



A Comparison of the Observed and Simulated Upper Ocean Response to Hurricane Passage in the Subtropical Atlantic Ocean

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The response of the upper ocean is examined for the passages of two hurricanes which followed similar paths in the subtropical Atlantic Ocean near the Bermuda Testbed Mooring. Hurricane Fabian (2003) and Hurricane Florence (2006), which were category 3 and category 1, respectively, provided a unique opportunity to study the ocean effects associated with different hurricane intensities. Without the need to adjust for storm path variations, more accurate observational analyses of the upper ocean currents, mixed layer depth, and heat fluxes can aid in hurricane modeling efforts. First, an MM5 atmospheric model was applied to both hurricanes using meteorological forcing data. The MM5 output of Hurricane Fabian was then applied to a three-dimensional ROMS ocean model and compared to in situ observations (paper in progress). On the other hand, Hurricane Florence was simulated with one-dimensional models (Mellor-Yamada and Price-Weller-Pinkel), and a ROMS ocean model. The results of these models were then compared to each other and to observational records.