

Tomographic inversion of three-dimensional subsurface P-wave velocity structure beneath Unzen Volcano

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An explosion seismic experiment was conducted on November 30, 1995 to investigate a magmatic system beneath Unzen Volcano. Six chemical explosions were recorded at 292 temporary stations. In this study, we use 1203 first arrival times to invert three-dimensional P-wave velocity structure based on finite-difference calculations of the arrival times. We obtain the velocity structure down to roughly 1.0 km below sea level, in which a high velocity region is observed to the west of Fugendake. This high velocity region may be related to a pressure source estimated from geodetic measurements.