

## Evidence for Slope Instability on the Iberian Mediterranean Margin (Mazarron Scarpment)

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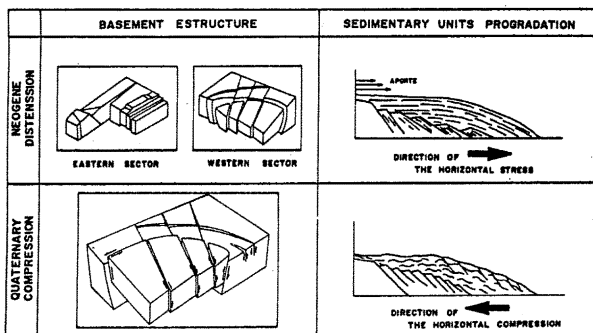
The structural configuration of the acoustic basement inferred from seismic-reflection profiles (Sparker 1.500 and 8.000 joules), show the evidence in the existence of a faulted network displaying a special geometry, where the grabens and horsts are alternated in the margin, as a result of the geological evolution that took place in the area during Upper Miocene, Pliocene and Quaternary periods (Diaz-del-Rio, 1989).

The detailed morphology and structure of the surveyed area, seems to indicate the development of two combined faulted systems, oriented into two main directions: W-E to SW-NE and NW-SE. Tectonic activity during pre-Neogene has exerted an important influence on the relief of the acoustic basement surface. These topographic features have been maintained during later tectonic processes on Neogene-Quaternary times, imposing the depositional axis on the basins, in the places where the grabens were formed (Somoza, 1989).

In the western sector, by the other hand, the main faults are running parallel to the coast line, and this particular phenomena determine a step-like basal geometry. For this reason, the thickness of the sedimentary bodies are increasing seaward, showing its maximum out of the shelfbreak on the continental slope. As a result of the basement structure, this zone of the margin turns out highly compartmentalised (Vegas, 1986), in a E-W direction, as well as in NNW-SSE direction. The geological processes involved in the Neogene-Quaternary history, includes two main factors: (1) Tectonic activity (ancient and recent) and, (2) sedimentological input. There is a third factor inherent in the recent evolution of the Western Mediterranean that is "glacioeustatic factor" being the one that determines the succession of different depositional units in the upper sedimentary bodies composing the margin.

Recent tectonic activity and relative movements of basal blocks (vertical, horizontal and others), have been the origin of certain gravitational slumping observed in the lithoseismic series composing the continental slope and shelfbreak. These morphological irregularities should have been generated under a tectonic distension regime, which turns to a compression one.

In this general structural framework, the depositional units could break away along a discontinuous surface caused by the heterogeneity of the beds. This is the reason why there is a high variety of submarine relief shapes (uneven bottom, scars, submarine valleys, ...etc), the evolution of which are in relation with the following factors: (1) water depth; (2) hydrodynamic conditions and, (3) sedimentary texture.



### REFERENCES

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