

Dynamical Behaviour of Transversely Isotropic Thermoelastic Solids with two Temperatures and without Energy Dissipation in Frequency Domain.

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ABSTRACTS

The present investigation is concerned with the time harmonic deformation in two dimensional homogeneous, transversely isotropic thermoelastic solids without energy dissipation and with two temperatures. Assuming the disturbances to be harmonically time-dependent, the transformed solution is obtained in the frequency domain. Frequency plays an important role in the study of deformation of the body. The application of a time harmonic concentrated, uniformly distributed and linearly distributed loads have been considered to show the utility of the solution obtained. Laplace and Fourier transforms are used to solve the problem. The components of displacements, stresses and conductive temperature distribution so obtained in the physical domain are computed numerically. Effect of two temperatures have been depicted graphically on the resulting quantities.