

Petrological characteristics of upper mantle of the Oman ophiolite: implications for evolution of ophiolites

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The Oman ophiolite had been formed through more than one tectonic setting. Detrital chromian spinels in recent wadi sediments derived from the upper mantle section frequently show high Cr#s ($= \text{Cr}/(\text{Cr} + \text{Al})$ atomic ratios), higher than 0.6, indicating a high non-oceanic character for the mantle. Preliminary analyses on in-situ rocks demonstrates that only discordant dunites have the high-Cr# spinels. This suggests a transition from mid-ocean ridge to supra-subduction zone environment for the Oman mantle crust formation.