

عنوان مقاله:

Impact of Initial Stress on Reflection and Transmission of SV-Wave between Two Orthotropic Thermoelastic Half-Spaces

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خلاصه مقاله:

Reflection and transmission of plane waves between two initially stressed thermoelastic half-spaces with orthotropic type of anisotropy is studied. Incidence of a SV-type wave from the lower half-space is considered and the amplitude ratios of the reflected and transmitted SV-wave, P-wave and thermal wave are obtained by using appropriate boundary conditions. Numerical computation for a particular model is performed and graphs are plotted to study the effect of angle of incidence of the wave and the initial stress parameters of the half-spaces. From the graphical results, it is found that the modulus of reflection and transmission coefficients of the thermal wave is very less in comparison to reflection and transmission coefficients of P- and SV-waves. It is also observed that for vertical incidence of SV-wave we have only reflected and refracted SV-waves and there is no reflected or refracted P and thermal waves, whereas for horizontal incidence of SV-wave there exists only reflected SV-wave and no other reflected or transmitted wave exists. Moreover, it is found that all the reflection and transmission coefficients are strongly affected by the initial stress parameters of the both half-spaces.

کلمات کلیدی:

Thermal wave, Anisotropic, Initial stress, Reflection coefficient, Transmission coefficient

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