

# Strong ground motion simulation for the 2005 west off Fukuoka prefecture Earthquake

# Toshihiko Hayakawa[1]; Takashi Furumura[1]

[1] ERI, Univ. Tokyo

Strong ground motions caused by the Mj 7.0 earthquake to the West off Fukuoka, Japan (2005/03/20, 33.9E, 130.2N, 9km; JMA) are simulated by a 3D finite-difference method (FDM) using a fault rupture model obtained by inversion of teleseismic seismograms and a 3D subsurface structure model for the South-west Japan. Because it was a shallow event, large amplitude surface waves were observed in many areas. The non-dispersive Love wave propagated to the West in Shimane prefecture without much attenuation, though surface waves which propagated in Kyushu island to the South showed a strong dispersion.

Using the Earth simulator (JAMSTEC), we performed the 16th-order (horizontal) and 4th-order (vertical) staggered FDM. The simulation model covered 820 km by 410 km and extends to a depth of 141 km. The volume discretized using a grid size of 0.8km (Horizontal) and 0.4km (Vertical). The simulation shows a good agreement on the ground motions from the event, reproducing well a fundamental-mode Love wave observed in Shimane prefecture.