

Transient Analysis of Piezoelectric Plates with Thermal Effects

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In this paper a finite element method for transient analysis of piezoelectric plates with thermal effects is presented. The kinematics of the model is based on a higher order plate theory. In particular, the plate is assumed to be able of thickness distensions and the electric potential and the temperature can vary through the thickness. The variational statement which supports the finite element formulation is of mixed type, involving mechanical, electrical and thermal both primary and secondary variables. The time integration is performed based on a discontinuous Galerkin approach.

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