

Near-surface structure around the K-NET Anamizu Site

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High-resolution S-wave reflection survey and S-wave VSP were conducted near the K-NET Anamizu observatory station, Ishikawa Prefecture, central Japan. The survey site has been characterized as a damage concentrated zone caused by the 2007 Noto Hanto earthquake. Aftershock observations (Yoshimi & Yoshida, 2007) and field geophysical surveys (Hayashi, et al., 2007) had revealed characteristic site amplifications in the zone and an irregular shape of bedrock surface beneath the overlying very soft sediments. However the detailed structure of the near-surface around the station was still uncertain. We then aimed to image the bedrock topography at the site along with to obtain geophysical properties of the near-surface, which could explain the specific seismograms recorded at the observatory station.

Two short seismic survey lines were set in northwest-southeast direction close to the observatory station. A 20-m deep borehole drilled at 23m southeast to the station was used for S-wave VSP. CMP stacked sections clearly imaged the bedrock surface and detailed structure in the overlying sediments down to 30 m in depth. The bedrock surface rises southeast from 16 m to 4 m within 20 m along the lines. Measured S-wave velocities ranged from 60 m/s to 80 m/s for the overlying soft sediments. The survey result was concordant with the previous surveys and provided useful data for the estimation of site amplifications.