

Regional Ocean Models for the U.S. Caribbean Islands and Florida Bay

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This talk presents the implementation of the Regional Oceanic Modeling System (ROMS) in the North Eastern Caribbean Sea and in the southeast United States. ROMS is a hydrodynamic model, which is designed to resolve the long-term horizontal and vertical dynamics of coastal regions. It resolves land run-offs, tides, ocean-atmosphere interactions and has the capability of embedding multiple finer grids in one coarser grid, while updating the latter's fields from the finer grids dynamics.

The Northeastern Caribbean ROMS simulation is used to understand the transport patterns and connectivity networks around the US Virgin Island for NOAA's CRCP project: US Caribbean Coral Reef Ecosystem Connectivity: Vieques Sound and Virgin Passage Transport Study. The Southeast U.S. Florida Model was used to understand pink shrimp larvae transport across the southwest Florida Shelf and is now used to investigate water management and climate change on fisheries sustainability.

