
A study on the differences in strong ground motion prediction methods focusing on temporal characteristics

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In order to prepare for the Nankai Trough mega-earthquake, which is likely to have an impact on seismic isolation and high-rise buildings, many attempts have been made to predict the strong ground motions that will occur in the earthquake. When calculating strong ground motions, the phase characteristics used differ depending on the calculation method, so the final calculated waveforms differ greatly. In this study, we conducted strong motion simulations of the Nankai Trough mega-earthquake using multiple different calculation methods, and compared the unsteady spectra and duration of waveforms obtained with each calculation method. The results revealed that the temporal characteristics of the synthesized waveforms were significantly different. The reason for this is largely due to the difference in the method of creating the element waveforms used for each calculation method, and it was pointed out that it is useful to use the temporal characteristics obtained empirically.
