House Damage by the Kanto Earthquake in Sunami-mura,Chiba Prefecture

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The Kanto earthquake in 1923 was one of the most destructive earthquakes which have historically occurred in Japan. The damage caused by the earthquake had a great regional difference and a close relation to the topography and geology. But the detailed relation between the house damage and the topography and geology has not been examined with sufficient accuracy because the record of the house damage, which was researched by across a wide area, was restricted mainly on a city, town, or village basis. This study shows the relation between the house damage and the topography and geology in the Kanto earthquake with good resolving power for the first time by using the house damage data on a house basis collected in Sunami-mura, Chiba prefecture.

As a result, the house damage tends to become big as the thickness of the alluvium increases. Moreover, this study shows the possibility that the thickness of the alluvium and the strength of seismic motion can be estimated from the topography and surface geology. The greatest damage in Sunami-mura occurs in alluvial terrace, followed by valley plain and hill.

In addition, the estimate of seismic intensity distribution on a section of a village basis clearly shows that the previous estimate of seismic intensity distribution on a village basis was overestimated.

In Sunami-mura, residential development is taking place rapidly in the area which would suffer devastating damage if once a huge earthquake would occur in the future. Sufficient antiearthquake measures should be prepared as soon as possible.