

Anisotropic velocity structure estimated from P-wave receiver functions in the crust and upper mantle beneath southwest Japan

Hirokazu Akazawa[1]; Mamoru Nagaya[2]; # Hitoshi Oda[3]

[1] Earth Science, Okayama Univ.; [2] Earth Science, Okayama Univ.; [3] Dept. of Earth Sci., Okayama Univ.

The P-wave receiver functions are calculated from seismograms recorded at seismic stations which are located in the Chugoku, Shikoku and Kyushu districts, southwest Japan. Ps converted waves from the Moho discontinuity are clearly identified at about 5 second just after P-arrival time on the receiver functions. Two Ps converted waves are observed: one is considered to be generated at the continental Moho and the other is to be converted at the oceanic Moho. The former is observed at seismic stations in south and east regions of the Shikoku district, and the latter is seen at those in north Chugoku region. The Ps waves from both the oceanic and continental Moho discontinuities are observed in Kyushu, north Shikoku and south Chugoku regions. The P-wave receiver functions are analyzed by weighting coefficient stacking method (Girardin and Farra, 1998) to estimate anisotropic structure of seismic waves. From azimuthal variation of Ps-wave amplitude on the stacked receiver functions, we obtain regional variation of hexagonal-axis orientation in the oceanic crust just above the Philippine Sea plate. The regional variation of the axis orientation is shown to be highly correlated with configuration of the oceanic crust subducting beneath southwest Japan.