

## Estimation of shallow Vs structure for Kanto basin using site amplification from spectral inversion of earthquake motion records

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Site amplification factors in a period range of 0.8 to 20 Hz were estimated from a spectral inversion of strong motion data at more than 600 stations in the Kanto basin, Japan. Since the site amplification for sedimentary layers over the basement of Vs of about 2.5 km/s at a reference station were used as the constraint condition in the spectral inversion, the estimated site amplification can be regarded as effects of shallow and deep soils over the basement. We, next, inverted the site amplifications to a 1D S-wave velocity model at each site by fitting the amplification with theoretical one of S-wave using a heuristic inversion method by Yamanaka (2007). Distributions of the S-wave velocities of the shallow and deep soils are obtained from results of the inversion of the site amplifications. We also map averaged S-wave velocity of soils in a depth of 30meters. The amplification is closely related with the averaged S-wave velocity.