ON THE IMPEDANCE TENSOR OF A SEMIINFINITE ELASTIC SOIL UNDER A RIGID BODY

BY JOAQUIN MONGE E. *

ABSTRACT

Impedance tensors are defined, and then their application to dynamic analysis of structures founded on a semiinfinite elastic soil is shown. The exact solution for the soil impedance is stated by means of a system of Fredholm's integral equations of the first kind.

Stress distribution on the contact area of foundation and soil is discussed. The impedance tensor in circular foundations is found to be not diagonal, but having also four other non-zero components.

To obtain the analytical expression of the stress distribution and of the impedance tensor a procedure is outlined and some progress in this direction is reported.

* Chief Engineer, Laboratory of Structures, School of Engineering, Faculty of Physic and Mathematic Sciences, University of Chile, Prof. of Strength of Materials at the same Faculty.