

Holocene sea-level record from a drilled core at land reclamation on reef crest in Okinawa Island

HONGO, Chuki^{1*} ; FUJITA, Kazuhiko¹ ; KAWASAKI, Yuko¹ ; MINEI, Shogo¹ ; SASAKI, Toru¹

¹Dept. Physics & Earth Sciences, University of the Ryukyus

Holocene sea level records provide the opportunity to understand reef formation history, mangrove development, and settlement by ancient people. Especially, the mid-Holocene sea-level record is important to accurate forecast coastal response to sea-level change in the near future because the amplitude of sea-level rise is similar to that of future sea-level rise. However, the magnitude and timing of Holocene sea-level records display great variability, inflecting ice sheet unloading and the redistribution of water masses in the global ocean, and glacio-isostatic and hydro-isostatic effects. Therefore, the local sea-level record is fundamental to a geological evidence for understanding the above topics. In the present study, we analyzed a drilled core and five radiocarbon ages at land reclamation on reef crest in Okinawa Island, Ryukyu Islands. Analyses of corals (*Isopora* sp. and *Goniastrea reriformis*) enable the reconstruction of a sea-level curve because these species are distributed in a shallow water depth. The Holocene sea-level curve reconstructed based on the drill core data reveals a sea-level rise until ca. 7000 cal. years BP. A mid-Holocene highstand occurred at 6760 cal. years BP, at a level of 2.7 m above the present mean sea level. The reconstructed mid-Holocene highstand is characterized by one of highest and oldest records in the Ryukyu Islands. The finding reflects the hydro-isostatic effect in response to size and volume of islands because Okinawa Island is the biggest island in the Ryukyu Islands.