

Origin of peridotites from Atlantis Bank, SWIR, deduced from REE contents of clinopyroxenes

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Genesis of spinel peridotite and plagioclase-spinel peridotite obtained from slopes of Atlantis Bank, SWIR, is discussed based on in-situ REE analysis on cpx by SIMS. Clinopyroxenes from plagioclase-free spinel lherzolite have strongly LREE-depleted chondrite-normalized REE patterns. On the other hand, clinopyroxenes in plagioclase-bearing spinel lherzolites are more enriched with LREE and MREE than those from plagioclase-free lherzolites, and have flat REE patterns. The latter characteristically have distinct negative Eu anomaly. The melt in equilibrium with cpx in plagioclase lherzolite is lower in REE contents than MORBs obtained from Atlantis II FZ, which are, on the other hand, within the range of the melts equilibrated with plagioclase-bearing spinel lherzolites. This strongly indicates that the plagioclase-bearing lherzolites were residue formed by melt-induced partial melting with various amounts of melts remained.