

ON A FREQUENCY RESPONSE OF A
PRE-STRAINED MANY-LAYERED SLAB ON A
RIGID FOUNDATION

Abstract

Within the framework of the piecewise homogeneous body model with the use of Three-dimensional Linearized Theory of Elastic Waves in Initially Stressed Bodies the frequency response of the pre-strained many-layered slab resting on a rigid foundation is studied. It is assumed that the whole thickness of the slab remains constant for any number of layers from which this slab is composed. Moreover, it is assumed that the slab consists of the packet which contains two layers. The elasticity relations of the layers' materials are described by Treloar potential. The cases where the number of layers (packets) in the slab is 6 (3), 4(2) and 2(1) are analyzed. According to the obtained numerical results the influence of the number of layers and the pre-stretching of these layers on the frequency response of the slab is analyzed.