



## **Active tectonics and gravitational phenomena offshore the Atlantic Moroccan Margin.**

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The Gibraltar accretionary prism is the offshore expression of the Mio-Pleistocene westward vergent Betic-Rif orogenic belt. It extends for 350 km west of the Gibraltar Strait while laterally is confined between the South Iberia and the North-western Moroccan continental margins.

The internal part of the prism, object of this work, is characterized by the presence of several mud-volcano fields, active tectonic structures and gravitational bodies.

Aim of this work is to show the relationship between recent active faulting and landslide generation and development, by means of swath bathymetry and high resolution CHIRP seismic data. Data that are recently acquired offshore the Rharb basin (NW Moroccan slope), during the R/V Urania NEAREST 2008 survey. In addition, to investigate the deep structure of the area we used one deep penetration MCS line acquired during the EVENT-DEEP 2010 cruise of R/V Sarmiento de Gamboa (3 km, 276 active channels long streamer), together with Parametric echosounder sub-bottom profiler and available commercial seismic lines.

The new dataset allows to map in detail four major WNW-ESE trending tectonic lineaments which crosscut the whole studied area. They are connected by minor, SW-NE lineaments forming a net of linear discontinuities. The morphology, along with the seismic data analysis, of these lineaments suggests that these features are the superficial evidence of deep transcurrent faults. These discontinuities seem to trigger and drive a major gravitational translational slide present in the northern sector of the area. The southern sector, near the Rharb submarine valley, is instead characterized by the presence of small slumps and fluid escape morphostructures related to active strike-slip faults.