

Abstract

The paper is devoted to free vibrations of a liquid-filled cylindrical shell reinforced by discretely distributed longitudinal ribs under axial pressure. The ribs are regularly arranged on a cylinder and medium is modelled as three-dimensional linear elastic body. The problem is solved by energetic method. By using Hamilton-Ostrogradskii principle the frequency equation of the system is constructed and its small root is found. Influence of geometrical and physical parameters characterising the system to this root is studied.