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Application of Boring Seismometer Data to On-site Warning

Yusuke Awata[1*], Kiyoshi Takano[2]

[1]GSFS, Univ. of Tokyo, [2]ERI, Univ. of Tokyo

On-site warning system is the information generated by users with a seismometer located on the ground. This warning system is effective against large earthquakes that occurs right under the seismometer, and in railways or nuclear power plants it is expected to be utilized with EEW issued against large and distant earthquakes. The seismometer for on-site warning system is usually located above ground, and the warning is issued by analyzing the data in real time. Toriumi (2009) suggests to use multiple indices in order to estimate the principal motion from the initial motion and to issue the warning earlier.

In this study we consider how we apply the indices to the seismometer located in a depth of a few hundred meter.

It is generally expected that we can get data with less noises and make the on-site indices more accurate. In addition, we can get data a little earlier whereas we may not be able to apply the current estimate equations because of smaller amplitudes.

In this presentation, from the data of 2004 Chuetsu earthquake and 2007 Chuetsu offshore earthquake on the seismometer in boring hole in Kashiwazaki-Kariwa nuclear power plants, TEPCO, we consider the appropriate method and the problems in applying the underground seismometers to on-site warning systems.

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