# SPINEL PERIDOTITE AND PYROXENITE XENOLITHS FROM PLIOCENE BASANITES OF UDOKAN VOLCANIC FIELD, BAIKAL REGION, RUSSIA

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Cr-diopside mantle xenoliths from Pliocene basanites of Kuas Lake may be divided into: (1) spinel lherzolites, (2) dunites and spinel harzburgites, and (3) spinel websterites. Clinopyroxene of lherzolites have transitional composition between those from harzburgites and websterites. Mg#=100Mg/(Mg+Fe) varies between 89 and 94. Orthopyroxenes in most xenoliths have a Mg# from 89.5 to 93 and contain and 2.2-5.7 wt.% Al2O3. Composition of olivine in most nodules is Fo89.3-91.5. Spinel vary in Cr# [=100Cr/(Cr+Al)] from 42 in dunites and harzburgites to 3-5 in websterites.Ion microprobe data were obtained for some clinopyroxenes. Most of them are enriched in LREE and variably depleted in HFSE. Clinopyroxene from lherzolites and websterites are distinguished from those from harzburgites. Clinopyroxenes from websterites have flat REE distribution, significant Nb-depletion and light Zr- and Ti-depletion. Clinopyroxenes from lherzolites has U-shape patterns with LREE-enrichment. Harzburgites contain clinopyroxenes with strong LREE and less obvious MREE-enrichment and HFSE-depletion. Harzburgites and dunites show highest equilibrium T (average 1050oC). Lherzolite have average T=1010oC. Websterite correspond to the lower T (average 930oC).Clinopyroxenes from depleted Kuas peridotites show a range of trace element enrichment through interaction with mantle fluids or small melt fraction. LREE enrichment and related HFSE depletion are mostly explained by chromatographic effect of small melt or fluid fraction percolation through peridotite, accompanying by mineralogical reactions. Harzburgitic clinopyroxenes correspond to the lower (high-T) part of column (near 60-50 km depth) and have most evolved patterns. Lherzolitic and websteritic clinopyroxenes (50-40 km) with least evolved composition appropriate to the upper part of column.