

## The depth of the Moho beneath the Kyushu district, southwest Japan, as derived from receiver functions

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Oblique subduction of Philippine Sea Plate beneath southwest Japan and spreading of Okinawa trough form several grabens and faults in the Kyushu district. We discuss about the depth of the Moho in the Kyushu district and its tectonic meaning.

The depth of the Moho has been examined with receiver function (RF) analysis. In order to estimate RFs, we have used waveforms of teleseismic events (Origin time: Aug. 1996 - Jul. 2008, Magnitude: over 5.5) observed at 121 stations (63 stations of Hi-net, 10 stations of Aso Volcanological Laboratory, Kyoto Univ., 23 stations of Kyushu Univ., 10 stations of Kagoshima Univ. and 15 stations of JMA) in the Kyushu district. Time domain RFs have been converted to depth domain with a velocity model, JMA2001. Depth domain RFs have been projected onto some vertical sections.

Our results show that the Moho is shallow beneath the east coast of Kyushu (about 30 km in depth). Previously, Nakamura et al. (2002) detected the depth of the Moho with analyzing Sp conversion phases and indicated that the Moho slopes upward eastward, while Oda and Ushio (2007) analyzed P-wave travel times and indicated that it slopes downward eastward. Our results are comparable to those of Nakamura et al. (2002). Our results also indicate that the Moho beneath Satsuma Peninsula, Kagoshima Gulf and Osumi Peninsula is shallow (about 28 km in depth).

In the central part of the Kyushu district, a series of grabens extends from Beppu to Shimabara (Beppu-Shimabara graben). Tada (1993) indicated that Beppu-Shimabara graben is a part of Okinawa trough, and a crustal thinning causes a gravity anomaly of Shimabara Peninsula. From our results, the depth of the Moho beneath Beppu-Shimabara graben is not different from that beneath the area outside of the graben.

Aoki and Kagiya (2006) indicated that the crust beneath Kagoshima graben is thinner than that beneath the area outside of the graben. However, our results showed that the Moho beneath Kagoshima graben is not shallower than that outside of the graben, though the Moho beneath Satsuma Peninsula, Kagoshima Gulf and Osumi Peninsula is shallow.