

SVC063-P22

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## Experimental performance test of infrasound microphones

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After an explosive eruption of the Sakurajima volcano on October 3rd 2009, we observed a large difference in the infrasound waveforms recorded at adjacent stations within the Sakurajima.

Investigating the cause of the waveform difference within the island, we could not rule out the difference in the response of different types of microphone/microbarometers.

We have experimented five kinds of sensors Model 6000-16B(Nano-baro), MB2005, ACO, SI100, BK, in

an environment in which we artificially impose a pressure change mimicking large eruptions observed in the Sakurajima island. These sensors are plumbed by flexible hoses and pressure change is controlled manually by turning a pressure handle while monitoring the pressure inside the plumb. During the experiment, variety of waveforms recorded by two microbarometers Nano-baro and MB2005 are very similar, confirming that the imposed pressure change within the hose is not affected by the air flow inside the hose.

Because of the weaker frequency response at longer period, waveforms of three microphones ACO, SI100, BK cannot record correctly pressure change with a period more than 3-5 sec.

Keywords: infrasound microphone, microbarometer, barometer, comparative experiment, volcanic explosion, pressure change