SEISMIC RISK ASSESSMENT OF ACTIVE FAULTS IN JAPAN IN TERMS OF POPULATION EXPOSURE TO SEISMIC INTENSITY

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ABSTRACT: This study evaluates and compares seismic risks associated with inland crustal earthquakes in Japan on the basis of published data available on the Japan Seismic Hazard Information Station (J-SHIS). First, taking account of prediction uncertainty of the attenuation law of seismic intensity, the evaluation method for population exposure (PEX) to seismic intensity is presented. The method is applied to 333 seismic events potentially caused by main active faults (154 cases) and other active faults (179 cases). The relationship between population exposure and the probability of occurrence of seismic events ("P-PEX relation") and the resultant seismic risk curves are obtained. Generalized risk index which incorporates the effects of focusing on urgency (probability) or significance (PEX) is defined, producing various risk rankings of active faults.

Key Words: National seismic hazard maps for Japan, J-SHIS, Main active faults, Other active faults, Population exposure to seismic intensity, Risk curve, Generalized risk index, Risk ranking