

Site amplification factor of the Hi-net stations

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This study estimated site amplification factors of all the Hi-net stations. Employing the coda normalization method and analyzing more than one thousand earthquakes, we obtained the values of all Hi-net sites in the frequency bands of 0.6-1.0 Hz, 1-3 Hz, 2-4 Hz, 2-6 Hz, 4-8 Hz, 6-9Hz, and 8-12 Hz. The site amplification factors were rather small showing that 90 % of the site amplification factors ranged within 20 dB. The site amplification varies from station to station more largely with decreasing the frequency. A correlation between the site amplification factor and the S-wave velocity where the sensor is installed was recognized. The site amplification factor decreases with increasing the S-wave velocity when the S-wave velocity is less than 1.5 km/s. When the S-wave velocity is larger than 1.5 km/s, the correlation disappears. Stations in southwest Japan show smaller site amplification factors, while stations in plains and around the volcanic front in the northeastern Honshu, Japan show larger site amplification factors.

Keywords: Hi-net, Site amplification factor