

Semiquantitative Discussion about Unusual Electromagnetic Phenomena using 'EQSIGN', a Revised Detector of Earthquake Precursor

Hiroshi Asahara[1]; Yuko Esaki[2]; Shinji Katayama[3]; Chihiro Yamanaka[4]

[1] ASTOM R&D; [2] Dept. of Earth and Space Sci., Graduate School of Sci., Osaka Univ.; [3] N & S Ltd.; [4] Earth and Space Sci., Osaka Univ.

<http://eqsign.tv/>

Retrospectively reported earthquake precursor phenomena are considered to be rare natural phenomena from the spatial distributions of the observed points and from the temporal distribution of their precursory times. Statistical discussions using Chi-squared tests revealed that reports accumulated within a radius of about 100 km from the epicenters were most likely natural phenomena, in the cases of Kobe(1995) and Izmit(1999) Earthquakes¹⁾. These phenomena are best explained by electromagnetic phenomena, considering that they appears simultaneously over large area.

In 1855 the Ansei Chronicle carried a report of iron nails which dropped from a big natural magnet two hours before the Ansei-Edo Earthquake. Attempts have been made to link this anomaly to a change in the earth's magnetic field, but the observed magnetic field variation before earthquakes is too minuscule to explain this anomaly. Ikeya²⁾ reproduced this phenomena experimentally, assuming that electrostatic induction generated a charge on the nails and an attractive force was formed between the ground and the nails. He developed EQSIGN, a revised detector of earthquake precursor of dropped nails. EQSIGN gives signals by buzzer sounds and red LED light when the pin attached to a magnet drops by electrostatic induction.

We will report experiment result for confirming the principle of EQSIGN and discuss about electrostatic induction before earthquakes semiquantitatively.

1)N.E.Whitehead, U. Ulusoy, H. Asahara, M. Ikeya: Are any public reported earthquake precursors valid?, Natural Hazards and Earth Science Systems 4, 463-468, 2004.

2)M. Ikeya: Earthquake and Animals: From Folk Legends to Science, World Scientific, 2004.

Acknowledgement

EQSIGN, a detector for examining the existence of earthquake precursor phenomena, was developed by Prof. Motoji Ikeya passed away suddenly in March, 2006. The authors pay respect to Prof. Ikeya's positive attitude to this study and pray sincerely for the repose of his soul.