

SEDIMENT-GRAVITY FLOWS RICH IN BIOGENIC COMPONENTS (FORAMINIFERA)

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Abstract

Micropaleontological and geoseismic techniques are used to ascertain the sediment fluxes through the balearic platform and talus. The importance of mud flows in the major productivity zones is evidenced by using benthic and planktonic forams (production areas and *post mortem* offshore transportation).

In the IEO "Carpabal 85" cruise, between 2° 15' - 2° 55' E and 38° 30' - 39° 10' N, in the South of Mallorca, a series of seismic profiles (sparker 4500 J and "mud penetrator" 3,5 KHz) evidences the presence of resedimented quaternary materials (mud flows).

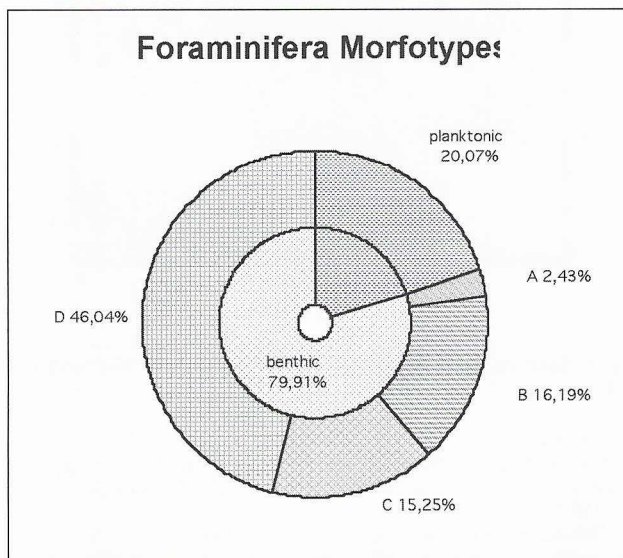
These sediments, acoustically transparents, form large tongues, 6 Km wide and 30 m thick. The sediment instability has been reported in other papers (1, 2).

The benthic forams, in the NE of Emile Baudot Escarpment, are distributed in 119 species clustered by Langer Morfotypes (3), sessile/crusting (A), temporarily motile (B), trophic motile (C) and permanently motile (D). Figure 1 shows the dominance of the permanently motile forms (46,04%) and the scarce presence (2,43%) of non motile, photophile forms from the infralittoral (*Planorbulinidae*, *Soritidae*, *Cibicididae*, *Rotaliidae*, *Elphidiidae* and *Homotrematidae*) indicate biotops of production areas less than 50 m depth. The taphocoenosis that they produce reach the 2000 m depth down to the Balearic Abyssal Plain (4).

Globorotalia inflata (levogyre form) and *Globorotalia truncatulinoides* (levogyre form) are the most conspicuous among planktonic foraminifera species, which reach up 20% of the total foraminifera percentage. This percentage of meso-epipelagic species fits the post-glacial Gibraltar hydrodynamic model.

Micropaleontological analysis and geoseismic data demonstrate the importance of sediment flow from the shallow infra-circalittoral zones into the deeper abyssal plain, driven by gravity processes.

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References

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