Atluri, Satya N.

Alternate stress and conjugate strain measures, and mixed variational formulations involving rigid rotations, for computational analyses of finitely deformed solids, with application to plates and shells. I. Theory. (English) Zbl 0524.73043

Comput. Struct. 18, 93-116 (1984).

MSC:

74B20 Nonlinear elasticity
74K15 Membranes
74S30 Other numerical methods in solid mechanics (MSC2010)
49S05 Variational principles of physics
74K20 Plates

Keywords:

alternate measures of stress-resultants and stress-couples; finitely deformed shell; finite mid-plane stretches; finite rotations; mixed variational principles; in terms of stress function vector and rotation tensor; polar decomposition; rotation followed by stretch; stretch followed by rotation; two alternate bending strain measures which depend on rotation alone; objectivity of constitutive relations in terms of alternate strain/stress-resultants and stress-couple measures; in context of three-dimensional continuum mechanics

Full Text: DOI