Chemical characteristics of aqueous fluids from subducting slabs: Constraints from high-temperature and high-pressure experiments

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I will review the recent experimental results as follows: (1) stability of hydrous minerals in slab materials. They deliver water beneath volcanic arcs. (2) Dihedral (wetting) angles between minerals and fluids. The PT conditions of the dihedral angles and the stability of hydrous minerals allow us to know about the mobile fluid in the slab and the mantle wedge. (3) Chemistry of silicates dissolved in to aqueous fluids. This understanding explains the dihedral angles. (4) Critical conditions between fluids and magmas. The location of the second end critical point between magmas and fluids will tell us about the chemical nature of fluids from the slab and has an important role in the magma generation.