

Fluid and melt inclusions in minerals of the Dzhugdzhur-Stanovoy belt anorthosites (Russian Far East)

¹KARSAKOV L.P., ²BERDNIKOV N.V.^{1,2} Institute of Tectonics and Geophysics, Russian Academy of Sciences, Khabarovsk, Russia.

In the Siberian platform South-East, among Early Archean granulites of the Aldan-Stanovoy Shield, there occurs one of the largest in the world the Dzhugdzhur-Stanovoy anorthosite belt. The total area of its massifs' outcrops is up to 12 000 km², their structural position is defined by the confinement to the Stanovoy fault system. Anorthosites make up plate-like plutons tilted towards the Siberian platform. Their isotopic age is 1700-1800 Ma. In anorthosites' plagioclase there were found solid-phase inclusions with $T=1210^{\circ}\text{C}$. This temperature is assumed as the minimum during anorthosites' crystallization. Rare fluid inclusions in plagioclase contain practically pure carbon dioxide based on which the crystallization pressure from 5 to 5.5 kbar was calculated.

Anorthosites are penetrated by small massifs of Early Proterozoic gabbroids. Melt inclusions in their minerals are homogenized at 1200°C , and fluid inclusions are filled with liquefied methane. Pressure of gabbroids crystallization is 3.2 kbar.

We associate formation of anorthosites and gabbroids with mantle plumes manifested under intraplate conditions. Differing fluid regime and pressure of crystallization of these rocks testify to their genetic heterogeneities and are explained, as we think, by the relation with metamorphism of host rocks. Emplacement of anorthosites near the peak of metamorphism caused their fluid regime being correlative with the granulites' carbon dioxide regime. Crystallization of gabbroids at relatively high and "cool" crust levels has lead to their fluid regime having not experienced considerable changes and reflecting deep restored fluid specialization of the plume's substance.