# Estimation of the heterogeneity structure in the crust and the upper mantle beneath the Chugoku Region

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## 1. Introduction

In this research, we extract the features of heterogeneity structures beneath the M6~7 class earthquake source region and consider their relationships to the earthquake generating process. In San-in Area, because several M6~7 class earthquake occurred in last 140 years with the intervals 10~60 km, it is thought to be suitable to conduct such kind of analysis.

## 2. Analysis

We estimated the distribution of the S wave reflectors. We converted the travel time to the depth of the reflection plane by normal move out (NMO) correction assuming the S wave velocity 3.5 km/sec. Transverse component data were synthesized from two horizontal component wave form data and 10~25 Hz band-pass filtered. We also corrected the effects of geometrical and anelastic attenuation.

## 3. Data

We dealt with the 423 earthquakes with the magnitude more than 1.6 and with the depth shallower than 15 km during 2002/9/1 ~2003/5/31. We used the waveforms recorded at the stations of Hi-net and university network. The total number of the waveform traces was 4,617.

## 4. Results

We will refer to the features along the line 30km inland from the coast line of the Japan Sea. At the depths of 30~40 km, high reflection strength region was detected. This region is considered to be due to the Moho. Along the transverse line, the depth of this reflection plane is changing beneath the epicenter of the M6~7 class earthquake. At depth of 15~35 km beneath around the source region of the M6~7 class earthquake, which is thought to correspond to the lower crust, the reflection strength was very high. In the future, we will take into deeper consideration the relationship between the earthquake generating process and the heterogeneities extracted in this study.