
Study on seismic motion evaluation by wavenumber integration method - Effect of slip velocity function on seismic motion characteristics -

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The wavenumber integration method is sometimes used to predict a strong ground motion for an assumed earthquake. The wavenumber integration method is used to evaluate long-period ground motions with a period of 1 second or longer assuming multi-layered half-space ground, and it is possible to evaluate ground motions that reflect the rupture effect of the earthquake source fault, and the calculation time is short. In this study, referring to the benchmark test by Hisada et al., we conducted a parametric study using the wavenumber integration method, and investigated the effects of the setting of the hypocenter slip velocity function on seismic ground motion characteristics, comparing them with the observation records. Then, we analyzed the influence of the slip velocity function on the amplitude and period characteristics of the acceleration waveform and the response spectrum, and considered the problems in applying the wavenumber integration method.
