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PNSWSH

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From: Judy Ghirardelli
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Subject: Soliciting Comments on Proposed Upgrades to the P-ETSS and ETSS
Models through April 26, 2023

The NWS Meteorological Development Laboratory (MDL) is proposing to upgrade the Probabilistic Extra-Tropical Storm Surge (P-ETSS) model and the Extra-Tropical Storm Surge (ETSS) model in the summer of 2023. NWS is seeking comments on the proposed changes through April 26, 2023.

Both P-ETSS v1.3 and ETSS v2.5 will be upgraded to:

- A. Incorporate a spatially varying bottom friction to improve the overland inundation guidance.
- B. Nest five fine resolution basins focused on: Deadhorse, AK (SCC), Wainwright, AK (AWI), Kotzebue, AK (OTZ), Nome, AK (OME), and King Salmon, AK (AKN) within the coarser Bering, Beaufort and Chukchi sea (BBC) basin to enable guidance which is similarly accurate to the comparable guidance for the East Coast and Gulf of Mexico.
- C. Introduce a Fourier-based post-processing scheme to improve storm surge guidance at stations.
- D. Incorporate 58 additional stations with corresponding observational data.

Additionally, P-ETSS will now produce results based strictly on the US's Global Ensemble Forecast System (GEFS), in addition to the current results based on both the GEFS and Canada's Global Ensemble Prediction System (GEPS).

The expected benefits of this upgrade are improved inundation skill, more accurate guidance in Alaska, better handling of inaccurate tidal predictions at select stations, and an expanded set of station guidance with observations.

A presentation that contains the P-ETSS/ETSS verification scores can be found in the 2023 section of MDL's storm surge technical notices here:

<https://vlab.noaa.gov/web/mdl/storm-surge-technical-notices>

or more directly at:

[https://vlab.noaa.gov/documents/6609493/7858383/SciBrief MDL PETSS v1.3.pdf/cfa53fab-86f1-611a-3a50-1e4c9f6344e5?t=1679675995068](https://vlab.noaa.gov/documents/6609493/7858383/SciBrief_MDL_PETSS_v1.3.pdf/cfa53fab-86f1-611a-3a50-1e4c9f6344e5?t=1679675995068)

For visualization of the upgrades, see:

P-ETSS: <https://slosh.nws.noaa.gov/para/petss/>

ETSS: <https://slosh.nws.noaa.gov/para/etss/>

There will be a runtime delay mainly due to improved modeling for the Alaska region (nesting the five high resolution domains), but also due to adding spatially varying bottom friction.

P-ETSS will disseminate products after 55 (versus 43) minutes. ETSS will disseminate products after 41 (versus 34) minutes.

For providing comments on the proposal (particularly the run-time delay), please use the feedback form which can be accessed via this link:

<https://forms.gle/2vGZExmeWPlug1vS9>

Alternatively, you can provide questions, comments, or requests by sending an email before April 26, 2023 with "P-ETSS v1.3 / ETSS v2.5 feedback" in the email subject to:

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