Coccolithophore fluxes in sediment traps from the central and western equatorial Pacific

Yuichiro Tanaka[1], Hisatake Okada[2]

[1] AIST, MRE, [2] Earth and Planetary Sci., Hokkaido Univ.

Coccolithophore fluxes were investigated by sediment trap studies in the central and western equatorial Pacific at 4N135E (station MT1), 5N140N(station MT2), 0N145E (station MT3), 0N175E(station MT5), 0N170W(station MT6), 0N160W(station MT7) collected from January 1999 to December 2002 at intervals of 15 or 16 days, respectively.

At station MT1, the coccolithophore flux indicated a low value about three stations of the WPWP region. At station MT3, the peak of coccolithophore flux was recognized respectively from March to April in 1999, from April to May in 2000. Moreover, coccolithophore flux was low from August and from November to December. The peak of coccolithophore flux of equator upwelling region was recognized as for station MT5 from August to September, 1999, and from March to April, 2000. At station MT6, the peak of coccolithophre flux was seen in January, March, and from June to August, 2000. At station MT7, coccolithophore flux decreased after October and was a value of 1/10 or less of the highest values though a remarkable change was not seen from January to October, 2001. As for the annual average of coccolithophore flux, the equator upwelling region was higher than that of the WPWP region. On the other hand, it was the highest in station MT5 in equator upwelling and was seen the tendency which lowered gradually toward the east side.

Florisphaera profunda, Gladiolithus flabellatus, Gephyrocapsa oceanica, Umbilicosphaera sibogae s.l., Emiliania huxleyi, Umbellosphaera irregularis and Oolithotus fragilis were the most abundant species of coccolith flora, together comprising more than 90% of the total flora. O. fragilis, regarded to prefer upwelling water conditions, and U. irregularis and U. sibogae s.l. characterized the warm water region in the equatorial Pacific Ocean. These results are suggested that the amount of the supply of the nutrient is reflected.