

Study in Spatial Distribution of Sediment Strength in Omiya and north Musashino Uplands

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In order to investigate the N -values of underground sediments in Omiya and north Musashino uplands, isopleth maps were drawn using ArcGIS (ver 10. 3. 1, ESRI Japan Corporation). First, the summarized N -values data¹⁾ were referred and picked up the values of 3-m depth intervals. Then, by using the GIS software, each boring point was plotted and made isopleth maps of each 3-m interval. As a result, high N -value with the sediments composed by gravel is distributed in Musashino uplands, whereas low N -values less than 10 with mud and silt sediments between 24-33m depth in Omiya uplands. Sediment layers existing fossil shells are also pointed out in the original boring core data¹⁾ in Omiya uplands. The low N -value area is corresponded to the distributed area of Kioroshi formation, which deposited during Shimosueyoshi transgression. From these analyses of mapping data, it is concluded that it is important to choose it by not only surface landscapes but also considering the history of landscape development as well as geotechnical parameters such as N -values, when we decide the suitable low-cost construction site.

Keywords: N -value, Omiya upland, Musashino upland, Boring core sample, GIS