Syngellakis, S.; **Cherukunnath, N.**

Boundary element analysis of symmetrically laminated plates. (English) Zbl 1130.74473

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Summary: Symmetrically laminated plates are analysed by the boundary element method. A common numerical scheme is devised for the linear, uncoupled plane stress and plate flexure problems. A generic formulation is based on adopting the stress function and the deflection as field variables in the respective problems. Their mathematical similarity allows the use of essentially the same fundamental solution and almost identical solution algorithms. The application of plane stress and flexure analyses to several benchmark problems illustrates the versatility of the formulations and the degree of accuracy achieved. In the case of flexure in particular, comparisons are made with results from earlier boundary element analyses.

MSC:

74S15 Boundary element methods applied to problems in solid mechanics
74K20 Plates
74E30 Composite and mixture properties

Keywords:

Laminated plates; Flexure; Extension; Boundary elements; Anisotropy

Software:

ANSYS

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