

Estimation for site amplification characteristics from spectral inversion of ground motion records in Northern Nagano area

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The 2014 Northern Nagano Earthquake generated the maximum intensity of 6 lower at a strong motion station. The serious damage of this earthquake was characterized by a dense area which is 5km away from an observation station with an intensity of 5 higher. In this study we estimated site amplification characteristics by using ground motion records at strong motion stations and aftershock observation stations by Chimoto et al; (2016) in Northern Nagano area through a spectral inversion technique. The results of Q-value in the propagation path and source characteristics by the spectral inversion technique show similar to those from previous studies. The site amplification in a heavy damaged area show large values in a frequency range of 1.0-3.0[Hz]. A good correlation was found in the relationship between the amplification factors at low frequency and AVS30 from the previous studies, This suggest that the heavy damage is controlled by near-surface layers with low S-wave velocity

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