Asymptotic analysis of spatial problems in elasticity

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Abstrak

The book presents homogeneous solutions in static and dynamical problems of anisotropic theory of elasticity, which are constructed for a hollow cylinder. It also offers an asymptotic process for finding frequencies of natural vibrations of a hollow cylinder, and establishes a qualitative study of several applied theories of the boundaries of applicability.

Further the authors develop a general theory for a transversally isotropic spherical shell, which includes methods for constructing inhomogeneous and homogeneous solutions that allow the characteristic features of the stress-strain state of an anisotropic spherical shell to be revealed. Lastly, the book introduces an asymptotic method for integrating the equations of anisotropic theory of elasticity in variable thickness plates and shells.