

CPAESS Discovery Seminar

Improvements to the Wind Field used in the Operational Storm Surge Model at the National Hurricane Center

DATE: Wednesday, April 15, 2026

TIME: 11:00 AM – 12:00 PM MT (VIRTUAL)

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To assess the storm surge risk during landfalling tropical cyclones, the Storm Surge Unit (SSU) at the National Hurricane Center (NHC) relies on probabilistic storm surge guidance (P-Surge), which is an ensemble of forecasts from the Sea, Lake, and Overland Surges from Hurricanes (SLOSH) model. While an accurate representation of the atmospheric forcing is vital for skillful storm surge forecasting, the parametric wind model currently used in SLOSH is relatively simple. This seminar will discuss recent efforts to improve the wind forcing used in SLOSH/P-Surge, including methods for providing a more accurate estimate of the radius of maximum winds (RMW), and recent efforts to integrate the Gridded Tropical Cyclone forecast/advisory Message (GTCM) wind model into SLOSH/P-Surge. These refinements in wind structure will help extend the lead time of skillful and reliable storm surge forecasts, which will provide additional time for the public and emergency managers to navigate important evacuation decisions prior to the onset of hazardous conditions.



SPEAKER

Andrew Penny

CPAESS Scientist V

National Hurricane Center,
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Andrew Penny leads research and development efforts related to advancing the capabilities of the probabilistic guidance used for operational storm surge forecasting.



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