Some Three-Dimensional Boundary Value and Boundary-Contact Problems for an Elastic Mixture with Double Porosity

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The paper deals with a linear system of equilibrium equations of elastic bodies with double porosity when the rigid skeleton of the body is a mixture of two isotropic materials. The general solution of this system of equations is represented by means of harmonic functions and a metaharmonic function. Based on the constructed general solution, the class of boundary value problems of porous elasticity for the rectangular parallelepiped is solved analytically using the method of separation of variables. The corresponding boundary-contact problems for the multilayer rectangular parallelepiped are also considered.