

Indian Institute of Tropical Meteorology (IITM), Pune

PRESS RELEASE (17.11.22)

Pune, 17.11.2022: The Indian Institute of Tropical Meteorology (IITM), Pune today celebrated its Diamond Jubilee foundation day (60th Anniversary) in a befitting manner. On this occasion, Dr. M. Ravichandran, Secretary, Ministry of Earth Sciences (MoES), Government of India was the Chief Guest. Prof. R.N. Keshavamurty, Former Director, IITM, Pune; and Prof. Jagadish Shukla, Managing Director, COLA, George Mason University, USA were the Guests of Honour.

IITM's **1)** new and updated "Damini: Lightning Alert" Mobile App and **2)** the indigenous High-resolution Global Forecast Model (HGFM) for providing forecasts to a scale smaller than block level were launched by Dr Ravichandran and Prof. R.N. Keshavamurty respectively.

The Damini app gives warnings using real-time data from the Lightning Location Network installed by IITM-MoES at 83 locations over the country. Apart from providing lightning alerts, this app also lists some basic information on lightning and various lightning safety measures.

The new Damini app is now available in 14 Indian Languages with additional features. The app now provides warnings in 14 languages (English, Hindi, Assamese, Bengali, Gujarati, Kannada, Konkani, Malayalam, Marathi, Oriya, Punjabi, Tamil, Telugu and Urdu). Users can choose to receive warnings in any of these languages. Users can also register their mobile numbers to receive SMS messages on lightning alerts. A new feature to send 'push messages' to all mobile users within a 20 km radius of lightning/thunderstorm area is being added. This feature would benefit users who do not have access to SMARTPHONES.

The new HGFM model developed by IITM scientists under the leadership of Dr. P. Mukhopadhyay increases the current horizontal resolution of ~12 km of the Global Forecast System (GPS) to near 6 km in the tropics, i.e., a scale smaller than block level. This "Make in India" Model is being run in real-time daily since June 2022 on an experimental basis. After a thorough validation and performance evaluation, the model will be handed over for operational implementation to India Meteorological Department (IMD).

The new model would be able to address the rising demands for higher resolution and accurate location-specific weather predictions, especially the smaller-scale weather extremes such as extremely heavy rain, thunderstorms, tropical cyclones, etc.

While speaking on the occasion, Dr. Ravichandran congratulated IITM for the successful completion of its glorious 60 years of contribution in improving weather forecasts and monsoon prediction. "IITM has made significant contributions, especially during the last decade, in improving prediction systems and understanding the weather and climate processes," said Dr. Ravichandran. He also remembered the past directors of IITM, starting from founding Director *Padma Shri* Prof. P.R. Pisharoty, for their contributions and setting a vision for improving weather and climate predictions.

Dr. Ravichandran emphasized that IITM has made a very significant contribution in the form of quality research publications which now should be translated into the model development for improving prediction systems. He added that the data from several observational activities of IITM such as CAIPEEX and HACPL, Mahabaleshwar should help improve model prediction. He also lauded IITM's efforts in human resource development and capacity building in weather and climate sciences through training and academic courses. "We need to strengthen the model physics for improving prediction systems. We should consider the influence of Polar Regions in the tropics. We should tap the potential of academia within India and abroad for exploring the hitherto unknown areas for improving weather and climate predictions," said Dr. Ravichandran.

Dr. Ravichandran and Dr Jagadish Shukla also presented the Prof. P.R. Pisharoty Award to Dr. S.A. Dixit and Dr. Jasti S. Chowdhari and for their outstanding contributions to atmospheric sciences.

In his welcome address, Dr. R. Krishnan, Director, IITM presented the important work being done at the Institute, the historical evolution of IITM and the recent achievements in the field of weather and climate research and services to the nation. “Under Monsoon Mission, IITM has made significant improvements in forecasting mechanisms of extreme events such as cyclones, heavy precipitation, forest fires, etc. that have led to better policy decisions saving human lives. Weather Forecast data are being shared with ARDE, DRDO for strategic defense missions. Recently, IITM has started providing inputs for renewable energy generation through collaboration with private companies for wind & solar energy,” Dr. Krishnan said. While appreciating the efforts of IITM scientists working on various R&D projects for their remarkable performance, he apprised the audience that IITM has successfully developed India’s first Earth System Model (IITM-ESM) for addressing the Science of Climate Change. The IITM-ESM participated in the Coupled Model Inter-comparison Project – Phase 6 (CMIP6) and contributed to the Intergovernmental Panel on Climate Change Sixth Assessment Report (IPCC AR6) released in August 2021, in which IITM scientists played key roles as lead authors and chapter scientist. He also highlighted the importance of observational activities of IITM, including the latest Atmospheric Research Testbed (ART) in Bhopal, and Lower Atmospheric Research Using Unmanned Aerial System Facility (LARUS) using Instrumented Unmanned Aerial Vehicle (UAV) system – a first time in India.

Prof. Jagadish Shukla, Managing Director, COLA, George Mason University (GMU), USA delivered the 61st foundation day special lecture. Through his lecture, he took the audience on a journey of how he started his career from IITM and went on to become a professor at GMU. “IITM is a shining jewel in the crown of MoES,” exclaimed Prof. Shukla. While discussing the measures for improving weather and climate predictions, he emphasized the need for urgently addressing the demand for high-performance computers and trained staff.

While speaking on the occasion, Prof. R. N. Keshavamurty, former director, IITM expressed his satisfaction that prediction skill, especially short-range prediction, has improved significantly in the country. However, there are still some challenges that need to be addressed. He emphasized that there is a need for capacity building and efforts should be made to engage with colleges/universities while sharing resources with them.

Earlier, a Scientific Session and a Brainstorming Discussion on ‘Improving Monsoon Forecasts in a Changing Climate’ were arranged, wherein top experts in weather and climate discussed the challenges and opportunities for improving prediction systems. Many top personalities in the field of weather and climate, including former directors of IITM, former secretaries of MoES, directors of MoES institutes, current and former scientists of IITM, and experts from different national and international institutions participated in the function and discussion for preparing a roadmap for the next 10 years for improving weather and climate forecasts.

View Photogallery of the Event: <https://www.tropmet.res.in/180-gallery>