

Fabric development of uppermost oceanic lithosphere preserved in the mantle sections drilled by Oman Drilling Project

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Oman Ophiolite is the largest ophiolite that preserves structures of the crustal section including volcanic rock, sheeted dike, gabbro and the mantle section consisting of peridotites. Oman Drilling Project has drilled cores penetrating from the lower crust to the uppermost mantle including the crust–mantle transition zone. Structural characteristics within peridotites from 3 holes at BA site and 2 holes at CM site have been described during the Oman Drilling Project Phase 2 from 5th August to 3rd September, 2018 on board D/V Chikyu. The peridotites consist of intensely serpentinized harzburgites containing elongated and aligned pyroxene grains and dunites. In this study, we observed peridotite textures derived from BA1B, BA3A and BA4A as well as CM1A and CM2B, and performed electron backscatter diffraction (EBSD) analyses to understand the characteristics of mantle flow. In EBSD analyses, peridotite textures have been reconstructed by extrapolation of the data, as they were obscured due to intense serpentinization.

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