

Numerical modelling of deformation of hyperelastic incompressible solids

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Abstract

© 2016, Institute of Problems of Mechanical Engineering. In this paper the model of investigation of large deformations of solids for incompressible elastic materials is considered. The constitutive equations are derived from the potential of elastic deformation. Calculation algorithm is based on the linearized equation of virtual work, defined to actual state. To account incompressibility a penalty method is applied. Numerical implementation is based on the finite element method. The deformation of a square plate with round neckline is provided.
