

Tsunami heights distributions of the 1498 Meio, the 1707 Hoei, and the 1854 Ansei-Tokai earthquakes in Aichi prefecture

Yoshinobu Tsuji^{1*}, Takashi Yanuma², Takenori Hirahata², Fumihiko Imamura³

¹Fukada Geolog. Inst., ²PASCO, ³IRIDeS

Aichi prefecture is situated in the central part of Tokai District, Central Japan, and was hit by the tsunamis accompanied with the series of the gigantic Tokai earthquakes, the 1498 Meio, the 1707 Hoei, and the 1854 Ansei Tokai earthquakes. But the tsunami heights of those gigantic Tokai earthquakes had not been discussed in past while that they had been discussed in detail by Hatori(1977, 1978) and Namegaya and Tsuji(2005). In the present study, we gathered the descriptions of those tsunamis in old documents data books published as "Revised volumes of Collected Materials of Historical Earthquakes in Japan, vols.1, 3 additional, 5 additional vol.5-1, ERI, 1981, 1983,1987). We made field surveys at the points where there are descriptions on those tsunamis. Before the survey we checked the features of those villages on the map in the scale of 50,000 to one published in the end of 19-th centuries. We also checked historical chronologies of villages by "Encyclopedia of place names in Aichi prefecture" published by Heibonsha Press. We visited the places of recorded points, and conducted survey of the heights and position by VRS-GPS. In the present study we did not estimate tsunami height only by descriptions on the damage. We assumed that the height of floor in a house is 70 centimeters above than ground level. We also assumed the thickness of water covering on the ground as 2 meters for the case that a group of houses were washed away in a village. Of course, actual tsunami heights was possible to exceeded two meters. Figure shows the distribution of the tsunami heights for the 1498 Meio, the 1707 Hoei, and the 1854 Ansei Tokai earthquakes in Aichi prefecture. The present authors wish to express their thanks to JNES for its financial support.

Keywords: the 1498 Meio Earthquake, the 1707 Hoei Earthquake, the 1854 Ansei Tokai Earthquake, Tsunami, Historical earthquakes

