

Reexamination of the tsunami trace of Hachijo Island in the 1605 Keicho earthquake

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During the 1605 Keicho earthquake, large tsunami attacked to the large area from Boso Peninsula in Chiba to the Kagoshima bay in Kyushu. Since no strong ground motion was observed during the earthquake it is thought a tsunami earthquake occurred aking the Nankai trough subduction zone.

Because of the Japanese historical backdrop in the beginning of the 17th century, historical records of tsunami damage from this earthquake is very limited. In it, the fact that 57 persons were killed by tsunami in Hachijo Island is an important historical fact, which is based on description of "Hachijo Jikki". Hatori (1975) had pointed out a possibility that the tsunami of a maximum of 10 to 20 m attacked the Hachijyo Island. Since then his opinion has had big influence on the tsunami disaster prevention for Tokai to Kanto area expected for future Nankai Trough earthquake.

The tsunami simulation which assumed the tsunami model for Tokai-type earthquake with fault rupture run from off Tokaido to Suruga bay show the tsunami height at Hachijo Island is about 5-6 m at most. Thus, it is very difficult to reproduce tsunami over 10 m without assuming special phenomenon for the earthquake source model. Actually, Aida (1981)claimed that the extreme tsunami source model which assume that the fault rupture run along the Sagami trough off Boso and Izu Mariana Trench is needed in addition to the ordinary Tokai earthquake model along the Nankai Trough off Tokaido, in order to explain this high tsunami. On the other hand, Yamamoto (1995) scrutinizes the record tradition of the tsunami described in the account of Hachijo Jikki, a map colony position of those days, and the geographical feature of the Island and concluded that the tsunami height of Hachijo Island in the Keicho earthquake was not having reached 10 m. Watanabe (1998) adopted that the height of tsunami during the earthquake is less than 7-8m.

We re-scrutinized the description of the height of tsunami in the Hachijyo Jikki, and conducted a field survey on 25-27 September, 2011 for reexamination of the Keityo earthquake tsunami. We concluded that the height of tsunami in Hachijyo Island was at most 7-8 m and it did not exceed 10m.