The image below Mt. Fuji from receiver functions

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The average eruption rate of Mt. Fuji has been much larger than most other island-arc volcanoes in Japan. The typical eruption product from an island-arc volcano is andesitic, while Mt. Fuji has erupted basaltic products. To understand the magma-plumbing system, we have to reveal the structure below Mt. Fuji. Even though the region around Mt. Fuji is a very active tectonic zone, the seismicity below Mt. Fuji is quiet, resulting in little knowledge about the structure of the Philippine Sea (PHS) Plate below Mt. Fuji.

In this study, we estimate the structure of the PHS plate below Mt. Fuji using a receiver function (RF) technique. This method is an effective tool in the seismic investigation of

velocity gaps. First, we draw the depth contour map of the PHS plate by calculating cross sections of the RFs. Then, we perform forward modelings and construct the detailed

structure below Mt. Fuji.

As a result, we find two boundaries below the region around Mt. Fuji, which are interpreted as the Moho-boundary of oceanic crust in the PHS plate and the velocity gap in the upper mantle. However, the Moho-boundary is unclear just below Mt. Fuji, and a high velocity boundary coming up from beneath the interpolated Moho-boundary of the surrounding PHS plate. The shape of this layer is similar to the low resistivity zone obtained from magnetotelluric data. We interpret this region as part of the magma-plumbing path of Mt. Fuji, and the magma of Mt. Fuji is ascending from beneath the PHS plate.