

Seismic slow anomalies in the deep upper mantle oceanward of subducting slabs

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P-wave tomographic imaging of the mantle indicates existence of slow anomalies oceanward of the subducting slabs along the South Kurile, Japan and Izu-Bonin trenches at depths 350-500 km. Synthetic recovery tests and resolution tests indicate that these slow anomalies are a resolvable feature and not an artifact due to the strong slab anomalies. The existence of these slow anomalies are also supported by the analysis of the J-array records showing remarkable positive travel time anomalies for P-waves from the Philippine earthquakes at stations on the Pacific side of Hokkaido.

