The Present Situation and Future Visions of Strong Motion Observation System by CEORKA

Takashi Akazawa[1]; masanori Horike[2]; Sumio Sawada[3]; Kiyoshi Takano[4]

[1] G.R.I.; [2] OIT; [3] DPRI, Kyoto Univ.; [4] III/ERI, Univ. of Tokyo

The Committee of Earthquake Observation and Research in the Kansai Area (CEORKA), arraying stations throughout the Kansai district, has obtained high resolution seismic records, not only records of major earthquakes (e.g. 1995 Hyogoken-nanbu earthquake, 2000 Tottoriken-seibu earthquake and 2007 Niigataken Chuetsu-Oki earthquake) but also records of moderate ones (M_{JMA}=2 or larger) occurred at the near field. The earthquake information, including seismic intensity and waveforms of major earthquake, are published via the Web (http://www.ceorka.org/) as needed.

Currently, CEORKA is considering constructing strong motion observation system, which can send observed data in real-time. The expecting specifications of new data logger are as follows.

1. Attachable to the existing sensor.
2. Observed data are transmittable in real-time.
3. Long time recording is possible.
4. High dynamic range.
5. Clock time is corrected by GPS.
6. Long time operable by internal battery during a failure of power supply.
7. Low price.

Main feature of new observation system is to maintain the existing observation by branching signals of seismometer. By such parallel observation, the observed data are stored by at least one data logger even if another breaks down. Additionally, this system assures the high accuracy of time by using GPS system. The stock-produced data loggers, which sold by manufacturers, have up to 6 functions. However they have high price also. Currently, we implement test observation using a low cost IT strong motion seismometer (ITK-Sensor) at three observation stations of CEORKA. Additionally, we examine development of a new data logger satisfying all conditions above.