

**AN ABSTRACT OF A DISSERTATION**

**VIBRATION OF PARABOLOIDAL SHELLS**

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The free vibration of paraboloidal shells of revolution was analyzed using thick and thin shell theories. The thin shell theory formulation included shear deformation and rotary inertia. The governing equation for three dimensional elasticity were derived based upon an axisymmetric formulation in cylindrical coordinates  $(r, \theta, z)$  and was used to solve the thick shell problem. The finite element method was used to formulate an analysis and solve the eigenvalue problem. The nondimensional frequencies and mode shapes were obtained for closed and open shells with various boundary conditions. Results were compared with similar data in literature.