Two-way estimates of porous solid body elasticity moduli

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The dual variational formulation of the problem of linear elasticity of the porous non-homogeneous solid body consisting of the chaotically directed isotropic fragments with different elastic characteristics is used for constructing the two-way estimates of the effective elastic behaviour of such body. We have conducted the quantitative analysis of these estimates and compared them with the known previously published results. The presented calculated ratios can be applied for forecasting the effective values of elasticity moduli of the porous composite material reinforced with isotropic inclusions as well as the materials obtained by means of powder metallurgical techniques and self-propagating high-temperature synthesis.

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