Anomalies in propagation and attenuation of seismic waves (3) Efficient waveguide for high-frequency waves in heterogeneous plate

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We present new plate model for efficient wave propagator for high-frequency seismic waves due to heterogeneities inside the plate. We found from numerical simulations of seismic wave propagation that the best model for the plate is that the random heterogeneities is characterized by von Karman type spectrum to have correlation length of 10 km along the subduction direction and 2 km to depth and standard deviation of 2 %. The 2D simulation of seismic waves demonstrates clearly the character of high-frequency wave propagation inside the plate. The simulated waveform agree the observation fairly well.