Melting processes in peridotites under hydrous condition: Consideration from the KLB1-melting experiments

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We compared the results of KLB1-melting experiments and petrological features of the depleted peridotite massif. By using of the Pt-Re double capsule, we could maintain fO2 close the upper-most mantle (about FMQ buffer) and get the accurate behaviour of spinel, which is very sensitive to oxygen fugacity. The Iwanaidake peridotite , one example of the depleted peridotites, is mainly composed of harzburgite with small amount of dunite and has high Fo-olivine and high-Cr spinel. However, this experiment of simple batch melting could not replay the behaviour of spinel seen in this massif. This massif has been estimated to be strongly influenced by water, therefore, this high-Cr spinel may also have been formed by melting in some hydrous conditions.