

# A Neohookean model of plates

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We study hyperelastic deformations of neohookean materials in planar domains called plates. These problems are motivated by recent remarkable relations between Geometric Function Theory and the theory of Nonlinear Elasticity. Both theories are governed by variational principles. Here we confine ourselves to deformations of 1-connected bounded Lipschitz planar domains  $X$  and  $Y$ . The general law of hyperelasticity tells us that there exists a stored energy function that characterizes the elastic and mechanical properties of the material. The subject of our investigation are Sobolev homeomorphisms with nonnegative Jacobian; having smallest isotropic energy.

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