



Microseismicity in the Algarve region (southern Portugal) and its seismotectonic implications

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Previous studies based on Seismic Network Transfrontiere (1999/2003) and temporary seismic network of Algarve (2006/2007) have identified a significant seismic activity in the Algarve region. The data obtained allowed to determine clusters of significant microseismicity in two major areas: the Almodôvar area and the Monchique area. In the Monchique area the seismicity is characterized by low magnitude events ($1 < M < 3.5$) and is possible to define, from the epicentral distribution, some alignments corresponding to probable faults. Also in the northwestern part of Almodôvar, we were able to determine the trend of the epicentral distribution and in an analogous way it might be suggested an active fault, not yet characterized by geological studies. In this region, the trend of the seismicity, presents an alignment in the NE-SW direction, which becomes more evident with the relocation of the seismic events. This epicentral distribution is also confirmed by the principal tectonic faults and focal mechanisms already known from previous studies. In fact the "Almodôvar's Fault" is the first seismic cartography obtained for this region. In addition, the first results of the Local Earthquake Tomography confirms the existence of two probable faults, for the Monchique region, with seismicity constrained from 5 km to 15 km depth.