

Effect of Loose Bonding and Corrugated Boundary Surface on Propagation of Rayleigh-Type Wave

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Abstract : The effect of undulatory boundary surface of a medium as well as the degree of bonding between two consecutive mediums, on the propagation of surface waves is an unavoidable matter of fact. Therefore, this paper investigates the propagation of Rayleigh-type wave in a corrugated fibre-reinforced layer overlying an initially stressed orthotropic half-space under gravity. Also, the two mediums are assumed to be loosely (or imperfectly) bonded. Numerical computation of the obtained frequency equation has been carried out which aids to analyze the influence of corrugation, loose bonding, initial stress and gravity on the phase velocity of Rayleigh-type wave. Moreover, the presence and absence of corrugation, loose bonding and initial stress are also discussed in a comparative manner.

Keywords : corrugated boundary surface, fibre-reinforced layer, initial stress, loose bonding, orthotropic half-space, Rayleigh-type wave

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