

Surface wave characteristics from ambient seismic noise in Northern China

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Studies have shown that the western Taiwan coastal plain is influenced by long-period ground motion from the 1999 Chi-Chi, Taiwan, earthquake, and engineering structures with natural vibration long-period are damaged by strong surface wave in the western coastal plain. The thick sediments in the western coastal plain are the main cause of the propagation of strong long-period ground motion. The thick sediments similar to in the western coastal plain also exist in northern China.

It is necessary to research the effects of thick sediments to long-period ground motion in northern China. We extract surface wave from ambient seismic noise in Northern China and analyze frequency spectrum of surface wave. Our purpose is to reveal the formation and propagation of long-period surface wave in thick sediments and to grasp the amplification effect of long-period ground motion due to the thick sediments.

Keywords: Surface wave, Ambient seismic noise, Thick sediments