

Intercomparison Observation of the Infrasond at Sakurajima Volcano

Toshiki Shimbori^{1*}, Kazuya Kokubo¹, Akimichi Takagi¹, Shin'ya Onizawa¹, Tetsuya Yamamoto¹, Keiichi Fukui², Shinobu Ando³, Yoshiaki Fujiwara⁴, Takayuki Sakai⁴, Hitoshi Yamasato⁴, Yoshihiro Ueda⁵, Koji Kato⁶, Masaki Nakahashi⁷, Shinichi Matsusue⁷

¹Meteorological Research Institute, ²Kakioka Magnetic Observatory, ³MEXT, ⁴Japan Meteorological Agency, ⁵Osaka DMO, ⁶Fukuoka DMO, ⁷Kagoshima LMO

For the purpose of detecting volcanic eruptions, the Japan Meteorological Agency (JMA) has been continuously monitoring the air shock with infrasond microphones which are installed near volcanoes. In the Meteorological Research Institute (MRI), for the purpose of investigating the characteristics of various infrasond sensors, intercomparison observation of the infrasond generated by the eruptions at Sakurajima volcano has been done with the cooperation of the Kagoshima Local Meteorological Observatory (KLMO) since 2009. The instruments for infrasonic observation are set up at Seto, Kurokami station which is about 4.7 km east-southeast of the Minami-dake summit crater. From comparison of the simultaneous observation data between the infrasonic piezoelectric microphone which is operationally used for volcano monitoring in KLMO of JMA and the infrasonic condenser microphone of MRI, it is found that the peak-to-peak value or the rms value of both infrasond wave forms are the same with each phase correction. In the presentation, the characteristics of amplitude, phase and wind noises of these infrasond sensors, including digital quartz barometer, will be reported.

Acknowledgements

We would like to thank Dr. A. Yokoo, Kyoto University, for his observation data.

Keywords: air shock, infrasond, infrasond microphone, pressure wave, barometer, volcano monitoring