

Characteristics of Ocean Responses Induced by Typhoon Ketsana Simulated by ocean model ROMS

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New evidence based on recent satellite data is presented to provide an opportunity in quantifying the characteristics of ocean responses induced by Typhoon. In October 2003, hurricane Ketsana passed over the North-West Pacific Ocean. The surface chlorophyll-a concentration is triggered to increase on an average of 30-fold during Ketsana's 8-day life period. Characteristics of Ocean Responses are simulated by ocean model ROMS. Using COADS data as initial fields and QuikSCAT wind data as forcing fields, the ROMS model has been run for one and half months beginning at September 1st to make it stable. Then the model is continued to run for another month, during which time the life period of Typhoon Ketsana was included. When using just the QuikSCAT wind data as forcing fields, the cool SST pool, chlorophyll-a concentration and SSH are weaker than data from AMSR, MODIS and merged altimeter data of TOPEX and Jason-1. But if multiply QuikSCAT wind data which are larger than 20m/s by 2, the results of model will fit the remote sensing data much better. This indicated that QuikSCAT wind data seriously underestimate the wind speed of Typhoon. Meanwhile the day of highest chlorophyll-a concentration of ROMS is later than MODIS data for about 5 days. This may be caused by error of short radiation of Sun or NO3 data.