Deep Earth water in the mantle and core

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Water is the most abundant volatile component in the Earth, and it has been transported into the Earth interiors by subducting slab during the Earth history. High pressure experimental and computational works have been clarified that various hydrous minerals, such as dense hydrous magnesium silicate (DHMS), were stable under high pressure and high temperature conditions corresponding to the Earth interiors. In addition, it is clarified that nominally anhydrous minerals under high pressure can accommodate significant amount of water in the crystal structures. Actually, some high pressure hydrous minerals such as hydrous ringwoodite were discovered in diamond inclusion, and the Earth interiors would be hydrous condition at least locally. The dehydration melting phenomena and the behavior of the generated hydrous magma also should have an important role for the Earth evolution. In this session, we welcome the various topic corresponding to the subject of “deep Earth water in the mantle and core”.

Suggested invited speaker: Eiji Ohtani (Tohoku University, Japan)

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