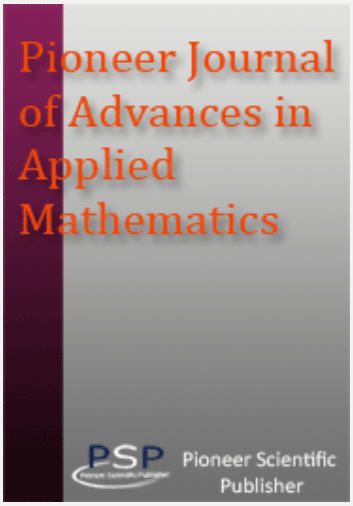
Pioneer Journal of Advances in Applied Mathematics
Volume 5, Issue 1, Pages 1-17 (June 2012)

ISSN: 2231-1858



EFFECTS OF ROTATION AND HYDROSTATIC INITIAL STRESS ON PROPAGATION OF RAYLEIGH WAVES IN AN ELASTIC SOLID HALF-SPACE UNDER THE GN THEORY

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Abstract

The present paper is aimed at studying the effect of rotation and hydrostatic initial stress on propagation of Rayleigh waves in an elastic solid half-space subjected to certain boundary conditions has been investigated. The solutions of the more general equations are obtained. The frequency equation for the surface wave propagation in the half-space has been derived which determines Rayleigh wave velocity as a real part and the attenuation coefficient as imaginary part, and the effects of rotation and hydrostatic initial stress on Rayleigh wave velocity and attenuation coefficient of surface waves have been studied in detail. Dispersion curves are computed numerically for a specific model and presented graphically. Some special cases have also been deduced. The results indicate that the effect of rotation, hydrostatic initial stress are very pronounced.

Keywords and phrases: rotation, hydrostatic, initial stress, generalized thermoelasticity, GN theory of types II and III.