

Subject: New Form Entry: Contact Form

Date: Monday, December 20, 2021 at 12:35:45 PM Eastern Standard Time

From: no-reply@weebly.com

To: Extreme Value Analysis and Application to natural Hazards Conference

You've just received a new submission to your [Contact Form](#).

[Mark as Spam](#)

Submitted Information:

Name

Brian Blanton

Email

Brian_Blanton@Renci.Org

Comment

Extreme sea levels from a 41-yr coastal reanalysis for the US East and Gulf of Mexico coasts

Brian Blanton, Jeffrey Tilson, Rick Luettich, Taylor Asher, UNC-Chapel Hill
William Sweet, Gregory Dusek, NOAA

Extreme sea levels from storm surges can have substantial impacts in the coastal zone. To better understand these impacts and anticipate probable future conditions, detailed information on coastal water levels and variability is needed. A regional 41-year reanalysis (1979-2019) of coastal water levels is being developed using the ADCIRC storm surge and tide model. Using the ECMWF ERA5 atmospheric reanalysis, NOAA observed water levels, and a recent data assimilation system for ADCIRC, errors in an unassimilated hindcast are computed and used to specify time- and space-dependent fields that are assimilated into a posterior simulation. The results will provide detailed datasets of long-term coastal water levels for use in a variety of applications, including computation of local extreme water level probability distributions over monthly to 100-yr return intervals. In this presentation, we describe the data assimilation approach, data availability and processing, and preliminary results of the reanalysis using a high-resolution ADCIRC grid for the US East and Gulf of Mexico coast.

