Home Seismometer for Earthquake Early Warning

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The Japan Meteorological Agency (JMA) has started the practical service of earthquake early warning (EEW) and a very dense deployment of receiving units is expected in the near future. The receiving/alarm unit of an EEW system is equipped with a CPU and memory and is on-line via the internet. By adding an inexpensive seismometer and A/D converter, this unit is transformed into a real-time seismic observatory, which we are calling a home seismometer. If the home seismometer is incorporated in the standard receiving unit of EEW, then the number of seismic observatories will be drastically increased. Since the background noise inside a house caused by human activity may be very large, we have developed specialized software for on-site warning using the home seismometer. We tested our software and found that our algorithm can correctly distinguish between noise and earthquakes for nearly all the events. About 650 sets of home seismometers were installed up to now. Their real-time data show that the home seismometer network is effective for the quick issue of EEW.