stationary, no moorings were available for the experiment, and slow mean vertical velocities were confounded with relatively energetic internal tides and internal gravity waves. The deduction of wind-induced vertical velocities using horizontal wind-stress-curl distributions does provide at least some order of magnitude estimates. However, spatial resolution of available satellite scatterometer data is insufficient to gain desired accuracy and spatial resolution. Clearly, models are sensitive to both good estimates of vertical and horizontal velocities for computing advection terms and estimates of turbulent diffusion. Unfortunately, no measurements of mixing, diffusion, or turbulence parameters were possible under the budgetary constraints of the E-Flux program. Nonetheless, Nencioli et al. (2008) have introduced some important ideas concerning nutrient inputs within Cyclone *Opal*, hypothesizing a conceptual model in which the eddy acts more like an open bottom/horizontally leaky feature, rather than like a closed system with no exchanges with the surrounding waters.

Despite many similar gross features and scales, each ocean eddy is unique. For example, there are several different genesis mechanisms for eddies that contribute to different physical, chemical, and biological distributions within their interiors. For example, Gulf Stream and Kuroshio eddies tend to retain materials derived from adjacent waters. On the other hand, materials found within Hawaiian lee eddies are likely locally produced suggesting that these eddies are likely more representative of gyre eddies. However, the subsurface expressions of the eddies studied during this experiment were relatively shallow, perhaps because they were rather newly formed. The Hawaiian lee eddies appear to go through several evolutionary stages and each translates along a unique path, presumably due to competing influences of the β-effects and flow conditions outside the eddy (i.e. in the atmosphere, hurricanes are steered by external wind patterns). There may well be eddy–eddy (vortex–vortex) interactions since cyclonic and anticyclonic eddies are often in close proximity in the lee of the Hawaiian Islands (Lumpkin, 1998). Such interactions would also likely affect the translations of the individual eddies. This aspect is considered in more detail for Cyclone *Opal* in the paper by Nencioli et al. (2008). It is clear that every eddy observation remains important for gaining new insights into processes, increasing our understanding, and developing and testing interdisciplinary models. Because we still have so few direct observations of eddies and the data we are presently able to collect are so limited in the number of key parameters and the spatial and temporal sampling, broad inferences and conclusions based on any single experiment or even a few such experiments must be considered in context. Future eddy research programs should be able to capitalize on emerging platform and sensor technologies as well as models using data assimilation and field programs using such models for adaptive sampling (Dickey and Bidigare, 2005). The region selected for the present study is ideal for such eddy studies.

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