on pollutant concentration during the lockdown period (March 2020) due to COVID-19 pandemic is being studied. It is observed that there is a reduction in the range, 30% – 68% in NO_x and PM_{2.5} at the four SAFAR cities. The variability in the magnitude of reduction in NO_x and PM_{2.5} among the SAFAR cities is being studied. The impact is being simulated using WRF-Chem with options of corresponding reductions in emissions from suitable sources applicable during the lockdown period.
- **Emission Inventory Campaign for Pune Metropolitan Region:** IITM-SAFAR in collaboration with SPPU, Pune led "Emission Inventory Campaign" for Pune metropolitan region. The campaign started in September 2019, In this campaign more than 120 students, volunteers from different colleges have participated. They have collected emission source data for Pune. This data is of great scientific importance as it will help in improving Air Quality Forecast for Pune region.



- **CAIPEEX Phase IV-Solapur and Tuljapur Sites:**
- Ground based Observations are ongoing at Solapur and Tuljapur ground sites. **In spite**

of the lockdown, observations at the both sites are maintained.

- Wind Profiler Radars (WPR) are in operation at Solapur and Tuljapur as part of the ongoing CAIPEEX- Phase IV campaign. Considering the WPR technique to derive 3-D wind components and uncertainties, a quality control algorithm is being developed jointly by M/s Astra Microwave Private Ltd. and IITM.
- Efforts are being made for continuation of the MoU with NBNSCoE, Solapur for the operations of the CAIPEEX ground site including C-band Radar. Efforts are also being made to shift the Micromet tower from NBNSCoE to Solapur university campus due to the obstructive surrounding construction work.
- CAIPEEX TEC meeting was held at IITM on 20-21 February 2020 for the evaluation of Technical bid received for the purchase of integrated Droplet Activation and Separation Analysis (iDASA) system, unified PM_{2.5} inlet system for the Solapur lab and the purchase of AMC/CMC for the instruments deployed at Solapur and Tuljapur observational sites.
- **ICCP2020 conference:** International Commission on Clouds and Precipitation (ICCP-2020) Conference is announced at ["http://iccp2020.tropmet.res.in/home"](http://iccp2020.tropmet.res.in/home).

Considering the current COVID-19 situation, the postponement of the ICCP conference is under discussion with the Commission.

- **Fluid Dynamics Laboratory (FDL):** Setting up PIV experiments in wall jets, development of miniature hotwire probes are in progress. Design of water-based convection setup for studying the dynamics and structure of individual and interacting plumes has been initiated.

Field Campaign

- IITM Scientists visited Munnar, Kerala during 5-8 February 2020 to explore the possibility of establishing a climate reference station.
- An IITM scientist was on tour to Central

University of Tamil Nadu, Tiruvarur during 10-12 February 2020 in connection with site selection for the installation of lightning location network sensor.

- Evaluation of 204 MHz Wind Profiling Radar at Advanced Center for Atmospheric Radar Research (ACARR) of CUSAT, Cochin was carried out during 10–14 February 2020.

Important Events

International Workshops/Conferences at IITM

- ***Workshop of Weather and Climate Science and Service Partnership (WCSSP):***

The first Weather and Climate Science and Service Partnership (WCSSP) India Annual Science Meeting was held at Indian Institute of Tropical Meteorology (IITM), Pune during 5-7 February 2020. Around 75 participants from seven MoES Institutes and Met Office and Academic Institutes from UK attended the meeting. The meeting focused on the modelling of high impact weather and development of tools for impact based forecasting leading to disaster risk reduction.

- ***6th International Conference on Climate Services (ICCS 6):***

IITM under the auspices of the Ministry of Earth Sciences of the Government of India, hosted the 6th International Conference on Climate Services (ICCS 6) at IITM, Pune during 11-13 February 2020. ICCS-6 is the world's premiere climate services event, organized jointly by the Global Framework for Climate Service, an international effort coordinated by the World Meteorological Organization (WMO), and the Climate Services Partnership.

ICCS-6 provided an ideal venue to promote dialogue on actionable solutions take place both in the region and around the world. It aimed to convene the international community of practice for issues related to the production and use of climate services in a range of social and economic sectors.



- ***South Asia Heat Health Summit (SAHHS):*** The South Asia Heat Health Summit (SAHHS) took place on 14 February 2020 following and in conjunction with the ICCS 6 (11-13 February 2020). The event was co-organized by the Global Heat Health Information Network, the Indian Institute of Tropical Meteorology and others to build capacity, promote sharing, and encourage evidence-based policy and actions to improve the management of extreme heat risks. The regional summit aimed to bring together interdisciplinary experts and practitioners to share experience and concerns, learn from each other, identify new solutions and opportunities, and raise awareness of the urgent need to protect ourselves and communities from extreme heat in a warming world. Total 225 national and International participants attended the Conference/WMO Workshop and SAHHS



IITM Participation in Important Meetings

- Numerical Weather Prediction (NWP) Review Meeting, MoES, New Delhi, 9 January 2020.
- Centenary Year Meeting of American Meteorology Society, Boston, USA, 12-16 January 2020.
- 25th Session of the CLIVAR Scientific Steering Group (SSG-25) meeting at San Diego, California, USA, 15-16 February 2020.
- AGU Ocean Sciences Meeting 2020, San Diego, California, USA, 16-21 February 2020.

- International Conference on Ensemble Methods in Modelling and Data Assimilation, NCMRWF, Noida, India, 24-26 February 2020.
- 10th IndOOS Resource Forum (IRF) Annual Meeting, 25 March 2020.

Outreach Program

- **107th Indian Science Congress ISC 2020:** IITM Pune participated in Indian Science Congress Pride of India Expo 2020 (ISC2020) at Ministry of Earth Sciences Government of India pavilion during 3-7 January 2020 at the University of Agricultural Sciences, Bengaluru, Karnataka. IITM team explained various R&D activities of IITM. The team also provided live demonstrations of the AWS system, the lightning app “DAMINI,” tree rings and speleothem samples and interacted with visitors.



- IITM participated in “Kutuhul”– An exhibition on health care system at S.P. College, Pune during 7-10 February 2020. IITM created awareness and understanding of Air Quality Index. Encouraged visitors to download the SAFAR_India app available on Android and iOS to know the Air Quality in their area.



- IITM participated in **ClimFishConExpo** at International conference Impact of climate change on Hydrological Cycle, Ecosystem, Fisheries and Food Security at Le Meridian International Convention Centre, Cochin during 12-14 February 2020.



- IITM celebrated **National Science day** 2020 by observing an open day at its premises on 28 February 2020. On this occasion, students/visitors/media persons/etc. visited the institute. The visitors were familiarized about the R&D activities of the institute and were taken on a guided tour to different laboratories and facilities at the institute.



- IITM participated in the **National Science Day Exhibition** organized by NCRA, TIFR at Giant Metrewave Radio Telescope (GMRT), Khodad, Narayangaon during 28-29 February 2020.



- IITM participated in the 4th **Innovation Festival** organized by **Nehru Science Centre, Mumbai** during 5-7 March 2020.



Prof. R. Ananthakrishnan Seminar Series, following talks were delivered:

- **Prof. Kishore Marathe**, Professor Emeritus of Mathematics and Physics, Brooklyn College and the Graduate Center, City University of New York

What is Physical Mathematics?, 7 January 2020

- **Dr. Vishal Dixit**, TU Delft,

Cloud-circulation coupling in tropical rain-bands, 21 January 2020

- **Prof. Prasanta K. Datta**, Department of Physics, IIT, Kharagpur

Thz spectroscopy for Atmospheric Monitoring, 17 February 2020.

Can we improve substantially weather forecasts without cheating?, 3 March 2020.

Decadal Climate change and the Human System: The need for bidirectional coupling of the Climate and Human Systems, 5 March 2020.

- **Prof. Eugenia Kalnay**, University of Maryland, USA, delivering lecture at "Prof. Ananthakrishnan Colloquium" seminar series 3 March 2020 & 5 March 2020



PhD Degree Awarded

- **Ms. Deepa J.S.** was awarded Ph.D. degree from Savitribai Phule Pune University (SPPU) in March 2020 for her thesis entitled "A Study on sea level variability and trends in the Indian Ocean and the underlying mechanisms using observations and model" under the guidance of Dr. C. Gnanaseelan and Dr. Anant Parekh(co-guide).
- **Mr. Sudarsan Bera** was awarded Ph.D. degree from Savitribai Phule Pune University (SPPU) in March 2020 for his thesis entitled "Investigation of entrainment and mixing process in convective clouds using observations and numerical simulations" under the guidance of Dr. Thara Prabhakaran and Dr. G. Pandithurai & Dr. Bipin Kumar(co-guides).

Honors and Awards

- Paper entitled "Progress of Indian summer monsoon onset and convective episodes over Indo-Pacific region observed during 2009-2014" by S.P. Ghanekar, S.G. Narkhedkar, D.R. Sikka, published in the journal MAUSAM, Vol. 67, October 2016, received 29th Biennial MAUSAM Award which was conferred on the occasion of "TMD Foundation Day 2020" function held at New Delhi on 15 January 2020.
- **Dr. G. Beig** was invited as the Guest of Honour for the inaugural session of 44th Annual National Seminar on "Green Technology for Environmental Management", North Orissa University, Baripada, Bhuneshwar, 20-25 January 2020.
- **Dr. S.D. Pawar** served as a (i) member of Selection Committee for the recruitment of Research Associate, Senior Research Fellow and Junior Research Fellow in India Meteorological Department, (ii) External Expert in the selection Committee for recruitment of Scientist B in North East Satellite Application Centre, Shillong.
- **Dr. G. Pandithurai** was invited as an examiner for reviewing the progress of

Ph.D. work in Defence Institute of Advanced Technology (DIAT), Pune.

- **Dr. G. Pandithurai** chaired a session on "Microwave remote sensing" in URSI-RCRS-2020 held at IIT, BHU, Varanasi during 12-14 February 2020.
- **Dr. G. Pandithurai**, nominated as a member of MoES Monitoring and Steering Committee, to review the activities of Advanced Centre for Atmospheric Radar Research (ACARR), a multi-disciplinary research Centre established by Cochin University of Science and Technology (CUSAT).
- **Dr. P. Mukhopadhyay** served as a panel member in the panel discussion at the National Seminar on "Weather Dependent Prediction of Renewable Energy Generation for Grid Management" on 12 March 2020 at Department of Applied Physics, University of Calcutta, Kolkata.
- **Dr. J. Sanjay**, Member, World Climate Research Program (WCRP) Coordinated Regional climate Downscaling Experiment (CORDEX) Science Advisory Team (SAT) (term extended for two years up to 31 December 2021).
- **Dr. J. Sanjay** was invited as a resource person for One day Workshop-cum-Training on Climate Change Modeling organised by the Center of Excellence in Environment, Climate Change and Public Health (CoE-ECCPH), Utkal University, Bhubaneswar, Orissa, on 11 February 2020.
- **Dr. Devendraa Singh** has been elected as Member COSPAR-URSI-SCOSTEP-National committee for International Science Council-INSANew Delhi.
- **Dr. H.N. Singh** chaired the session "Application of Geospatial Technology in natural resource management" during Geospatial Conclave 2020 at the Jadavpur University, Kolkata on 14 January 2020.
- **Ms. Shikha Singh** has been awarded with the Outstanding Student Presentation Award in the AGU Fall Meeting 2019 at San Francisco during 9-13 December 2019.
- **Dr. Roxy Mathew Koll** is elected as a member of the recent Research Foci group on Tropical Basin Interactions (TBI), announced by CLIVAR.
- **Dr. Roxy Mathew Koll** chaired an e-

meeting for the 16th CLIVAR/IOC-GOOS Indian Ocean Region Panel (IORP) Annual Meeting on 24 March 2020.

- **Dr. Subrata Kumar Das** chaired a session titled "Wind Profiling Radars" during 4th National conference on India Radar Meteorology (iRAD-2020), IIT, Chennai, 5-7 February 2020.
- **Dr. U. V. Murali Krishna** received the "Young Scientist Award" for the paper entitled "Radar derived convective characteristics during different phases of Tropospheric Biennial Oscillations", during 4th National conference on India Radar Meteorology (iRAD-2020), IIT, Chennai, 5-7 February 2020.
- **Mr. Vineet Kumar Singh** was awarded Augmenting Writing Skills for Articulating Research (AWSAR) award by Department of Science and Technology, Govt. of India for Best Popular Science Stories entitled "Cyclones in the North Indian Ocean in a Changing Climate", under PhD Category on 28 February 2020

Visitors

- **Mr. Deep Sengupta**, Desert Research Institute, Reno, USA, 10-11 December 2019 and delivered a talk on "Emissions and fate of organic aerosols from Biomass burning: A laboratory perspective", 9 January 2020.
- 400+ students from different Organization, University, Colleges and Schools are visited IITM and Institute's Laboratories during January 2020
- **Dr. Rajesh Kumar**, Project Scientist II, Research Applications Laboratory, National Center for Atmospheric Research, USA visited IITM and delivered a talk on "Multi-scale air quality modeling to support air quality decision-making activity and evaluate measurement techniques" on 26 February 2020
- **Dr. Ashish Sharma**, Illinois Research Climatologist, Adjunct Professor, Department of Atmospheric Sciences, University of Illinois at Urbana-Champaign, USA visited IITM and delivered a talk on "Bridging scales for societal impacts: Modeling to

measurements” on 27 February 2020.

- ~ 400 students from different Organization, University, Colleges and Schools are visited IITM and Institute's Laboratories during February 2020
- 10 Trainees of Advanced Meteorological Training Course (AMTC Batch No. 180), from Meteorological Training Institute, India Meteorological Department, Pune visited IITM on 5th March 2020.

Other Activities

- One day workshop on '**National Information System for Climate and Environment Studies (NICES) and its Activities**' organized by National Remote Sensing Centre (NSRC), ISRO, Hyderabad in association with Indian Meteorological Society, Pune Chapter (IMSP) and IITM Pune, was held at IITM on 8 January 2020.
- On the occasion of **National Voters Day**, all the employees of IITM, Pune took the Voter's pledge on 24 January 2020 administered by Prof. Ravi S. Nanjundiah, Director, IITM.
- IITM Pune organised **blood donation camp** in collaboration with Rakesh Jain Memorial Blood Bank, Poona Hospital and Research Centre, Pune on 24 January 2020. In addition to the blood donation camp, a general medical check-up was also organised. An informative lecture on Blood Donation by Dr. Shilpa Gupta, Poona Hospital was arranged on 21 January 2020.
- **71st Republic Day** was celebrated with great zeal and enthusiasm by all the employees of IITM, Pune. Prof. Ravi S. Nanjundiah, Director, IITM, Pune hoisted the flag followed by his address and Prize distribution of Annual Sports event at the Institute.



- Indian Meteorological Society, Pune Chapter (IMSP) arranged a lecture entitled “From the byte to the service: trans-disciplinary climate research” by **Dr. Francesco Doblas Reyes**, Director, Earth Sciences Department, Barcelona Super Computing Center, Barcelona (Spain) on 22 February 2020.
- India Meteorological Society Pune Chapter (IMSP) in association with Indian Institute of Tropical Meteorology (IITM), arranged two Special Public Lectures:
 - i) Lecture entitled "From IoT to Machine Learning, Simulation and Exa-scale" by Dr. Eng Lim Goh, Senior Vice President of Hewlett Packard Enterprise (HPE) on 2 March 2020.

ii) **Prof. P.R. Pisharoty distinguished lecture** entitled, "Talk on Life and works of Sri Radhanath Sikdar: a Pioneer Indian Meteorologist of 19th Century who measured the height of Mt. Everest" by Mr. Ashish Lahiri, Writer, Translator, Lexicographer & a Researcher in History of Science, specializing in science-culture, Visiting Faculty IISER, Kolkata, Member Pavlov Institute, Kolkata on 6 March 2020. This lecture was preceded by an introductory address delivered by Dr. R.R. Kelkar, Former DGM, IMD.

Constitution Day: As per the directives of MoES and Cabinet Secretariat, Institute celebrated the Constitution Day by arranging an Essay Competition on the theme of "Constitution Day" on 12 March 2020.

One Day Hindi Workshop was arranged at IITM on this occasion on 13th March 2020. A Lecture in Hindi was delivered by Ms. Meenakshi Jadhav, STO, NCCS, Pune on the topic "Koshika vigyan aur manav jeevan". The workshop was followed by Quiz Competition as a part of observance of Constitution Day on "Constitution of India & Sambidhan Diwas". Quiz is meant to highlight the Pre-amble of the Indian Constitution, Fundamental Rights, Fundamental Duties and Directive Principles as mentioned in the Indian constitution.

World Water Day: On Occasion of World Water Day, IITM Scientists: Dr. Milind Mujumdar and Dr. Yogesh Tiwari participated in the program "Hindi Charcha" on the topic of "Tapti dharti ghata pani" (Increase in Heat and Decrease in Water) on Akashwani Pune. This Hindi Charcha was broadcasted by All India Radio on 20 March 2020 at 2200 hrs under "Hindi Kalash Karyakram". Aakashwani Pune Center facilitated the live streaming through official app "air news".



(L-R)Dr. Milind Mujumdar, R.J Akashwani Pune and Dr. Yogesh Tiwari



Editorial Team

Chief Editor: Prof. Ravi S. Nanjundiah, *Director, IITM*
 Co-Editors : Dr. Parthasarathi Mukhopadhyay, *Sc. E, IITM*
 Dr. Shivsai A. Dixit, *Sc. E, IITM*
 Mrs. Shompa Das, *Sc. E, IITM*
 Concept & Design: Mr. Vijay H. Sasane, *Sci. Off.-II, IITM*



Indian Institute of Tropical Meteorology

(An Autonomous Institute of the Ministry of Earth Sciences, Govt. of India)

Dr. Homi Bhabha Road, Pashan, Pune - 411 008, India

E-mail: lip@tropmet.res.in . Website: www.tropmet.res.in

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