



## **Coccolithophore export production and flux at the south-western margin of Crete (Eastern Mediterranean)**

E. Malinverno (1,2), M. Triantaphyllou (2), S. Stavrakakis (3), P. Ziveri (4,5) & V. Lykousis (3)

(1) University of Milano-Bicocca, Department of Geological Sciences and Geotechnologies, Milano, Italy (elisa.malinverno@unimib.it), (2) University of Athens, Faculty of Geology & Geoenvironment, Department of Historical Geology-Paleontology, Athens, Greece, (3) Hellenic Centre for Marine Research, Athens, Greece, (4) Faculty of Earth and Life Sciences, Vrije Universiteit Amsterdam, The Netherlands, (5) ICTA, Universitat Autònoma de Barcelona (UAB), Spain.

Previous studies have shown that, in eastern Mediterranean, coccolithophores are the major contributors to biogenic particle export production and flux (Ziveri et al., 2000, Malinverno et al., 2003, Triantaphyllou et al., 2004). Within the present work we analysed coccolithophore-related fluxes in order to assess their contribution to the sediment flux at the south-western margin of Crete.

Six sediment trap moorings were deployed in the south-western margin of Crete (eastern Mediterranean) from June 2005 to May 2006, at various locations and different distance from the coastline. Coccolithophore-related flux, in terms of both entire coccospheres and coccoliths, were calculated along with the total and carbonate fluxes. Coccolithophores export production and flux shows a strong seasonality at all investigated stations: fluxes are highest (up to  $10^6$  coccosphere,  $10^9$  coccoliths  $\times \text{m}^{-2} \times \text{day}^{-1}$ ) during the summer months, i.e. from June to August, and decrease during winter, although peak flux can develop in December-January at some locations. The assemblage is characterized throughout the year by *Emiliania huxleyi*, a cosmopolitan species that is found in all oceanic environments throughout the photic zone, followed by *Algyrosphaera robusta*, which is commonly found at middle to high depth within the photic zone. Among the minor species, the most significant are those which typically thrive in surface waters, such as *Syracosphaera*

spp., *Helicosphaera carteri*, *Rhabdosphaera clavigera stylifera* and different species of holococcolithophorids, with minor contribution of *Discosphaera tubifera*, *Umbilicosphaera sibogae*, *Pontosphaera* spp. and *Coronosphaera* spp. Compared to similar environments in the eastern Mediterranean, *A. robusta* makes a significant contribution among the deep species, while other species that usually dominate the deep photic zone, i.e. *Florosphaera profunda* and *Gladiolithus flabellatus*, show very low flux in this area.

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### References

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