Geophysical Research Abstracts
Vol. 16, EGU2014-1075, 2014
EGU General Assembly 2014

Variations of the electromagnetic field that preceded the Peruvian M7.0 earthquake occurred on September 25, 2013

Daniele Cataldi (1), Gabriele Cataldi (2), and Valentino Straser (3)

(1) LTPA Observer Project, Radio Emissions Project, Lariano, Rome (Italy), (2) LTPA Observer Project, Radio Emissions Project, Albano Laziale, Rome (Italy), (3) International Earthquake and Volcano Prediction Center (IEVPC), Orlando, Florida (USA)

Through this work we want to highlight the existence of strong electromagnetic emission in the ELF band that preceded the M7, 0 earthquake occurred in Peru on September 25, 2013 at 16:42:42 UTC.
The electromagnetic activity data were provided by the monitoring station of Radio Emissions Project (Cecchina, Albano Laziale, Rome, Italy). The monitoring of electromagnetic field takes place 24H24, 7 days on 7, through a prototype of a ELF radio receiver (gain = 57dB) connected to a loop antenna with diameter of 1x1 meters (square section) and contains 25 turns. The antenna is oriented at 306° NW. The data on M7, 0 earthquakes were provided by USGS.
The monitoring station has detected intense impulsive emissions starting from 13:55 UTC until, approximately, to 16:40 UTC. These emissions have a very high intensity and have shown just a few hours before the M7.0 earthquake.
Seeing as have not been registered radio emission of this intensity for more than 24 before, we think that these signals can be associated with the Peruvian earthquake.
Radio emissions with these characteristics have been recorded many times by the monitoring station of Radio Emissions Project, and in all cases have preceded of some hours the M6+ seismic events occurred on a global scale.

Key words: Earthquake prediction, ELF, Seismic Electromagnetic Precursor (SEP), Seismic Geomagnetic Precursor (SGP), Geomagnetic emissions.