

Aftershock observation in the source region of the 2004 Chuetsu earthquake: Part 3 Site effect evaluation

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The 2004 Niigata-ken Chuetsu earthquake caused severe damage to its source region where villages dot the mountain area. It is reported that the damage differs from village to village in extent. The variation in damage extent is also found in one village. It is difficult to check these differences to spatial distribution of strong ground motions during the mainshock and large aftershocks, because of shortage of the sites where the mainshock seismograms were recorded, though the nationwide and dense strong motion networks are now being deployed. So we had observed ground motions from aftershocks at 19 sites in and near the source region about for a month and are now trying to find the variation in strong ground motions during the mainshock among these aftershock observation sites. As part of this study, we here present site amplification effects inferred by fitting the Fourier amplitude spectra of the accelerograms recorded during aftershocks to a model spectra that is represented by source spectra multiplied by two frequency response functions expressing path effects and site amplification effects respectively.

