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**ANALYTICAL MODEL FOR IN PLANE
BUILDING-FOUNDATION-SOIL INTERACTION:
INCIDENT P-, SV- AND RAYLEIGH WAVES**

by

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ABSTRACT

Foundation-soil and building-foundation-soil interaction has been studied using a two-dimensional analytical model, including both the dynamic and the kinematic interaction effects. The building has been represented by an infinitely long shear wall resting on a rigid circular foundation, embedded into an elastic homogeneous half-space. Deep and shallow foundations have been considered (with depth-to-half-width ratio of 1 and 0.5) and excitation consisting of plane P- and SV- and surface Rayleigh waves. The wave function expansion method has been used to represent the motion in the half-space and a substructure approach to solve the interaction problem. Special attention has been paid to the wave passage effects, and to the influence of the depth of the embedment.

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