

Characteristics of Long-Period Ground Motions in Osaka Basin Generated by the 2004 off the Kii Peninsula Earthquakes (Part 3)

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Employing the spectrograms and the Fourier spectrum ratios, the author has demonstrated that the long-period waves, generated by the main shock of the 2004 off the Kii Peninsula earthquake (9/5 23:57 ; Mj7.4), were grown before they arrived to Osaka basin. Then, the amplification effect, inherent to the sedimentary basin, amplified these waves. In this study, by using the Fourier spectrum ratios of records at the sedimentary sites in Osaka basin to the records at the reference rock site, the author demonstrates the similarity of the amplification effects for records of regional events occurred around Japan and for records of local events.

The outline of the obtained result is as follows.

1. At all observation sites in Osaka basin, practically there are no difference in the Fourier spectrum ratios in between most regional events and local ones, including series of the off Kii Peninsula earthquakes.
2. The Fourier spectrum ratios of the regional events stay within the standard deviation range of the spectral ratios of local events.
3. The above results suggest that it is possible to express the amplification effects of regional events by the amplification effect of local events.

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