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The volcanic mitigation strategy for the eruption crisis - Case study of Kirishima volcanic complex, southern Kyusyu. Japan.

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Kirishima volcanic complex is a quaternary composite volcano located in southern Kyusyu, Japan. It occupies an area of about 20 km×30km elongated in the northwest to southeast direction and contains more than 20 eruptive centers, which have been repeatedly active.

Ohachi Volcano, one of the active vents in this area, suddenly restarted fumarolic activity on December 13, 2003, after 80 years dormancy. This gas emission was preceded by volcanic tremors. Ohachi has been very active through the historic time. The largest eruption occurred in 1235, producing large plinian column and issuing scoria flows and lava flows.

In order to mitigate volcanic disaster, we have to know the type of eruption and the size of disaster that are feasible. Numerical simulation is useful for examination of such issues. Using simulation, we can anticipate the extent of inundation area, the time required for the flow to reach a particular point, and morphological changes. However, when we perform simulations, it is crucial not only to understand the systematic of the simulation procedure but also to make the strategy and scenarios based on the geological evidences. It is because that the strategy and scenarios only provide the guidance for disaster mitigation plan.

In this presentation, 1) we will introduce the chronology of 2003 event of the Ohachi, 2) we will show how to establish a strategy and scenarios against the feasible disaster, 3) we will present the result of simulations for further eruption crisis. Finally, We will discuss several possible future hazards around the volcano using simulation and will examine key factors controlling the results.

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