

## Vp/Vs structure of the subducting Pacific plate near the Japan Trench by wide-angle seismic experiments

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We have shown that the Vp of the oceanic crust and upper mantle near the Japan Trench is significantly reduced as compared to that in the Northwestern Pacific Basin [Shinohara et al., 2008]. Since the velocity reduction is observed under the well developed horst-graben system, it is interpreted to be accompanied with the normal faulting caused by lithospheric bending near the trench. However, it is necessary to know Vp/Vs structure to understand what process is responsible for the velocity reduction.

In this study, we analyzed S wave travel time data obtained by airgun OBS seismic experiments made at the inner trench (line IT, 20 km landward of the trench) and outer rise (line OR, 80 km seaward of the trench) areas of the Japan trench by R/V Hakuohmaru KH07-03 Leg2 cruise. Although it is difficult to give accurate estimation of Sn velocity because of unclear appearance of Sn phases, we observed clear shear wave arrivals on the OBS records enabling us to estimate Vs of the oceanic crust. Vp/Vs ratio in the oceanic crust beneath the line OR was 1.8-1.9, almost the same as or slightly larger than that beneath the NW Pacific basin. This indicates velocity decrease in the oceanic crust (Vp decrease ~4% in the layer 2 and the layer 3) possibly be caused mainly by fracture [Carlson and Miller, 2004]. We are now estimating a Vs structure beneath the line IT. These results will enable us to discuss about how the oceanic crust is deformed according to the plate bending near the trench more detail.