
Simulations of Strong Ground Motions Based on the Pseudo Point-Source Model as the Method Calculating the Waves in the Time Domain for Structural Design

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The pseudo point-source model was one of the simulation methods for strong ground motions, and it proposed by Nozu (2012). This model has potential to re-calculate the previous earthquakes accurately. In this study, we applied this method to three crustal earthquakes (less than $M_{\text{JMA}} 7$) occurred in Japan, and we obtained the good agreement with observation records, through the comparison of instrumental seismic intensity distributions, waves, and Fourier spectra. For the structure design, we need to investigate that we are able to apply this method to large earthquakes (larger than $M_{\text{JMA}} 7.0$). We applied this method to the 2003 Tokachi-oki earthquake ($M_{\text{JMA}} 8.0$), and we obtained the good agreement with observation records, although we didn't perform the pre-simulation for the optimized parameter. The results (as mentioned above) show that you can use this method to calculate the waves in the time domain for structural design, if you need to consider crustal earthquakes or large ones.