

Current status and future prospects of study on the seismic hazard maps for Japan

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National seismic hazard maps for Japan were published by the Earthquake Research Committee of Japan (ERCJ) in March 2005, and have been updated every year since then. We have developed methodology to improve the seismic hazard maps and a new version of seismic hazard maps for Kyushu region has been released from ERCJ. We summarize the methodology adopted for the new version of the hazard maps and also consider future prospects of study on the seismic hazard maps for Japan.

In order to improve the seismic hazard maps for Japan, we have developed the following methods.

(1) In the basis of the geomorphologic classification database by Wakamatsu(2007), we calculated amplification factor for meshes whose size is approximately 250 by 250m.

(2) We study uncertainty of strong ground motion and find dependence of the uncertainty on distance.

(3) We develop the recipe for strong motion prediction to set parameter semi-automatically and also improve modeling of underground structure.

(4) We evaluate strong ground motions for earthquakes in all major active fault zones by using hybrid method in the basis of the improved recipe.

(5) Maps for conditional probability of given strong-motion level are made for earthquakes in all major active fault zones.

(6) We develop the velocity structure model for whole of Japan for strong ground motion evaluation.

(7) We improve the web system, J-SHIS to release the data of seismic hazard maps for Japan.

The study to model the earthquake activity for other faults and to model the background seismicity is now under going.