عنوان مقاله:

On Plane Waves for Mode-I Crack Problem in Generalized Thermoelasticity

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نویسنده:

kh Lotfy - *Department of Mathematics, Faculty of Science, Taibah University, Madina, Kingdom of Saudi Arabia---Department of Mathematics, Faculty of Science, Zagazig University, Egypt*

خلاصه مقاله:

A general model of the equations of generalized thermoelasticity for an infinite space weakened by a finite linear opening Mode-I crack is solving. The material is homogeneous and has isotropic properties of elastic half space. The crack is subjected to prescribed temperature and stress distribution. The formulation is applied to generalized thermoelasticity theories, the Lord-Şhulman and Green-Lindsay theories, as well as the classical dynamical coupled theory. The normal mode analysis is used to obtain the exact expressions for the displacement components, force stresses, temperature, couple stresses and micro-stress distribution. The variations of the considered variables through the horizontal distance are illustrated graphically. Comparisons are made with the results between the three theories.

کلمات کلیدی:

Mode-I crack, (L-S) theory, (G-L) theory, Thermoelasticity