

Detection of abrupt increase in CO₂ flux from a submarine volcano, Wakamiko, in the innermost part of Kagoshima Bay in July 2015

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CO₂ flux from a submarine volcano, Wakamiko, Southern Kyushu, Japan, has been measured since 2007. The CO₂ flux from the volcano were varied ranging from 160 to 360 ton/day from 2007 to 2014, but in 2015 the flux is significantly increased up to 500 ton/day calculated using the data obtained in July. In the next month, August 2015, significant volcanic tremors were started beneath Sakurajima Volcano, so large-scale eruption of the volcano had been expected. After that, volcanic tremors beneath Sakurajima Volcano declined within two weeks, and also CO₂ flux from Wakamiko Volcano observed in December was decreased to similar range before 2014. Magma chamber beneath Aira Caldera has been considered to provide magmatic volatile to Wakamiko Volcano and to be connected with another shallower magma chamber beneath Sakurajima Volcano. The volcanic tremors were considered to be associated with ascending of magma from the shallower magma chamber. Therefore, the detected abrupt increase of CO₂ flux from Wakamiko Volcano may reflect those magma activities.

Keywords: Wakamiko submarine volcano, CO₂ flux, Volcanic activity of Sakurajima Volcano