

Study on Multi Application of Seismic Early Warning Information in Nagoya Univ.

Yoshinari Hayashi[1]; Takamori Ito[2]; Kazuro Hirahara[3]; Naoyuki Fujii[4]

[1] Disaster Management Office, Nagoya Univ.; [2] OYO SI; [3] Environmental Studies, Nagoya Univ.; [4] RCSV, Grad. Sch. Sci., Nagoya Univ.

<http://www.seis.nagoya-u.ac.jp/~hayashi/>

Along the Nankai trough, southwest Japan, great interplate earthquakes with the magnitudes of 8 have occurred repeatedly with a recurrence time of 90-150 years. The rupture of the last 1944 Tonankai earthquake did not reach the Tokai area, and hence the Tokai has been unbroken in 150 years since the 1852 Ansei earthquake. Because the latest two earthquakes the 1944 Tonankai and the 1946 Nankai earthquakes seem to be smaller than previous ones, the next ones may come soon according to time predictable model. Accordingly, people are afraid of the occurrences of the Tokai earthquake and Tonankai earthquake in recent years. If these earthquakes occur, heavy damages are expected in Nagoya city, a megalopolis, in central Japan. But source areas of these earthquakes are fortunately apart from Nagoya city. Therefore, if the early warning system is realized, we will have time longer than 20 seconds before the arrival of strong ground motion and we will be able to reduce disasters.

We have been developing the seismic early warning system using JMA (Japan Meteorological Agency) nowcast information since 2003. The feature of this system is dual warning sources, JMA nowcast information via an exclusive line and independent seismometers operated by ourselves. These data are assembled in the nowcast server placed in Nagoya University. Another unique feature of this system is to use INTERNET for taking and serving seismic data. This feature contributes to cost-down of regular communication fee. One problem for early warning systems was to distribute the seismic information to students in our university campus or citizens in the town. At resent, we are serving via INTERNET, in which a user accesses our base server in a time interval of 1secnond .We started the feasibility study on effectiveness of JMA nowcast information for disaster reduction in Nagoya University, because the network environment is well prepared and there are some dangerous spots such as chemical laboratories.