

Precursor observed by movements of aero-ionization measurement prior to the pacific coast of tohoku earthquake in 2011

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1. Introduction

Earthquake predictions that predict when, where, how much of an earthquake will happen, is one of the most important theme in Japan. In this study, we aim at correct information of earthquake predictions by means of measurements for aero-ionization in many measurement points. Before the 3.11 earthquake, in our network of measurement an unusual behavior appeared. This study reported the unusual behavior in detail.

2. Experimental method

The experimental apparatus is based on Gerdien-condensor method, was developed by COMSYSTEM Co.Ltd. The apparatus has been setting up in a campus of Kanagawa Institute of Technology(KAIT), and aero-ionization value have been measured in 24 hours. The data of ionization was sent to the headquarters of e-PISCO and was opened in a website. In KAIT we have measured aero-ionization since ten years ago, predictions of earthquake have been informed locally. The target earthquakes of predictions were sensible earthquakes in Kanagawa Pref. or over the magnitude 5.0.

3. Results and discussions

This study reports the unusual behaviors of aero-ionization measurements in some experimental points in December 2010 before the 3.11 earthquake. Especially the unusual behavior appeared at Matsumoto measurements point in Nagano Pref., which is located over 500 km from the epicenter. The unusual behavior is wondered that the experimental apparatus is in trouble.

In our experience, for one large earthquake(M=7.0) cause less than 5 times of unusual behavior for aero-ionization, based on this experience we succeed in predictions for the day of Chuetsu earthquake in 2004 and of Iwate-Miyagi earthquake in 2008 and so on. On the contrary, for the 3.11 earthquake both behavior and period of aero-ionization have the new case, and we cannot predict the earthquake.

4. Conclusions

Now, for correct information of earthquake predictions, many method have been challenged. The method of aero-ionization observation is one of them. Because all of them have some demerits each other, in the present a better way is combination of some methods. Although for the prediction of earthquakes, many discussions occurred academically, many challenges should be executed by means of various methods.

Keywords: prediction of earthquake, precursor, aero-ionization, the pacific coast of tohoku earthquake in 2011