

HDS023-P01

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## Applying an advanced direction estimation method to JMA Nansei-Shoto Area stations

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JMA Earthquake Early Warning System (EEWS) is a hybrid system of single station method and network method. Though, in Nansei-Shoto Area, limited location of seismic stations and epicenter orientation forces JMA Earthquake EEWS not to make use of network method. That is, in this area, single station method plays a key role in hypocenter determination.

Currently, JMA EEWS uses 1.1sec length displacement waveform to estimate hypocenter direction in single station method. However, Noda, et. al (2009) claims that using 0.5sec waveform improves estimation by about 16%. In this study, we applied this method to JMA stations in Nansei-Shoto Area to validate this advantage.

From Feb. 21 to Dec. 28, 2009, 46 EEW warnings were published for this area. From these earthquakes, we collected 96 waveforms that have more than 100um amplitude, from 19 stations of 42 earthquakes.

Compared to the JMA catalog, estimated results of current routine shows average estimation error of 27.2 deg. On the other hand, this method indicates the average error of 22.4 deg., that is an improvement of 17.6%.

Accordingly, the advantage of this method in direction estimation is suggested.

Keywords: Earthquake Early Warning