

Seismic interferometry at active volcanoes in Japan: Analyses of seismic records of JMA for the period from 2012 to 2018

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We analyze the seismic records of JMA stations deployed at active volcanoes in Japan, to examine the basic characteristics of daily variations of seismic velocity changes in the shallow medium. About 20 active volcanoes are systematically analyzed at the frequency range of 0.5-4 Hz. Temporal changes of the seismic velocity changes calculated from comparison of 7 years averaged cross-correlations and 5-days ones show long-period changes with periods of a year and/or a few months. The frequency distributions of seismic velocity changes at each station pairs roughly follow the normal distributions with a standard deviation of about 0.2 to 1 percents. Several phreatic eruptions occurred at Kuchinoerabu-jima, Ontake, Hakone and Aso volcanoes during the observation period, but no significant change is observed in the seismic velocity changes. On the other hand, seismic velocity changes due to the strain changes by volcanic pressure sources, moderate and large earthquakes, and/or dike intrusion are observed at, for example, Sakurajima, Miyakejima, Izu-Oshima, Azuma and Tarumae volcanoes.

Keywords: Seismic interferometry, active volcanoes, seismic velocity change