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EFFECT OF IRREGULARITY AND HETEROGENEITY ON THE PROPAGATION OF TORSIONAL WAVES

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Abstract

The paper aims to study the torsional wave propagation in a homogeneous layer over a semi infinite heterogeneous half space with linearly varying rigidity and density with an irregularity on the boundary. In this paper the irregularity has been taken in the half-space in the form of a rectangle. The study reveals that torsional surface waves propagate in the medium. The velocities of torsional waves have been calculated numerically with respect to KH, a non-dimensional quantity where K being the wave number and H being the thickness of the layer and are presented in number of graphs. It is also observed that for a layer over a homogeneous half-space, the velocity of torsional surface waves coincides with that of Love waves.

Key Words: Torsional surface waves, Propagation; Heterogeneous half-space, Irregular boundary.