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THEORETICAL AND NUMERICAL ANALYSIS OF FIXED-FIXED BEAM FOR FREE VIBRATION

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Abstract

Vibration analysis of a fixed-fixed beam system is important as it can explain and help us to analyses a number of real life systems. In this paper, the theoretical analysis of transverse vibration of Fixed-Fixed beam is carried out. The Fixed-Fixed beam is first derived analytically according to the Euler Bernoulli Beam Theory. The first fifth mode shapes and natural frequencies of the beam are constructed analytically and verified with finite element analysis with ANSYS platform. Both the analytical and numerical results are compared for authentication. Finally, useful conclusions have been drawn from both the analytical and numerical results.

Keywords : Fixed -Fixed Beam, Mode Shape Frequency, Finite Element Method.

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