provided binned, mapped daily and eight-day composite surface chlorophyll *a* imagery derived from MODIS Aqua optical imagery. This imagery has 4.6 km ground pixel resolution with chlorophyll *a* concentration being calculated using the standard NASA data processing routines and algorithms (http://oceancolor.gsfc.nasa.gov/PRODUCTS/; Campbell et al., 1995).

The collective satellite-derived data products were used for identifying periods when trade winds occurred and persisted, approximating when mesoscale eddies formed and dissipated, and estimating the scales of the surface manifestations of the eddy features. These data also enabled the optimal initiation of ship-based sampling and placement of drifters in the proximal centers of eddies, and aided in tracking the movements of the eddies during the field exercises. It should be noted that satellite-derived chlorophyll *a*, in particular, and SST imagery were often unobtainable due to cloud cover. In addition, only near surface expressions of the eddies' physical and biological effects could be monitored and subsurface features could not be discerned. Thus, our satellite-based determinations of initiation and cessation times of mesoscale eddies are only estimates with likely errors of 1-2 weeks.

5. Measurement Overview

The multi-platform sampling approach used for the E-Flux study was essential and enabled the collection of interdisciplinary data spanning multiple time and space scales as synoptically as possible under the constraints (i.e., Dickey and Bidigare, 2005). One of the greatest *in situ* sampling challenges for E-Flux was to locate the centers of the mesoscale eddies. The three primary methods follow:

1. GOES satellite SST images (and MODIS chlorophyll *a* when available) were inspected and the coordinates of the geometrical center of each eddy were estimated. These images along with the MODIS SST images were also useful for estimating the lifetime of each eddy since ship time was necessarily limited. It should be noted that the surficial manifestations of horizontal scales of the eddies were smaller than their subsurface signatures (by at least a factor of two or more in scale).

2. Ship-based real-time underway surface sampling systems measured several variables including temperature (and chlorophyll *a*) from water flowing through the ship's intake system. The continuously ship-sampled SST values along transects were used to determine if the research ships were at or near the centers of the cyclones.

3. The ships' near real-time ADCP horizontal current recording systems were used for several purposes. The transect data (usually 40-m depth record) were inspected and the centers of the cyclones were deemed to be located where the ADCP-determined currents were minimal or near zero. Useful information was also retrieved from the directions of the current vectors, as they reversed direction after passing through the cyclones' centers, as well as from the angles of the velocity vectors with respect to the ship's track (radial tracks being characterized by velocity vectors perpendicular to the track). In some cases, inferences of eddy centers were possible only after having performed multiple transects near the actual centers.