



Separating the effects of intrinsic and scattering seismic attenuation in Southern Taiwan

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During seismic waves propagate in the medium, the energy will disperse because of geological complexity. In general, the traveling energy can be involved in the conversion of elastic energy to anelastic processes (intrinsic absorption) and the scattering from heterogeneities (scattering attenuation) in the lithosphere. Shown in seismic waves at high frequencies degree of coda content will display the geological structure characteristics in the region. To estimate the energy redistribution in the propagation pool is an important problem in seismology and in engineering.

In this study, we use the energy flux model developed by Frankel and Wennerberg (1987) to separate the effects of intrinsic and scattering attenuation. The analyzed seismic coda waves begin at least twice the direct S-wave travel time from the local events recorded by the Taiwan Strong Motion Network in southern Taiwan. The data are filtered with center frequencies at 1.0 Hz, 3.0 Hz, 5.0 Hz and 10.0 Hz by using the Butterworth filter. We hope the result can help us better understand the physical mechanisms of seismic attenuation in the lithosphere and explain the high-frequency seismograms.