

## Seismic Wave Attenuation in Deep Soil Deposits as revealed by the Deep Well VSP

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Seismic wave attenuation factors in deep soil deposits are estimated at four deep-borehole crustal activity observatory sites. The 3-component record of deep well VSP is transformed to the amplitude spectrum, then attenuation factors are determined by the spectral ratio method. The obtained factors for the deep soil deposit are  $Q_p=10 \sim 90$  for P-wave, and  $Q_s=10 \sim 50$  for S-wave, in terms of average Q between the reference depth and the concerned depth. The Q-value for the basement rock is estimated as about  $\sim 100$  only for P-wave, but that for S-wave is not obtained.