

Daily biogeochemical processes in upper water column during winter season

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Data from daily observation of profiling buoy was utilized to infer the episodic term (days-weeks) of biogeochemical variability in Sagami Bay, Japan. Variations in Chl and nitrate were explainable when examined in the context of episodic term of meteorological (air temperature, precipitations, etc) and physical-oceanographic (temperature, salinity, density, current speed and directions, etc) variability in the bay. During the study period, we were able to capture several water masses intrusion events into the bay and subsurface upwelling. By combining with the satellites data, the large scale monitoring phenomena can be observed. Also, the present study demonstrates the high temporal-resolution measurements from underwater profiling buoy data systems could be exploited for a better understanding of biogeochemical process in response to different episodic physical events.