Proposal of a Simplified Estimation Method for Design Ground Motion in Irregular Ground

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In this study, based on random vibration theory, the authors propose a method of directly correcting nonlinear spectrum for local seismic amplification in irregular ground. The effect of irregular ground can be estimated more simply within current design. Next, the authors conducted soil response analysis under various conditions of ground for improving the estimation of correction factor. The effects due to these conditions are estimated using the results of soil response analysis. Finally, the authors propose an estimation method for design ground motion in irregular ground, in which the effects due to various conditions are considered in the current simplified method using the damping factor of ground as an index.