



Investigating the variability of surface chlorophyll-a in association with sea surface temperature and surface wind in the South China Sea

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In this study, the variability of surface chlorophyll-a (Chl-a) in association with sea surface temperature (SST), and surface wind (SW) in the South China Sea (SCS) is investigated using the 8-day, 4-km, DINEOF-reconstructed MODISA Chl-a and SST, and the 8-day, 25-km Cross-Calibrated Multi-Platform SW from 2003 to 2016. Empirical Orthogonal Function analysis on the data sets presents: (1) The first Chl-a mode presents the high concentrations in the coastal regions, except those of the Palawan and Philippines. (2) The second Chl-a mode shows the seasonal variability of Chl-a in the whole basin, increasing in winter and decreasing in summer, with the highest variability in northern SCS. The second Chl-a mode has a connection with the SST and SW modes that present the cooling (warming) of the basin in response to monsoon. (3) The third Chl-a mode in association with the third SST mode shows upwellings in the Vietnamese coast in summer and the Borneo coast in winter.