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Inverse of Constitutive Equations of Anisotropic Hereditary Elastic Continua

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Inverse of constitutive equations of anisotropic hereditary elastic continua. The inverse of Boltzmann-Volterra constitutive equations is based on defining the resolvent of the matrix Neumann series with the aid of algebraic properties of the resolvent operators. In practical realization the procedure of the inverse does not depend on the kind of the operator and is reduced to some matrix calculations. A kernel of the resolvent operator may be chosen either exponential, power (Abel's), fraction-exponential (Rabotnov's) functions or their linear combinations. The examples of the constitutive equations inverse for orthotropic glass fiber-reinforced epoxy laminates are given. The verification of the procedure correctness is carried out.

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