ABSTRACT

This research discusses about the isotropic plate on Winkler foundation with semi-rigid boundary condition for each sides. The completion of Modified Bolotin Method is used to obtain the natural frequencies and mode shapes of isotropic plate. The analysis is determined by two transcendental equations, which derived from the solution of two auxiliary Levy's type problems. This research is conducted to find out the influence of aspect ratio of plate and modulus of Winkler foundation to the critical buckling load. It is also conducted to determine the influence from the position and frequency of transversal loads, in-plane load, and coefficient of rotational stiffness to the dynamic response and the inner forces of isotropic plate. The results of the calculation are displayed in the form of tables, graphics, and three-dimensional images.

Keyword : *Modified Bolotin Method, transcendental equation, semi-rigid, in-plane load, transversal load*