

## Reference on formation process and physical properties of the Holocene mud layer of the Yumeshima-oki core from Osaka Bay

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Geotechnical properties of the Holocene mud layer in the Osaka Plain and surrounding areas have slight differences, and are divided into three types such as Kobe (low consistency in general), Osaka (high consistency in the middle part) and Sennan type (consistency increasing upward). In this study, grain size distribution, total organic carbon, total nitrogen, radiocarbon dates of the Yumishima-oki core in the offshore of Osaka area were analyzed with consistency properties for clarifying the relation between the formation processes and geotechnical properties of the Holocene mud layer. As the results of the analysis, it becomes clear that clay content could be main factors of difference on consistency of the mud layer. During initial phases of the formation of the mud layer, the lower part of mud layer consists of relatively coarse grained particles under high sedimentation rate. After the filling the incised valley, clay content gradually increases upward under low sedimentary rate until high stand of sea level. High clay content and consistency are stable in the middle part of the mud layer. Subsurface the Osaka Plain, because the upper part of the Holocene mud layer consists of the bottom set of the deltaic sediments, clay content and consistency decreases upward. The upper part of the mud layer in the Yumeshima-oki core in the offshore area also decreases consistency with high sedimentation rate. Therefore, vertical variation on consistency of the Holocene mud layer in the Yumeshima-oki core and subsurface of the Osaka Plain were formed depending on changes of the sedimentation rate by the Holocene sea level change.