

Estimate of seismic structure by waveform inversion using genetic algorithms -Numerical experiment-

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A low-velocity layer has been found on the Philippine Sea Plate subducting beneath the Chugoku and Shikoku districts. We expect that the low-velocity layer has low-Q value because Q value is usually small in the low velocity zone. Thus, it is necessary to investigate one-dimensional structure of seismic wave velocity and attenuation. We perform a numerical experiment, where the seismic structure is estimated from seismic waveforms that are synthesized for a given structure by Haskell's layer matrix method. Waveform inversion using genetic algorithms is employed for estimating the seismic structure. The obtained structure is nearly in agreement with that given to calculate the waveforms.