

## Estimate of pressure source parameters by using the time sequence of crustal deformation detected in Izu-Oshima

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To evaluate pressure changes beneath a volcano by using the spatial pattern of the ground displacement, displacement differences between two moments are generally used. In this method, the time variation at the source can not be obtained. By using all of data during a whole period, source parameters which include the time function of pressure changes are estimated in this study. By this way, in the case of adopting the Mogi source, the time function of pressure changes could be estimated, in addition to position and an amount of pressure change of a source.

We tried to adapt this method to the ground deformation in Izu-Oshima. The time function of pressure changes was estimated by fitting it to a sextic function. Although Izu-Oshima volcano has been inflated in the long view, rapid changes of deflation and inflation have occurred intermittently. The significant rapid change was observed since July 2006 to August 2007. During this period, three variable pressure sources were evaluated by this method. One source, as a basic inflation source at a slow pace, is located in the northern part of the caldera at an inflation rate of about + 2 million cubic meters per year. Another one is located in the west part of the caldera at an amount of volume change of about - 3 million cubic meters, since July 2006 to January 2007. Another one is located in the central part of the caldera at an amount of volume change of about + 4 million cubic meters, since February to August 2007. These lay at a depth of about 5 kilo meters.