

Aftershock observation in the source region of the 2004 Chuetsu earthquake: Part 1

Outline

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During the 2004 Chuetsu, Niigata earthquake, invaluable strong-motion records were retrieved by the K-NET, KiK-net, JMA, Seismic Intensity Information Networks, and others. Among the records, the highest intensity (7) of JMA scale was recorded at two sites. The earthquake damage was distributed in a wide area in the Uonuma-Higashiyama hills and their foot. Nevertheless the strong-motion sites were very dense compared with the previous disastrous earthquakes, they were not enough to understand the relation between ground motion levels and various degrees of damage in the source region. We, therefore, deployed mobile strong-motion stations for aftershock observation consists of 19 sites in the source region. We used the handy strong-motion instrument consists of a tri-axial moving coil accelerometer and a 24 bits data logger, which frequency range and full scale are 0.1-30 Hz and +/- 2.5 g, respectively.

We could retrieve lots of records due to the very active aftershock sequences. Our major objectives are: 1) to estimate the strong-motion during the mainshock at temporal observation site for understanding a detail distribution of earthquake ground motion in the source region, 2) to understand the reasons why localized damage distributions in a relatively narrow area were occurred, 3) to quantify the local site effects on ground motion, and so on. We carried out array observation of microtremors, as well, for a subsidiary to clarify the abovementioned issues.

We will report the results by separate papers focusing on the individual subjects (Matsushima et al., 2005; Hatayama et al, 2005; Hayakawa et al., 2005).

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