

Whole mantle seismic tomography

Dapeng Zhao[1]

[1] Earth Sci., Ehime Univ

Whole mantle seismic tomography is determined with a grid parameterization, 3-D ray tracing, and taking into account the topography of the mantle discontinuities. This global tomography model contains the following features: a low-velocity ring around the Pacific Ocean basin in the depth range 35-400 km, high-velocity anomalies associated with subducting slabs most prominent in the mantle transition zone, and high-velocity anomalies surrounding the Pacific basin just above the core-mantle boundary. There are considerable changes in the images of the transition zone when the topography of mantle discontinuities is included. In general, final travel time residuals become smaller for the tomographic models including the topography of the discontinuities.