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Natural Hazards and Earth System Sciences
Discussions

Interactive comment on "Stand-Alone Tsunami Alarm Equipment" *by* Akio Katsumata et al.

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Dear Referee #1

I would like to add a comment about conflict with the official alert. Such a device dealt with in this study is assumed to have a void alarm. If a message is issued from the device such as "Tsunami is possibly coming. Please confirm the public information about tsunami. If such information is unavailable, It is better to move to higher place as soon as possible.", the degree of conflict would be reduced. This is one of practical ways. Other messages or methods would be possible to reduce the confusion.

As to the false alarm, I show the result of the changed method in the figure. The red dot in upper chart indicates the data over the threshold. Some data at short epicentral distances of smaller events exceeded the threshold. These become "false alarm". It would be not easy to remove those false alarms.

As to the frequency of "slow rupture events". The 1896 Sanriku earthquake was a typical "tsunami earthquake", and that is considered as a slow-rupture event. However, all events listed in Table 1 were not slow-slip events. The frequency of slow-rupture events is not so high. Whereas it is ideal to provide a countermeasure against the slow events with the single-site processing, there are many occasions in which the single-site processing is considered to be effective.

Akio Katsumata

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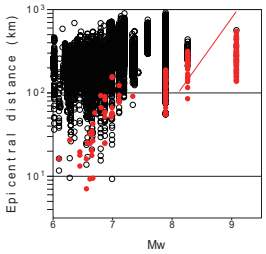

Figure 4. Amplitude data which exceeds the threshold value (0.081 m) are presented by red dots. The black circle are the data under the threshold. The red line indicates the distance at which tsunami height is 2 m based on the formula by Abe (1981).

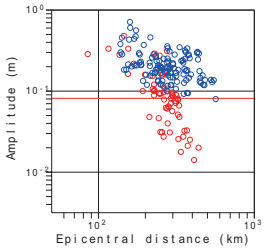

Figure 5. Amplitude data distribution of the 2003 Tokachi-oki earthquake (the red circle) and he 2011 off the Pacific coast of Tohoku earthquake (the blue circle). The red line indicates the threshold amplitude.

Fig. 1. Application of the data to archived seismic data.