

## Numerical experiments for seismic tomography using deep holes planned at Unzen volcano

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One of some plans in "Scientific drilling project at Unzen Volcano" is seismic tomography by using the boreholes. The purpose of this study is to consider how to set borehole and how to arrange the measuring instruments before carrying out the project. First we made an underground structure model of Unzen Volcano using the results of previous studies, and simulated seismic tomography identifying this model with the true structure. We located sources and receivers, and calculated synthetic seismograms at the receiver positions by the finite difference method. We then measured the first P arrival time of the synthetic seismograms, and constructed the observational equation for seismic tomography. We investigated the solution of this equation by the Singular Value Decomposition technique.