

Weekly Report – October 03, 2025
Cooperative Institute for Satellite Earth System Studies (CISESS)
NOAA/NESDIS/STAR

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HIGHLIGHTS FOR NESDIS LEADERSHIP

People

Martiny Elected AGU Fellow

CISESS Consortium Institute Scientist Adam Martiny from the University of California - Irvine has been elected AGU Fellow, to be awarded at December's AGU Annual Meeting. This honor has been bestowed on Martiny primarily due to his [Bio-GO-SHIP](#) efforts. GO-SHIP is a ship-based global survey of ocean hydrographic sections. GO-SHIP's sustained repeat observations of ocean physics and chemistry have provided critical constraints on changes in ocean heat content, ventilation, penetration of anthropogenic carbon, and oxygen loss, all of which have serious implications for ocean life. Bio-GO-SHIP is a part of the GO-SHIP, collecting and analyzing samples from GO-SHIP section A16S to understand the biogeography of plankton biodiversity and biogeochemical functions in the South Atlantic Ocean.



(Adam Martiny, CISESS, amartiny@uci.edu; Funding: GOMO)

Use-Inspired Science

Hunting Down Dead Zones in the Chesapeake Bay

CISESS Scientist Guangming Zheng and colleagues at NASA and the Virginia Institute of Marine Science were recently featured in an [article published in the Bay Journal](#), explaining their research on identifying dead zones in the Chesapeake Bay using artificial intelligence. A dead zone is an aquatic area, such as a bay, with extremely low oxygen levels that cannot support most marine life. Their model called "HypoxAI" combines AI-powered analysis with the Chesapeake Bay Environmental Forecast System (CBEFS), a tool commonly used to forecast hypoxia in the Bay. It turns out that HypoxAI is more accurate than CBEFS alone, suggesting that including an AI aspect to CBEFS is a promising route to follow. Their [peer-reviewed paper](#) published in the journal *Artificial Intelligence for the Earth Systems* provides the scientific details.

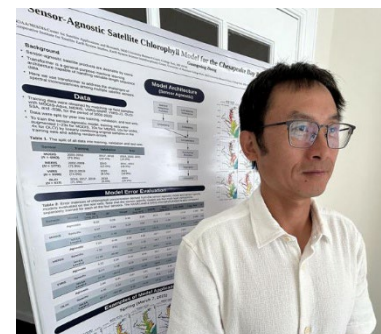


Figure: Guangming Zheng

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(Guangming Zheng, CISESS, guangming.zheng@noaa.gov; Funding: ORS)

TRAVEL AND MEETING REPORTS

Villegas Bravo Attends the 2025 EUMETSAT Meteorological Satellite Conference

CISESS Scientist Javier Villegas Bravo attended the European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT) Meteorological Satellite Conference 2025 in Lyon, France that took place from 15 to 19 September. The conference provided satellite program updates from the world's meteorological offices, including the China Meteorological Administration, the Japan Meteorological Agency, the Korea Meteorological Administration, NOAA, EUMETSAT, and the Indian Space Research Organisation. Talks included the history and future vision on missions to address what each country sees as the most important advancements. Much emphasis was placed on satellite data assimilation into numerical weather prediction to improve model forecasts, with a focus on data from low-earth-orbit (LEO) microwave sounders and imagers, as well as geostationary (GEO) infrared sounders from current and future missions from the different agencies. There was also a focus on how to measure the value of observations, particularly in the context of underserved, low-income countries versus higher-income ones.

Of particular interest to Villegas Bravo were the talks focused on wildfire weather. Regions of Europe like Spain, Portugal, and Greece have recently experienced large fires. As a result, efforts have matured to track fire ignition via satellite and also to map current fires. At last year's conference, Villegas Bravo gave a talk titled "Wildfire Burn Scar Detection and Severity Using Satellite Sensors and Machine Learning to Help Predict Flash Flooding". This year's conference has motivated Villegas Bravo to expand his burned area mask to other regions of the world, given its broad impact.

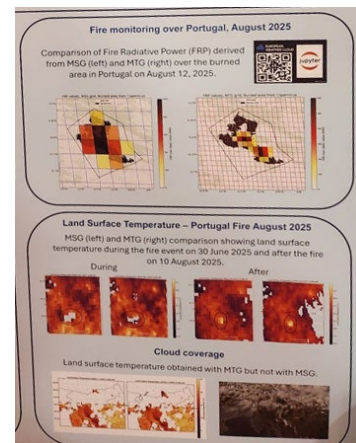


Figure: Part of a poster comparing MeteoSat Second Generation and MeteoSat Third Generation resolution effects on fire detection, a project conducted by scientists at the Slovenian Environment Agency and the Instituto Português do Mar e da Atmosfera. This project aligns with Villegas Bravo's research interests.

(Javier Villegas Bravo, CISESS, vllgsbr2@umd.edu; Funding: GOES-R PGRR)

SOCIAL MEDIA AND BLOG POSTS

Another Storm Hits Alaska

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It was a storm, [a hurricane-force storm](#) approaching southeastern Alaska at the end of September, but the National Weather Service (NWS) Ocean Prediction Center (OPC) and the Juneau Weather Office had it covered, working together to share critical weather information to all, including ships in the area, reports Christopher Smith, CISESS Scientist and GOES-R Satellite Liaison for the NWS Weather Prediction Center and OPC. With waves as high as 17 feet (reaching 33 feet near the center of circulation at some point during the storm's passage, according to satellite measurements) and winds blowing a gale with gusts of up to 100 mph in places, ships changed their courses or headed to coastal harbors to avoid the perilous marine conditions. Thus starts the autumnal storm season in Alaska.

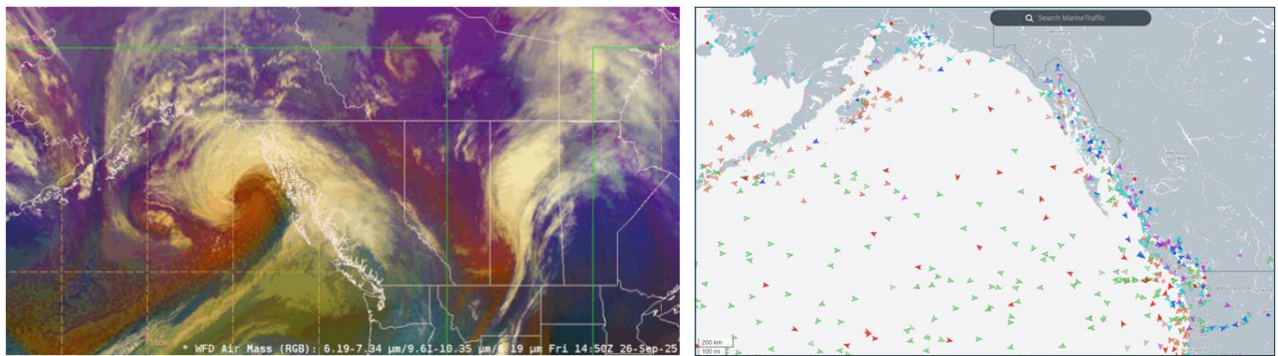


Figure: (left panel) GOES-West Full Disk Air Mass RGB image at 1450 UTC 26 September 2025. (right panel) Vessel locations at ~1530 UTC 26 September 2025 from [marinetraffic.com](#), showing a good chunk of vessels hunkering down along the coast.

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

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