

## Petrological structure of the uppermost mantle from the northern Oman ophiolite: an example from Wadi Fizh

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We petrologically examined ultramafic rocks for about 72m in depth beneath the layered gabbro along Wadi Fizh in the northern Oman ophiolite. I tentatively call the lower end of the layered gabbro seam 'Moho' in this paper. Wehrlites are predominant just beneath the Moho, and change to harzburgites through dunites in 10m in depth. Network-like gabbro sills increase in frequency within the dunite-wehrlite section.

In the harzburgites, aggregates of orthopyroxene are progressively reduced in size upward to the Moho, and spinels which are commonly associated with the orthopyroxene aggregates progressively increase their idiomorphism.

Mineral chemistry shows systematic variations upward to the Moho; (1) the Fo content (91 to 86) and NiO (0.4 to 0.2 wt%) of olivines decrease and (2) the Cr/(Cr + Al) atomic ratio (0.5 to 0.6) and TiO<sub>2</sub> content (nil to 1.5 wt %) increase and the Fe<sup>3+</sup>/(Cr + Al + Fe<sup>3+</sup>) atomic ratio (0.05 to 0.2) in spinels increases from the harzburgite through the dunite to the wehrlite.

Geological, petrographical and mineral chemical characteristics can be explained by peridotite/magma interaction including incongruent melting of orthopyroxene around the Moho.

The interaction was most prominent at the Moho and decreased with a distance from the layered gabbro.