



On-line application of the waveform stacking method for the local EEW arrays in Taiwan: A case study of the 6 February, 2016, Mw 6.4 Meinong, Taiwan earthquake

Ruei-Hua Huang and Ting-Li Lin

National Cheng-Kung University, Taiwan (ljegay1111@gmail.com)

Taiwan is constantly threatened by large and damaging earthquakes. Earthquake Early Warning (EEW) is an effective approach to mitigating earthquake damage. The 6 February, 2016, Mw 6.4 Meinong, Taiwan earthquake is the strongest and most devastating inland earthquake in Taiwan after the Mw 7.6, 1999 Chi-Chi earthquake. A high density seismic network dedicated to EEW and rapid reporting with MEMS-type accelerators, Palert, has been operating since 2012 in Taiwan. A high density of Palert stations is beneficial for EEW, but the relatively low signal-to-noise ratio (S/N) would decrease EEW performance. We have tested the array-stacking method in real-time mode with the Palert EEW system in the 2016 Meinong earthquake. The array-stacking method is a hybrid type of EEW method combining on-site and regional methods. The performance of the Palert EEW network in terms of earthquake magnitude estimation can be improved by the array-stacking method, and the processing time does not substantially increase. The results of this study suggest the use of the array-stacking method in the Palert EEW system or other high-density EEW seismic networks.