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Reexamination of Hachoudaira caldera eruption in Miyakejima Volcano

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Collapse caldera is a common volcanic structure in basaltic volcanoes. To make an effective forecasting of the volcanic activity, we must understand the variations of eruption activities based on the eruption history of the post-caldera period of many volcanoes.

Miyakejima Volcano formed Hachodaira Caldera in 2.5 ka BP. The tephra sequence of Hatchodaira Caldera Eruption has been divided into 5 units; scoria fall deposit (Hachodaira Scoria), thick volcanic ash deposit with aqutionary lapilli (Hachodaira Ash), lahar deposit (Hachodaira Lahar Deposit), scoria fall and explosion breccia deposit (Furumio Explosion Breccia), in ascending order. However, based on our outcrops observation, the Hatchodaira Caldera Eruption tephra is composed of Hachodaira Scoria and Hachodaira Ash, only. On the basis of radiocarbon dating and stratigraphical relation, the age of Hachodaira Scoria and Ash and Furumio Explosion Breccia is different for 600 years . Moreover it became clear that the flank fissure eruption occurred within about 100 years after the Hachodaira caldera formation.

Keywords: Miyakejima Volcano, Hachoudaira caldera, Frumio explosion breccia, Volcanic stratigraphy, tephrochronology, Radiocarbon dating