

HDS030-02

Room:101

Time:May 26 16:45-17:00

Examination of the On-site Earthquake Warning System by Boring Seismograph Data

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In our country, a lot of public earthquake observation facilities are maintained. If the data of these seismographs will be used for the on-site earthquake warning system, we will be able to build up the ideal early warning system that can apply from the near regional large earthquakes to the far great earthquakes by combining with the JMA EEW.

In the public earthquake observation facilities, there are a lot of observation facilities where the boring seismograph set up under the soil.

The noise of these boring seismograph are very low compared with the ground level seismograph, and the earthquake detection time can be earlier if the seismograph was set in the very deep well of about 1000m class.

However it is not easy to forecast a strong shake of the ground level from the underground observational data by the influence of the subsurface layer.

We examined the technique for forecasting a strong shake of the ground level from the P wave part of the underground observational data.

We are adopted the simple seismic intensity which can obtain by real-time processing as a predictive index.

We examined the effectiveness by using the data of the ground level and underground level strong motion record of Tokyo Electric Power Company Kashiwazaki and KiK-net of the NIED, and obtained the forecasting formula of the underground seismograph.

It is thought that it is possible to offer the on-site earthquake warning for the regional area of the site by making the similar forecasting formula for each borehole seismograph.

Keywords: Boring Seismograph, On-site Earthquake Warning, Earthquake Early Warning