

Density structure model of western part of Japan - Fujihashi-Kamigori profile and reanalyzed Kurayoshi-Hanabusa profile -

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The P and S wave velocity structure model beneath the refraction and wide-angle reflection profile of Fujihashi-Kamigori, western part of Japan, was determined by Otsuka and Moriya (2001) using the ray tracing method. The P wave velocity structure beneath the Kurayoshi-Hanabusa profile which was also located in the western part of Japan was reanalyzed. The two profiles are across each other at the northern part of Lake Biwa. From those analyses, the thin layer whose P wave velocity is 5.5 km/s is guessed to spread over widely in the western part of Japan and the thickness of the crust is thicker than other parts of Japan. The depth of the Moho discontinuity is about 37 km.

Gravity anomalies along above two profiles are also calculated and density distributions of each profile are determined. The much detailed Bouguer anomaly map of the western part of Japan made by the Gravity research group in Southwest Japan (2001) is used for observation values of gravity anomalies. Bouguer anomalies changes about 50 mgal in the Fujihashi-Kamigori profile and about 70 mgal in the Kurayoshi-Hanabusa profile. It changes from positive to negative in the western part of Lake Biwa. Gravity values along profiles are calculated by Talwani's method (1959). Density distribution of each profile are as follows.

Fujihashi-Kamigori profile: sedimentary layer 2.24-2.48; 5.5 km/s layer 2.59-2.65; upper crust 2.59-2.71; lower crust 2.80-2.81; uppermost mantle 3.27 (g/cm³) Kurayoshi-Hanabusa profile: sedimentary layer 2.24; 5.5 km/s layer 2.61-2.62; upper crust 2.67-2.76; lower crust 2.80; uppermost mantle 3.22 (g/cm³)

References

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