Evaluation Method of Input Loss Effect in Seismic Design by means of Static Analysis Method

Yudai HOCHI　　Tatsuya DOI　　Yoshitaka MURONO

More reasonable seismic design can be achieved by considering the input loss effect of the soil-foundation interaction. However, there is no practical evaluation method of the input loss in the seismic design by means of the static analysis method for the foundation widely used in the railway field. Therefore, we examined a practical evaluation method of the input loss effect for the static analysis method. First, we conducted sensitivity analysis by varying the conditions of both the grounds and the piles, and the input loss effects caused by the pile foundations were investigated. Them, we proposed a practical method for calculating effective input coefficients by means of a seismic deformation method and that for calculating response spectra based on the random vibration theory. Furthermore, the applicability of these methods was verified through comparison between the dynamic analysis results and the evaluated results.