

Identification of 1771 Meiwa Tsunami deposits using ^{14}C dating and oxygen isotope profiling of emerged massive *Porites* boulders

Atsushi Suzuki[1]; Yusuke Yokoyama[2]; Hironobu Kan[3]; Hiroyuki Matsuzaki[4]; Kayo Minoshima[5]; Nozomu Hamanaka[6]; hodaka kawahata[7]

[1] GSJ/AIST; [2] Dept. Earth & Planet. Sci., Univ. Tokyo; [3] Okayama Univ.; [4] MALT, Univ.Tokyo; [5] AIST; [6] Earth System Sci., Okayama Univ.; [7] GFS and ORI, U of Tokyo

<http://staff.aist.go.jp/a.suzuki/>

The Meiwa Tsunami is one of the biggest recorded in historical documents in Japan struck Ishigaki Island and adjacent islands of the Ryukyu Arc in 1771AD killing more than 12,000 people. There is enormous number of massive *Porites* coral boulders rifted on to the shore and reef moat in the eastern part of Ishigaki Island. Although those are likely to be cast ashore by the Meiwa Tsunami, detailed examination has not yet been conducted. Taking marine reservoir effect into account, mode value is likely to correspond to the 1771 Maiwa tsunami event. Thus the majority of large coral boulders was confirmed to be cast ashore by the tsunami. However, diversified calibrated radiocarbon ages indicated that causes of transportations of boulders cannot solely ascribed as the Tsunami. Oxygen isotope microprofiles, which indicated sea-surface temperature variation therefore conducted to further investigate the mechanisms. The result suggested that skeletal growth of the most colonies was interrupted in summer or autumn, and hence tropical storms and typhoons would be very likely other agents. A combined approach of radiocarbon dating and oxygen isotope microprofiling on *Porites* coral boulders has ability to separate paleo-tsunami boulders from others by storm events.