

## **Effects of High Frequency Ground Motion on Seismic Design of Bridges and Viaducts**

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Recently earthquake ground motions with high frequency components have been often observed. It is well known that an effective input motion is reduced in high frequency range due to the effect of the Kinematic interaction of soil-pile system. Dynamic soil-pile interaction analyses, therefore, were conducted by varying the conditions of both grounds and piles, and the influences for input loss of pile foundation were investigated. The analysis result clarified that the input loss was negligibly small for the ground motion whose amplitude predominated in 1 ~ 2 Hz such as in the case of the Hyogoken Nanbu earthquake. On the other hand, the input loss was quite large on the high frequency seismic motion such as the ground motion observed in the Tohoku earthquake. The simplified expression of input loss, which could be used in the seismic design practice, was prescribed by based on the Winkler-type spring model.