

## Strong Ground Motion Validation in the Tokyo Metropolitan Area (2) : Hypothetical Tokai Earthquake

# Hiroe Miyake[1]; Kazuki Koketsu[1]; Takashi Furumura[2]; Takashi Hayakawa[3]; Motofumi Watanabe[4]; Toshiaki Sato[3]

[1] Earthq. Res. Inst., Univ. Tokyo; [2] ERI, Univ. Tokyo; [3] Ohsaki Research Institute; [4] ORI

The Tokyo metropolitan area is under constant threat of strong ground motions from future subduction-zone earthquakes along the Sagami and Nankai troughs. Broadband ground motion prediction for the subduction-zone earthquakes is one of the key issues for disaster mitigation and hazard assessment.

Here we introduce research progress of DaiDaiToku I project for broadband ground motion simulation for the hypothetical Tokai earthquake (Mw 8.0). We constructed a characterized source model which consists of asperities and background area. The size and slip of the asperities are constraint by the source scaling of asperities for subduction-zone earthquakes, where the scaling is based on the compilation of past slip inversion results. The stress drop was adjusted to behave asperities for long-period ground motions as strong motion generation areas for short-period ground motions. We adopted the integrated 3D velocity structure model in the Tokyo metropolitan area which includes the plate and crustal structures as well as subsurface shallow structure.

Using the source and velocity models mentioned above, we performed broadband ground motion validation for the hypothetical Tokai earthquake by the hybrid method. The matching filter is 3 seconds. The pattern of seismic intensity well reproduced that of the Ansei Tokai earthquake. Even the seismic intensity is limited to reach 4 or 5-, long-period ground motions are significantly excited in the Kanto basin. This fact indicates the necessity of long-period ground motion validation for the future subduction-zone earthquakes in the Tokyo metropolitan area.