

## Magma intrusion model and simulation of magma intrusion process for Houei-Eruption of Mt. Fuji

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Anomalous crustal movements have been often observed accompanied with eruptions of volcanoes. The observation of crustal movements is one of the important methods for the prediction of eruptions. Actually, in case of the 2000 Ususan eruption and the 2000 Miyakejima eruption, it was very useful to monitor and watch volcanic activities almost on real time.

It was well known that rumblings had been felt in the eastern part of Mt.Fuji more than ten days before the 1707 eruption of Mt.Fuji. Intensive seismic swarm started from one day before the eruption. And a large amount of pyroclastic materials was erupted during the eruption. According to Yasui et al(1998), the magma of the 1707 eruption could have come up from under the gabbroic body, which was the solidified basaltic magma chamber, and have caught and brought the rocks from the gabbroic body up to the surface as cognate xenoliths during the eruption. So it may be reasonable for us to estimate these seismic swarm must be occurred by magma intrusion.

We will simulate the magma intrusion process for the 1707 eruption, interpreting crustal movements by an inflation model and a vertical tensile fracture model. And we will discuss the possibility of detecting the crustal movement by GPS and tiltmeters installed in and around Mt.Fuji.