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## Petrology of Cr-rich Podiform Chromitites of Bulqiza, Eastern Ophiolitic Belt, Albania

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The ultramafic massif of Bulqiza, which belongs to the eastern ophiolitic belt of Albania, is a major source of metallurgical chromitite ore. The massif consists of a thick (>4 km) sequence, composed from the base upward of tectonized harzburgite with minor dunite, a transitional zone of dunite, and a magmatic sequence of wehrlite, pyroxenite, troctolite and gabbro. Only sparse, refractory chromitites occur within the basal clinopyroxene-bearing harzburgites, whereas the upper and middle parts of the peridotite sequence contain abundant metallurgical chromitites. The transition zone dunites contain a few thin layers of metallurgical chromitite and sparse bodies are also present in the cumulate section. The Bulqiza Ophiolite shows major changes in thickness, rock type, and chemical composition from west to east as a result of its complex evolution in a suprasubduction zone (SSZ) environment. The peridotites show abundant evidence of mantle metasomatism at various scales, and mineral compositions suggest formation in a forearc. The composition of the melts passing through the peridotites

changed gradually from arc tholeiite to boninite due to melt-rock reaction, leading to more Cr-rich chromitites in the upper part of the body. Most of the massive and disseminated chromitites have high Cr numbers (70–80), although there are systematic changes in olivine and magnesiochromite compositions from harzburgites, to dunite envelopes to massive chromitites, reflecting melt-rock reaction. Compositional zoning of orthopyroxene porphyroblasts in the harzburgite, incongruent melting of orthopyroxene and the presence of small, interstitial grains of spinel, olivine and pyroxene likewise attest to modification by migrating melts. All of the available evidence suggests that the Bulqiza ophiolite formed in a suprasubduction zone mantle wedge, in which the magma composition changed gradually with time.

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