

Abstract Submitted  
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**Response of Ocean Circulation to Different Wind Forcing in Puerto Rico and US Virgin Islands<sup>1</sup>** MIGUEL SOLANO, EDGARDO GARCIA, Universidad de Puerto Rico, STAFANO LEONARDI, University of Texas at Dallas, MIGUEL CANALS, JORGE CAPELLA, Universidad de Puerto Rico — The response of the ocean circulation to various wind forcing products has been studied using the Regional Ocean Modeling System. The computational domain includes the main islands of Puerto Rico, Saint John and Saint Thomas, located on the continental shelf dividing the Caribbean Sea and the Atlantic Ocean. Data for wind forcing is provided by an anemometer located in a moored buoy, the Coupled Ocean-Atmosphere Mesoscale Prediction System (COAMPS) model and the National Digital Forecast Database (NDFD). Hindcast simulations have been validated using hydrographic data at different locations in the area of study. Three cases are compared to quantify the impact of high resolution wind forcing on the ocean circulation and the vertical structure of salinity, temperature and velocity. In the first case a constant wind velocity field is used to force the model as measured by an anemometer on top of a buoy. In the second case, a forcing field provided by the Navy's COAMPS model is used and in the third case, winds are taken from NDFD in collaboration with the National Centers for Environmental Prediction. Validated results of ocean currents against data from Acoustic Doppler Current Profilers at different locations show better agreement using high resolution wind data as expected.

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