

عنوان مقاله:

The Approximate Solution for Transverse Vibration of Conical Euler-Bernoulli beam, using Differential Transformation Method

محل انتشار:

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خلاصه مقاله:

Analysis of transverse vibration of beams is presented in this paper. Unfortunately, in account of complexities which appear in solving differential equation of transverse vibration of non-uniform beams, analytical methods, can't be used to solve it and weak solutions as orthogonal functions like Rahliye-Rights can be used to solve these cases. The differential transform is a numerical method for solving linear and some non- linear, ordinary and partial differential equations. In this paper, this technique has been applied for solving differential equation of transverse vibration of conical Euler-Bernoulli beam. Natural circular frequencies and mode shapes have been calculated. For validity of method, exact solution has been presented and results of DTM have been compared to it. This comparison proves the accuracy of this technique.

کلمات کلیدی:

Differential Transformation Method (DTM), Transverse Vibration, conical Euler-Bernoulli beam

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