



Surface mixed layer temperature and salinity variability on seasonal and interannual time scales in the eastern tropical Pacific

M. J. McPhaden (1), M. F. Cronin (1) and D. C. McClurg (1, 2)

(1) NOAA/PMEL, 7600 Sand Point Way NE, Seattle, WA 98115, USA (2) Joint Institute for the Study of the Atmosphere and Ocean, University of Washington, Seattle, WA, 98115 USA (michael.j.mcphaden@noaa.gov)

The eastern tropical Pacific is characterized by a pronounced seasonal cycle, interannual variations associated with the ENSO cycle, and significant hemispheric asymmetries in mean oceanographic and meteorological conditions that affect the climate of the region. To better understand the oceanic processes and ocean-atmosphere interactions that control variability in the eastern tropical Pacific, the Tropical Atmosphere Ocean (TAO) moored buoy array along 95W was enhanced in 2000-2003 with additional moorings between 8S-12N and additional upper ocean and surface meteorological sensors. Data from this enhanced array of measurements are used to examine surface mixed layer temperature and salinity variations during this period, which encompassed a La Nina event in 2000-2001 and an El Nino in 2002-2003. Diagnosis of property balances with these data results in a more accurate definition in time and latitude of processes affecting the evolution in mixed layer variability than previously possible. The analysis highlights the importance of accurate surface flux measurements and the need for sustained measurements of mixed layer properties in the tropics.