WARRS study of Alboran Sea and Strait of Gibraltar

M.G. GAYE[1],J. MAKRIS[1],J. MEZCUA[2],A. KHRIBESH[3], J. PLIEGO GUTIERREZ[4], D.B. SARI[5]

[1] Institut für Geophysik, Universität HAMBURG (**Germany**)
[2] Instituto Geografico Nacional, General Ibanez de Ibero,MADRID (**Spain**)
[3] SNED, 31 Charia Al, RABAT (**Maroc**)
[4] SECEG-SA, Estebanez Kalderon MADRID (**Spain**)
[5] Centre National de la Recherche, RABAT (**Maroc**)

During a period from 30th. of October, to 5th. of December 1991 the Research Cruise R/V-*Valdivia*(V117) of the Institut für Geophysik Universität Hamburg conducted a seismic (wide-angle reflection and on refraction seismic (WARRS) and high resolution reflection seismic) investigation of Alboran Sea and the Strait of Gibraltar. This Project was a joint venture between : Institut für Geophysik, Universität Hamburg, Instituto Geografico Nacional, SNED, SECEG-SA, and Centre National de la Recherche.

The aim of the project was to :

- solve problems posed by the regional tectonics and geological situation, and
- develop a crustal and upper mantle model for on/offshore Marocco-Mediterranean-Spain. For this purpose 15 OBS (Ocean Bottom Seimographs) and 40 LOBS (mobile seimic land stations were deployed several times on both research areas. We obtained 390 km WARRS lines in the Alboran Sea and 225 km in the Strait of Gibraltar. An airguns array with a total volumen of 371 produce the seismic energy. Shooting was extended beyond the ends of the lines in order to obtain an overlap. Additionnal 20 shots on approximatly the same position (stack shots) were fired at the ends and the centre of each profile (figure 1). A detailed high resolution reflection seismic study in the Strait of Gibraltar completed the survey and covered more than 560 km seismic lines (figure 2). We will present our 1th. results and discuss the tectonic implications.

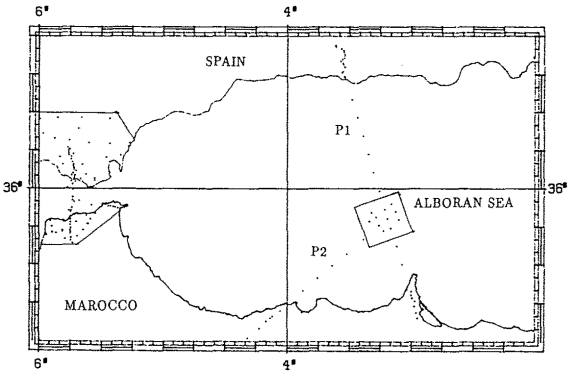

Fig 1: Location map of the on/offshore microseismic areas and the OBS/LOBS positions.

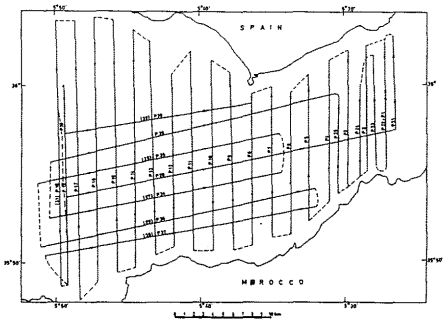

Fig.2: Location of single-channel reflection seismic lines in the Strait.