

TECTONIC EVOLUTION OF THE MINORCA ISLAND (BALEARIC PROMONTORY, WESTERN MEDITERRANEAN)

Oriol Gimeno Vives

ABSTRACT

The Minorca Island is located in a key position within the Western Mediterranean, at the boundary between the Betic Front and the North Balearic Fault Zone. This island presents a thick stratigraphic sequence since the Paleozoic. This study investigated the tectonic evolution of the Island unravelling the distinct deformation events and its tectonic agenda. Eventually, the evolution of Minorca is integrated in the frame of the Western Mediterranean. Based on new field observations and cross-sections, this work proposes a new interpretation of the Minorca Island. Two main tectonic events have been distinguished: 1) a pre-Upper Oligocene compressive event, 2) an Oligo-Miocene extensional event. The latter event corresponds to the general extension recorded at that time in the northwest Mediterranean. In addition, this deformation is linked with the presence of the North Balearic Fault Zone (NBF), located to the north, offshore of the Island. This extension led to a general tilting towards the South of the island interpreted as a rift shoulder in relation with the North Balearic Fault Zone. The presence of Upper Oligocene-Lower Miocene rocks sealing a previous compressive stage suggests that Minorca suffered Palaeogene compressional event prior to the Oligo-Miocene extensional event. This leads us to re-interpret the area, proposing that the Minorca Island recorded a deformation synchronous with the Pyrenean belt. Eventually no evidence for a deformation in relation with the Alpine-Betic belt has been observed suggesting a possible bending of the Betic Front, near the Island.