NOAA-VIMS SCHISM Boot Camp and Workshop

Opening Remarks

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NOAA OCS and VIMS

Memorandum Of Understanding

In June 2020, a MOU between OCS and VIMS was signed

The main purpose of the MOU is to collaborate and seek opportunities of mutual benefit in the field of coastal and ocean modeling. For example:

- To coordinate coastal ocean modeling research to operation efforts in support of navigation, disaster mitigation and other downstream applications at NOAA to ensure consistency among and within line offices.

NOAA-VIMS Collaborations and Success Stories

Jul 2013	OCS worked with SELFE (Dr. Antonio Baptista)/SCHISM (Dr. Joseph Zhang) for many years. Columbia River Estuary Operational Forecast System (CREOFS) is based on SELFE/SCHISM
Nov 2017	**Initial conversation with VIMS on building the Inland-Coastal Flooding Operational Guidance System (ICOGS)**
Jan 2018	NOS Modeling Plans Current Status and Future Options for 2D, 3D, Integrated Coastal-River Approaches (presented at National Water Center)
Jan 2018	Evaluating 3D capabilities with a demonstration project on a SCHISM-based modeling system on a national model framework (presented at the NWC)
Mar 2018	Strategies and recommendations for coastal-hydrology coupling as part of NOAA's Water Initiative Report (Prepared by OCS modeling team)
Jun 2018	Finalize SCHISM project NOAA Water Initiative Statement of Work
Nov 2018	Annual water meeting at NWC – Presentation, update on the on-going SCHISM project and OCS' future plans
May 2019	Presenting NOAA Water Initiative projects results at the Coastal Coupling Community of Practice at NWC including SCHISM project outcomes
2019-2021	**Results of the NOS-VIMS work presented in several venues including 2nd International Workshop on Waves, Storm Surges & Coast Hazards 2019, American Meteorological Society Annual Meeting (AMS) 2020 and American Geophysical Union – Ocean Science Meeting 2020 in addition to 4 peer-reviewed publications (Ye et al. 2019; Zhang et al. 2020; Huang et al. submitted; Ye et al. submitted).**
June 2020	MOU BETWEEN VIMS and OCS FOR THE PURPOSE OF COASTAL AND OCEAN MODELING
Oct 2020	**Pre-operational once-a-day testing of the Inland-Coastal Flooding Operational Guidance System (ICOGS)**

NOS Coastal Ocean Modeling: Community Engagement

Community modeling is critical:

- Avoid single point of failure in model development
- Allow the community to contribute improvements to model code and applications
- EPIC can facilitate this community engagement
- Code management strategies can support the community engagement

NOS Coastal Ocean Modeling: Unified Modeling

Most effective and efficient number of models at NOAA

- Does not imply ‘Unitary Modeling’, as no one model can do everything
- Build modular capabilities, e.g. for data assimilation. Have models link to functionalities that are common across multiple models.
- Linking to other models and functionalities through coupling caps.
- Integrate NOS coastal models into Unified Forecast System (UFS)

NOS Coastal Ocean Modeling: Code Management

- Community code management through Github is a core component of the NOAA Unified Forecast System Strategic Implementation Plan
  - Repository restructuring plan
  - Best practices for code managers within NWS

- NCO Code management standards
  - E.g. no “go to” statements