

Harzburgite melting process accompanied by dunite formation -the case of the Iwanaidake peridotite mass-

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The Iwanaidake peridotite mass consists mainly of harzburgite, with small amounts of dunite, and very little amount of websterite, chromitite, orthopyroxenite and clinopyroxenite.

The Mg# of olivine and Cr# of spinel are higher and NiO wt% of olivine is lower in dunite than those in harzburgite surrounding. There is good correlation between orthopyroxene mode and chemical compositions; the less orthopyroxene mode, the Mg# of olivine and Cr# of spinel increase and olivine NiO wt% decreases.

From experiments and model calculations, harzburgite is considered to have been melted heterogeneously and incongruently. Dunite can be interpreted as intensely melted part under melt or fluid existence.