



ESTIMATION OF SPECTRAL AMPLIFICATION OF GROUND MOTION BASED ON GEOMORPHOLOGICAL LAND CLASSIFICATION

Shigeki SENNA¹ and Saburoh MIDORIKAWA²

¹ Member of JAEE, Researcher, National Research Institute for Earth Science and Disaster Prevention,
Tsukuba, Japan, senna@bosai.go.jp

² Member of JAEE, Professor, Department of Built Environment, Tokyo Institute of
Technology, Tokyo, Japan, smidorik@enveng.titech.ac.jp

ABSTRACT: This study aims to estimate the spectral amplification factor for all of Japan. The spectral amplification factor for each geomorphology is calculated from the H/V spectral ratio of the microtremor with the modification factors by Senna et al.(2008). For some geomorphologies, the subdivided units are used. The spectral amplification factor is modeled for each geomorphology. For the 2007 Niigata-ken-chuetsu-oki earthquake, the proposed method is applied. The estimated spectra show good agreements with the observed ones, and the effectiveness of the method is confirmed.

Key Words: Spectral amplification, Geomorphological classification, Response spectrum, Microtremor, H/V spectral ratio