



Professor Julius D. Kaplunov

From: Kaplunov, J. D., Kossovich, L. Y., and Nolde, E. V., 1998, Dynamics of Thin Walled Elastic Bodies, Academic Press, San Diego, CA.

See:

<https://www.keele.ac.uk/scm/staff/professors/juliuskaplunov/>

<http://people.brunel.ac.uk/~mastjjk/>

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Autobiography:

I was awarded my PhD and DSc in Theoretical Solid Mechanics by the Institute for Problems in Mechanics at the Russian Academy of Sciences. I was affiliated with this institution until 2000, when I joined Manchester University. In 2005 I moved to Brunel University where I spent seven years before coming to Keele in 2012. I have also held several visiting positions all over the world, including the University of Alberta, Bordeaux University, City University of Hong-Kong, Technical University of Munich, and Tel-Aviv University.

Research and Scholarship:

My research interests lie in the general area of physical applied mathematics, including continuum mechanics, acoustics, asymptotic analysis, and multi-scale modeling. I have co-authored over 100 publications in these areas. Amongst these are 3 books including the advanced research monograph 'Dynamics of Thin Walled Elastic Bodies', written in collaboration with L. Kossovich and E. Nolde. I am a member of the editorial boards of 5 journals, such as Mathematics and Mechanics of Solids, and Mechanics of Time Dependent Materials.

Selected Publications:

BOOK: Kaplunov, J. D., Kossovich, L. Y., and Nolde, E. V., 1998, Dynamics of Thin Walled Elastic Bodies, Academic Press, San Diego, CA.

Journal articles/chapters in books:

- Elishakoff I, Kaplunov J, Nolde E. 2015. Celebrating the Centenary of Timoshenko's Study of Effects of Shear Deformation and Rotary Inertia. *Applied Mechanics Reviews*, vol. 67(6)
- Kaplunov J, Prikazchikov DA, Rogerson GA, Lashab MI. 2014. The edge wave on an elastically supported Kirchhoff plate (L). *Journal Of The Acoustical Society Of America*, vol. 136(4), 1487-1490
- Fu YB and Kaplunov J. 2012. Analysis of localized edge vibrations of cylindrical shells using the Stroh formalism. *Mathematics And Mechanics Of Solids*, vol. 17(1), 59-66
- Kaplunov J, Pichugin AV, Zernov V. 2009. Extensional edge modes in elastic plates and shells. *J Acoust Soc Am*, vol. 125(2), 621-623
- Zernov V and Kaplunov J. 2008. Three-dimensional edge waves in plates. *Proceedings Of The Royal Society A-Mathematical Physical And Engineering Sciences*, vol. 464(2090), 301-318
- Kaplunov, J. D., Nolde, E. V., and Rogerson, G. A., 2006, "An Asymptotic Analysis of Initial-Value Problems for Thin Elastic Plates," *Proc. R. Soc. London A*, 462(2073), pp. 2541–2561
- Rogerson GA, Kaplunov JD, Tovstik P. 2005. Localized vibration in elastic structures with slowly varying thickness. *Quarterly Journal of Mechanics and Applied Mathematics*, vol. 58(4), 645-664
- Kaplunov JD, Nolde EV, Shorr BF. 2005. A perturbation approach for evaluating natural frequencies of moderately thick elliptic plates. *Journal Of Sound And Vibration*, vol. 281(3-5), 905-919
- Babenkova, E., and Kaplunov, J., 2004, "Low-Frequency Decay Conditions for a Semi-Infinite Elastic Strip," *Proc. R. Soc. Lond. A*, 460(2048), pp. 2153–2169
- Kaplunov JD, Kovalev VA, Wilde MV. 2003. Matching of asymptotic models in scattering of a plane acoustic wave by an elastic cylindrical shell. *Journal Of Sound And Vibration*, vol. 264(3), 639-655
- Kaplunov J, Nolde, EV, Rogerson, GA. 2002. An Asymptotically Consistent Model for Long-Wave High-Frequency Motion in a Pre-Stressed Elastic Plate. *Mathematics and Mechanics of Solids*, vol. 7(6), 581-606
- Kaplunov JD, Nolde EV, Rogerson GA. 2002. Short wave motion in a pre-stressed incompressible elastic plate. *Ima Journal Of Applied Mathematics*, vol. 67(4), 383-399
- Kaplunov JD and Wilde MV. 2002. Free interfacial vibrations in cylindrical shells. *Journal Of The Acoustical Society Of America*, vol. 111(6), 2692-2704
- Kaplunov J, Kovalev, VA, Wilde, MV. 2002. Approximate description of resonances of whispering gallery type waves in the problem of acoustic wave scattering by elastic circular cylinders and spheres. *Mechanics of Solids*, vol. 37(4), 147-158
- Wilde, MV, Kaplunov J, Kovalev, VA. 2002. On the approximation of plane layer type in the problem of acoustic wave scattering by a cylindrical shell. *Mathematics and Mechanics of Solids*, vol. 37(3), 153-159
- Belov, A. V., Kaplunov, J. D., and Nolde, E. V., 1999, "A Refined Asymptotic Model of Fluid-Structure Interaction in Scattering by Elastic Shells," *Flow, Turbul. Combust.*, 61, pp. 255–267
- Kaplunov, J. D., 1995, "Long-Wave Vibrations of a Thin-Walled Body With Fixed Faces," *Q. J. Mech. Appl. Math.*, 48(3), pp. 311–327.
- Kaplunov, J. D., Nolde, E. V., and Veksler, N. D., 1994, "Asymptotic Formulae for the Modal Resonance of Peripheral Waves in the Scattering of an Obliquely Incident Plane Acoustic Wave by a Cylindrical Shell," *Acustica*, 80, pp. 280–293
- Goldenveizer, A. L., Kaplunov, J. D., and Nolde, E. V., 1993, "On Timoshenko–Reissner Type Theories of Plates and Shells," *Int. J. Solids Struct.*, 30(5), pp. 675–694
- Chapter in Book:** Kaplunov J. 2004. Universal dynamic theory of shells. (vol. 16)