

ABSTRACT:

In this paper, the analysis of natural frequencies for all clamped edges rectangular flexible thin plate is carried out using Finite Difference (FD) and Finite Element (FE) approaches. According to the literatures, the differential equation of plate was obtained by considering the Kirchhoff hypotheses and Newton's law. The dynamic differential model is developed by using the FD to obtain the natural frequencies of given plate; for this purpose, a displacement model is converted to combination of sine and cosine functions in form of Fast Fourier Series. In second method, modes of vibration are driven by FE method using the ABAQUS software. The obtained natural frequencies of both methods are evaluated and compared with previous literatures; the outcomes can explain that the improved FD method's results are more accurate in compare with FE method's.