

Strong ground motion simulation for the 2005 off Miyagi prefecture earthquake

Toshihiko Hayakawa[1]; Takashi Furumura[2]; Toshitaka Baba[3]

[1] ERI; [2] ERI, Univ. Tokyo; [3] IFREE, JAMSTEC

Strong ground motion is observed in the East Japan caused by the Mj 7.2 earthquake that occurred off the Miyagi prefecture at the depth of 37km. A notable feature of the earthquake was that a little long period motions of 1-6 s were observed with the duration of 5 minutes or more in the Kanto Basin. It is very important to estimate such strong ground motion by the off Miyagi prefecture earthquake expected for near future.

At the previous meeting, we had presented the result of a simulation for strong ground motion by the earthquake, but we could not reproduce the feature that relatively long duration of short period motion in the Kanto basin, since the deep structural model beneath the Pacific Ocean and the northern edge of the Kanto basin is not modeled sufficiently.

In this presentation, we have execute the simulation by using a new subsurface structure model integrated by Special Project for Earthquake Disaster Mitigation

in Urban Areas (Tanaka et al, 2006), and a deep structure model beneath the Pacific Ocean (Baba et al, 2006).

The result of simulation reproduces periods and amplitude of Love waves in the Kanto basin well. Thus, it makes clear that the amplitude level of long period ground motion caused by the earthquake on the Pacific Ocean side of the Tohoku region depends on the depth of source.