



## **Paleomagnetic rotations in the Gibraltar Arc**

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In the last few years, several tectonic models have been proposed to explain the Cenozoic evolution of the Western Mediterranean. Paleomagnetic data used in some of these models, derive from few samples mainly collected in Mesozoic sedimentary units and don't give any information on the deformation mechanisms responsible of the present-day shape of the Western Mediterranean chains. In order to precisely constrain the time and the amount of paleomagnetic rotations, a paleomagnetic study was carried out in Neogene sedimentary sequences of the Iberian and Moroccan margins.

In the Betic sector, sampling was focused on the Neogene units cropping out in the Granada, Alcalà, Tercia, Mula, and Lorca sedimentary basins. A total amount of 87 sites, with about 800 samples, were collected. Paleomagnetic results evidence different sense of vertical axis rotation in the Almeria region (mainly counterclockwise rotations), respect to the Granada zone (mainly clockwise rotations). This different sense of paleomagnetic rotations points out the role of left-lateral strike-slip faults in the Almeria-Murcia continental margin, and suggests that some of the large clockwise rotations measured in the Betic mountains are post Messinian in age. These results show a rotational pattern in the Gibraltar arc more complicated than previously stated and imply a reconsideration of the proposed model for the Gibraltar Arc formation.