Weekly Report – February 28, 2025

Cooperative Institute for Satellite Earth System Studies (CISESS)

NOAA/NESDIS/STAR

Submitted by: Maureen Cribb
Email: mcribb@umd.edu
Phone: 301-405-9344

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TRAVEL AND MEETING REPORTS

Isaac Moradi Presents at the Satellite Book Club

The Satellite Book Club convenes weekly to provide an opportunity for scientists throughout the NOAA satellite domain to share a topic of interest, followed by an open discussion. Topics may include applications of satellite data in the field, new and exciting changes to both polar and geostationary programs, and anything else satellite-related that the field would like to discuss. CISESS Scientist Isaac Moradi was the latest speaker, presenting a talk via video conferencing on 27 February about the role of Low Earth Orbit (LEO) observations in enhancing tropical cyclone predictions. Tropical cyclones are among the most destructive natural disasters, causing widespread damage and loss of life each year. Accurate forecasting, driven by satellite observations and high-resolution numerical models, is essential for mitigating their impact. Moradi's study examines how assimilating observations from LEO satellites and increasing model resolution enhance cyclone track predictions, helping to prevent delayed warnings or minimize unnecessary evacuations. About 60 people were in attendance for this presentation.

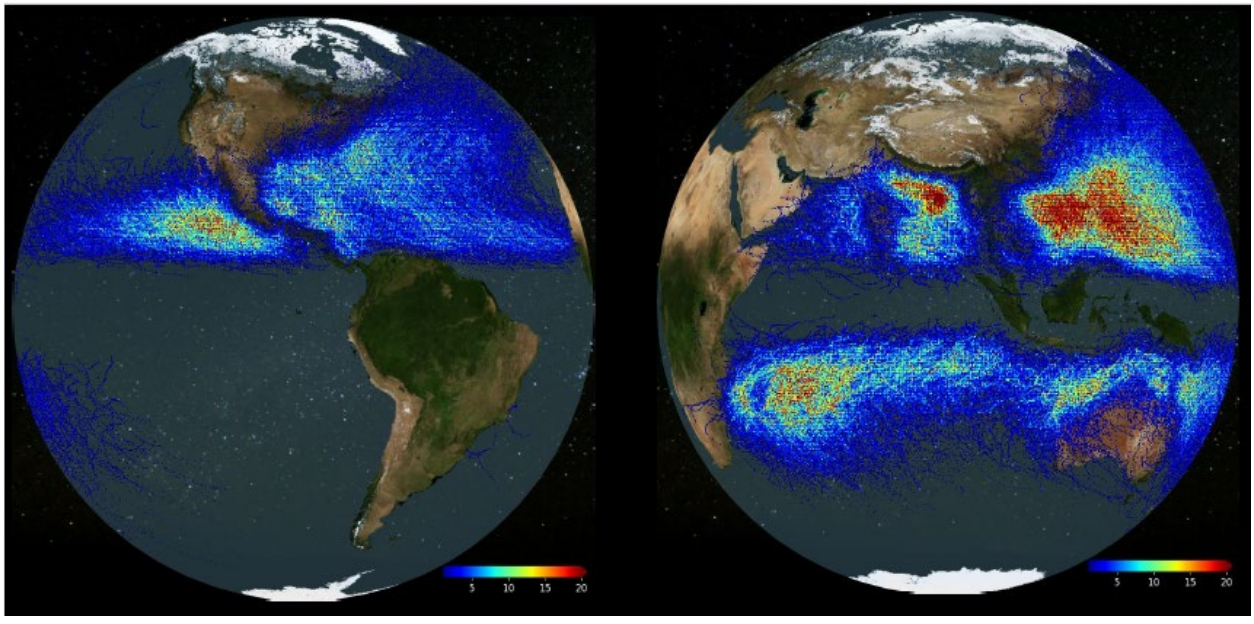

Figure. Frequency of distribution of tropical cyclones derived from Best Track data.

(Isaac Moradi, CISESS, imoradi@umd.edu; Funding: LEO)

SOCIAL MEDIA AND BLOG POSTS

A Stormy Western Atlantic

The Atlantic has been busy brewing up especially strong extratropical cyclones lately. Yet another hurricane-force low developed in the western Atlantic towards the end of February, south of the Canadian province of Newfoundland, blogged CISESS Scientist and Satellite Liaison to the NWS Weather Prediction Center and Ocean Prediction Center Christopher Smith. Of note was the rapid intensification of this storm. Metop-B and Metop-C Advanced SCATterometers measured winds of about 74 mph, with gales of 40 mph extending all the way south to near Bermuda. The ocean was churning, with wave heights more than 29 feet observed by the altimeter onboard the Sentinel-3a satellite. A day later, this cyclone remained a powerful hurricane-force low. Signs are that more such storms are coming down the line.

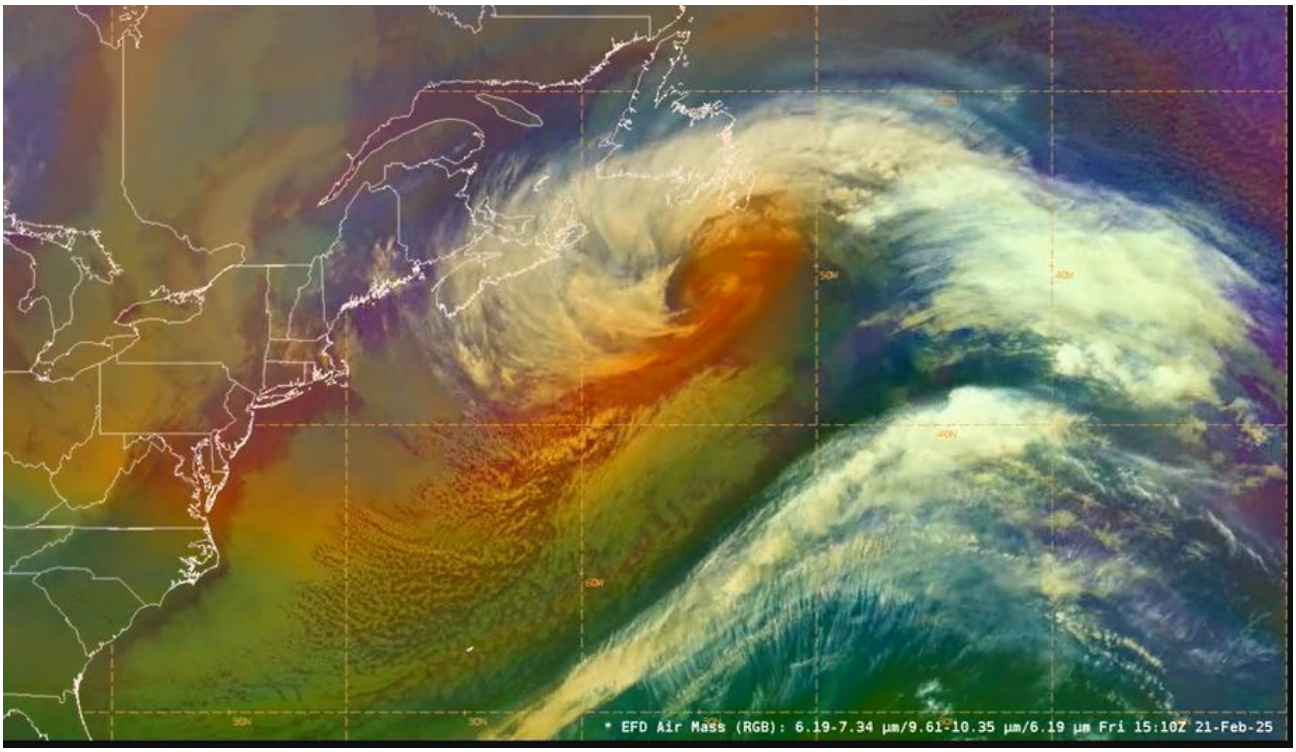

Figure. Snapshot of the cyclone from GOES-East Full Disk Air Mass RGB imagery valid from ~0150 UTC to ~1510 UTC 21 February 2025.

(Christopher Smith, CISESS, csmith70@umd.edu; Funding: GOES-R PGRR)

(Maureen Cribb, CISESS, mcribb@umd.edu, Funding: CISESS Task I)