

- "Paleoenvironmental Correlation between Eastern and Western Mediterranean Basins during Late Quaternary"
 - CANALS, Miguel¹, MALDONADO, Andrés¹, MANGINI, Augusto², and WILLIAMS, Douglas F.³
 - (1) U.E.I. Geología Marina y Regional, Instituto "Jaime Almera", C.S.I.C. - c/Alcarria s/nº, Núcleo Universitario de Pedralbes, Barcelona-28 - SPAIN
 - (2) Institut für Umweltp Physik der Universität Heidelberg, Neuenheimer Feld 366, D-69 Heidelberg - FED. REP. GERMAN.
 - (3) University of South Carolina, Department of Geology, Columbia, S.C. 29208 - U.S.A.
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ABSTRACT

Late Quaternary hemipelagic sediments of the southern Balearic margin show a cyclic pattern which is related to the changes in oceanographic conditions during sedimentation. Each cycle is composed of: 1) basal gray mud, 2) a thin, dark-brown layer of reduced sediments, and 3) an upper calcareous-rich layer. These cycles can be correlated with the well developed Late Quaternary cyclic sequences of the eastern Mediterranean Sea.

RESUME

Les sédiments hémipélagiques du Quaternaire supérieur de la marge sud-baléare présentent une succession cyclique liée aux changements des conditions d'environnement durant leur dépôt. Chaque cycle est constitué par : 1) une vase grise à la base, 2) un niveau très mince de sédiments réduits, de couleur brun sombre, et 3) un niveau supérieur riche en carbonates. Ces cycles peuvent être corrélés avec les séquences cycliques quaternaires bien développées en Méditerranée orientale.

DIGEST OF THE COMMUNICATION

The analyses of sediments from topographic highs and protected areas of the southern Balearic margin, western Mediterranean Sea, shows a cyclic pattern of sedimentation. Each cycle is composed by a basal grey, terrigenous-rich hemipelagic mud, followed by a few centimeters thick dark-brown layer of reduced sediments and a top calcareous-rich yellowish hemipelagic mud. These cycles can be correlated with the well-developed sapropel cyclic sequences of the eastern Mediterranean Sea.

The intermediate reduced layer may be attributed to deposition under reduced bottom conditions and partial stagnation of the water masses, while the top, calcareous-rich, oxidized layer represents deposition under well oxygenated bottom water. Detailed trace metals analysis (Mg, Mn, Fe, Sr and Zn) of the hemipelagic sequences shows an enrichment in Fe and Mn contents in the intermediate reduced layer.

The cyclic pattern of the hemipelagic sequences of the western Mediterranean appears to result from changes in the water masses, oceanographic conditions and probably circulation patterns during the Late Quaternary. Radioisotopic dating of these sediments, however, demonstrates that at least for the last sedimentary cycle the oceanographic events that caused these sequences were not strictly contemporary in the eastern and western Mediterranean Sea.
