



Climatic and sea level control on late Neogene sedimentation inferred from palaeomagnetic secular variation dating. An example from eastern Tyrrhenian margin.

M. Iorio (1), J. Liddicoat (2), F. Budillon (1), R. Coe (3), E. Marsella (1)

(1) Istituto per l' Ambiente Marino Costiero, National Research Council, Italy, (2) Department of Environmental Science, Barnard College, Columbia University, NY, USA, (3) Earth Science Department, University of California, CA, USA. (marina.iorio@iamc.cnr.it / Fax 0039-081-5423888 / Phone: 0039-081-5423845)

Drilled slope and continental shelf sediments from eastern Tyrrhenian Sea preserve for the first time Palaeomagnetic Secular Variation (PSV) of Earth's magnetic field between 25,000 years B.P. and present day. The age of the cored sediment is calculated from tephrochronology, ^{14}C dates, and correlation to European PSV curves and relative intensity in sediments cored from the Mediterranean Sea. The ages of the most important sedimentation rate changes, established on slope and continental shelf by PSV dating, coupled with paleoclimatic proxies suggest that in the late Pleistocene and up to the Pleistocene-Holocene boundary, the sedimentation rate on the continental slope was controlled by global rapid sea-level pulses and cold climatic phases that induced reduction and/or rapid increments in the sediment deposition rate. However in the middle Holocene, during phases of continuous relative sea-level increase, the sedimentation rate on the slope was less sensitive to climatic control than on the continental shelf, whereas from the late Holocene to present, it seems that on both the continental shelf and slope the main control on the sedimentation rate was exerted by local factors such as volcanic supply and human deforestation.