

Holocene event deposits detected from Kushimoto, Wakayama prefecture, along the Nankai Trough

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We found several Holocene event deposits in Kushimoto where tsunami has been repeatedly attacked due to mega-thrust earthquakes along the Nankai Trough. Analyzing the drilling cores up to 9 m in depth, mean recurrence interval of event is estimated to 400-600 years. This result is consistent with our previous studies of tsunami boulders and uplifted sessile assemblages in outskirts area.

Drilling survey site is in the campus of Kushimoto-Koza high school located in tombolo of 500 m in width and 5.8 m in altitude. Obtained core samples show that at least 7 layers of fine-coarse sand are intercalated into humic silt-clay. Based on the lithofacies, it is inferred that sand has been intermittently transported into marsh or lagoon.

In the depth of 7.4 m, we found volcanic ash layer which is probably K-Ah tephra (ca 7300 yr BP). Radiocarbon samples in the depth of 4.1 m and 3.2 m were dated to 5570-5320 yrs BP and 4150-3980 yrs BP respectively. Archeological layer of late Yayoi period (1800 years ago) was also found in the depth of 1.8 m. Because seven sand layers were deposited between 5400 yrs BP and 1800 yrs BP, mean recurrence interval of event can be estimated to 400-600 years.

Cause of event deposits found in this survey is tsunami or storm, but its distinction is difficult. To identify tsunami deposit, it is necessary to consider synchronism with crustal movement reconstructed by microfossil analysis.

Keywords: Nankai Trough, Kushimoto, Holocene, tsunami, deposit