

## Along axis variation of crustal structure of fast-spread oceanic crust: Evidence from the northern Oman ophiolite

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Although crustal thickness does not vary with spreading rates with the exception of very-slow spread oceanic crust, architectures of crusts vary with spreading rates. The thickness of the upper oceanic crust (lava and sheeted dike complex) decreases with increasing spreading rates at intermediate to ultra-fast spread oceanic crusts. This implies that the gabbroic section thickens with spreading rates. The lava layer seems to become thicker, while sheeted dike complex becomes thinner with spreading rates. Thus, a systematic change of the crustal structures is expected with spreading rates for intermediate to ultra-fast spread oceanic crusts.

On the other hand, the crustal structures are also affected by segment structure. Nicolas and Boudier (1996) proposed a crustal structure of fast spread oceanic crust based on the Oman ophiolite studies. They showed that the thickness of gabbro layer is thinnest at the segment center and becomes to thicken away from the segment center. In contrast to this, the thickness of mantle-crust transition zone is thickest at the segment center and becomes thinner away from the center.

We show along axis variations of ridge segment based on several lines of evidence recently obtained from the northern Oman ophiolite. Systematic variations of magma system such as extraction of melts from mantle, regional variation of mineral compositions of the basal part of layered gabbro and mantle-crust transition zone, and crustal architecture were detected along the ridge segment in the northern Oman ophiolite.