Dissemination of Waves in Thin Plates

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The article deals with the wave propagation in thin plate. A wave was caused by the impact force. In the first part of an article the Kirchhoff's theory of thin isotropic plate is given. It is a vertical displacement w, angles of rotation tangent φ_x and φ_y, bending stresses σ_x, σ_y, shear strength $\tau_{yx} = \tau_{yx}$, shear strength from displacement forces τ_{xz}, τ_{yz}. In the second part of an article is solved a Kirchhoff's theory by analytically in MATLAB programme. Analytically were solved only displacements u, v and velocity $\dot{u}$, $\dot{v}$. The solution is performed for two plate materials – aluminium and steel. By result are deformations and velocities graphs in the x-axis and the y-axis at the measurements points given. In the conclusion of an article is comparing of individual deformations and velocities graphs.

Keywords: Displacement, Velocity, Vibration, Thin Plate

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