Applying Earthquake Early Warning System Algorithm to the Dataset of the 2007 Noto Hanto Earthquake

Masumi Yamada[1]

[1] Kyoto University

The Noto Hanto Earthquake (Mw6.7) occurred offshore west of the Noto peninsula on March 25, 2007. Significant numbers of near-source ground motions are recorded by the strong motion networks (e.g., K-NET, KiK-net, and JMA). The closest station to the epicenter is the K-Net station ISK006, where the P-wave and S-wave arrived at 3 and 5 seconds after the origin time, respectively; i.e. we have less than 2 seconds for the warning time.

Newspapers reported that the Earthquake Early Warning System of JMA issued a warning for the earthquake (asahi.com, YOMIURI ONLINE, Mainichi Interactive, etc.). However, the warning arrived after the S-wave arrival in Wajima-city, Nanao-city, and Anamizu-town, which are the areas that were subjected to strong ground motions. For those cities, the S-wave arrived 5 to 12 seconds after the origin time.

In this presentation, different types of earthquake early warning algorithms are applied to the dataset of the Noto Hanto Earthquake in 2007. I used the Tau_c method (Wu and Kanamori, 2005) and the Virtual Seismologist method (Cua and Heaton, 2004). According to these methods, it takes about 3 seconds after the P-wave arrival to the closest station, without considering data transfer latency. Decreasing the time for issuing warnings is an important issue for improving the earthquake information systems.