

Müller, S.; Pakzad, M. R.

Convergence of equilibria of thin elastic plates – the von Kármán case. (English)

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Summary: We study the behaviour of thin elastic bodies of fixed cross-section and of height h , with $h \rightarrow 0$. We show that critical points of energy functional of nonlinear three-dimensional elasticity converge to critical points of von Kármán functional, provided that their energy per unit height is bounded by Ch^4 (and that the stored energy density function satisfies a technical growth condition). This extends recent convergence results for absolute minimizers.

MSC:

74K20 Plates

74B20 Nonlinear elasticity

Cited in 1 Review
Cited in 14 Documents

Keywords:

critical points; energy functional; nonlinear three-dimensional elasticity

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