

Variation in a Cd - PO₄ plot in the central equatorial Pacific associated with ENSO

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The variation in a cadmium (Cd)/phosphate (PO₄) plot in the surface layer of the central equatorial Pacific was investigated from January 2001 through January 2002. The enhancement of the water temperature due to the eastward expansion of the Western Pacific Warm Pool (WPWP) and decrease in the PO₄ concentrations at each station were observed in 2002, which indicated that an El Niño trend had developed in the sampling period of this year. Cd concentrations were also reduced as well as PO₄ at each station, and a plot of Cd and PO₄ showed the variation in connection with the El Niño Southern Oscillation (ENSO) trend. Namely, the Cd - PO₄ plot (cluster) shifted in the direction of the origin from 2001 (La Niña trend) through 2002 (El Niño trend) as the WPWP expanded eastward and the effect of the upwelling weakened, which was attributed to the uptake by the phytoplankton in the surface layer under a developing water column stratification that had only a small supply of these constituents from the subsurface water, and, consequently, the plot (cluster) was left at a relatively low level at each station in 2002.