

عنوان مقاله:

Fundamental Steady state Solution for the Transversely Isotropic Half Space

محل انتشار:

ماهنامه بین المللی مهندسی، دوره 16، شماره 2 (سال: 1382)

تعداد صفحات اصل مقاله: 16

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خلاصه مقاله:

Response of a transversely isotropic 3-D half-space subjected to a surface time-harmonic excitation is presented in analytical form. The derivation of the fundamental solutions expressed in terms of displacements is based on the perfect series of displacement potential functions that have been obtained in the companion paper by the authors. First the governing equations are uncoupled in the cylindrical coordinates. Then, the uncoupled equations are analytically solved to obtain Green functions that are expressed in terms of Fourier series in the tangential direction of the coordinates and in terms of Hankel functions in its radial direction. The analytical Green functions of this paper are exactly same as the results of Lamb (1904) in the case of isotropic material. The Green functions can be used as the kernel functions of the boundary integral equation that is used to solve elastodynamic boundary value problems.

کلمات کلیدی:

Transversely Isotropic, Elastodynamic Boundary Value Problem, Time Harmonic, Fundamental Solution (Green Function), potential function, Fourier series

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