Propagation of Shear Waves in Viscoelastic Medium at Irregular Boundaries

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A b s t r a c t

The aim of the paper is to study the shear wave propagation in a viscoelastic layer over a semi-infinite viscoelastic half space due to irregularity in the viscoelastic layer. It is of great interest to study the propaga-tion of shear waves in the assumed medium having a non planar boundary due to its similarity to most of the real situations. The perturbation method is applied to find the displacement field. The effect of complex wave number on dissipation factor is analysed. Finally, as an application, the result obtained has been used to get the reflected field in viscoelastic layer when the shear wave is incident on an irregular boundary in the shape of parabolic irregularity as well as triangular notch. It is observed that the amplitude of this reflected wave decreases with increasing length of the notch, and increases with increasing depth of the irregularity.

Key words: viscoelastic medium, propagation of shear waves, perturbation technique, dissipation factor.