

Coupled oxygen isotope records of inclusion water and carbonate from a stalagmite in Hoshino Cave, Okinawa

*Ryu Uemura¹, Satoru Mishima¹, Kanako Oomine¹, Ryuji Asami¹, Chen Jin-Ping², Chuan-Chou Shen²

1.University of the Ryukyus, 2.Dept. of Geosci., National Taiwan University

Millennial scale abrupt climate changes have been occurred during the last deglaciation. However, the land climate change in Japan is unclear due to sparsity of the high-time resolution paleoclimate record. In this study, we have measured isotope ratios of fluid inclusions and the calcium carbonate of a speleothem in a subtropical island. A stalagmite sample (HSN2), which was broken during a construction work of tourist corridor, was collected in Hoshino cave at Minami Daito Island, Okinawa Prefecture. Isotope ratios of the fluid inclusions were measured using the CRDS-based isotope measurement system. The analytical method was based on Uemura et al. (GCA, 2016), but the most of processes has been automated. The stalagmite covers the last deglaciation period (13-21 kyr). Water content of the stalagmite significantly differs in each layers. The water content correlates with the pattern of stripes of the cross section of the sample. There are weak correlation between the oxygen isotope ratio of the fluid inclusions and that of calcium carbonate.

Keywords: speleothem, stalagmite, isotope, fluid inclusion