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**Comparison of Three Dimensional Elasticity Solutions for Functionally Graded Plates**

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**Abstract**

Three dimensional (3-D) elasticity solution is presented for simply supported functionally graded (FG) material plate by using a semi analytical approach. Formulation is based on solution of a two-point boundary value problem (BVP) governed by a set of coupled first order ordinary differential equations (ODEs) through thickness of plate. Fourth-order Runge–Kutta algorithm is used for numerical integration of these ODEs. A comprehensive comparison of the present formulation with other 3-D elasticity approaches available in the literature is also attempted. The proposed semi-analytical model is very simple, efficient and highly accurate. Both displacements and stresses are evaluated simultaneously with the same degree of accuracy which is the main feature of the present development.

Keywords: Three dimensional; Functionally graded material; Cylindrical bending

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