



Crustal stress, seismicity, acoustic emission (AE), and tectonics: the Kefallinà (Greece) case study

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New inferences - confirming previous results (see references)- are presented dealing with a few years Acoustic Emission (AE) records collected at Kefallinà (Ionian Islands, Greece). A physical distinction between HF (high frequency) vs. LF (low frequency) AE is required. Step-wise changes of the AE underground conductivity are evidenced, and can be suitably handled. “Smooth” results concern (i) the annual variation, (ii) some long-lasting stress “solitons” crossing through the area, and (iii) tidal effects. In particular, every AE station can be operated like a monitoring station both for Earth’s tides and for the free oscillations of the Earth. In addition, Kefallinà exhibits a much peculiar groundwater circulation, in which conduit flow is dominant, that originates a specific (and unique) AE effect. By means of AE time-series analysis, “extreme” or “catastrophic” events can be also monitored and possibly related to relevant tectonic occurrences (either earthquakes, or maybe other occasional phenomena). They can be investigated, and have a regional - rather than local - character. Therefore, every interpretation based on a single station record - being biased by some arbitrariness - can only result indicative. A standardized procedure and software is proposed for routine AE data handling and analysis.

References.:

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