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Sedimentary facies and environments of the latest Pleistocene to Holocene core (GS-KSO-1) in the Arakawa Lowland

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Sedimentary environments in a sediment core GS-KSO-1 (Kawagoe City, Saitama Prefecture) are reconstructed based on sedimentary facies analysis and radiocarbon dating.

The Arakawa Lowland, where GS-KSO-1 was taken, is a long and narrow alluvial plain, about 5 km wide, located between the Musashino and Omiya highlands. It is a branch of the Tokyo Lowland. The Tonegawa River, which is a largest drainage in the Kanto Plain, was passing through the other branch Nakagawa Lowland into the Tokyo Bay before the artificial rerouting of a stream in Edo era. However, it had been passed through the Arakawa Lowland until 4000 years ago (Kikuchi, 1981 Urban Kubota; Hirai, 1983, Geographical Review of Japan). Due to a large amount of sediment supply during most time of a post glacial sea-level rise, valley fills in the Arakawa Lowland is supposed to be sandier than the Nakagawa Lowland.

GS-KSO-1 is located near the upstream end of sea water incursion during the Jomon Highstand, so that it may provide important information about the reconstruction of valley fill processes. Sedimentary facies analysis and radiocarbon dating reveal that the paleo-coastline reached the most inland of the Arakawa Lowland around 8000 years ago. It does not agree with the peak of relative sea level curve in the area around the Tokyo Bay, possibly due to a large amount of sediment supply into the lowland that prevented the transgression.

Keywords: Arakawa Lowland, latest Pleistocene to Holocene, boring core, sedimentary facies, Jomon Transgression, Kawagoe City