

# Curriculum vitae

## Danila A. Prikazchikov

### ***EDUCATION AND DEGREES***

- 2011 Certified “Docent” Diploma issued by the Russian Ministry of Education
- 2004 PhD in Applied Mathematics, University of Salford, UK  
(supported by the ORS Award, supervised by Prof G.A. Rogerson)  
Thesis title: “*Surface and edge phenomena in pre-stressed, incompressible elastic solids*”.
- 2000 MSc (including BSc) in Applied Mathematics,  
A Diploma with Distinction, Saratov State University,  
Dept. of Mathematical Elasticity and Biomechanics, Saratov, Russia.
- 1995 Diploma of Education. Gymnasium №3, Saratov (Silver Medal).

### ***EXPERIENCE***

- 2007-present *Docent* (2007-2008 part-time),  
Department of Computational Mathematics  
and Mathematical Physics, The Bauman  
Moscow State Technical University (BMSTU)
- 2006-2008 *Lecturer, Docent*,  
Department of Higher and Applied Mathematics,  
Russian State Technical University of Railways
- 2004-2006 *Research Associate*, ITE Research Laboratory,  
Russian State Technical University of Railways

### ***TRAINING***

CISM Advanced Course “*Dynamic Localization Phenomena in Elasticity*”, Udine, Italy,  
June 2012.

### ***RESEARCH INTERESTS***

#### **Theoretical Solid Mechanics and Acoustics**

- Surface and edge dynamic phenomena
- Explicit models for surface, interfacial and edge waves
- Moving loads
- Finite deformations/pre-stress
- Mechanics of elastic coatings

## Asymptotic methods

- Matched expansions
- Asymptotic integration of partial differential equations

## AWARDS AND HONOURS

- 2012-13 The Russian Foundation for Basic Research, Grant No: 12-01-33049
- 2012-13 Grant of the President of Russian Federation for Support of Young Scientists, Grant No: MK-3150.2012.8.
- 2012 Russian Ministry of Education and Science Federal Program (CI), Grant No: 14.A18.21.2014.
- 2010-11 Grant of the President of Russian Federation for Support of Young Scientists, Grant No: MK-4234.2010.8.
- 2011 “The best University lecturer”, granted by the Bauman Moscow State Technical University.

## VISITING POSITIONS

- Senior Research Fellow at City University of Hong Kong, Hong Kong. (January-March 2010, supported by City University of Hong Kong)

## MAJOR PUBLICATIONS

### Chapter in a Book

- J. Kaplunov, **D.A. Prikazchikov**. Explicit models for surface, interfacial and edge waves in elastic solids. In “*Dynamic localization phenomena in elasticity, acoustics and electromagnetism*” (editors R. Craster & J. Kaplunov), *CISM Lecture Notes*, Springer-Verlag, in press, 2012.

### Research Papers

23. **D.A. Prikazchikov**. Rayleigh waves of arbitrary profile in anisotropic media. (submitted to *Mech. Res. Comm.*)
22. J.D. Kaplunov, **D.A. Prikazchikov** and G.A. Rogerson. On the bending edge wave in a thin elastic plate. (submitted to *Q. J. Mech. Appl. Math.*)
21. J. Kaplunov, **D.A. Prikazchikov**, B. Erbas, and O. Sahin. On a 3D moving load problem in an elastic half space. *Wave Motion* (special volume dedicated to Prof. V.I. Alshits), 2013. (doi: 10.1016/j.wavemoti.2012.12.008)
20. A.S. Anofrikova, **D.A. Prikazchikov**. Effective boundary conditions for an elastic half-plane coated with a thin viscoelastic layer. *Eng. Ed.*, 2012, published online (doi: 10.7463/1112.0496367)
19. **D.A. Prikazchikov**, E.V. Kovalenko. On the elastic potentials for 3D problems of elastodynamics. *Proc. BMSTU, Ser. Math. Modelling*, Vol. 4, pp. 131-137, 2012.
18. J.D. Kaplunov, **D.A. Prikazchikov**. Formulation of mixed problems for a half plane

- within the asymptotic model for the Rayleigh wave. *Proc. BMSTU, Ser. Math. Modelling*, Vol. 3, pp 114-120, 2012.
17. B. Erbas, J. Kaplunov, **D.A. Prikazchikov**. The Rayleigh wave field in mixed problems for a half-plane. *IMA J. Appl. Math.*, published online, 2012. (doi: 10.1093/imatat/hxs010).
  16. J.D. Kaplunov, **D.A. Prikazchikov**. On flexural edge waves of general time dependence. *Proc. BMSTU, Ser. Math. Modelling*, 164-170, 2011.
  15. **D.A. Prikazchikov**, V.G. Mitskevich. An asymptotic model for Scholte-Gogoladze wave. *Jl. Sci. Tech. Transp.*, iss. 3, 49-51, 2011.
  14. **D.A. Prikazchikov**. Development of the asymptotic models for surface and interfacial waves. *Proc. NGU*, 4(4), 1713-1715, 2011.
  13. **D.A. Prikazchikov**, V.Y. Tomashpolsky. Forced edge vibration of pre-stressed, incompressible elastic solids subject to mixed face boundary conditions. *Proc. BMSTU, Ser. Nat. Sci.* iss. 2, 61-72, 2011.
  12. H.-H. Dai, J. Kaplunov & **D.A. Prikazchikov**. A long wave asymptotic model for surface wave in a coated elastic half-space. *Proc. R. Soc. Lond. A* **466**, 3097-3116, 2010. (doi:10.1098/rspa.2010.0125).
  11. J. Kaplunov, E. Nolde & **D.A. Prikazchikov**. A revisit to the moving load problem using an asymptotic model for the Rayleigh wave. *Wave Motion* **47**, 440-451, 2010. (doi:10.1016/j.wavemoti.2010.01.005).
  10. M. Destrade, M.D. Gilchrist, **D.A. Prikazchikov** & G. Saccomandi. Surface instability of sheared soft tissues, *J. Biomech. Eng.* **130(6)** 061007 (6p.), 2008. (doi:10.1115/1.2979869)
  9. L.A. Bokeria, V.N. Makarenko, L.A. Yurpol'skaya & **D.A. Prikazchikov**. On computer tomography for analysis of the heart anatomy with inborn troubles. *Bul. Bakulev Nat. Cent. Card. Surg.* **9(2)**, 41-52, 2008.
  8. V.G. Mitskevich, **D.A. Prikazchikov**. On application of the asymptotic model for Stoneley wave to moving load problems. *Jl. Sci. Tech. Transp.* iss. 3, 94-98, 2008.
  7. **D.A. Prikazchikov**, G. A. Rogerson & K.J. Sandiford. On localized vibrations in pre-stressed incompressible transversely isotropic elastic solids. *Jl. Sound Vib.* **301**, pp. 701-717, 2007.
  6. J.D. Kaplunov, A. Zakharov & **D.A. Prikazchikov**. Explicit models for elastic and piezoelectric surface waves. *IMA Jl. Appl. Math.* **71**, 768-782, 2006.
  5. T. Demchenko, J.D. Kaplunov, **D.A. Prikazchikov** & I.A. Aleynikov. On application of the asymptotic model for Rayleigh wave to moving load problems. *Jl. Sci. Tech. Transp.*, iss. 3, 82-85, 2005.
  4. J.D. Kaplunov, **D.A. Prikazchikov** & G. A. Rogerson. On three-dimensional edge waves in pre-stressed incompressible elastic structures. *Jl. Acoust. Soc. Am.* **118(5)**, 2975-2983, 2005.
  3. J.D. Kaplunov, **D.A. Prikazchikov** & G. A. Rogerson. Edge vibration of a pre-stressed semi-infinite strip with traction-free edge and mixed face boundary conditions. *Z. angew. Math. Phys.* **55**, 701-719, 2004.
  2. **D.A. Prikazchikov**, G. A. Rogerson. On surface wave propagation in incompressible, transversely isotropic, pre-stressed elastic half-spaces. *Int. Jl. Eng. Sci.* **42**, 967-986, 2004.

1. **D.A. Prikazchikov**, G. A. Rogerson. Some comments on the dynamic properties of anisotropic and strongly anisotropic pre-stressed elastic solids. *Int. Jl. Eng. Sci.* **41**, 149-171, 2003.

### ***Recent presentations***

10. N.S. Anofrikova, J. Kaplunov, **D.A. Prikazchikov** and Yu.I. Dimitrienko. A mathematical model for a surface wave on an elastic half-space coated with a thin viscoelastic layer. Presented at the 8<sup>th</sup> International Conference on Mechanics of Time-Dependent Materials, Kanazawa, Japan, September, 2012, p. 56.
9. J. Kaplunov, **D.A. Prikazchikov**. An asymptotic model for the Kononov wave. Presented at the 38<sup>th</sup> Solid Mechanics Conference. Warsaw, Poland, August, 2012, pp. 246-247.
8. **D.A. Prikazchikov**. Application of the asymptotic model for the Rayleigh wave to moving load problems. Presented at the conference "Topical Directions in Continuum Mechanics", Saint-Petersburg, July 2012, pp. 32-33. (***plenary lecture***)
7. N.Ege, B. Erbas, **D.A. Prikazchikov** and A.Sokolov. An asymptotic model for the Rayleigh wave in an elastic half space. Presented at the Int. Conf. "*Days on Diffraction 2012*", Saint-Petersburg, June 2012, pp. 37-38.
6. J. Kaplunov, **D.A. Prikazchikov**. Explicit models for surface waves and moving load problems. Presented at "Elasticity Day", University of Liverpool, May, 2012. (***keynote lecture***)
5. **D.A. Prikazchikov**. On the development of asymptotic models for surface and interfacial waves. Presented at the X All-Russian Congress on Mechanics, Nizhny Novgorod, August, 2011.
4. J. Kaplunov, **D.A. Prikazchikov**. Flexural edge waves with general time dependence. Presented at the Int. Conf. "*Days on Diffraction 2011*", Saint-Petersburg, June 2011, pp. 68-69.
3. **D.A. Prikazchikov**, V. Tomashpolsky and V. Mitskevich. On application of the asymptotic model for Schölte-Gogoladze wave to a steady moving load problem. *6<sup>th</sup> All-Russian Conf. "Irreversible Processes in Science and Technology"*, Moscow, Russia, January 2011, vol. 2, pp. 131-134.
2. **D.A. Prikazchikov** and V. Tomashpolsky. An asymptotic model for surface wave on the boundary of solid and fluid media. *Int. Conf. "Topical Problems of Applied Mathematics"*, Moscow, Russia, October 2010, pp. 287-289.
1. **D.A. Prikazchikov**. The asymptotic model for surface wave. *Proc. Int. Conf. "Days on Diffraction 2010"*, Saint-Petersburg, Russia, June 2010, pp. 137-141, ISBN 978-1-577-0244-0.

### **Lecture notes**

1. «Additional chapters of the probability theory». Learners guide. Published by the Bauman Moscow State Technical University, 2011, 73 p., 300 copies. (with O.V. Mihailova и T.V. Oblakova)

2. «Differential calculus for functions of a single variable». Lecture notes. Published by the Moscow State University of Railways. 2009, 76 p., 500 copies. (with V.N. Alekseev, and V.V. Riedel)
- 3 «Theoretical mechanics». Learners guide to assignments №1,2 on statics and kinematics for 2<sup>nd</sup> Year engineering students. Published by the Moscow State University of Railways. 2009, 54 p., 7000 copies. (with Kapranov I.V., Dubrovin V.S, Kaplunov J.D., Kiseleva E.I., Fedorinin N.I., Shumeyko G.S.)
- 4 «Series». Lecture notes. Published by the Moscow State University of Railways. 2009, 53 p., 300 copies. (with V.N. Alekseev, and V.V. Riedel)
- 5 «Algebra and geometry». Learners guide for the 1<sup>st</sup> Year “Computing systems and networks” students. Published by The Russian State Technical University of Railways, 2008, 47 p., 500 copies. (with V.N. Alekseev)
- 6 «Theoretical mechanics. The Lagrange equations». Learners guide. Published by the Russian State Technical University of Railways, 2007, 42 p., 200 copies. (with I.V. Kapranov, Y.V. Kim and D.V. Dol)
- 7 «Mathematics». Semester workbook for the 1<sup>st</sup> Year “National economy” students, Published by The Russian State Technical University of Railways, 2007, 20 p., 500 copies. (with V.N. Alekseev)

### ***RESEARCH VISITS***

- An academic visitor at the University of Salford, UK. (March-April 2006, supported by LMS)
- An academic visitor at Brunel University, UK. (April-May 2008, August 2008, July-August 2009, June 2010, January 2011, June 2011, May 2012, December 2012, February 2013)  
(supported by Brunel University)
- An academic visitor at Keele University, UK. (January 2011)
- An academic visitor at Anadolu University, Turkey. (November 2011, April 2013 (scheduled), supported by the Turkish Research Council B.14.2.TBT.0.06.01.03.220.01-16415)

### ***REVIEWING***

Acted as a referee for a number of international journals including

1. Proceedings of the Royal Society London, Series A.
2. Journal of Sound and Vibration.
3. Acta Mechanica Solida Sinica.
4. Mechanics of the Time Dependent Materials.
5. Mathematics and Mechanics of Solids.