



Professor Davit Harutyunyan

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Department of Mathematics
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Education:

2012 PhD University of Bonn, Germany

Research Interests:

Analysis of Partial Differential Equations; Calculus of Variations (Optimization); Homogenization of PDEs, Systems of PDEs and Integrals, Asymptotic (multiscale) Analysis; Geometric and Analytic Inequalities; Continuum Mechanics (Elasticity); Composite Materials, Metamaterials; Micromagnetics

Selected Publications:

D. Harutyunyan. Gaussian curvature as an identifier of shell rigidity. submitted to “Archive for Rational Mechanics and Analysis”, 2016. <http://arxiv.org/abs/1606.03613>

Y. Grabovsky and D. Harutyunyan. Korn inequalities for shells with zero Gaussian curvature. “Annales de l’Institut Henry Poincaré (C) Analyse Non Linéaire”, accepted, 2016. <http://arxiv.org/abs/1602.03601>

D. Harutyunyan. Sharp weighted Korn and Korn-like inequalities and an application to washers. “Journal of

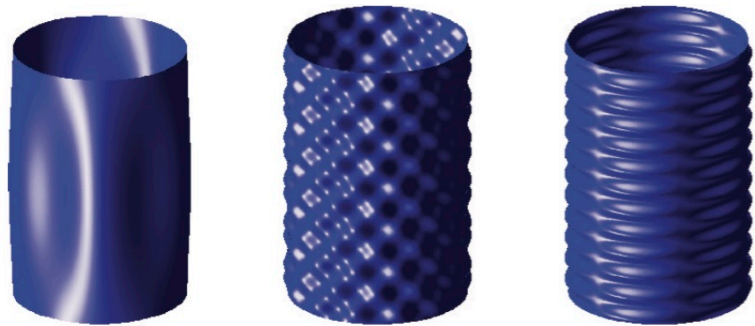


Figure 1: Buckling modes corresponding, left to right, to $m = 1$, $m = M(h)/2$ and $m = M(h)$ on the Koiter’s circle.

From: Yury Grabovsky and Davit Harutyunyan, “Rigorous asymptotic analysis of buckling of thin-walled cylinders under axial compression”, Cornell University Library, arXiv.1301.6079 [math.AP], January 2013

Elasticity”, in press, 2016. <http://arxiv.org/abs/1509.02994>

D. Harutyunyan. Buckling of washers under in-plane pressure. (in preparation in 2016)

Yury Grabovsky and Davit Harutyunyan, “Scaling instability in buckling of axially compressed cylindrical shells”, *Journal of Nonlinear Science*, vol. 26, No. 1, pp 83-119, February 2016

Grabovsky, Y., Harutyunyan, D.: Rigorous derivation of the buckling load in axially compressed circular cylindrical shells. *J. Elast.* 120(2), 249–276 (2015)

D. Harutyunyan. New asymptotically sharp Korn and Korn-like inequalities in thin domains. *Journal of Elasticity*, 117(1), pp. 95-109, 2014.

Grabovsky, Y., Harutyunyan, D.: Exact scaling exponents in Korn and Korn-type inequalities for cylindrical shells. *SIAM J. Math Anal.* 46(5), 3277–3295 (2014)

Yury Grabovsky and Davit Harutyunyan, “Rigorous asymptotic analysis of buckling of thin-walled cylinders under axial compression”, Cornell University Library, arXiv.1301.6079 [math.AP], January 2013