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Transition of infrasound waveform by long-distance propagation - the explosive eruption of Sakurajima volcano -

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As a component of the International Monitoring System for CTBT's verification scheme, an array observation system for infrasound signals was installed at Isumi, Chiba (60 km SE of Tokyo) in November 2004. The system is about 2 km aperture array comprised of six stations, each of which is equipped with an MB2000 microbarograph whose resolution is 0.002 Pa in 0.02-4 Hz band.

The infrasound signals generated by the eruption of the Asama volcano on February 2009 2nd were observed at Isumi. Isumi is 200km away from the volcano. Fluctuation of the signal observed at Isumi was coincided directly with the volcanic activities. The Sakurajima volcano has been actively erupting since 2009, producing infrasound signals which are recorded also at Isumi. In order to investigate how the waveform changes as the infrasound travels about 1000 km from Sakurajima to Isumi, we installed microbarograph stations at three locations (Kirishima, Kii-Peninsula and Izu-Peninsula) between Sakurajima and Isumi. The sensors used in this experiment are the nano-resolution version of Paroscientific model 6000-16B, whose performance has been verified by parallel observation with MB2000 at Isumi.

We will report the observation results and discuss transition of the infrasound waveform by long-distance propagation.

Keywords: infrasound, volcanic explosion, pressure wave, microbarometer