

Deployment of new strong-motion seismographs of KiK-net

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After the 1995 Hyogoken-Nanbu (Kobe) earthquake, the National Research Institute for Earth Science and Disaster Prevention (NIED) installed KiK-net that uniformly covers all Japan with about 700 strong-motion accelerometers. At most stations, boreholes of 100m or more in depth were drilled and, at each station, 3-component acceleration strong-motion seismographs have been installed both on the surface and at the bottom of the boreholes. Because the network system becomes superannuated more than ten years since the beginning of construction of the network, the KiK-net system has been renewed including accelerometers on the surface, recorders and also system of data management center (DMC). NIED has developed a new instrument for KiK-net (KiK-net06) based on the new K-NET system (K-NET02). KiK-net06 will automatically call the DMC at NIED several seconds after being triggered, and transmit waveform data even while recording. This function not only reduces much of the time for data collection but also helps in avoiding any overcrowding of telephone lines. The only practical countermeasure for overcrowding is to connect to the line before it becomes crowded. The signal to noise ratio of KiK-net06 in a long-period range has been improved by a factor of ten compare with the old system. This will improve the accuracy of data analysis such as waveform inversion analysis of source processes and realtime seismology.