

BATHYMETRY AND MORPHOTECTONIC OF THE GIBRALTAR STRAIT SILL
(BETWEEN 5°40'W AND 5°48'W)

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ABSTRACT.- On the Gibraltar Strait a geophysical study was carry out over the sill (between 5°40'W and 5°48'W) with sparker, proton magnetometer, echosondeur and precision radio-positioning. Charts with detailed bathymetry, morphological, geomagnetics and tectonics results was made.

RESUME.- Nous avons réalisé, sur une zone de 200 km, dans le détroit de Gibraltar, 1400 km de profils géophysiques. Cette zone correspond au seuil qui divise le détroit en deux bassins différents. A partir des résultats obtenus, nous avons établi des cartes morphologique, géomagnétique et tectonique ainsi qu'une bathymétrie détaillée.

Nous avons également découvert l'existence de quatre unités morphologiques différentes ainsi que la présence de deux important accidents tectoniques à la base des pentes continentales N et S. La continuité de l'accident Açores-Gibraltar n'a pas été détectée.

The study area could be divided in four parts: Continental shelves, continental slopes, sill and deep areas.

In the base of continental slopes we find depressions that limits the central zone of the sill and it is possible to interpret as accidents E-W.

Two channels cut the sill, which origin could be a erosive

action on the fracture zones, later the currents flowing from Atlantic to the Mediterranean in the opening time at the Strait in addition with the actual Mediterranean undercurrent, modeling the present morphology.

The sill is divided in small "blocks" trending south. The faults has a direction ENE-WSW.

The continental shelf from P. Camarinal to the East is limited by two fractures, one trending NW-SE and another in the base of continental slope, this produce a uplift in the shelf break at -50 m. which in the rest of Spain and Marroccan shelf is founded at -100 m.

A bottom profile N-S show a general tilting toward South, mainly on the sill "block".

The geomagnetic total field do not present important anomalies. We appreciate an small increase of geomagnetic gradient in the spanish continental slope.