

# Estimation of local site effects in the Ojiya city using aftershock records of the 2004 Niigata-ken Chuetsu earthquake

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Observation of aftershocks of the 2004 Niigata-ken Chuetsu earthquake was conducted in the central part of the Ojiya city in the Niigata prefecture to estimate local site effects. We installed accelerographs at 8 sites in the vicinity of the K-NET and JMA in the area. The stations of the aftershock observation are situated with different geological conditions and one of the sites was installed in mountainous area on Tertiary layers to serve as a reference site. Ground motion characteristics of the records for the aftershock with an  $M_j$  of 6.1 were mainly discussed with a focus on local site effects. The amplification at period less than 1 s is the largest in the vicinity of the K-NET station. The amplification at periods of longer than 2 s is larger at the sites in the west part of the city than those in the east. We revealed an S-wave velocity of the sediments over the basement with an S-wave velocity of 3.4 km/s from inversion of phase velocity derived in array observations of vertical microtremors. The appropriateness of the S-wave profile is confirmed with an agreement of 1D synthetic ground motion with the observed motion.