# Coccolithophore seasonal export production and fluxes in the Ionian Sea, eastern Mediterranean (June 2004–September 2005)


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Coccolithophores are a major phytoplankton group in the oligotrophic eastern Mediterranean and make a significant contribution to the biogenic sediments on the seafloor. The vertical stratification and seasonal succession of species, as well as the alternation of haplo–diploid phases of their life cycle, allow coccolithophores to exploit different ecological niches year-round. Understanding these patterns and the subsequent mechanisms of settling through the water column is key to unravelling the role of coccolithophore species as paleoceanographic proxies.

Here we present a 15-month (June 2004–September 2005) time series of coccolithophore export production and fluxes from sediment trap samples at 500, 1500, and 3000 m water depths with the aims of linking the seasonal export of species to the seasonal oceanographic and external forcing and tracing the sinking speed and the modifications of the export flux with depth. The peak in total mass and coccolithophore fluxes occurred in early summer. *Emiliania huxleyi* dominated the coccolith and coccosphere fluxes for most of the year and displayed the highest relative abundance in March, whereas the deep-dwelling *Florisphaera profunda* made a higher contribution during late summer and early autumn. Minor species that occur year-round in the flux were represented by *Syracosphaera pulchra*, *Umbellosphaera tenuis*, *Rhabdosphaera clavigera*, *Umbilicosphaera foliosa*, *Helicosphaera carteri*, and *Calcidiscus leptoporus*. Other minor species and the holococcolithophore phases only occurred during the summer peak of flux.