

Abstract

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A Thick Plate Problem under the Action of a Body Force in Generalized Thermoelasticity

The two-dimensional problem for a thick plate is considered within the context of the theory of generalized thermoelasticity with one relaxation time under the action of a body force. The upper surface of the plate is subjected to a known temperature distribution, while its lower one is laid on a thermally insulated rigid foundation. Laplace and exponential Fourier transform techniques are used. The solution in the transformed domain is obtained by a direct approach. The inverse double transform is evaluated numerically. The distributions of the considered physical variables are obtained and represented graphically.