

R. Paroni: Plate Theory for Inhomogeneous, Anisotropic, Linearly Elastic Bodies as a Variational Limit of the Complementary Energy Functional

In the last three decades the principle of the minimum potential energy has been used, in conjunction with the theory of Gamma-convergence, to justify/derive models for thin structures starting from the three-dimensional theory. We here consider an inhomogeneous, anisotropic, linearly elastic body whose reference configuration is a cylinder of height h . Then, by means of Gamma-convergence, we study the asymptotic behavior, as h goes to zero, of the sequence of complementary energies. This approach has the advantage to deliver a direct approximation of the stress field.

This is a joint ongoing work with Francois Murat (Univ. Paris VI).