

Construction of an Earthquake Information System for the Disaster Prevention Plan of a Local Government

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1. Purpose

On the occasion of a big earthquake, the local government usually sets up the countermeasure headquarters for seismic hazard when the earthquake intensity is 4 or more. This intensity criterion for setting up the headquarters is clear. On the other hand, it is not so easy to dissolve the headquarters. For many local governments, the judgment whether the seismic activity has settled down or not is difficult, because they have less information about seismic activity.

If the executive officials of the local government can get the new and detailed information about seismic activity, the judgment becomes more accurate. For inhabitants, grasping usual seismic activity of the region may be the most effective counter plan against seismic disaster. In near future, they will be able to judge by themselves whether an irregular phenomenon appears or not, and whether the seismic activity will be decreasing or not.

Many seismologists standing on the information producer side, they have not enough idea how their information are utilized and what is required by society for their information. Also, they might have not so much idea about the effective distribution method of their information.

The purpose of this study is to construct more effective seismic informations and to prepare better distribution method by executive officials of local government and seismologists in collaboration.

2. Method and the degree of progress

Concerning the Disaster Prevention Research Institute (DPRI), Kyoto University, the 21st Century COE project started in 2002. As the part of this project, the local government of Tottori prefecture and the Research Center for Earthquake Prediction (RCEP) of DPRI have been promoting the collaborating plan mentioned above.

As Tottori pref. is the region where the Tottori seismic network of Kyoto Univ. have been studying for these 40 years, we have much basic seismic knowledge of the region. In the recent centuries, 4 big earthquakes with magnitude greater than or equal to 7 occurred in the San'in coastal region. The last big one is the 2000 Western Tottori Earthquake. Thus, the consciousness about seismic disaster prevention in this region is very high, and the local government of Tottori pref. is very active for this issue. Considering these conditions, RCEP put in action the plan with Tottori pref.

The system we constructed is installed in the local government office. It consists of three PC's. We receive seismic waveform data from the satellite link and analyze those data automatically. Additionally, we receive seismic information data such as manually inspected hypocenter catalogue using the Internet connection. We compile the both data and make various information that would be useful for understanding seismic activity in and around Tottori prefecture. Resultant information can be seen on web based system. The executive officials of Tottori pref. utilize this information experimentally, and assemble the requirements from inhabitants. We will feed back those requirements onto our data and brush up the seismic information.

We already started the test run of the system at Tottori pref. office. The improvement of the system will be done by working out the problems from users. Through this procedure, we expect that a lot of executive officials become familiar with earthquakes and that the seismic disaster plan will be more substantial.