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Estimation of spectral amplification using ground motion records observed in Tsukuba city

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In this study, spectral amplification from the reference site was presumed by using the observation seismic ground motion. Considering variance of spectral amplification affected by different ground motion's directivity, the variance of H/V spectral amplification was smaller than the variance of Fourier spectral amplification. Furthermore, we discussed about revision of studied ground structure model in Tsukuba city (Senna et. al. (2008)¹⁾) by comparing the resultant of this study with the studied model.

The estimated spectral amplification at the observed station (K-NET IBR011) was slightly different from spectral amplification using studied model at the observed point. Then we revised the studied model at the observed point.

The accuracy of the ground structural model of the Tsukuba city has been improved by evaluating the site amplification constant as a result of this research.

Keywords: spectral amplification, seismic hazard map, velocity structure, structure model, Tsukuba-city