Hurricane Ian: Coastal Ocean Observing & Modeling

College of Marine Science
University of South Florida
Overview of the Project

Coordinated coastal ocean circulation observing & modeling on the West Florida Shelf and its estuaries. Applications to the matters of societal concern: HABs, fisheries, storm surge, SAROPS, etc.

Moorings

Automated Nowcast/Forecast Systems

WFCOM (nested in HYCOM)

Hurricane Ian (Sept 2022)
Accomplishments

Peer-Reviewed Publications

- Chen et al. (2023). Hillsborough Bay inflow modification study: An application of the Tampa Bay Coastal Ocean Model, Est., Coastal & Shelf Sci.

AGU Honor & Presentations

- Dr. Robert H. Weisberg was elected as AGU Fellow
- Liu et al. (2022). Coastal Ocean Response to Hurricane Ian as Simulated by the WFCOM and TBCOM

Nowcast/Forecast Systems

- Weisberg et al. (2022). Air Sea Heat Exchange and Stratification Seasonal Cycles on the West Florida Shelf Identified from Long-term Mooring Data
- Chen et al. (2022). Storm surge simulations based on an Ian-like Hurricane over Tampa
- Law et al. (2022). The USF Coastal Ocean Monitoring and Prediction System (COMPS) Buoys: Surviving Hurricane Ian
Challenges Looking Ahead

Plans for next year

• Hurricane Ian hindcasts & multidisciplinary studies
• Expand upon inundation studies with regard to SL rise and unaccounted for natural variability
• Develop a coupled physical-biological model of red tide based on WFCOM

Challenges

• Human capital: required are highly skilled, dedicated scientists who are in short supply and difficult to recruit and to retain, given funding levels and uncertainty.
• Sustaining long-term observations, as required for assessing inter-annually varying natural processes.