

Geochemical features of subduction-zone fluids based on in-situ observation of fluids and melts under high-pressure

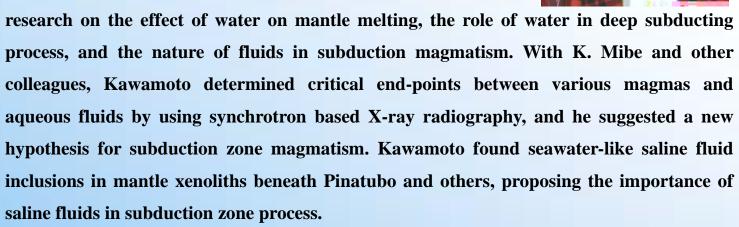
and high-temperature conditions

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Dr. Tatsuhiko Kawamoto of the Institute for Geothermal Sciences of Kyoto Univ (Japan) is world famous for his excellent



Abstract

Slab-derived supercritical fluids are likely to separate into melt and fluid in the mantle wedge (Kawamoto et al., 2012, PNAS). Findings of saline fluids from sub-arc mantle peridotite indicate that aqueous fluids in mantle wedge can contain 3.7 wt% NaCl in Ichinomageta, Northeast Japan arc (Kumagai et al., 2014, CMP) to 5.1 wt% NaCl in Pinatubo, Luzon arc (Kawamoto et al., 2013, PNAS). Synchrotron radiation XRF analysis is conducted to study Rb, Sr, and Pb partitioning between aqueous fluids and melts (Kawamoto et al., 2014, EPS). We suggest that slab-derived components have compositional features consistent with a saline fluid and a melt, which can be formed through a separation of a slab-derived supercritical fluid (Kawamoto et al., 2012).