Abstract

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Effect of body forces on a 2D generalized thermoelastic long cylinder

In this work, we consider a two-dimensional problem for an infinitely long solid cylinder. The lateral surface of the cylinder is taken to be traction free and is subjected to a known temperature distribution under the action of solenoidal body forces. Laplace transform techniques are used. The solution in the transformed domain is obtained by using a direct approach in the form of an infinite series. The inverse Laplace transforms are obtained by using a numerical method based on Fourier expansion techniques. Numerical results are computed for the temperature, displacement and stress distributions and shown graphically.