

SUB-BOTTOM PROFILING RECORDS OF THE DEEP SEA FLOOR AROUND THE CENTRAL INDIAN RIDGE (CIR)

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Diving cruises of Shinkai6500 had performed at Edmond site and Kairei site, near the central axis and at western megamullion on the segment1 area and at eastern Uraniwa-hills during the YK05-16 cruise of Yokosuka.

Sub-bottom profiling records from Sinkai6500 were successfully obtained in 8 diving cruises out of 10 total dives.

To produce sub-bottom profiling records we assumed the constant speed of Shinkai6500 to be 0.5 knot and reconstructed the profile with together the CTD depth data of Shinkai6500.

Judging from the sub-bottom profiling records thin semi-transparent soft sediment had layered on lava basement by the thickness of 0 to 3.5m at most.

The sub-bottom profiler cannot penetrate so deep on the sandy sediments of continentals lobe around Japan due to it's high frequency and weak power, but in case of mid oceanic ridge the record is very clear because the sediment is soft and homogeneous and usually there is no other type of material than soft sediment and hard lava.

There is no record of sediment where lava only exists at the ridge axis (926). It accumulates thinly around the hydrothermal sites by the order of 50cm according to the sub-bottom profiling records (918,923).

About 1.2m sediment can be recognized on the western megamullion, and it seems that obviously an accumulation layer is thicker than the ridge axis area, although the layer thickness distributes very broad, particularly on the slope area (919,921).

About 3.5m thickness of sediments are recognized at the thickest part in the sub-bottom profiling records at the eastern Uraniwa-hills (922,925), and the cause is thought that the age of Uraniwa-hills are older or sedimentation rate is particularly high at that spot.

During the diving cruise at the southern end of the Segment3, rather thick sediment was recognized from the window of Shinkai6500 and approximately 1.5m sediment was also recognized on the record of sub-bottom profiler (924).

Although the reflection strength of multi-narrow-beam echo-sounder at the point was presumed to be high in the beginning of cruise, the strength of reflection recorded just at the morning on the day is proved to be weak finally.