

Volcano monitor using broadcast satellite signals

*Hiroshi Takiguchi¹, Tadahiro Gotoh¹, Masatake Harada², Jun Amagai¹, Mikio Satomura²

1.Applied Electromagnetic Research Institute, National Institute of Information and Communications Technology, 2.Hot Springs Research Institute of Kanazawa Prefecture

We cannot see the change of an internal active volcano condition directly by its geography then, perceiving of its activities is difficult. To mitigate disasters by eruption, continuous volcano activity monitoring system will be desired. Most active volcanoes radiate internal thermal energy as a water vapor, and this radiation is increase with increasingly active volcano. The propagation speed of electromagnetic signal in the neutral atmosphere is delayed by the change of refractivity, which is a function its temperature, pressure, and water vapor. Therefore, to measure the propagation delay changes on volcano crater may be possible to estimate the vitalization of active volcano. We have devised a volcano activity monitor using broadcast satellite signals. In this presentation, we describe the details of the system, and show the result of feasibility survey at Hakone.

Keywords: volcano, VLBI, broadcast satellite