

Subsurface Geology in Kansai Area using borehole database and its properties

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In Osaka Plain, Pliocene to Quaternary sediment called Osaka Group and terrace sediment are deposited. These are covered with Holocene deposit at the lower plain and around Osaka bay area. These deposits include fifteenth layers of marine clay; refer to Ma-1, Ma0, and Ma1 to Ma13. Geological study indicates that these alternating clay layers are deposited due to glacial and interglacial cycle. Ma12 and Ma13 are Late Pleistocene and Holocene sediment respectively and are distributed near surface. Geo-database Information Committee of Kansai Area has developed the geotechnical database around Kansai Area. For the development of the geo-database, urban area has been focused because of its social and economical importance. More than 50,000 borehole data were collected and digitized. Basically, these data consist of information only soil classification (grain size), N values and some soil test data. However, these Sedimentary facies and N-values (one of the indices to indicate soil property on the point of soil engineering) are regarded as important indices to the subdivision and the continuity of the formation. In 2006, we conclude the distribution of these Ma12 and Ma13 marine layers around Osaka bay area using geological borehole data. However this distribution map is classified on the point of lithography and facies using sedimental environment. In this study, we applied the sequence stratigraphy around Osaka area, especially Holocene deposit. Some geological borehole data provide the deposit ages using volcanic ash and radiocarbon ages. After correlation between these borehole data, we can estimate to correlate the isochronous planes in it. This information can estimate the correlation around geotechnical borehole data. In this study, we would like to show the distribution of alluvium deposit around Osaka area and discuss of its properties.