

LONG-PERIOD GROUND MOTION SIMULATION OF TOKAI-TONANKAI-NANKAI COUPLED EARTHQUAKE BASED ON LARGE-SCALE 3D FEM

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We conducted a series of long period ground motion simulation of the Tokai-Tonankai-Nankai multi-segment earthquake based on large scale 3-dimensional FEM considering subsurface ground model including Kanto, Nobi and Osaka plain. We studied the influence of the location of rupture starting point and the contribution of each earthquake to the estimation results of the Tokai-Tonankai-Nankai earthquake. The results showed that the peaks of calculated pseudo velocity response spectra surpassed the uniform design spectra regulated by Building Standard Law. The simulated ground motions of Nankai and Tonankai earthquakes were dominant in Osaka plain. Those of Tonankai earthquake were dominant in Nobi plain and those of Tokai earthquake were dominant in Kanto plain. The duration time of the simulated ground motion of Tokai-Tonankai-Nankai multi-segment earthquake became longer than that of each earthquake. Furthermore, it was found that the Nankai earthquake amplified the long period ground motions exceeding 10 seconds in the Nobi and Kanto plains when the rupture started from the south east point of the fault plain.