

## Transverse Vibration of Non-Homogeneous Rectangular Plates of Variable Thickness Using GDQ

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**Abstract :** The effect of non-homogeneity on the free transverse vibration of thin rectangular plates of bilinearly varying thickness has been analyzed using generalized differential quadrature (GDQ) method. The non-homogeneity of the plate material is assumed to arise due to linear variations in Young's modulus and density of the plate material with the in-plane coordinates  $x$  and  $y$ . Numerical results have been computed for fully clamped and fully simply supported boundary conditions. The solution procedure by means of GDQ method has been implemented in a MATLAB code. The effect of various plate parameters has been investigated for the first three modes of vibration. A comparison of results with those available in literature has been presented.

**Keywords :** rectangular, non-homogeneous, bilinear thickness, generalized differential quadrature (GDQ)

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