

Making of home-seismometer and its performance

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'Home-seismometer project' is proposed by Horiuchi et al. [2007] for the following reasons: 1)to issue more accurate EEW information, 2) broadcasting an EEW 4-5 seconds faster than the present system, 3)providing information on the characteristic shaking response of a target building and 4) evaluating the safety of a target building immediately after a large earthquake. In order to facilitate this project, we are developing an inexpensive, compact and user-friendly EEW intelligent system (home-seismometer) which is based upon a MEMS accelerometer. This accelerometer has the ability to detect the seismic signal from events with a shaking intensity of 2 and larger. We are also developing the software for the home-seismometer system that will transmit earthquake data and waveform data to a center server in order to issue a general EEW warning from a center server and also issue local warnings by on-site P-wave detection. A new and very effective algorithm to discriminate between an earthquake signal and an artificial noise is also being installed in the software. Our next step is to develop the center server software and carry out a large-scale real-time experiment. Performance of the home-seismometer system is significantly improved if we have a huge network of home-seismometers in operation. The home-seismometer system will prove invaluable to studies of hazard assessment and mitigating the risk from earthquakes and the corporation of companies and organizations is indispensable in order to accomplish this goal.