Attenuation character of seismic waves in Southern Taiwan

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Generalized inversion technique (GIT) (Castro et al., 1990) was used to derive SH-wave in the frequency range 0.2–40 Hz (interval 0.1 Hz). The inversion results can find attenuation characteristics, earthquake source parameters and site amplification functions. The characteristics of the site amplification are referred to horizontal-to-vertical (H/V) Fourier spectral ratios of earthquake for a referent rock site. The SH-wave from 28 earthquakes with magnitude ranging from M_L 5 to 7, of 1319 earthquake records at 146 TSMIP strong motion stations in Jianan Plain, southwestern Taiwan are used in this analysis. The SH-wave quality factor $Q(f)$ is estimated as $86.42f^{0.73}$ for $0.2 \leqq f \leqq 25$ Hz. The stress drops can be found from source spectra by using the omega-square model. The results of site amplification are similar to horizontal-to-vertical spectral ratio of the earthquake which have clearly and similar predominant peaks.

References

Castro RR, Anderson JG, Singh SK (1990) Site response, attenuation and source spectra of S waves along the Guerrero, Mexico, subduction zone. Bull. Seism. Soc. Am. 80, 1481–1503.