



EVALUATION OF EARTHQUAKE GROUND MOTION BY STOCHASTIC GREEN'S FUNCTION METHOD USING RECTANGULAR CRACK MODEL

Tomoki HIKITA¹

¹ Member of JAEE, Senior Research Engineer, Kajima Technical Research Institute, Tokyo, Japan,
tomoki@kajima.com

ABSTRACT: One of the problems in the application of the stochastic Green's function method (SGFM) is that the Fourier spectrum of the synthetic ground motion shows a fall-off in a middle frequency range. For the purpose of solving this problem, I examine the method to apply the fault model that considered heterogeneity of the distribution of the rise time and the final slip based on the rectangular crack model. The approximate expressions of the rise time and the final slip are shown for application to the estimation of strong ground motion. The fault model based on the approximate expressions is applied to the sample of the strong ground motion estimation using SGFM. Using this fault model, compared with the case that the uniform fault model is used, the Fourier spectrum of the synthetic ground motion by SGFM does not show an evident fall-off.

Key Words: Estimation of Strong Ground Motion, Stochastic Green's Function Method, Finite Fault Model, Rectangular Crack