



Recent Seismic Activity in the Mid-Atlantic Ridge at the Azores Region

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This work reports the recent seismic activity recorded at the Mid-Atlantic Ridge (MAR), near or even associated to the so-called Azores Triple Junction (ATJ), formed by the contact between the North American, Eurasian and African lithospheric plates. In this region of the MAR plate boundary, the seismic activity is not unusual and is characterized by low magnitude events sometimes occurring in small swarms.

From December 6th until December 30th, 2010, an important seismic swarm has occurred with more than 600 recorded events. From these, 5 have magnitude above 4MI and 177 above 3MI. The sequence of events seems to have a cyclic behaviour, with a period between 4 and 5 days. The number of recorded events nearly doubled on each cycle, reaching a maximum of 88 events on the 18th of December. The magnitude of the recorded events had a small decrease during the swarm, with the event of highest magnitude occurring on December 9th and reaching a magnitude of 4.2MI. Considering the swarm time duration and the by far high number of recorded events, this is the most significant earthquake swarm recorded in the Azores seismic network since it improved its event detection and location capabilities in 1997.

The regular background seismic activity recorded at MAR is associated with the motion along the spreading axis. The relation of this important seismic swarm with volcanic activity is under investigation.