(SW) monsoon featured strong, persistent southwesterly winds with greater intensity (up to 15 m/sec). The NE monsoon forced deeper mixed layers (~110 m depth) than the SW monsoon (~80 m depth) because of the convective forcing. The MVMS data set showed that chlorophyll concentrations and primary production correlate with the seasonal physical cycle associated with the NE and SW monsoons (Figure 10). A half-yearly cycle in chlorophyll *a* is an important feature with seasonal blooms occurring late in each monsoon season and into the respective intermonsoon periods. One of the more interesting results was the finding that mesoscale eddies play such an important role in the evolution of chlorophyll *a* at the observational site (Figure 10; Dickey et al., 1998b). A sediment trap mooring array with serial samplers (Honjo et al., 1999) at depths of ~0.8, 2.2, and 3.5 km was located approximately 50 km north of the central mooring site. The combined MVMS time series of derived primary productivity (Marra et al., 1998) and sediment trap time series (Honjo et al., 1999) indicate that the timing and amplitudes of the short-lived but intense phytoplankton blooms associated with seasonal stratification and eddies were well correlated (Figure 11). This suggests relatively rapid (days to weeks) export of organic carbon to the deep ocean. This is qualitatively consistent with the recent results of Conte et al. (2002) for the Bermuda area.

3.3 EQUATORIAL PACIFIC

The primary JGOFS equatorial Pacific process study (see Deep-Sea Research II, vols. 42 (2-3), 1995; 43(4-6), 1996, 44(9-10), 1997) took place in 1992 with some related studies preceding and extending after the main experiment. Field experiments were conducted in the central and eastern Pacific from 95^0W to 170^0W and between 10^0N and 10^0S. The equatorial Pacific is interesting because of its great variety of physical processes (including equatorial waves) and the El Niño-Southern Oscillation (ENSO) with its related global effects. The region is thought to play an important role in the global carbon cycle as it is estimated to supply roughly 1 gigaton of carbon (as CO_2) per year to the atmosphere by upwelling of carbon-rich deep water. It is also a high nutrient-low chlorophyll (HNLC) region, so that its productivity and carbon fluxes are relatively small considering the availability of nutrients. The physical dynamics of the equatorial Pacific have become increasingly well understood, largely because of the large number of measurements made from the Tropical Atmosphere Ocean (TAO) mooring array (McPhaden et al., 2001). However, understanding of biological and optical variability has been limited since few dedicated ship-based experiments could be performed in this remote oceanic region in the past. Only a few ship-based biological observations of chlorophyll and