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# Thin shells theory based on the asymptotic analysis of three-dimensional equations of the elasticity theory

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*The article presents main relations for a new theory of thin multilayer anisotropic shells. The main equations of the shell theory suggested were deduced from general three-dimensional theory of elasticity by means of asymptotic expansions over small parameter without any hypothesis concerning displacement and stress distribution over thickness. It is shown that the averaged problem of the shell theory developed proves to be similar to the Kirchhoff—Love shell theory, but there are some differences in constitutive relations, that contain derivatives for membrane strains. The method suggested allows one to calculate all six stress tensor components including transverse normal stresses and stresses of interlayer shear of thin elastic shells.*

**Keywords:** viscoelastic composites laminated fibrous composites, elastic-dissipative properties, steady vibrations, tangent of loss angle, complex elastic modules, method of asymptotic averaging.

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