

Abstract

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A Two-Dimensional Problem for a Thick Plate with Heat Sources in Generalized Thermoelasticity

In this work, a two-dimensional problem for a thick plate is solved. The upper surface of the plate is traction free and subjected to a known temperature distribution, while the lower surface is laid on a rigid foundation and thermally insulated. Heat sources permeate the medium. The problem is in the context of the theory of generalized thermoelasticity with one and two relaxation times. 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. Numerical results are obtained and represented graphically.