

#### Comments:

This work provides enough and useful information on electromagnetic signals generated when rock samples are led to fracture.

Of course, it lacks a theoretical background supporting the experimental results. However, this work is worth publishing after a minor revision.

#### Literature issues:

In principal it has to be noticed that the literature review that is included in the manuscript is limited. A widely published work on experimental methods is already published and it is available in the literature describing similar mechanical tests on rocks. In these works electrical signals originating from non-piezoelectric or electrokinetic effects are presented and investigated. The published works also attribute the recorded electrical signals on valid underlying physical models. Such works should be included in order to fill the gap of laboratory experimental studies and the lack of the theoretical background. Under this concept the following issues should be addressed.

In the introduction (page 7823) the sentence “ laboratory experiments show that rocks ....” the following phrase should be added:

“.. as well as electrical emissions.” Including the following references:

1. Stavrakas et al., 2003 [ I. Stavrakas, C. Anastasiadis, D. Triantis, F. Vallianatos, Piezo Stimulated currents in marble samples: Precursory and concurrent – with – failure signals, Natural Hazards and Earth System Sciences, 3, pp 243-247 (2003)]
2. Anastasiadis et al., 2007 [C. Anastasiadis, D. Triantis, C. A. Hogarth, *Comments on the phenomena underlying pressure stimulated currents (PSC) in dielectric rock materials*, Journal of Materials Science, 42, pp 2538-2542 (2007)]

The Author is also invited to include a published work that discusses signals in the rocks that do not contain piezoelectric minerals and also describes similar signals that author presents: Nardi, A., Caputo, M.: Monitoring the mechanical stress of rocks through the electromagnetic emission produced by fracturing, Elsevier, International Journal of Rock Mechanics & Mining Sciences, 46 (2009) 940–945.

The following works should also be taken into consideration:

1. F. Vallianatos and A. Tzanis, Electric current generation associated with the deformation rate of a solid: Preseismic and coseismic signals, Physics and Chemistry of the Earth, 23/9-10, 933-939, 1998.
2. F. Vallianatos and A. Tzanis, On possible scaling laws between electric earthquake precursors (EEP) and earthquake magnitude, Geophysical Research Letters, Vol.26, No. 13, 2013-2016, 1999.

3. Vallianatos, F.; Triantis, D.; Tzanis, A.; Anastasiadis, C.; Stavrakas, I., Electric earthquake precursors: from laboratory results to field observations, *Physics & Chemistry of the Earth*, 29, 339-351, 2004.
4. I. Stavrakas, D. Triantis, Z. Agioutantis, S. Maurigianakis, V. Saltas and F. Vallianatos and M. Clarke, Pressure stimulated currents in rocks and their correlation with mechanical properties, *Natural Hazards and Earth Systems Sciences*, 4, 563-567, 2004
5. D. Triantis, I. Stavrakas, C. Anastasiadis, A. Kyriazopoulos and F. Vallianatos, An analysis of pressure stimulated currents (PSC), in marble samples under mechanical stress, *Physics and Chemistry of the Earth*, 31 ,234–239, 2006.