

Site characterization for urban seismic hazard in lower Manhattan,
New York City, from microtremor array analysis

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(seismic risk)가 , (seismic hazard)가
 , (Vs) bedrock
 Vs verse depth structure(Vs profile)
 SPAC (SPAtial Auto -Correlation)
 가 6 microtremor
 . SPAC modeling HVSР peak amplitude bedrock
 , soil Vs, ground amplification,
 site resonant frequency .
 microtremor 6 10, 30, 60m dimension triangular array 4
 30 .
 ±10%
 가 , Vs array length spectral bandwidth 50%
 가 , Soil Vs 15% 가 .
 , surface wave 1D Vs structure spectral
 amplification structure body wave amplification
 . SPAC 1D SH transfer function
 RATTLE Q
 30 가 Vs 2000m/sec 가 .
 6 (peak amplification) 15.5 Hz
 7.5 - 10 , peak spectral frequency Rayleigh ellipticity peak HVSР
 peak amplitude . 6 HVSР peak amplitude 1.4 - 5.5 Hz
 , 20m , HVSР peak frequency
 SH Rayleigh ellipticity peak .
 2.1 - 5.5 Hz . , HVSР data SPAC microtremor 가
 Rayleigh ellipticity peak, 1D SH amplification, peak HVSР .
 SPAC Vs
 verse depth structure(Vs profile) .