

AN ABSTRACT OF THESIS

AXISYMMETRIC ELASTICITY VERSUS THICK PLATE THEORY  
FOR ANALYSIS OF A TRANSVERSELY ISOTROPIC DISK

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Vibration of plate is a topic gaining more importance nowadays. Two approaches are used for analysis. Formulations using first order shear deformation theory and three-dimensional elasticity theory have been employed. The study presented herein includes the current work done on 13 transversely isotropic materials. The research is based upon a finite element analysis using a nine node Lagrangian finite element. Mindlin plate theory is used to develop a finite element model in polar coordinates. Also, the same shape function is used as a nine node element in cylindrical coordinates to model the plate/disk as an axisymmetric elasticity problem.