Coccolithophore fluxes in the sediment trap from the western Pacific warm pool

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Coccolithophore fluxes were investigated by sediment trap studies in the West Pacific Warm Pool, which is located in the western equatorial Pacific at 4N 135E (station MT1), 5N 140N(station MT2) and 0N 145E (MT3), collected from January 1998 to November 1999 at intervals of 15 or 16 days, respectively.

At both stations, seasonal maxima of coccolith fluxes was observed during February -March and May. During summer coccolith fluxes were low but continuous at station M3. At the two stations, Florisphaera profunda, Gladiolithus flabellatus, Gephyrocapsa oceanica, Umbilicosphaera sibogae var. sibogae, Emiliania huxleyi, and Oolithotus fragilis were the most abundant species of coccolith flora, together comprising more than 80% of the total flora. O. fragilis, regarded to prefer upwelling water conditions in the equatorial Pacific Ocean, was highest in abundance during early May of station M3.

The annual mass estimated CaCO3 flux of coccoliths and coccospheres was 1.6 g m-2 year-1 at M1, 1.5 g m-2 year-1 at MT2, and 1.4 g m-2 year-1at MT3. These calculated values contributed on only 13.6% at MT1, 25.9% at MT2, and 13.3% at M3 to the total CaCO3 flux.