S-wave veolocity structure and ground motion characteristics of "loam terraces": Examples from the eastern part of Utsunomiya City, Tochigi Prefecture, central Japan

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S-wave velocity structure and ground motion characteristics of “loam terraces” are examined in the eastern part of Utsunomiya City, Tochigi Prefecture, northern Kanto Plain, central Japan. The microtremor array observations reveal that the average S-wave velocitity in the upper 30 m (AVS30) becomes lower and the peak frequency in the H/V spectrum sifts to the lower value in higher terraces. These are considered to be influenced by the thickness of the loam bed (S-wave velocity: ~150 m/s) covering gravelly terrace deposits. We should note that the relatively low frequency (1.5–2 Hz) ground motion would be more largely amplified in the higher terraces and hills compared with the lower terraces.

Keywords: S-wave velocity structure, ground motion characteristics, loam terraces, microtremor array observation, Utsunomiya City, Kanto Plain

