

Probabilistic Seismic Casualty Models and Simplified Method to Evaluate Seismic Casualty Risk

This paper discusses seismic casualty from the point of view of a probability model based on binomial distribution compared with the actual data of hearing investigation into the 2003 Tokachi-oki earthquake and the 2004 Niigata-ken Chuetsu earthquake. The parameters of the model are the decrease rate of floor space by furniture falling and the number of people in that space. It is possible to estimate the occurrence probability of casualty using the model. Moreover, we propose a simplified method of evaluation of a casualty potential by furniture density as an application of the model. The furniture density is the number of furniture per the floor space. This index is extremely easy so that anyone can calculate the casualty risk of their bedroom, living room, and even their house.