

عنوان مقاله:

Parametric Study of Inertial Soil-Structure Interaction Effects

محل انتشار:

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خلاصه مقاله:

Soil-structure interaction (SSI) phenomenon may alter the response of a dynamic system. The influence of SSI can be categorized in kinematic and inertial interaction effects. Kinematic interaction changes the amplitude and frequency content of foundation input motion (FIM) and inertial interaction is related to changing dynamic properties of both structure and soil around the foundation. This paper discusses about inertial interaction and the role of various parameters in the level of its effects. Inertial interaction is resulted from relative deformations between soil and superstructure as well as nonlinear behavior of the soil around the foundation. As various researches have shown that the level of inertial interaction effects are depended on both superstructure and soil properties, some dimensionless parameters controlling nonlinear behavior in the region near the foundation were selected to investigate SSI effects. Results of parametric study demonstrate that stiffness ratio has the most important role in altering dynamic properties of soil and superstructure Moreover, influence of modeling foundation with flexible and rigid elements was studied in present research.

کلمات کلیدی:

soil-structure interaction, dimensionless parameters, flexibility, seismic anal

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