

3.3. E-Flux II

The E-Flux II field experiment, conducted from January 10 to 28, 2005 (YD 10–28), followed E-Flux I, which ended on November 22, 2004. The wind time series shown in Fig. 1 indicates generally weak winds with variable directions from late December 2004 through the time period encompassing the E-Flux II cruise period. The key point here is that northeasterly trade winds were especially rare during E-Flux II; at times southwesterly winds prevailed (180° with respect to the northeasterly trade wind direction). QuikScat wind vectors and speeds shown in Fig. 7A are representative for E-Flux II. Thus, wind-forcing conditions were clearly unfavorable for the

generation of mesoscale eddies. Furthermore, satellite SST images did not indicate the presence of any eddies with surface expressions in the region from mid-December 2004 until early February 2005 (Fig. 7B). Interestingly, warm waters appeared in satellite SST images (i.e., Fig. 7B) to the southwest of the 'Alenuihaha Channel where cold eddies are often spawned.

With no obvious hints of mesoscale features in the study region prior to the E-Flux II cruise, it was decided to first begin mapping surface currents (ADCP data) and subsurface hydrographic and bio-optical variables along selected sections to attempt to discover any sub-mesoscale and/or mesoscale features that might be present outside the detection limits of remote sensors. Data were plotted in

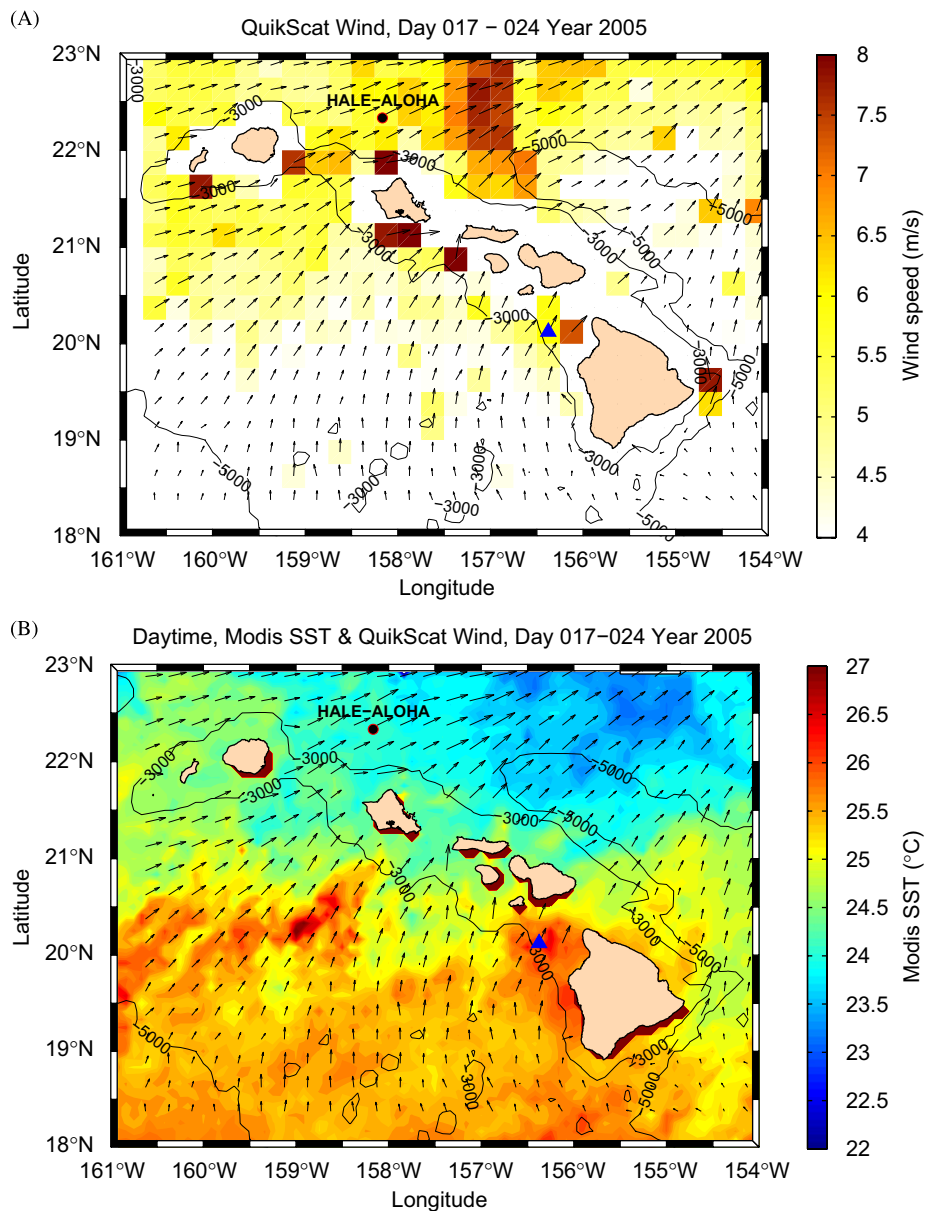


Fig. 7. QuikScat wind vectors with wind speed magnitude shown in color during E-Flux II (January 17–27, 2005; YD 17–27) (A). MODIS sea-surface temperature in color and QuikScat wind vectors during E-Flux II (January 17–24, 2005; YD 17–24) (B). Blue triangle indicates location of time series of winds shown in Fig. 1.