Compressive Stresses near Crack Tip Induced by Thermo-Electric Field

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Abstract : In this paper, the thermo-electro-structural coupled-field in a cracked metal plate is studied using the finite element analysis. From the computational results, the compressive stresses reveal near the crack tip. This conclusion agrees with the past reference. Furthermore, the compressive condition can retard and stop the crack growth during the Joule heating process.
Keywords : compressive stress, crack tip, Joule heating, finite element