

## Shear-wave splitting in the central part of Japan

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This paper investigates shear-wave splitting beneath the central part of Japan using local S phases to constrain a spatial pattern of mantle flow generated by the subduction of the Pacific and Philippine Sea plates. This region includes the arc-arc junction, where the direction of the plate motion is changed relative to the trench axis, and consequently, the oblique subduction is taking place beneath the Izu-Bonin arc in contrast with the normal subduction beneath the NE Japan arc. Therefore this region is an excellent natural laboratory for studying the effect of local slab geometry on mantle corner flow. Detailed investigation of shear-wave splitting in subduction zones would provide important information concerning tectonic deformation and dynamic process of the mantle wedge.

Waveforms of 246 intermediate-depth earthquakes recorded at 167 seismic stations were used, and 808 splitting parameters, the leading shear-wave polarization direction (fast direction) and delay time between two split waves, were observed. Obtained results show that in the southern part of Tohoku most of fast directions observed at stations in the back-arc side are nearly NW-SE, whereas those at stations in the fore-arc side are N-S. We found that in Kanto fast directions sub-parallel to the plate convergence direction are observed even in the fore-arc side, inconsistent with the observations in the NE Japan arc. Fast directions polarized in E-W are observed in Tokai district and those polarized in N-S are observed around the Hida Mountains, which are consistent with the previous studies [e.g., Ando et al., 1983; Hiramatsu et al., 1998].