

## Stagnant slab configuration in the vicinity of the 660-km discontinuity

# Masayuki Obayashi[1]; Junko Yoshimitsu[2]; Yoshio Fukao[3]

[1] IFREE, JAMSTEC; [2] JAMSTEC,IFREE; [3] Earthq. Res. Inst., Univ. of Tokyo  
IFREE/JAMSTEC

Arrivals times of the direct P-waves hand-picked on seismograms from the broadband seismometer networks OHP, JISNET, SPANET, SKIPPY and IRIS were added to the ISC data in our P-wave tomography with a focus on the western Pacific region. We measured PP-P differential travel times on the IRIS records, which were also used in the tomography. The result shows clearer images of the subducting slabs than the previous ones (Fukao et al., 2001). The Japan and Izu-Bonin slabs horizontally flatten most extensively in a depth range of about 450 - 600 km. The horizontal spread shrink gradually towards the 660-km discontinuity. The northern Kurile, Mariana and Java slabs are apparently stagnant below 700 km depth. The depth range between 600 and 700 km with the 660-km discontinuity in it is marked by a trench-parallel slab-like feature whose thickness varies from region to region. These characteristics are observed regardless of how the model mantle is divided into layers or whether the model mantle discontinuities are of the zeroth or higher orders. Recently the 660-km discontinuity undulation under the Japanese islands has been obtained from ScS reverberations (Tono et al., 2005) and P-S conversions (Niu et al., 2005) using the Hi-net data. According to their results, the 660-km depression is greatest in the area where our P-wave tomography shows a slab-like feature in the relevant depth range. The 660-km discontinuity is still depressed but with less amount in the area where the slab horizontally spreads most extensively in our tomographic model. There is little indication that slabs lie horizontally directly above the 660 km-discontinuity.