

論文内容の要旨

論文題目 Very-Long-Period pulses at Asama Volcano
 inferred from dense seismic observation
 (稠密地震観測網による浅間山長周期地震の研究)

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We observed seismic events composed of a few one-sided velocity pulses with nearly 10s durations (hereafter called VLP pulses) using up to 14 broadband seismometers installed near the summit area of Asama Volcano. Particle motions did not point to a single source location despite their recti-linearities, suggesting a non-isotropic source mechanism. We conducted moment-tensor inversion analysis for these events using the Green's functions consisting of not only the seismometer's response to synthetic translational motions but also the seismometer's response to synthetic tilt motions, resulting in a source mechanism approximatable as a tensile-crack of 90° strike and 60° dip with 10^{12}Nm locating relatively north and 100-200m deep from the bottom of the crater. Time histories of moment-tensors are indicative of initial sudden pressurization and following gradual depressurization at the source region. However, gas amount estimated by SO_2 observation is smaller to explain the moment histories in the source region by pure gas movement. We propose a source model considering an inflow of liquid-gas mixture to solve the inconsistency about the gas amount.