

عنوان مقاله:

A DISCRETE MODEL FOR RESPONSE ESTIMATION OF SOILSTRUCTURE SYSTEMS WITH EMBEDDED FOUNDATIONS

محل انتشار:

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خلاصه مقاله:

One of the main steps involved in Soil-Structure Interaction (SSI) analysis is the evaluation of soil impedances. Thus, numerous studies have been done to calculate dynamic response of foundation through sophisticated numerical techniques. As an alternative, many researchers have focused on introducing simple physical models representing soil impedances. Generally, complex models are resulted in order to capture impedance functions in a wide range of excitation frequencies. That is while there is just a limited range of frequencies that really influence the response of the structure. Here, a new methodology is proposed, which can lead to development of simpler discrete models. The premise of the proposal is to calibrate the model to get the best match for the response of the structure rather than for the impedance functions of soil. The applicability of the model in both frequency domain and time domain analyses was discussed. It was shown that the proposed model accurately captures the elastic response of soil-structure systems with embedded foundations while preserving the simplicity of surface foundation models.

کلمات کلیدی:

Soil-Structure Interaction, Discrete Model, Embedded Foundation, Response-Spectral-Matching Method

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