Geophysical study of the Southern Adriatic basin

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By the interpretation of a great amount of multichannel seismic reflection data and of the heat flow density data it is possible to infer that the Adria plate began to detach from the African Megaplate in the Middle-Upper Triassic. Complete separation occurred in Middle Jurassic and stretching phase continued also in Cretaceous and later on. The Dogger tectonic activity determined a crustal thinning and persistent deep sea condition in the Southern Adriatic basin and induced halokinetic movements in the Upper Triassic salt layer (Burano Formation).

The compressive meso and neo-alpine tectonic processes of Dinaric orogenesis created a diffused thrusting deformation accompanied by some evident strike-slip movements.

Since the Southern Adriatic basin is the foredeep of the Dinarides and the Apulian platform is its foreland, the Apenninic orogenesis affected only in a light manner this depression area. But during the Neogene-Quaternary alpine activity, progression of the thrusting deformation of the Dinaric system, and foundering of the adriatic foredeep took place, very probably accompanied by new crustal stretching and thinning with local mantle uplifting.

Quaternary features in Palma Bay (Baleares, Spain) and surrounding littoral areas : A physiographic approach

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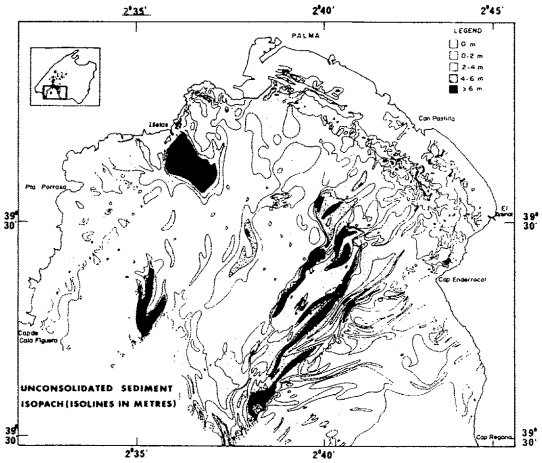
Palma Bay is a shallow semienclosed enbayment located in the Southern of the Mallorca island in the Western Mediterranean. Its morphology is slightly flat, deepen gently in a SW direction. The uppermost litoseismic unit, Quaternary in age, has two different depositional bodies infering two different genesis as well, on the basis of the recent geological evolution developed in the area. From the analysis of the data available (Uniboom 200 joules, 3.5 kHz, echosounder, side scan sonar, aerial reconnaissance and bottom sediment samples) it seems that a drainage system strongly hierarchized (MATEU *et al.*, 1985) took place over the broad littoral plain formed in relation to the post-glacial relative sea-level drop affecting the Western Mediterranean 18.000 years B.P. (PIRAZZOLLI, 1987). Correlatively to this event an erosional period has been affecting the Plio-Pleistocene basement composing the plain by means of a fluvial encassenment highly active. This is the reason why is possible to identify in the litoseismic record, a lower sedimentary body (channel infilling) in the base of the uppermost unit before mentioned (DIAZ-DEL-RIO and SOMOZA, 1991).

Following this relative sea-level drop, there was a steepy-state sea-level rise events, producing a marine carbonate sedimentation (due to high biological productivity) fozilizing the drainage system in successive stages. This evolution finally reach the present time being possible to recognize a smooth sea bottom in the bay, widely covered by a sandy sheet occupied by a seagrass meadow that contribute to sedimentation with great amounts of carbonate skeletons from the living organisms coexisting in this particular ecosystem.

In this poster we present the results of the study in a form of "Physiograhical Map" showing the main units (depositional and morphological) recognized in the area, and also a chronology of the littoral units (Early Pleistocene to Holocene). This approach let us stablish the interrelation between seabottom units and littoral ones during the Quaternary, and also to infer the role of the benthic communities in the present sedimentary process.



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