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Nonlinear problem on hyperelastic deformation of the shell of average thickness FEM

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Abstract

© 2014 M. K. Sagdatullin and D. V. Berezhnoi. In work the numerical research of finite deformations of isotropic hyperelastic bodies is resulted. In the first section it is resulted resolving linearise the equation in a current configuration and the parities defining speed of change stress tensor Cauchy-Euler as linear function from tensor of a spatial gradient of speed are deduced. In the second section within the limits of finite-element technique numerical realization of research algorithm of finite deformations isotropic hyperelastic bodies is considered. In the third section numerical decisions of some deformation problems of hyperelastic bodies are resulted.

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Keywords

A method of finite elements, Finite strains, Metric tensor