Inauguration of Open-Field Observatory of Coastal Atmospheric Research Testbed (C-ART), at Andhra University, Visakhapatnam

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Indian Institute of Tropical Meteorology (IITM), an autonomous institute under the Ministry of Earth Sciences, Government of India has established a Coastal Atmospheric Research Testbed (C-ART) at Andhra University (AU) in Visakhapatnam. Andhra University has allocated land on its campus for setting up an open-field meteorological observatory, enabling continuous and integrated observations and research collaborations.

The Open-Field Observatory of Coastal Atmospheric Research Testbed (C-ART) was inaugurated on 1st May 2026 by Dr. M. Ravichandran, Secretary, Ministry of Earth Sciences in the august presence of Hon'ble Vice chancellor Prof. G.P. Raja Sekhar, and Dr. Suryachandra Rao, Director, IITM, marking a significant milestone under the Mission Mausam initiative of Ministry of Earth Sciences (MoES) aimed at enhancing observational network and model prediction.

The function started with welcoming the chief guest, Dr. M. Ravichandran, Secretary MoES, guest of honour, Prof. G. P. Raja Sekhar, Vice-Chancellor of Andhra University, Dr. A. Suryachandra Rao, Director IITM, Prof. CV Naidu, Head Dept. of Meteorology & Oceanography, AU, Prof. MVR Raju, Principal AU, and Dr. B. Padma Kumari, Project Director, IITM.

Dr. A. Suryachandra Rao, Director of IITM, delivered the welcome address highlighting IITM's research activities and the strategic importance of establishing the Coastal Atmospheric Research Testbed in Visakhapatnam on the east coast. He briefed about the first phase of instrumentation set up at Department of Meteorology and Oceanography, AU and the upcoming state-of-art remote sensing, profiling and in-situ instruments as part of coastal research testbed.

Dr. M. Ravichandran, Secretary MoES, and other dignitaries released a brochure on "Coastal Atmospheric Research Testbed". The brochure outlines research objectives, implementation strategy, institutional collaboration, advanced meteorological instruments, and regional impact. He also released a short movie on "Coastal Atmospheric Research Testbed" in Visakhapatnam.

Prof. G. P. Raja Sekhar, the honourable VC AU, delivered the inaugural speech. He emphasized how AU and IITM's joint efforts were crucial to the establishment of this research testbed facility in Visakhapatnam. This facility marks a significant milestone in fostering long-term scientific collaboration between IITM and AU.

The Hon. Secretary M. Ravichandran emphasized the MoES plans and initiatives to improve current observational capability (including spatial and temporal) under Mission Mausam to monitor all weather conditions, particularly severe weather, facilitating improved weather predictions. He encouraged the collaborations between the MoES institutes and state universities.

To mark first observations from this testbed facility, a meteorological balloon was launched by the Secretary, MoES, VC, AU, and Director, IITM. Other instruments such as the impact disdrometer, 2-dimensional video disdrometer (2DVD), 3D printed Automatic weather station (3D-PAWS), convectional AWS, and eddy covariance tower are also installed at this site. These instruments recorded the measurements form the first thundershower reported today in Visakhapatnam. Such instruments will enable high-resolution monitoring of drop size distributions including their sizes and shapes, rain-microphysics, turbulence fluxes, wind information-critical for improving process understanding and their representation in numerical models.

The future instruments for this testbed facility will include scanning wind lidar, polarimetric cloud and precipitation Doppler radars, phase array radars, proton transfer reaction mass spectrometer which will not only help us to understand the atmosphere better but also to predict the extremes with improved accuracy.

This Coastal Atmospheric Research Testbed (C-ART) will serve as a national user facility to provide research observations to support process-level diagnostics of monsoon convection, improve parameterization schemes in numerical weather prediction models, enable data assimilation experiments for enhanced forecast skill and for model evaluation. This shall help in improving early warning systems for cyclones and extreme weather, supporting disaster management.

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