

UNIVERSITÀ DEGLI STUDI DI PISA
DIPARTIMENTO DI SCIENZE DELLA TERRA



Corso di Laurea Magistrale in
Geofisica di Esplorazione ed Applicata



Anno Accademico 2011/2012

Candidato: **Lo Piccolo Angelo**
Laurea triennale in: **Scienze Geologiche per la Protezione Civile**

Titolo della tesi

Seismic processing and interpretation of multichannel seismic reflection L-7 profile:
Project Marconi, bay of Biscay

Relatore: **Paolo Scandone**
Correlatore: **David Martí Linares**

Controrelatore: **Eusebio Stucchi**
Giovanni Musumeci

Abstract

A complete sequence of processing and interpretation of a marine seismic reflection line (L-7), acquired in the northeast Atlantic Ocean, is presented in this thesis. Seismic reflection data for the MARCOM project were acquired during September-October 2003, in the eastern part of the Bay of Biscay. Almost 2000 km of data were recorded along 11 profiles, from L1 to L-11 lines. Basic aims were to establish the lithospheric structural features, the transition from continental to oceanic crust and the recent geodynamic evolution of this margin.

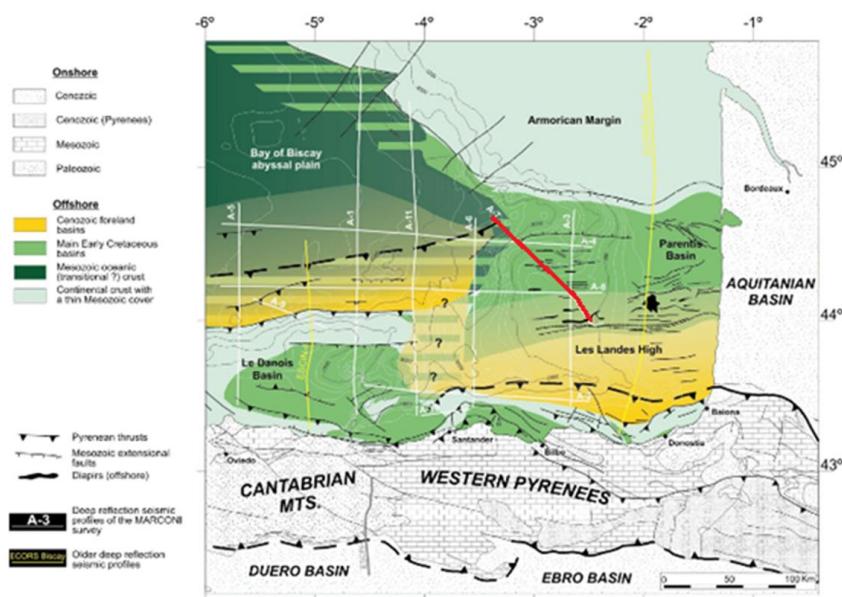


Diagram showing the geology of the investigated area

The first part of this thesis is based on the conventional marine seismic processing steps in order to obtain a reasonable image to interpret, including stacked and migrated sections. The second part deals with the seismic interpretation.

Basic concepts of seismic stratigraphy and structural geology have been applied, presenting the results both in digital format and in paper. Seismic facies and main structures of the line have been identified; particularly the main structural element which is clearly evident in L-7 line, is the Txipiroi High, interpreted as a saline dome of Upper Triassic diapiric rocks which was formed during the Albian-Late Cretaceous. From the line, structural elements that emerge allow us to make some considerations about the geodynamics of the area we can say that the eastern part of the Bay of Biscay results from the succession of two well-differentiated deformational stages: an initial one, coeval to the opening of the North Atlantic Ocean and the Bay of Biscay, which was extensional; and a younger compressive one, coeval by the building of the Pyrenean orogen.

Next I will try to prove the existence or less of structural elements more in depth than those found until now.