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Holocene paleoclimate change in the Nakdong River delta (southeastern Korea) and role of Tsushima Warm Current

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Two drilled sediments (ND-01 and ND-02) in the Nakdong River delta (southeastern Korea) were obtained to trace the Holocene paleoclimate change and the role of Tsushima Warm Current. Age of drilled sediments was determined by AMS ¹⁴C dates. Lithostratigraphic division of both drilled cores are similar each other and corresponds to the variation of preliminary geochemical properties and microfossil (benthic foraminifera) assemblages. Pre-Holocene lithologic unit (> 10 ka) is characterized by rare CaCO₃ content, influenced by more terrestrial impact. A very thick transgressive basal sand (10~9 ka) indicates the onset of sea level flooding, above which the transgressive unit (~8 to 5 ka) was formed to show more marine influence. After ~5 ka, the highstand lithologic unit indicates the gradual increase of terrestrial effect by the Nakdong River. Stratigraphic distributions of the benthic foraminifera clusters analysed statistically represent a succession of paleoenvironmental conditions from the inner bay into the outer bay-outer shelf to inner shelf in the lower part of cores to the outer bay-outer shelf in the middle to upper section. Such benthic foraminifera assemblages support the gradual paleoclimate changes in response to the Holocene sea level rise. In particular, transient changes of benthic foraminifera in coincidence with the geochemical shift at ~8 ka might have been caused by the enhanced influence of the Tsushima Warm Current.

