

About the Workshop

Tropical cyclones are among the most destructive natural hazards, causing severe impacts on life, infrastructure, agriculture, and coastal regions. The North Indian Ocean frequently experiences intense cyclones affecting India and neighbouring countries. Recent advances in Earth Observation satellites, numerical weather prediction (NWP) models, data assimilation, and artificial intelligence have significantly improved cyclone monitoring and forecasting. These technologies enable accurate monitoring and forecasting of cyclone structure, intensity, rainfall, and associated hazards, supporting timely early warning, disaster preparedness, risk mitigation, effective response, decision-making and disaster management. This workshop provides an overview of modern satellite observations and numerical modeling for tropical cyclone monitoring and forecasting. The programme will include lectures by experts in these fields covering NWP forecasting, satellite applications and advance data assimilation techniques.

Workshop Content and Outline

This online workshop will cover the following topics:

- Fundamentals of tropical cyclones: Genesis, Structure, and Life Cycle.
- Multi-Sensor Earth Observation satellites for tropical cyclone monitoring: Capabilities, Applications and Future Perspectives.
- Numerical Weather Prediction (NWP) models for tropical cyclone monitoring and forecasting.
- Earth Observations data for Cyclone-Induced inundation and hazard mitigation.
- Advances in satellite data assimilation and AI/ML for improved tropical cyclone forecasting.
- Demonstration of operational tropical cyclone monitoring, forecasting systems, and satellite data products.

Important links

To participate in this programme the interested organisations /universities/departments/institutes have to identify coordinator at their end. The identified coordinator will register online his/her institute as nodal centre in IIRS website

(<https://elearning.iirs.gov.in/edusatregistration/coordinator>)

Course Registration

Course updates and other details will be available on URL-
<http://www.iirs.gov.in/Edusat-News/>

- Registered through Nodal centres. The participant's registration must be approved by the coordinator of nodal centers.
- The participants can register and see their application status through URL-
<https://elearning.iirs.gov.in/edusatregistration/>. In case, the application is pending for approval then participants are advised to contact the coordinator of respective nodal center.

Registered as "Individual registrations"-

- The participants with individual registration will be automatically approved. All the registered participants will get their login credentials for ISRO Learning Management System (LMS)- <https://isrolms.iirs.gov.in>.

Award of Certificate

Registered through Nodal centres : Based on 70% attendance, students will be awarded a "Courses Participation Certificate."

Individual Registration: A "Course Participation" certificate will be given to everyone who devotes at least 70% of each session's hours to the course. The course participation certificate will be available for download in ISRO LMS.

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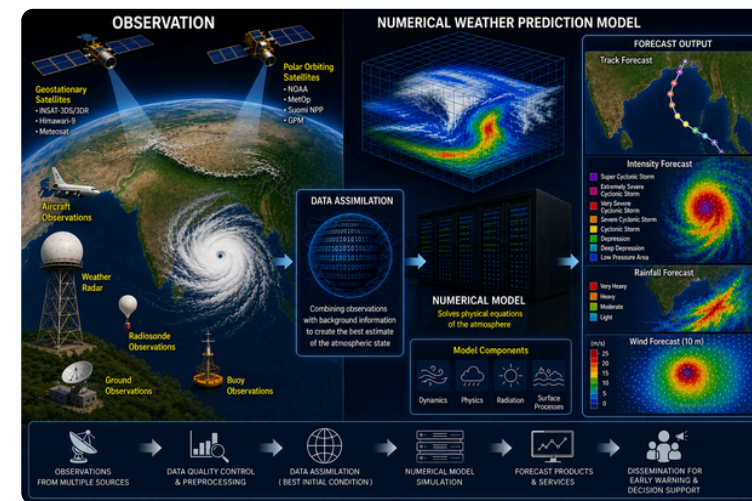
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One Day Online Workshop on Earth Observations and Numerical Model Applications for Tropical Cyclone Monitoring and Forecasting

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1054th IIRS Outreach Workshop

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