Geophysical Research Abstracts
Vol. 15, EGU2013-4428-1, 2013
EGU General Assembly 2013

Correlation between Seismicity and Mental Health: Crete, 2008-2010

George C. Anagnostopoulos

Division of Telecommunications, Dept. of Electrical & Comp.Engin. Xanthi, Greece (ganagno@ee.duth.gr, 0030-25410 79986)

We present, for the first time, the results from a research on the possible influence of seismicity to the mental health of a population not exposed to trauma. The research was inspired by the results of (a) recent research on various electromagnetic phenomena related with earthquakes, (b) several experiments of electric, magnetic and electromagnetic effects on animals' behavior, (c) the electric and electromagnetic activity of the neural network of the brain and (d) the treatment of brain functions with traditional electric or electromagnetic methods. The Research was basically baised on a comparison of the number of M>2 earthquakes N_E in a area including the island of Crete (21^0-29^0E, 32.5^0-38^0N), Greece, to the admissions to the Psychiatric Inpatient Unit of the University of Crete IPU/UoC) during the years 2008-2010. It was found that the number of monthly admissions to the Acute Care Unit of the IPU/UoC N_{AA} reached their lowest values during, and in particular at the end (N_{AA}=2; July 2008) of "a storm of strong earthquakes" in 2008 (G. Papadopoulos, EOS, 90, 46, 2009). On the contrary, the number of monthly admissions N_{AA} increased with increasing the monthly number N_E of earthquakes (EQs) during the rest of the time period 2008-2010, and showed a maximum rate (N_{AA}= 31) during the month with the highest number of EQs (N_E=70; August 2010) throughout the entire period examined. During the second period (October 2008-December 2010) we found a positive correlation between the total number of monthly admissions N_A with the number of EQs N_E (r=0.601 / P=0.001). When a daily resolution analysis was performed for the month with highest number of EQs N_E(August 2010), we found that an abrupt appearance of a cluster of small earthquakes near Crete was followed by an increase in the number of acute admissions N_{AA}, with a delay time of $\sim$2 days. We hypothesize that seismic activity might be a major factor influencing the frequency of admissions of psychotic disorders in Crete in the period 2008-2010 and that the beneficial / adverse effects are related with the EQ-related anomalous electric field / ELF-ULF emissions (Anagnostopoulos et al. Geom., Nat. Haz. & Risk, 2012 submitted). Preliminary results on the influence of seismicity (N_E) to various types of psychiatric disorders will be also discussed in the presentation.