

Origin and evolution of water in the Earth inferred from geological evidences

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The persistent liquid ocean is a result of balance between input and output of water through the Earths mantle; however, the mass of ocean could be markedly reduced since Archean and might be disappeared in future. In this project, we plane to investigate the origin and evolution of water in the Earth, based mainly on D/H ratio of fluid inclusion, water content of primary magma and it time evolution, and water transportation into the mantle at subduction zone. Integrating these evidences, quantitative estimate of mass of liquid ocean through Earth history will be discussed.

Keywords: water differentiation in the Earth, water evolution in the Earth, water transportation into the Earth