

Characteristic of Strong Motion in Sanriku Tsunami of 1896 by the point of view of seismic intensity distribution

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It is thought that the Sanriku Tsunami of 1896 which occurred on June 15, 1896 is a "tsunami earthquake" with a large scale of tsunami compared with the magnitude of the earthquake presumed from the size of earthquake motions, such as a surface wave (Kanamori, 1972; Abe, 1989).

Seismic intensity distribution of a Sanriku Tsunami of 1896 has two reports. The Central Meteorological Observatory (1896) has reported that seismic intensity of the northern Tohoku district is weak. Omori (1901) illustrated the observed seismic intensity. Omori (1901) has reported that the strong seismic intensity was observed by the area of the weak of seismic intensity. I contrasted the seismic intensity described by the earthquake investigation original register of JMA, and the seismic intensity which Omori (1901) reported. As a result, it turned out that two reports are almost the same. For this reason, I considered distribution of the seismic intensity observed on the basis of Omori (1901). The seismic intensity observed in the west side of backbone range of northern Tohoku district was strong compared with seismic intensity of Kitakami mountain district. The attenuation of seismic intensity by the distance from the epicenter is not clear. Moreover, in the point of strong seismic intensity, a primary natural period is distributed over the area for natural period of 2 seconds or more, and the area for natural period of 1 second or less has many points of weak seismic intensity.

The earthquake investigation original register and Omori (1901) have reported the character of a shake to be "slow." Noda (2000) – expression of a shake of 1.5 seconds or more of periods – "slowly" – it have reported. A Sanriku Tsunami of 1896 is considered that the periodic ingredient beyond periodic 1.5 second, at least. In the northern Tohoku district, the point where an earthquake intensity scale is big is similar with the point to relativity where long period ground motion class (Aizawa et al.,2014) is large.

It is thought that the seismic intensity in a Sanriku Tsunami of 1896 shows the physical feeling by the long period ground motion of about 5 seconds or more of periods together with the character of the observed earthquake motion from the above result.

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