Hydration experiment of obsidian and hydration-rind dating of Izu-Niijima volcano

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As Niijima volcano are composed mainly of fresh glassy rhyolite, it is possible to use the hydration-rind dating. One of the possible error sources of this method is the hydration during the cooling of lava flow. Thus it is important to know the effect of hydration during the cooling. In the present study, We attempted to examine the hydration of volcanic glass under the condition of super-heated steam current. Based on the comparative study of the hydration-rinds between natural and artificial, we can distinguish the hydration-rinds between formed at the cooling stage and at the stage after cooling,, and found that the hydration-rind dating reported by Taniguchi (1980) is applicable to Niijima volcano. Thus we estimated the absolute ages of each eruptions in Niijima volcano.