

## Imaging S-wave scatterer distribution around the focal area of the 2005 West off Fukuoka Prefecture Earthquake (MJMA7.0)

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S-wave reflectors and scatterers are considered to relate to the existence of liquid in the seismogenic zone of the crust, which plays an important role in understanding the mechanism of earthquakes. We studied a distribution of S-wave reflectors and scatterers in and around the hypocentral zone of the 2005 West off Fukuoka Prefecture Earthquake (M7.0). In order to discuss the relationship between this activity and the crustal heterogeneities, we deployed a temporal seismic network and a dense seismic array. For the stations in the seismic network, normal moveout processing (NMO) was applied to the data of the aftershock. Several S-wave reflectors could be identified from the NMO sections for every station. In particular, relatively strong S-wave reflectors exist in the lower crust at a depth of approximately 20 km in the middle part of the aftershock region. Additionally, reflectors were found beneath the fault planes of the main shock. This suggests a possibility of the correlation of the crustal heterogeneities to the occurrence of an earthquake. For seismic array data, waveforms of 22 natural earthquakes were analyzed in a frequency range of 16-24 Hz. It is difficult to estimate the inhomogeneous structure in this wavelength range with ordinary travel time tomography, in spite of its importance for understanding the earthquake-generating process. After filtering and gain recovery in the coda part, observed waveforms were semblance enhanced slant stacked into various directions from the array and then diffraction curve summation was applied in order to image the scatterer distribution. The spatial distribution of scatterers thus imaged shows that higher strengths are distributed at the SE-extension of the fault plane of the event, which corresponds to a region where the rupture of the main shock stopped.