INTEGRATED STUDIES ON THE LITHOSPHERIC STRUCTURE AND GEODYNAMICS OF THE NORTH IBERIAN CONTINENTAL MARGIN: THE MARCONI PROJECT

J. Gallart (1), J. A. Pulgar (2), J. A. Muñoz (3) and the MARCONI Team

(1) Institute of Earth Sciences-CSIC Barcelone, (2) Dep. Geology Univ. Oviedo, (3) Dep. Geodynamics and Geophysics Univ. Barcelone

The MARCONI project involves a multidisciplinary, integrated research of the North Iberian continental margin from geophysical and geological methods. The purpose of this project, funded by the Spanish research agency, is the understanding of the fundamental processes that govern the evolution of the southern margin of the Bay of Biscay which is a submerged portion of the Pyrenean-Cantabrian range. Basic aims are to establish the lithospheric structural features, the transition from continental to oceanic crust and the recent geodynamic evolution of this margin. To constrain these features, a huge amount of new geophysical data at different scales have been acquired during two consecutive oceanographic campaigns carried out in September-October 2003 using the RV. BIO/HESPERIDES. The crustal reflectivity and the velocity-depth distribution of the eastern half of the margin, from Asturias to its eastern end, have been investigated from a set of N-S and E-W seismic profiles totaling 2000 km of multichannel reflection seismics, recorded also at wide angles in a network of 24 OBS/OBH instruments and 36 land stations. Continued measurements of gravity, magnetics and sea beam have also been obtained along the profiles. In the second cruise, a dense network of high and very high resolution seismics and bathymetric mosaics have been conducted to characterize the submarine, erosional, transport and sedimentation processes operating in this margin in recent times. Selected examples of the preliminary results will be presented, illustrating the strong lateral variations of the structure along the margin and testing the undercrusted models proposed for the alpine convergence in the area.