

## Fabric developed in the Horoman peridotite complex, Hokkaido, Japan

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The Horoman ultramafic complex in Hokkaido, Northern Japan, has a characteristic layered structure and is identified as 'Alpine-type' peridotite. The geological structure of the area shows a gentle to open synclinal structure in the southern half of the body. The major scale folds axes run NW-SE and the mineral lineations show dipping in the north. These folded structures are cut by a northwest-to-southeast trending fault with a steep northward dip. Lattice preferred (LPO) and Dimensional preferred (DPO) orientations of olivine in the peridotite complex were measured in thin sections on the XZ and YZ planes using an optical microscope with a universal stage. The LPO of olivine in the peridotite complex (spinel lherzolite, plagioclase lherzolite, harzburgite and dunite) in the Lower and Upper Zone is distinguished into two types: concentrated and diffuse fabrics. The concentration LPO developed in the porphyroclastic texture (mylonite), such as Z axes form a point maximum that tends to be slightly oblique to the direction of foliation; X axes are roughly perpendicular to the mineral lineation on the foliation; and Y axes are scattered roughly around Z axes. The asymmetric LPO patterns with respect to foliation and lineation indicate a top-to-the-north sense of shear, and the mylonite of the Lower and the Upper zone appears to have been formed by mylonitization, at the same lower temperature (above 1100 degrees) during solid state flow. The diffuse fabric of LPO, developed in an irregular micro-fold structure with an array of medium to coarse grains of olivine on the YZ plane, is similar to the LPO patterns of cumulate rocks produced by magma. The irregular micro-fold structure may have been formed as a result of turbulent magma flow.

The magmatic flow fabric that has developed in the peridotite complex may be evidence of turbulent magma flow in the mantle diaper and magma chamber during uplift of ultrabasic magma from the upper mantle.