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Two magmatic series through separation of slab-derived supercritical fluid into aqueous fluid and melt

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We will review two magma series, which was originally observed by Kuno (1950, Geological Society of America Bulletin) and suggested by his successors, and present a new working hypothesis including separation of supercritical fluids in mantle wedge. We show our recent sets of data of elemental partition between aqueous fluid and melt under high-temperature and high-pressure conditions and address our hypothesis.

Keywords: water, magma, high-pressure and high-temperature, chemical composition, synchrotron X-ray, subduction zone