# Progresses and Prospects of Study on Long-period Earthquake Ground Motion

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Long-period earthquake motions that caused damage and fire of oil tanks during the 2003 Tokachi-oki earthquake were recognized and reported as a new issue from the mass-media. The study on long-period earthquake ground motion has rapidly been progressed with some integrated research projects after the 2003 Tokachi-oki earthquake. Especially, long-period ground motion prediction for anticipated Tokai, Tonankai, Nankai earthquakes and study on the response of tall buildings have been developed.

However, the studies on long-period earthquake motion have a history longer than 40 years with slow but steady progress, and it is not necessarily a new issue. The dominated advantages of recent studies are that the data from very dense strong-motion observation networks are available, the quality of data has been improved, and the ability of computer has significantly been increased. On the other hand, the velocity structure data for basins and shallow crust are very limited for assessing the long-period earthquake motions at any required areas or places.

I will review on issues and studies on the long-period earthquake motions that have been investigated during 40 years focusing on the epochs affected by the 1968 Tokachi-oki, the 1985 Mexico (Michoacan), and the 2003 Tokachi-oki earthquakes.