
Departmental Seminar

Seminar Title	: Large-Scale Environmental Features during Maximum Intensity of Tropical Cyclones
Speaker	: Mr. Mohan Murali Krishna Gorja
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Venue	: ER-303 Class Room
Date and Time	: 26 Sep 2024 (05:00PM)
Abstract	: The study investigates the variation in large-scale environment during the maximum intensity of tropical cyclones (TC) formed in the Bay of Bengal. TC tracks are classified into four groups based on their direction of movement using the k-means clustering technique. Results from the pressure level and azimuthal-averaged radial-height wind fields near the vortex centre show weak deep layer wind shear (WS) and abundant moisture in all clusters. However, large-scale environmental differences in the northwest quadrant are identified with a contrasting combination of WS and humid environment between clusters. The composites of OLR are also analyzed during maximum intensities of TC. Results show that anomalous high OLR in the west-northwest direction from the vortex centre, along with the low OLR around the vortex centre, signify the formation of a strong OLR dipole during TC peak intensity. Furthermore, OLR dipole metrics, such as magnitude, orientation, and distance, are observed by having mean of 235 Wm^{-2} , 147° , and 1782 km along with standard deviation of 14 Wm^{-2} , 34° , and 492 km , respectively. The identified large-scale environmental fields from this study could provide valuable insights for predicting the intensity and movement of TC.