Quantitatively Showing the Prediction of Tohkai Earthquake to be Illusional

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1. Introduction

It is reported that Tohkai Earthquake is to be predicted by a half day before it, based on following assumptions.

(1) Precursory crustal motion caused the bubble tremble in the water tube, during leveling, one to a half day before Tohnankai Earthquake (44/12/7, M8.0).

(2) The similar precursor accompanies coming Tohkai Eq.

(3) The precursor is detected by a strainmeter etc.

The increase of reliability of observation makes the detection of the precursory motion decrease. This riddle is solved by considering precursory electric fields.

2. Bubble Trembling

The sensitivity of the level was about 1 microrad in angle and 1 mgal in horizontal acceleration.

The babble is stable when the potential energy is minimum. When the level is charged, the electric fields are generated in the tube, which generate the pressure, Maxwell stress, and the bubble moves to the spot of higher pressure, i.e. to the spot of stronger fields, like the sea water surface goes down in a high-pressure area.

3. Experiment on bubble trembling

We used the water levels attached to measures. The specifications are as follows:

DC voltage: About 1 kV

Sensitivity: 1.7 mrad and 7 gal

Length of water tube: 4 cm, Diameter: 1 cm

Major axis of bubble: 11 mm, Cross section: 0.385 cm2, Volume: 0.28 cm3

Applying the voltage makes the bubble move to the end, and removing makes the bubble return to the original spot. The bubble at center does not move.

The following values are calculated.

Electric capacity = 1.044 pF

Quantity of electricity = 1.044 nC

The fields and pressure at both ends of the tube, 1 cm from end to center, and center of tube, respectively, are

End: E = 375 kV/m, P = 0.624 Pa

1 cm to center from end: E = 107 kV/m, P = 0.0508 Pa

Center: E = 66.3 kV/m, P = 0.0195 Pa

If the density of the liquid is 1 g/cm3, the mass of the equivalent volume to the bubble is 0.28 g. The pressure difference is 0.5732 Pa. Then, from the relation: acceleration = force/mass,

Acceleration of bubble = 7.88 gal

As 1 mgal makes the bubble in the level of leveling tremble, when the sizes of the tube and bubble are the same as those in the measures, 2 kV/m are enough to make the bubble in the level tremble, as pressure is proportional to the square of field strength. Even triboelectricity, rain or snow generates these values. When the fields in a level are these values, earth surface values are smaller than these.

4. Mechanism of Electrification

The precursory fields may be generated by the streaming potential, which explains the fields generated at P wave front, microcrack, activation of pole plates, which explains the fields generated simultaneously with the arrival of S wave, or current between the ionosphere and earth, which is photographed by Sugie Terumi a few days before South of Hyogo Pref. Eq (95/1/17, M7.2).

5. Closing Remarks

The experiment showed the bubble tremble to be possibly caused by precursory fields. This means the earthquake to be predicted by the fields. But the fields are excluded from the prediction system, as they are changed by thundercloud, rain or snow. Therefore, the prediction of Tohkai Eq is illusional, if the precursor occurs in the fields only. To detect the precursor, IPS proposes as follows:

The output difference between two antennae of different heights is observed at 0.02-30 Hz. The difference caused by local charge is larger than that by distant lightning.

The field anomaly is to be precursory, that is observed at more than two sites of no lightning cloud, rain and snow.

Ref.: Motoji Ikeya, Earthquake & Animals, World Scientific, Singapore, 2004