



Gulf of Cadiz oceanography for comparison with seismic imaging

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The GO project (European Union-NEST-Adventure funding; www.dur.ac.uk/eu.go) aims to assess the potential of seismic imaging of the water column. A dedicated experiment (April-May 2007, Gulf of Cadiz) looked at varying Mediterranean Water (MW) flow along and down the continental slope. The distinctive MW thermohaline properties provide strong reflections from seismic sounding. We aim to relate water properties to mixing and hence to (e.g.) tides, internal waves, eddies.

Physical oceanography results derive from 500 XBT casts, typical spacing 2km, and moorings: three ADCPs and three temperature strings in line on the north-eastern margin of Portimão Canyon (water depths 740-980 m); a fourth ADCP offset ~6 km from the line in 1015 m depth. Additionally there was CTD and LADCP profiling on an IFM-Geomar research cruise, closely following the seismic sections.

We examine the structures observed on the principal line through the moorings (five repeated surveys), and compare with the contemporary seismic data that also show boundaries in water characteristics. The mooring data and profiles are analysed for tides and internal wave spectra, small-scale structure and turbulence to estimate diffusivity and mixing.