

Study on the 1707 Hoen Tsunami on the basis of the descriptions in Kokuryoki along the coast of Kochi Prefecture

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The tsunami of the Hoen earthquake of October 28, 1707 hit the coasts between Kyushu Island and Kanto District. Studies on the distribution of the heights of this tsunami were conducted by Imamura(1941), Hatori(1978, 1981), Tsuji et al.(1994), and Murakami et al.(1994, 1996) on the basis of descriptions of old documents, stone monuments, and oral literatures. But none of those authors had never referred the official report book of this hazard called Kokuryoki, which was edited by Okumiya Masaaki. He was a teacher of the school of Tosa Clan. He edited and published Kokuryoki on the basis of official records of the clan within a few years after the tsunami. In this book damage of the tsunami for 211 towns and villages along the coast of Tosa province (Kochi prefecture at present) is described. Why the preceded researchers had not referred this book? It is because in this book the descriptions for most of the villages are simple; for example, perfectly went to ruin, rice fields were flooded, but hoses were only slightly damaged, or Sea water reach the foot of the hind hill and so on, and poor for the descriptions of the limit of submergences. In the present study, we made database of the description in this book, and found out that this book contains the records of inundation limit at 41 points in total. We conducted survey of the heights of those points. In addition that, we gathered about 300 copies of city planning maps in scale of 2,500 to 1 with contour intervals of 2 meters by visiting public work sections in city and town halls. We can estimate the heights of the limits of the submerged area at the village where such descriptions were given in this book that, sea water went to the foot of the hind hill or sea water flooded all rice fields, but no house damage took place. For such villages, we estimated the tsunami inundation height in the accuracy of one meter.

Figure shows the distribution of the inundation heights above the mean sea level for villages. White circles show the villages where heights were measured exactly, Diamonds shows the villages where tsunami heights were estimated by using city planning maps in the scale of 1:2500. Black circles show data given by the previous studies.

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