

Development of real-time earthquake damage information system using K-NET

*Hiromitsu Nakamura¹, Takashi Kunugi¹, ikuo takahashi¹, Hiroyuki Fujiwara¹, Shin Aoi¹

1.National Research Institute for Earth Science and Disaster Prevention

We develop a real-time earthquake damage information system that provides information by combining amplification characteristic data for subsurface ground accumulated in the course of the development of the Japan Seismic Hazard Information Station (J-SHIS), basic information on population and buildings, methods for predicting ground motion, methods for assessing building damage, and strong motion data observed by K-NET, KiK-net, local governments, and the Japan Meteorological Agency (JMA) in real-time. This system estimates spatial ground motion distribution in 250m-mesh from seismic intensity information sent at different timing for observation stations, estimates population exposure to seismic intensity and building damage using estimated ground motion as input, and provides information as "J-RISQ earthquake quick report" to users via Web (<http://www.j-risq.bosai.go.jp/report/en/>). The system estimation is based on intensity data obtained at different timing to ensure recency by updating results when it receives new data and updates results when it receives estimation results. We will improve the system for not only estimating damage situations but also confirming them by various type of information. In this study, we report on system outline and progress in developing building and population models covering the entire country of Japan, along with the development of methodologies related to damage estimation and situation assessment which are core components in the research and development of a real-time earthquake damage information system.

Acknowledgements

This work was supported by the Council for Science, Technology and Innovation (CSTI) through the Cross-ministerial Strategic Innovation Promotion Program (SIP), titled "Enhancement of societal resiliency against natural disasters" (Funding agency: JST). The seismic intensity data from local governments and JMA that were used in the real-time system were provided by JMA.

Keywords: real-time, earthquake damage, K-NET