

## The amplitude anomaly distribution of deep intraplate earthquake in Philippine-Sea plate at Kyusyu district

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The Philippine-sea plate is subducting at a high dip angle under Kyusyu district (e.g. Shiomi et al., 2006). There are active volcanoes on Kyusyu district. The low velocity and high attenuated zones are found under the volcanic front and its west region, and the high velocity and low attenuated Philippine-Sea plate are also found, from the distribution of velocity tomography (Matsubara et al., 2006) and attenuation tomography (Sekine et al., 2006). In addition, it was known that the deep earthquake under Kyusyu had the zone of abnormal seismic intensity on the western part of Japan, and the zone is created by trapped wave in Philippine-Sea plate.

We found notable features on the seismograms recorded by Hi-net tiltmeters and F-net broadband seismometers of Ohita-ken Chubu earthquake (Mj 6.2). The maximum seismogram amplitude over 2Hz on west of the epicenter was smaller than the one on east of epicenter, remarkably. However, the maximum seismogram amplitude below 0.5Hz was opposite. The maximum seismogram amplitude on east of the epicenter was small, remarkably. It is known that maximum amplitude of low frequency seismogram is affected by the earthquake mechanism. Since the mechanism of the earthquake can not solely generate such a remarkable difference, we have to incorporate the three-dimensional inhomogeneities of intrinsic attenuation for the explanation of the characteristics of the observed seismograms. Therefore we study about the region of intrinsic attenuation.

To obtain more broad information on the attenuation observed at the earthquake, we examined maximum amplitude distribution at two frequency bands over 2Hz and below 0.5Hz. We found the large amplitude area of maximum amplitude over 2Hz was distributed from Kyusyu to Okayama, and that area near Okayama finished, suddenly. The area shape showed good correlation with iso-depth contours of Philippine-Sea plate [Shiomi, 2006]. Furthermore, the distribution is similar to the synthetic amplitude distribution which was calculated by Sekine et al. (On S230 session). This suggests the existence of trapped-wave in the Philippine-Sea plate at a high frequency band. In other word, it is the zone of abnormal seismic intensity. The maximum amplitude below 0.5Hz roughly decreases with increasing distance. However, we found small amplitude region which was laid from Ohita prefecture to west side of Cape Ashizuri, in Kochi prefecture. This distribution is different pattern to the maximum amplitude distribution over 2Hz. Moreover, this small amplitude region is not similar to the synthetic amplitude distribution. Therefore, the small amplitude region suggests the strong intrinsic attenuation of low frequency wave exists under the Bungo-channel.