Asymptotic approach to anti-plane dynamic problem of asymmetric three-layered composite plate

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Abstract

In this paper, the anti-plane shear motion of an asymmetric three-layered inhomogeneous elastic plate has been examined. An asymptotic approach is employed for the present investigation. Both the generalized and unified dispersion relations within the long-wave low-frequency range have been determined. The obtained unified dispersion relation is investigated taking into account the recently analyzed material contrast for layered plate with mixed stiff-soft layers of different material properties. Finally, we make comparison with symmetric plate being a special case of the asymmetric plate under consideration in the end.

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