

**Effect of Inertial and Kinematic Interactions on Seismic Behavior
of Various Types of Structures**

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In this research, effects of upper structure's response and soil deformation on total behaviors of structures are studied. Three different structures having pile foundations constructed on a good soil condition are assumed. The soil deposit characters are selected so that their deformations are regarded as negligible in the design standard, whereas the shear velocity and resulting strain change drastically with the depth. It is clarified through simulations that response of soils significantly affects the moment distributions of piles, regardless of the amount of response of upper structures. It consequently follows that the soil behavior should be properly considered even under good soil conditions.