

Stratigraphy, physical properties, and ground motion characteristics of incised-valley fills of the Pleistocene Tokyo Formation beneath central Tokyo Metropolis

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The Pleistocene Tokyo Formation which is distributed beneath the Musashino Upland in central Tokyo Metropolis is composed of depositional cycles correlated with the Kioroshi (MIS5e), Kamiizumi (MIS7e), and Yabu (MIS9) formations of the Shimosa Group, Boso Peninsula (Naya et al., 2019a, b; Nakazawa et al., 2020). Although the Tokyo Formation consists mainly of sand and gravel beds with SPT N-values of 30–50 and S-wave velocities of more than 300 m/s, it also contains thick valley-filling mud deposits with SPT N-values of less than 10 beneath the eastern part of the Musashino Upland, Minato-ku, Tokyo. A drilling survey reveals that these mud deposits are composed of intensely bioturbated mud/sandy mud accumulated in an inner bay environment. These mud deposits exhibit S-wave velocities of 170–280 m/s and AVS30 of ~200 m/s. The peak frequency of 2Hz in the H/V spectra is observed by microtremor surveys around the drill site.

The Tokyo Formation is, thus, unequal in physical properties as it contains depositional cycles of various ages. Particularly we should take account of geological risk of the valley-filling mud deposits in this formation.

Naya et al. (2019a) Abstr. JpGU Meet. 2019, HQR05-10.

Naya et al. (2019b) Abstr. 126th Annu. Meet. Geol. Soc. Japan, 72.

Nakazawa et al. (2020) Bull. Geol. Surv. Japan, 71, 19–32.

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