



The Moho beneath the Variscan orogen of SW Iberia

R. Carbonell(1), F. Simancas(2), I. Flecha(1), I. Palomeras(1), D. Martí(1), F. Gonzalez-Lodeiro(2), and A. Azor(2)

(1) Dept. Geofísica i Tectònica, CSIC-Inst. Jaume Almera (rcarbo@ija.csic.es), (2) Dept. Geodinàmica, Univ. Granada,

The Mohorovicic discontinuity beneath the Variscan orogen of SW Iberia has been probed by two seismic reflection surveys. A deep normal incidence transect recorded using Vibroseis sources and a wide-angle/refraction experiment using explosive sources. These two seismic data sets provide constraints on the nature of the Moho beneath the study area. The Variscan orogenic belt consists of three major tectonic terranes: the South Portuguese Zone, the Ossa-Morena Zone and the Central Iberian Zone, which were accreted in Late Paleozoic times. The Moho imaged by the deep seismic reflection data of the IBERSEIS transect is located at 11.5 s (at approximately 31-34 km depth) beneath the South Portuguese Zone and the Ossa-Morena Zone. In this data the Moho is a relatively high amplitude 0.3 s event. Beneath the Central Iberian Zone the Moho is not imaged. The dense wide-angle seismic records image a high amplitude PmP arrival from normal incidence to offsets of 120 km. At this offset range the Pn intersects the first arrival. The PmP arrival in the wide-angle records is a simple event beneath the South Portuguese Zone suggesting a very simple structure most probably a step discontinuity.