

Tsunami deposit survey on the Chichi Is. and Haha Is. in the Bonin Islands (Preliminary report)

HARADA, Tomoya^{1*} ; GOTO, Tomoko² ; ISHIBE, Takeo¹ ; NARUHASHI, Ryutaro¹ ; FURUMURA, Takashi¹

¹Earthquake Research Institute, Univ. of Tokyo, ²Graduate School of Frontier Science, Univ. of Tokyo

The Izu-Bonin subduction zone has been regarded as so-called "Mariana-type subduction zone" where $M > 7$ interplate earthquakes do not occur. Ishibashi and Harada (2013) proposed a working hypothesis that the 1605 Keicho earthquake which has been considered a great tsunami earthquake along the Nankai trough was a giant/great earthquake along the Izu-Bonin trench based on the similarity of the distributions of ground shaking and tsunami of this event and the 2010 Bonin earthquake. Harada et al. (2013) carried out the tsunami numerical simulations from the fault models along the Izu-Bonin trench and their results support the Ishibashi and Harada's hypothesis. However, it has not discovered that the evidences of the giant/great earthquake along the Izu-Bonin trench yet. Therefore, in order to discover the tsunami traces of the earthquake such as tsunami deposit or tsunami boulders, we started to tsunami deposit survey on the Chichi Is. and Haha Is. in the Bonin Islands last year.

We have conducted two tsunami deposit surveys on the Chichi Is., Haha Is. and some territorial islands around the two islands. Total number of survey points is 23. We found tsunami deposits at three survey areas in the Chichi Is. (Sakai-ura beach, Yatsuse-gawa valley and Minami-fukurozawa valley).

Some preliminary results are as follows. We found at least three event layers on the outcrops in the Sakai-ura beach in Chichi Is. Upper two layers were possibly deposited by the tsunamis or storms because of their typical features of tsunami deposit. The third layer (thickness is 50~100 cm) has the sharp basal contact with under soil and consists of large amount of corals which suggest an unidirectional flow. At the two survey points in Yatsuse-gawa valley, some event layers were identified. In the Minami-fukurozawa valley, two thick layers include large gravels and four or five thin layers on the outcrops. However, origin of the thick layers has not been revealed yet. More tsunami deposit surveys are necessary in the islands to confirm these layers were tsunami deposits or not.

We thank Mr. Ichiro Hosoda, other teachers, and students of the Ogasawara high school for supporting our survey. This study was supported by JSPS KAKENHI Grant-in-Aid for Young Scientists (B) (Grant Number 26750129).

Keywords: tsunami deposit, Chichi Is. and Haha Is., Izu-Bonin subduction zone, 1605 Keicho earthquake